Detailed Ecological Risk Assessment, RAAF Williams, Laverton, Victoria

Department of Defence

Report

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We acknowledge the Traditional Custodians of Country throughout Australia and their connection to land, sea and community.

We pay our respect to Elders past, present and emerging and in the spirit of reconciliation we commit to working together for our shared future where every person is respected, valued and has strong sense of belonging.

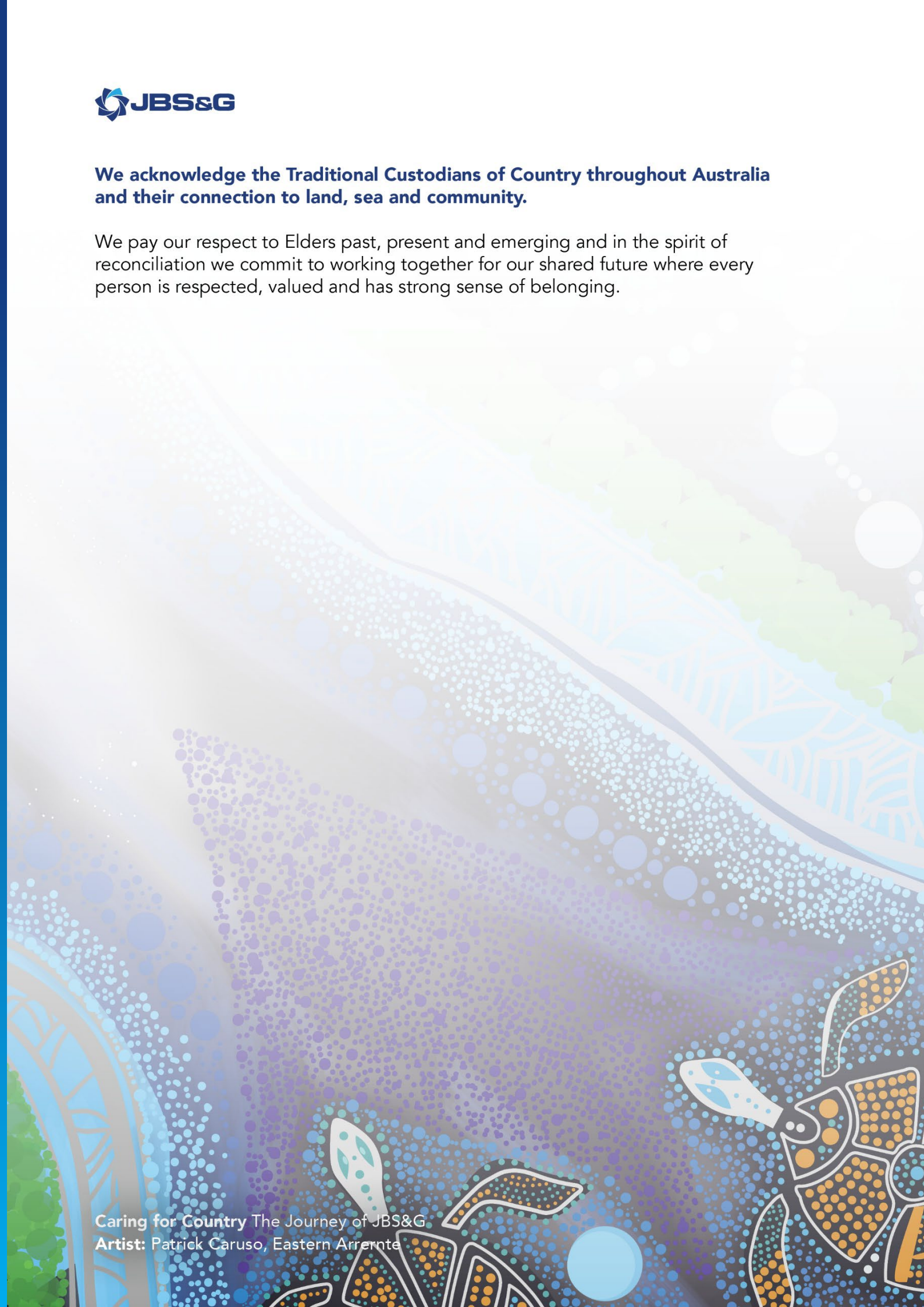


Table of Contents

1. Introduction 1

1.1 Background 1

1.2 Objective 2

1.3 Regulatory guidance 2

1.3.1 Australian 2

1.3.2 International 3

1.4 Scope of work 3

1.5 Per- and poly-fluoroalkyl substances 3

2. Problem identification 5

2.1 Base identification 5

2.1.1 Base and PMAP management area 5

2.1.2 Receiving environment 5

2.2 Environmental setting 8

2.3 Base history 10

2.4 Environmental values within areas of interest 11

2.5 Ecological condition within areas of interest 13

3. Tier 1 risk assessment 17

3.1 PFAS investigations 17

3.1.1 General 17

3.1.2 Preliminary site investigation (Golder, 2017) 17

3.1.3 Detailed site investigation (Aurecon, 2020) and addendum to the detailed site investigation (Aurecon, 2021) 18

3.1.4 Receiving environment preliminary ecological risk assessment (Aurecon, 2022) 19

3.1.5 Data gap investigations 20

3.2 PFAS NEMP Version 3.1 (HEPA 2026) 22

3.2.1 General 22

3.2.2 Soil – direct exposure 23

3.2.3 Soil – indirect exposure 23

3.2.4 Freshwater and interim marine default guideline values 24

3.2.5 Biota guideline values 25

3.3 Canadian guidance (CCME 2021) – soil, direct contact 25

3.4 Tier 1 screening 26

3.4.1 General 26

3.4.2 Statistical analysis 26

3.4.3 Soil 27

3.4.4 Surface water 29
3.4.5 Groundwater 30
3.4.6 Biota 31
3.4.7 Sediment 34
3.4.8 Identification of risk driving contaminant of concern 34
3.5 Investigation adequacy 35
3.5.1 General 35
3.5.2 Data representativeness 35
3.5.3 Seasonality and temporal variation 37
4. SPR linkage assessment 38
4.1 General 38
4.2 Sources and media 38
4.3 Pathways 39
4.3.1 General 39
4.3.2 Surface water 39
4.3.3 Groundwater 40
4.4 Receptors 40
4.5 Problem statement 41
5. Receptor identification 42
5.1 General 42
5.2 Preliminary ERA (Aurecon 2022) 42
5.3 Elgin biota sampling and desktop review reports (Elgin 2025) 42
5.4 Ecological database searches 43
5.5 Receptors of concern 43
5.5.1 General 43
5.5.2 Amphibians, aquatic invertebrates, aquatic flora and fish 43
5.5.3 Avian 44
5.5.4 Mammals 47
5.5.5 Stygofauna 48
6. Exposure assessment 49
6.1 General 49
6.2 Adopted exposure point concentrations 49
6.3 Exposure parameters 49
6.3.1 General 49
6.3.2 Surface water intake 52
6.3.3 Dietary intake 52
6.3.4 Daily sediment ingestion 53

6.3.5 Home range and area use factors 53
6.4 Dose estimation 56
7. Toxicity assessment 57
7.1 General 57
7.2 Key toxicity testing concepts 57
7.3 Aquatic species toxicity 59
7.3.1 Aquatic receptor direct exposure toxicity assessment 59
7.3.2 Aquatic receptor indirect (bioaccumulation) toxicity assessment 61
7.3.3 Summary of adopted aquatic toxicological assessment endpoints 62
7.4 Mammalian and avian species toxicity 63
7.4.1 Mammalian species tolerable daily intake 63
7.4.2 Avian species tolerable daily intake 63
7.4.3 Summary of adopted TRVs 64
7.5 Stygofauna species toxicity 64
7.5.1 Summary of CRC CARE (February 2022) *Final Report – Stygofauna direct toxicity assessment* 64
7.5.2 Study representativeness 65
7.5.3 Derivation of environmental concern level 65
8. Risk characterisation 67
8.1 General 67
8.2 Categorization of hazard indices 67
8.3 Risks characterisation 68
8.3.1 Direct contact risks– aquatic species 68
8.3.2 Indirect contact (bioaccumulation) risks – aquatic species 68
8.3.3 Risks to air-breathing aquatic receptors (birds and mammals) 69
8.3.4 Stygofauna 69
9. Sensitivity assessment 70
9.1 General 70
9.2 Problem identification 70
9.3 Identification or risk drivers (tier 1 screening) 71
9.3.1 Availability of tier 1 screening criteria 71
9.3.2 Reliance on empirical data 72
9.3.3 Estimated exposure point concentrations 73
9.4 Receptor identification 75
9.4.1 Mammalian and avian 75
9.4.2 Stygofauna 76
9.5 Exposure estimation 76
9.6 Toxicity assessment 78

9.6.1 Adopted toxicity end-points 78
9.6.2 Reptile toxicity 78
9.6.3 Other PFAS 78
9.7 Sensitivity assessment summary 78
10. Conclusions 80
10.1 General 80
10.2 Aquatic species 80
10.3 Avian and mammalian species 80
10.4 Stygofauna 82
10.5 Overall conclusions 82
11. References 83
11.1 Guidelines and legislation 83
11.1.1 Australian 83
11.1.2 International 84
11.2 Previous reports 84
11.3 Other information sources 85
12. Limitations 88

List of Tables

Table E.1 Birds and mammals estimated hazard indices x
Table 2.1 Base identification and setting summary 5
Table 2.2 On-base water bodies and receiving environment 6
Table 2.3 Environmental setting summary 8
Table 2.4 Summary of RAAF Williams, Laverton PFAS SAs 10
Table 2.5 Ecological condition of the areas of interest 14
Table 3.1 Preliminary ERA hazard indices by receptor group, AOI and media 19
Table 3.2 Elgin ecological observations 21
Table 3.3 Ecological direct exposure values for soil as per PFAS NEMP (HEPA 2026) 23
Table 3.4 Ecological indirect exposure guideline values for soil as per PFAS NEMP (HEPA 2026) 24
Table 3.5 Freshwater and interim marine water criteria (PFAS NEMP (HEPA 2026)) 25
Table 3.6 PFAS NEMP (HEPA 2026) biota guideline values 25
Table 3.8 Summary of available soil data 28
Table 3.9 Summary of available surface water PFAS data 30
Table 3.10 Summary of available groundwater PFAS data 31
Table 3.11 Summary of available terrestrial biota PFAS data 32
Table 3.12 Summary of available aquatic biota PFAS data 33
Table 3.13 Summary of available sediment PFAS data 34
Table 4.1 PFOS+PFHxS exposure media summary 38
Table 4.2 Potentially complete SPR linkages 40
Table 5.1 Review of resident/nomadic avian receptors 44
Table 5.2 Review of migratory/partly migratory avian receptors 45
Table 5.3 Selected aquatic avian receptors of concern 46
Table 5.4 Review of mammalian receptors 47
Table 6.1 Summary of adopted PFOS+PFHxS aquatic EPCs 49

Table 6.2 ROC - general information 50
Table 6.3 Receptors of concern – area use factors 54
Table 7.1 ANZG (2026) Species sensitivity distributions 60
Table 7.2 ANZG (2026) Toxicity data for PFOS (by Taxonomic Group) 60
Table 7.3 Adopted aquatic toxicological assessment endpoints 63
Table 7.4 Adopted PFOS+PFHxS TRVs 64
Table 7.5 Stygofauna environmental concern level 66
Table 8.1 Estimated hazard indices for direct contact risks to aquatic taxa 68
Table 8.2 Estimated hazard indices for indirect (bioaccumluatio) risks to higher order aquatic taxa 69
Table 8.3 Birds and mammals estimated hazard indices 69
Table 9.1 Summary of MPEs by media and AOI 74

List of Figures

Figure 1 Site location
Figure 2 RAAF Williams, Laverton source areas
Figure 3 Off-base source areas
Figure 4 Hydrological features and source areas
Figure 5 Areas of interest (exposure environments)
Figure 6 Soil sample locations and tier 1 Exceedances
Figure 7 Groundwater well locations and tier 1 exceedances
Figure 8 Sediment sample locations and key PFAS results
Figure 9 Surface water sample locations and tier 1 exceedances
Figure 10 Biota sample locations and tier 1 exceedances (Laverton RAAF Swamp)
Figure 11 Biota sample locations and tier 1 exceedances (Skeleton Creek)
Figure 12 Biota sample locations and tier 1 exceedances (Sanctuary Lakes)
Figure 13 Biota sample locations and tier 1 exceedances (Cheetham Wetlands)

List of Plates

Plate 1 Skeleton Creek Sub-catchment (Melbourne Water 2018) 15
Plate 2 ANZG (2026) species sensitivity distribution, PFOS in freshwater 59

Appendices

Appendix A **Figures**
Appendix B **Environmental data tables**
Appendix C **Selection of receptors of concern**
Appendix D **Exposure estimation and risk characterisation**

Abbreviations

Term	Definition
AFFF	Aqueous film forming foam
AHD	Australian height datum
ANZG	Australian and New Zealand guidelines
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
AOI	Area of interest
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013
AUF	Area use factor
Base	RAAF Williams, Laverton
BGV	Biota guideline value
BCF	Bioconcentration factor
BMF	Biomagnification factors
BoM	Bureau of Meteorology
BW	Body weight
CBD	Central business district
CCME	Canadian Council of Ministers of the Environment
cm	Centimetre
CMA	Catchment Management Authority
COPC	Chemicals of potential concern
CRC CARE	Cooperative Research Centre for Contamination and Remediation of the Environment
CSM	Conceptual site model
CSR	Contaminated Sites Register
CTV	Critical toxicity value
CUSFARP	Clean up so far as reasonably practicable
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DEECA	Department of Energy, Environment and Climate Action
Defence	Department of Defence
DETD	Daily effects threshold dose
DELWP	Department of Energy, Environment and Climate Action (formerly Department of Environment, Land, Water and Planning) Victoria
DGV	Default guideline values
DOEE	Department of Climate Change, Energy, the Environment and Water (formerly Department of the Environment and Energy) Australia
DMI	Dry matter intake
DSI	Detailed site investigation
EC	Effect concentration
ECL	Environmental concern level
ECCC	Environment and Climate Change Canada

Term	Definition
EPA	Environment Protection Authority Victoria
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPC	Exposure point concentration
ERA	Ecological risk assessment
ERS	Environment reference standard
ESSD	Estimated species sensitivity distributions
FFG Act	Flora and Fauna Guarantee Act 1988
FFTG	Federal fish tissue guideline
FI:BW	Food intake to bodyweight ratio
FIR	Food ingestion rate
FMI	Fresh matter intake
FTA	Fire training area
g	Grams
GEMS	General engineering and maintenance store
Golder	Golder Associates Pty Ltd
ha	Hectare
HEPA	Heads of EPA Australia and New Zealand
HI	Hazard index
JBS&G	JBS&G Australia Pty Ltd
kg	Kilograms
LC	Lethal concentration
LOAEL	Lowest observed adverse effect level
LOEC	Lowest observed effect concentration
m AHD	Metres Australian Height Datum
m bgl	Metres below ground level
MFA	Mass flux study
mg/kg	Milligrams per kilogram
mg/L	Milligrams per litre
mm	Millimetre
MNES	Matter of national environmental significance
MPE	Maximum probable error
NATA	National Association of Testing Authorities
NOEC	No observed effect concentration
NOEL	No observed effect level
NVA	Newer volcanics aquifer
OEH	Office of Environment and Heritage NSW
OMP	Ongoing monitoring plan
PFAS	Per- and polyfluoroalkyl substances
PFAS NEMP	PFAS National Environment Management Plan
PFHxS	Perfluorohexane sulfonate

Term	Definition
PMAP	PFAS Management Area Plan
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
POP	Persistent organic pollutant
PSI	Preliminary site investigation
RAAF	Royal Australian Air Force
ROC	Receptors of concern
SA	Source area
SAQP	Sampling and analysis quality plan
SERDP	Strategic Environmental Research and Development Program
SFARP	So far as reasonably practicable
spp	Species protection
SPR	Source-pathway receptor
SSD	Species sensitivity distribution
TA	Technical advisor
TDI	Tolerable daily intake
TDS	Total dissolved solids
TEC	Threshold effects concentration
TF	Transfer factor
TRV	Toxicity reference value
UF	Uncertainty factor
UCL	Upper confidence limits
UNEP	United Nations Environment Programme
US EPA	United States Environmental Protection Agency
VVG	Visualising Victoria's Groundwater
ww	Wet weight

Executive summary

JBS&G Australia Pty Ltd (JBS&G) has been engaged by the Department of Defence (Defence) as the lead consultant for the implementation of *RAAF Williams, Laverton and RAAF Base Point Cook, PFAS Management Area Plan* (Defence 2025a), herein referred to as the 'PMAP (Defence 2025a)'. This work forms part of a national Defence program to understand per- and polyfluoroalkyl substances (PFAS) contamination resulting from the historical use of aqueous film forming foam (AFFF) on and adjacent to Defence properties. JBS&G has prepared a detailed ecological risk assessment (detailed ERA) focused on the receiving environment for surface water and groundwater discharges in relation to Royal Australian Air Force (RAAF) Base Williams, Laverton, Victoria (the base). The overall objective of the project is to achieve remediation and management following a 'so far as reasonably practicable' (SFARP) approach which is consistent with Environment Protection Authority (EPA) Victoria duty to manage contaminated land.

The base is located approximately 17.0 km to the south-west of the Melbourne central business district (CBD). Following the closure of the airfield in 1996, the western portion, including the airfield and the natural wetlands known as Laverton RAAF Swamp, was sold and subsequently redeveloped to a primarily residential mixed-use suburb known as Williams Landing. Previous investigations and analytical data from the Defence Esdat database informed this detailed ERA (refer to **Appendix B**). A preliminary ERA (Aurecon 2022) identified four key areas of interest (AOI) requiring further assessment: Laverton RAAF Swamp (in Williams Landing), Skeleton Creek, Sanctuary Lakes and Cheetham Wetlands south of Skeleton Creek.

The preliminary ERA (Aurecon 2022) included a number of recommendations which were to be addressed in management action four of the PMAP. JBS&G developed a sampling and analysis quality plan (SAQP) to address data gaps identified within the preliminary ERA (Aurecon 2022) to allow for preparation of a detailed ERA, as documented in *PFAS Management Area Plan (PMAP) Delivery at RAAF Williams, Laverton and RAAF Base Point Cook Sampling and Analysis Quality Plan (SAQP) – Ecological Risk Assessment & Human Health Risk Assessment* (JBS&G, 2024), herein referred to as the 'SAQP (JBS&G 2024)'.

The objective of this detailed ERA is to determine whether base-originated PFAS poses a low and acceptable or potentially elevated risk to ecological receptors within the AOI. PFAS exposures were assessed by identification of risk driving environmental media (e.g. surface water, sediment and biota[1]) and quantification of risks via calculation of hazard indices (HI[2]) for receptor groups and representative receptors of concern (ROC), focusing on perfluorooctane sulfonic acid (PFOS) and perfluorohexane sulfonate (PFHxS)[3].

The results for surface water and biota samples collected from most water bodies exceeded current generic regulatory guideline values to assess risks to aquatic species. Risks were found to be low within the AOI based on the absence of substantial exceedances of the adopted criteria, generally being the lowest reported no observed effect concentrations (NOECs) for aquatic taxa. For avian and mammalian receptors, representative ROC were selected to indicate potential risks to the broader species group. The representative ROC were selected as follows:

- Herbivorous resident bird: black swan.

[1] Biota refers to biological matter such as plants, algae, benthic invertebrates, pelagic invertebrates, small fish (i.e. prey fish) and large fish (i.e. predatory fish).

[2] For the purposes of this detailed ERA: HI ≤1: Risks are low and acceptable, HI >1 to ≤10: Risks are potentially elevated and HI >10: Risks are elevated. Further information is provided in **Section ?**. It is important to note that the Australian Government guidance states that HIs greater than 1 (risks are 'potentially elevated') do not necessarily mean that risks are unacceptable, but that further consideration should be applied to refine risk estimates (e.g. additional sampling and analysis of media, further receptor characterisation), or that risk management actions should be recommended.

[3] The risk assessment focused upon PFAS for which National government criteria have been provided for ecological risk assessment within the framework of the *PFAS National Environmental Management Plan (Version 3.0)*. Further information is provided in **Section 1.5.**

- Invertivorous/omnivorous resident birds: hooded plover, dusky moorhen.
- Piscivorous resident birds: Australasian bittern and royal spoonbill.
- Piscivorous bird of prey: osprey.
- Migratory birds: long-toed stint and great egret.

For avian and mammalian species, estimated HI calculations (i.e. the estimated exposure dose divided by the acceptable exposure dose), which represent a measure of risk, is summarised in **Table E.1**. Exposure estimates indicated that species which obtain a portion of their diets from invertebrates, and particularly fish, adopt an elevated potential risk in comparison to primarily herbivorous species.

The spatial pattern observed in the estimated risk profile aligns with the flow pathway, whereby the highest risks were observed in Skeleton Creek, which is the closest large receiving water body to the base. Lower risks were observed in Laverton RAAF Swamp, which is closer to the base than Skeleton Creek, however this is attributable to its smaller size and proportionally lower estimated use by receptors.

Overall, the detailed ERA has refined the risk estimates to ecological receptors initially presented in the preliminary ERA, with risk estimates considerably lower than initially indicated due to consideration of refined, site-specific approach and additional data collected since 2022.

This detailed ERA has quantified risks to ecological receptors within the AOI and identified potentially elevated risks to some receptors. The outcomes of this detailed ERA will be considered in an updated PMAP.

Table E.1 Birds and mammals estimated hazard indices

Trophic level / feeding guild	Representative ROC	Laverton RAAF Swamp	Skeleton Creek	Sanctuary Lakes	Cheetham Wetlands
Resident aquatic birds					
Primary / herbivore	Black swan	Low and acceptable	Low and acceptable	Low and acceptable	Low and acceptable
Secondary-tertiary invertivore/ omnivore	Hooded plover	Low and acceptable	Low and acceptable	Potentially elevated	Potentially elevated
Secondary-tertiary omnivore	Dusky moorhen	Potentially elevated	Potentially elevated	Low and acceptable	Low and acceptable
Tertiary-quaternary / carnivore	Australasian bittern	Potentially elevated	Potentially elevated	Low and acceptable	Low and acceptable
Tertiary-quaternary / carnivore	Royal spoonbill	Potentially elevated	Potentially elevated	Potentially elevated	Potentially elevated
Quaternary / carnivore	Osprey	Potentially elevated	Potentially elevated	Low and acceptable	Low and acceptable
Migratory aquatic birds					
Secondary - tertiary / invertivore	Long-toed stint	Potentially elevated	Potentially elevated	Potentially elevated	Potentially elevated
Tertiary-quaternary carnivore	Great egret	Potentially elevated	Elevated	Potentially elevated	Potentially elevated
Mammals					
Secondary invertivore	Rakali	Potentially elevated	Elevated	Potentially elevated	Potentially elevated

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) has been engaged by the Department of Defence (Defence) as the lead consultant for the implementation of *RAAF Williams, Laverton and RAAF Base Point Cook, PFAS Management Area Plan* (Defence, 2025), herein referred to as the 'PMAP (Defence 2025a)', in relation to Royal Australian Air Force (RAAF) Base Williams, Laverton, Victoria (the base).To address management action four detailed in the PMAP, JBS&G has been requested to prepare a detailed ecological risk assessment (detailed ERA) focused on the receiving environment for surface water and groundwater discharges from the base.

PMAP implementation work is part of a national Defence program to understand the nature and extent of per- and poly-fluoroalkyl substances (PFAS) contamination resulting from the historical use of aqueous film forming foam (AFFF) on and adjacent to selected Defence properties across Australia. The overall objective of the project is to achieve remediation and management in accordance with a 'so far as reasonably practicable' (SFARP) approach. SFARP is to be determined through principles and processes similar to that developed by the Environment Protection Authority (EPA) Victoria duty to manage contaminated land. This process is set out in EPA publication *Guidance for the Clean Up and Management of Contaminated Groundwater (EPA Victoria Publication 2001.2)* (EPA 2024).

The base is located approximately 17.0 km to the south-west of the Melbourne central business district (CBD). The location of the base is shown in **Figure 1**. It is noted that following the closure of the airfield at RAAF Williams, Laverton in 1996, the western portion, including the airfield and the natural wetlands known as Laverton RAAF Swamp, was sold and subsequently redeveloped to a mixed-use (primarily residential) suburb known as Williams Landing.

Defence has previously completed detailed environmental investigations at and surrounding the base to develop a risk-based approach for managing PFAS contamination at the base. A list of documents and/or relevant investigations is provided in the references section of this report (**Section 11**). Analytical data has been obtained from the Defence Esdat database for the relevant reports and relied upon to inform this detailed ERA (refer to **Appendix B**). Reports which include the investigation of PFAS contamination on-base are referenced below:

- *Preliminary Site Investigation for PFAS RAAF Base Williams Laverton VIC (0927)* (Golder, 2017). Herein referred to as the 'PSI (Golder 2017)'.
- *Investigation of per-and poly-fluoroalkyl substances at RAAF Williams Laverton, Detailed Site Investigation* (Aurecon, 2020). Herein referred to as the 'DSI (Aurecon 2020)'.
- *Investigation of per-and poly-fluoroalkyl substances at RAAF Williams Laverton, Addendum to the Detailed Site Investigation* (Aurecon, 2021). Herein referred to as the 'addendum DSI (Aurecon 2021)'.
- *Investigation of per- and poly-fluoroalkyl substances at RAAF Williams Laverton, Off-site Ecological Risk Assessment* (Aurecon, 2022). Herein referred to as the 'preliminary ERA (Aurecon 2022)'.

The preliminary ERA (Aurecon 2022) presents a combined tier 1 and tier 2 risk assessment in relation to Laverton RAAF Swamp, Skeleton Creek, Sanctuary Lakes, and Cheetham Wetlands. The preliminary ERA (Aurecon 2022) was undertaken to assess potential risks to ecological communities in terrestrial, and aquatic and subterranean ecosystems that receive PFAS discharges from the base. Based on the findings and recommendations of the DSI (Aurecon 2020) and addendum DSI (Aurecon 2021), the preliminary ERA (Aurecon 2022) was focused on the following specific receiving water bodies, herein referred to as areas of interest (AOI):

- Laverton RAAF Swamp (in Williams Landing, part of the former RAAF Williams, Laverton base extent).

- Skeleton Creek.
- Sanctuary Lakes.
- Cheetham Wetlands south of Skeleton Creek.

The preliminary ERA (Aurecon 2022) included a number of recommendations which were to be addressed in management action four of the PMAP .JBS&G developed a sampling and analysis quality plan (SAQP) to address data gaps identified within the preliminary ERA (Aurecon 2022) and determine the required scope of works for the detailed ERA, as documented in *PFAS Management Area Plan (PMAP) Delivery at RAAF Williams, Laverton and RAAF Base Point Cook Sampling and Analysis Quality Plan (SAQP) – Ecological Risk Assessment & Human Health Risk Assessment* (JBS&G 2024), herein referred to as the ' SAQP(JBS&G 2024) '. The SAQP (JBS&G 2024) was prepared to inform collection of data for both the base and RAAF Base Point Cook, which have been separately reported. The SAQP (JBS&G 2024) was implemented during October/November 2024 and May 2025, as documented in:

- *RAAF Williams Laverton – Sampling Event Factual Report, November 2024 to inform Ecological Risk* (JBS&G 2026b). Herein referred to as the 'November 2024 Factual Report (JBS&G 2026b).'.
- *RAAF Williams Laverton – Ecological Risk Assessment Factual Report, May 2025* (JBS&G 2026a). Herein referred to as the 'May 2025 Factual Report (JBS&G 2026a)'.

This detailed ERA has been prepared based on relevant historical information collected at the base, including data generated by recent investigation and monitoring work completed as part of a concurrent remediation investigation assessment (JBS&G 2026) and the ongoing monitoring plan (OMP), as documented in:

- *PFAS OMP Factual Report, Biannual Sampling Event February 2024, RAAF Williams (Laverton)* (Stantec 2024).
- *RAAF Williams, Laverton – PFAS OMP Sampling Event Report, October 2024* (JBS&G 2025a).
- *RAAF Williams, Laverton - PFAS OMP Sampling Event Report May/June 2025* (JBS&G 2025b).
- *RAAF Williams Laverton Remediation Investigation Assessment Report* (JBS&G 2025c), herein referred to as the 'RIA (JBS&G 2026)'.

1.2 Objective

The objective of this detailed ERA is to quantify whether risks posed by base-originated PFAS contamination to ecological receptors[4] within the AOI are low and acceptable or potentially elevated.

1.3 Regulatory guidance

1.3.1 Australian

The Australian Government only provides general guidance regarding the basis and methodology for conducting ERAs. The relevant Australian Government guidance are:

- Section 18.5 of *Environmental Health Risk Assessment, Guidelines for Assessing Human Health Risks from Environmental Hazards* (enHealth 2012).
- Schedule B5A of *National Environment Protection (Assessment of Site Contamination) Measure, as amended 2013* (NEPC, 2013). Herein referred to as the 'ASC NEPM (NEPC 2013)'.

[4] Ecological receptors, for the purpose of this detailed ERA, are identified as both taxonomic groups containing multiple individual species (e.g. mammals and birds) as well as individual species (e.g. black swan) and comprise both flora (e.g. plants and algae) and fauna (e.g. fish and reptiles).

- *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG 2018).
- National Chemicals Working Group of the Heads of Environment Protection Authorities (HEPA) *PFAS National Environmental Management Plan (Version 3.1)* (HEPA, 2026).
- *Toxicant default guideline values for aquatic ecosystem protection Perfluorooctane sulfonate (PFOS) in freshwater* (ANZG 2026).

As the guidance provided in the documents listed above is of a general nature only and contains no equations for risk quantification, reference must be made to international guidance when preparing an ERA in Australia (see **Section 1.3.2**).

1.3.2 International

The United States Environmental Protection Agency (US EPA) has prepared a number of guidelines in relation to conducting ERAs, the most relevant of which is *Wildlife Exposure Factors Handbook (EPA/600/R-93-187)* (US EPA 1993). This guidance provides relevant risk quantification equations but is not specific to PFAS.

Reputable international guidance for conducting ERAs specifically in relation to PFAS is considered to be limited to the guidance document *Guidance for Assessing the Ecological Risks of PFASs to Threatened and Endangered Species at Aqueous Film Forming Foam-Impacted Sites* (Strategic Environmental Research and Development Program (SERDP), 2020). This provides guidance for conducting quantitative ERAs in relation to PFAS which is based on equations presented in US EPA (1993). SERDP (2020) also provides guidance for methods of discretising the environment in consideration of different feeding guilds and dietary sources.

On the basis of the above, this detailed ERA has considered both US EPA (1993) and SERDP (2020).

1.4 Scope of work

The scope of work undertaken in preparation of this detailed ERA, and in accordance with the requisite components on an ERA specified in Schedule B5a in ASC NEPM (NEPC 2013) comprised the following:

- Problem identification (**Section 2**).
- Tier 1 risk assessment (**Section 3**).
- Conceptual site model (CSM) (**Section 4**).
- Receptor identification (**Section 5**).
- Exposure assessment (**Section 6**).
- Toxicity assessment (**Section 7**).
- Risk characterisation (**Section 8**).
- Sensitivity assessment (**Section 9**).
- Presentation of conclusions (**Section 10**).

1.5 Per- and poly-fluoroalkyl substances

PFAS represent a large group comprising thousands of individual anthropogenic chemicals. At the time of this report, a total of 30 PFAS compounds are typically quantified using commercially available National Association of Testing Authorities (NATA) accredited methods. Of these 30 compounds, the Australian

Government only provides protection of the environment-based criteria for perfluorooctane sulfonate (PFOS), perfluorohexane sulfonate (PFHxS), perfluorooctanoic acid (PFOA) and perfluorobutane sulfonate (PFBS)[5].

The Australian Government currently provides limited guidance regarding the toxicity of PFOS, PFHxS and PFOA to ecological receptors, with the available guidance largely referring to other information sources. The available Australian Government guidance is summarised in **Section 3.2** and the international guidance relied upon by the Australian Government is summarised in **Section 3.3**.

For the purposes of this report:

- All of the detectable PFAS (i.e. 30 individual compounds) have been considered to inform the assessment of the presence and transport of PFAS from source to receptor.
- Only the PFAS for which there are Australian Government ecological criteria (i.e. PFOS, PFHxS and PFOA) have been considered in the process of screening environmental media to evaluate whether environmental media potentially poses an exposure risk to ecological receptors.
- Based on the outcomes of the screening process, only PFOS and PFHxS have been adopted for detailed risk assessment (assessed as the arithmetic sum of PFOS+PFHxS and herein referred to 'PFOS+PFHxS').

Whilst PFOS+PFHxS represent the majority of detectable PFAS in environmental media in the AOI, in absence of reliable quantitative criteria for the assessment of other PFAS compounds, or reliable quantitative laboratory detection methods for the identification of all PFAS, the capacity to assess PFAS on the whole of group basis is currently limited. This is considered to represent the Australian government's current policy settings and is reflective of the limitations of the scientific literature and commercially available assessment practices.

[5] PFBS criteria are only available in relation to potential human health exposure via consumption of drinking water. No PFBS criteria are currently available to assess potential ecological exposures.

2. Problem identification

2.1 Base identification

2.1.1 Base and PMAP management area

The base and PMAP management area identification details are provided in **Table 2.1**, as obtained from the PMAP (Defence 2025a). The extent of the PMAP management area and base are shown in **Figure 1**. The base extent is shown in **Figure 2**.

Table 2.1 Base identification and setting summary

Item	Details
Base address	17 Sir Richard Williams Ave, Laverton Victoria 3028.
Base area	The current extent of the base is approximately 150 hectares (ha).
PMAP management area	876 ha.
Military area (Property ID)	0927.
Municipality	Wyndham City Council.
Current land use (on-base)	Defence base used for (non-flight) training, storage, maintenance and administration, temporary accommodation, a childcare centre and sporting facilities associated with Defence activities.
Historical land use	Defence based used for administration, fire training, firepower demonstrations, aircraft maintenance, logistics and communications hub (as further discussed in **Section 2.3**).
PMAP area	The PMAP management area includes: • Private properties and public land to the west (including the former base extent located in Williams Landing shown to the west of the base in **Figure 3**). • Water bodies and adjacent land hydraulically downstream of the base including Addison Wetlands, Laverton RAAF Swamp, Skeleton Creek and Sanctuary Lakes.

2.1.2 Receiving environment

The receiving environment south and south-east of the base is the primary focus of this detailed ERA and comprises the aquatic environments within and downstream of the base. Previous investigations have found these to be potentially affected by discharges of PFAS from the base by surface water and groundwater transport. AOI were nominated as consistent with historical investigations (DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and preliminary ERA (Aurecon 2022)) based on an appraisal of the concentrations of PFAS within the base and along discharge flow pathways. The AOI nominated for detailed assessment herein comprise the following water bodies downstream of the base:

- Laverton RAAF Swamp, which receives affected stormwater and groundwater discharges.
- Skeleton Creek, which receives affected stormwater and groundwater discharges.
- Sanctuary Lakes and Cheetham Wetlands, which are both subject to active water management with the surface water sourced from the lower reaches of Skeleton Creek.

Concentrations of PFAS in Doherty's Drain and Laverton Creek were substantially lower than the AOI and associated tributaries and these water bodies were not identified as AOI on this basis. Addison Wetland was not adopted as an AOI on the basis that the concentrations of PFAS observed in surface water were lower than observed in Laverton RAAF Swamp and that it occupies an area approximately 10x smaller. Supporting discussion is provided in the sensitivity assessment (**Section 9.2**).

Key hydrological features and water bodies within receiving environments are detailed in **Table 2.2,** and shown in **Figure 4**, with context provided in relation to potential sources of water from the base. The water bodies are discussed in order of proximity to the base (as shown in **Figure 5**), with further information provided in **Section 2.4** and **Section 2.5.** Each of the water bodies have been subject to a number of previous investigations (DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and preliminary ERA (Aurecon 2022). The nominated water bodies comprise water bodies in receipt of potential discharges from the base.

Table 2.2 On-base water bodies and receiving environment

Water body	Details
On-base water bodies outside AOI	
Doherty's Drain 1 km length east-west within the base	A stormwater channel constructed to manage drainage and flooding upgradient of the base. Doherty's Drain receives upstream surface water prior to entering the base. The drain enters the base at the north-west corner, receiving runoff from a capped landfill and grassed areas including the golf course, within the northern portion of the base. The drain is typically dry whereas the three ponds present along the length of the drain within the base typically contain water. The historical data review completed in the SAQP indicated relatively low concentrations of PFAS in Doherty's Drain and as such this water body does not warrant further investigation.
Laverton Creek 1 km length north-south within the base	Within the base, Laverton Creek comprises a surface water feature which receives input from overland flows within the base in the north-east portion. Laverton Creek converges with Doherty's Drain at the central-eastern boundary of the base, before ultimately discharging to Port Phillip Bay. The preliminary ERA (Aurecon, 2022) reports that Laverton Creek is a gaining surface water system with a high potential for groundwater discharge. The historical data review completed in the SAQP indicated relatively low concentrations of PFAS in Laverton Creek and as such this water body does not warrant further investigation.
Off-base water bodies outside AOI	
Addison Wetland ~5 ha total, ~3 ha wetland, 100 m west of the base	Addison Wetland is in Williams Landing, within the former extent of the base. The wetland comprises a constructed stormwater management feature fringed by parklands with public amenities including a playground and fitness area. The wetland is recharged by stormwater runoff from nearby residential areas and acts as a stormwater detention basin that captures peak flows, with gross pollutants managed by zones of planted macrophytes. Addison Wetland is a primarily freshwater environment that becomes more saline during periods of dry weather due to evaporation. Constructed stormwater management systems are an aquatic environment which is not covered under the environment reference standard (October 2021), herein referred to as the 'ERS (Victorian Government 2021)'. The DSI (Aurecon 2020) and preliminary ERA (Aurecon 2022) identified potential off-base risks to ecological receptors within the natural wetlands of Cheetham Wetlands and Laverton RAAF Swamp. As Addison Wetlands is a constructed wetland, JBS&G has not considered this further as part of this ERA, excluding confirmatory sampling of sediment and soil.

Water body	Details
Port Phillip Bay 1930 km^2 5 km southeast of the base	The Skeleton Creek sub-catchment ultimately discharges to the marine environment of Port Phillip Bay approximately 5 km southeast of the base. Laverton Creek ultimately discharges to Port Phillip Bay approximately 4.3 km southeast of the base. Port Phillip Bay is a horsehead-shaped enclosed bay on the central coast of southern Victoria. City of Geelong and parts of Greater Melbourne are situated on Port Phillip Bay which receives inflows from various urban, commercial, industrial and residential areas. Any PFAS discharges from the base which migrate to Port Phillip Bay are expected to primarily occur via flow through Skeleton Creek and Cheetham Wetlands. Port Phillip Bay is not identified as an AOI as it is likely to be affected by numerous additional sources of PFAS and is a considerable distance away from the base which introduces practical limitations on interpretation of the effect of base discharges to the ecological condition of Port Phillip Bay. Preference is made to assess proximal, smaller water bodies with more definitive hydrological link to the base.
Off-base water bodies within AOI	
Laverton RAAF Swamp 36 ha total, 17 ha wetland, 500 m west of the base	This area comprises an altered natural wetland in Williams Landing restricted from public access. Laverton RAAF Swamp is identified as a freshwater body during wetter months that increases in salinity during periods of extended dry weather due to evaporation. Laverton RAAF Swamp receives surface water overflow from Forsyth Road Drain which extends approximately 3.5 km north-west of the outlet to the swamp. An underground stormwater conduit directs excess water under Princes Freeway and eventually to Skeleton Creek.
Skeleton Creek 7 km non-tidal portion, 800 m south of the base	Skeleton Creek originates near the Western Freeway at Truganina, passing through Hoppers Crossing, Seabrook and Point Cook before discharging to Port Phillip Bay via the Cheetham Wetlands. Skeleton Creek is a highly modified surface water system that receives stormwater from urban areas and passes the base approximately 800 m south of its southern boundary. Stormwater runoff from the southern and western parts of the base is conveyed underneath the railway corridor via a series of drains and pipes that enter Skeleton Creek south of the Princes Freeway. Upgradient of the PMAP management area, Skeleton Creek consists of a series of disconnected pools when not flowing. It receives stormwater inputs from numerous urban sources upstream of the confluence with base sources and continues to receive stormwater discharges from areas unrelated to the base downstream of the confluence with base sources. The portion of Skeleton Creek adjacent to the base comprises a primarily freshwater environment which is in receipt of groundwater discharges, including from groundwater north of Skeleton Creek. Groundwater elevation is approximately 3.5 metres (m) Australian height datum (AHD) north of the creek compared with surface water elevations (approximately 2.5 m AHD). Further downstream, Skeleton Creek becomes an estuarine tidal channel which traverses Cheetham Wetlands. The extent of the tidal channel was verified by EPA Victoria and is illustrated in **Figure 4** and **Figure 5**.
Sanctuary Lakes 60 ha artificial wetland, 3.3 km south of the base	Sanctuary Lakes forms part of a residential development located in Point Cook / Altona Meadows. The lakes are an entirely artificial recreational lake system designed for stormwater management as well as aesthetic and leisure purposes. Sanctuary Lakes receives stormwater input from Cheetham Creek, as well as active pumping from the tidal pond adjacent to, and receiving tidal waters from, the estuarine portions of Skeleton Creek. Cheetham Creek is an urbanised stormwater management feature which receives runoff from the primarily residential suburban area to the west of Sanctuary Lakes.

Water body	Details
Cheetham Wetlands 420 ha of artificial and natural lagoons, 3.8 km southeast of the base	Cheetham Wetlands was previously a natural salt marsh with fringing grassy woodlands. The area was subsequently used as a saltworks, which created numerous artificial lagoons that attracted birds to the area. The lakes were recognised for the conservation significance and subject identified as a nationally important wetland, listed in the Department of Energy, Environment and Climate Action (DEECA) (formerly Department of Environment, Land, Water and Planning) *Directory of Important Wetlands Australia* (DELWP 2018). Portions of Cheetham Wetlands areas are a part of the larger Ramsar Site 18 (Port Phillip Bay (western shoreline) and Bellarine Peninsula) identified as a matter of national environmental significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

2.2 Environmental setting

The general environmental setting of the base and PMAP management area is summarised in **Table 2.3**, as obtained from the PMAP (Defence 2025a).

Table 2.3 Environmental setting summary

Item	Details
Surrounding land uses	Land uses surrounding the base are as follows: • **North:** The area directly north of the base consists of Sayers Road and then Lawrie Emmins Reserve. Further north, the landscape transitions into commercial and light industrial areas, with sections of vacant land dispersed throughout. • **East:** To the east, the base is bordered by the residential suburb of Laverton. Additionally, commercial properties and community infrastructure, including schools and recreational facilities, are present. Beyond this, the Princes Freeway provides a major transport corridor connecting the area to Melbourne. • **South:** The base is bordered to the south by a railway corridor consisting of three tracks and a railway station (Aircraft Station). Beyond this is a mix of low density residential and industrial developments, particularly within the Laverton North industrial precinct. Further south, the Cheetham Wetlands and coastal reserves extend towards Port Phillip Bay, providing significant environmental and conservation value. • **West:** To the west the landscape is dominated by the residential suburb of Williams Landing and an industrial area, which consists of large-scale warehousing, logistics, and manufacturing facilities. Beyond this lies Skeleton Creek and Hoppers Crossing.
Climate	Long-term climate data for the closest Bureau of Meteorology (BoM) station located within the perimeter of the base (station ID 087031), indicated the following between 1943—2025 for rainfall and between 1941— 2025 for temperature: • Annual rainfall is approximately 534.2 millimetres (mm). • Highest average monthly rainfall is approximately 56.0 mm and occurs in October. • Lowest average monthly rainfall is approximately 34.2 mm and occurs in March. • The mean maximum temperature is 25.8 °C and occurs in January. • The mean minimum temperature is 5.2 °C and occurs in July. Consideration of climatic conditions has been made as part of the climate and seasonality review in **Section 3.5.3**.
Topography	The base slopes gently to the south-east, with elevations ranging from approximately 10 to 20 m AHD. In the north-west portion of the base, a mound partially composed of fill material stands as a distinct topographical feature. Two waterways, Laverton Creek and Doherty's Drain, cut through the northern and north-eastern portions of the base where they combine towards the eastern base boundary. Beyond the base, the land falls to the south-east, reaching its lowest point at Skeleton Creek before flowing into Port Phillip Bay.

Item	Details
Hydrology	Surface water features and hydrology are discussed in **Table 2.2**. Surface water features are shown on **Figure 4**.
Tidal Influence	Based on field electronic conductivity parameters collected along Skeleton Creek the estuarine environment extends through Cheetham Wetlands towards the Sanctuary Lake tidal pond, with tidal influence observed. North of this, Skeleton Creek is not directly affected by tidal movements.
Geology	The base is predominately underlain by the Quaternary-Tertiary aged Newer Volcanics geological formations. The Newer Volcanics formation, which consists of olivine basalt and olivine labradorite basalt, is light to dark grey in colour, coarsely vesicular in places, and can include minor interbedded silty sand and baked soil. Surface geology comprises predominantly volcanic rocks assigned to the quaternary-tertiary aged Newer Volcanics formations and localised deposits of recent alluvium along drainage lines. The upper basalt layer varies in thickness and weathering profile across the base and is generally from 2.7—13.7 m thick but is typically dry at shallower levels. Across the base, the upper basaltic unit is underlain by a red/brown baked clay paleosol of varying thickness, which is typically soft and moist to wet. Directly below the clay is a lower basalt flow. The underlying formations in the region of the base and PMAP management area consist of Brighton, Fyansford and Werribee Group formations.

Hydrogeology	Groundwater within the base is part of the Port Phillip and Western Port Region, which flows towards Port Phillip Bay.
	The hydrogeology of the base consists of fractured basalt, separated by clay layers and lies within the Newer Volcanics aquifer (NVA).
	The following presents a summary of base specific hydrogeological information:
	• Groundwater occurrence/quality within the base comprises the following multi-layered aquifer system:
	  ○ Two basalt aquifers separated by an intervening clay aquitard. The upper basalt is generally unconfined whilst the lower basalt aquifer is semi-confined to confined.
	  ○ Upper basalt aquifer between approximately 2.7—13.7 m thick. The total thickness of the lower basalt aquifer is 12 m in the northern portion of the base.
	  ○ According to the Visualising Victoria's Groundwater (VVG)[3] website, the groundwater salinity at and near the base is classified in the ERS (Victorian Government 2021)[4] as segment C salinity level between 3,101—5,400 milligrams per litre (mg/L) total dissolved solids (TDS). Groundwater sampling and analysis has identified lower TDS with segment B considered to be an applicable groundwater segment.
	• Depth to groundwater for on-base wells averaged 5.1 metres below ground level (m bgl) whilst average groundwater depths for off-base wells downgradient of the base and former base extent at Williams Landing were 4.2 m bgl reducing towards Skeleton Creek to 5.6 m bgl.
	• Groundwater flow direction underlying the base is in a general south to south-eastern direction towards Skeleton Creek and ultimately discharges from the NVA into Port Phillip Bay.
	• A bore search within 2 km of the base was completed to determine groundwater usage[3]. The bore search identified 145 registered bores for a combination of observation, groundwater investigation, irrigation and domestic and/or stock watering purposes.
	  ○ WRK960196 (located approximately 150 m south of Laverton RAAF Swamp) is identified as a domestic and stock watering bore, noting that it is within an industrial complex).
	  ○ WRK039523 (located approximately 800 m southeast of the base and outside of the PMAP Management Area) is identified as an irrigation bore within a residential premises.
	Neither of the identified proximal bores are considered to represent a meaningful potential of causing groundwater to affect ecological receptors outside of the nominated AOI. Any discharges from WRK960196 would likely be directed toward stormwater assets which discharge to Skeleton Creek or otherwise captured by sewer services. WRK039523 is outside of the current management area extent.

1 Bureau of Meteorology monthly rainfall at Laverton RAAF Station ID 087031 - Bureau of Meteorology (bom.gov.au) last accessed in April 2025.

2 Australian Soil Resource Information System http://www.asris.csiro.au/mapping/viewer.htm, last accessed in September 2024.

3 Visualising Victoria's Groundwater https://www.vvg.org.au/vvg_map.php?agreement=Agree+and+Continue#, last accessed in 2025.

4 Victorian Government (2021). Victoria Government Gazette – ENVIRONMENT REFERENCE STANDARD. Victorian Government dated 26 May 2021.

2.3 Base history

This section presents a summary of the broader base history to provide context, predominantly based upon *Establishment of RAAF Base Williams – Laverton* (RAAF, 2025).

The base was established in 1921 and comprises one of the oldest bases in the RAAF. RAAF Williams, Laverton was primarily an administrative, training and logistics base between its establishment and the 1930s (the interwar years). During the Second World War, the base was expanded to support operational squadrons, training, aircraft maintenance and functioned as a logistics and communications hub.

In the post-war era, RAAF Williams, Laverton was utilised for administration and training purposes, including hosting RAAF headquarters, training schools and support units. The airfield was decommissioned in September 1996, with the associated land redeveloped into Williams Landing. In 1999, the base was merged administratively with RAAF Base Point Cook and collectively identified as RAAF Williams. The base currently houses Defence administrative offices and training facilities.

Defence has previously completed a range of detailed environmental investigations at and surrounding the base to understand the nature and extent of base-derived PFAS contamination. Previous reviews of base history as presented in the PSI (Golder 2017), DSI (Aurecon 2021) and addendum DSI (Aurecon 2021) identified sources of PFAS across the base including the now divested land to the west of the current base extent known as Williams Landing. The previous reviews confirmed historical activities resulted in PFAS contamination (**Section 3.1**). As investigations have progressed at the base, the sources of PFAS have been consolidated into four source areas (SAs) as summarised in **Table 2.4**.

Table 2.4 Summary of RAAF Williams, Laverton PFAS SAs

SA ID	Name	PMAP indication of source significance
SA01	Wet testing area extending partially off-base to the west.	Primary source
SA02	Western finger area extending partially off-base to the north including: • Air movements. • Fire truck maintenance shed. • Former chemical storage. • Electroplating areas. • Former electrical workshop.	Primary source
SA03	Former secondary fire training area (FTA), including former fire training area and historical landfill/dumping site.	Primary source
SA04	Former general engineering and maintenance store (GEMS) compound now off-base and extending partially on-base and divested by Defence.	Primary source

The PSI (Golder 2017) and DSI (Aurecon 2021) identified that AFFF was historically used by Defence in areas of the former part of the base that was divested to form the residential development of Williams Landing. The former Defence land is located immediately west of the current RAAF Williams, Laverton extent and was approximately 276 ha in size. The SAs within this portion of land include the following:

- Runways – Fire trucks with AFFF attended to aircraft 'hot wheels' incidents at least weekly across the runways and taxiways at various locations between 1974—1996.
- FTA (primary) – Weekly fire training fills using AFFF including burning of fuel in pits and disused aircraft.
- Firepower demonstration area – Demonstrations and training with fire-bombing using PE4 explosives and Napalm.

The boundary of the former Defence owned land, along with the three above listed off-base SAs, have been highlighted in **Figure 3**.

Areas of Williams Landing that were divested and redeveloped were subject to a series of six environmental audits over the period 1996 to 2014.Whilst historical fire training was acknowledged in the audits, testing for AFFF and PFAS was not undertaken as part of these audits (as PFAS was not identified as a potential contaminant of concern at that time). However, subsequent investigations have identified PFAS in the shallow upper basalt aquifer likely originated from historical fire training. The PFAS identified in this area is not related to PFAS sources on the current base. The primary fire training infrastructure was removed during development of Williams Landing.

Subsequent to completion of the environmental audits, risks associated with PFAS has been evaluated in stages of the development linked to historic fire training activities. The assessment was undertaken by the same environmental auditor and human health risk assessment support team that prepared three of the previous six audit reports (SLR 2018). Based on the assessments undertaken, the risk associated with PFAS was considered to be low and acceptable. Ongoing monitoring of surface water and groundwater across Williams Landing are included in the OMP to monitor legacy PFAS sources and any change in understanding the risk profile and CSM while the mass flux investigation is in progress.

While the previous investigations did not identify further potential off-base sources, it should be noted that Doherty's Drain and Laverton Creek, both of which pass through the northern portion of RAAF Williams, Laverton, have large catchments upstream of the base. These catchments are occupied by industrial estates which have high potential to be a major source of PFAS as per the findings from *Urban surface water flows contribute more PFAS to marine environments than treated wastewater* (Lewis et al., 1 December 2025). However, investigations undertaken previously (PSI (Golder 2017), DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and preliminary ERA (Aurecon 2022)) have not found elevated concentrations of PFAS migrating into or out of the base via Doherty's Drain and Laverton Creek.

2.4 Environmental values within areas of interest

The ERS (Victorian Government 2021) defines the protected environmental values of surface water and groundwater. In accordance with the ERS (Victorian Government 2021), environmental values do not apply to waters in any of the following:

(a) constructed -

(i) stormwater drains.

(ii) agricultural drains.

(iii) irrigation channels and drains.

(iv) wetlands.

(v) landfill cells.

(b) waste and wastewater treatment systems.

(c) reticulated water supply distribution systems.

(d) off-stream private dams.

(e) water tanks.

The environmental value of water dependent ecosystems and species applies to surface water at one of the following three levels of protection— largely unmodified, slightly to moderately modified or highly modified.

For toxicants in water '% species' refers to the '% species protection (spp.)' values set out in ANZG (2018). Unless otherwise stated, the level that must be used to determine the objectives is—

(vi) 99% for largely unmodified aquatic ecosystems.

(vii) 95% for slightly to moderately modified ecosystems.

(viii) 90% for highly modified aquatic ecosystems.

(ix) toxicants which are bioaccumulative must adopt the next level of protection higher than the level of protection set out for toxicants in water.

The ERS (Victorian Government 2021) indicates the following:

- Addison Wetlands were constructed as part of a functional stormwater management system. In accordance with Part 5, Section 13, environmental values do not apply to constructed stormwater drains (i.e. no statutory requirement to apply species protection based criteria).
- Laverton RAAF Swamp falls under the wetland (swamp) segment and is considered a slightly to moderately modified ecosystem (i.e. application of 95% spp. DGV).
- Skeleton Creek (upper reaches) north of the boundary of the urban growth zone falls within the 'urban segment' and is considered a highly modified aquatic ecosystem (i.e. application of 90% spp. DGV).
- Skeleton Creek (lower reaches) are characterised as being in the 'estuarine segment' between Port Phillip Bay to the boundary of the urban growth zone, as advised by EPA Victoria and is considered a slightly to moderately modified ecosystem (i.e. application of 95% spp. DGV). The tidal area of Skeleton Creek is shown on **Figure 4**.
- Sanctuary Lakes was constructed from former salt evaporation ponds to act as a stormwater retarding basin. In accordance with Part 5, Section 13 of ERS (Victorian Government 2021), environmental values do not apply to constructed stormwater drains (i.e. no statutory requirement to apply species protection based criteria). Whilst Sanctuary lakes is not designated environmental values under the ERS, this water body is identified as containing aquatic life which is the target of foraging/predation, and potentially affected by discharges form the base. In order to assess potential base impacts on the AOI as per the objectives of the detailed ERA, Sanctuary Lakes has been retained as an AOI for detailed assessment.
- Cheetham Wetlands falls within the 'estuaries segment' and is considered a slightly to moderately modified ecosystem (i.e. application of 95% spp. DGV).

DELWP (2018) *Port Philip Bay (Western Shoreline) and Bellarine Peninsula – Ramsar Site Management Plan Summary* identifies that the following ecological values are applicable to the portion of Cheetham Wetlands which are subject to the management plan:

- Hydrology (including connectivity).
- Tidal flats (high priority).
- Intertidal reefs.

- Coastal saltmarsh (high priority).
- Waterbird diversity and abundance (high priority).
- Waterbird breeding (high priority).
- Threatened species:
    - Beach nesting birds (high priority).
    - Shorebirds (high priority).

2.5 Ecological condition within areas of interest

A review of the ecological condition of the AOI has been undertaken to inform an assessment of the ecological function and value of the relevant water bodies. *Co-designed Catchment Program for the Werribee Catchment Region* (Melbourne Water 2018) documents an assessment of the ecological condition of the Skeleton Creek sub-catchment, including Laverton RAAF Swamp, Skeleton Creek and Cheetham Wetlands.

The key metrics assessed by Melbourne Water (2018) relate to the hydrological condition and capacity to support/sustain fish, amphibians, vegetation and birds. The report states that the 'Current Condition" relates to the assessed condition, and provides the following definitions in relation to the future ecological conditions:

- ***Current Trajectory:*** *This scenario represents the expected change in waterway health if current programs and approaches continue otherwise referred to as the 'business as usual' approach.*
- ***Target Trajectory****: This scenario represents what can be achieved with an increase in coordinated, collaborative and prioritised effort. It is the scenario that the strategy partners have agreed is required. Maintaining, and where possible improving, waterway health is what the Healthy Waterways Strategy proposes to achieve. This 'target trajectory' includes assumptions on policy allowing increased standards for stormwater management, increased resources for waterway management, willingness to take collaborative actions, and that it is feasible to establish continuous vegetation buffers along the majority of waterways.*

The current condition assessments were based on information available at the time of the report (2018), which predates a substantial extent of PFAS investigations undertaken and published by Defence. Condition assessments were based on qualitative categories ranging from very low to very high and on specific environmental assessment metrics relevant to the ecological condition assessment (e.g. vegetation health scores). It is noted that the target may be a lower score than the current score, which represents that some indicators will not be able to be improved and may decrease even after implementing conservation efforts. A summary of the assessment of current (2018) and target conditions is provided in **Table 2.5**.

The following table presents a summary of the ecological condition of the AOI as of 2018. JBS&G was not able to identify any recently published relevant local planning or policy documents that consider the current condition of the water bodies. It is understood that the intent of the term 'target' is used in accordance with the definition 'predicted' which considers the current trajectory and likely effect of interventions as opposed to the use of 'target' meaning a 'future goal'.

Table 2.5 Ecological condition of the areas of interest

Factor	Laverton RAAF Swamp	Skeleton Creek	Cheetham Wetlands
Water for environment / flow regime	**Flow regime (wetlands)** **Very low (current)** **Low (target)** Measured using a threat metric: based on level of alteration to flow regimes – magnitude and monthly and seasonal variability.	**Water for environment** **High (current)** **Low (target)** Compliance with requirements for environmental flows needed to sustain fresh-water systems. The low condition indicates that flows have been estimated not to be achieved in dry climate years.	**Flow regime (wetlands)** **Very low (current)** **Low (target)** Measured using a threat metric: based on level of alteration to flow regimes – magnitude and monthly and seasonal variability.
Fish	**No data** Very little data exists for wetland fish.	**High (current)** **High (target)** Skeleton Creek fish value is high and predicted to remain high, citing a diversity of estuarine species inhabiting the waterway.	**No data** Very little data exists for wetland fish.
Amphibians	**Very high (current)** **Very high (target)** The frog value at the wetland is very high with conservation-significant species present.	No information provided.	**Very high (current)** **Very low (target)** The frog value at the wetland is very high with conservation significant species being present. The predicted trajectory is very low due to climate change on coastal wetlands that will impact the capacity of the wetland to support frogs.
Vegetation	**Low (current)** **Moderate (target)** The current value is low, however predicted drying, warming and urbanisation will be mitigated by planned improvements to the wetland and buffer conditions.	**Low (current)** **Low (target)** The estuarine vegetation score is low with a trajectory of very low. A reduction in invasive flora and climate change mitigation measures was cited as a means to maintain the score at low.	**Moderate (current)** **Moderate (target)** The vegetation value is moderate with a trajectory of decline to very low. It is anticipated that climate change adaptation strategies could maintain the vegetation value at moderate.
Birds	**Very Low (current)** **Very Low (target)** Despite records of conservation-significant birds, the existing condition and imminent threats to the wetland limits its value as bird habitat. This wetland does not have formal recognition as significant bird habitat.	**High (current)** **Moderate (target)** The estuarine bird score is high as Skeleton Creek is formally recognised for its conservation significance by the Ramsar Convention on Wetlands. The trajectory of decline in condition is associated with some issues unable to be mitigated (highly industrial	**High (current)** **High (target)** The Cheetham Wetlands are formally recognised as significant bird habitat as part of the Port Phillip Bay (Western Shoreline) & Bellarine Peninsula Ramsar site. Conservation significant birds have been recorded.

Factor	Laverton RAAF Swamp	Skeleton Creek	Cheetham Wetlands
		area, predicted climate change effects).	



Plate 1 Skeleton Creek Sub-catchment (Melbourne Water 2018)

A review was undertaken of publicly accessible information relating to the ecological condition of Sanctuary Lakes. According to *Sanctuary Lakes Exercise and Nature Trail*, *Public Signage* (Sanctuary Lakes Resort, nd.), the current managers of the water body:

- Sanctuary Lakes comprises a 60 ha human-constructed lake created over former salt evaporation ponds. It receives stormwater runoff from Cheetham Creek and pumped water from Skeleton Creek to maintain water levels and desired salinity.
- The lake is a stormwater basin and a water quality management facility, also providing an aesthetically appealing environment for residents. It is understood to be maintained through a lake management plan that does not appear to be publicly available.
- The lake is reportedly subject to monthly inspection, testing and reporting on primary parameters including dissolved oxygen, salinity, turbidity, nitrogen and phosphorus as well as the maintenance of healthy seagrass beds.
- The lake is identified as supporting a healthy food chain of small invertebrates (e.g. shrimps, snails), fish (e.g. flat-head gudgeon and black bream) and water birds including black swans and Eurasian coots.

One of the main goals Sanctuary Lakes Resort lists for the lake ecology is the maintenance of a healthy and vigorous ecosystem within the lake.

Public information signs have been placed in proximity of the lake and are available publicly on the Sanctuary Lakes Resort website[6]. This identifies:

- Sanctuary Lakes is home to numerous species of avian species (spotted crake, chestnut teal, Australian pelican, whiskered tern, Eurasian coot, welcome swallow, little pied cormorant, Pacific black duck, black swans and little grebes) and mammals (rakali or native water rat).
- Cheetham Wetlands is home to numerous species of avian species (common greenshank, red-necked stint, Latham's snipe, sharp-tailed sandpiper, red-necked avocet, great egret, black-fronted dotterel and royal spoonbill) and mammals (rakali or native water rat).

[6] https://www.sanctuarylakesresort.com.au/images/Interpretive_Signs_combined_Final.pdf accessed 3 September 2025.

3. Tier 1 risk assessment

3.1 PFAS investigations

3.1.1 General

Defence has previously completed a range of detailed environmental investigations at and surrounding the base to understand the nature and extent of PFAS contamination in AOI potentially affected by base-attributable PFAS, along with a range of other chemicals of potential concern (COPC). Key documents have been referenced in **Section 1.1** and **Section 11.2**.

Previous assessments have identified sources of PFAS within the base, and the potential for base-attributable PFAS to be migrating into downgradient groundwater and downstream surface water bodies. Previous assessments have been undertaken which have sought to map and define sources and investigate the potential risks to ecological receptors. Recommendations and limitations of previous assessments were the driver for the current program of PFAS investigations. A review of key documentation in relation to PFAS investigations is included in this section to make key recommendations and limitations to be addressed through this detailed ERA.

The environmental data generated by the DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and the preliminary ERA (Aurecon 2022) have been considered in undertaking this assessment. Data collected as part of the PSI have not been adopted to characterise AOI as no environmental data was obtained from the AOI as part of the PSI. The locations of previously identified SAs, hydrological features, including aquatic receiving environments and past sample locations, are shown in **Figure 2**—**Figure 13**. The environmental data provided in **Appendix B** includes:

- **Table B1** – Soil analytical results.
- **Table B2** – Surface water analytical results and field chemistry.
- **Table B3** – Groundwater analytical results and field chemistry.
- **Table B4** – Biota analytical results and sample identifiers.
- **Table B5** – Sediment analytical results.

3.1.2 Preliminary site investigation (Golder, 2017)

Golder Associates Pty Ltd (Golder) prepared a PSI which was focused on PFAS at the base. The PSI (Golder 2017) was limited to:

- Assessment of the storage, use and waste disposal related to the use of AFFF products and associated PFAS contamination.
- Review of relevant site history information including the Defence contaminated sites register (CSR) and historical aerial photographs.

The site history review identified that no PFAS related contaminated sites were identified in the CSR for the base. The aerial photographs review commenced in the post-war era, with the earliest photograph provided from 1951. Review of the photographs indicated that the base was present as largely consistent with its current day alignment for the entire period of available photography. On the basis of the site inspection the PSI (Golder 2017) identified three PFAS source areas within the base: wet testing area, secondary FTA and air movements (western finger area).

The PSI (Golder 2017) presented an environmental dataset which included soil, sediment, surface water and groundwater data. The data relates to samples obtained exclusively outside of the AOI which are the subject of this detailed ERA. JBS&G notes that this data has not been included in the detailed ERA as more recent data has been collected within the AOI that is reflective of the current conditions.

The PSI (Golder 2017) confirmed AFFF use, storage and waste disposal at the base and identified potential primary sources of PFAS contamination. Limited environmental data collected as part of the PSI (Golder 2017) indicated that PFAS contamination had migrated from SAs, however the extent and magnitude of migration was not able to be assessed. The PSI (Golder 2017) recommended progressing works to better understand the PFAS CSM, and identified several data gaps related to source characterisation, groundwater and surface water uses.

3.1.3 Detailed site investigation (Aurecon, 2020) and addendum to the detailed site investigation (Aurecon, 2021)

Defence commissioned a DSI (Aurecon 2020) and an addendum DSI (Aurecon 2021) to identify the nature and extent of PFAS across the base and surrounding areas. The DSI (Aurecon 2020) was conducted between 2018 and 2020 and comprised sampling and analysis of soil, sediment, surface water, porewater, groundwater and chicken eggs. With respect to potential ecological risks, the following key conclusions and recommendations were provided, based on the criteria adopted at the time of the report[7]:

- The DSI (Aurecon 2020) found evidence of potential risks to on-base ecological receptors in the wet testing area, former GEMS compound and the open space in the western finger adjacent to air movements with respect to on-base soils only.
- The DSI (Aurecon 2020) concluded that there was sufficient on base information to derive risk-based remedial strategies and further assessment of ecological risks was not required at the base.
- The DSI (Aurecon 2020) reported that Laverton Creek, which receives discharges from the northern portions of the base via Doherty's Drain and Laverton Creek, was found to exhibit surface water concentrations below the adopted screening 95% spp. DGVs. No further assessment was recommended to be undertaken for Laverton Creek on this basis.
- Evidence of potential risks was identified in relation to the receiving environments of Skeleton Creek and Laverton RAAF Swamp. An ERA was recommended to be undertaken to further assess potential bioaccumulation / secondary poisoning of sensitive receptors.
- The DSI (Aurecon 2020) recommended that biota sampling in Cheetham Wetlands be undertaken where a complete pathway between PFAS sources and receptors had been established.

The addendum DSI (Aurecon 2021) was completed during 2021 to address key data gaps identified by the DSI (Aurecon 2020). The data gaps were identified as the extent of exposure attributable to potential consumption of home-grown produce in properties south-east of the base and the lateral extent of PFAS in groundwater. Neither of the data gaps were specifically intended to further the understanding of potential ecological risks in the receiving environment but can be utilised to indicate the uptake by plants. The reported concentrations of PFAS in sampled media were found to be below the adopted ecological screening criteria.

The key recommendations of the DSI (Aurecon 2020) and addendum DSI (Aurecon 2021), in relation to the requirement to undertake further investigations to evaluate potential ecological risks are paraphrased as follows:

- The DSI (Aurecon 2020) recommended an ERA to assess risks associated with bioaccumulation of PFAS in biota within Skeleton Creek and the Williams Landing natural wetlands (i.e. Laverton RAAF Swamp).
- The addendum DSI (Aurecon 2021) recommended that a collated dataset from the DSI (Aurecon 2020) and addendum DSI (Aurecon 2021) be utilised to prepare an ERA.

[7] The DSI data have been compared against the most recent PFAS NEMP criteria (HEPA 2026) within **Section 3.4**.

3.1.4 Receiving environment preliminary ecological risk assessment (Aurecon, 2022)

A preliminary ERA (Aurecon 2022) was prepared by Aurecon in 2022. The preliminary ERA (Aurecon 2022) screened risks to ecological receptors attributable to exposure to PFAS in the AOI based on individual media (soil, terrestrial flora/invertebrates, surface water, aquatic flora, aquatic invertebrates, and fish). The potential risks were reported to range from 'low' (hazard index (HI)<1) to 'greater potential' (HI>10). The preliminary ERA (Aurecon 2022) adopted an approach whereby site-specific screening values were developed to assess potential risks between ecological receptors and site media. Consistent with the stage of assessment, the preliminary ERA (Aurecon 2022) did not incorporate and assess the effects of a number of potentially influential factors which have been considered as part of this detailed ERA, including:

- The potential risks were estimated on the basis of the assumption that receptors spend all their time in one area of concern as opposed an AOI representing one of many areas utilised.
- The dietary sources and proportions were not distinguished (i.e. whether it was prey fish or predatory fish, or whether they were benthic invertebrates or pelagic invertebrates, or whether it was aquatic vegetation).
- Aquatic biota data was presented in the preliminary ERA (Aurecon 2022) for dietary groups (flora, invertebrates and fish), however, the availability of data was variable across water bodies and limited for some groups.
- The preliminary ERA (Aurecon 2022) preliminary ERA assessed potential risks to stygofauna by comparison of spp. DGVs published in the PFAS NEMP (HEPA 2026). However, the adopted spp. DGVs were not specifically developed to assess risks to stygofauna.
- The environmental dataset was identified as being limited in relation to temporal and/or spatial variability in some water bodies.

Key details from the preliminary ERA (Aurecon 2022) have been considered as part of this detailed ERA to inform the identification of receptors of concern (ROC) and exposure estimates. Where data has been adopted, reference is made in the relevant sections of this detailed ERA. For reference, the preliminary ERA (Aurecon 2022) estimated potential risks to ecological receptors based on different dietary sources, as summarised in **Table 3.1**.

Table 3.1 Preliminary ERA hazard indices by receptor group, AOI and media

Receptor group	Terrestrial exposure media			Aquatic exposure media			
	Soil	Flora	Invertebrates	Surface water	Plants	Invertebrates	Fish
Laverton RAAF Swamp							
Terrestrial organisms	<1	-	-	-	-	-	-
Higher order consumers	<1	<1	1—10	-	-	-	-
Aquatic organisms	-	-	-	>100	-	-	-
Mammals	-	<1	10—100	-	1—10	10—100	>100
Birds (non-migratory)	-	<1	10—100	-	1—10	10—100	>100
Birds (migratory)	-	<1	10—100	-	1—10	10—100	>100
Skeleton Creek							
Aquatic organisms	-	-	-	1—10	-	-	-
Mammals	-	-	-	-	1—10	1—10	>100
Birds (non-migratory)	-	-	-	-	1—10	1—10	10—100
Birds (migratory)	-	-	-	-	1—10	1—10	>100

Receptor group	Terrestrial exposure media			Aquatic exposure media			
	Soil	Flora	Invertebrates	Surface water	Plants	Invertebrates	Fish
Sanctuary Lakes							
Aquatic organisms	-	-	-	1—10	-	-	-
Mammals	-	-	-	-	1—10	1—10	10—100
Birds (non-migratory)	-	-	-	-	<1	1—10	10—100
Birds (migratory)	-	-	-	-	1—10	1—10	10—100
Cheetham Wetlands							
Aquatic organisms	-	-	-	>100	-	-	-
Mammals	-	-	-	-	1—10	1—10	10—100
Birds (non-migratory)	-	-	-	-	1—10	10—100	10—100
Birds (migratory)	-	-	-	-	1—10	10—100	10—100

JBS&G considers that the estimates of risk are highly conservative as a result of the provisional nature of the preliminary ERA (Aurecon 2022).

3.1.5 Data gap investigations

As previously noted, JBS&G developed a SAQP (JBS&G 2024) to address data gaps identified in relation to the preliminary ERA (Aurecon 2022)preliminary ERA and undertook field investigations to address these data gaps (refer to November 2024 Factual Report (JBS&G 2026b) and May 2025 Factual Report (JBS&G 2026a)). The data gaps predominantly pertained to obtaining aquatic biota data which sufficiently considers both seasonal variation and appropriate discretisation of the aquatic environment in terms of avian and mammalian food sources for aquatic plants, benthic invertebrates, pelagic invertebrates, prey fish and predatory fish.

JBS&G notes that the SAQP (JBS&G 2024) was prepared based on a previous version of the PFAS NEMP (HEPA 2020), which has since been revised from Version 2.0 to Version 3.1 (the current version). Whilst the overall guidance in relation to the recommended approaches to ERA and data collection have not materially changed between Version 2.0 and Version 3.1, it is noted that the ecological screening criteria were updated including:

- A number of criteria derivation methodology updates were made. Based on bioaccumulation modelling for Australian mammals, soil screening criteria for indirect exposure criteria relevant to terrestrial soil was updated.
- Provision of an interim terrestrial soil direct contact PFOA criterion for reptiles has been applied.
- An update to the PFOS DGVs for freshwater species protection.
- Inclusion of a biota threshold value (BTV) to assess for potential dietary risks to air breathing species by foraging/predation on aquatic species.

The SAQP (JBS&G 2024) did not identify reptiles as potential receptors warranting detailed risk assessment. Further consideration has been made in this detailed ERA with relation to the assessment of reptiles given the update to the PFAS NEMP (HEPA 2026), as limited to discussion of screening criteria exceedances and a sensitivity assessment scenario (**Section 9**).

Both the November 2024 Factual Report (JBS&G 2026b) and May 2025 Factual Report (JBS&G 2026a) document individual sampling events undertaken as part of the SAQP (JBS&G 2024) implementation. The sampling events were conducted in general accordance with the SAQP (JBS&G 2024), with minor deviations identified in relation to the number of aquatic biota sub-types able to be collected at each of the nominated sampling locations.

The PFAS NEMP (HEPA 2026) was updated between the issue of the November 2024 Factual Report (JBS&G 2026b) and the May 2025 Factual Report (JBS&G 2026a), and this is reflected in adoption of criteria, tables of

analytical results and discussions of exceedances presented in the relevant reports. It is noted that all relevant environmental data have been consolidated as presented in **Appendix B**, with the current environmental data tables providing comparison to the most recent applicable screening criteria (as further discussed in **Section 3.2**).

The identified deviations from the proposed scope of works for sampling and analysis, as well as the revisions to HEPA (2026) have been considered in the risk assessment methodology and data interpretation presented in this detailed ERA. The investigation adequacy is discussed in more detail in **Section 3.5.2**.

The factual reports each present specialist ecologist reports as documented in *RAAF Williams, Laverton Observations and Biota Sampling for Ecological Risk Assessment* (Elgin 2025a) and *RAAF Williams, Laverton May 2025 Aquatic Biota Sampling and Assessment for Ecological Risk Assessment* (Elgin 2025b). The reports document observations, sampling and analysis of aquatic biota.

Key observations reported by Elgin are provided in **Table 3.2**. A detailed review of the ecological condition and identification of key receptors is provided in **Section 5.3**.

Table 3.2 Elgin ecological observations

AOI	Observation summary
Skeleton Creek	The sampling locations comprised two locations within the creek itself (SW021 and SW024), one location in the Forsyth Road Drain (SW042) and one location in a tidal pond adjacent to the creek (SW089). The locations within the creek were described as being located on reaches which were fringed by wide and dense stands of reeds. The creek was reported as brackish (specific conductivity 7,300 to 9,000 µS/cm). The tidal pond at SW089 was reported to be separate to the creek line and in receipt of tidal influxes from the estuarine reach of the creek during flood tides. Observations were consistent across November 2024 and May 2025. Sampling efforts yielded a range of fish: juvenile carp, flat-head gudgeon, short finned eel, juvenile hardyhead and juvenile flounder within the creek (upper reaches and tidal pond). Benthic invertebrates were sampled including shrimp and shore crabs. No biota were collected from the Forsyth Road drain. Multiple attempts were made to collect pelagic invertebrates using multiple sampling approaches. Pelagic invertebrates were not observed or caught at any location. Elgin reported that the reason for this was unclear, potentially attributable to their absence from the water body at the time of sampling.
Sanctuary Lakes	Sanctuary Lakes were reported as being an artificial lake system bounded by concrete walls. Some beach areas and fringing wetland was observed. Water was reported to be brackish with specific conductivity at 19,800 µS/cm and green, indicative of high microbial growth. Elgin observed active harvesting of algae by a mechanical harvester. Numerous birds were observed including black swans, Eurasian coots, cormorants and silver gulls. Observations were consistent across November 2024 and May 2025. Sampling efforts yielded a range of fish (tupong, mullet and bream) with bream being the most abundant. Whilst efforts were made, benthic and pelagic invertebrates were not observed or caught at any location. Elgin reported that the reason for this was potentially the prolific presence of filamentous algae reducing their presence or interfering with the sampling method. In May 2025 Elgin used a baited crab pot which returned no catch. Elgin reported that no benthic invertebrates were attached to concrete walls or wooden piles and no sea stars were present on small visible patches of the lakebed.

AOI	Observation summary
Cheetham Wetlands	The sampling locations were reported to comprise two locations on an estuarine reach of Skeleton Creek (SW057 and SW070), one location on a channel linking the salt pan network (SW071) and one location within a salt pan (SW058). The estuarine reaches of Skeleton Creek were reported as being tidal and fringed by mangroves, with specific conductivities similar to seawater between 546,000—564,000 µS/cm. The salt pan channel and salt pan were hypoxic, turbid and hypersaline with specific conductivities from 120,000—169,000 µS/cm. Observations were consistent across November 2024 and May 2025. Sampling efforts yielded fish (juvenile bream, juvenile flounder, short finned eel, toadfish, mullet and juvenile hardyhead) from the Skeleton Creek estuary only. No fish were encountered in the salt pan or salt pan channel. It was considered that the water was not suitable to support fish. Pelagic invertebrates were not observed or sampled. Elgin reported that this is attributable to the poor condition of the salt pan and salt pan channel not likely being able to support pelagic invertebrates. Within the Skeleton Creek estuary Elgin reported that the reason for the absence of pelagic invertebrates was unknown and may be either genuine absence or due to not being observed and caught. Benthic invertebrates (European green crab, shore crabs, shrimp and pond snails) were caught within Skeleton Creek. Brine shrimp were caught in the salt pan and salt pan channel in November 2024, but not May 2025, noting that although individuals were observed in May 2025, their numbers were too low to permit collection of sufficient mass for analysis (i.e. less than the minimum sample mass for laboratory analysis, approximately 5 g).

The May 2025 Factual Report (JBS&G 2026a) concluded that a sufficient environmental dataset was available to prepare a detailed ERA. Both the November 2024 factual report (JBS&G 2026b) and May 2025 Factual Report (JBS&G 2026a) recommended that a full review and discussion of the results is undertaken as part of the detailed ERA with consideration of the entire dataset generated by both the November 2024 and the May 2025 sampling rounds. This has been undertaken in **Section 3.5**.

3.2 PFAS NEMP Version 3.1 (HEPA 2026)

3.2.1 General

The PFAS NEMP (HEPA 2026) provides ecological screening criteria for the following constituents and media:

- Ecological guideline values for PFOS and PFOA protective of direct toxicity to ecological receptors.
- Ecological guideline values for PFOS and PFOA in soil protective of indirect exposure as derived based on food-web modelling and dietary exposure assessment for eleven Australian mammals.
- Ecological biota guideline values for PFOS+PFHxS and PFOA for mammalian and avian receptors, based on a simplified exposure assessment for a representative bird and mammal species.
- Biota guideline values for bird eggs for sum of PFOS+PFHxS and PFOA.
- Ecological water quality guidelines for freshwater and interim marine (PFOS and PFOA only), noting that the PFOS criteria have been since superseded by ANZG (2026).

There are a number of comments provided in the PFAS NEMP (HEPA 2026) that must be considered when interpreting the data and assessing whether a site-specific risk assessment is required. These include:

- The indirect exposure soil guideline may not be protective of specific Australian animals.
- The avian diet value may not be protective of migratory wading birds which have a high food intake due to needing to gain weight rapidly.
- The mammalian and avian diet values may not be protective of reptiles and amphibians.

- The water quality guidelines do not account for effects that result from the biomagnification of toxicants in air-breathing animals or in animals which prey on aquatic organisms.

The guideline values are discussed further in the following sections.

3.2.2 Soil – direct exposure

HEPA (2026) does not provide a detailed rationale for the derivation of the PFOS and non-reptile PFOA direct contact soil quality guidelines. The values are the same as the PFOS and non-reptile PFOA direct contact soil quality guidelines provided in the previous PFAS NEMP (HEPA 2020) Version 2.0. The PFAS NEMP (HEPA 2020) Version 2.0 states that the direct ecological soil-quality guidelines are based on application of the human health screening criteria for public open space land use. Reference is made to direct contact soil quality criteria developed in the Canadian Council of Ministers of the Environment (CCME) *Scientific Criteria Document for the Development of the Canadian Soil and Groundwater Quality Guidelines for the Protection of Environmental and Human Health – Perfluorooctane Sulfonate (PFOS)* (CCME, 2021) which is discussed in **Section 3.3**. All soil criteria developed for the protection of mammalian or avian receptors assume a component of exposure is attributable to consumption of impacted biota.

By review of the screening criteria discussed in **Section 3.3** the adopted current PFAS NEMP (HEPA 2026) direct soil quality guidelines are likely to be protective of plants and invertebrate exposure to impacted soil but are not likely to be protective of avian/mammalian receptor exposure to soil. The guideline for ecological direct exposure as per the PFAS NEMP Version 3.1 (HEPA 2026) is summarised in **Table 3.3**.

Table 3.3 Ecological direct exposure values for soil as per PFAS NEMP (HEPA 2026)

Exposure scenario	PFOS (mg/kg)	PFOA (mg/kg)
Ecological direct exposure – protective of plants and invertebrate exposure (see **Section 3.3**).	1	10
Ecological direct exposure – direct contact, reptiles only.	-	0.005

3.2.3 Soil – indirect exposure

Supporting Document 2 of the PFAS NEMP (HEPA 2026) documents the technical approach to derivation of the indirect soil exposure guidelines for PFOS and PFOA. The approach can be summarised as follows:

- The indirect soil exposure guidelines considers potential bioaccumulation based exposures to mammals only (i.e. no consideration of avian receptors).
- Eleven species of mammal are selected as ROC from various trophic levels and feeding guilds:
    - Primary herbivorous consumers herbivorous:
        - Broad-toothed rat (small eutherian).
        - Tammar wallaby (medium marsupial).
        - Eastern grey kangaroo (Large marsupial).
    - Secondary omnivorous consumers:
        - Ash-grey mouse (small marsupial).
        - Dusky antechnius (small marsupial, primarily insectivorous).
    - Swamp rat (medium eutherian, omnivorous).
    - Southern brown bandicoot (medium marsupial, omnivorous).
    - Short-beaked echidna (medium monotreme, insectivorous).

- Tertiary consumers:
    - Fat-tailed dunnart (small marsupial, omnivorous).
    - Spotted-tailed quoll (medium marsupial, carnivore).
    - Dingo (large eutherian).
- Exposure parameters are adopted for each of the ROCs including bodyweight, soil intake rate, food intake rates and dietary composition. The adopted parameters are largely based on preceding Canadian guidance and *food requirements of wild animals: predictive equations for free-living mammals, reptiles, and birds* (Nagy KA, 2001).
- Exposure point concentrations (EPCs) are estimated for each medium. This involves the use of plant transfer factors (TFs) and biomagnification factors (BMFs) to model the EPCs for biota based on source soil concentrations.
- A daily effects threshold dose (DETD) is adopted for mammals for both PFOS (0.01086 mg/kg.bw/day) and PFOA (0.01 mg/kg.bw/day), based on critical toxicity values (CTVs) for PFOS (0.1086 mg/kg.bw/day) and PFOA (0.1 mg/kg.bw/day).
- A background exposure is included, which assumes that the species obtain 25% of the DETD from background sources unrelated to soil contamination.
- The screening criteria are based on the concentration in soil rounded to the nearest 0.001 mg/kg, which would cause the estimated dose of PFOS and PFOA to exceed the DETD.

The interim guideline for ecological indirect exposure as per the PFAS NEMP Version 3.1 (HEPA 2026) is summarised in **Table 3.4**.

Table 3.4 Ecological indirect exposure guideline values for soil as per PFAS NEMP (HEPA 2026)

Exposure scenario	PFOS (mg/kg)	PFOA (mg/kg)
Interim ecological indirect exposure	0.003	0.003

3.2.4 Freshwater and interim marine default guideline values

The PFAS NEMP (HEPA 2026) provides freshwater DGVs for the protection of 80%, 90%, 95% and 99% of freshwater species for both PFOS and PFOA, with relevant criteria (90%, 95% and 99%) shown in **Table 3.5**. The freshwater DGVs for PFOS have been sourced from ANZG (2026. Insufficient data were available to derive marine water quality guidelines as of the publishing of the PFAS NEMP (HEPA 2026) and no marine water quality guidelines have since been published by ANZG. The PFAS NEMP (HEPA 2026) adopts the freshwater DGVs as interim marine DGVs.

The PFAS NEMP (HEPA 2026) identifies the DGVs as being sourced from the 2023 version of ANZG (2026), however JBS&G notes that the referenced document does not include PFOA screening values. The PFOA screening values presented in the PFAS NEMP (HEPA 2026) appear to have been sourced from Version 2.0 of the PFAS NEMP which, in turn, references the Department of Climate Change, Energy, the Environment and Water (formerly Department of the Environment and Energy (DOEE)) guidance document *Commonwealth Environmental Management Guidance on PFOS and PFOA* (DOEE, 2016) as the source of the guideline values.

The freshwater DGVs for PFOA have been adopted as screening criteria to screen for risks to estuarine/marine aquatic species in the lower reaches of Skeleton Creek, Cheetham wetlands and Sanctuary Lakes.

Table 3.5 Freshwater and interim marine water criteria (PFAS NEMP (HEPA 2026))

Exposure scenario	PFOS (µg/L)	PFOA (µg/L)
90% spp. DGV	2.0[1]	632
95% spp. DGV	0.13[1]	220
99% spp. DGV	0.00023[1]	19
Biota threshold value	0.0005	-

[1] Superseded by ANZG (2026)

3.2.5 Biota guideline values

Supporting Document 2 of the PFAS NEMP (HEPA 2026) outlines the technical approach to the derivation of the biota guideline values (BGVs) for PFOS+PFHxS and PFOA. A reference concentration was estimated based on adopted toxicity reference values (TRVs), divided by the food intake to bodyweight ratio (FI:BW).

Table 3.6 PFAS NEMP (HEPA 2026) biota guideline values

Parameter	Unit	Mammals		Birds	
		PFOS	PFOA	PFOS	PFOA
Bodyweight	Kilograms (kg)	-[5]		0.032	
Food intake rate	kg/day	-[5]		0.03	
FI:BW	kg(ww)/kg (body weight (bw))	0.36[1]		0.94[2]	
Critical toxicity value	mg/kg (bw)/day	0.11[3]	0.1	0.772	-
Uncertainty factor (UF)	-	100[3]	100	100	-
Tolerable daily intake (TDI)	mg/kg (bw)/day	0.0011[3]	0.001	0.0077	0.0023[4]
Background dose	%	25		25	
Reference concentration	mg/kg	0.0031	0.0028	0.0082	0.0024

[1] Based on a Platypus as measured during late stage lactation. PFAS NEMP (HEPA 2026) reports that this value is considered suitably conservative for a range of mammalian species.

[2] Parameter based on Nagy KA (2001) allometric equations. The avian FI:BW underpinning the guidance may be too low for some Australian species such as migratory waders, inferring the guidance value could be under-protective for these species.

[3] This value is directly obtained from Environment and Climate Change Canada (ECCC) *Canadian Environmental Protection Act 1999 Federal Environmental Quality Guidelines Perfluorooctane Sulfonate (PFOS)* (ECCC, 2018).

[4] This value is an interim PFOA TDI. It is based on developmental toxicity assuming a similar PFOS and PFOA maternal loading occurring to eggs, and a threefold difference in LD50 between PFOS and PFOA. The adopted value comprises 30% of the PFOS TDI (i.e. 7.7 µg/kg(bw)/day * 0.3 = 2.3 µg/kg(bw)/day).

[5] The PFAS NEMP and the paper referenced by the PFAS NEMP do not specifically provide the bodyweight or food intake for the receptor. The FI:BW ratio is stated.

3.3 Canadian guidance (CCME 2021) – soil, direct contact

CCME (2021) presents a PFOS soil quality guideline for direct contact based on a range of land-uses. The criteria comprise threshold effects concentrations derived by dividing estimated species sensitivity distributions (ESSDs) by an UF.

The ESSDs are provided for agricultural and residential/parkland uses as well as commercial and industrial land uses as follows:

- Agricultural and residential/parkland (based on 75% spp.) = 22.1 mg/kg.

- Commercial industrial land use (based on 50% spp.) = 61 mg/kg.

An UF of 2 is applied to the agricultural and residential/parkland ESSD, but not to the commercial/industrial ESSD. The resulting threshold effects concentrations are rounded to the nearest 10 mg/kg as follows:

- Agricultural and residential/parkland (75% spp.) = 10 mg/kg.
- Commercial industrial land use (50% spp.) = 60 mg/kg.

These criteria, whilst not directly adopted herein, provide a sufficient basis to consider that the HEPA (2026) approach of adopting the PFOS+PFHxS HIL C criterion as the direct contact criteria is likely conservative.

3.4 Tier 1 screening

3.4.1 General

As part of this detailed ERA, available environmental data for the AOI has been compared with analytical criteria provided in published guidance to assess potential ecological risks.

For groundwater, a MFA factual report is pending which will incorporate the available data including assessment of representative concentrations of PFAS in groundwater. The groundwater data have been reviewed herein, with the ranges of observed values considered between 29 October 2012 and 5 June 2025. Consideration has been given to interpretations of the groundwater-surface water interactions documented in the preliminary ERA (Aurecon 2022) until such time as the MFA is formalised.

The PFAS NEMP (HEPA 2026) presents tier 1 screening criteria for various PFAS compounds to assess different endpoints. Criteria are presented for different media based on assessment of PFOS only, PFOS+PFHxS and PFOA. The EPCs have been calculated for each media based on PFOS only, PFOS+PFHxS and PFOA, in the following sections for consistency across media. Where tier 1 screening criteria are available, they are specified in the subsequent sections.

Exceedances of the identified tier 1 screening criteria are shown by colour coding sample locations in **Figure 6**, **Figure 7** and **Figure 9**. The PFAS NEMP (HEPA 2026) does not provide criteria for sediment, however the sample locations are colour coded based on ranges of PFOS+PFHxS in **Figure 8**. The colour coding has been based on the maximum reported concentration at the sample location (i.e. for soil with multiple depths, or surface water with multiple dates, the maximum concentration was adopted). Biota data are shown as available for all sample locations, with PFOS+PFHxS and PFOA criteria exceedances identified in call-out boxes.

The tier 1 screening process has been undertaken to identify the environments, locations and PFAS compounds which warrant focus within this risk assessment, within the context of constituents for which regulatory guidance is available.

3.4.2 Statistical analysis

Statistical analyses have been undertaken on datasets generated by discretising the environmental data into distinct media (e.g. soil and sediment), AOI, contaminant/contaminant group (e.g. PFOS, PFOA and PFOS+PFHxS) and biota type (e.g. aquatic vegetation). The statistical analyses have been undertaken to determine the most appropriate method to estimate a conservative exposure point concentration (EPC) and to document the adopted EPC.

- Datasets have been generated by review of **Table B1** to **Table B5** in **Appendix B**, with the following processing steps undertaken: Duplicate/triplicate values were removed from the datasets such that only the primary sample data has been considered. Based on the lack of significant concerns regarding the representativeness of the primary sample precision from a review of historical data and the large data set available, this was considered appropriate. It is noted that the inclusion of duplicate/triplicate sample artificially raises the number of samples and may lead to inappropriate selection of EPCs (e.g. a 95% upper confidence limit (UCL) mean rather than a maximum despite there being less than ten primary samples).

- The datasets were input into *ProUCL: Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. Version 5.2* (US EPA, 2022a), herein referred to as 'ProUCL (US EPA 2022a)'.The datasets were analysed by ProUCL (US EPA 2022a) to estimate UCLs of the mean concentrations of each contaminant (PFOS+PFHxS, PFOS and PFOA).
- ProUCL (US EPA 2022a) analysed the concentration distributions and recommended which distribution most appropriately represented the datasets (e.g. normal, log-normal, gamma and non-parametric).
- For datasets with censored data, ProUCL (US EPA 2022a) implemented data substitution methods on the basis of imputed statistical values. Imputed value estimation methods did not always form the basis of the adopted statistical parameters (e.g. Kaplan-Meier gamma UCLs).
- The datasets including imputed values were then subject to analysis using techniques appropriate to the dataset distribution.

Detailed statistical outputs are provided in **Appendix B** for all media, which form the basis of the EPCs discussed in the following sections.

ProUCL (US EPA 2022a) provides UCL estimates on datasets with as little as three distinct observations. However, the UCLs are considered unreliable, as no meaningful assessment of concentration distribution can be made with small datasets. JBS&G has adopted a nominal minimum of ten distinct observations in a sample dataset as the threshold to consider UCLs in screening purposes and risk estimation, which is consistent with the recommendation in *ProUCL Version 5.2.0 Technical Guide: Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations* (US EPA, 2022b). For datasets with less than ten distinct observations the maximum value in the dataset was adopted for screening purposes and risk estimation.

Imputed statistical values have been used in preference to more rudimentary substitution approaches (e.g. replace non-detects with the detection limit divided by two). This approach is supported by Section 13.2.2 of Schedule B2 of ASC NEPM (NEPC 2013). The imputed statistical values are mapped to the dataset distribution by extrapolating the distribution curve below the detection limit. This a preferred approach for datasets containing a high number of non-detect values as alternative methods (e.g. replacement of non-detect values with detection limit divided by two) artificially alter the distribution of the data (i.e. the dataset histogram will exhibit an artificial mode at the substituted value and will affect all statistical parameters of interest).

Statistical analysis of groundwater data has been limited to estimating the range of concentrations observed in groundwater wells. For the purposes of this detailed ERA, the range of concentrations is adopted to characterise the groundwater and potential risks to receptors of groundwater. The MFA which is to be prepared for the base will provide a more comprehensive assessment of groundwater contamination conditions, potential for discharges to the AOI and characteristic exposure concentrations within the relevant area. This detailed ERA can be updated where any future assessments indicate a materially different risk profile to receptors of groundwater.

3.4.3 Soil

Soil analytical data have been reviewed against tier 1 screening criteria presented in the PFAS NEMP (HEPA 2026). Soil analytical data with specific geographical coordinates has been included. The majority of soil data have been obtained from source areas within the base which are provided for context only noting the focus of this detailed ERA is within the AOI listed in **Section 1.1**.

The DSI (Aurecon 2020) concluded that sufficient information was available to develop risk-based remedial approach for terrestrial impacts within the base. The on-base soil data have not been reviewed for the purpose of characterising potential exposure risks to ROCs as part of this detailed ERA.

The off-base soil data have been reviewed for the purpose of identifying potential terrestrial exposure risks within the AOI, noting that off-base soil data are relatively limited and in all cases were not collected for the purpose of this risk assessment. Further discussion of soil data is provided as part of the CSM (**Section 4**).

On- and off-base soil data have been distinguished into the following areas:

- On-base: SA01 to SA04, as shown on **Figure 3** and **Figure 6**, consistent with the source areas discussed in **Section 3.5**.
- Off-base: Skeleton Creek comprising samples of the soil profile obtained from six wells (MW121—MW123 and MW246—MW248) installed on the northern side of Skeleton Creek.
- Off-base: Laverton RAAF Swamp comprising ten surface samples obtained from the periphery of Laverton RAAF Swamp (SS063—SS072).
- Off-base Princes Freeway comprising samples of the soil profile obtained from ten wells (MW124—MW126, MW228—MW230, MW244, MW245, MW252—MW253) installed between Skeleton Creek and the southern boundary of the base.
- Off-base: Williams Landing comprising samples of soil from 17 wells (MW127—MW133, MW135—MW137, MW249—MW251 and MW254—MW257) installed west of the base.

Criteria have been adopted for the following potentially complete source-pathway-receptor (SPR) linkages:

- Ecological direct exposure – all land uses (direct contact-based SPR linkages):
  - PFOS: 1 mg/kg.
  - PFOA (exc. Reptiles): 10 mg/kg.
  - PFOA (Reptiles only): 0.005 mg/kg.
- Ecological indirect exposure - all land uses (bioaccumulation-based SPR linkages):
  - PFOS: 0.003 mg/kg.
  - PFOA: 0.003 mg/kg.

Comparison of representative concentrations has been made in **Table 3.8**.

Table 3.7 Summary of available soil data

Location	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2]	EPC (mg/kg)	Basis	D[2]	EPC (mg/kg)	Basis	D[2]	EPC (mg/kg)	Basis
Direct (reptiles)			-[3]			-[3]			0.005	
Direct (exc. reptiles)			-[3]			1			10	
Indirect (all)			-[3]			0.003			0.003	
On-base										
SA01	77	50	0.27	95% UCL	47	0.199	95% UCL	5	0.23	Max
SA02	160	56	0.083	95% UCL	39	0.0533	95% UCL	4	0.08	Max
SA03	35	17	0.027	95% UCL	14	0.0239	95% UCL	0	<0.005	Max
SA04	76	42	0.48	95% UCL	40	0.425	95% UCL	3	0.051	Max
Other	62	15	0.0065	95% UCL	15	0.00621	95% UCL	2	0.0004	Max[4]
Off-base										
Williams Landing	46	20	0.073	95% UCL	20	0.0628	95% UCL	5	0.0006	Max[4]
Laverton RAAF Swamp	10	10	0.016	95% UCL	10	0.015	95% UCL	7	0.0002	Max[4]
Princes Freeway	25	2	0.0054	Max	2	0.0054	Max	0	<0.005	Max
Skeleton Creek	14	3	0.012	Max	3	0.012	Max	0	<0.005	Max

[1] Number of primary samples.

[2] Number of primary detections.

[3] No criteria for constituent grouping.

[4] Maximum non-detect above maximum detect.

It can be observed that the EPCs estimated for all on- and off-base areas exceed the ecological indirect exposure criterion for PFOS. No EPCs were estimated to exceed the ecological direct exposure criterion for PFOS.

The concentrations of PFOA exceeded the ecological direct exposure criterion for reptiles and indirect exposure criteria for SAs on the base (SA01, SA02 and SA04). PFOA was not detected at a concentration that exceeded the ecological direct exposure criterion for reptiles or the indirect exposure criteria in any off-base areas. As such, PFOA in soil is not considered to represent a potentially significant direct contact exposure risk to reptiles in the AOI.

The EPC for PFOS was observed to exceed the indirect exposure criterion in soil by a maximum factor of 24. The relative magnitude of exceedance of the indirect soil criteria has been compared with other pathways (e.g. surface water and aquatic biota concentrations - see **Section 3.4.4** and **Section 3.4.6**), which reported an exceedance of criterion by a maximum factor of 350. Whilst the soil dataset is limited in the AOI, it is not anticipated that shallow, ecologically relevant soil would be substantially affected by PFAS discharges which are primarily occurring via groundwater (which is deeper than would be ecologically relevant for terrestrial exposures, nominally 0.5 m bgl) or surface water which is directed through discrete drainage lines and channels directly to the aquatic AOI. As such, it is considered soil represents a limited component of the potential risk to ecological receptors in the AOI. Further discussion is provided in **Section 9.2**.

3.4.4 Surface water

The surface water analytical dataset has been compared against tier 1 screening criteria presented in the PFAS NEMP (HEPA 2026) and ANZG (2026). Surface water analytical results have been compared against criteria to evaluate the potential for surface water to represent a risk to aquatic species (vegetation, invertebrates and vertebrates) in **Table 3.9** as differentiated by AOI, and consistent with the ERS (Victorian Government 2021) (discussed in **Section 2.4**):

- Cheetham Wetlands (including Skeleton Creek lower reaches) and Laverton RAAF Swamp, consistent with slightly to moderately disturbed ecosystems:
    - 95% spp. DGV for direct contact risks.
    - 99% spp. DGV for bioaccumulation risks.
- Skeleton Creek (upper reaches), consistent with highly modified aquatic ecosystems:
    - 90% spp. DGV for direct contact risks.
    - 95% spp. DGV for bioaccumulation risks.
- Sanctuary Lakes and Addison Wetlands, comprising constructed stormwater features which are not afforded specific environmental values under ERS (Victorian Government 2021):
    - The 90% spp. DGV for direct contact risks.
    - 95% spp. DGV for bioaccumulation risks.

Consideration has further been given to application of the BTV published in ANZG (2026) for PFOS to screen for potential bioaccumulation risks to air breathing animals.

Table 3.8 Summary of available surface water PFAS data

Location	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2]	EPC (µg/L)	Basis	D[2]	EPC(µg/L)	Basis	D[2]	EPC(µg/L)	Basis
90% spp. DGV		-[3]			4.0			632		
95% spp. DGV		-[3]			0.9			220		
99% spp. DGV		-[3]			0.02			19		
BTV		-[3]			0.0005			-		
Aquatic Exposure Environments										
RAAF Laverton Swamp	15	15	1.3	95 UCL%	14	1	95 UCL%	14	0.058	95 UCL%
Skeleton Creek	84	83	0.29	95 UCL%	81	0.14	95 UCL%	81	0.011	95 UCL%
Sanctuary Lakes	26	26	0.068	95 UCL%	26	0.041	95 UCL%	26	0.0069	95 UCL%
Cheetham Wetlands	51	51	0.12	95 UCL%	51	0.069	95 UCL%	51	0.0063	95 UCL%

[1] Number of primary samples.

[2] Number of primary detections.

[3] No criteria for constituent grouping.

It can be observed that the concentration of PFOS exceeds the adopted 99% spp. DGV and the BTV in all water bodies, indicating a potential for bioaccumulation-based risks to aquatic species and air-breathing animals. The concentration of PFOS additionally exceeded the 95% spp. DGV in RAAF Laverton Swamp, indicating a potential for direct risks to aquatic biota.

The SAQP (JBS&G 2024) identified that Addison Wetland had not been sampled for an extended period of time. As part of the SAQP (JBS&G 2024) implementation, additional samples were collected from Addison Wetland. The concentrations observed (PFOS+PFHxS 0.24—0.76 µg/L, PFOA 0.008—0.016 µg/L) were marginally lower than observed in the sample collected in September 2018 (PFOS+PFHxS 1.3 µg/L, PFOA 0.02 µg/L). The observed concentrations of PFOS+PFHxS exceeded the adopted 95% and 99% spp. DGV and the BTV. Given this water body comprises an urbanised stormwater feature which occupies a comparatively small portion of the receiving environment and exhibits concentrations less than similar larger areas more likely to represent significant avian/mammalian habitat (i.e. RAAF Laverton Swamp), separately adopting it as an AOI for detailed risk assessment is not considered to be warranted. Further discussion is provided in the sensitivity assessment in **Section 9.2**.

3.4.5 Groundwater

The groundwater analytical dataset has been compared against tier 1 screening criteria presented in the PFAS NEMP (HEPA 2026). Groundwater analytical results have been compared against criteria adopted for the purpose of identifying whether groundwater may represent a source of PFAS contamination to receiving surface water environments in **Table 3.10**. It is noted that a is to be undertaken which presents a detailed assessment of the potential for groundwater to represent a source of PFAS to the receiving water bodies.

On- and off-base groundwater data has been distinguished in the following areas:

- On-base: SA01 to SA04, as shown on **Figure 3** and **Figure 7**, consistent with the source areas discussed in **Section 3.5**.
- Off-base areas including Skeleton Creek, Princes Freeway and Williams Landing, with the adopted datapoints consistent with the soil dataset (i.e. groundwater wells only, **Section 3.4.3**).

As such, criteria have been adopted consistent with the surface water bodies closest to the groundwater PFAS SAs:

- 99% spp. DGV for both freshwater and marine environments to assess potential for bioaccumulation risks in the receiving water bodies.

- 95% spp. DGV for both freshwater and marine environments to assess direct contact risks in the receiving water bodies.

Consideration is additionally given to application of the BTV published in ANZG (2026) for PFOS to screen for potential bioaccumulation risks to air breathing animals in the receiving water bodies.

Table 3.9 Summary of available groundwater PFAS data

Location	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2,3]	Min (µg/L)	Max(µg/L)	D[2]	Min(µg/L)	Max(µg/L)	D[2]	Min(µg/L)	Max(µg/L)
95% spp. DGV			-[3]			0.9			220	
99% spp. DGV			-[3]			0.02			19	
BTV			-[3]			0.0005			-[3]	
On-base										
SA01	50	48	0.6	1510	50	0.21	1500	49	<0.02	40
SA02	192	151	0.47	183	186	<0.01	69.8	177	<0.01	4.04
SA03	8	8	0.08	0.25	7	<0.01	0.09	1	<0.01	<0.01
SA04	19	19	8.1	171	19	3.6	49	19	0.16	3.51
Other	83	80	<0.01	138	80	<0.01	89.5	58	<0.01	2.3
Off base										
Williams Landing	48	47	<0.01	220	45	<0.01	90	44	<0.01	6.5
Skeleton Creek	20	20	0.5	4.1	20	0.15	2.1	20	0.01	0.07
Princes Freeway	42	42	0.21	20.1	42	0.03	9.9	42	0.01	0.79

[1] Number of primary samples.

[2] Number of primary detections.

[3] Not all samples for which PFOS and PFHxS data exist have separately reported PFOS+PFHxS.

It can be observed that the maximum concentration of PFOS exceeds the adopted 99% spp. and 95% spp. DGV in all off-base areas and all on-base areas investigated, with the exception of SA03, which did not exceed the 95% spp. DGV. Concentrations of PFOS additionally exceeded the BTV for PFOS in all areas investigated. Concentrations of PFOA were below the adopted ecological 99% and 95% spp. DGV in all SAs. The concentrations of PFOS+PFHxS, PFOS and PFOA were notably higher in the groundwater north of Skeleton Creek than Skeleton Creek surface water.

The table shows that off-base concentration ranges are considerably lower than concentrations in the AOI (i.e. Skeleton Creek).

The adopted criteria were not developed for the protection of ecological species directly exposed to groundwater (i.e. stygofauna). In absence of an appropriate set of tier 1 screening criteria to allow for the screening of groundwater risks to stygofauna, further assessment has been undertaken as discussed in the subsequent sections of this detailed ERA.

3.4.6 Biota

The biota analytical dataset has been compared against tier 1 screening criteria presented in the PFAS NEMP (HEPA 2026) in **Table 3.11** and **Table 3.12**. The tier 1 criteria comprise BGVs which were developed to assess whether biota represents a potential risk to avian and mammalian receptors if consumed as a food source.

The dataset has been differentiated into food groups for the purpose of the screening-based assessment, as consistent with the approach recommended in SERDP (2020).

Criteria have been adopted for the following potentially complete SPR linkages:

- Mammalian consumers of biota:
  - PFOS+PFHxS: 0.0031 mg/kg[8].
  - PFOA: 0.0028 mg/kg.
- Avian consumers of biota:
  - PFOS+PFHxS: 0.0082 mg/kg.
  - PFOA: 0.0024 mg/kg.

Table 3.10 Summary of available terrestrial biota PFAS data

Location / Type	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2]	EPC (mg/kg)	Basis	D[2]	EPC(mg/kg)	Basis	D[2]	EPC(mg/kg)	Basis
Avian BGV			0.0082			0.0082			0.0024	
Mammalian BGV			0.0031			0.0031			0.0028	
Laverton RAAF Swamp										
Flora	10	7	0.0019	Max	4	0.0011		1	0.0004	Max
Invertebrate	7	7	0.31	Max	7	0.29		4	0.0011	Max

[1] Number of primary samples.

[2] Number of primary detections.

The EPC for PFOS+PFHxS and PFOS exceeded the BGV in Laverton RAAF Swamp terrestrial invertebrate samples. Results for other PFAS or biota were found to be below the BGVs for terrestrial biota in Laverton RAAF Swamp. The following is noted with respect to the terrestrial invertebrate dataset noted above:

- The dataset comprises seven samples of mixed macroinvertebrates collected from the terrestrial fringe of Laverton RAAF Swamp which represents a small area (~0.2 km^2) of potential habitat for terrestrial foragers.
- Whilst the maximum concentration was elevated, it does not represent statistical metrics of the 'true' concentrations (range: 0.007 to 0.31 mg/kg, median: 0.053 mg/kg, mean: 0.098 mg/kg).
- Review of the terrestrial invertivores identified in **Section 5** (which may consume the sampled macroinvertebrates) are likely to predate over areas considerably larger than the extent of the Laverton RAAF Swamp terrestrial area. As such, any site-specific risk estimates would accordingly reduce the exposure potential.

On the basis of the above, and with consideration of the magnitude of exceedances of other media (refer to **Table 3.10**), it was considered that detailed risk estimates for receptors exposed to terrestrial invertebrates was not warranted.

[8] It is noted that results are presented as mg/kg based upon the laboratory reporting units and maintaining consistency with soil/sediment units, noting that PFAS NEMP (HEPA 2026) criteria for biota are presented as µg/kg.

Table 3.11 Summary of available aquatic biota PFAS data

Location / Type	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2]	EPC(mg/kg)	Basis	D[2]	EPC(mg/kg)	Basis	D[2]	EPC(mg/kg)	Basis
Avian BGV			0.0082			0.0082			0.0024	
Mammalian BGV			0.0031			0.0031			0.0028	
Laverton RAAF Swamp										
Aquatic vegetation	10	10	0.013	95% UCL	10	0.013	95% UCL	0	<0.0003	Max
Benthic invertebrate	4	4	0.056	Max	4	0.043	Max	4	0.0051	Max
Pelagic invertebrate	2	2	0.166	Max	2	0.16	Max	2	0.0005	Max
Predator fish	-[3]	-	-	-	-	-	-	-	-	-
Prey fish	10	10	1.1	95% UCL	10	1.1	95% UCL	3	0.0029	Max
Skeleton Creek										
Aquatic vegetation	23	22	0.007	95% UCL	22	0.0066	95% UCL	1	0.001	Max
Benthic invertebrate	2	2	0.024	Max	2	0.019	Max	1	0.005	Max
Pelagic invertebrate	10	10	0.025	95% UCL	10	0.024	95% UCL	7	0.0006	Max
Predator fish	12	12	0.97	95% UCL	12	0.94	95% UCL	6	0.0013	Max
Prey fish	23	23	0.32	95% UCL	23	0.31	95% UCL	12	0.0014	95% UCL
Sanctuary Lakes										
Aquatic vegetation	13	13	0.011	95% UCL	13	0.011	95% UCL	3	0.0009	Max
Benthic invertebrate	3	3	0.025	Max	3	0.025	Max	1	0.0005	Max
Pelagic invertebrate	3	3	0.0199	Max	3	0.019	Max	0	<0.0003	Max
Predator fish	13	13	0.080	95% UCL	13	0.080	95% UCL	1	0.0005	Max
Prey fish	13	13	0.076	95% UCL	13	0.075	95% UCL	3	0.001	Max
Cheetham Wetlands										
Aquatic vegetation	12	10	0.025	95% UCL	10	0.026	95% UCL	3	0.0007	Max
Benthic invertebrate	5	5	0.058	Max	5	0.029	Max	1	0.005	Max
Pelagic invertebrate	7	7	0.035	Max	7	0.033	Max	3	0.0023	Max
Predator fish	3	3	0.053	Max	3	0.043	Max	0	<0.001	Max
Prey fish	9	9	0.065	Max	9	0.034	Max	1	0.0012	Max

[1] Number of primary samples.

[2] Number of primary detections.

[3] The preliminary ERA (Aurecon 2022) proposed predator fish sampling but no samples were able to be collected.

The following observations are made regarding **Table 3.10.**

- The EPC for PFOS+PFHxS and PFOS exceeded the mammalian BGV in each type of biota sample collected from each water body.
- The EPC for PFOS+PFHxS exceeded the avian BGV in each type of biota sample collected from each water body, with the exception of aquatic vegetation in Skeleton Creek.
- The EPC for PFOS exceeded the avian BGV in each type of biota sample collected from each water body.
- The EPC for PFOA exceeded the mammalian and avian BGV for benthic invertebrates in prey fish (Laverton RAAF Swamp only) and benthic invertebrates (Laverton RAAF Swamp, Skeleton Creek and Cheetham Wetlands). All other PFOA EPCs were below the adopted criteria.

JBS&G notes that no Australian Government BGVs are available to assess ecological receptor risks from consumption of impacted biota to groups other than mammals and birds.

3.4.7 Sediment

The PFAS NEMP (HEPA 2026) does not provide sediment criteria for PFAS compounds and no alternative sediment criteria have been adopted. A summary is provided of estimated EPCs for sediment in AOI in **Table 3.13**, to inform the CSM (e.g. elevated concentrations of PFAS in sediment are likely to be associated with higher concentrations of PFAS in benthic invertebrates).

Table 3.12 Summary of available sediment PFAS data

Type	N[1]	PFOS+PFHxS			PFOS			PFOA		
		D[2]	EPC (mg/kg)	Basis	D[2]	EPC (mg/kg)	Basis	D[2]	EPC (mg/kg)	Basis
Aquatic exposure environments										
RAAF Laverton Swamp	15	14	0.059	95% UCL	13	0.059	95% UCL	9	0.0007	Max
Skeleton Creek	28	27	0.12	95% UCL	14	0.12	95% UCL	13	0.00047	95%
Sanctuary Lakes	13	13	0.0044	95% UCL	27	0.0044	95% UCL	5	0.0003	Max
Cheetham Wetlands	18	18	0.048	95% UCL	18	0.048	95% UCL	12	0.0021	95%

Sediment analytical results have been incorporated into the detailed ecological risk assessment estimates for all water bodies where a potential risk was identified from either surface water (**Section 3.4.4**) or biota (**Section 3.4.6**).

3.4.8 Identification of risk driving contaminant of concern

In review of the abiotic and biotic environmental datasets, it can be observed that the adopted EPCs for PFAS exceed the adopted tier 1 screening criteria for various constituents, media and AOI. The adopted screening criteria from the PFAS NEMP (HEPA 2026) and ANZG (2026) are based on different contaminant groupings to assess different end-points (e.g. surface water considers PFOS only, BGV consider PFOS+PFHxS and PFOS).

JBS&G has adopted PFOS and PFHxS as COPCs for detailed risk assessment in all aquatic exposure media (i.e. surface water, sediment and biota) in the subsequent sections of this report. The assessment has been

undertaken on the basis of PFOS+PFHxS is consistent with the biota BGV presented in the PFAS NEMP (HEPA 2026). The adoption of PFOS+PFHxS is based on the following rationale:

- PFOS+PFHxS (or otherwise PFOS individually) was identified to exceed the adopted tier 1 screening criteria in surface water and biota.
- EPCs for PFOA above adopted criteria were limited to individual biota groups, primarily comprising invertebrates, with the maximum magnitude of exceedance (~2) considerably lower than PFOS+PFHxS, indicating that PFOA will contribute a low risk in comparison to PFOS+PFHxS.
- PFOS and PFHxS have been assessed as PFOS+PFHxS. This is consistent with the PFAS NEMP (HEPA 2026) approach in the development of BGVs, whereby the toxicity of PFHxS is assumed to be equivalent to PFOS[9]. It can be observed that PFOS comprises the majority of the detected PFAS in most samples by weight. However, the concentrations of PFHxS frequently contribute a meaningful proportion of the detected PFOS+PFHxS and are accordingly relevant to the risk estimates.
- Whilst the screening indicates that the majority of potential risks will be attributable to consumption of aquatic biota, the assessment has considered the contribution to the risk profile of other media (including sediment and surface water).

Terrestrial media (soil and biota) are not the subject of additional quantitative ecological risk assessment. The terrestrial environment proximal to Laverton RAAF Swamp is identified as the only terrestrial environment which may be meaningfully affected by discharges of PFAS from the base within surficial media. The preliminary ERA (Aurecon 2022) assessed potential risks posed by the terrestrial media in Laverton RAAF Swamp. No additional data was able to be obtained to further refine the estimated EPCs due to access limitations. The terrestrial fringe of the water body comprises a small component of overall lateral extent of the AOI and accordingly represents a lower potential for foraging/predating by ROCs. Given that the aquatic area of Laverton RAAF Swamp is proportionally larger and is identified to contain biota with higher concentrations of PFOS+PFHxS, it is considered that assessment of Laverton RAAF Swamp on the basis of exposure attributable to aquatic media is an appropriately conservative approach.

3.5 Investigation adequacy

3.5.1 General

JBS&G has conducted a review of the available data in consideration of the typical requirements of a detailed ERA. The review has been undertaken with due regard given to the inherent uncertainties of scientific investigations.

3.5.2 Data representativeness

Previous investigations have been relied upon to inform this detailed ERA. The DSI (Aurecon 2020) and addendum DSI (Aurecon 2021) were generally focused on identifying and characterising potential PFAS contamination sources within the base. Investigations undertaken to assess ecological risks include the preliminary ERA (Aurecon 2022) and works undertaken in accordance with the SAQP (JBS&G 2024). The available data relate primarily to soil, surface water, sediment and groundwater within the extent of the base and Williams Landing. The available data are considered adequate to identify and characterise PFAS contamination for the purposes of confirming that the base is a potential source of PFAS contamination to the AOI. For the purpose of this detailed ERA, no further data is considered critical to screening and characterising potential risks to ecological receptors in the AOI.

[9]PFAS NEMP (HEPA 2026), text below Table 7 "*This has been adapted to allow for uncertainties and potential similar properties and toxicities of PFHxS with PFOS*".

The preliminary ERA (Aurecon 2022) presented an environmental dataset including terrestrial and aquatic media obtained from the AOI. Additional investigations have been completed by JBS&G in accordance with the SAQP (JBS&G 2024). The SAQP (JBS&G 2024) was designed to infill data gaps relevant to specific environmental media within the AOI that were considered material to undertaking this detailed ERA. The investigation was undertaken in general accordance with the SAQP (JBS&G 2024), noting that not all sample types were able to be collected from all water bodies. It is considered that sufficient data have been collected to facilitate undertaking this detailed ERA. Dataset representativeness and associated potential limitations are considered and addressed by the adoption of conservative assumptions where uncertainties are identified (e.g. statistical measures preferencing maximums or upper confidence limits). None of the identified data gaps have been considered critical to completing this detailed ERA.

The availability of investigation data to characterise environmental media in AOI is considered appropriate. Sampling programs carry an inherent uncertainty attributable to sample media spatial and temporal variations, as well as the process of simple categorisation of biota datasets to allow for meaningful estimates of exposure. Samples of biotic media are highly variable, which reflects a range of factors including individual sample species, maturity, gender, foraging/predating behaviours and opportunities. This variance has been considered when defining EPCs.

A process has been implemented throughout this assessment to minimise the potential to underestimate risks by adoption of conservative statistical metrics in estimating EPCs (e.g. 95% UCL or maximum). The effect on screening and overall risk estimates of adopting conservative statistical metrics has been assessed in **Section 9**.

One of the primary factors which affects EPC uncertainties is the number of observations available to make estimates. For all media, the minimum sample number to provide a 95% UCL was ten samples. Review of the available datasets (**Table 3.8** to **Table 3.13**) indicates that most media had sufficient samples to obtain a 95% UCL estimate in most AOI. Where a 95% UCL could not be derived, maximum concentrations have been adopted as EPCs as a conservative measure. In undertaking this detailed ERA, limitations have been identified in relation to the biota dataset. These are discussed below in consideration of key observations identified in **Table 3.2**.

- **Limited aquatic macroinvertebrates**: Aquatic macroinvertebrates were generally not encountered in abundance in the AOI. Implementation of sustained sampling efforts made over numerous rounds of sampling, and using multiple sampling methods, has resulted in cumulative datasets for macroinvertebrates between two and ten individual samples per target area. The number of samples generally limits the ability to undertake detailed statistical analysis and the extent of error on particular estimates is not readily quantified using statistical methods. It is considered that the inability to recover these samples reflects general absence of these biota in abundance within the AOI and the ability for receptors to derive PFAS exposure through consumption is likely to be limited.
- **No fish in Cheetham Wetland salt pans and channels**: No fish samples have been obtained from the salt pans or channels during sampling implemented by Elgin or as reported in previous investigations. It is considered that the hypersaline/hypoxic conditions are potentially unsuitable for sustaining fish. Similar to low levels of macro-invertebrates, this indicates that these biota and their ability to cause an exposure to receptors of concern is limited within this portion of the AOI.
- **No predatory fish in Laverton RAAF Swamp**: No predatory fish samples are available from Laverton RAAF Swamp. It is not known whether the inability to obtain predatory fish samples represents their absence or ineffective sampling methods. JBS&G was not able to access Laverton RAAF Swamp for sampling and had to rely on data provided in the preliminary ERA (Aurecon 2022). The preliminary ERA (Aurecon 2022) reported that a single day of sampling was completed, with the intended target (short-finned eels) not able to be collected. The absence of predatory fish samples has been addressed by the conservative assumption that they are present and represented by the concentrations reported in prey fish (see **Section 6.2**).

- **Limited sampling locations in Cheetham Wetland salt pans / salt pan channels**: Access to the northern ponds is limited due to administrative (access arrangements required via the site operator as indicated in the preliminary ERA (Aurecon 2022)) and safety (based on observations made by field staff as part of JBS&G's investigations). The preliminary ERA (Aurecon 2022) reported that bird activity in Cheetham Wetlands is anecdotally lower in the northern ponds. Given that the source of potential base-derived PFAS impacts is consistent between the northern and southern ponds (i.e. extraction of water from lower estuarine sections of Skeleton Creek), the lack of access to the northern ponds for sampling is not considered likely to materially affect the risk assessment but remains a potential data gap. The sample locations are consistent with the preliminary ERA (Aurecon 2022) which reported that these areas provide potentially viable foraging / predating habitat due to the presence of brine shrimp.
- **Limited individual species**: Aquatic biota datasets have been consolidated based on relatively simple group identifiers. There is the potential that individual species adopt materially different potential to accumulate PFAS and this may represent a materially different exposure risk to receptors which preferentially target specific species. Preference was given to sampling a representative range of species as these species were assumed to represent typical exposure conditions.
- **Absence of terrestrial vertebrate data**: No terrestrial aquatic predator sampling was undertaken as part of this risk assessment (e.g. birds of prey). Collecting samples of fauna (e.g. birds, mammals and reptiles.) was considered unwarranted as the risk profile to predators is typically dominated by aquatic invertivores and piscivores. It is not evident that additional sampling of higher order species would result in materially different outcomes to the risk assessment.

The SAQP (JBS&G 2024) identified the potential to use either site-specific or literature-based PFAS uptake ratios to estimate the concentrations of PFAS within aquatic biota. As empirical data were available for all datasets in all water bodies, preference was given to the use of measurements in place of modelling. Consideration of the use of estimates is provided in the sensitivity assessment in **Section 9.3.2**. The abiotic media sampling program (sediment, surface water and groundwater) provides data over numerous rounds of sampling as undertaken across multiple seasons and years under the OMP. The biota sampling program was implemented across two rounds, targeted toward summer (November 2024) and winter (May 2025). This has facilitated an assessment of the seasonality of the observed results as presented in **Section 3.5.3**. JBS&G notes that the preliminary ERA (Aurecon 2022) also presented biota data from previous years.

3.5.3 Seasonality and temporal variation

The available environmental data comprise samples of media collected over numerous rounds of investigation by different consultants. The SAQP (JBS&G 2024) was designed explicitly to obtain data from spring/summer as well as from autumn/winter. Numerous rounds of investigation have been undertaken under historical investigation programs including the OMP, with investigations completed at different times of year.

JBS&G has used the available dataset to estimate representative chronic concentrations of environmental media (i.e. all data have been used to estimate exposures to ecological receptors). This has the effect of accounting for potentially reduced and/or increased concentrations in media associated with temporal events and seasonality. This approach is consistent with the toxicological basis of the screening criteria and the toxicity assessment endpoints used to inform risk estimates.

The potential influence of temporal variations has been discussed in the sensitivity assessment (see **Section 9**). JBS&G has undertaken the screening process and risk estimates on the basis of the entire available dataset. It is noted that any significant trends observed would be reviewed as part of the future assessment process and the potential requirement to revise risk estimates identified, if relevant.

4. SPR linkage assessment

4.1 General

Detailed PFAS CSMs for the base and surrounding areas have been presented in previous reports, including the DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and PMAP (Defence 2025a). A summary of elements of the CSMs relevant to this detailed ERA is presented in the following sections, categorised as follows:

- Sources and media representing the environmental media to which receptors are exposed.
- Pathways of contaminant migration via surface water and groundwater to the AOI.
- Receptors of contamination, comprising the species and taxa potentially exposed to contamination.

4.2 Sources and media

A detailed CSM will be presented in the RIA (JBS&G 2026) currently pending. Based on previous reports, primary sources of PFAS contamination include historical AFFF use, storage and waste disposal within various areas of the base. For the purposes of this CSM, sources are identified as environmental exposure media which form part of a potentially complete source-pathway-receptor linkage.

PFAS has been detected above applicable screening criteria in each waterway represented within the AOI. The available data previously summarised is detailed in **Section 3**. The table focuses upon PFOS+PFHxS based upon **Section 3.4.8**. Where PFOS+PFHxS results are below tier 1 screening criteria or the pathway does not require further assessment, the cell has been highlighted green. Where PFOS+PFHxS results are above tier 1 screening criteria and the pathway requires further assessment, the cell has been highlighted orange. The only exception is the base, where reference is made for comparison purposes only.

Table 4.1 PFOS+PFHxS exposure media summary

Area	Typical PFOS+PFHxS concentration				
	Soil	Surface water	Sediment	Groundwater	Aquatic biota
Base	EPC > indirect exposure criterion and below direct exposure criterion	Data limited to stormwater assets	Data limited to stormwater assets	Range of values > NEMP tier 1 criteria	No data / not relevant
Laverton RAAF Swamp	EPC > PFAS NEMP tier 1 criteria but not considered to represent a significant source of impact to avian / mammalian receptors	EPC > direct and bioaccumulation spp. DGVs	No tier 1 criteria available but PFAS identified above detection limits	Range of values > NEMP tier 1 criteria	EPC > PFAS NEMP tier 1 criteria based on avian / mammalian diet
Skeleton Creek	EPC > PFAS NEMP tier 1 criteria but not considered to represent a significant source of impact to avian / mammalian receptors	EPC > direct and bioaccumulation spp. DGVs	No tier 1 criteria available but PFAS identified above detection limits	Range of values > NEMP tier 1 criteria	EPC > PFAS NEMP tier 1 criteria based on avian / mammalian diet
Sanctuary Lakes	No data / not relevant	EPC > direct and bioaccumulation spp. DGVs	No tier 1 criteria available but PFAS identified above detection limits	No data / not relevant	EPC > PFAS NEMP tier 1 criteria based on avian / mammalian diet

Area	Typical PFOS+PFHxS concentration				
	Soil	Surface water	Sediment	Groundwater	Aquatic biota
Cheetham Wetlands	No data / not relevant	EPC > direct and bioaccumulation spp. DGVs	No tier 1 criteria available but PFAS identified above detection limits	No data / not relevant	EPC > PFAS NEMP tier 1 criteria based on avian / mammalian diet

4.3 Pathways

4.3.1 General

Groundwater and surface water are identified as the dominant transport and migration pathways for PFAS impacts at the base. As of the issue of this detailed ERA, sufficient information is available to estimate the current risks to receptors within the AOI. The following section is provided to establish the migration pathways and linkages between base-attributable PFAS and the AOI.

4.3.2 Surface water

The flow-pathways for excess surface water generated within the base is discussed in **Table 2.2**. The flow paths are shown on **Figure 4** and can be summarised as follows:

- On-base waterways: The northern portion of the base is intersected by two drainage channels (Doherty's Creek and Laverton Creek). Both channels merge in the central eastern portion of the base and continue as Laverton Creek to the east of the base.
- Laverton RAAF Swamp receives surface water overflow from Forsyth Road Drain and the surrounding suburb of Williams Landing. Laverton RAAF Swamp discharges to Skeleton Creek via Forsyth Road Drain.
- Skeleton Creek receives stormwater input from the southern portions of the base (including SA01, SA02 and SA04) via incised/constructed stormwater channels and pipelines. Skeleton Creek receives groundwater discharge from the base as reported in the preliminary ERA (Aurecon 2022).
- Sanctuary Lakes receives stormwater inputs from Cheetham Creek and is also actively managed by pumping of estuarine/tidal water from the estuarine lower reaches of Skeleton Creek.
- Cheetham Wetlands is actively managed by pumping of water from Skeleton Creek.

Surface water and sediment PFAS data were summarised as part of the SAQP (JBS&G 2024) which found that:

- Concentrations of PFAS in Doherty's Drain and Laverton Creek were substantially lower than the AOI and associated tributaries. Whilst a wider range of PFAS concentrations was observed within and downstream of the base compared to upstream, the overall concentrations were considerably lower than observed in the Skeleton Creek network and frequently reported as non-detects in surface water (<0.01 µg/L).
- On-base and proximal stormwater management features illustrated in **Figure 9** (Addison Wetlands, Ashcroft Wetlands, Bioretention Systems, and Kingwell Wetlands) exhibited the highest concentrations of PFAS. The range of values observed including maximum PFOS+PFHxS concentrations of 17.1 µg/L (Bioretention System), 1.3 µg/L (Addison Wetland), 1.0 µg/L (Kingwell Wetland) and 0.25 µg/L (Ashcroft Wetland).
- Of the AOI, Laverton RAAF Swamp exhibited the highest maximum concentrations of PFAS (PFOS+PFHxS 1.7 µg/L), followed by Skeleton Creek (PFOS+PFHxS 1.3 µg/L), Cheetham Wetlands (PFOS+PFHxS 0.2 µg/L) and then Sanctuary Lakes (PFOS+PFHxS 0.07 µg/L). This is consistent with the surface water flow, exhibiting diminishing concentrations with distance from the base and former off-base sources.

- Upgradient portions of Skeleton Creek and the local tributary of Sanctuary Lakes (Cheetham Creek) exhibited lower concentrations than measured in the surface water bodies where they are anticipated to be affected by mixing with discharges from the base (i.e. downstream of Forsyth Road Drain in Skeleton Creek and within Sanctuary Lakes).

4.3.3 Groundwater

The base and local hydrogeology is broadly defined by the presence of Newer Volcanics upper and lower aquifers, separated by a discontinuous clay aquitard. The upper basalt aquifer is generally unconfined whilst the lower basalt aquifer is semi-confined to confined. Groundwater flow in both the upper and lower basalt aquifers is generally towards the south and south-east towards Port Phillip Bay. It is understood that the upper basalt aquifer discharges to Skeleton Creek to the south of the base.

A significant groundwater monitoring well network had been established across the base to assess conventional contamination sources (e.g. petroleum storage and use of chlorinated solvents). The DSI (Aurecon 2020) and addendum DSI (Aurecon 2021) made use of the existing well network and supplemented it with the installation of additional targeted on and off-base wells.

PFAS affected groundwater was identified by both investigations primarily relating to infiltration of PFAS from impacted soils within the identified source areas. PFAS was identified in both upper and lower aquifers, with PFAS concentrations being higher in the upper aquifer. The DSI (Aurecon 2020) and addendum DSI (Aurecon 2021) identified PFAS affected groundwater as having migrated off-base to the south.

Previous investigations have reported that Skeleton Creek is in receipt of groundwater discharges, including discharges of groundwater from the southern portion of the base. Groundwater concentrations in proximity of Skeleton Creek and Laverton RAAF Swamp are in exceedance of the adopted screening criteria and are typically elevated by one or more orders of magnitude compared with Skeleton Creek.

The current knowledge regarding the extent of the PFAS plume is shown in **Figure 7**.

4.4 Receptors

Based on the information reviewed in the preceding sections, potentially complete SPR linkages have been identified in **Table 4.2**. The identified SPR linkages form the basis of the subsequent sections of this detailed ERA.

Table 4.2 Potentially complete SPR linkages

Exposure media	Pathway (Media)	Ecological receptor	Assessment
Soil within banks and nearby areas along RAAF Laverton Swamp, Skeleton Creek, Sanctuary Lakes and Cheetham Wetlands	Direct contact (soil)	Avian, mammalian and reptilian receptors	Not likely to be significant[1]
Water and sediment within RAAF Laverton Swamp, Skeleton Creek, Sanctuary Lakes and Cheetham Wetlands with PFAS concentrations above tier 1 screening criteria	Direct contact (surface water and sediment)	Aquatic flora and fauna	Potentially complete
Aquatic biota and biota within RAAF Laverton Swamp, Skeleton Creek, Sanctuary Lakes and Cheetham Wetlands with PFAS concentrations above tier 1 screening criteria	Incidental ingestion Dietary consumption (biota)	Avian and mammalian receptors	Potentially complete
Groundwater with PFAS concentrations above tier 1 screening criteria	Direct contact (groundwater)	Stygofauna	Potentially complete

[1] As discussed in **Section 3.4.3**.

4.5 Problem statement

Previous investigations have been undertaken as summarised in **Section 3.1**, which have indicated a potential risk is posed by PFAS to environmental receptors (principally mammals, migratory and non-migratory birds and aquatic species). The preliminary ERA (Aurecon 2022) did not quantify the effects of various relevant exposure dynamics which have a material effect on the estimated risk levels to ROCs. The preliminary ERA (Aurecon 2022) further did not adopt an appropriate screening approach for stygofauna and considered only a limited dataset for concentrations of PFAS in biota.

A detailed ERA is required to expand upon the findings of the preliminary ERA (Aurecon 2022), assess additional data collected since 2022 and provide a more site specific risk quantification methodology. The detailed ERA is to address:

- Risks to aquatic biota posed by PFOS in surface water.
- Risks to avian and mammalian receptors posed by PFOS+PFHxS in surface water, sediment and aquatic biota within the AOI.
- Risks to troglofaunal posed by PFOS+PFHxS in voids within the AOI.
- Risks to stygofauna posed by PFOS+PFHxS in groundwater within the AOI.

5. Receptor identification

5.1 General

Previous environmental documentation, including the preliminary ERA (Aurecon 2022), Elgin (2025a) and Elgin (2025b) have documented extensive reviews of online databases and observations made during biota sampling activities in relation to the presence of specific ecological receptors in AOI.

JBS&G has conducted a review of existing documentation and undertaken supplementary ecological database searches as documented in the subsequent sections. The purpose of the review was to identify ROC which are representative of the broad range of receptors groups and potential PFAS exposures as may occur in the AOI to inform the assessment of exposure undertaken in **Section 6**.

A key outcome of this section is to focus the assessment of exposure on receptors which are likely to have the greatest potential for exposure, or to identify where preliminary assessment outcomes do not warrant progression to detailed assessment for specific receptors groups.

Information reviewed in this section is summarised in **Appendix C**, with key tables provided:

- **Table C1** – Accumulated data, all species and sources.
- **Table C2** – Avian and mammalian species screening.

5.2 Preliminary ERA (Aurecon 2022)

The preliminary ERA presents a summary of ecological ROC based on a desktop review and field observations.

Online databases were reviewed for information on key ecological receptors at the four AOI: Laverton RAAF Swamp, Skeleton Creek, Sanctuary Lakes and Cheetham Wetlands. The review found that each of the AOI were reported as providing potential habitat for a range of conservation significant species. The species identified by desktop review are shown in **Table C1**.

The preliminary ERA (Aurecon 2022) reported observations of biota made during sampling. Observations of biota were conducted by a specialist aquatic ecologist and cross-referenced with literature to confirm findings for algae and fish respectively. The observations reported in the preliminary ERA (Aurecon 2022) included both conservation significant species as well as a range of biota observations (i.e. sample types collected), non-conservation significant species and invasive species. Biota observations are summarised in **Table C1** of **Appendix C**.

5.3 Elgin biota sampling and desktop review reports (Elgin 2025)

JBS&G engaged Elgin as a specialist ecological consultancy to undertake an assessment of the ecological environment in support of this detailed ERA. Elgin prepared two post works reports as documented in Elgin (2025a) and Elgin (2025b).

Elgin undertook a desktop review which comprised searches of ecological databases including the EPBC Protected Matters Search Tool, Victorian Biodiversity Atlas and NatureKit, and a review of the preliminary ERA (Aurecon 2022) to identify species with ecological significance. The database searches undertaken by Elgin were used to inform requirements of fishing permits obtained from Fisheries Victoria and are presented in the relevant reports.

Species identified by Elgin as part of the desktop review or as observed during biota sampling works are identified in **Table C1** of **Appendix C**.

Key observations reported by Elgin are provided in **Table 3.2**.

5.4 Ecological database searches

As part of preparing this detailed ERA, JBS&G has expanded the scope of desktop searches to obtain a single consolidated dataset relating to the presence of ecological species, including Listed Threatened Ecological Communities, Threatened Species and Migratory Species within the receptor identification area. The receptor identification area encompasses the base, including the PMAP management area and each AOI. The registers and outputs of online databases are provided in **Appendix C**, with a consolidated summary table provided as **Table C1**.

5.5 Receptors of concern

5.5.1 General

Numerous ecological receptors are likely to occur within the receptor identification area from various feeding guilds. An approach has been undertaken to identify and characterise exposure of representative or otherwise conservation significant species which are likely or known to occur within the assessment area.

The ROC identified as part of a potentially complete SPR linkage (**Table 4.2**) with respect to this detailed ERA are categorised into the following groups:

- Aquatic (lower order): Amphibians, plants and invertebrates.
- Aquatic (higher order): Fish.
- Terrestrial/aquatic (higher order): Birds and mammals.
- Subterranean: Stygofauna and troglofauna.

An approach has been undertaken to estimate potential risks to species which considers whether the relevant ROC are exposed through abiotic media only (direct exposure), or both abiotic and biotic media (i.e. indirect exposure). Each of these receptor groups is discussed in the subsequent sections.

5.5.2 Amphibians, aquatic invertebrates, aquatic flora and fish

A review of the ecological species database indicates that aquatic amphibians, invertebrates and flora are variously present throughout the assessment area. The consolidated species list has identified:

- Six species of amphibians (all frogs). Five of the species are identified as conservation significant (Vulnerable, EPBC Act) and are known to occur within the AOI.
- 16 species of aquatic flora, comprising four species which are identified as conservation significant (Endangered, *Flora and Fauna Guarantee Act 1988* (FFG Act) and 12 species observed in the preliminary ERA (Aurecon 2022), Elgin (2025a) and/or Elgin (2025b) that are not identified as conservation significant.
- 15 species of aquatic invertebrates, all of which were observed in the preliminary ERA (Aurecon 2022), Elgin (2025a) and/or Elgin (2025b) and are not identified as conservation significant.
- 24 species of fish, comprising four species which are conservation significant (Vulnerable, Conservation dependent or Endangered under the EPBC Act) and 20 of which were observed in the preliminary ERA (Aurecon 2022), Elgin (2025a) and/or Elgin (2025b) that are not identified as conservation significant.

Reference has been made to the availability of appropriate tier 1 screening criteria to evaluate potential risks to the identified receptor groups listed above. JBS&G notes that the ANZG (2026) criteria (90%, 95% and 99% spp. DGVs) have been developed based on toxicity studies conducted on amphibians, aquatic invertebrates, aquatic flora and fish. DGVs is applied to all species to screen risks. This has the effect of potentially overestimating risks to specific taxonomic groups which are less sensitive to PFAS. In order to further evaluate the significance of potential risks to aquatic species, amphibians, invertebrates, flora and fish, the above

receptor groups have been adopted for additional assessment. Whilst specific receptors are identified in legislation, the assessment of these receptor groups is undertaken at the level of taxa (e.g. fish).

5.5.3 Avian

A review of the ecological species database has identified a total of 113 avian species potentially within the AOI. Avian species are the most abundant receptor group, with the following observations made:

- 58 species have been confirmed in the preliminary ERA (Aurecon 2022), Elgin (2025a), Elgin (2025b) and/or NatureKit.
- 59 species are identified as migratory or partially migratory.
- 45 species are identified as conservation significant under the EPBC Act (five critically endangered, 11 endangered and 29 vulnerable).
- 36 species are identified as conservation significant under the FFG Act (11 critically endangered, 12 endangered and 13 vulnerable).

The term 'migratory' in avian species behaviour has been given more thorough assessment in this detailed ERA. In the Australian context, some species migrate across continents and have significantly higher dietary intake rates when nesting in the Northern Hemisphere. Some species across the AOI are only migratory at an interstate level (e.g. Victoria – New South Wales) and some at an international level (i.e. Australia – New Zealand). Some species have local migratory patterns determined by climatic conditions and are considered partially migratory, nomadic or dispersive. What is critical to understand for the purposes of a detailed ERA is whether avian species consume all or only part of their diet from a specific exposure area.

Birds are identified as key ROC given their abundance, conservation status and the potential for elevated exposure to PFAS through consumption of impacted aquatic biota. The species list has been reviewed to identify species with a distinct potential for exposure to PFAS across the AOI. This has been undertaken based on reviewing the trophic level and feeding guild of each of the species.

The identified species within each trophic level and feeding guild are presented in **Table 5.1** and **Table 5.2** as segregated into predominantly aquatic and terrestrial species for resident/nomadic (**Table 5.1**) and migratory or partially migratory species, including those listed under the EPBC Act (**Table 5.2**). Some species exhibit different behaviours at different life stages as well as between individuals. The distinction that has been made in **Table 5.1** and **Table 5.2** represents a simplification which is intended to ensure that a conservative selection of species is adopted.

Table 5.1 Review of resident/nomadic avian receptors

Primary habitat	Trophic level	Feeding guild	Species
Aquatic	Primary consumer	Herbivore	Black swan.
Aquatic	Secondary consumer	Omnivore	Blue-billed duck, dusky moorhen, Eurasian coot, freckled duck, Pacific black duck.
Aquatic	Tertiary consumer	Invertivore/ omnivore	Australasian shoveler, Eastern hooded plover, hooded plover, musk duck, pied stilt.
Aquatic	Tertiary consumer	Carnivore	Australasian bittern, Australian pelican, Australian white ibis, Caspian tern, eastern great egret, little black cormorant, little egret, little pied cormorant, plumed egret, royal spoonbill, white-faced heron.
Aquatic	Quaternary consumer	Carnivore	Northern Buller's albatross, Pacific albatross, osprey, shy albatross, white-bellied sea-eagle.
Terrestrial	Primary consumer	Herbivore	Crested pigeon, diamond dove, diamond firetail.

Primary habitat	Trophic level	Feeding guild	Species
Terrestrial	Secondary consumer	Invertivore	Brown treecreeper (south-eastern), south-eastern hooded robin, hooded robin (south-eastern), southern whiteface.

Table 5.2 Review of migratory/partly migratory avian receptors

Primary Habitat	Trophic Level	Feeding Guild	Species
Aquatic	Secondary consumer	Omnivore	Chestnut teal, Latham's snipe, purple swamphen, sharp-tailed sandpiper.
Aquatic	Secondary consumer	Invertivore/ omnivore	Greater sand plover.
Aquatic	Secondary consumer	Invertivore	Lesser sand plover, Pacific golden plover, yellow wagtail.
Aquatic	Tertiary consumer	Omnivore	Australian painted snipe, broad-billed sandpiper, pectoral sandpiper, red-necked stint.
Aquatic	Tertiary consumer	Invertivore/ omnivore	Black-tailed godwit, curlew sandpiper, double-banded plover, long-toed stint, masked lapwing, red knot, ruff.
Aquatic	Tertiary consumer	Invertivore	Bar-tailed godwit, common greenshank, common sandpiper, eastern curlew, great knot, grey plover, grey-tailed tattler, Lewin's rail, marsh sandpiper, pin-tailed snipe, ruddy turnstone, Swinhoe's snipe, Terek sandpiper, whimbrel, wood sandpiper.
Aquatic	Tertiary consumer	Carnivore	Fairy prion (southern), fairy tern, flesh-footed shearwater, Gould's petrel, little tern, sooty shearwater, white-faced storm-petrel.
Aquatic	Quaternary consumer	Carnivore	Antipodean albatross, wandering albatross, black-browed albatross, Buller's albatross, Pacific albatross, Indian yellow-nosed albatross, Atlantic yellow-nosed albatross, Northern giant petrel, sooty albatross, southern giant petrel, southern royal albatross, northern royal albatross (as royal albatross), white-capped albatross.
Terrestrial	Primary consumer	Herbivore	Blue-winged parrot, gang-gang cockatoo, orange-bellied parrot.
Terrestrial	Secondary consumer	Herbivore	Swift parrot.
Terrestrial	Secondary consumer	Herbivore/ omnivore	Painted honeyeater, regent honeyeater.
Terrestrial	Secondary consumer	Invertivore	Fork-tailed swift, little curlew, white-throated needletail.

Based on the outcomes of the tier 1 screening (**Section 3.4.8**), identification of potentially complete SPR linkages (**Table 4.2**), representative species have been selected from aquatic birds only as the AOIs are marine/aquatic environments. It was anticipated that the most highly exposed individuals would be invertivores or piscivores that derive a high proportion of their diet from local waterways. The representative groups/guilds include:

- Aquatic primary herbivore (resident/nomadic only).
- Aquatic secondary or tertiary omnivore (resident/nomadic only).
- Aquatic secondary or tertiary invertivore (resident/nomadic and migratory/partly migratory).
- Aquatic tertiary or quaternary carnivore (two resident/nomadic and one migratory/partly migratory).
- Aquatic quaternary carnivore (resident).

Representatives of trophic level/feeding guild have been selected by identifying the species with the highest FI:BW of each of the trophic levels/feeding guilds. The potential for exposure of a given receptor is primarily driven through consumption of PFAS impacted food sources. The ratio of daily food ingestion to the bodyweight of a receptor is a key factor for exposure assessment (see **Section 6.3.3**). In addition to selecting receptors which consume a range of different food sources, to ensure conservatism in the assessment, receptors with higher FI:BW should also be selected.

Where an individual receptor is identified as belonging to more than one of the feeding rate groups in Nagy KA (2001), JBS&G has assigned the allometric food intake equations which would result in the highest estimated food intake rate for each of the birds identified in this review. Further explanation of the process of estimating FI:BW is provided in **Section 6.3.3**. This is a conservative assumption which is likely to overstate the extent of dietary exposure, however this is an appropriate conservative simplification in the approach.

The receptors selected for assessment, and the associated rationale is provided in **Table 5.3**.

Table 5.3 Selected aquatic avian receptors of concern

Trophic level	Feeding guild	Migratory or resident	Selected ROC	Rationale
Primary consumer	Herbivore	Resident	Black swan	Frequently observed (preliminary ERA (Aurecon 2022) and Elgin (2025a)), particularly in Sanctuary Lakes. Only example of herbivorous aquatic bird. Not conservation significant.
Secondary or tertiary consumer	Omnivore	Resident	Dusky moorhen	Wide variety of diet, possible community concern (identified on local signage).
Secondary or tertiary consumer	Invertivore/ omnivore	Resident	Hooded plover	Highest FI:BW in class. Sighted on NatureKit, identified as 'vulnerable' under *Flora and Fauna Guarantee Act 1988* (FFG Act) and EPBC Act.
Secondary or tertiary consumer	Invertivore/ omnivore	Migratory (inter-continental)	Long-toed stint	Highest FI:BW in class. Identified as 'migratory' under the EPBC Act.
Tertiary or quaternary consumer	Carnivore	Resident	Australasian bittern	Sighted on NatureKit. High FI:BW. Identified as 'endangered' and known to occur in the area (EPBC Act).
Tertiary or quaternary consumer	Carnivore	Resident	Royal spoonbill	Identified by desktop review and shown on Cheetham Wetlands birdwatching sign. One of the highest FI:BW in class. Reliable quantified food intake ratios in literature.
Tertiary or quaternary consumer	Carnivore	Partially migratory / nomadic	Great egret	Identified by desktop review and shown on Cheetham Wetlands birdwatching sign. One of the highest FI:BW in class. Identified as 'endangered' and known to occur in the area (FFG Act).
Quaternary consumer	Carnivore	Resident	Osprey	High FI:BW, most resident example. Very high fish intake.

5.5.4 Mammals

A review of the ecological species database has identified a total of 11 species of mammal within the AOI. The following observations were made:

- Four species have been confirmed in the preliminary ERA (Aurecon 2022), Elgin (2025a), Elgin (2025b) and/or NatureKit.
- Four species are identified as migratory marine species (three whales and one dolphin), which are not relevant to each of the AOI.
- Five species are identified as conservation significant under the EPBC Act (two endangered and three vulnerable).
- One was identified as conservation significant under the FFG Act ('vulnerable').

Mammals are identified as key ROC given their abundance, conservation status and the potential for elevated exposure to PFAS through consumption of impacted aquatic biota. The species list has been reviewed to identify species with a distinct potential for exposure to PFAS in the AOI. This has been undertaken on the basis of reviewing the trophic level and feeding guild of each of the species.

The identified species within each trophic level and feeding guild are presented in **Table 5.4**, and segregated into predominantly aquatic and terrestrial species.

Table 5.4 Review of mammalian receptors

Primary Habitat	Trophic Level	Feeding Guild	Species
Aquatic	Primary consumer	Herbivore	None identified
Aquatic	Secondary consumer	Omnivore	Rakali (water rat)
Aquatic	Secondary consumer	Carnivore	Humpback whale, pygmy right whale and Southern right whale
Aquatic	Tertiary consumer	Carnivore	Dusky dolphin
Terrestrial	Primary consumer	Herbivore	European rabbit and grey-headed flying-fox
Terrestrial	Secondary consumer	Omnivore	New Holland mouse
Terrestrial	Secondary consumer	Invertivore	Fat-tailed dunnart and yellow-bellied sheath tail bat
Terrestrial	Tertiary–quaternary Consumer	Carnivore	Spot-tailed quoll

The review has indicated that conservation significant mammalian species with potential to frequent the AOI is limited. The following species were not considered further:

- Primarily oceanic migratory species (i.e. whales and dolphins) as these species are not likely to be able to access any part of the AOI. Oceanic migratory species are also likely to exhibit a very large home range with exposure to multiple potential PFAS sources which impact Port Phillip Bay and the other waterways along the coastline which these species use as habitat.
- Primarily terrestrial mammalian species have been excluded on the following basis:
    - The New-Holland mouse and grey-headed flying-fox are not anticipated to obtain a significant portion their diet from aquatic biota in the AOI.
    - The fat-tailed dunnart is an arid terrestrial grass-land dwelling marsupial not anticipated to be present in the AOI.

- The spot-tailed quoll is a terrestrial carnivore which has a very large home range. Office of Environment and Heritage (OEH) *Spotted-tailed Quoll - profile* (OEH, 2020) reports that the home ranges for spot-tailed quolls range from 500 to 4000 ha and they are primarily found at higher altitudes. The spot-tailed quoll is not anticipated to be present in the AOI.
- European rabbit is an invasive species and a terrestrial herbivore not anticipated to be significantly exposed in the AOI.

JBS&G has adopted the rakali (water rat) as the only conservation significant mammalian species which is likely to be present and potentially exposed in the aquatic AOI. It is noted that the rakali is highly adapted to the aquatic environment and both hunts fish and eats fish as carrion.

5.5.5 Stygofauna

The ERS (Victorian Government 2021) defines the protected environmental values of groundwater as discussed in **Section 2.4**. Water dependent ecosystems and species is a protected environmental value for groundwater. The preliminary ERA (Aurecon 2022) considered potential subterranean aquatic fauna (i.e. stygofauna and troglofauna) as ROC. Stygofauna refers to aquatic animals residing within the groundwater whereas troglofauna are air breathing animals that reside within subterranean caves and voids. Troglofauna have been excluded from further assessment on the basis that caves and voids have not been identified during the completed sampling program and is unlikely to be present at the base or the PMAP management area.

JBS&G has undertaken a review of available online records in relation to the presence of stygofauna in proximity to the base. No information was able to be identified which specifically discussed stygofauna within Laverton, Victoria. No species of stygofauna are identified within the EPBC Act, FFG Act or previously observed in NatureKit.

The following information was identified proximal to the base:

- A survey was undertaken as part of the Victorian Gas Program and documented in *VGP Technical Report 14 - Regional baseline stygofauna survey, Onshore Gippsland Basin* (Bold, 2020). The study area comprised the West and East Gippsland CMA regions of the Gippsland Basin in southeast Victoria (located approximately 200 km east-northeast of the base). The study identified limited species within the study area.
- A project was undertaken by Wildlife Experiences as documented in *Recent Project* (Wildlife Experience, 2025) which related to the Port Campbell Limestone Aquifer (located approximately 50 km southwest of the base). Wildlife Experiences confirmed the presence of 14 taxa of stygofauna as obtained from seven bores.

Notwithstanding, ERS (Victorian Government 2021) identifies that water dependent ecosystems and species is a protected environmental value for groundwater. Whilst no specific stygofauna species have been confirmed or indicated within the base or the PMAP management area, further assessment was considered to be required on the basis of the overall CSM and issues raised in the preliminary ERA (Aurecon 2022).

6. Exposure assessment

6.1 General

An exposure assessment has been undertaken in the following sections to estimate the amount of PFAS exposure attributable to each of the representative ROC identified in **Section 5**. The exposure assessment has been undertaken by:

- Specifying the EPCs as estimated in each of the AOI.
- Documenting the exposure parameters for each of the ROC.
- Quantifying impacted media intake by estimating the quantity of each medium ingested by the ROC.
- Estimating bodyweight normalised doses of PFOS+PFHxS to each of the ROC by summing the doses attributable to each of the impacted media intake relevant to the ROC.

6.2 Adopted exposure point concentrations

EPCs were estimated in **Section 3.4**, on the basis of empirical data. The adopted EPCs are based on either the maximum concentration or the 95% UCL for the available dataset, as nominated in **Table 3.9**, **Table 3.10** and **Table 3.13.** As noted earlier, adoption of the maximum and the 95% UCL is a conservative measure which is likely to overstate typical exposure but is considered appropriate given the uncertainties which are inherent in environmental data.

Table 6.1 Summary of adopted PFOS+PFHxS aquatic EPCs

AOI	Sediment	Surface water	Aquatic vegetation	Benthic invertebrates	Pelagic invertebrates	Predator fish	Prey fish
	mg/kg	*µg/L*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Tier 1	NA	0.0005[2]	0.0031	0.0031	0.0031	0.0031	0.0031
Tier 1 x 10[3]	NA	0.005[2]	0.031	0.031	0.031	0.031	0.031
Tier 1 x 100[3]	NA	0.05[2]	0.31	0.31	0.31	0.31	0.31
Cheetham Wetlands	0.048	0.12	0.025	0.058	0.035	0.053	0.065
Laverton RAAF Swamp	0.059	1.3	0.013	0.056	0.17	1.1[1]	1.1
Sanctuary Lakes	0.0044	0.068	0.011	0.025	0.020	0.080	0.076
Skeleton Creek	0.12	0.29	0.007	0.024	0.025	0.97	0.032

[1] No data available for predator fish. The absence of predatory fish data represents a single sampling event undertaken as part of the preliminary ERA (Aurecon 2022). An assumption has been made that predatory fish are potentially present and similarly impacted to prey fish. Prey fish concentration adopted to represent group.

[2] Value adopted to contextualise magnitude of bioaccumulation screening criteria exceedances.

[3] The EPCs have been compared against tier 1 multiplied by 10 and 100 to show which media are likely to represent the greatest potential for exposure (see **Section 6.4**)

6.3 Exposure parameters

6.3.1 General

An assessment has been undertaken of the potential exposure of key avian and mammalian receptors in the receiving environment. To inform the assessment, key general factors have been considered which are provided in **Table 6.2**.

Table 6.2 ROC - general information

Species	General description
Resident birds	
Black swan - aquatic primary consumer and herbivore	*Black swan* (Birdlife Australia, 2023a): • The black swan is a large bird (110 to 140 cm long) with a wingspan of 160—200 cm. The black swan is reported to range in bodyweight from 3,700—8,750 grams (g). • The black swan is widespread in temperate and tropical terrestrial wetlands, sheltered estuarine and maritime habitats. They prefer large permanent waters and avoid fast flowing or turbulent water. • The black swan tolerates fresh to hypersaline conditions and is common on large salt lakes, coastal lagoons, estuaries, inlets saltpans and saltmarshes. • They are entirely herbivorous, usually consuming leaves and shoots of aquatic vegetation. Food is taken while swimming by up-ending or skimming surface flora. • Adults are sedentary when living in permanent waterbodies. Young and adults living in ephemeral water bodies move far and often.
Dusky moorhen - aquatic secondary-tertiary consumer and omnivore	*Dusky moorhen* (Birdlife Australia, 2023b): • The dusky moorhen is a medium sized dark waterhen (35—40 cm long with a wingspan of 55—65 cm. Bodyweight is reported to range from 350—700 g. • They live in permanent or ephemeral terrestrial and coastal wetlands. • Usually prefer fresh water but also brackish to saline including swamps, creeks, rivers, lagoons, estuaries and artificial wetland. • The dusky moorhen is sedentary, to moderately dispersive (banding records up to 30 km from banding site). Some adults observed to stay in the same area for over eight years. • They are an omnivore which consumers seeds, fruits, molluscs, insects, spiders, carrion and faeces.
Hooded plover - aquatic secondary-tertiary consumer and invertivore / omnivore	*Hooded Plover* (Birdlife Australia, 2023c): • The Hooded Plover is a medium sized stocky bird (19 to 23 cm long), with a wingspan of 36 to 44 cm. The hooded plover is reported to range in bodyweight from 90 to 100 g. • The hooded plover prefers sandy ocean beaches with sparse vegetation. The hooded plover is occasionally on tidal bays and estuaries and regularly uses near-coast saline and freshwater lakes and lagoons. • The hooded plover is identified as exhibiting potential seasonal flocking, but their movement patterns are poorly known. • They are primarily insectivores preferring polychaetes, molluscs, crustaceans but are known to also eat turions and seeds.

Species	General description
Australasian bittern - aquatic tertiary - quaternary consumer and carnivore	*Australasian bittern* (Birdlife Australia 2023d): • The Australasian bittern is a large stocky thick-necked heron (66—76 cm long) with a wingspan of 1,050—1,180 cm. The Australasian bittern is reported to range in bodyweight from 900—1,400 g. • The Australasian bittern occurs in terrestrial wetlands and estuarine habitats, mainly in south-east and south-west Australia. They favour permanent fresh waters dominated by sedges, rush, reeds and cutting grass growing over muddy or peaty substrates. Brackish water is tolerated in estuaries and tidal wetlands especially near the mouths of creeks. Sea coasts are avoided. The Australasian bittern is identified as only occasionally in estuarine habitats and preferring permanent freshwaters. • The Australasian bittern is endemic to southeast and south-west Australia and New Zealand. They are sedentary in permanent habitat. Reporting rates indicate no seasonal movement occurs in Victoria. • They are an aquatic predator, primarily feeding on eels, frogs and freshwater crayfish. Records indicate occasional consumption of spiders, insects, fish (other than eels), snakes, lizard, birds, rats, mice, leaves and fruit, but this is anticipated to comprise a small component of their diets.
Royal spoonbill – aquatic tertiary - quaternary consumer and carnivore	*Royal spoonbill* (Birdlife Australia 2023c): • The Royal spoonbill is a large (74—81 cm long) white waterbird with a wingspan of approximately 120 cm. They are reported to range in bodyweight from 1,500—1,800 g • The Royal spoonbill resides in sheltered marine habitats, wet grasslands, permanent waters. They prefer large areas of water, using both fresh and saline, open or vegetated areas. Favoured coastline habitats include estuaries and inlets. They are less common in saline swamps. They are sedentary at most coastal sites in Australia. • They use five methods of catching prey including probing. The reported stomach contents indicate 24—42 % fish (by dry volume), 0—33 % insects (various water bugs) and 25—66% crustaceans. Molluscs and plants accounted for <1%.
Osprey - aquatic quaternary consumer and carnivore	*Osprey* (Birdlife Australia 2023d): • The osprey is a medium sized piscivorous raptor (50—65 cm long), with a wingspan of 145—170 cm. The reported weight ranges from 1—1.5 kg. • They prefer littoral habitats, terrestrial wetlands and coastal lands and requires sheets of clear open water for fishing. The osprey is mostly sedentary but forages over a wide area and usually nests within 1 km of waterways. • The osprey eats mostly fish but also small terrestrial vertebrates, seabirds and crustacea. Remains observed at feeding roosts included 85% fish, 12% birds and 3% crustaceans.
Migratory and partially migratory birds	
Long-toed stint - aquatic secondary - tertiary consumer and invertivore	*Long-toed stint* (Birdlife Australia 2023e): • The long-toed stint is a very small Sandpiper (13—16 cm long) with a wingspan of 26.5—30.5 cm. The Long-toed stint is reported to range in bodyweight from 20—45 g. • The long-toed stint occurs in a variety of terrestrial wetlands and prefers freshwater or brackish wetlands with areas of muddy shoreline. The long-toed stint also frequents margins of permanent wetlands such as reservoirs and artificial lakes. • Migratory, though routes and timing of migration is not well known. Within Australia, movement is regular between temporary wetlands. Very few remain in Australia during winter. Typically, their residency in Australia is limited to summer. • They forage on wet mud or in shallow water. The long-toed stint mainly eats from freshwaters by gleaning from surface of mud and water, occasionally turning detritus. The dietary composition is poorly known. They are identified as omnivorous eating insects, crustaceans, molluscs and seeds.

Species	General description
Great egret - aquatic tertiary - quaternary consumer and predator	*Great egret* (Birdlife Australia 2023f): • The great egret is a large bird (83—103 cm long) with a small wingspan of 40—45 cm. The great egret is reported to range in bodyweight from 700—1,200 g. • The great egret occurs in a variety of terrestrial wetlands. They generally avoid deep or flooded areas. They regularly use saline habitats, including estuarine mudflats, but typically as drought refuges in Victoria (Summer to Autumn). Nesting occurs in inland freshwater swamps, lakes or rivers. Roosting occurs in trees. • The great egret is identified as a dispersive bird with regular seasonal movements, and possibly migratory. • The reported frequency of prey in stomachs analysed indicate they are primarily piscivorous (100% frequency), but also regularly eat pelagic invertebrates (40%) and other insects.
Mammals	
Rakali - aquatic secondary consumer and omnivore	Rakali size and general features (APC, 2025) and *Rakali Hydromys chrysogaster* (iNaturalist, 2025): • The rakali (or water rat) is an Australian native rodent 231—345 mm in length, and weighing between 400—1,275 g. • The rakali lives near permanent water of various salinities, often found along wetlands, rivers, estuaries and beaches. rakalis frequently live in polluted urban water bodies with populations present across Australia. • They are opportunistic and feed on fish, aquatic insects, mussels, crustaceans. To a lesser extent they will consume small water birds and mammals. They consume little plant matter.

6.3.2 Surface water intake

The rate of surface water intake for each of the identified ROC has been estimated as consistent with the method presented in US EPA (1993). This is consistent with the approach presented in SERDP (2020).

The following equation was used to estimate the surface water intake for birds:

$$IR_{SW} = 0.059 * \left(BW(kg)\right)^{0.67}$$

The following equation was used to estimate the surface water intake for mammals:

$$IR_{SW} = 0.099 * (BW(kg))^{0.90}$$

Where: IR_{SW} is the ingestion rate of surface water in litres per day.

BW is the bodyweight of the receptor in kg (**Table 6.2**).

The calculated ingestion rates are provided in **Appendix D**.

6.3.3 Dietary intake

The rate of food intake for each of the identified ROC has been estimated as consistent with the method presented in Nagy KA (2001) and US EPA (1993), which is consistent with the approach presented in SERDP (2020).

The equations for dietary intake have been estimated for each of the receptors as both dry matter intake (DMI) and fresh matter intake (FMI). Concentrations of PFOS+PFHxS in biota have been measured on a fresh matter basis. To estimate dietary doses of PFOS+PFHxS, the fresh matter intake rates were required to be estimated.

Nagy KA (2001) presents a comprehensive analysis of the food intake requirements for wild animals. The data are presented for each of the species considered in the study and then an allometric equation provided to

facilitate estimates of food intake requirements of similar species based on their foraging and feeding habits. The allometric equations were generated for groups of species based on statistical regression analyses. Each of the species included in the analysis were assigned one or more group identifiers (e.g. all mammals, marsupials and androdentia) and their corresponding food intake and bodyweights were plotted on a $\log_{10}$ transformed x-y scatter plot. A linear regression was undertaken for each of the datasets which measured the y-intercept (i.e. 'a' parameter) and the slope of the resulting line (i.e. 'b' parameter). Each of the groups was then assigned an 'a' and 'b' parameter which can be used to estimate the food intake of similar species where the bodyweight is known, as per the equation presented following.

Multiple group identifiers are provided that are potentially relevant to each of the species identified in **Table 6.2**. JBS&G has reviewed the allometric equations and parameters which may apply to each of the species and has adopted the group identifier which would result in the highest predicted food intake rate.

The predictive equation takes the form as presented following:

$$FIR = a * BW^{b}$$

Where: FIR is the food ingestion rate of biota in g per day.

a and b are the y intercept and slope of the line equation generated by linear regression of the $\log_{10}$ transformed food intake to bodyweight ratios of similar species and have been obtained from Nagy KA (2001).

BW^{b} is the bodyweight of the receptor in grams (**Table 6.2**).

The calculated ingestion rates are provided in **Appendix D**. It is noted that the FMI and DMI are calculated in the same manner using different 'a' and 'b' values.

Based on the dietary preferences of species summarised in **Table 6.2**, and in accordance with the general aquatic food groups identified for ecological food groups, a proportion of dietary FMI has been estimated for each of the food groups for each of the receptors.

In estimating the dietary intakes, it is noted that specific dietary intakes for species are very rarely documented within the available scientific literature. Where available, such parameters have been stated in **Table 6.2**. These parameters are subject to professional judgement, with the effects of adopting alternative parameters considered as part of the sensitivity assessment (**Section 9.4** and **Section 9.5**). It further noted that the effect of the assumptions may be consequential where the relevant dietary components are materially different in concentration (i.e. 90% fish to 10% plants vs. 90% plants to 10% fish). It is considered that the available information is sufficient to ensure that such large differentials in selected parameters would be unlikely.

6.3.4 Daily sediment ingestion

The rate of sediment intake has been estimated consistent with the method presented in US EPA (1993), based on an incidental intake proportional to intake of dietary food sources.

The sediment intake proportions are considered as dry weight and have been estimated on a worse case basis using professional judgement, by review of the intake rates presented in US EPA (1993) for similar species. The sediment/soil percentage of dietary intake (based on dry weight) varies from <2%—30%.

The calculated soil and sediment ingestion rates are provided in **Appendix D**.

6.3.5 Home range and area use factors

The area use factor (AUF) is an exposure factor which describes the proportion of time that a given representative ROC spends within a specific feeding area. This factor effectively represents the proportion of ingestion of media exposure which will occur within one specific portion of a broader home range. Failure to consider the AUF can lead to overly conservative estimates of risk, particularly where an exposure area represents a relatively limited dietary source for a receptor (e.g. a migratory bird or raptor). AUFs have been selected to balance the risk of both under- and overestimation of potential PFAS risks.

A review of reputable sources of information has been undertaken to estimate the proportion of time each representative ROC spends living, foraging and predating within the AOI. Reputable quantitative data relevant to estimating the home-ranges of specific species is limited. Consideration has been given to adoption of factors which represent conservative professional judgements for each species, with the rationale for adoption provided in **Table 6.3.**

A simplifying assumption has been made, which is to separately assess the potential for exposure based on each individual water body within the AOI, rather than to proportionate an anticipated assessment area wide AUF by waterbody sizes (e.g. an AUF of 1 as made up by 0.25 in each water body). This decision has been made to support potential future decisions on a per waterbody basis and is considered to be generally conservative as it will overestimate the maximum exposure.

Laverton RAAF Swamp is identified as a small water body which represents a relatively lower potential to provide habitat, foraging and predation potential to the identified ROCs. A minimum AUF of 0.05 is adopted for Laverton RAAF Swamp, with some ROCs potentially adopting a greater exposure, and some migratory species adopting a lower exposure.

JBS&G has sought specialist ecologist advice from JBS&G ecologists and Elgin in relation to the AUF assumptions, which are significant with respect to the overall assessment of risk.

Table 6.3 Receptors of concern – area use factors

Species	Freshwater		Brackish/ marine		Comment
	Laverton RAAF Swamp	Skeleton Creek (non-tidal)	Sanctuary Lakes	Cheetham Wetlands	
Resident/ nomadic Birds					
Black swan	0.25	1	1	1	An AUF of 1 has been adopted for the Black swan in all large water bodies. The Black swan has frequently been observed within the AOI, with preferred habitats including both freshwater and saltwater lakes, swamps and rivers. An AUF of 0.25 has been applied to Laverton RAAF Swamp based on its proportionally lower size and black swan's anticipated preference for other water bodies
Hooded plover	0.1	0.5	1	1	An AUF of 1 has been adopted for the hooded plover in large saline water bodies. It is not anticipated to be forage/reside further inland, based on its food sources and habitat preferences. A lower AUF is adopted for Skeleton Creek based on its occasional use of tidal estuaries. A minimum resident bird AUF of 0.1 has adopted for Laverton RAAF Swamp to account for infrequent/incidental use.
Dusky moorhen	0.25	1	0.25	0.25	An AUF of 1 has been adopted for the dusky moorhen in Skeleton Creek based on their preference for freshwater bodies. A proportionally lower AUF has been adopted for Laverton RAAF Swamp based on its small size. To account for occasional use of more saline environments, an AUF of 0.25 has been adopted for both Sanctuary Lakes and Cheetham Wetlands.

Species	Freshwater		Brackish/ marine		Comment
	Laverton RAAF Swamp	Skeleton Creek (non-tidal)	Sanctuary Lakes	Cheetham Wetlands	
Australasian bittern	0.1	0.5	0.25	0.25	An AUF of 0.5 has been adopted for the Australasian bittern in Skeleton Creek based on their preference for freshwater bodies. The Australasian bittern is noted to prefer open fresh water bodies and an AUF of 1 considered unnecessarily conservative. To account for occasional use of more saline environments, an AUF of 0.25 has been adopted for both Sanctuary Lakes and Cheetham Wetlands. A minimum resident bird AUF of 0.1 has adopted for Laverton RAAF Swamp to account for infrequent/incidental use.
Royal spoonbill	0.25	0.5	1	1	An AUF of 1 has been adopted for large water bodies based on the royal spoonbill's affinity for both various water bodies and vegetation conditions. A proportionally lower AUF has been adopted for Skeleton Creek and Laverton RAAF Swamp based on their smaller sizes and the larger / preferable nearby water bodies.
Osprey	0.05	0.1	0.1	0.1	An AUF of 0.1 has been adopted for the osprey, which is an apex predator that prefers open waterbodies for predation. A proportionally lower AUF has been adopted for Laverton RAAF Swamp consistent with its smaller size and the larger / preferable nearby water bodies.
Migratory/Partly Migratory Birds					
Long-toed stint	0.125	0.5	0.5	0.5	The long-toed stint is a migratory bird which breeds in the northern hemisphere and migrates to Australia for the summer. Its residency in Australia is typically <6 months per year. An adjustment factor of 0.5 has been applied to its AUF to account for its anticipated residency period. Based on its affinity for invertebrates and muddy flats, a residency adjusted AUF of 0.5 (i.e. 1 x 0.5) has been adopted for Sanctuary Lakes, Skeleton Creek and Cheetham Wetlands. Based on the small size of Laverton RAAF Swamp, a residency adjusted AUF of 0.125 (0.25 * 0.5) has been adopted.
Great egret	0.05	0.5	0.5	0.5	The great egret is a dispersive migratory bird which uses coastal estuarine mudflats as a summer-autumn refuge. Its residency in coastal areas is typically <6 months per year. An adjustment factor of 0.5 has been applied to its AUF to account for its anticipated residency period. Based on its affinity for invertebrates and muddy flats, a residency adjusted AUF of 0.5 (i.e. 1 x 0.5) has been adopted for Sanctuary Lakes, Skeleton Creek and Cheetham Wetlands. Based on the absence of large fish, a residency adjusted AUF of 0.05 (i.e. 0.1 x 0.5) has been adopted for Laverton RAAF Swamp.
Mammal					

Species	Freshwater		Brackish/ marine		Comment
	Laverton RAAF Swamp	Skeleton Creek (non-tidal)	Sanctuary Lakes	Cheetham Wetlands	
Rakali	0.1	1	0.5	1	The rakali is reported as having a home range of 1 to 4 km of waterways with a foraging distance of 0.2 to 1 km overnight Speldewinde (2013). An AUF of 1 has been adopted for large water bodies with fringing vegetation. A proportionally reduce AUF has been attributed the smaller water body (Laverton RAAF Swamp) and the urbanised location of Sanctuary Lakes (i.e. not a preferred habitat based on available literature).

6.4 Dose estimation

Dosages have been estimated by multiplying the media intake rate for surface water (L/day), soil and sediment (g/day) and various biota food groups (g/day) by the EPCs provided in **Table 6.1**. The doses were estimated on a per medium basis, as well as total sum of pathways, and are provided in **Appendix D**.

The total daily dose (TDD) was estimated in accordance with the following equation which is adapted from US EPA (1993) equation 4-8:

$$Total\ Daily\ Dose = AUF * \left(\frac{W_{IR} * C_{SW} + DMI * (P_{sed} * C_{sed}) + FMI * (\sum P_{BIO} * C_{BIO})}{BW} \right)$$

Where: the total daily dose is in mg/kg.bw/day.

AUF is the area use factor (-).

C_{SW} is the concentration in surface water (mg/L).

C_s and C_{sed} are the concentrations in soil and sediment, respectively (mg/kg).

W_{IR} is the water ingestion rate (L/day).

DMI is the food ingestion rate (g.dm/day).

FMI is the food ingestion rate (g.ww/day).

P_{sed} are the proportion of daily dry matter intake attributable to incidental consumption of soil and sediment.

P_{BIO} is the proportion of wet-weight dietary intake attributable to each category of biota (i.e. terrestrial plants and invertebrates, aquatic vegetation, pelagic invertebrates, benthic invertebrates, prey fish and predatory fish (-).

C_{BIO} is the concentration in category of biota (i.e. terrestrial plants and invertebrates, aquatic vegetation, pelagic invertebrates, benthic invertebrates, prey fish and predatory fish (mg/kg).

BW is the bodyweight (g).

7. Toxicity assessment

7.1 General

PFAS represent a broad group of chemical compounds which are currently being actively researched with respect to factors including (but not limited to) laboratory quantification of individual PFAS compounds and toxicity. PFAS are a group of chemicals which include individual compounds which have been declared as persistent organic pollutants (POPs) under the Stockholm Convention. POPs are defined as follows by the United Nations Environment Programme (UNEP):

> *"… organic chemical substances, that is, they are carbon-based. They possess a particular combination of physical and chemical properties such that, once released into the environment, they:*
>
> - *remain intact for exceptionally long periods of time (many years).*
> - *become widely distributed throughout the environment as a result of natural processes involving soil, water and, most notably, air.*
> - *accumulate in the living organisms including humans, and are found at higher concentrations at higher levels in the food chain.*
> - *are toxic to both humans and wildlife".*

PFAS are one of many POPs and the following definitions provided in *Australian and New Zealand guidelines for fresh and marine water quality* (ANZECC/ARMCANZ, 2000) are considered to remain as relevant to PFAS as the contaminants which were considered to be POPs at the time these documents were prepared (e.g. polychlorinated biphenyls and organochlorine pesticides):

- *"Bioaccumulation: General term describing a process by which chemical substances are accumulated by aquatic organisms from water, either directly or through consumption of food containing the chemicals.*
- *Bioconcentration: A process by which there is a net accumulation of a chemical directly from water into aquatic organisms resulting from simultaneous uptake (e.g. by gill or epithelial tissue) and elimination.*
- *Bioconcentration factor (BCF): A unitless value describing the degree to which a chemical can be concentrated in the tissues of an organism in the aquatic environment. At apparent equilibrium during the uptake phase of a bioconcentration test, the BCF is the concentration of a chemical in one or more tissues of the aquatic organisms.*
- *Biomagnification: Result of the processes of bioconcentration and bioaccumulation by which tissue concentrations of bioaccumulated chemicals increase as the chemical passes up through two or more trophic levels. The term implies an efficient transfer of chemicals from food to consumer, so that residue concentrations increase systematically from one trophic level to the next."*

At the time of this report, a total of 30 PFAS compounds are typically quantified using commercially available NATA accredited methods. Of these 30 compounds, the Australian Government only provides criteria for the protection of ecological receptors-for PFOS, PFOA and PFHxS.

The Australian Government currently provides limited guidance regarding the toxicity of PFOS, PFHxS and PFOA to ecological receptors, with the available guidance largely referring to other information sources. The available Australian Government guidance is summarised in **Section 3.2** and the international guidance relied upon by the Australian Government is summarised in **Section 3.3**.

7.2 Key toxicity testing concepts

National and international ecological risk assessment guidance relies upon toxicological assays which relate observations of effects to concentrations or doses of contaminants. The key toxicological testing measures referred to within this detailed ERA are described following:

- NOEC – no observed effect concentration. This is the highest concentration in a medium (e.g. soil or surface water) of a chemical or substance at which no statistically significant adverse effect was observed on the test organisms in comparison to controls. A NOEC is preferred over a LOEC to assess potential risks at it represents a known no effect dose and does not require adjustment with additional safety factors.
- LOEC – lowest observed effect concentration. This is the lowest concentration in a medium (e.g. soil or surface water) of a chemical or substance at which a statistically significant effect was observed on the test organisms in comparison to controls. The LOEC is intended to identify a minimum 'unsafe' concentration, and is typically reported as the next incremental concentration above the NOEC.
- EC10 – 10% effect concentration. This is the concentration at which a measurable non-lethal effect (e.g. reduced growth) occurs in 10% of the test population, or the concentration at which a measured response changes 10% relative to controls.
- LC10 – 10% lethal concentration. This is the concentration expected to cause mortality in 10% of the test organisms over a defined period of exposure.
- IC10 – 10% inhibition concentration. This is the concentration expected to inhibit a biological function (e.g. growth rate) or process by 10% compared to controls.
- NOAEL – no observed adverse effect level. This is the highest estimated dose of a toxicant of a chemical or substance at which no adverse effects were observed on the test organisms. The NOAEL is intended to identify a maximum 'safe' dose of a chemical, typically normalised to mass of chemical per mass of organism per unit time (.e.g mg/kg.bw/day). The NOAEL can be used to assess both ecological species and can also be used in human toxicological assessments. In general, a NOAEL is preferred over a LOAEL to assess potential risks at it represents a known no effect dose and does not require adjustment with additional safety factors.
- LOAEL – lowest observed adverse effect level. This is the lowest estimated dose of a toxicant (e.g. PFOS) of a chemical or substance at which an adverse effect was observed on the test organisms. The LOAEL is intended to identify the minimum 'unsafe' dose of a chemical, typically normalised to mass of chemical per mass of organism per unit time (.e.g mg/kg.bw/day). The NOAEL can be used to assess both ecological species and can also be used in human toxicological assessments.

Tier 1 criteria for lower order terrestrial receptors (i.e. plants and invertebrates) and for aquatic species (e.g. amphibians, plants, fish), the toxicological testing data is used to develop species sensitivity distribution (SSD), whereby the measured toxicological testing data is are mapped to a distribution and a line of best fit applied to interpolate the concentration of a toxicant in a medium (e.g. soil) at which a given percentage of species are expected to be observed to be affected by the presence of the contaminant.

Tier 1 criteria for higher order species (e.g. mammalian receptors), toxicological testing data is reviewed to identify the most appropriate LOAEL / NOAEL on which to estimate a conservative tolerable daily intake (TDI) or daily threshold effects does (DTED). The DTED and TDI typically incorporates one or more safety factors to account for limitations on the available toxicological effects (e.g. inter- or intra-species variation, sub-chronic to chronic study).

7.3 Aquatic species toxicity

7.3.1 Aquatic receptor direct exposure toxicity assessment

Aquatic receptor direct toxicity has been assessed by the comparison of measured surface water concentrations to chronic NOEC values. Reference has been made to ANZG (2026) which presents an extensive dataset of chronic PFOS freshwater toxicity data for 37 species from 11 taxonomic groups upon which the current tier 1 criteria for PFOS are based.

The criteria presented in ANZG (2026) were derived in accordance with the revised method for deriving water quality guideline values, namely *Method for deriving Australian and New Zealand water quality guideline values for protecting aquatic ecosystems from toxicants – update of 2018 version Prepared for the Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (Warne *et al.* 2025) and considered formal modality checks and quality screening.

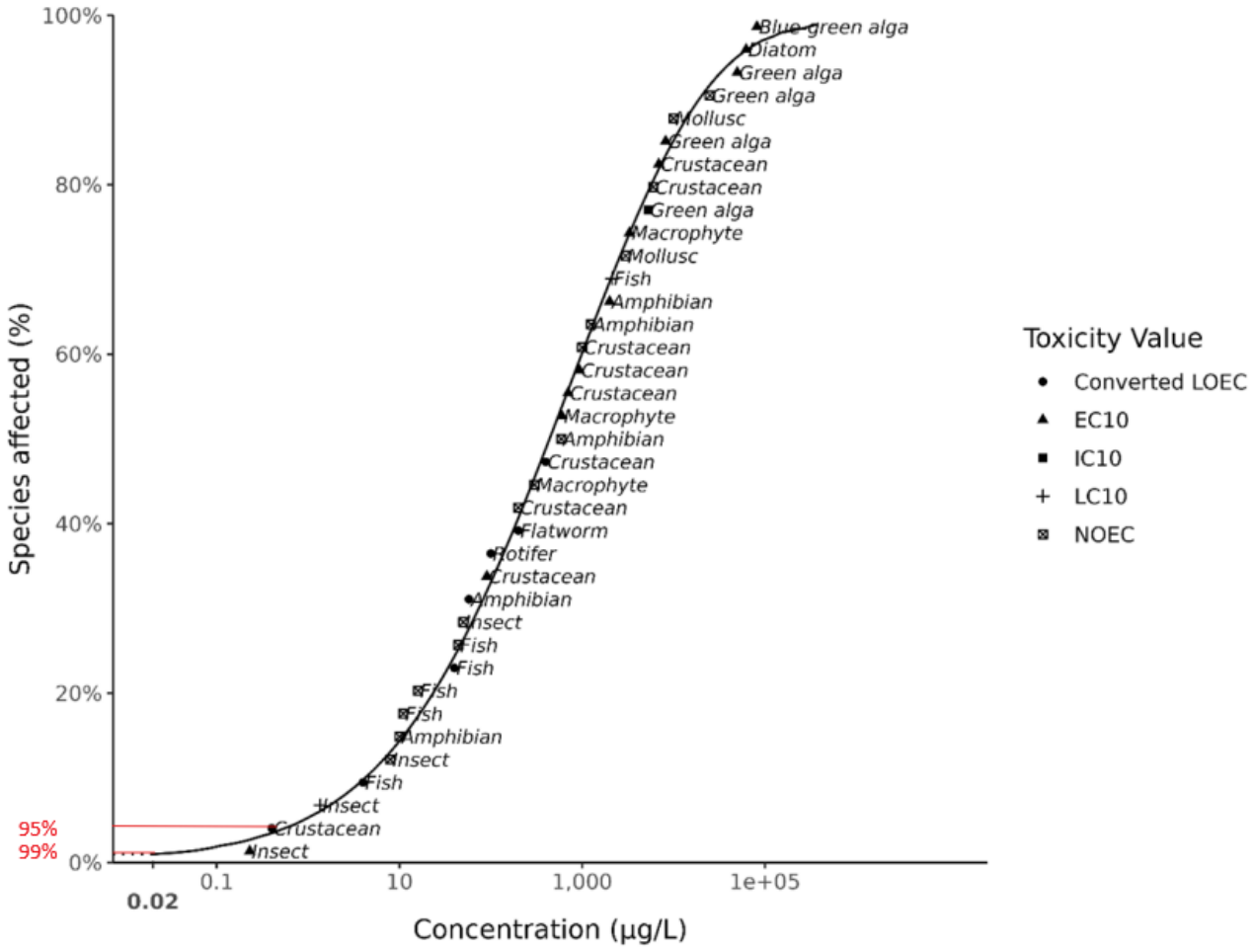


Plate 2 ANZG (2026) species sensitivity distribution, PFOS in freshwater

The SSD presented in ANZG (2026) was constructed by compiling chronic toxicity endpoints which passed the quality control screening. For each species, the most sensitive chronic toxicity value was selected following the hierarchy established in Warne et al. (2025). Ther compiled values were then ranked in order of increasing sensitivity and fitted to a statistical distribution (i.e. the SSD) which described the proportion of species affected as a function of the exposure concentration. The SSD allows the concentration which is protective of a nominated percentile of the tested species to be estimated by interpolation. The nominated DGVs are the interpolated concentrations which are protective of 99%, 95%, 90% and 80% of species.

ANZG (2026) additionally identifies that biota within the water body may express PFOS in tissue at concentrations which exceed the PFAS NEMP (HEPA 2026) mammalian tissue screening guidelines even if the water concentration is below the 99% spp. DGV. The criteria recommended in ANZG (2026) are summarised in **Table 7.1**.

Table 7.1 ANZG (2026) Species sensitivity distributions

Level of species protection	DGV for PFOS anion in freshwater (µg/L)
99%	0.02
95%	0.9
90%	4.0

[1] For the purpose of this assessment, JBS&G has assumed that PFHxS is as toxic as PFOS, which is consistent with the approach for other media as presented in the PFAS NEMP (HEPA 2026).

ANZG (2026) presents single chronic toxicity values used to derive PFOS DGVs in freshwater, which are summarised in **Table 7.2**.

Table 7.2 ANZG (2026) Toxicity data for PFOS (by Taxonomic Group)

Taxonomic Group	No. species	Estimated chronic value (µg/L)	Sensitive end-point
Amphibians			
Amphibian	5	10 to 2000 µg/L	Tadpole, development (NOEC)
Plants / Algae			
Blue-green algae	1	82 000 µg/L	Growth, biomass (EC10)
Green microalgae	4	8200 µg/L	Growth, biomass (IC10)
Macrophyte	3	300 to 3300 µg/L	Growth (NOEC)
Diatom	1	62 300 µg/L	Growth, cell density (EC10)
Invertebrates			
Crustacean	6	0.4 to 6900 µg/L	Neonate reproduction (EC10): 90.6 µg/L[1]
Insect	4	0.23 7.95 µg/L	Larval growth (EC10)
Mollusc	3	3000 to 10 000 µg/L	Adult, survival (NOEC)
Flatworm	1	200 µg/L	Fragment, reproduction (LOEC)
Rotifer	1	100 µg/L	Neonate, population (LOEC)
Vertebrates			
Fish	6	4 to 2120 µg/L	Embryo, F1 generation, reproduction (LOEC)

[1] The EC10 based chronic NOEC is adopted in preference to the LOEC based NOEC. Both end-points assess reproduction as the toxicological effect. According to Section 3.2.4 of *Method for deriving Australian and New Zealand water quality guideline values for protecting aquatic ecosystems from toxicants – update of 2018 version* (Warne *et al.* 2025) the EC10 based NOEC is preferable to LOEC based NOEC as no conversion is required to be applied.

The adopted assessment endpoints are summarised:

- Amphibians: 10 µg/L (tadpole development NOEC).
- Plants/algae: 300 µg/L (growth NOEC).
- Crustaceans: 90.6 µg/L (neonate reproduction, EC10 based NOEC).
- Insects: 0.23 µg/L (larval growth, EC10 based NOEC).
- Mollusc: 3000 µg/L (adult survival, NOEC).
- Flatworms: 200 µg/L (fragment reproduction, NOEC).

- Rotifers: 100 µg/L (neonate population, LOEC based NOEC).
- Fish: 4 µg/L (embryo, F1 generation, reproduction LOEC based NOEC).

In applying the freshwater criteria to marine/saline water bodies, consideration has been given to the absence of nationally endorsed surface water criteria based on marine toxicity data, and the precedent established in the PFAS NEMP (HEPA 2026) of applying the freshwater criteria to marine water environments as an interim measure. Within this detailed ERA, the freshwater criteria and associated toxicity data are adopted to assess potential risks to aquatic receptors. Notwithstanding, consideration has been given to marine species toxicity assessments for PFAS, namely:

- *Marine ecotoxicity evaluation of 10 per- and poly-fluoroalkyl acids using three USEPA short-term chronic bioassays* (Hayman *et al.* 2026). Hayman *et al*. (2026) published measured or estimated NOECs in surface water for PFOS for three species (giant kelp, sea urchin and mussels) which ranged between 290 to 1030 µg/L.
- *Chronic effects and thresholds for estuarine and marine benthic organism exposure to perfluorooctane sulfonic acid (PFOS)-contaminated sediments: Influence of organic carbon and exposure routes* (Simpson *et al*. 2021). Simpson *et al.* (2021) reviewed toxicity effects for 11 species of marine benthic organisms and developed a SSD which considered NOECs and chronic EC10s between 100 and 4200 µg/L.

Review of these studies indicates that the most sensitive end-points are in the same order for similar taxa, noting that neither study published fish or insect toxicity data. Hayman *et al* (2026) provides data which indicates that the toxicity of PFHxS is lower than PFOS, supporting that the approach of comparing PFOS+PFHxS concentrations to PFOS criteria is likely to be conservative. Consideration has not been given to development of a marine water spp. DGV based on the available studies.

7.3.2 Aquatic receptor indirect (bioaccumulation) toxicity assessment

The assessment of indirect (bioaccumulation) risks has been focused on higher order species. Bioaccumulation by lower order species is considered to represent lower indirect (bioaccumulation) risks based on the affinity of PFOS+PFHxS to bioaccumulate more in crustaceans and fish than in plants and algae, as indicated by *Evaluation of published bioconcentration factor (BCF) and bioaccumulation factor (BAF) data for per- and polyfluoroalkyl substances across aquatic species* (Burkhardt, 2021) and SERDP (2020). Lower order species either do not consume biota for energy (i.e. plants/algae) or consume plants, algae and microorganisms as their primary food source (e.g. crustaceans). Higher order species such as predatory fish primarily consume other vertebrate and macroinvertebrate biota and accordingly have a relatively high dietary exposure to PFOS+PFHxS.

The default approach to evaluating potential risks to higher order aquatic receptors is to compare EPCs to the spp. DGV which is one level higher than the default value for the waterbody (e.g. for a waterbody afforded a 95% spp. DGV, a 99% spp. DGV would be applied to assess for potential bioaccumulation risks). The SSDs developed for PFOS in aquatic environments is highly sensitive to the input of an individual toxicity data point (as discussed above) and the application of the 99% spp. DGV by default to assess higher order species for bioaccumulation risks to aquatic species potentially results in an unnecessary level of conservatism.

ECCC (2018) presents a federal fish tissue guideline (FTTG) which is intended to protect fish from the direct adverse effects of bioaccumulated contaminants. The FTTG was developed on the basis of estimating the fish tissue concentration which would be associated with an exceedance of the aquatic ecosystem health guideline level (6.8 µg/L). This approach has the effect of being able to account for both bioconcentrated (i.e. water to fish tissue) and biomagnified (i.e. prey/food items to fish tissue) contaminants.

ECCC (2018) calculated a FTTG using a bioaccumulation factor equation. The equation involves multiplying the federal environmental quality guideline for the maintenance of aquatic ecosystem health (6.8 µg/L) by the geometric mean PFOS water to biota uptake ratio for fish (1378 L/kg), obtained from a number of studies undertaken between 2002 and 2012. The ECCC (2018) FTTG is 9.4 mg/kg, as derived using the following equation:

$$FTTG = Environmental\ quality\ guideline\ \left(6.8\ \frac{\mu g}{L}\right) * Geomean\ uptake\ ratio\ \left(1378\frac{L}{kg}\right) * 10^{-3}\left(\frac{mg}{\mu g}\right)$$

ECCC (2018) reported that the FTTG was corroborated by a study undertaken on bluegill in which water and fish tissue PFOS concentrations were associated with observed toxicological effects. The study reported a fish tissue NOEC of 81 mg/kg for bluegill exposed to PFOS in water at a concentration of 86 µg/L. Dividing the NOEC by a safety factor of 10 resulted in a value of 8.1 mg/kg, which is similar to the value determined by the bioaccumulation factor that underpins the FTTG (9.4 mg/kg). Acknowledging the uncertainties which are inherent when using BAFs, this provides an important line of evidence to support the BAF approach in this instance.

The FTTG is based on the Canadian maintenance of aquatic ecosystem guidelines. Although the Canadian FTTG is based on two different approaches (i.e. evaluation of adverse effects associated with differing water concentrations, and evaluation of adverse effects associated with differing tissue concentrations), as a conservative measure JBS&G has reduced the FTTG by consideration of the Australian spp. DGV. The 90% (Skeleton Creek) and 95% (Cheetham Wetlands and Laverton RAAF Swamp) spp. DGVs have been considered below rather than the 99% spp DGV on the basis that a) these are the relevant DGVs for the water bodies of interest, and b) the fish tissue concentration data collected represents a measurement of bioaccumulation (i.e. adopting a higher level of protection to account for bioaccumulation is not warranted). Adopting a higher BAF (e.g. one based on Burkhardt 2021) would raise the FTSB and accordingly to remain conservative, the ECCC (2018) BAF has been retained. Adjustment of the FTTG by application of the spp. DGV applicable to each of the AOI instead of federal environment quality guideline results in the following fish tissue screening benchmark (FTSB), which has been considered to assess potential bioaccumulation risks to aquatic receptors, as rounded to two significant figures:

- Cheetham Wetlands (including Skeleton Creek lower reaches) and Laverton RAAF Swamp, consistent with slightly to moderately disturbed ecosystems (95 % spp. DGV, 0.9 µg/L): 1.2 mg/kg.
- Skeleton Creek (upper reaches), Addison Wetlands and Sanctuary Lakes (90% spp. DGV, 4.0 µg/L): 5.5 mg/kg

Whilst not developed based on amphibian or invertebrate specific studies, the FTSB value has been adopted to screen for potential amphibian and invertebrate bioaccumulation risks. It is noted that, based on the available toxicological studies reviewed in ANZG (2026) and the average BAFs documented for amphibians and a range of invertebrates (SERDP (2020) and Burkhard (2021)), it is considered that the relatively lower PFOS uptake by higher-order species other than fish is offset by their relatively lower sensitivity to PFOS exposure and that the adopted FTSB is appropriate to screen for potential amphibian and invertebrate bioaccumulation risks.

To add an additional layer of conservatism, the 95 % spp. DGV based FTSB has been adopted (i.e. 1.2 mg/kg) to assess all water bodies.

7.3.3 Summary of adopted aquatic toxicological assessment endpoints

The adopted aquatic toxicological assessment endpoints are summarised in **Table 7.3**.

Table 7.3 Adopted aquatic toxicological assessment endpoints

Aquatic receptor group	Direct contact[1]	Indirect (bioaccumulation)[2]
Amphibians	10 µg/L (surface water)	1.2 mg/kg.ww (biota tissue)
Plants/algae	300 µg/L (surface water)	Not relevant
Crustaceans	90.6 µg/L (surface water)	1.2 mg/kg.ww (biota tissue)
Insects	0.23 µg/L (surface water)	Not relevant
Molluscs	3000 µg/L (surface water)	Not relevant
Flatworms	200 µg/L (surface water)	Not relevant
Rotifers	100 µg/L (surface water)	Not relevant
Fish	4 µg/L (surface water)	1.2 mg/kg.ww (biota tissue)

[1] Adopted from **Table 7.2**

[2] Adopted from **Section 7.3.2.**

7.4 Mammalian and avian species toxicity

7.4.1 Mammalian species tolerable daily intake

The mammalian BGV for PFOS+PFHxS presented in the PFAN NEMP (HEPA 2026) is based on a TDI for PFOS adopted directly from ECCC (2018). The PFAS NEMP (HEPA 2026) states that adoption of the PFOS TDI allows for uncertainty and potential similar properties and toxicities of PFHxS with PFOS. ECCC (2018) states the following in relation to the mammalian toxicity review for PFOS:

> *"Nine studies were evaluated for four different species, cynomolgus monkeys (Macaca fasicularis), rabbits (Oryctolagus cuniculus), mice and rats. TDIs, calculated as the critical toxicity value divided by an uncertainty factor of 100, ranged from 1.1 to 112 µg/kg bw·d. The lowest TDI of 1.1 µg/kg bw·d was reported for rats and came from a two-year, chronic toxicity diet study (Covance Laboratories 2002). The mammalian FWiDG of 4.6 µg/kg food was calculated by dividing the minimum observed TDI of 1.1 µg/kg bw·d by the maximum mammalian FI:BW of 0.24 kg food/kg bw·d for American mink (CCME 1998)"*.

The soil indirect exposure criterion for PFOS was developed using a mammalian DETD of 0.01086 mg/kg.bw/day on the basis of a lowest observed adverse effect level (LOAEL) (0.1086 mg/kg.bw/day) and an uncertainty factor of 10. The approach for assessment of mammals via direct dietary exposure and indirect bioaccumulation from soil source utilise different TRVs.

The TDI of 1.1 µg/kg bw/d (or 0.0011 mg/kg.bw/day) has been adopted as the TRV in this report for assessing risks to mammalian receptors.

7.4.2 Avian species tolerable daily intake

The avian BGV for PFOS+PFHxS presented in the PFAS NEMP (HEPA 2026) is based on a TDI for PFOS adopted directly from ECCC (2018). The PFAS NEMP (HEPA 2026) states that adoption of the PFOS TDI allows for uncertainty and potential similar properties and toxicities of PFHxS with PFOS. ECCC (2018) states the following in relation to the avian toxicity review for PFOS:

> *"Avian: Dietary PFOS toxicity to three avian species, mallard (Anas platyrhynchos), northern bobwhite (quail) (Colinus virginianus) and Japanese quail (Coturnix coturnix japonica) were evaluated. For developing the avian FWiDG the selected CTV is the LOAEL dose rate in northern bobwhite of 772 µg/kg bw·d that resulted in reduced chick survival post exposure. By applying an UF of 100, a TDI of 7.7 µg/kg bw·d is produced and an avian FWiDG of 8.2 µg/kg food is calculated by dividing that TDI by the maximum avian FI:BW of 0.94 kg food/kg bw·d for Wilson's storm-petrel (CCME 1998). Given the long duration of both the avian and mammalian studies, the uncertainties relate primarily to lack of*

knowledge of interspecies sensitivity given the paucity of wildlife species in the data set. Therefore an uncertainty factor of 100 was selected (CCME 1998) for both the avian and mammalian dietary guidelines."

The TDI of 7.7 µg/kg bw/d (or 0.0077mg/kg bw/d) has been adopted as the TRV in this report for assessing risks to avian receptors.

7.4.3 Summary of adopted TRVs

Table 7.4 presents a summary of the adopted TRVs. The ECCC (2018) values have been adopted as consistent with the approach in the PFAS NEMP (HEPA 2026). JBS&G has adopted the TRV presented for mammalian receptors in place of the DETD, as this is consistent with the approach used for assessing direct toxicity and is conservative. The potential effect of considering the DETD value is discussed in the sensitivity assessment (**Section 9**). Background exposures have not been considered on the basis that the detailed ERA aims to focus upon the contribution of the AOI to risks. Risks associated with other exposure areas cannot be reliably estimated (e.g. the Siberian nesting grounds of the Long-toed stint).

JBS&G has assumed that there is no background intake of PFOS+PFHxS for the relevant receptors, as it is considered that the multi-pathway assessment provides a suitable basis on which to assess the potential for risks attributable to interaction with the AOI. Whilst the PFAS NEMP (HEPA 2026) adopts a background intake in development of some criteria (e.g. soil bioaccumulation criteria consider 25% background intake), this is likely to be attributable to intakes from other environmental sources such as surface water. Within this detailed ERA, all potentially significant exposure pathways have been quantified and accordingly no background intake is required to be accounted for from external sources.

Table 7.4 Adopted PFOS+PFHxS TRVs

Receptor	Adopted TRV	Basis	Background
Avian	7.7µg/kg bw/d	ECCC (2018)	0%
Mammals	1.1µg/kg bw/d	ECCC (2018)	0%

7.5 Stygofauna species toxicity

7.5.1 Summary of CRC CARE (February 2022) *Final Report – Stygofauna direct toxicity assessment*

Cooperative Research Centre for Contamination and Remediation of the Environment (CRC CARE) conducted direct toxicity testing as documented in CRC Care (2022). The CRC Care study can be summarised as follows:

- A literature review was conducted to assess whether any previous studies had assessed the toxicity of PFAS to stygofauna. The review identified stygofauna toxicity studies representing a combination of classes (e.g. Copepod, Isopod, Amphipod, Syncarid) and non-PFAS related chemical stressors (i.e. hexavalent chromium, aldicarb, endosulfan and ammonia or temperature). No PFAS related studies were identified.
- A sampling program was developed to target existing groundwater monitoring wells within the boundaries of a listed groundwater threatened ecological community in Ethel Gorge, Western Australia.
- A total of 252 individual specimens were collected and transported to the CRC Care laboratory.
- The specimens were identified under microscope, with 220 of the specimens representing the Copepod *Diacyclops humphreysi*.
- The *Diacyclops humphreysi* specimens were exposed to different concentrations of PFOS (0, 0.05, 0.1, 1, 5, 10, 50, 100, 200, 500 and 1000 µg/L) and mortality rates were recorded over a 56 day period (days 4, 7, 14, 28, 42 and 56).
- Mortality was observed to increase with increasing PFOS concentrations, with a lethal concentration 50 (LC 50) of 238 µg/L calculated.

- The study was scored against the system documented in Warne et al. (2018) and deemed to have a score of 82%, indicating a high level of study quality.
- Additional studies were recommended to further assess the toxicity of PFOS and other PFAS compounds.

7.5.2 Study representativeness

The CRC CARE study focuses upon PFOS. This approach has been adopted as PFOS is typically considered to be the most toxic PFAS compound based on current research. This is reflected in the PFAS NEMP (i.e. ecological water quality guideline for PFOS vs PFOA) as well as other sources which consider more than one PFAS compound (e.g. US EPA Aquatic Life Criteria) or other sources which only consider PFOS (e.g. Canadian draft Federal Environmental Quality Guideline). The uncertainty regarding the risk posed by other PFAS compounds can be assessed using a conservative approach where all PFAS compounds are assumed to have the same toxicity as PFOS as an initial screen.

The CRC CARE study focuses upon *Diacyclops humphreysi* as an indicator species. As discussed in **Section 5.5.5**, data relating to the abundance and variation of species of stygofauna within the assessment area was not able to be obtained in preparation for this assessment. As such, the degree to which the indicator species represents the specific stygofauna present within the assessment is not able to be determined.

The use of a single species to represent a broad class of species is common when setting water quality guidelines. It is considered possible that PFAS is both less or more toxic to *Diacyclops humphreysi* in comparison to stygofauna species present within the site. The use of a single species is considered to raise uncertainty, and this should be taken into account when deriving site specific criteria based on the CRC CARE study.

7.5.3 Derivation of environmental concern level

ANZG (2018) supersedes ANZECC/ARMCANZ (2000), however, the main content of ANZG (2018) is heavily reliant upon ANZECC/ARMCANZ (2000), so both documents are discussed together in this section. Neither ANZECC/ARMCANZ (2000) or ANZG (2018) provide guidance regarding PFAS, however, both guidelines provide some guidance with respect to stygofauna, as noted below:

> ANZECC/ARMCANZ (2000), Box 1.2:
>
> *"Application of the guidelines to groundwater - Groundwater is an essential water resource for many aquatic ecosystems, and for substantial periods it can be the sole source of water to some rivers, streams and wetlands. Groundwater is also very important for primary and secondary industry as well as for domestic drinking water, particularly in low rainfall areas with significant underground aquifers.*
>
> *Generally these Guidelines should apply to the quality both of surface water and of groundwater since the environmental values which they protect relate to above-ground uses (e.g. irrigation, drinking water, farm animal or fish production and maintenance of aquatic ecosystems). Hence groundwater should be managed in such a way that when it comes to the surface, whether from natural seepages or from bores, it will not cause the established water quality objectives for these waters to be exceeded, nor compromise their designated environmental values.* ***An important exception is for the protection of underground aquatic ecosystems and their novel fauna. Little is known of the lifecycles and environmental requirements of these quite recently-discovered communities, and given their high conservation value, the groundwater upon which they depend should be given the highest level of protection****.*
>
> *As a cautionary note the reader should be aware that different conditions and processes operate in groundwater compared with surface waters and these can affect the fate and transport of many organic chemicals. This may have implications for the application of guidelines and management of groundwater quality."*

ANZG (2018), application of the Water Quality Guidelines to groundwater:

> *"…where groundwater fauna (e.g. stygofauna) need to be protected, DGVs for surface water ecosystem protection could be applied in the absence of any site-specific data that indicate the DGVs will be under- or over-protective. However, their applicability to the groundwater quality and ecosystem of interest should be carefully considered. Also, the assessment of ecosystem receptor lines of evidence is always recommended as part of a weight of evidence process to improve understanding of the impacts of toxicants in groundwaters, which would include the derivation of locally relevant guideline values. Ideally, locally relevant guideline values would be derived based on groundwater quality data from appropriate groundwater reference sites."*

The CRC CARE study represents toxicity data for a single species from a single taxonomic group. As such, the SSD method is not applicable, and the assessment factor method should be used to derive a guideline value (see below).

Warne et al. (2018) provides clear guidance regarding the derivation of site specific water quality criteria and specific guidance for classification of toxicity data with respect to macroinvertebrates (>2mm in length) and macroinvertebrates (<2mm in length). The document does not provide specific guidance in relation to stygofauna or PFAS, but does guidance with respect to:

- The preferred method of calculating guideline values using the SSD method.
- The non-preferred method of using an assessment factor method.

It is noted that although Warne et al. (2018) was recently updated in 2025, the updated guidance refers back to Warne et al. (2018) in relation to the assessment factor method.

Section 3 of Warne et al. (2018) provides detailed guidance for several steps to use this method, including assessing the quality of the toxicity data and using a specific software program (Burrlioz). This method is not discussed further as it is not viable for deriving PFAS criteria protective of stygofauna due to the lack of toxicity data and that the SSD method requires toxicity data for at least five species that belong to at least four taxonomic groups.

With respect to the assessment factor method, Warne et al. (2018) defers to relevant guidance provided in ANZECC/ARMCANZ (2000). Although this method is non-preferred, many of the guideline values provided in ANZECC/ARMCANZ (2000)/ANZG (2018) were derived using this approach. When deriving guidelines for toxicants, ANZECC/ARMCANZ (2000) adopted assessment factors ranging between 2 and 1000 on a case by case basis depending upon whether the toxicant is an essential element, the nature of the toxicity study (e.g. chronic NOEC vs acute effect concentration (EC)/LC, the number of available studies and the mode of action (e.g. narcotic vs non-narcotic). An assessment factor of 1000 was adopted for a number of chemicals, typically where the available toxicity studies produced EC50/LC50 values for single species. Where an assessment factor of 1000 was adopted, the guidelines were defined as low reliability environmental concern level (ECL).

Based on the nature of the CRC Care study and Section 8.3.2 of ANZECC/ARMCANZ (2000), the assessment factor method requires the LC50 of 238 µg/L to be divided by a factor of 1000. This results in a guideline value of 0.24 µg/L, which should be referred to as a low reliability ECL in accordance with the ANZECC/ARMCANZ (2000) framework. Warne et al. (2018) states that a reality checking step is not required where the assessment factor method is used, however, it is considered pertinent to note that the ECL is on the same order of magnitude as the current ANZG (2026) 95% spp. DGV (0.9 µg/L).

Table 7.5 Stygofauna environmental concern level

Receptor	Adopted ECL
Stygofauna	0.24 µg/L

8. Risk characterisation

8.1 General

Risk characterisation has been undertaken in the following sections which have considered exposure assessment approaches specific to the receptor groups identified as part of a potentially complete SPR linkage (**Table 4.2**). Risks to species in aquatic environments have been characterised as follows:

- Direct toxicity to aquatic species: comparison of the surface water EPCs for PFOS+PFHxS to the lowest NOECs documented in ANZG (2026) for relevant taxa.
- Indirect toxicity to aquatic species: comparison of the aquatic biota tissues EPCs for PFOS+PFHxS to the FTSB developed in **Section 7.3.2**.
- Aquatic avian and mammalian receptor risks: comparison of estimated PFOS+PFHxS dosages to the adopted TDI.

8.2 Categorization of hazard indices

Hazard indices have been estimated for each of the receptor groups or ROC assessed in the AOI. The hazard index (HI) was calculated using the following equations.

For receptor groups assessed by comparing media concentrations specific to media concentration-based assessment end-points:

$$HI = \frac{EPC}{criterion}$$

Where: HI is the hazard index

EPC is the estimated exposure point concentration for the medium (µg/L or mg/kg).

$criterion$ is the adopted receptor group assessment end-point (µg/L or mg/kg) as per **Table 7.3** and **Table** 7.5.

For ROC based on comparison of estimated daily doses to toxicity reference values:

$$HI = \frac{TDD}{TRV}$$

Where: HI is the hazard index

TDD is the total daily dose estimated for the ROC as per **Section 6.4** in mg/kg.bw/day.

TRV is the toxicity reference value for the receptor group in mg/kg. bw/day as per **Table 7.4**.

Schedule B4 of the ASC NEPM states the following in relation to the HI:

> '*Where the HI for the mixture is less than unity (HI<1), a conclusion that exposure is likely to be within acceptable bounds may be made. When HI>1, it does not necessarily indicate that a site poses an unacceptable risk but it does indicate that either further consideration should be applied, or risk management actions should be recommended. An HI >1 does not necessarily indicate unacceptable risk*.'

Reference is made to Section 12.4 of enHealth (2012) in relation to the interpretation of hazard indices. Whilst it is acknowledged that enHealth (2012) was prepared to guide the assessment of human health risks, the use of a hazard index and hazard quotient (HQ) based approach is common across both ERAs and human health risk assessments.

> *'The HI approach is essentially quite conservative in providing an estimate of cumulative risk, since 'safety factors of between 100 and 10,000 are commonly used to adjust the estimated [NOAEL] to derive the … TDI estimates. This means that the effects of the chemical combinations would need to significantly erode this 100–10,000-fold margin between the TDI and the level where toxic effects begin to occur. When the overall HI is less than 1, it is generally assumed that cumulative risk is within reasonable bounds and that there is no need to undertake a more refined risk assessment. Even when HI is greater than 1, it does not imply that risks are unacceptable, although there is clearly some erosion of the conservatism built into each of the processes of determining components of the HQ calculation (exposure and TDI). When the HI is greater than 10 there is more reason to undertake further investigation of the risks, including an assessment of whether addition of HQs is justified or whether the risk contribution of some of the components is independent.'*

For the purposes of this detailed ERA, the following approach has been adopted with respect to the HI:

- HI ≤1: Risks are low and acceptable.
- HI >1 to ≤10: Risks are potentially elevated.
- HI >10: Risks are elevated.

8.3 Risks characterisation

8.3.1 Direct contact risks– aquatic species

The EPC for PFOS in surface water exceeded the 95% spp DGV in Laverton RAAF Swamp. The EPC did not exceed the adopted spp. DGVs in any other water body. HIs have been calculated as per the process documented in **Section 8.2** and are presented in **Table 8.1**.

Table 8.1 Estimated hazard indices for direct contact risks to aquatic taxa

Taxonomic group	NOEC	Laverton RAAF SWAMP		Skeleton Creek		Cheetham Wetlands		Sanctuary Lakes	
		EPC µg/L	HI	EPC µg/L	HI	EPC µg/L	HI	EPC µg/L	HI
Plants/algae	300	1.3	0.0043	0.29	0.00097	0.12	0.0004	0.068	0.00023
Amphibians	10		0.13		0.029		0.012		0.0068
Crustaceans	90.6		0.014		0.0032		0.0013		0.00075
Insects	0.23		5.7		1.3		0.52		0.3
Molluscs	3000		0.00043		0.000097		0.00004		0.000023
Flatworms	200		0.0065		0.0015		0.0006		0.00034
Rotifers	100		0.013		0.0029		0.0012		0.00068
Fish	4.0		0.33		0.073		0.03		0.017

8.3.2 Indirect contact (bioaccumulation) risks – aquatic species

An assessment of the indirect contact (bioaccumulation) risks has been made by comparison of the measured higher order fish (predator) fish tissue concentrations (**Table 3.12**) against the fish tissue screening benchmarks developed in **Section 7.3.2**). The estimated HIs are summarised in **Table 8.2**.

Table 8.2 Estimated hazard indices for indirect (bioaccumluatio) risks to higher order aquatic taxa

Taxonomic group	FTSB (mg/kg)	Laverton RAAF SWAMP		Skeleton Creek		Cheetham Wetlands		Sanctuary Lakes	
		EPC	HI	EPC	HI	EPC	HI	EPC	HI
Fish	1.2	1.1	0.92	0.97	0.78	0.053	0.067	0.08	0.044

8.3.3 Risks to air-breathing aquatic receptors (birds and mammals)

The estimated TDDs and HIs for each of the species subject to detailed food-web modelling are provided in **Appendix D**. A summary is provided in **Table 8.3**.

Table 8.3 Birds and mammals estimated hazard indices

Trophic level / feeding guild	Representative ROC	Laverton RAAF Swamp	Skeleton Creek	Sanctuary Lakes	Cheetham Wetlands
Resident aquatic birds					
Primary / herbivore	Black swan	<1	<1	<1	<1
Secondary-tertiary invertivore/ omnivore	Hooded Plover	<1	<1	>1 to ≤10	>1 to ≤10
Secondary-tertiary omnivore	Dusky moorhen	>1 to ≤10	>1 to ≤10	<1	<1
Tertiary-quaternary / carnivore	Australasian bittern	>1 to ≤10	>1 to ≤10	<1	<1
Tertiary-quaternary / carnivore	Royal spoonbill	>1 to ≤10	>1 to ≤10	>1 to ≤10	>1 to ≤10
Quaternary / carnivore	Osprey	>1 to ≤10	>1 to ≤10	<1	<1
Migratory aquatic birds					
Secondary - tertiary / invertivore	Long-toed stint	>1 to ≤10	>1 to ≤10	>1 to ≤10	>1 to ≤10
Tertiary-quaternary carnivore	Great egret	>1 to ≤10	>10	>1 to ≤10	>1 to ≤10
Mammals					
Secondary omnivore	Rakali	>1 to ≤10	>10	>1 to ≤10	>1 to ≤10

8.3.4 Stygofauna

A low-reliability ECL was derived in **Section 7.5.3** for the protection of stygofauna from direct toxicity related effects of PFOS. Comparison of the guideline value (0.24 µg/L) with the range of concentrations observed in groundwater within the base and in off-base areas (**Figure 7**) indicates that risks to stygofauna are potentially elevated. However, this assessment assumes that high value stygofauna are present within the AOI.

No publicly available information was able to be identified which relates specifically to stygofauna present within groundwater horizons in and downgradient of the base. There are no published analytical criteria available for the assessment of potential risks of PFAS exposure to stygofauna. Whilst the ERS (Victorian Government 2021) specifies the requirement to consider stygofauna, in absence of regulatory information relating to the presence of stygofauna, or susceptibility of stygofauna to PFAS, the assessment undertaken is limited.

The assessment undertaken on other receptor groups has identified a potential for risks to be present. It is considered that any work to reduce risks to avian/mammalian receptors will also reduce risks to stygofauna (if relevant).

9. Sensitivity assessment

9.1 General

The process of undertaking a quantified ecological risk assessment involves a number of decisions in relation to problem identification and risk characterisation which ultimately affect the overall assessment outcomes.

In general, where uncertainties have been identified throughout the assessment process, a preference has been to adopt the more conservative potential option(s) in order to ensure that, in the absence of complete information, the likelihood that potential risks exist which have not been identified is low. Notwithstanding, given the interaction between parameters, consistent selection of the most conservative parameters will have the effect of compounding the error and result in an unnecessarily conservative assessment.

A sensitivity assessment has been conducted in the subsequent sections which seeks to identify potentially sensitive assumptions/parameters which have been adopted as part of the risk assessment process. The purpose of identifying sensitive assumptions/parameters is to inform an assessment of the extent of uncertainties and errors which must be considered as part of the conclusions of the assessment.

The assessment of uncertainties has been undertaken in general accordance with the key steps of the ERA as defined in **Section 1.4.**

9.2 Problem identification

In scoping the problem which formed the basis of the detailed risk assessment, a number of assumptions have been made which have the potential to introduce uncertainty to the conclusions. Each of these are discussed qualitatively as follows:

- JBS&G has relied upon information provided in existing environmental assessments to scope the problem. Previous investigations, principally the DSI (Aurecon 2020), addendum DSI (Aurecon 2021) and the preliminary ERA (Aurecon 2022), have provided site setting, site history and empirical data which have been used to identify which parts of the receiving environment warranted detailed risk assessment (i.e. AOI selection), and provided empirical data used to estimate concentrations of COPCs in the environmental media and assess potential temporal variation. These reports have been subject to a comprehensive review process as part of Defence's procedures in commissioning and publishing contamination investigations, including independent third-party reviews by a Technical Advisor (TA). JBS&G considers that the use of information from existing environmental assessments in this instance has reduced the level of uncertainty in this detailed ERA.
- Discretisation of the receiving environment includes a simplifying set of assumptions around the dynamics of PFAS contamination within the receiving environment. This step involves identifying specific areas of the receiving environment which are subject to potentially significant input of PFAS from the base, and further discretising these areas based on PFAS loading, effects of dilution and the likelihood that these areas will represent a distinct potential for risk to the ROC. This step also feeds into the conclusions which can be made in relation to a specific area (as the ultimate risk estimates are based on media in a specific AOI). The identified AOI are consistent with those identified in existing environmental documentation, represent distinct environments with different receptor exposure potential, and are considered appropriate for the purpose of the risk assessment.
- In adopting AOI for detailed risk assessment, consideration has been given to the anticipated extent of PFAS contamination as well as empirical data, and whether an individual water body would represent a distinct or elevated risk in comparison to the selected AOI. This is particularly relevant for Addison Wetland which was identified to contain elevated concentrations of PFOS+PFHxS in surface water (0.23 to 1.3 µg/L). Addison wetland is a constructed stormwater management feature which occupies an aerial extent of approximately 3 hectares. The concentrations of PFOS+PFHxS in surface water are comparable to the proximal and considerably larger Laverton RAAF Swamp (0.03 to 2.2 µg/L). It is

considered that Addison Wetlands likely represents an equivalent or lower potential for risk than Laverton RAAF Swamp due to the lower abundance of aquatic biota anticipated to be present as reflective of the water body's relatively smaller size, and that that concentrations in surface water are similar to Laverton RAAF Swamp.

- Identification of the ecological values and ecological conditions of the receiving environment has been undertaken on the basis of reviewing a range of publicly accessible documentation, including policies and ecosystem assessments. There are a range of factors which may affect the suitability of the AOI to provide for the protected environmental values (e.g. climate change and habitat destruction). The review is considered appropriate within the current regulatory / environmental context to identify the values against which potential PFAS contamination requires to be assessed.
- Selection of environmental media for consideration as part of the multi-pathway exposure assessments was limited to risk driving media. This included all aqueous environmental media (i.e. sediment, surface water and aquatic biota) and excluded terrestrial soil and biota. Terrestrial soil and biota were considered not likely to be risk driving within the aquatic AOI on the following basis:
    - Site-attributable PFAS discharges occur primarily via surface water and groundwater directly to the aqueous media. As such, any soil impacts are considered likely to be ancillary to the primary affected aqueous media due to the mechanics of PFAS transport.
    - Where data were available, the estimated EPCs PFOS+PFHxS in terrestrial biota indicated lower relative concentrations (e.g. 0.31 mg/kg in soil invertebrates vs. 1.3 mg/kg in fish) as well as a lower ratio of biota concentrations to abiotic media (e.g. 0.31 mg/kg in soil invertebrates to 0.072 mg/kg in soil, vs. 1.3 mg/kg in prey fish to 0.0011 µg/L in surface water). This indicates that the potential for uptake, as well as the observed magnitude of uptake of PFAS into the terrestrial food chain, is lower than the aquatic food chain.
    - There is a lower anticipated potential for terrestrial foraging and predation within affected areas. The terrestrial fringes of the AOI represent smaller areas with anticipated lower aggregate potential for foraging and predation due to their smaller size.
    - Potentially affected terrestrial species have been further considered:
        - Lower order (plants and invertebrates) that may be affected by exposure to PFAS in soil: No individual EPCs were identified above the generic screening criteria in soil indicating this potential risk is low and acceptable without further assessment.
        - Higher order (air breathing) species which may be exposed through both direct contact and bioaccumulation: The assessment of air breathing species would consider a HI-based approach adopting the same TDIs/TRVs as have been adopted for air breathing species which forage/predate in the aquatic environment. As there is no reasonable basis to consider that primarily terrestrial species are more sensitive, and there is evidence to suggest that the ultimate exposure concentrations and capacity to undertake foraging/predator behaviours is lower than for aquatic species, the conclusions with respect to the AOI as provided on the basis of the aquatic exposures is considered adequately protective of potential terrestrial exposures.

9.3 Identification or risk drivers (tier 1 screening)

9.3.1 Availability of tier 1 screening criteria

Tier 1 screening has been undertaken on the basis of the previous investigation data and the AOI nominated in the preceding two steps. Tier 1 screening is required to identify the likely risk driving environmental media, assessment endpoints and COPCs for detailed risk assessment. The tier 1 screening process involved identification of suitable Tier 1 screening guidelines, identification of potentially affected receptor groups and

the contaminants which are likely to drive risk estimates. The tier 1 screening process was undertaken in accordance with Australian Government guidance.

It is noted that tier 1 screening criteria are not available for a range of environmental media and a range of relevant environmental end-points, specifically:

- The Australian Government does not provide guidance for constituents other than PFOS, PFHxS and PFOA to screen potential risks to ecological receptors.
- The Australian Government does not provide guidance to assess risks to all receptors (e.g. reptiles, stygofauna and troglofauna). Further, criteria are not available to assess bioaccumulation risks (e.g. soil->plant->herbivore->receptor) to higher-order receptors with the explicit exception of terrestrial mammalian receptors (e.g. spotted tailed quoll via indirect soil bioaccumulation criteria).
- The Australian Government does not provide PFAS criteria for sediment.

The absence of available criteria represents Australian Government policy decisions based on the state of the science. It is considered that assessment of other PFAS compounds and receptors is not able to be undertaken in a scientifically defensible manner at this point in time. It is noted that PFOS+PFHxS represents the majority of the detected mass of PFAS in biota, which are the risk driving media in the AOI. On this basis, any non-PFOS+PFHxS compounds are considered likely to represent a lower potential for risk to receptors. The absence of sediment criteria is not considered to be significant as sediment has been considered as a source of exposure to mammalian and avian species.

The PFAS NEMP (HEPA 2026) provides a direct contact soil criterion for PFOA which was developed to be protective of reptiles. The criterion is based on a LOAEL of 0.05 mg/kg in soil divided by an uncertainty factor of 10. With respect to PFOS and PFHxS, no protection based criteria are presented in the PFAS NEMP (HEPA 2026) or Canadian Guidance for reptiles. In absence of a reliable screening criterion being available within Australian guidance for the assessment of direct or indirect exposure of reptiles, consideration is given to potential reptile exposure in the subsequent sections of this sensitivity assessment to demonstrate that the outcomes of the risk assessment would not be materially different if reptiles were to be adopted as a receptor group.

9.3.2 Reliance on empirical data

The SAQP (JBS&G 2024) was designed to ensure that empirical data were available for all relevant environmental media in the AOI. The empirical datasets are characterised as varying in size, variability and seasonality and that these factors affect the level of confidence in the estimates of EPCs (See **Section 9.3.3**). Notwithstanding, JBS&G considers that the use of empirical data is generally preferable to alternative methods (e.g. use of bioaccumulation factors).

The SAQP (JBS&G 2024) proposed the potential supplementation of empirical data with theoretical estimates of concentrations based on site-specific and/or literature based PFAS uptake ratios. The factual reports documented site-specific uptake ratios for PFOS and compared them against the literature values summarised in SERDP (2020). The uptake ratios for PFOS were generally comparable to the values anticipated and, as such, there was no need to undertake bioaccumulation modelling to supplement the dataset.

Whilst reliance on empirical data has been made, it is considered that site-specific bioaccumulation data could be used to inform future monitoring and/or decision-making in relation to the site (i.e. relating a concentration of surface water to sensitive receptor risk).

The empirical datasets were statistically analysed as per the process summarised in **Section 3.4.2**. The process for dataset preparation included the removal of duplicate and triplicate values from the datasets prior to analysis. A key assumption in the estimation of statistical parameters is that each datapoint is independent, duplicate values do not satisfy this criterion and require removal. A potential alternative method for handling duplicate analyses is to adopt the maximum of the three values. It is considered that reliance on the primary values is appropriate given the factual reports assessed the data as exhibiting adequate precision to be relied

upon to inform this detailed ERA. Adoption of the maximum value of each replicated sample would affect an unnecessary additional level of conservatism and would not meaningfully affect the estimated values given the dataset precision acceptability and the range of other more significant uncertainties in undertaking detailed ERAs.

The empirical data were assessed on a whole of dataset basis, rather than limiting the assessment to specific sub-sets of data over the available period of monitoring (i.e. 2012 to 2025). This approach provides an assessment of the likely long-term exposures which are the most relevant to the assessment of risks to PFAS in the environment, as the underlying toxicological assessments are based on chronic exposures.

Treatment of datasets from various monitoring rounds has the potential to impact on risk estimates where there are notable seasonal and/or long-term temporal effects. The potential risks to receptors are driven by consumption of fish and invertebrates for the most at risk receptors and, as such, decisions relating to including/excluding monitoring rounds from the datasets for sediment and surface water will not meaningfully impact the risk estimates in comparison to other more sensitive decisions (e.g. nominated TRV).

There is not sufficient data to assess potential seasonal/long-term temporal trends in biota data. This is considered not to be significant in relation to estimating risks given the conservativism that was applied in estimating EPCs.

9.3.3 Estimated exposure point concentrations

Influence on assessment

EPCs were required to be estimated to compare against screening criteria and to represent media concentrations at the point of exposure to receptors. The effect of adopting alternative EPCs can be summarised as:

- Identification of alternative media and risk driving contaminants for detailed risk assessment (i.e. different selections).
- Alternate concentrations of contaminants in environmental media. The effect of alternative concentrations in environmental media is directly and linearly linked to the exposure dose attributable to that media (i.e. direct linear effect on pathway specific HI).

Quantification of EPC conservatism/error

EPCs have been estimated based on statistical evaluations of empirical data. A key measure of uncertainty in sampling programs is the difference between the actual mean concentration (which represents the best estimate of the true average) and the adopted EPC (which represents a conservative mean with a quantified confidence interval (i.e. 95% UCL) or the maximum of the dataset). This is referred to as the maximum probable error (MPE).

For datasets with a quantified confidence interval (i.e. 10 or more detections) the MPE can be estimated as per NSW EPA (2022) *Contaminated Land Guidelines: Sampling design part 1 - application*, whereby the confidence interval (which is the 95% UCL less the mean concentration) is divided by the dataset mean:

$$MPE = \frac{95\%\ UCL - \bar{x}}{\bar{x}}$$

A similar approach has been used for datasets where the maximum value has been adopted as the EPC, though the confidence in the error margin is not able to be quantified using statistical methods. This simply demonstrates the level of conservatism adopted in using the maximum value in place of the dataset mean.

$$MPE' = \frac{maximum - \bar{x}}{\bar{x}}$$

JBS&G has quantified the MPE and MPE' for the datasets and presented the results in **Appendix B**. This has been limited to PFOS+PFHxS only, as the risk driving contaminant group. The estimates are summarised in **Table 9.1**.

There is no maximum MPE above which the investigation dataset error(s) would be too high to be relied upon to inform the risk estimates. The acceptability of the MPEs depends on how sensitive the screening process and ultimately the risk estimates are to changes on the basis of refining confidence intervals by additional sampling.

Table 9.1 Summary of MPEs by media and AOI

AOI	Sediment	Surface water	Aquatic vegetation	Benthic invertebrates	Pelagic invertebrates	Predator fish	Prey fish
	%	*%*	*%*	*%*	*%*	*%*	*%*
Cheetham Wetlands	82%[2]	34%[2]	279%[2]	241%[1]	218%[1]	77%[1]	333%[1]
Laverton RAAF Swamp	28%[2]	38%[2]	57%[2]	79%[1]	55%[1]	12%[2]	12%[2]
Sanctuary Lakes	38%[2]	10%[2]	134%[2]	39%[1]	47%[1]	116%[2]	46%[2]
Skeleton Creek	66%[2]	17%[2]	30%[2]	61%[2]	61%[1]	46%[2]	49%[2]

[1] MPE' represents the relative difference between the maximum and mean concentration.

[2] MPE represents the relative difference between the 95% UCL and mean concentration.

Review of EPC conservatism/error effect

The potential effects of alternate EPC selection are discussed as follows:

- The estimated MPEs for surface water ranged from 10% to 38% and were all based on 95% UCLs (i.e. number of detects > 10). JBS&G notes that the difference between the average concentration and the EPCs for surface water would not have caused an alternative selection of AOI for detailed assessment (i.e. no effect on screening). The concentration of surface water has a negligible effect on the overall risk estimates (maximum 2% overall HI). The overall error is accordingly considered to be low and acceptable.
- The estimated MPEs for sediment ranged from 28% to 82% and were all based on 95% UCLs (i.e. number of detects > 10). Sediment PFAS results were not screened against tier 1 screening criteria (i.e. due to no Australian Government criteria being available) and did not affect the screening process. The concentration of sediment affects the risk estimates for a number of invertivorous avian species, which results from the relatively high concentration of PFOS+PFHxS in sediment compared with invertebrates, particularly in Cheetham Wetlands and Skeleton Creek. Notwithstanding, the maximum HI from incidental sediment ingestion occurs in Skeleton Creek (1 to 37 % total hazard index) which is primarily attributable to the relatively elevated sediment EPC in comparison to aquatic flora and invertebrates and a conservatively adopted incidental sediment ingestion rate for the black swan, hooded plover and long-toed stint. The effect of adopting alternate EPCs would not likely cause alternate overall risk assessment outcomes.
- The estimated MPEs for aquatic biota ranged from 12% to 333% and were variously based on both maximum and 95% UCL values. The maximum values were typically substantially more different to the mean concentrations than were the 95% UCL values. Notwithstanding, the effect of alternative parameter adoption is at most linear for any given receptor. The adopted EPCs have resulted in risk estimates ranging from:
    - Cheetham Wetlands: 2.7 to 3.8x above mean-based estimates.
    - Laverton RAAF Swamp: 1.1 to 1.6x above mean-based estimates.

- Sanctuary Lakes: 1.5 to 2.3x above mean-based estimates.
- Skeleton Creek: 1.3 to 1.6x above mean-based estimates.

- With consideration of the above, whilst, the adopted values are likely to overestimate the extent of exposure, the magnitude of the effect is relatively low, and acceptable for the purposes of this detailed ERA.

9.4 Receptor identification

9.4.1 Mammalian and avian

A process of receptor identification was undertaken as described and detailed in **Section 5**. Selection of receptors of concern influences the investigation outcomes as follows:

- Identification of receptors groups which are potentially at risk (driven by the tier 1 screening process), which inform the focus of the detailed review of receptors.
- Identification of the range of species within receptor groups by review of field observations and accessible databases, which provides the range of receptors from which to nominate representative ROC.
- Identification of representative ROC which are likely to adopt the highest potential for exposure from each of the identified receptor groups.

The process undertaken to identify the receptor groups (e.g. mammals and birds) is generally common across ecological environments. The tier 1 screening process undertaken subsequently relies upon Australian Government guidance documents and comparison of EPCs to criteria to identify ecological groups which are potentially at risk.

Identification of the range of species was undertaken by review of investigations completed by previous consultants, including specialist ecological consultants, as well as supplementary reviews of databases maintained by the Australian and Victorian Governments for the purpose of supporting conservation efforts. JBS&G considers that the combination of sources is appropriate to the identification of species potentially present within the AOI.

JBS&G notes that there were numerous avian species which were considered to be potentially exposed within the AOI, consistent with the status of some of the AOI as valuable bird habitat and protected wetlands. Mammalian species were far less abundant, with only a single species adopted for detailed risk assessment.

Identification the representative ROC was undertaken by identifying the most exposed species representing various trophic levels and feeding guilds. This process comprised assigning each receptor a bodyweight range from Birdlife Australia (2023a) and identifying the potentially applicable Nagy KA (2001) feeding groups (i.e. all birds, marine birds and pelecaniformes). The allometric equations were then processed for each species to evaluate which group designation resulted in the highest FI:BW. The representatives with the highest FI:BW were generally adopted as the representative ROC for their group. It is noted that this process is intentionally conservative to ensure that the ensuing risk calculations would overestimate the risks for the relevant receptor group. This is considered appropriate and consistent with the intention of the risk assessment process to be protective of the reasonable maximum exposed population(s).

The effect of adopting alternative representatives of groups would necessarily result in a reduced FI:BW and linearly reduce the estimated risk levels. For example, the group identified as resident/nomadic quaternary carnivorous birds includes five species, and is represented by the Osprey with an estimated FI:BW of (0.3 g(food) / g(bodyweight) per day). The Osprey's estimated FI:BW is approximately 50% higher than the balance of examples of this trophic level/guild (ranging from 0.2 to 0.23 g(food) / g(bodyweight) per day).

9.4.2 Stygofauna

Stygofauna and troglofauna are commonly considered in unison, whereas this detailed ERA has focused upon stygofauna. The preliminary ERA (Aurecon 2022) reported that troglofauna are subterranean aquatic fauna which reside in caves and voids in the subsurface. Caves and voids have not been identified within the base or the PMAP management area. As such, troglofauna have been excluded from further assessment on the basis that they are not likely to be present in the base or the PMAP management area.

9.5 Exposure estimation

The exposure estimation was undertaken as described and detailed in **Section 6**. The exposure estimation was undertaken in accordance with preeminent international guidance documentation including US EPA (1993) and SERDP (2020). The dose estimation has considered a number of factors which have a consequential influence over the assessment outcomes, including:

- There is the potential for alternative assumptions in relation to the water, food and sediment intake rates to affect the outcomes of the assessment. However, the intake rates have been based on reputable available literature for each of the ROC, and adoption of parameters as consistent with the preeminent guidance (US EPA (1993) and Nagy KA (2001)).
- The PFAS NEMP (HEPA 2026) identifies that migratory species may exhibit higher FI:BW during periods in which they have a higher caloric intake requirement.

  The preliminary ERA (Aurecon 2022) provides a simplified approach to estimating additional food intake requirements for migratory birds (e.g. long-toed stint) in which it is assumed that they may consume a factor of four above their non-migratory food intake rates. JBS&G notes that periods of relatively high food intake (i.e. hyperphagia) are typically short and completed directly prior to periods of decreased food intake (i.e. hypophagia) associated with migration. It is accordingly considered that, where excess food intake rates were modelled in the assessment, the period of time in which such behaviour occurred would necessarily need to be considered. Where hyperphagia occurred for short periods, it is considered that the overall effect on the average intakes of PFAS for relevant migratory receptors is not significant compared to a range of other sensitive factors built into the detailed ERA.

  Further to the above, it is important to note that ingestion rates are much higher during nesting periods than non-nesting periods. For the nominated ROC which represent migratory shorebirds, the nesting periods occur outside the AOI (i.e. Siberia for the Long-toed stint, Murray River for the Great egret). Review of *Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site Ecological Character Description* (DELWP, 2020) indicates that, whilst the Ramsar site is identified as an important breeding site for 49 wetland dependent species, only the greater sand plover is identified as breeding within Cheetham Wetlands. The greater sand plover is further noted to have a similar diet and a notably lower chronic food intake to bodyweight ratio than the long-toed stint which was adopted to represent the guild (0.7 vs. 1.1 g/g.bw/day).

  On the basis of the above, it is considered that modifying ingestion rates for migratory shorebirds would add an unnecessary layer of conservatism to calculations which are already highly conservative.
- Alternative assumptions in relation to the proportion of dietary intake attributable to aquatic food groups obtained from near site water bodies could be adopted which could increase or decrease the estimated risks, however, the effect of alternating these exposure assumptions would have a small effect on the estimated risks when compared to the compounding conservative assumptions adopted to estimate EPC for food groups. In general, there is a lack of scientific data which can substantiate selection of specific dietary intakes for avian and mammalian species identified by the receptor selection process. The effects of alternate dietary intakes are directly related to the concentrations in different media and are discussed following:

- Herbivores were assumed to consume 100% of their diet from aquatic plants, which is considered appropriate.
- Omnivores (primarily invertivorous) were assumed to consume approximately equal proportions of vegetation, pelagic and benthic invertebrates. The proportion of vegetation to invertebrate intake is a sensitive parameter noting that invertebrate EPCs were generally 2 to 10x higher than vegetation. It is noted that exclusive invertebrates were also assessed which would represent the exposure of omnivorous which preferentially eat invertebrates.
- Invertivores were assumed to consume the majority of their food in equal parts pelagic and benthic invertebrates, with a minor designation of their intake attributed to vegetation (5%). In water bodies other than Laverton RAAF Swamp the EPCs for pelagic and benthic invertebrates were approximately equal indicating that alternative dietary proportions would not affect the risk estimates. In Laverton RAAF Swamp, pelagic invertebrates were approximately 3x higher in PFOS+PFHxS concentration than benthic invertebrates indicating that alternate dietary proportions may increase or reduce the dietary PFAS intake estimates and associated risks but the effect is noted to be minor. For any given receptor the range of estimated dietary PFAS intakes could be reduced by assuming 100% of invertebrates were obtained from benthic species, or increased by assuming 100% of invertebrates obtained from pelagic species, which would cause either a 50% reduction or 50% increase in the dietary intakes from invertebrates.
- Carnivores/piscivores were assumed to consume between 50 and 97% of their food from fish, with the proportions of large and small fish differing between receptors. The balance of the food intake for carnivores was assumed to comprise invertebrates (3 to 50%). Fish were reported to exhibit the highest EPCs in all AOI and, except for Skeleton Creek, where concentrations of PFOS+PFHxS were generally consistent across prey and predator fish (i.e. within same order of magnitude). In Skeleton Creek, predator fish EPCs were 3x higher in concentration than prey fish. Assigning all fish intake to predatory fish in Skeleton Creek would result in HI estimates via fish-attributable PFAS intakes increasing by a maximum of 3x (for the dusky moorhen which was modelled exclusively off prey fish) with the range of increases typically between 1.16 (for the osprey) to 2 (for the Australasian bittern). It is considered that the adopted parameters are appropriate, that the parameters are not particularly sensitive given the low concentration variability between fish types, and that alternative parameters would not materially affect the conclusions of the risk assessment. The HIs would remain below 1 for the Australasian bittern and osprey in Sanctury Lakes and Cheetham Wetlands.

- For the purpose of this risk assessment, it has been assumed that some receptors spend their entire lives within the AOI and obtain 100% of their abiotic and biotic exposure from the receiving water bodies. Whilst some species are likely to exhibit small home ranges, it is considered unlikely that the entirety of their dietary intake over sustained chronic periods would be sourced from any individual water body and, as such, this is a conservative assumption. The effect of overestimation is likely increased for smaller water bodies or water bodies which are less suitable as habitat or food sources. The AUF is identified as an important, sensitive factor which may affect risk estimates by up to an order of magnitude.

A detailed quantitative estimate of reptile exposures has not been made based on the limitations of the available toxicity data. An alternative approach could consider the limited available data and provide an estimate using the allometric food intake equations for reptiles published in Nagy KA (2001). The estimated FI:BW ratio for reptiles is considerably lower than are estimated for birds and mammals. An example is provided following for a small reptile (all reptiles) with a bodyweight of 10 g:

$$FIR_{DMI} = 0.0111 * 10^{0.92}$$

$$FIR_{DMI} = 0.092\ g/day$$

Which would result in a FIR to bodyweight ratio of 0.0092 g (food-dry matter basis)/g(bodyweight) per day. This value is approximately an order of magnitude lower than the ratios upon which the risk estimates for mammals are made). Whilst it is a valid argument that smaller reptilian species would likely have a high AUF, this is likely to be offset by the proportionally lower food intake. Consideration of the available toxicity data is provided in **Section 9.6.2** which indicates that reptiles are not particularly sensitive to PFOS in comparison with mammals.

9.6 Toxicity assessment

9.6.1 Adopted toxicity end-points

The toxicity assessment presented herein draws predominantly on the PFAS NEMP (HEPA 2026) and ANZG (2026). The ecological toxicity assessment which underpins the criteria presented in the PFAS NEMP (HEPA 2026) are inconsistent. For the purposes of this report, TRVs have been adopted based upon values relied upon in the PFAS NEMP (HEPA 2026) for avian and mammalian wildlife diet. If the TRVs adopted in the PFAS NEMP (HEPA 2026) when deriving soil criteria were adopted, the risks would be significantly lower (see **Section 7.4.1**). This would however be inconsistent with the approaches typically adopted when conducting PFAS related ERAs in Australia at present.

9.6.2 Reptile toxicity

At the time of this report, there is a lack of defensible TRVs to assess the risks posed by PFAS to reptiles. Common approaches adopted include not assessing risks to reptiles due to uncertainty or using avian based TRVs on the basis that reptiles are closer to avian species than mammalian species.

JBS&G undertook a review of readily accessible online databases and identified an individual study which assessed the dose-response of the brown anole (*anolis sagrei*) to PFOS, as documented in *Effects of perfluorooctane sulfonate (PFOS) on a novel reptilian toxicity test species, the brown anole (Anolis sagrei)* (Salice CJ. et al. 2025). The study was limited to an individual species at two life stages of one sex (adult and sub-adult males). A NOEL of 0.2 mg/kg.bw/day was reported with a 10% effect for growth rate reported at 0.22 mg/kg.bw/day.

Whilst Salice CJ. *et al*. (2025) is limited to single species and a single sex, the reported NOEL is not substantially different to the LOAELs reported for mammals, and reptiles are noted to have a considerably lower food intake to bodyweight ratio compared to mammals, as reported in Nagy KA (2001). Detailed assessment for specific reptiles using an uncertainty adjusted NOEL (e.g. 0.002 mg/kg.bw/day) would likely result in an overall lower estimated risk than for mammals due to the substantially lower food intake (~10x lower food intake) and marginally higher potentially applicable TRV.

9.6.3 Other PFAS

The PFAS NEMP (HEPA 2026) states that "*In relation to wildlife exposure to PFAS, there is a lack of available toxicity data relevant to Australian species, hindering quantitative risk assessment. Such information is unlikely to become available in the near future*". This provides a source of uncertainty which cannot be addressed at the time of this report.

9.7 Sensitivity assessment summary

The sensitivity assessment documented herein has been undertaken to evaluate whether alternative parameter exposure would result in materially different outcomes to the risk assessment. The following outcomes are provided:

- The process of problem identification has been undertaken on the basis of previous investigations and review of information and is considered appropriate in identifying the issues that warrant consideration as part of the detailed ERA.

- The tier 1 screening process has made use of Australian Government guidance approaches and available criteria.
- The parameters adopted for the estimation of concentrations of PFOS within exposure media were selected on a conservative basis. At each step of EPC estimation, conservative values were selected (i.e. maximum or 95% UCLs). This has resulted in conservatism which has likely overstated the extent of risks adopted by organisms.
- The adopted representative ROC have been selected to ensure that risk calculations were undertaken on individuals with the highest estimated FI:BW. This has resulted in the conservatism which has likely overstated the extent of risks adopted by other organisms within the relevant receptor groups.
- The TRVs adopted are consistent with the lower of the two sets of TRVs relied upon in the PFAS NEMP (i.e. more conservative).
- Exposure estimates were made on the basis of reputable published literature and in consultation with specialist ecologists. Exposure factors inherently provide a significant source of uncertainty due to the simplifying assumptions which are required to be made (e.g. all Osprey have a common weight). However, the adopted exposure factors are considered to be well founded and suitable for the purposes of this report.
- There are several factors which may have caused the risk and hazard estimates provided in this risk assessment to be underestimated. However, it is more than likely that any underestimation caused by the risk assessment process and limitations of available data and modelling techniques has been overcome by the use of conservative assumptions throughout the assessment.

10. Conclusions

10.1 General

Based on the scope of works undertaken, the available data set, and subject to the limitations presented in **Section 9** and **Section 12**, the following conclusions are provided on the basis of the detailed ERA presented within this report.

The detailed ERA has assessed whether there are risks posed by base originated PFAS contamination (PFOS+PFHxS) in soil, sediment, surface water, groundwater and biota to the primary ecological receptors of concern within the areas of interest. These areas are defined by their proximity of closest to furthest away from RAAF Base Williams, Laverton:

- Laverton RAAF Swamp (receives stormwater discharge from Williams Landing).
- Skeleton Creek (receives stormwater discharge from base).
- Sanctuary Lakes (receives water from Skeleton Creek via pumping).
- Cheetham Wetlands (includes estuarine section of Skeleton Creek and saltpans receive water from Skeleton Creek via pumping).

10.2 Aquatic species

Although the current tier 1 screening criteria for the protection of aquatic species are exceeded in most water bodies within the AOI, risks to aquatic species (e.g. fish, amphibians) are considered to be low and acceptable across the AOI. This assessment has been made on the basis that tier 1 screening criteria are designed to be protective of highly sensitive species which are unlikely to be present in the specific water bodies of concern. When consideration is given to typical species which are likely to be present, PFAS concentrations in surface water are not of concern with respect to risks to aquatic species.

Assessment of higher order aquatic species using fish tissue screening benchmarks developed in **Section 7.5.3** indicates that bioaccumulation risks to higher-order species are low and acceptable in all water bodies.

Risks to higher order consumers of aquatic species are discussed in **Section 10.3**.

10.3 Avian and mammalian species

Risks to avian and mammalian species are summarised below:

- The primary ROC for the AOI have been identified to comprise the following:
    - Herbivorous resident bird: black swan.
    - Resident invertebrate consumer: hooded plover.
    - Resident omnivore including invertebrate and fish consumer: dusky moorhen.
    - Resident fish consumer: Australasian bittern and royal spoonbill.
    - Bird of prey with relatively high fish diet: osprey.
    - Inter-continental migratory bird: long-toed stint.
    - Inter-state migratory bird: great egret.
    - Mammal with significant aquatic biota diet: rakali.

    The ROC are indicator species for a significantly longer list of similar species which are known to be present within the AOI and surrounding areas. Consideration has been given to threatened and endangered species when selecting the ROC.

- The majority of the ROC are resident and likely to spend the majority of their life cycle in the vicinity of the AOI. In contrast, migratory species are likely to only spend approximately 50% of their life cycle within the AOI and when not within the AOI, these species may be in other regions of Australia / New Zealand (e.g. the Murray River for the great egret) or the northern hemisphere (e.g. Siberia for the Long-toed stint). For the nominated migratory ROC, high intensity feeding related to nesting occurs in areas other than the AOI.
- PFAS related risks to avian and mammalian receptors are driven by PFOS+PFHxS. PFOS+PFHxS concentrations are most elevated in predator fish and prey fish (approximately 0.1 to 1 mg/kg), with concentrations in aquatic plants, benthic invertebrates and pelagic invertebrates lower (approximately <0.1 mg/kg).
- For avian and mammalian species, HI calculations (i.e. the estimated exposure dose divided by the acceptable exposure dose), which represent a measure of risk, can be summarised as follows:
    - Laverton RAAF Swamp: HIs predominantly between 1 and 10 (highest for rakali).
    - Skeleton Creek:
        - HIs predominantly between 1 and 10.
        - The HIs for two ROC are greater than 10 (great egret, rakali).
    - Sanctuary Lakes and Cheetham Wetlands:
        - HIs for four ROC <1.
        - HIs between 1 and 10 for five ROC (hooded plover, royal spoonbill, long-toed stint, great egret and rakali.

  It is important to note that the Australian Government guidance[10] states that HIs greater than 1 do not necessarily mean that risks are unacceptable, but that further consideration is required.
- The spatial pattern observed in the estimated risk profile aligns with the flow pathway, whereby the highest risks were observed in Skeleton Creek, which is the closest to the base. Lower risks were observed in Laverton RAAF Swamp, which is closer to the base than Skeleton Creek, however this is attributable to its smaller size and proportionally lower estimated use by receptors.
- Where interventions are applied within the base to reduce the discharges of PFAS to downgradient environments, the concentrations of PFAS in Skeleton Creek, as the most proximal major water body, are expected to decline. Sanctuary Lakes and Cheetham Wetlands receive water from Skeleton Creek, and accordingly the concentrations of PFAS in these AOI will also reduce following reductions in Skeleton Creek. Whilst quantified estimates of the period of time required to observe measurable decreases in concentrations of PFAS within the receiving water bodies is out of the scope of this detailed ERA, it is considered that this process would likely take years.
- Overall, the risks are significantly lower than indicated in the preliminary ERA (Aurecon 2022), which generally ranged from 1 to 10 for herbivores, 10 to 100 for invertivores and greater than 100 for piscivores. This is related to the additional data collected since 2022 to address data gaps and the site specific nature of the risk assessment approach presented in this detailed ERA. The preliminary ERA (Aurecon 2022) provided risk estimates based on dietary exposure media and provided HI ranges from 10 to greater than 100 for mammals, migratory and non-migratory birds.

[10] National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (commonly referred to as 'the ASC NEPM').

For all ROC the primary exposure pathway was intake of food. Elevated HIs are driven by the relatively high PFOS+PFHxS concentrations in fish (significant source of exposure for the great egret and rakali), which is consistent with the expectation for higher bioaccumulation of PFOS+PFHxS into fish than invertebrates and flora. Other ROC which were found to exhibit HIs greater than 1 comprised receptors which obtain a portion of their diets from either invertivores or fish. For ROC with a primarily vegetarian diet, a proportionally higher component of the estimated risks was attributable to incidental intakes of sediment.

10.4 Stygofauna

The preliminary ERA (Aurecon 2022) identified potential risks to stygofauna, but was not able to quantify risks based on the available scientific literature database. Since 2022, an Australian paper has been released which allows for derivation of assessment criteria which consider risks to stygofauna. On the basis of this assessment criteria, risks to stygofauna are potentially elevated in some areas downgradient of the base. However, these potential risks are considered to be secondary to risks posed to avian and mammalian species. Any actions undertaken to reduce risks to avian and mammalian species will also reduce risks to stygofauna.

10.5 Overall conclusions

This detailed ERA has quantified risks to ecological receptors within the AOI and identified potentially elevated risks to some receptors. The outcomes of this detailed ERA will be considered by Defence in an updated PMAP (Defence 2025a).

11. References

11.1 Guidelines and legislation

11.1.1 Australian

Australian National Guidelines, legislation and regulations considered in preparation of this ERA are listed following:

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11.1.2 International

International Guidelines considered in preparation of this ERA are listed following:

- CCME (2021). *Scientific Criteria Document for the Development of the Canadian Soil and Groundwater Quality Guidelines for the Protection of Environmental and Human Health – Perfluorooctane Sulfonate (PFOS)*. Canadian Council of Ministers of the Environment, ISBN 978-1-77202-075-5, dated 2021.
- ECCC (2018). *Canadian Environmental Protection Act 1999 Federal Environmental Quality Guidelines Perfluorooctane Sulfonate (PFOS)*. Environment and Climate Change Canada, dated May 2018.
- SERDP (2020). *Guidance Document, Guidance for Assessing the Ecological Risks of PFASs to Threatened and Endangered Species at Aqueous Film Forming Foam-Impacts Sites (ER18-1614 Revision 1)*. Strategic Environmental Research and Development Program dated January 2020.
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- US EPA (2022b). *ProUCL Version 5.2.0 Technical Guide: Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. United States Environmental Protection Agency, dated 2022.

11.2 Previous reports

Previous reports made available to JBS&G for review are listed following:

- Aurecon (2020). *Investigation of per-and poly-fluoroalkyl substances at RAAF Williams Laverton, Detailed Site Investigation*. Aurecon Australasia Pty Ltd dated 3 November 2020. Herein referred to as the 'DSI'.
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- Golder (2017). *Preliminary Site Investigation for PFAS RAAF Base Williams Laverton VIC (166923_002_R_Rev1)*. Golder Associates Pty Ltd dated 17 September 2017. Herein referred to as the 'PSI'.
- JBS&G (2024). *PFAS Management Area Plan (PMAP) Delivery at RAAF Williams, Laverton and RAAF Base Point Cook Sampling and Analysis Quality Plan (SAQP) – Ecological Risk Assessment & Human Health Risk Assessment (66022 | 159,236 – Final Rev 1)*. JBS&G Australia Pty Ltd, dated 22 November 2024. Herein referred to as the 'SAQP'.
- JBS&G (2025a). *RAAF Williams, Laverton – PFAS OMP Sampling Event Report, October 2024 (165421 | 66022 Revision 0).* JBS&G Australia Pty Ltd dated 23 October 2025.
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- JBS&G (2026a). *RAAF Williams Laverton – Ecological Risk Assessment Factual Report, May 2025 (167611 | 66022 Revision 0)*. JBS&G Australia Pty Ltd, dated 29 March 2026. Herein referred to as the 'May 2025 Factual Report'.
- JBS&G (2026b). *RAAF Williams Laverton – Sampling Event Factual Report, November 2024 to inform Ecological Risk Assessment (164,737 | 66022 Revision 0)*. JBS&G Australia Pty Ltd, dated 25 March 2026. Herein referred to as the 'November 2024 Factual Report'.
- JBS&G (2025c). *DRAFT RAAF Williams Laverton Remediation Investigation Assessment Report (66022 | 173,668 Rev B).* JBS&G Australia Pty Ltd dated 24 September 2026.
- SLR (2018). F*urther Advice, Standing of Statements and Certificates of Environmental Audit (Stages 1 to 5), Williams Landing, Vic* dated 14 November 2018.
- Stantec (2024). *PFAS OMP Factual Report, Biannual Sampling Event February 2024, RAAF Williams Laverton*. Stantec dated 9 July 2024.

11.3 Other information sources

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12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements or agreed scope of work.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Appendix A Figures

Figure 1 Site location

Figure 2 RAAF Williams, Laverton source areas

Figure 3 Off-base source areas

Figure 4 Hydrological features and source areas

Figure 5 Areas of interest (exposure environments)

Figure 6 Soil sample locations and tier 1 Exceedances

Figure 7 Groundwater well locations and tier 1 exceedances

Figure 8 Sediment sample locations and key PFAS results

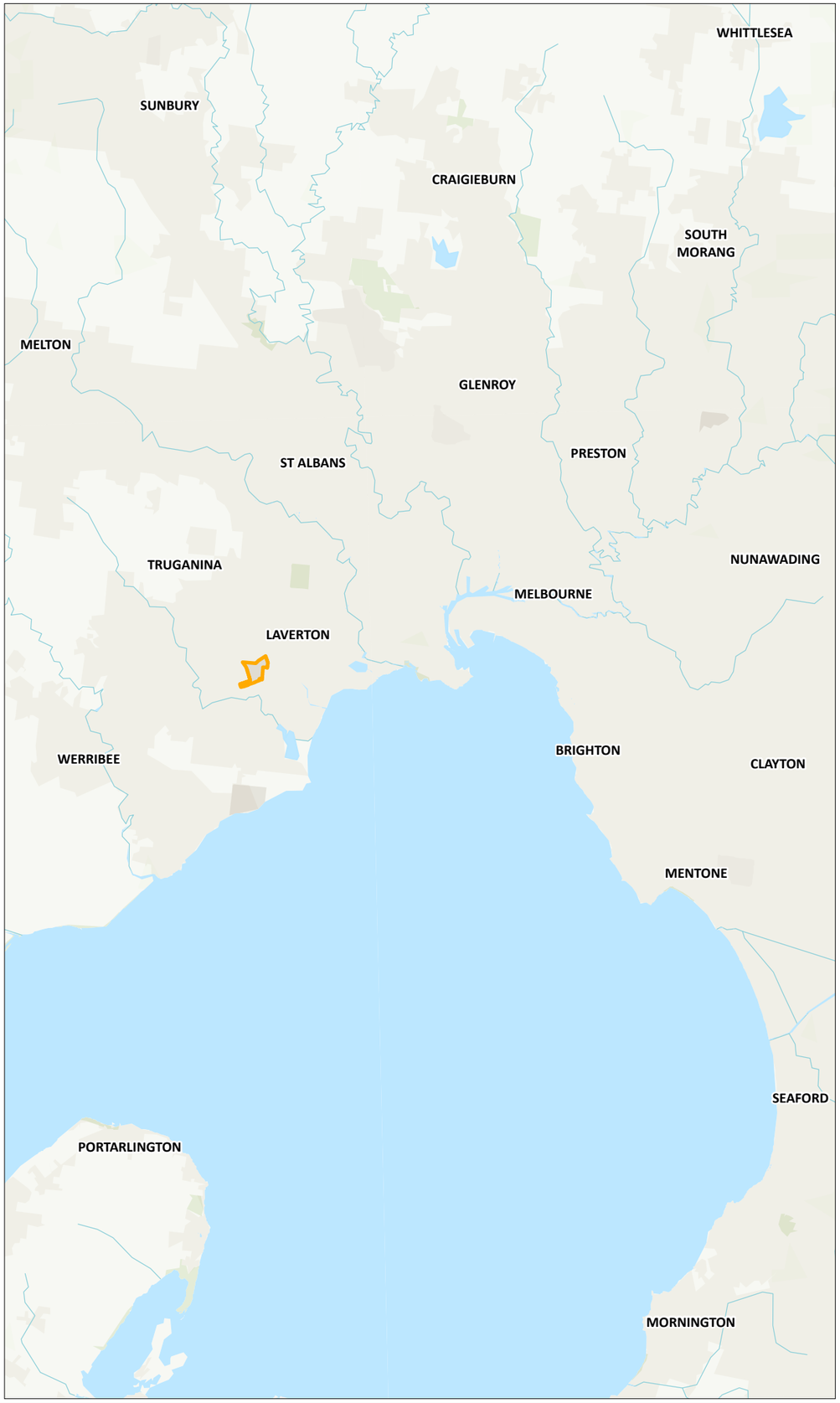
Figure 9 Surface water sample locations and tier 1 exceedances

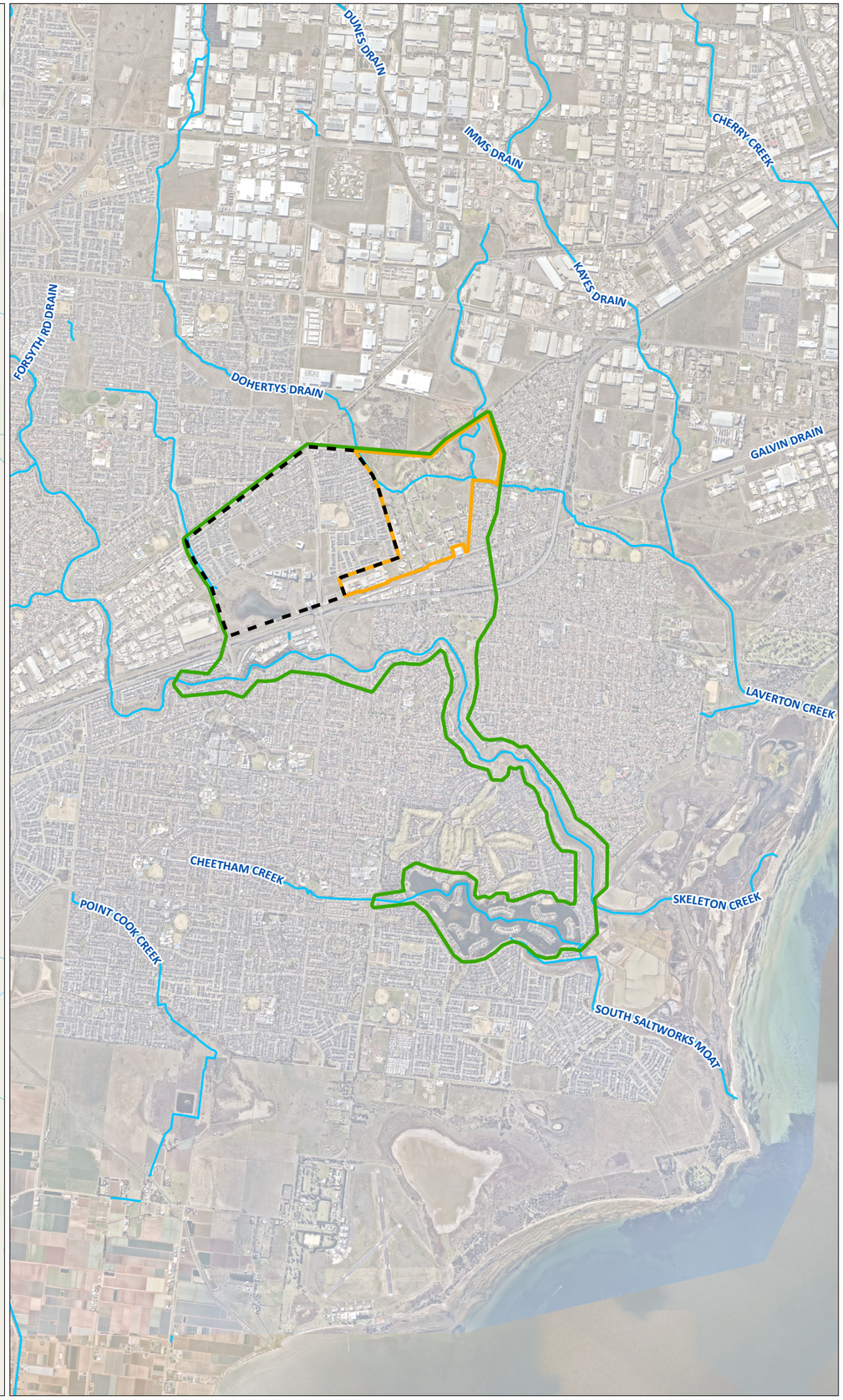
Figure 10 Biota sample locations and tier 1 exceedances (Laverton RAAF Swamp)

Figure 11 Biota sample locations and tier 1 exceedances (Skeleton Creek)

Figure 12 Biota sample locations and tier 1 exceedances (Sanctuary Lakes)

Figure 13 Biota sample locations and tier 1 exceedances (Cheetham Wetlands)





Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Watercourse

JBS&G

Job No: 66022	
Client: Department of Defence	
Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:55,000 at A3

0 1,700 3,400

metres

Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

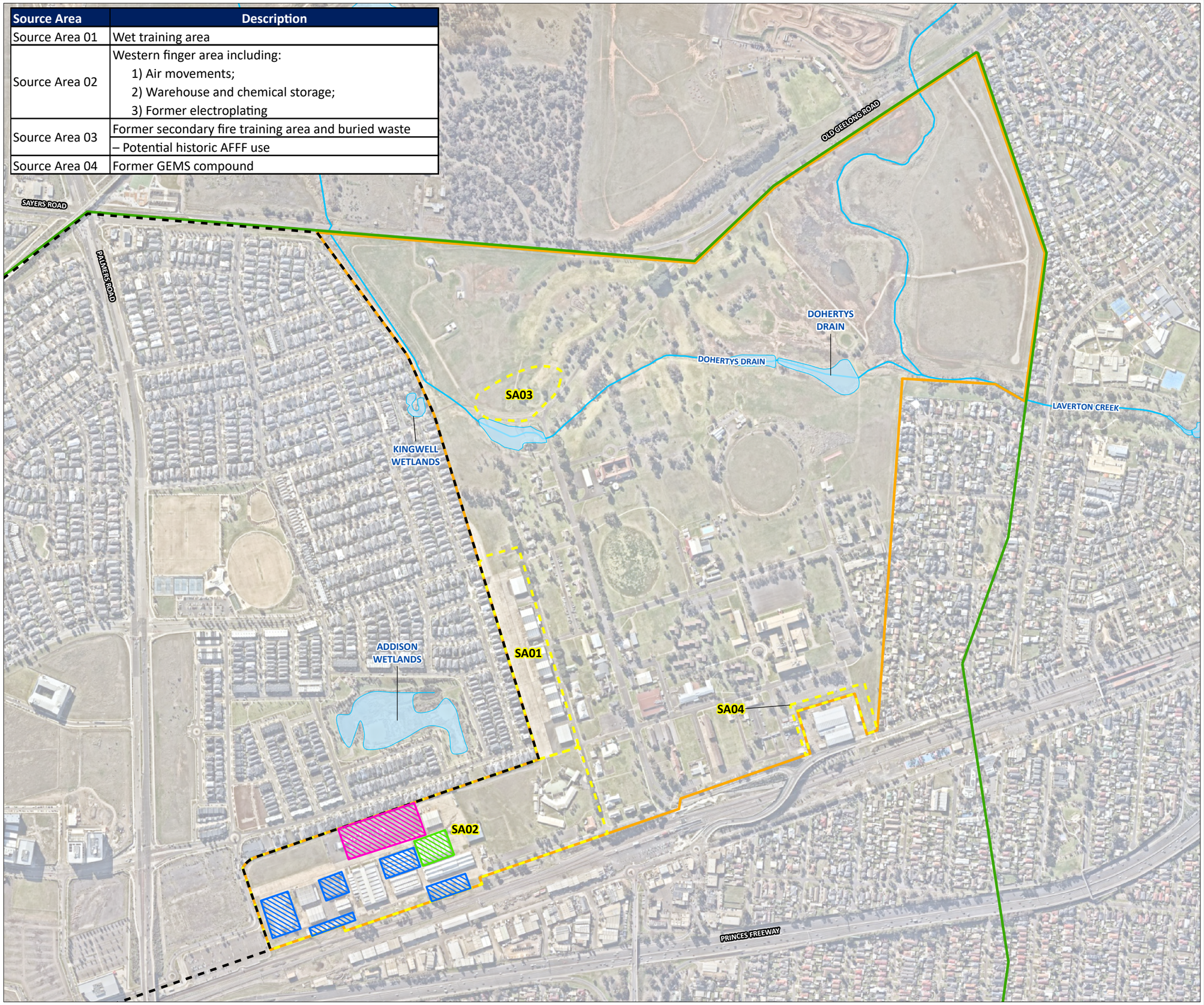
SITE LOCATION

FIGURE 1

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: ESRI Topographic Basemap - Accessed Imagery: 29/09/2025 | Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)

Source Area	Description
Source Area 01	Wet training area
Source Area 02	Western finger area including: 1) Air movements; 2) Warehouse and chemical storage; 3) Former electroplating
Source Area 03	Former secondary fire training area and buried waste
	– Potential historic AFFF use
Source Area 04	Former GEMS compound



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Waterbodies
- Watercourse

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:8,000 at A3

0 250 500
metres

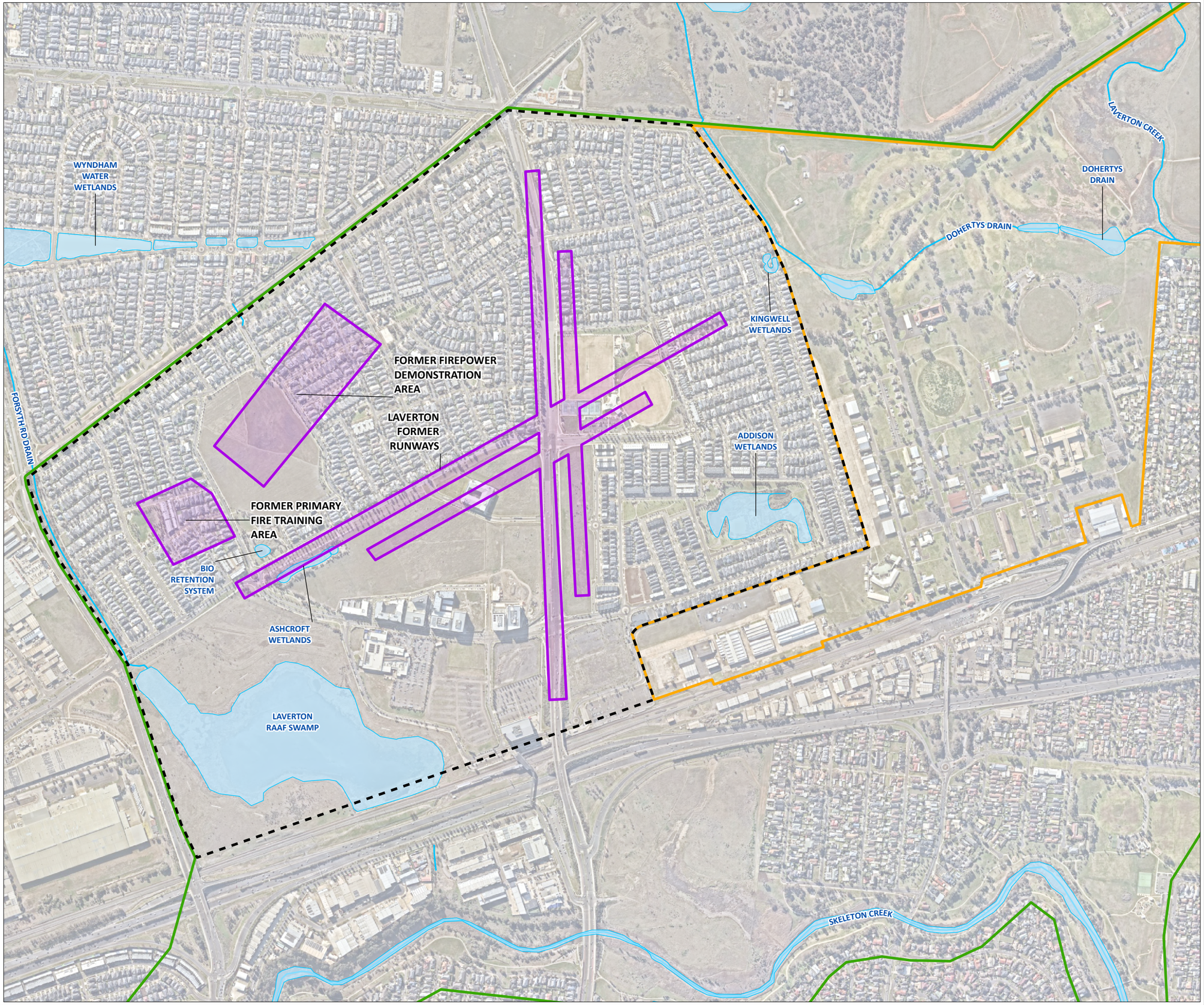
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

SOURCE AREAS

FIGURE 2

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Waterbodies
- Watercourse

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:10,000 at A3

0 300 600

metres

Coord. System: GDA2020 MGA Zone 55

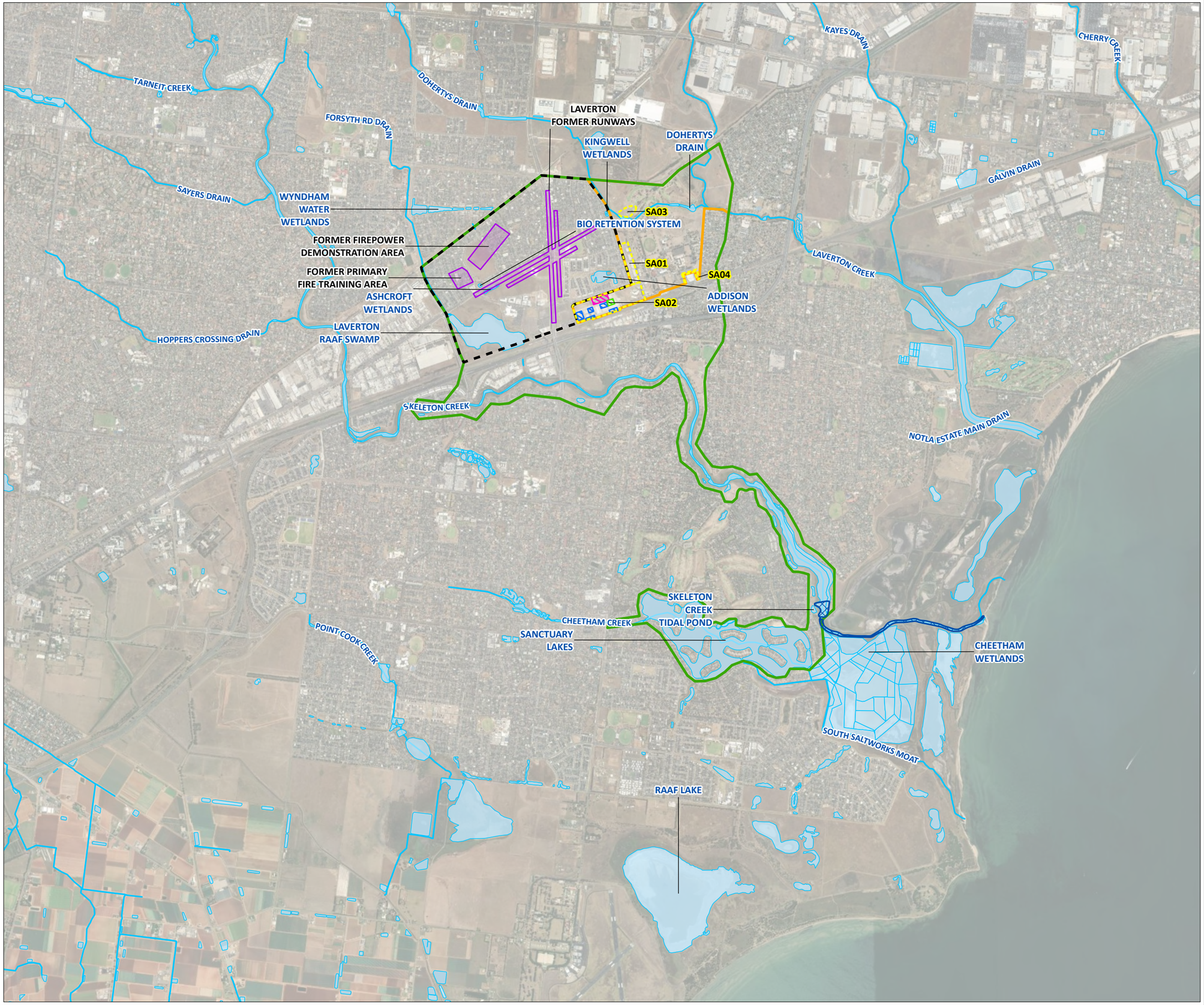
RAAF Williams, Laverton

OFF-BASE SOURCE AREAS

FIGURE 3

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Tidal area of Skeleton Creek (EPA Victoria)
- Waterbodies
- Watercourse

JBS&G

Job No: 66022	
Client: Department of Defence	
Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:40,000 at A3

0 1,250 2,500

metres

Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

HYDROLOGICAL FEATURES AND SOURCE AREAS

FIGURE 4

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)

TARNEIT
LAVERTON NORTH
TRUGANINA
LAVERTON
ALTONA
WILLIAMS LANDING
HOPPERS CROSSING
SEABROOK
ALTONA MEADOWS
POINT COOK
WERRIBEE SOUTH

Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Tidal area of Skeleton Creek (EPA Victoria)

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:27,000 at A3

0 750 1,500
metres

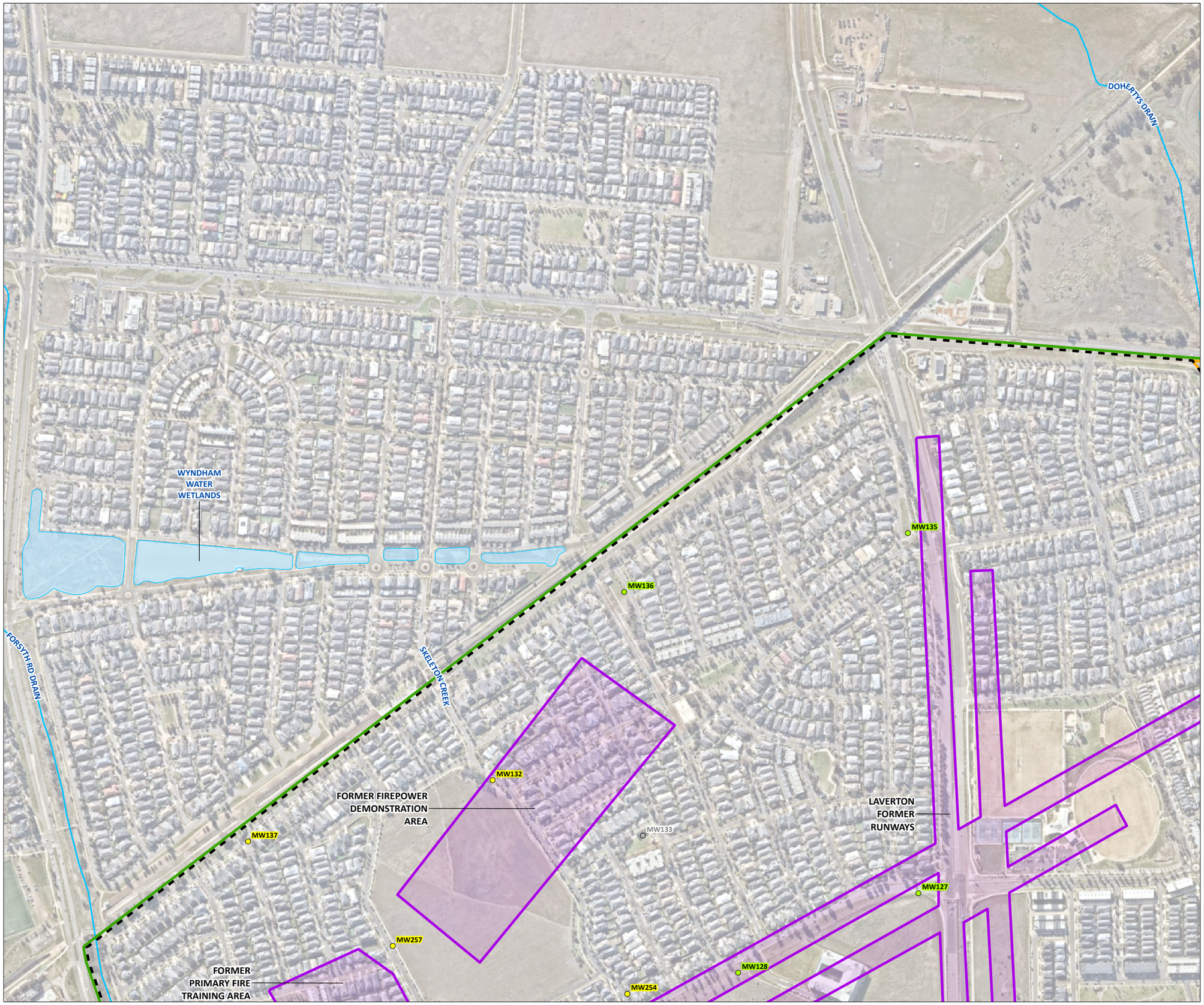
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

AREAS OF INTEREST

FIGURE 5

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

Analytical Results PFOS in Soil

- Non-detect
- PFOS ≤0.003 – detected, no exceedances
- PFOS >0.003 to ≤1.0 mg/kg – PFAS NEMP 2025 Interim ecological indirect exposure – all land uses
- PFOS >1.0 mg/kg – PFAS NEMP 2025 Ecological direct exposure – all land uses



JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:6,000 at A3

0 175 350
metres

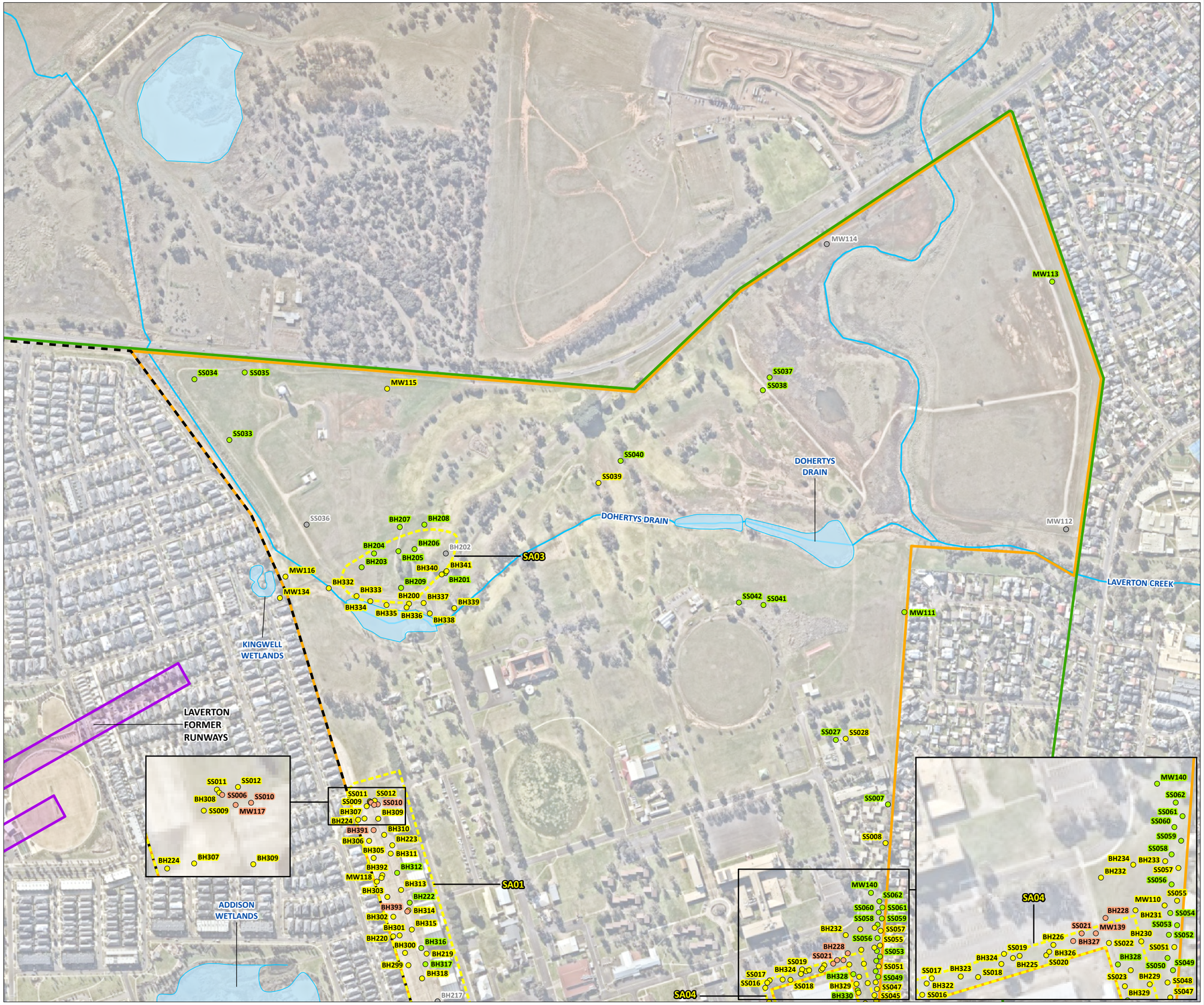
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

SOIL SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 6A

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

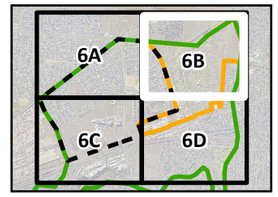
- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

Analytical Results PFOS in Soil

- Non-detect
- PFOS ≤0.003 – detected, no exceedances
- PFOS >0.003 to ≤1.0 mg/kg – PFAS NEMP 2025 Interim ecological indirect exposure – all land uses
- PFOS >1.0 mg/kg – PFAS NEMP 2025 Ecological direct exposure – all land uses



JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:6,000 at A3

0 175 350
metres

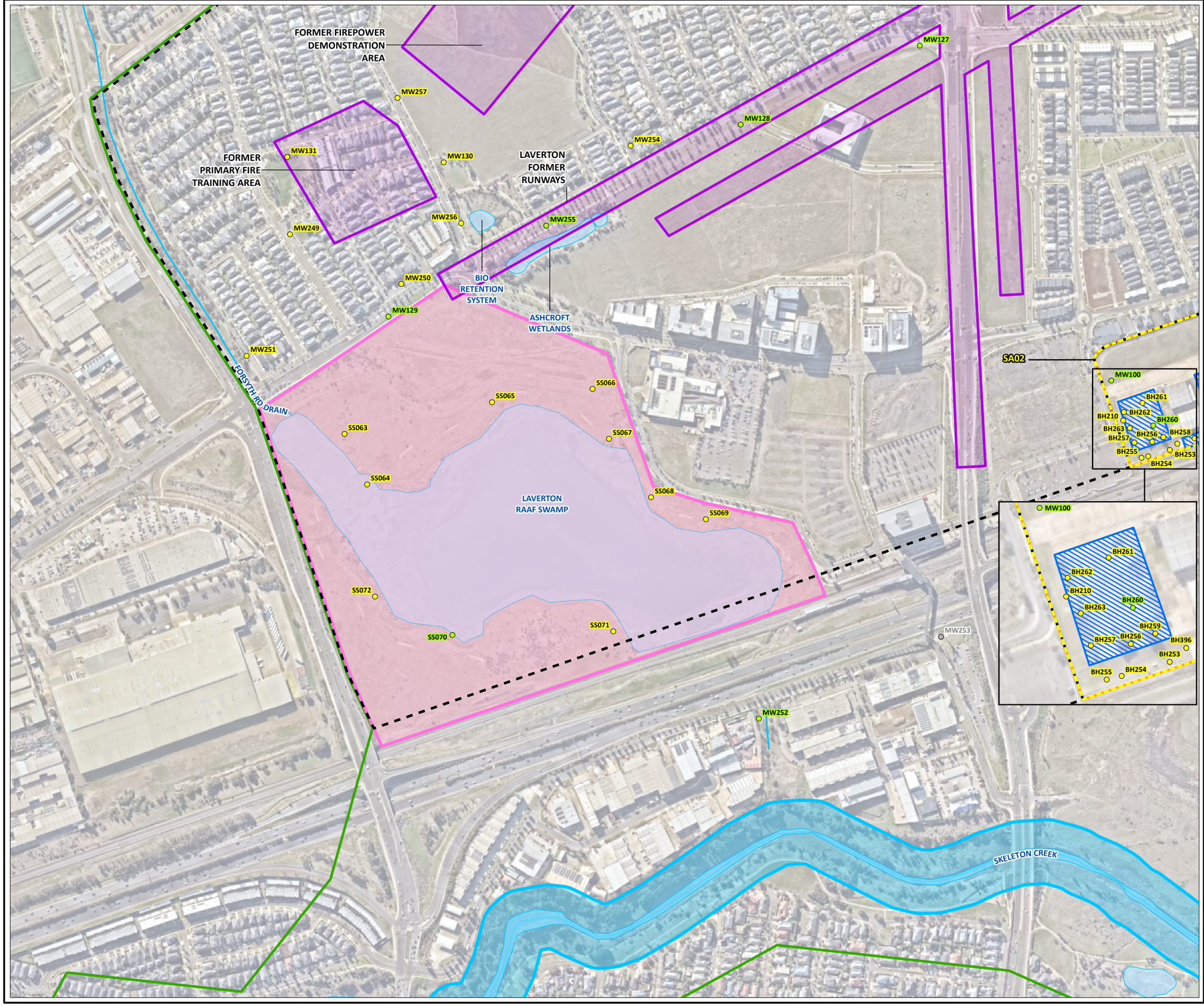
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

SOIL SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 6B

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

Analytical Results PFOS in Soil

- Non-detect
- PFOS ≤0.003 – detected, no exceedances
- PFOS >0.003 to ≤1.0 mg/kg – PFAS NEMP 2025 Interim ecological indirect exposure – all land uses
- PFOS >1.0 mg/kg – PFAS NEMP 2025 Ecological direct exposure – all land uses

JBS&G

Job No: 66022	
Client: Department of Defence	
Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:6,000 at A3

0 175 350
metres

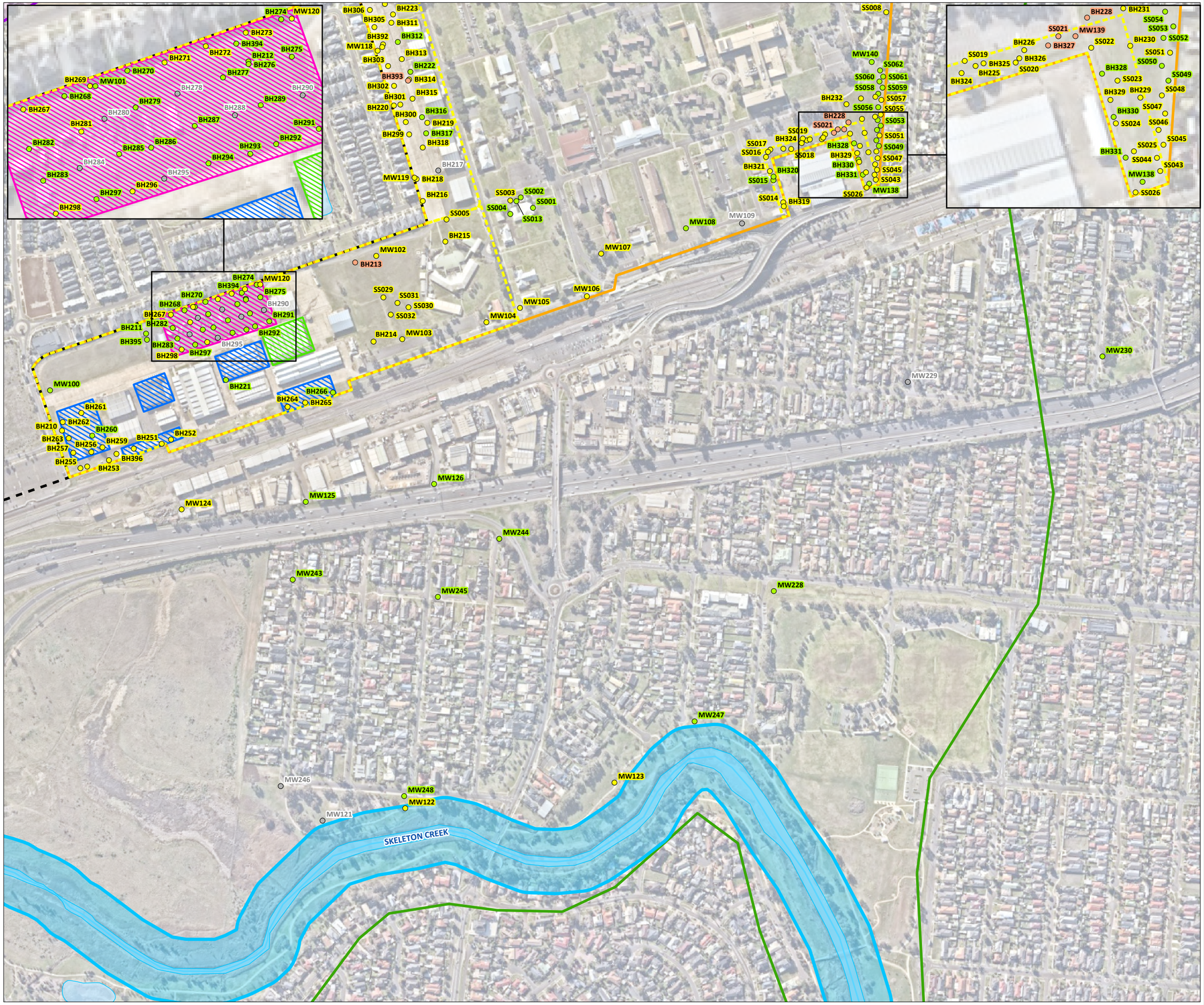
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

SOIL SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 6C

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

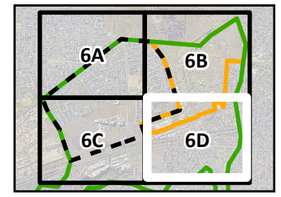
- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

Analytical Results PFOS in Soil

- Non-detect
- PFOS ≤0.003 – detected, no exceedances
- PFOS >0.003 to ≤1.0 mg/kg – PFAS NEMP 2025 Interim ecological indirect exposure – all land uses
- PFOS >1.0 mg/kg – PFAS NEMP 2025 Ecological direct exposure – all land uses



JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:6,000 at A3

0 175 350

metres

Coord. System: GDA2020 MGA Zone 55

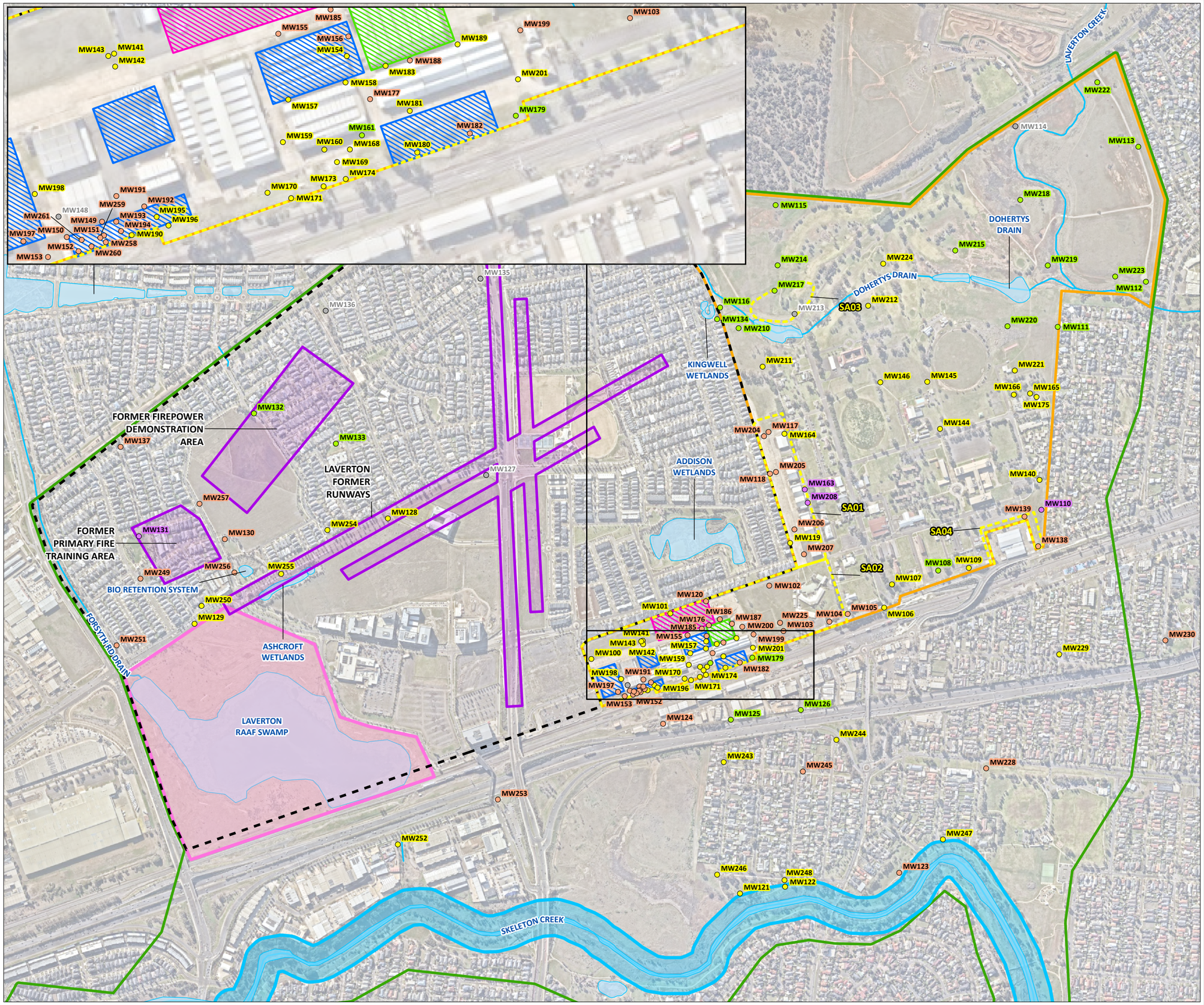
RAAF Williams, Laverton

SOIL SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 6D

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

PFOS Concentration Range Key (µg/L)

- Non-detect
- PFOS ≤0.13 µg/L – Exceeds PFAS NEMP 99% spp. DGV
- PFOS >0.13 to ≤2.0 µg/L – Exceeds PFAS NEMP 95% spp. DGV
- PFOS >2.0 to ≤80 µg/L – Exceeds PFAS NEMP 90% spp. DGV
- PFOS >80 µg/L – Exceeds PFAS NEMP 90% spp. DGV

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:11,000 at A3

0 350 700

metres

Coord. System: GDA2020 MGA Zone 55

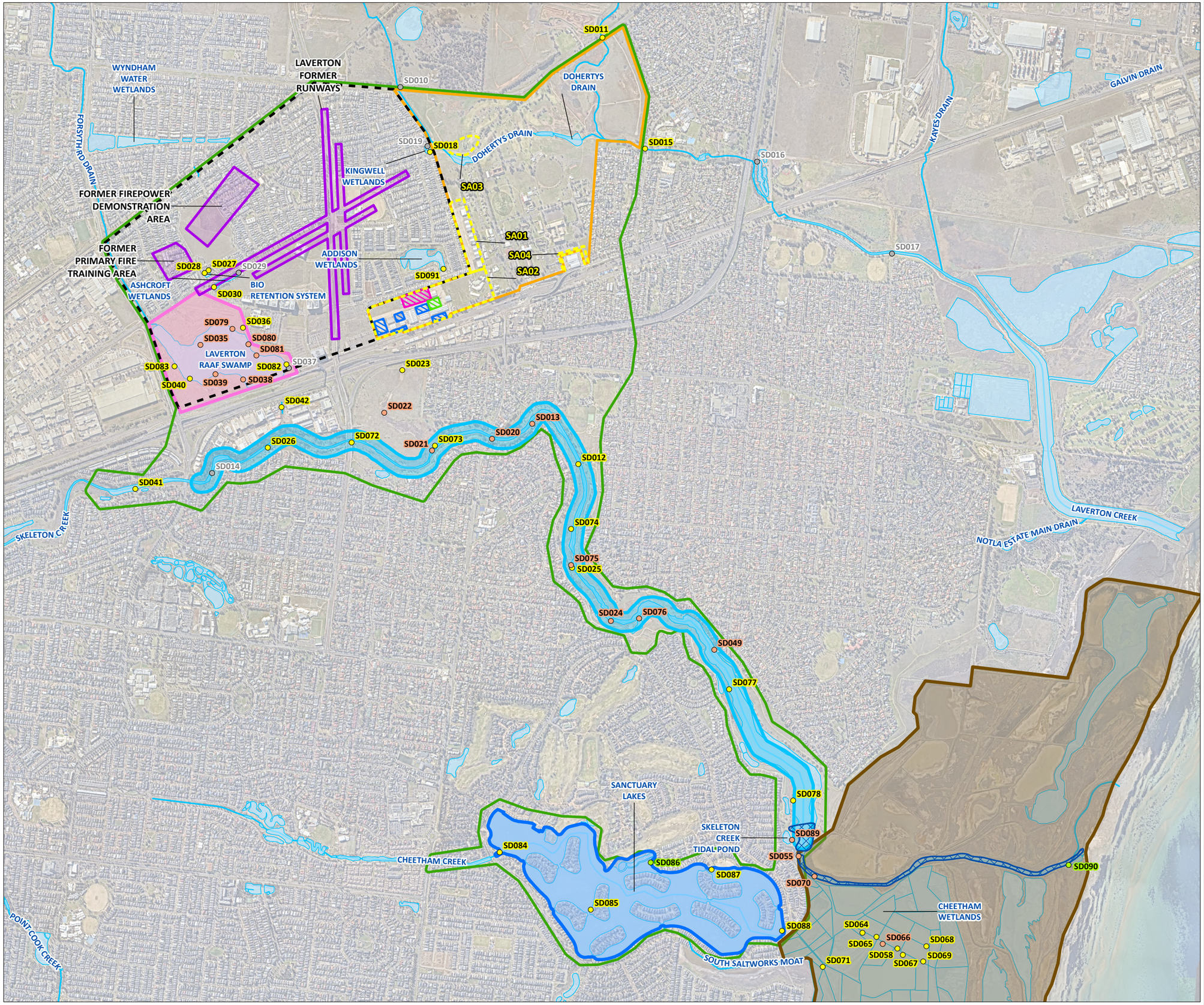
RAAF Williams, Laverton

GROUNDWATER WELL LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 7

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source Area
- Air movements
- Former chemical storage area
- Former electroplating area
- Tidal area of Skeleton Creek (EPA Victoria)
- Waterbodies
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

PFOS+PFHxS Concentration Range Key (mg/kg)

- Non-detect
- PFOS+PFHxS <0.005 mg/kg
- PFOS+PFHxS 0.005 to ≤0.05 mg/kg
- PFOS+PFHxS >0.05 mg/kg

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:23,000 at A3

0 700 1,400

metres

Coord. System: GDA2020 MGA Zone 55

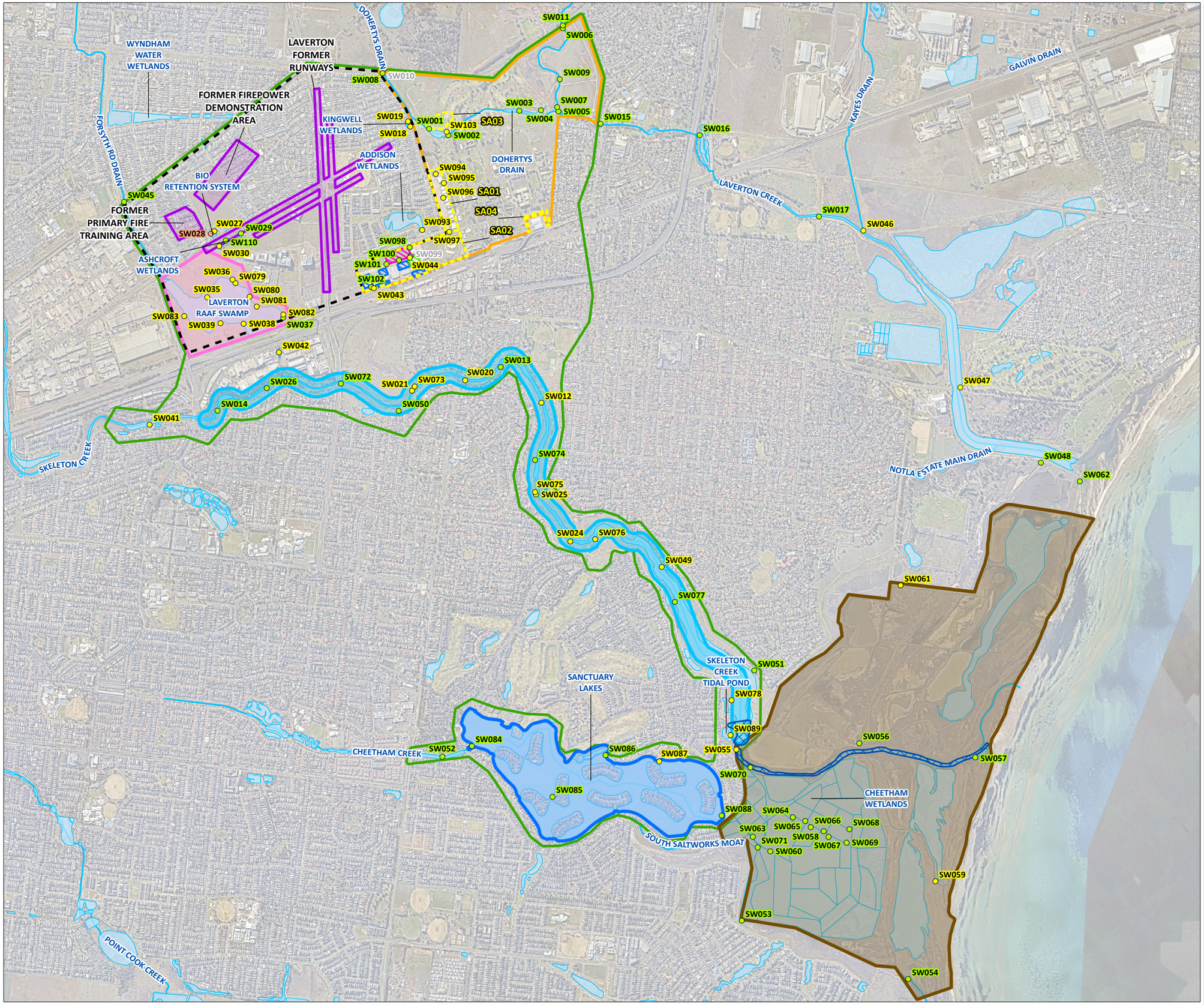
RAAF Williams, Laverton

SEDIMENT SAMPLE LOCATIONS AND PFOS+PFHXS RANGES

FIGURE 8

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Air movements
- Former chemical storage area
- Former electroplating area
- Tidal area of Skeleton Creek (EPA Victoria)
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Laverton RAAF Swamp
- Sanctuary Lakes
- Skeleton Creek

PFOS Concentration Range Key (µg/L)

- Non-detect
- PFOS ≤0.13 µg/L – Exceeds PFAS NEMP 99% spp. DGV
- PFOS >0.13 to ≤2.0 µg/L – Exceeds PFAS NEMP 95% spp. DGV
- PFOS >2.0 to ≤80 µg/L – Exceeds PFAS NEMP 90% spp. DGV
- PFOS >80 µg/L – Exceeds PFAS NEMP 90% spp. DGV

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0	Date: 19/10/2026
Drawn By: AL	Checked By: RH

Scale: 1:26,000 at A3

0 750 1,500

metres

Coord. System: GDA2020 MGA Zone 55

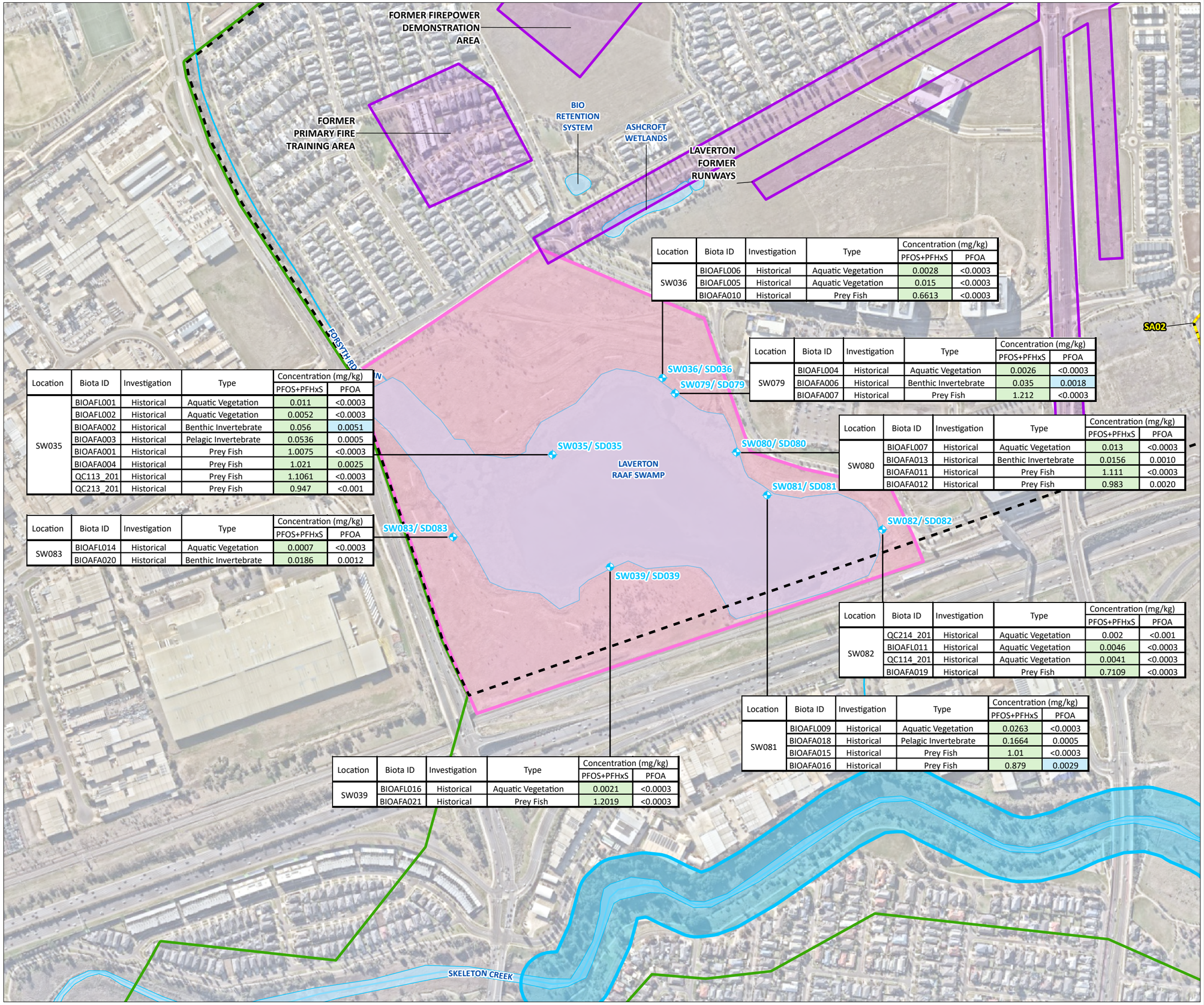
RAAF Williams, Laverton

SURFACE WATER SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES

FIGURE 9

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW035	BIOAFL001	Historical	Aquatic Vegetation	0.011	<0.0003
	BIOAFL002	Historical	Aquatic Vegetation	0.0052	<0.0003
	BIOAFA002	Historical	Benthic Invertebrate	0.056	0.0051
	BIOAFA003	Historical	Pelagic Invertebrate	0.0536	0.0005
	BIOAFA001	Historical	Prey Fish	1.0075	<0.0003
	BIOAFA004	Historical	Prey Fish	1.021	0.0025
	QC113_201	Historical	Prey Fish	1.1061	<0.0003
	QC213_201	Historical	Prey Fish	0.947	<0.001

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW083	BIOAFL014	Historical	Aquatic Vegetation	0.0007	<0.0003
	BIOAFA020	Historical	Benthic Invertebrate	0.0186	0.0012

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW039	BIOAFL016	Historical	Aquatic Vegetation	0.0021	<0.0003
	BIOAFA021	Historical	Prey Fish	1.2019	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW036	BIOAFL006	Historical	Aquatic Vegetation	0.0028	<0.0003
	BIOAFL005	Historical	Aquatic Vegetation	0.015	<0.0003
	BIOAFA010	Historical	Prey Fish	0.6613	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW079	BIOAFL004	Historical	Aquatic Vegetation	0.0026	<0.0003
	BIOAFA006	Historical	Benthic Invertebrate	0.035	0.0018
	BIOAFA007	Historical	Prey Fish	1.212	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW080	BIOAFL007	Historical	Aquatic Vegetation	0.013	<0.0003
	BIOAFA013	Historical	Benthic Invertebrate	0.0156	0.0010
	BIOAFA011	Historical	Prey Fish	1.111	<0.0003
	BIOAFA012	Historical	Prey Fish	0.983	0.0020

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW082	QC214_201	Historical	Aquatic Vegetation	0.002	<0.001
	BIOAFL011	Historical	Aquatic Vegetation	0.0046	<0.0003
	QC114_201	Historical	Aquatic Vegetation	0.0041	<0.0003
	BIOAFA019	Historical	Prey Fish	0.7109	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW081	BIOAFL009	Historical	Aquatic Vegetation	0.0263	<0.0003
	BIOAFA018	Historical	Pelagic Invertebrate	0.1664	0.0005
	BIOAFA015	Historical	Prey Fish	1.01	<0.0003
	BIOAFA016	Historical	Prey Fish	0.879	0.0029

Legend

- Laverton site boundary
- Laverton management area
- Former extent of RAAF Williams
- Former features
- Source area
- Waterbodies
- Watercourse

Areas Of Interest

- Laverton RAAF Swamp
- Skeleton Creek
- Surface water/ Sediment sample location

Exceedance Criteria	Concentration (mg/kg)	
	PFOS+PFHxS	PFOA
PFAS NEMP 3.0 - Avian Biota Screening Value	0.0082	0.0024
PFAS NEMP 3.0 - Mammalian Biota Screening Value	0.0031	0.0028

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0 | Date: 19/10/2026

Drawn By: AL | Checked By: RH

Scale: 1:6,000 at A3

0 175 350
metres

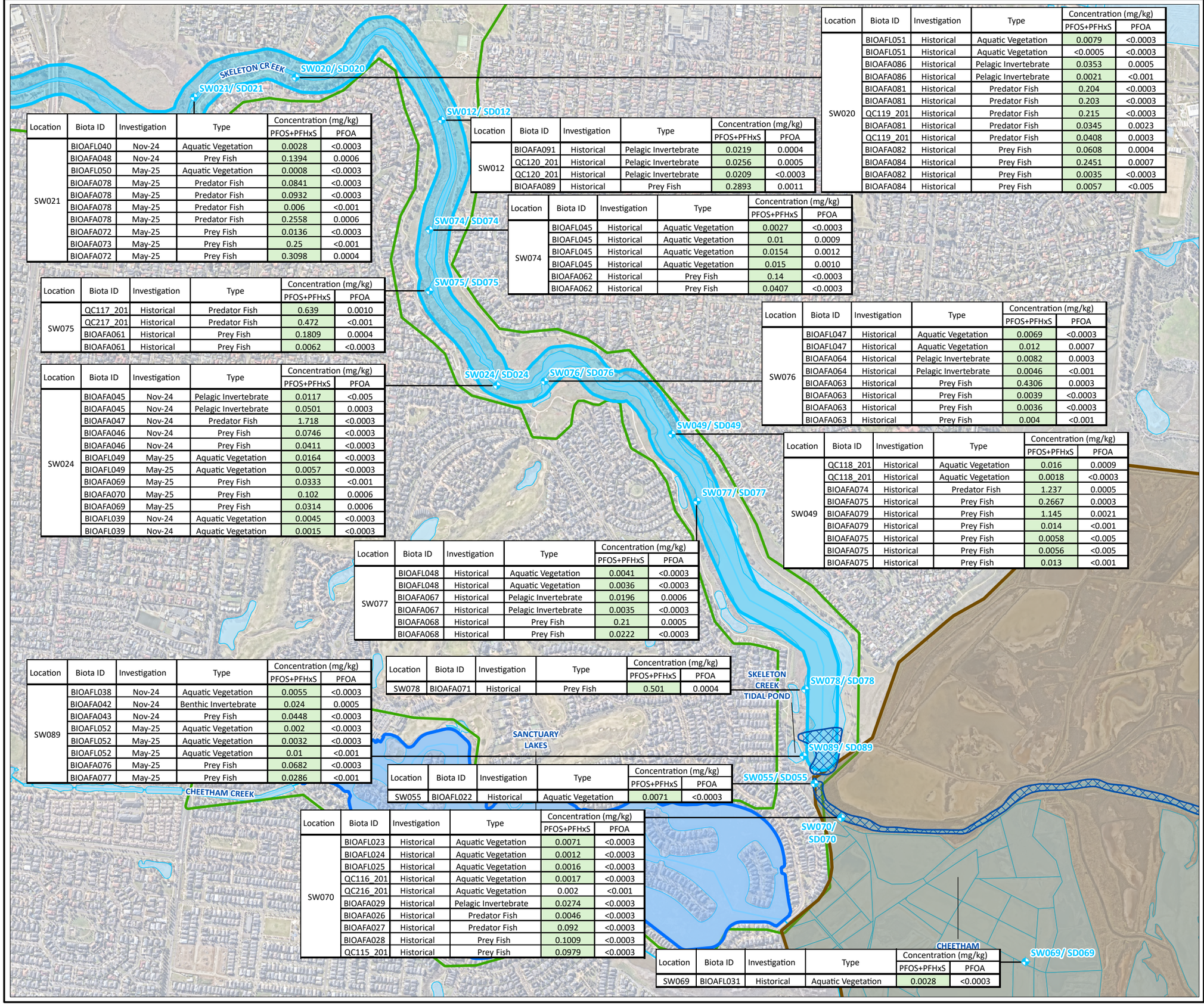
Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

BIOTA SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES (LAVERTON RAAF SWAMP)

FIGURE 10

File Name: 66022_RAAF_Laverton_ERA_A3
Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW021	BIOAFL040	Nov-24	Aquatic Vegetation	0.0028	<0.0003
	BIOAFA048	Nov-24	Prey Fish	0.1394	0.0006
	BIOAFL050	May-25	Aquatic Vegetation	0.0008	<0.0003
	BIOAFA078	May-25	Predator Fish	0.0841	<0.0003
	BIOAFA078	May-25	Predator Fish	0.0932	<0.0003
	BIOAFA078	May-25	Predator Fish	0.006	<0.001
	BIOAFA078	May-25	Predator Fish	0.2558	0.0006
	BIOAFA072	May-25	Prey Fish	0.0136	<0.0003
	BIOAFA073	May-25	Prey Fish	0.25	<0.001
	BIOAFA072	May-25	Prey Fish	0.3098	0.0004

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW012	BIOAFA091	Historical	Pelagic Invertebrate	0.0219	0.0004
	QC120_201	Historical	Pelagic Invertebrate	0.0256	0.0005
	QC120_201	Historical	Pelagic Invertebrate	0.0209	<0.0003
	BIOAFA089	Historical	Prey Fish	0.2893	0.0011

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW020	BIOAFL051	Historical	Aquatic Vegetation	0.0079	<0.0003
	BIOAFL051	Historical	Aquatic Vegetation	<0.0005	<0.0003
	BIOAFA086	Historical	Pelagic Invertebrate	0.0353	0.0005
	BIOAFA086	Historical	Pelagic Invertebrate	0.0021	<0.001
	BIOAFA081	Historical	Predator Fish	0.204	<0.0003
	BIOAFA081	Historical	Predator Fish	0.203	<0.0003
	QC119_201	Historical	Predator Fish	0.215	<0.0003
	BIOAFA081	Historical	Predator Fish	0.0345	0.0023
	QC119_201	Historical	Predator Fish	0.0408	0.0003
	BIOAFA082	Historical	Prey Fish	0.0608	0.0004
	BIOAFA084	Historical	Prey Fish	0.2451	0.0007
	BIOAFA082	Historical	Prey Fish	0.0035	<0.0003
	BIOAFA084	Historical	Prey Fish	0.0057	<0.005

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW074	BIOAFL045	Historical	Aquatic Vegetation	0.0027	<0.0003
	BIOAFL045	Historical	Aquatic Vegetation	0.01	0.0009
	BIOAFL045	Historical	Aquatic Vegetation	0.0154	0.0012
	BIOAFL045	Historical	Aquatic Vegetation	0.015	0.0010
	BIOAFA062	Historical	Prey Fish	0.14	<0.0003
	BIOAFA062	Historical	Prey Fish	0.0407	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW075	QC117_201	Historical	Predator Fish	0.639	0.0010
	QC217_201	Historical	Predator Fish	0.472	<0.001
	BIOAFA061	Historical	Prey Fish	0.1809	0.0004
	BIOAFA061	Historical	Prey Fish	0.0062	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW076	BIOAFL047	Historical	Aquatic Vegetation	0.0069	<0.0003
	BIOAFL047	Historical	Aquatic Vegetation	0.012	0.0007
	BIOAFA064	Historical	Pelagic Invertebrate	0.0082	0.0003
	BIOAFA064	Historical	Pelagic Invertebrate	0.0046	<0.001
	BIOAFA063	Historical	Prey Fish	0.4306	0.0003
	BIOAFA063	Historical	Prey Fish	0.0039	<0.0003
	BIOAFA063	Historical	Prey Fish	0.0036	<0.0003
	BIOAFA063	Historical	Prey Fish	0.004	<0.001

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW024	BIOAFA045	Nov-24	Pelagic Invertebrate	0.0117	<0.005
	BIOAFA045	Nov-24	Pelagic Invertebrate	0.0501	0.0003
	BIOAFA047	Nov-24	Predator Fish	1.718	<0.0003
	BIOAFA046	Nov-24	Prey Fish	0.0746	<0.0003
	BIOAFA046	Nov-24	Prey Fish	0.0411	<0.0003
	BIOAFL049	May-25	Aquatic Vegetation	0.0164	<0.0003
	BIOAFL049	May-25	Aquatic Vegetation	0.0057	<0.0003
	BIOAFA069	May-25	Prey Fish	0.0333	<0.001
	BIOAFA070	May-25	Prey Fish	0.102	0.0006
	BIOAFA069	May-25	Prey Fish	0.0314	0.0006
	BIOAFL039	Nov-24	Aquatic Vegetation	0.0045	<0.0003
	BIOAFL039	Nov-24	Aquatic Vegetation	0.0015	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW049	QC118_201	Historical	Aquatic Vegetation	0.016	0.0009
	QC118_201	Historical	Aquatic Vegetation	0.0018	<0.0003
	BIOAFA074	Historical	Predator Fish	1.237	0.0005
	BIOAFA075	Historical	Prey Fish	0.2667	0.0003
	BIOAFA079	Historical	Prey Fish	1.145	0.0021
	BIOAFA079	Historical	Prey Fish	0.014	<0.001
	BIOAFA075	Historical	Prey Fish	0.0058	<0.005
	BIOAFA075	Historical	Prey Fish	0.0056	<0.005
	BIOAFA075	Historical	Prey Fish	0.013	<0.001

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW077	BIOAFL048	Historical	Aquatic Vegetation	0.0041	<0.0003
	BIOAFL048	Historical	Aquatic Vegetation	0.0036	<0.0003
	BIOAFA067	Historical	Pelagic Invertebrate	0.0196	0.0006
	BIOAFA067	Historical	Pelagic Invertebrate	0.0035	<0.0003
	BIOAFA068	Historical	Prey Fish	0.21	0.0005
	BIOAFA068	Historical	Prey Fish	0.0222	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW089	BIOAFL038	Nov-24	Aquatic Vegetation	0.0055	<0.0003
	BIOAFA042	Nov-24	Benthic Invertebrate	0.024	0.0005
	BIOAFA043	Nov-24	Prey Fish	0.0448	<0.0003
	BIOAFL052	May-25	Aquatic Vegetation	0.002	<0.0003
	BIOAFL052	May-25	Aquatic Vegetation	0.0032	<0.0003
	BIOAFL052	May-25	Aquatic Vegetation	0.01	<0.001
	BIOAFA076	May-25	Prey Fish	0.0682	<0.0003
	BIOAFA077	May-25	Prey Fish	0.0286	<0.001

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW078	BIOAFA071	Historical	Prey Fish	0.501	0.0004

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW055	BIOAFL022	Historical	Aquatic Vegetation	0.0071	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW070	BIOAFL023	Historical	Aquatic Vegetation	0.0071	<0.0003
	BIOAFL024	Historical	Aquatic Vegetation	0.0012	<0.0003
	BIOAFL025	Historical	Aquatic Vegetation	0.0016	<0.0003
	QC116_201	Historical	Aquatic Vegetation	0.0017	<0.0003
	QC216_201	Historical	Aquatic Vegetation	0.002	<0.001
	BIOAFA029	Historical	Pelagic Invertebrate	0.0274	<0.0003
	BIOAFA026	Historical	Predator Fish	0.0046	<0.0003
	BIOAFA027	Historical	Predator Fish	0.092	<0.0003
	BIOAFA028	Historical	Prey Fish	0.1009	<0.0003
	QC115_201	Historical	Prey Fish	0.0979	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW069	BIOAFL031	Historical	Aquatic Vegetation	0.0028	<0.0003

Legend

- Laverton management area
- Tidal area of Skeleton Creek (EPA Victoria)
- Waterbodies
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Sanctuary Lakes
- Skeleton Creek
- Surface water/ Sediment sample location

Exceedance Criteria	Concentration (mg/kg)	
	PFOS+PFHxS	PFOA
PFAS NEMP 3.0 - Avian Biota Screening Value	0.0082	0.0024
PFAS NEMP 3.0 - Mammalian Biota Screening Value	0.0031	0.0028

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0 | Date: 19/10/2026

Drawn By: AL | Checked By: RH

Scale: 1:13,500 at A3

0 400 800

metres

Coord. System: GDA2020 MGA Zone 55

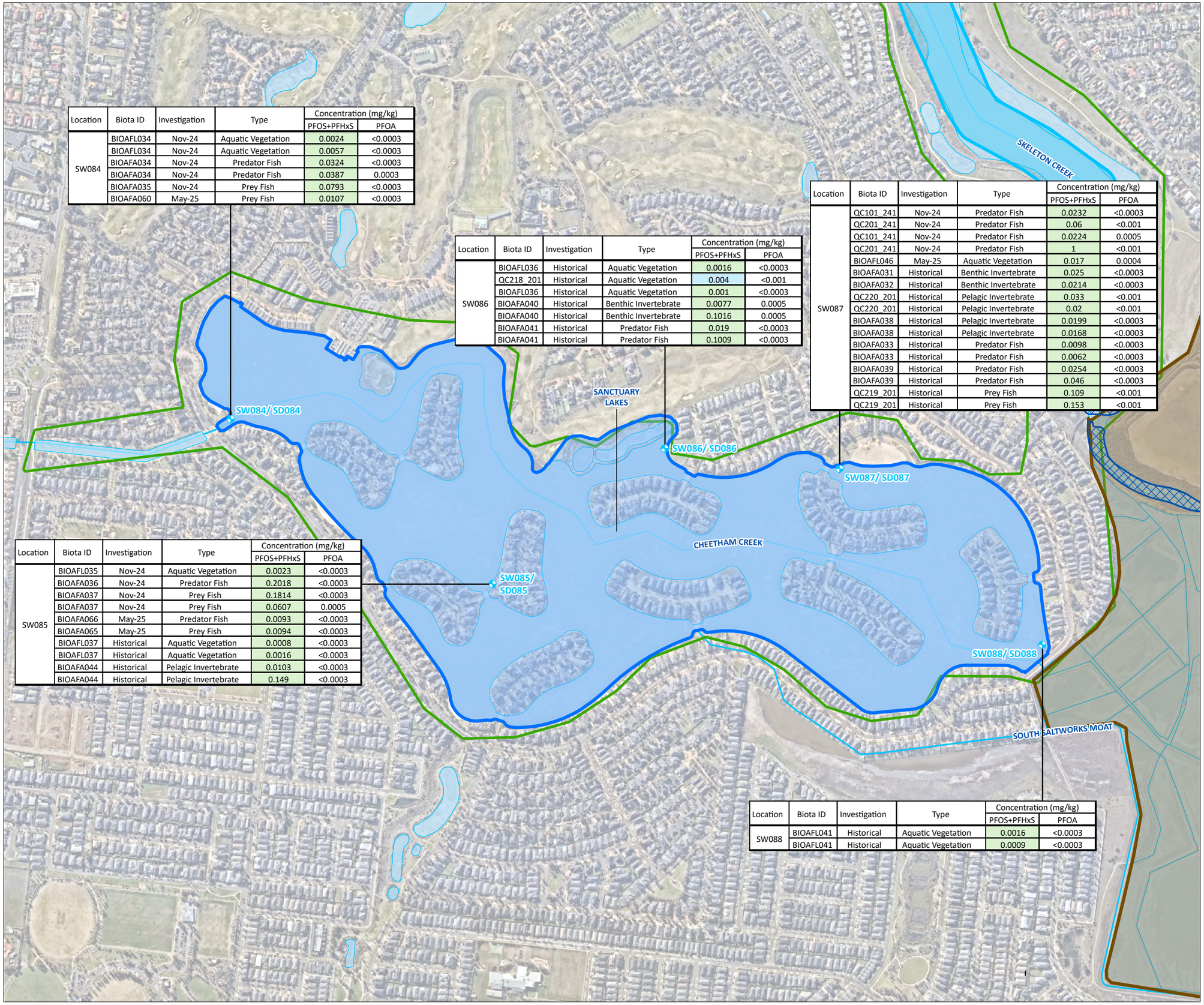
RAAF Williams, Laverton

BIOTA SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES (SKELETON CREEK)

FIGURE 11

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW084	BIOAFL034	Nov-24	Aquatic Vegetation	0.0024	<0.0003
	BIOAFL034	Nov-24	Aquatic Vegetation	0.0057	<0.0003
	BIOAFA034	Nov-24	Predator Fish	0.0324	<0.0003
	BIOAFA034	Nov-24	Predator Fish	0.0387	0.0003
	BIOAFA035	Nov-24	Prey Fish	0.0793	<0.0003
	BIOAFA060	May-25	Prey Fish	0.0107	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW086	BIOAFL036	Historical	Aquatic Vegetation	0.0016	<0.0003
	QC218_201	Historical	Aquatic Vegetation	0.004	<0.001
	BIOAFL036	Historical	Aquatic Vegetation	0.001	<0.0003
	BIOAFA040	Historical	Benthic Invertebrate	0.0077	0.0005
	BIOAFA040	Historical	Benthic Invertebrate	0.1016	0.0005
	BIOAFA041	Historical	Predator Fish	0.019	<0.0003
	BIOAFA041	Historical	Predator Fish	0.1009	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW087	QC101_241	Nov-24	Predator Fish	0.0232	<0.0003
	QC201_241	Nov-24	Predator Fish	0.06	<0.001
	QC101_241	Nov-24	Predator Fish	0.0224	0.0005
	QC201_241	Nov-24	Predator Fish	1	<0.001
	BIOAFL046	May-25	Aquatic Vegetation	0.017	0.0004
	BIOAFA031	Historical	Benthic Invertebrate	0.025	<0.0003
	BIOAFA032	Historical	Benthic Invertebrate	0.0214	<0.0003
	QC220_201	Historical	Pelagic Invertebrate	0.033	<0.001
	QC220_201	Historical	Pelagic Invertebrate	0.02	<0.001
	BIOAFA038	Historical	Pelagic Invertebrate	0.0199	<0.0003
	BIOAFA038	Historical	Pelagic Invertebrate	0.0168	<0.0003
	BIOAFA033	Historical	Predator Fish	0.0098	<0.0003
	BIOAFA033	Historical	Predator Fish	0.0062	<0.0003
	BIOAFA039	Historical	Predator Fish	0.0254	<0.0003
	BIOAFA039	Historical	Predator Fish	0.046	<0.0003
	QC219_201	Historical	Prey Fish	0.109	<0.001
	QC219_201	Historical	Prey Fish	0.153	<0.001

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW085	BIOAFL035	Nov-24	Aquatic Vegetation	0.0023	<0.0003
	BIOAFA036	Nov-24	Predator Fish	0.2018	<0.0003
	BIOAFA037	Nov-24	Prey Fish	0.1814	<0.0003
	BIOAFA037	Nov-24	Prey Fish	0.0607	0.0005
	BIOAFA066	May-25	Predator Fish	0.0093	<0.0003
	BIOAFA065	May-25	Prey Fish	0.0094	<0.0003
	BIOAFL037	Historical	Aquatic Vegetation	0.0008	<0.0003
	BIOAFL037	Historical	Aquatic Vegetation	0.0016	<0.0003
	BIOAFA044	Historical	Pelagic Invertebrate	0.0103	<0.0003
	BIOAFA044	Historical	Pelagic Invertebrate	0.149	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW088	BIOAFL041	Historical	Aquatic Vegetation	0.0016	<0.0003
	BIOAFL041	Historical	Aquatic Vegetation	0.0009	<0.0003

Legend

- Laverton management area
- Tidal area of Skeleton Creek (EPA Victoria)
- Waterbodies
- Watercourse

Areas Of Interest

- Cheetham Wetlands
- Sanctuary Lakes
- Skeleton Creek
- Surface water/ Sediment sample location

Exceedance Criteria	Concentration (mg/kg)	
	PFOS+PFHxS	PFOA
PFAS NEMP 3.0 - Avian Biota Screening Value	0.0082	0.0024
PFAS NEMP 3.0 - Mammalian Biota Screening Value	0.0031	0.0028

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0 | Date: 19/10/2026

Drawn By: AL | Checked By: RH

Scale: 1:8,000 at A3

0 250 500

metres

Coord. System: GDA2020 MGA Zone 55

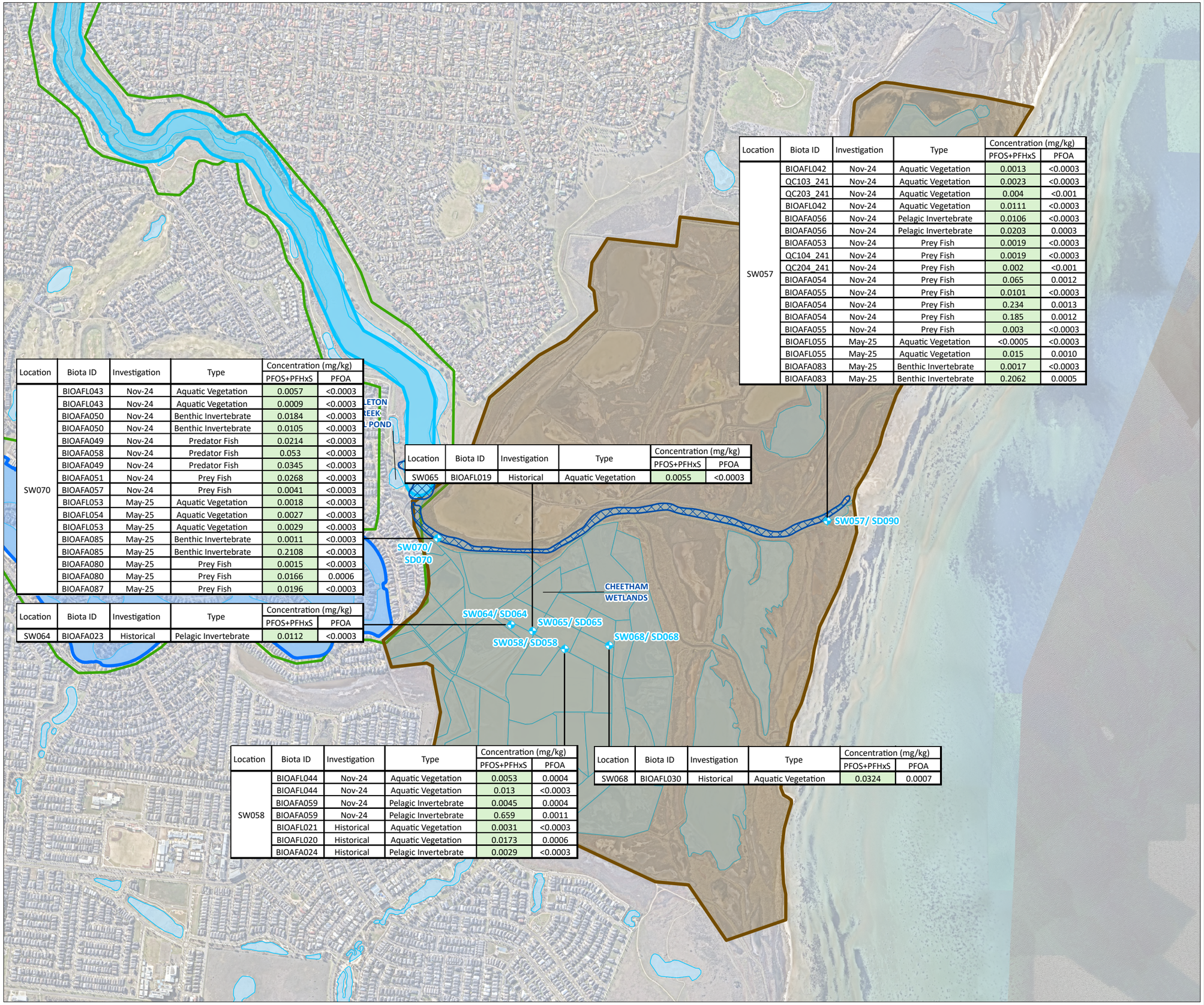
RAAF Williams, Laverton

BIOTA SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES (SANCTUARY LAKES)

FIGURE 12

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)



Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW070	BIOAFL043	Nov-24	Aquatic Vegetation	0.0057	<0.0003
	BIOAFL043	Nov-24	Aquatic Vegetation	0.0009	<0.0003
	BIOAFA050	Nov-24	Benthic Invertebrate	0.0184	<0.0003
	BIOAFA050	Nov-24	Benthic Invertebrate	0.0105	<0.0003
	BIOAFA049	Nov-24	Predator Fish	0.0214	<0.0003
	BIOAFA058	Nov-24	Predator Fish	0.053	<0.0003
	BIOAFA049	Nov-24	Predator Fish	0.0345	<0.0003
	BIOAFA051	Nov-24	Prey Fish	0.0268	<0.0003
	BIOAFA057	Nov-24	Prey Fish	0.0041	<0.0003
	BIOAFL053	May-25	Aquatic Vegetation	0.0018	<0.0003
	BIOAFL054	May-25	Aquatic Vegetation	0.0027	<0.0003
	BIOAFL053	May-25	Aquatic Vegetation	0.0029	<0.0003
	BIOAFA085	May-25	Benthic Invertebrate	0.0011	<0.0003
	BIOAFA085	May-25	Benthic Invertebrate	0.2108	<0.0003
	BIOAFA080	May-25	Prey Fish	0.0015	<0.0003
	BIOAFA080	May-25	Prey Fish	0.0166	0.0006
	BIOAFA087	May-25	Prey Fish	0.0196	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW064	BIOAFA023	Historical	Pelagic Invertebrate	0.0112	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW065	BIOAFL019	Historical	Aquatic Vegetation	0.0055	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW057	BIOAFL042	Nov-24	Aquatic Vegetation	0.0013	<0.0003
	QC103_241	Nov-24	Aquatic Vegetation	0.0023	<0.0003
	QC203_241	Nov-24	Aquatic Vegetation	0.004	<0.001
	BIOAFL042	Nov-24	Aquatic Vegetation	0.0111	<0.0003
	BIOAFA056	Nov-24	Pelagic Invertebrate	0.0106	<0.0003
	BIOAFA056	Nov-24	Pelagic Invertebrate	0.0203	0.0003
	BIOAFA053	Nov-24	Prey Fish	0.0019	<0.0003
	QC104_241	Nov-24	Prey Fish	0.0019	<0.0003
	QC204_241	Nov-24	Prey Fish	0.002	<0.001
	BIOAFA054	Nov-24	Prey Fish	0.065	0.0012
	BIOAFA055	Nov-24	Prey Fish	0.0101	<0.0003
	BIOAFA054	Nov-24	Prey Fish	0.234	0.0013
	BIOAFA054	Nov-24	Prey Fish	0.185	0.0012
	BIOAFA055	Nov-24	Prey Fish	0.003	<0.0003
	BIOAFL055	May-25	Aquatic Vegetation	<0.0005	<0.0003
	BIOAFL055	May-25	Aquatic Vegetation	0.015	0.0010
	BIOAFA083	May-25	Benthic Invertebrate	0.0017	<0.0003
	BIOAFA083	May-25	Benthic Invertebrate	0.2062	0.0005

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW058	BIOAFL044	Nov-24	Aquatic Vegetation	0.0053	0.0004
	BIOAFL044	Nov-24	Aquatic Vegetation	0.013	<0.0003
	BIOAFA059	Nov-24	Pelagic Invertebrate	0.0045	0.0004
	BIOAFA059	Nov-24	Pelagic Invertebrate	0.659	0.0011
	BIOAFL021	Historical	Aquatic Vegetation	0.0031	<0.0003
	BIOAFL020	Historical	Aquatic Vegetation	0.0173	0.0006
	BIOAFA024	Historical	Pelagic Invertebrate	0.0029	<0.0003

Location	Biota ID	Investigation	Type	Concentration (mg/kg)	
				PFOS+PFHxS	PFOA
SW068	BIOAFL030	Historical	Aquatic Vegetation	0.0324	0.0007

Legend

- Laverton management area
- Tidal area of Skeleton Creek (EPA Victoria)
- Waterbodies

Areas Of Interest

- Cheetham Wetlands
- Sanctuary Lakes
- Skeleton Creek
- Surface water/ Sediment sample location

Exceedance Criteria	Concentration (mg/kg)	
	PFOS+PFHxS	PFOA
PFAS NEMP 3.0 - Avian Biota Screening Value	0.0082	0.0024
PFAS NEMP 3.0 - Mammalian Biota Screening Value	0.0031	0.0028

JBS&G

Job No: 66022

Client: Department of Defence

Version: Rev 0 | Date: 19/10/2026

Drawn By: AL | Checked By: RH

Scale: 1:15,000 at A3

0 450 900

metres

Coord. System: GDA2020 MGA Zone 55

RAAF Williams, Laverton

BIOTA SAMPLE LOCATIONS AND TIER 1 EXCEEDANCES (CHEETHAM WETLANDS)

FIGURE 13

File Name: 66022_RAAF_Laverton_ERA_A3

Reference: Aerial Imagery Supplied by Nearmap - (Capture Date: 10/08/2025)

Appendix B Environmental data tables

Environmental data tables

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**														
0927_BH342_0.2_241024	BH342	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH342_0.5_241024	BH342	0.5 - 0.6	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH343_0.15_241024	BH343	0.15 - 0.25	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH343_0.3_241024	BH343	0.3 - 0.4	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH344_0.2_241024	BH344	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH344_0.5_241024	BH344	0.5 - 0.6	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_2410124	BH342	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH01_0.2_240223	BH354	0.2	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	<0.0002	<0.0002	**0.0026**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	**0.0004**	**0.0003**	**0.0017**	<0.0002	**0.0012**	<0.0002	<0.0005
0927_BH02_0.2_240223	BH355	0.2	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0034**	-	<0.0002	<0.001	<0.0002	**0.0002**	<0.0002	**0.0004**	<0.0002	**0.0011**	<0.0002	**0.0010**	<0.0002	<0.0005
0927_BH03_0.1_240223	BH356	0.1	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	<0.0002	<0.0002	**0.0014**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	**0.0006**	**0.0003**	**0.0022**	**0.0003**	**0.0016**	<0.0002	<0.0005
0927_BH03_0.23_240223	BH356	0.23	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0027**	-	<0.0002	<0.001	**0.0002**	**0.0004**	**0.0002**	**0.0009**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH04_0.15_240223	BH357	0.15	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	<0.0002	<0.0002	**0.0016**	-	<0.0002	<0.001	**0.0003**	**0.0004**	**0.0003**	**0.0013**	**0.0008**	**0.0066**	**0.0014**	**0.0051**	**0.0004**	**0.0012**
0927_BH04_0.3_240223	BH357	0.3	23 Feb 2024	Other - Unknown	<0.0002	<0.0002	**0.0009**	<0.0002	**0.0212**	-	<0.0002	<0.001	**0.0006**	**0.0006**	**0.0005**	**0.0044**	**0.0006**	**0.0008**	<0.0002	**0.0004**	<0.0002	<0.0005
0927_SS063_201026	SS063	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0010**	<0.0001	**0.0035**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0004**	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS064_201026	SS064	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0010**	**0.0001**	**0.015**	<0.0001	<0.0001	<0.0005	**0.0001**	**0.0003**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS065_201026	SS065	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0005**	<0.0001	**0.025**	**0.0001**	**0.0001**	<0.0005	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_QC101_201026	SS066	0 - 0.1	27 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0087**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_QC201_201026	SS066	0 - 0.1	27 Oct 2020	Off-base Laverton RAAF Swamp	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0062**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS066_201026	SS066	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0087**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS067_201026	SS067	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0005**	<0.0001	**0.019**	**0.0001**	**0.0002**	<0.0005	**0.0001**	**0.0002**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS068_201026	SS068	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0004**	<0.0001	**0.012**	**0.0001**	**0.0002**	<0.0005	**0.0001**	**0.0002**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS069_201026	SS069	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0065**	<0.0001	<0.0001	**0.0007**	<0.0001	**0.0001**	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS070_201026	SS070	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0020**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS071_201026	SS071	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0083**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS072_201026	SS072	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0001	**0.0004**	<0.0001	**0.0086**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_MW124_0.4-0.5_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW124_3.8-3.9_190708	MW124	3.8 - 3.9	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	**0.0054**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC133_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC233_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW125_0.0-0.1_190619	MW125	0 - 0.1	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW125_0.4-0.5_190619	MW125	0.4 - 0.5	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW125_4.1-4.2_190619	MW125	4.1 - 4.2	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW125_9.0-9.1_190619	MW125	9 - 9.1	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW126_0.0-0.1_190620	MW126	0 - 0.1	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW126_0.4-0.5_190620	MW126	0.4 - 0.5	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW126_6.2-6.3_190620	MW126	6.2 - 6.3	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW228_0.0-0.1_210301	MW228	0 - 0.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW228_1.0-1.1_210301	MW228	1 - 1.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW228_3.0-3.1_210301	MW228	3 - 3.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW229_0.0-0.1_210302	MW229	0 - 0.1	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW229_0.4-0.5_210302	MW229	0.4 - 0.5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW229_4.9-5.0_210302	MW229	4.9 - 5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC100_210302	MW229	0.4 - 0.5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC200_210302	MW229	0.4 - 0.5	03 Mar 2021	Off-base Prices Freeway	<0.0002	<0.0002	<0.0002	<0.0002	**0.0004**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW230_0.0-0.1_210303	MW230	0 - 0.1	03 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW230_1.0-1.1_210303	MW230	1 - 1.1	03 Mar 2021	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW244_0.5_241204	MW244	0.5 - 0.6	04 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW244_1.5-1.6_241204	MW244	1.5 - 1.6	04 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**														
0927_MW245_0.0_241203	MW245	0 - 0.1	03 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW245_0.5_241203	MW245	0.5 - 0.6	03 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW252_0.0_241203	MW252	0 - 0.1	03 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW252_0.5_241203	MW252	0.5 - 0.6	03 Dec 2024	Off-base Prices Freeway	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW253_0.1_240730	MW253	0.1	30 Jul 2024	Off-base Prices Freeway	<0.0002	<0.0002	<0.0002	<0.0002	**0.0025**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW253_0.5_240730	MW253	0.5	30 Jul 2024	Off-base Prices Freeway	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW121_0.0-0.1_200113	MW121	0 - 0.1	13 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW121_0.9-1.0_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW121_2.4-2.5_200114	MW121	2.4 - 2.5	13 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC100_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC200_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW122_0.0-0.1_200114	MW122	0 - 0.1	14 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	**0.0096**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW122_0.9-1.0_200114	MW122	0.9 - 1	14 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW122_2.5-2.6_200114	MW122	2.5 - 2.6	14 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW123_0.4-0.5_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	**0.012**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW123_0.9-1.0_200115	MW123	0.9 - 1	15 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	**0.0092**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	<0.0002	<0.0002	**0.0046**	**0.0004**	**0.0207**	-	<0.0002	<0.001	<0.0002	**0.0003**	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW246_0.3_241204	MW246	0.3 - 0.4	04 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW246_1.5_241204	MW246	1.5 - 1.6	04 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_241204	MW246		04 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH235_0.2-0.3_201211	BH235	0.2 - 0.3	11 Dec 2020	Other - Unknown	**0.0002**	**0.0004**	**0.0085**	**0.0004**	**0.0049**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0006**	**0.0001**	**0.0006**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH235_0.5-0.6_201211	BH235	0.5 - 0.6	11 Dec 2020	Other - Unknown	**0.0019**	**0.0056**	**0.13**	**0.028**	**0.64**	**0.0001**	<0.0001	<0.0005	**0.0010**	**0.0064**	**0.0011**	**0.0079**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH236_0.1-0.2_201211	BH236	0.1 - 0.2	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0009**	<0.0001	**0.011**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH236_0.5-0.6_201211	BH236	0.5 - 0.6	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0007**	<0.0001	**0.0083**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH237_0.3-0.4_201211	BH237	0.3 - 0.4	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0008**	<0.0001	**0.017**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	**0.0005**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH238_0.25-0.4_201211	BH238	0.25 - 0.4	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0011**	**0.0002**	**0.035**	<0.0001	<0.0001	<0.0005	**0.0003**	**0.0004**	**0.0002**	**0.0011**	**0.0001**	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH239_0.5-0.6_201211	BH239	0.5 - 0.6	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0019**	**0.0003**	**0.029**	<0.0001	<0.0001	<0.0005	**0.0005**	**0.0007**	**0.0004**	**0.0005**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH240_0.5-0.6_201211	BH240	0.5 - 0.6	11 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0004**	<0.0001	**0.022**	<0.0001	<0.0001	<0.0005	**0.0005**	**0.0006**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH241_0.3-0.4_201213	BH241	0.3 - 0.4	13 Dec 2020	Other - Unknown	**0.0002**	**0.0003**	**0.0045**	**0.0008**	**0.14**	**0.0003**	<0.0001	<0.0005	**0.0002**	**0.0007**	<0.0001	**0.0005**	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH241_0.6-0.7_201213	BH241	0.6 - 0.7	13 Dec 2020	Other - Unknown	**0.0004**	**0.0006**	**0.0073**	**0.0008**	**0.054**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0011**	**0.0002**	**0.0009**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH242_0.3-0.4_201213	BH242	0.3 - 0.4	13 Dec 2020	Other - Unknown	**0.0016**	**0.0020**	**0.053**	**0.0080**	**0.49**	<0.0001	**0.0001**	<0.0005	**0.0005**	**0.0030**	**0.0003**	**0.0022**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH243_0.5-0.6_201213	BH243	0.5 - 0.6	13 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0010**	<0.0001	**0.0012**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH244_0.1-0.2_201213	BH244	0.1 - 0.2	13 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0087**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0002**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH244_0.3-0.4_201213	BH244	0.3 - 0.4	13 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0027**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH244_0.5-0.6_201213	BH244	0.5 - 0.6	13 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0018**	<0.0001	**0.0087**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0004**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH245_0.2-0.3_201216	BH245	0.2 - 0.3	16 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0069**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH246_0.6-0.7_201216	BH246	0.6 - 0.7	16 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0006**	<0.0001	**0.028**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0003**	<0.0001	**0.0005**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH247_0.1-0.2_201216	BH247	0.1 - 0.2	17 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0043**	**0.0004**	**0.024**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0003**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH247_0.4-0.5_201216	BH247	0.4 - 0.5	17 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0035**	**0.0004**	**0.031**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0003**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH248_0.5-0.6_201216	BH248	0.5 - 0.6	17 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0036**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0003**	**0.0002**	**0.0018**	**0.0002**	**0.0004**	<0.0001	**0.0002**	<0.0001	<0.0001
0927_BH249_0.3-0.4_201216	BH249	0.3 - 0.4	16 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0008**	<0.0001	**0.0061**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0003**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
0927_BH249_0.5-0.6_201216	BH249	0.5 - 0.6	16 Dec 2020	Other - Unknown	<0.0001	<0.0001	**0.0005**	<0.0001	**0.0008**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0004**	**0.0004**	**0.0013**	**0.0002**	**0.0012**	<0.0001	**0.0003**	<0.0001	<0.0001
0927_BH250_0.0-0.1_210709	BH250	0 - 0.1	09 Jul 2021	Other - Unknown	<0.0001	<0.0001	**0.0005**	<0.0001	**0.011**	<0.0001	<0.0001	<0.0005	**0.0002**	**0.0002**	<0.0001	**0.0004**	<0.0001	**0.0005**	**0.0002**	**0.0004**	<0.0001	<0.0001
0927_BH250_0.2-0.3_210709	BH250	0.2 - 0.3	09 Jul 2021	Other - Unknown	<0.0001	<0.0001	**0.0003**	**0.0002**	**0.019**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_QC202_041224	MW246		04 Dec 2024	Off-Base Skeleton Creek	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00020	**0.00086**	**0.0015**	**0.00014**	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_MW247_0.0_241202	MW247	0 - 0.1	02 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW247_2.0_241202	MW247	2 - 2.1	02 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_MW248_0.3_241202	MW248	0.3 - 0.4	02 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW248_2.5_241202	MW248	2.5 - 2.6	02 Dec 2024	Off-Base Skeleton Creek	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW127_0.0-0.1_190626	MW127	0 - 0.1	26 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW127_0.4-0.5_190626	MW127	0.4 - 0.5	26 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW127_1.9-2.0_190626	MW127	1.9 - 2	26 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW128_0.0-0.1_190627	MW128	0 - 0.1	27 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW128_0.4-0.5_190627	MW128	0.4 - 0.5	27 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW129_0.0-0.1_190702	MW129	0 - 0.1	02 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW129_0.4-0.5_190702	MW129	0.4 - 0.5	02 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW129_0.9-1.0_190702	MW129	0.9 - 1	02 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW130_0.0-0.1_190703	MW130	0 - 0.1	03 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.022**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW130_0.4-0.5_190703	MW130	0.4 - 0.5	03 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	**0.0076**	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW130_0.9-1.0_190703	MW130	0.9 - 1	03 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW131_0.0-0.1_190701	MW131	0 - 0.1	01 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.03**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW131_0.9-1.0_190701	MW131	0.9 - 1	01 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.031**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW131_1.4-1.5_190701	MW131	1.4 - 1.5	01 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC131_190701	MW131	1.4 - 1.5	01 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC231_190701	MW131	1.4 - 1.5	07 Jan 2019	Off-Base Williams Landing	<0.0002	<0.0002	**0.0004**	<0.0002	**0.0006**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW132_0.0-0.1_190628	MW132	0 - 0.1	28 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.006**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW132_0.4-0.5_190628	MW132	0.4 - 0.5	28 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW132_1.4-1.5_190628	MW132	1.4 - 1.5	28 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW133_0.4-0.5_190625	MW133	0.4 - 0.5	25 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW133_2.4-2.5_190625	MW133	2.4 - 2.5	25 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW133_5.2-5.3_190625	MW133	5.2 - 5.3	25 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW133_8.8-8.9_190625	MW133	8.8 - 8.9	25 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC130_190625	MW133	0.4 - 0.5	28 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC230_190625	MW133	0.4 - 0.5		Off-Base Williams Landing	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW135_0.0-0.1_190624	MW135	0 - 0.1	24 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW135_0.4-0.5_190624	MW135	0.4 - 0.5	24 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW135_2.5-2.6_190624	MW135	2.5 - 2.6	24 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW135_8.2-8.3_190624	MW135	8.2 - 8.3	24 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW136_0.0-0.1_190621	MW136	0 - 0.1	21 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW136_0.4-0.5_190621	MW136	0.4 - 0.5	21 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW136_9.0-9.1_190621	MW136	9 - 9.1	21 Jun 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW137_0.4-0.5_190704	MW137	0.4 - 0.5	04 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	**0.016**	<0.005	**0.0088**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW137_0.9-1.0_190704	MW137	0.9 - 1	04 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	**0.022**	<0.005	**0.05**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW137_1.2-1.3_190704	MW137	1.2 - 1.3	04 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	**0.015**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW137_3.9-4.0_190704	MW137	3.9 - 4	04 Jul 2019	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW249_0.1_240729	MW249	0.1	29 Jul 2024	Off-Base Williams Landing	**0.0002**	**0.0003**	**0.0063**	**0.0003**	**0.0783**	-	**0.0027**	<0.001	**0.0006**	**0.0008**	<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW249_1.0_240729	MW249	1	29 Jul 2024	Off-Base Williams Landing	**0.0017**	**0.0017**	**0.0025**	<0.0002	<0.0002	-	<0.0002	<0.001	**0.0011**	**0.0055**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW250_0.1_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	<0.0002	<0.0002	**0.0075**	**0.0008**	**0.198**	-	**0.0021**	<0.001	**0.0002**	**0.0006**	<0.0002	**0.0006**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW250_0.7_240729	MW250	0.7	29 Jul 2024	Off-Base Williams Landing	**0.0012**	**0.0002**	<0.0002	<0.0002	**0.0006**	-	<0.0002	<0.001	**0.0004**	**0.0008**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_QC101_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	<0.0002	<0.0002	**0.0063**	**0.0005**	**0.148**	-	**0.0011**	<0.001	**0.0002**	**0.0006**	**0.0002**	**0.0013**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_QC201_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.13**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW251_0.1_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	**0.0005**	**0.0009**	**0.0161**	**0.0007**	**0.196**	-	**0.0039**	<0.001	**0.0004**	**0.0009**	<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW251_1.0_240726	MW251	1	26 Jul 2024	Off-Base Williams Landing	<0.0002	**0.0009**	**0.0441**	**0.0002**	**0.0010**	-	<0.0002	<0.001	**0.0012**	**0.0057**	**0.0014**	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_QC100_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	**0.0006**	**0.0010**	**0.0169**	**0.0008**	**0.213**	-	**0.0052**	<0.001	**0.0004**	**0.0010**	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_QC200_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	<0.005	<0.005	**0.016**	<0.005	**0.24**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_MW254_0.3_241206	MW254	0.3 - 0.4	06 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	**0.0059**	<0.005	**0.2**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW254_1.0_241206	MW254	1 - 1.1	06 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	**0.034**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_241206	MW254		06 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	**0.0055**	<0.005	**0.16**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_061224 (QA09)	MW254		03 Dec 2024	Off-Base Williams Landing	**0.0012**	**0.0014**	**0.01**	**0.0011**	**0.27**	-	<0.00020	**0.00034**	**0.00036**	**0.0012**	**0.00010**	**0.00045**	**0.00019**	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_MW255_0.3_241205	MW255	0.3 - 0.4	05 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW255_0.5_241205	MW255	0.5 - 0.6	05 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW256_0.3_241205	MW256	0.3 - 0.4	05 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	**0.052**	<0.005	**0.13**	<0.005	<0.005	<0.005	<0.005	**0.0068**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW256_0.5_241205	MW256	0.5 - 0.6	05 Dec 2024	Off-Base Williams Landing	<0.005	<0.005	**0.073**	<0.005	**0.38**	**0.0092**	<0.005	<0.005	<0.005	**0.0075**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW257_0.1_240725	MW257	0.1	25 Jul 2024	Off-Base Williams Landing	<0.0002	<0.0002	**0.0018**	**0.0004**	**0.0310**	-	<0.0002	<0.001	**0.0004**	**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW257_1.0_240725	MW257	1	26 Jul 2024	Off-Base Williams Landing	**0.0012**	**0.0012**	**0.0142**	**0.0009**	**0.0124**	-	<0.0002	<0.001	**0.0004**	**0.0016**	<0.0002	**0.0006**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW108_0.4-0.5_181108	MW108	0.4 - 0.5	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW108_0-0.1_181108	MW108	0 - 0.1	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW108_2.9-3_181108	MW108	2.9 - 3	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW108_6.9-7_181108	MW108	6.9 - 7	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW109_0.4-0.5_181108	MW109	0.4 - 0.5	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW109_0-0.1_181108	MW109	0 - 0.1	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW109_2.9-3_181108	MW109	2.9 - 3	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW109_6.9-7_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW110_0-0.1_181107	MW110	0 - 0.1	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.0055**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW110_1.9-2_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW110_5.9-6_181107	MW110	5.9 - 6	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW110_8.9-9_181107	MW110	8.9 - 9	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.006**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW111_0.9-1_181107	MW111	0.9 - 1	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW111_0-0.1_181107	MW111	0 - 0.1	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW111_3.9-4_181107	MW111	3.9 - 4	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW111_6.9-7_181107	MW111	6.9 - 7	07 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW112_0.4-0.5_181105	MW112	0.4 - 0.5	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW112_0-0.1_181105	MW112	0 - 0.1	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW112_4.9-5_181105	MW112	4.9 - 5	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW112_6.9-7_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW113_0.4-0.5_181105	MW113	0.4 - 0.5	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW113_0-0.1_181105	MW113	0 - 0.1	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW113_2.9-3_181105	MW113	2.9 - 3	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW113_8.9-9_181105	MW113	8.9 - 9	05 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW114_0.1-0.2_181102	MW114	0.1 - 0.2	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW114_0.9-1_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW114_3.9-4_181102	MW114	3.9 - 4	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW114_6.9-7_181102	MW114	6.9 - 7	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC100_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC200_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW115_0.1-0.2_181101	MW115	0.1 - 0.2	01 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.0065**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW115_0.9-1_181101	MW115	0.9 - 1	01 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**														
0927_MW115_10.9-11_181102	MW115	10.9 - 11	02 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW115_6.9-7_181101	MW115	6.9 - 7	01 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW116_0.4-0.5_181109	MW116	0.4 - 0.5	09 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW116_0-0.1_181109	MW116	0 - 0.1	09 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.0066**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW116_3.9-4_181109	MW116	3.9 - 4	09 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW116_8.9-9_181109	MW116	8.9 - 9	09 Nov 2018	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW117_0.0-0.1_190125	MW117	0 - 0.1	25 Jan 2019	On-base (other)	<0.005	<0.005	**0.0072**	<0.005	**0.24**	-	**0.0077**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW134_0.0-0.1_190705	MW134	0 - 0.1	05 Jul 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.02**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW134_0.7-0.8_190705	MW134	0.7 - 0.8	05 Jul 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW134_2.7-2.8_190705	MW134	2.7 - 2.8	05 Jul 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW134_5.9-6.0_190705	MW134	5.9 - 6	05 Jul 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC132_190705	MW134	0.7 - 0.8	05 Jul 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC232_190705	MW134	0.7 - 0.8	07 May 2019	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW140_0.0-0.1_200117	MW140	0 - 0.1	17 Jan 2020	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS001_181202	SS001	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	<0.0001	<0.0001	**0.0014**	-	**0.0005**	<0.0005	**0.0004**	**0.0002**	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS002_181202	SS002	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	<0.0001	<0.0001	**0.0019**	-	<0.0001	<0.0005	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001
0927_SS003_181202	SS003	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	**0.0009**	<0.0001	**0.0039**	-	**0.0003**	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001
0927_SS004_181202	SS004	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	<0.0001	<0.0001	**0.0009**	-	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001
0927_SS007_181202	SS007	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	<0.0001	<0.0001	**0.0023**	-	**0.0004**	<0.0005	<0.0001	**0.0004**	<0.0001	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
0927_SS008_181202	SS008	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0001	<0.0001	<0.0001	**0.0051**	-	<0.0001	**0.0008**	<0.0001	<0.0001	<0.0001	<0.0001	**0.0002**	**0.0004**	<0.0001	<0.0001	<0.0001
0927_SS013_190405	SS013	0 - 0.1	05 Apr 2019	On-base (other)	<0.0005	<0.0005	<0.0003	<0.0005	**0.001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_SS018_191031	SS018	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.08**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS027_191031	SS027	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS028_191031	SS028	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS033_191031	SS033	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS034_191031	SS034	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS035_191031	SS035	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.0002	<0.0002	<0.0002	<0.0002	**0.0021**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS036_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS037_191031	SS037	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS038_191031	SS038	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS039_191031	SS039	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	**0.074**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS040_191031	SS040	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS041_191031	SS041	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS042_191031	SS042	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH215_1.5-1.6_190131	BH215	1.5 - 1.6	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH216_0.4-0.5_190131	BH216	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH216_0-0.1_190131	BH216	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.032**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH217_0.4-0.5_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH217_0-0.1_190131	BH217	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC121_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC221_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.0002	<0.0002	**0.0006**	<0.0002	**0.0005**	-	<0.0002	<0.001	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH218_0-0.1_190131	BH218	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.005	**0.0051**	<0.005	**0.055**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH219_0.4-0.5_190131	BH219	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.031**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH219_1.4-1.5_190131	BH219	1.4 - 1.5	31 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH220_0.9-1.0_190131	BH220	0.9 - 1	31 Jan 2019	On-Base SA01	<0.005	<0.005	**0.0055**	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH220_0-0.1_190131	BH220	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.005	**0.0051**	<0.005	**0.25**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_BH222_0-0.1_190201	BH222	0 - 0.1	01 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH222_1.4-1.5_190201	BH222	1.4 - 1.5	01 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH223_0.9-1_190201	BH223	0.9 - 1	01 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH223_0-0.1_190201	BH223	0 - 0.1	01 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.0065**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH224_0.4-0.5_190201	BH224	0.4 - 0.5	01 Jan 2019	On-Base SA01	<0.005	<0.005	**0.0063**	<0.005	**0.09**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH224_0-0.1_190201	BH224	0 - 0.1	01 Jan 2019	On-Base SA01	<0.005	<0.005	**0.015**	<0.005	**0.5**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC122_190131	BH224	0.4 - 0.5	01 Feb 2019	On-Base SA01	<0.005	<0.005	**0.007**	<0.005	**0.089**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC222_190201	BH224	0.4 - 0.5	01 Feb 2019	On-Base SA01	**0.0004**	**0.0003**	**0.0075**	**0.0023**	**0.0756**	-	<0.0002	<0.001	**0.0006**	**0.0026**	**0.0002**	**0.0008**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH299_0.0_240902	BH299	0 - 0.1	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.022**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH299_0.6_240902	BH299	0.6 - 0.7	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240902	BH299		02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.03**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240902	BH299		02 Sep 2024	On-Base SA01	**0.00026**	**0.00045**	**0.0059**	**0.00074**	**0.042**	-	<0.00020	<0.00020	<0.00020	**0.00097**	**0.00012**	**0.00026**	<0.00010	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH300_0.0_240902	BH300	0 - 0.1	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH300_0.6_240902	BH300	0.6 - 0.7	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH301_0.1_240902	BH301	0.1 - 0.2	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.16**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH301_0.6_240902	BH301	0.6 - 0.7	02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.063**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC104_240902	BH301		02 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.15**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC204_240902	BH301		02 Sep 2024	On-Base SA01	**0.00013**	**0.00021**	**0.0036**	**0.00088**	**0.089**	-	<0.00020	<0.00020	<0.00020	**0.00060**	**0.00011**	**0.00034**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH302_0.0_240903	BH302	0 - 0.1	03 Sep 2024	On-Base SA01	**0.0090**	**0.0075**	**0.05**	<0.005	**0.04**	<0.005	<0.005	<0.005	<0.005	**0.019**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH302_0.4_240903	BH302	0.4 - 0.5	03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.025**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240903	BH302		03 Sep 2024	On-Base SA01	**0.0089**	**0.0063**	**0.045**	<0.005	**0.041**	<0.005	<0.005	<0.005	<0.005	**0.021**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240903	BH302		03 Sep 2024	On-Base SA01	**0.0090**	**0.01**	**0.049**	**0.0022**	**0.043**	-	**0.00088**	**0.0018**	**0.0037**	**0.025**	**0.0031**	**0.0040**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH303_0.0_240903	BH303	0 - 0.1	03 Sep 2024	On-Base SA01	**0.0080**	**0.0086**	**0.058**	<0.005	**0.089**	<0.005	<0.005	<0.005	<0.005	**0.028**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH303_0.1_240903	BH303	0.1 - 0.2	03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.022**	<0.005	**0.11**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH304_0.0_240903	BH304	0 - 0.1	03 Sep 2024	On-Base SA01	**0.0071**	<0.005	**0.014**	<0.005	**0.15**	<0.005	<0.005	<0.005	<0.005	**0.015**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH305_0.0_240903	BH305	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.055**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH305_0.6_240903	BH305	0.6 - 0.7	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240903	BH305		03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.012**	<0.005	**0.12**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240903	BH305		03 Sep 2024	On-Base SA01	**0.00041**	**0.00068**	**0.011**	**0.0023**	**0.11**	-	**0.00051**	<0.00020	<0.00020	**0.0010**	**0.00015**	**0.00027**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH306_0.0_240903	BH306	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.0057**	<0.005	<0.005	<0.005	<0.005	**0.0051**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH306_0.3_240903	BH306	0.3 - 0.4	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH307_0.0_240903	BH307	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.0068**	<0.005	**0.061**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH307_0.5_240903	BH307	0.5 - 0.6	03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.0053**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH308_0.0_240903	BH308	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	**0.011**	<0.005	**0.14**	<0.005	**0.0068**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH308_0.6_240903	BH308	0.6 - 0.7	03 Sep 2024	On-Base SA01	**0.039**	**0.073**	**2.6**	**0.22**	**0.3**	<0.005	<0.005	**0.0094**	**0.014**	**0.13**	**0.015**	**0.23**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH309_0.1_240903	BH309	0.1 - 0.2	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.085**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH309_0.9_240903	BH309	0.9 - 1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240903	BH309		03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.072**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240903	BH309		03 Sep 2024	On-Base SA01	<0.00010	<0.00010	**0.0016**	**0.00019**	**0.06**	-	**0.00042**	<0.00020	<0.00020	**0.00025**	<0.00010	**0.00012**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH310_0.0_240903	BH310	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH310_0.9_240903	BH310	0.9 - 1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH311_0.0_240903	BH311	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH311_0.5_240903	BH311	0.5 - 0.6	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.0056**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH312_0.0_240903	BH312	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH312_0.6_240903	BH312	0.6 - 0.7	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH313_0.0_240903	BH313	0 - 0.1	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH313_0.5_240903	BH313	0.5 - 0.6	03 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.0053**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH314_0.0_240904	BH314	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.024**	<0.005	**0.11**	<0.005	<0.005	<0.005	<0.005	**0.0068**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses									1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses									0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**																		
0927_BH314_0.4_240904	BH314	0.4 - 0.5	04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.015**	<0.005	**0.22**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240904	BH314		04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.014**	<0.005	**0.11**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240904	BH314		04 Sep 2024	On-Base SA01	**0.0011**	**0.0017**	**0.024**	**0.0030**	**0.093**	-	**0.0010**	**0.00033**	**0.00086**	**0.0065**	**0.00057**	**0.0023**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH315_0.0_240904	BH315	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.062**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH315_0.1_240904	BH315	0.1 - 0.2	04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.011**	<0.005	**0.36**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH315_0.5_240904	BH315	0.5 - 0.6	04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.0053**	<0.005	**0.0068**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240904	BH315		04 Sep 2024	On-Base SA01	<0.005	<0.005	**0.0078**	<0.005	**0.34**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240904	BH315		04 Sep 2024	On-Base SA01	**0.00060**	**0.00089**	**0.013**	**0.0044**	**0.32**	-	**0.00033**	**0.00026**	**0.00050**	**0.0034**	**0.00065**	**0.0015**	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH316_0.0_240904	BH316	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH316_0.7_240904	BH316	0.7 - 0.8	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH317_0.0_240904	BH317	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH317_0.4_240904	BH317	0.4 - 0.5	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH318_0.0_240904	BH318	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.02**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH318_0.45_240904	BH318	0.45 - 0.55	04 Sep 2024	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH391_0.1_250225	BH391	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.005	**0.0081**	<0.005	**0.42**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_250225	BH391	0 - 0.1	25 Feb 2025	On-Base SA01	<0.005	<0.005	**0.01**	<0.005	**0.48**	**0.0051**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_250225	BH391		25 Feb 2025	On-Base SA01	**0.00059**	**0.0017**	**0.046**	**0.016**	**2.1**	-	**0.018**	<0.00020	**0.00033**	**0.0041**	**0.00085**	**0.00077**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH392_0.1_250225	BH392	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.005	**0.0060**	<0.005	**0.26**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH393_0.4_250225	BH393	0.4 - 0.5	25 Feb 2025	On-Base SA01	**0.01**	**0.018**	**0.069**	**0.0083**	**0.32**	<0.005	<0.005	<0.005	<0.005	**0.028**	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH394_0.1_250225	BH394	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW117_0.9-1.0_190125	MW117	0.9 - 1	25 Jan 2019	On-Base SA01	**0.024**	**0.02**	**0.19**	**0.062**	**2.9**	-	<0.005	<0.005	**0.0055**	**0.041**	**0.0068**	**0.019**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW117_6.9-7.0_190125	MW117	6.9 - 7	25 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.012**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW117_8.9-9.0_190125	MW117	8.9 - 9	25 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.0078**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC117_190125	MW117	6.9 - 7	25 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.012**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC217_190125	MW117	6.9 - 7	24 Jan 2019	On-Base SA01	**0.0003**	**0.0003**	**0.0021**	<0.0002	**0.0069**	-	<0.0002	<0.001	<0.0002	**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW118_0-0.1_190130	MW118	0 - 0.1	30 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.013**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW118_2.9-3.0_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW118_5.9-6.0_190130	MW118	5.9 - 6	30 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW118_7.9-8.0_190130	MW118	7.9 - 8	30 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.01**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC119_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC219_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.0002	<0.0002	**0.0004**	<0.0002	**0.0009**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW119_0-0.1_190129	MW119	0 - 0.1	29 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.015**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW119_1.9-2.0_190129	MW119	1.9 - 2	29 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW119_6.9-7.0_190129	MW119	6.9 - 7	29 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW119_8.9-9.0_190129	MW119	8.9 - 9	29 Jan 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.005**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS005_181202	SS005	0 - 0.1	02 Dec 2018	On-Base SA01	**0.0002**	<0.0001	**0.0043**	<0.0001	**0.026**	-	**0.0005**	<0.0005	<0.0001	**0.0003**	<0.0001	**0.0002**	**0.0001**	**0.0002**	<0.0001	**0.0003**	<0.0001	<0.0001
0927_SS006_181202	SS006	0 - 0.1	02 Dec 2018	On-Base SA01	**0.0095**	**0.01**	**0.13**	**0.014**	**1.4**	-	**0.19**	**0.0027**	**0.0035**	**0.014**	**0.0028**	**0.0079**	**0.0003**	**0.0003**	**0.0005**	**0.0026**	**0.001**	**0.0004**
0927_SS009_190405	SS009	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.005	**0.0052**	<0.005	**0.071**	<0.005	**0.0069**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS010_190405	SS010	0 - 0.1	05 Apr 2019	On-Base SA01	**0.013**	**0.011**	**0.11**	**0.0076**	**2.6**	**0.0098**	**0.018**	<0.005	**0.0059**	**0.012**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS011_190405	SS011	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.005	**0.021**	<0.005	**0.38**	**0.016**	**0.046**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS012_190405	SS012	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.005	<0.005	<0.005	**0.033**	<0.005	**0.0085**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH210_0.4-0.5_190131	BH210	0.4 - 0.5	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH210_0.9-1_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH210_0-0.1_190131	BH210	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.018**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC120_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC220_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH211_0.4-0.5_190131	BH211	0.4 - 0.5	31 Jan 2019	On-Base SA02	<0.005	<0.005	**0.035**	<0.005	<0.005	-	<0.005	<0.005	<0.005	**0.0055**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH211_1.4-1.5_190131	BH211	1.4 - 1.5	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_BH212_0.7-0.8_190131	BH212	0.7 - 0.8	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH212_0-0.1_190131	BH212	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH213_0.9-1_190131	BH213	0.9 - 1	31 Jan 2019	On-Base SA02	**0.3**	**0.37**	**1.5**	**0.073**	**0.88**	-	<0.005	**0.014**	**0.054**	**0.46**	**0.042**	**0.08**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH213_0-0.1_190131	BH213	0 - 0.1	31 Jan 2019	On-Base SA02	**0.009**	**0.0056**	**0.058**	<0.005	**1.6**	-	<0.005	<0.005	**0.0057**	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH214_0-0.1_190131	BH214	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.024**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH215_0.4-0.5_190131	BH215	0.4 - 0.5	31 Jan 2019	On-Base SA02	**0.13**	**0.16**	**1**	**0.01**	**0.012**	-	<0.005	**0.028**	**0.055**	**0.24**	**0.027**	**0.07**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH221_0.4-0.5_190201	BH221	0.4 - 0.5	01 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH221_0.8-0.9_190201	BH221	0.8 - 0.9	01 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH251_0.0_240826	BH251	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0090**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH251_0.7_240826	BH251	0.7 - 0.8	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.021**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240826	BH251		26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240826	BH251		26 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.0010**	<0.00010	**0.0075**	-	<0.00020	<0.00020	<0.00020	**0.00017**	<0.00010	**0.00036**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH252_0.2_240826	BH252	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.23**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0083**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH252_0.9_240826	BH252	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0077**	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0081**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH253_0.2_240826	BH253	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.005	**0.012**	<0.005	**0.044**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH253_0.9_240826	BH253	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.072**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH254_0.0_240826	BH254	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.034**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH254_0.9_240826	BH254	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.005	**0.011**	<0.005	**0.017**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH255_0.0_240826	BH255	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.028**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH255_0.6_240826	BH255	0.6 - 0.7	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.094**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH256_0.0_240826	BH256	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0074**	<0.005	**0.031**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH256_0.2_240826	BH256	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.005	**0.014**	<0.005	**0.054**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH257_0.0_240826	BH257	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.018**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH257_0.4_240826	BH257	0.4 - 0.5	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH257_0.9_240826	BH257	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240826	BH257		26 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240826	BH257		26 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00085**	<0.00010	**0.019**	-	<0.00020	<0.00020	<0.00020	<0.00010	**0.00013**	**0.00037**	**0.00036**	**0.00076**	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH258_0.0_240827	BH258	0 - 0.1	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.031**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH258_0.6_240827	BH258	0.6 - 0.7	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0052**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240827_240827	BH258		27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0099**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240827	BH258		27 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00038**	<0.00010	**0.0084**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	**0.00023**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_QC201_240827_240827	BH258	0	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.02**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH259_0.2_240827	BH259	0.2 - 0.3	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH259_0.9_240827	BH259	0.9 - 1	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0069**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH260_0.2_240827	BH260	0.2 - 0.3	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH260_0.9_240827	BH260	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH261_0.2_240827	BH261	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH261_0.9_240827	BH261	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0061**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH262_0.2_240827	BH262	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH262_0.9_240827	BH262	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0098**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH263_0.2_240827	BH263	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0089**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH263_0.9_240827	BH263	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH264_0.0_240827	BH264	0	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0052**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH264_0.4_240827	BH264	0.4	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH264_0.9_240827	BH264	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240827	BH264		27 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00043**	<0.00010	**0.0082**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	**0.00019**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH265_0.2_240827	BH265	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH265_0.7_240827	BH265	0.7	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0060**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_BH266_0.2_240827	BH266	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH266_0.9_240827	BH266	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH267_0.0_240828	BH267	0 - 0.1	28 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0086**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH267_0.6_240828	BH267	0.6 - 0.7	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240828	BH267		28 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0071**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240828	BH267		28 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.0010**	**0.00014**	**0.0060**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_QC201_240828	BH267		28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH268_0.2-0.3_240828	BH268	0.2 - 0.3	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH268_0.5_240828	BH268	0.5 - 0.6	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH269_0.1_240828	BH269	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0056**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH269_0.5_240828	BH269	0.5 - 0.6	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH270_0.1_240828	BH270	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH270_0.4_240828	BH270	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH271_0.1_240828	BH271	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH271_0.4_240828	BH271	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240828	BH271		28 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00096**	**0.00016**	**0.0080**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH272_0.0_240828	BH272	0 - 0.1	28 Aug 2024	On-Base SA02	<0.005	<0.005	**0.0075**	<0.005	**0.029**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH272_0.4_240828	BH272	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH273_0.0_240829	BH273	0 - 0.1	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.074**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH273_0.3_240829	BH273	0.3 - 0.4	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240829	BH273		29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.017**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240829	BH273		29 Aug 2024	On-Base SA02	<0.00010	**0.00012**	**0.0017**	**0.00014**	**0.012**	-	<0.00020	<0.00020	<0.00020	**0.00018**	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH274_0.1_240829	BH274	0.1 - 0.2	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH274_0.5_240829	BH274	0.5 - 0.6	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH275_0.1_240829	BH275	0.1 - 0.2	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH275_0.5_240829	BH275	0.5 - 0.6	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH276_0.3_240830	BH276	0.3 - 0.4	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH276_0.6_240832	BH276	0.6 - 0.7	29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH277_0.0_240830	BH277	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH277_0.3_240830	BH277	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH277_0.6_240830	BH277	0.6 - 0.7	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH278_0.0_240830	BH278	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH278_0.2_240830	BH278	0.2 - 0.3	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH278_0.7_240833	BH278	0.7 - 0.8	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240829	BH278		29 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240829	BH278		29 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH279_0.0_240830	BH279	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH279_0.3_240830	BH279	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH279_0.7_240830	BH279	0.7 - 0.8	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH280_0.1_240830	BH280	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH280_0.5_240830	BH280	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH280_0.8_240830	BH280	0.8 - 0.9	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240830	BH280		30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240830	BH280		30 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00039**	<0.00010	**0.0013**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH281_0.0_240830	BH281	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH281_0.3_240830	BH281	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH281_0.8_240830	BH281	0.8 - 0.9	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH282_0.1_240830	BH282	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

				PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
				Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses								1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses								0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**																	
0927_BH282_0.5_240830	BH282	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH283_0.1_240830	BH283	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH283_0.7_240830	BH283	0.7 - 0.8	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH284_0.0_240830	BH284	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH284_0.5_240830	BH284	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240830	BH284		30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240830	BH284		30 Aug 2024	On-Base SA02	<0.00010	<0.00010	**0.00033**	<0.00010	**0.0013**	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH285_0.1_240830	BH285	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW243_0.0_241203	MW243	0 - 0.1	03 Dec 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW243_1.5_241203	MW243	1.5 - 1.6	03 Dec 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH285_0.5_240830	BH285	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH286_0.1_240830	BH286	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH286_0.5_240830	BH286	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH287_0.1_240830	BH287	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH287_0.5_240830	BH287	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH288_0.1_240830	BH288	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH288_0.3_240830	BH288	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240830	BH288		30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240830	BH288		30 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH289_0.1_240830	BH289	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH289_0.4_240830	BH289	0.4 - 0.5	30 Aug 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH290_0.1_240902	BH290	0.1 - 0.2	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH290_0.4_240902	BH290	0.4 - 0.5	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240902	BH290		02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240902	BH290		02 Sep 2024	On-Base SA02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH291_0.0_240902	BH291	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH291_0.3_240902	BH291	0.3 - 0.4	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH292_0.0_240902	BH292	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH292_0.1_240902	BH292	0.1 - 0.2	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH293_0.0_240902	BH293	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH293_0.1_240902	BH293	0.1 - 0.2	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH294_0.0_240902	BH294	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH294_0.9_240902	BH294	0.9 - 1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH295_0.0_240902	BH295	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH295_0.3_240902	BH295	0.3 - 0.4	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240902	BH295		02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240902	BH295		02 Sep 2024	On-Base SA02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	-	<0.00020	<0.00020	<0.00020	<0.00010	<0.00010	<0.00010	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH296_0.0_240902	BH296	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH296_0.4_240902	BH296	0.4 - 0.5	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH297_0.0_240902	BH297	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH297_0.4_240902	BH297	0.4 - 0.5	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH298_0.0_240902	BH298	0 - 0.1	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH298_0.5_240902	BH298	0.5 - 0.6	02 Sep 2024	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0085**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH395_0.3_250225	BH395	0.3	25 Feb 2025	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH396_0.3_250226	BH396	0.3 - 0.4	25 Feb 2025	On-Base SA02	<0.005	<0.005	**0.012**	<0.005	**0.21**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW100_0-0.1_190121	MW100	0 - 0.1	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_201211	SS075	0 - 0.1	11 Dec 2020	On-Base SA03	<0.0001	<0.0001	**0.0020**	**0.0003**	**0.055**	<0.0001	**0.0002**	<0.0005	**0.0001**	**0.0003**	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_MW100_2.9-3_190121	MW100	2.9 - 3	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_MW100_5.9-6_190121	MW100	5.9 - 6	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW100_8.9-9_190121	MW100	8.9 - 9	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW101_0.0-0.1_190124	MW101	0 - 0.1	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW101_1.9-2.0_190124	MW101	1.9 - 2	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW101_6.9-7.0_190124	MW101	6.9 - 7	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW101_9.9-10.0_190124	MW101	9.9 - 10	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW102_0.9-1_190121	MW102	0.9 - 1	21 Jan 2019	On-Base SA02	**0.0052**	**0.0063**	**0.031**	<0.005	**0.01**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW102_0-0.1_190121	MW102	0 - 0.1	21 Jan 2019	On-Base SA02	<0.005	<0.005	**0.013**	<0.005	**0.31**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW102_5.9-6_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW102_7.9-8_190121	MW102	7.9 - 8	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0081**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC110_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC210_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	<0.0002	<0.0002	**0.0007**	<0.0002	**0.0022**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW103_0.9-1_190122	MW103	0.9 - 1	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW103_0-0.1_190122	MW103	0 - 0.1	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.041**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW103_1.9-2_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_201211	BH240	0.5 - 0.6	11 Dec 2020	On-Base SA04	<0.0001	<0.0001	**0.0005**	<0.0001	**0.016**	<0.0001	<0.0001	<0.0005	**0.0004**	**0.0005**	<0.0001	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_MW103_5.9-6_190122	MW103	5.9 - 6	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC111_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC211_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0005**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW104_0-0.1_190122	MW104	0 - 0.1	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.011**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW104_2.9-3_190122	MW104	2.9 - 3	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW104_4.9-5_190122	MW104	4.9 - 5	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW104_5.9-6_190122	MW104	5.9 - 6	22 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW105_0.0-0.1_190123	MW105	0 - 0.1	25 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.033**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW105_1.9-2.0_190123	MW105	1.9 - 2	25 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.018**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW105_3.9-4.0_190123	MW105	3.9 - 4	25 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.014**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW105_5.9-6.0_190123	MW105	5.9 - 6	25 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0065**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_201213	BH244	0.5 - 0.6	13 Dec 2020	On-Base SA04	<0.0001	<0.0001	**0.0008**	<0.0001	**0.0021**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0006**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
0927_QC215_190123	MW105	1.9 - 2	23 Jan 2019	On-Base SA02	**0.0003**	**0.0003**	**0.0040**	<0.0002	**0.0162**	-	<0.0002	<0.001	<0.0002	**0.0006**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW106_0.0-0.1_190123	MW106	0 - 0.1	23 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.051**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW106_0.4-0.5_190123	MW106	0.4 - 0.5	23 Jan 2019	On-Base SA02	<0.005	<0.005	**0.023**	<0.005	**0.044**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW106_3.9-4.0_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW106_5.9-6.0_190123	MW106	5.9 - 6	23 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC114_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC214_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	<0.0002	<0.0002	**0.0003**	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_MW107_0.0-0.1_190124	MW107	0 - 0.1	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.0098**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC104_201216	BH248	0.5 - 0.6	17 Dec 2020	On-Base SA04	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0038**	<0.0001	<0.0001	<0.0005	**0.0003**	**0.0003**	**0.0002**	**0.0013**	**0.0002**	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
0927_MW107_2.9-3.0_190124	MW107	2.9 - 3	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW107_3.9-4.0_190124	MW107	3.9 - 4	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC107_240223	BH356	0.1	23 Feb 2024	On-Base SA04	<0.0002	<0.0002	<0.0002	<0.0002	**0.0018**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	**0.0006**	**0.0002**	**0.0019**	<0.0002	**0.0015**	<0.0002	<0.0005
0927_MW107_7.9-8.0_190124	MW107	7.9 - 8	24 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW120_0.4-0.5_190129	MW120	0.4 - 0.5	29 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.014**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW120_0-0.1_190129	MW120	0 - 0.1	29 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.033**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW120_3.9-4.0_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW120_7.9-8.0_190129	MW120	7.9 - 8	29 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC118_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC218_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS029_191031	SS029	0 - 0.1	31 Oct 2019	On-Base SA02	<0.005	<0.005	**0.015**	<0.005	**0.39**	<0.005	<0.005	**0.0052**	<0.005	**0.0052**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

					PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
					Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses									1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses									0.003							0.003						
Field ID	**Location**	**Depth**	**Date**	**Area**																		
0927_SS030_191031	SS030	0 - 0.1	31 Oct 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.091**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.053**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	**0.0004**	**0.0002**	**0.0027**	**0.0002**	**0.0380**	-	**0.0003**	**0.001**	**0.0012**	**0.0011**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS031_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.033**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS032_191031	SS032	0 - 0.1	31 Oct 2019	On-Base SA02	<0.005	<0.005	<0.005	<0.005	**0.074**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH200_0.9-1_181112	BH200	0.9 - 1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH200_0-0.1_181112	BH200	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.054**	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH201_0-0.1_181112	BH201	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH202_0-0.1_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH202_1.9-2_181112	BH202	1.9 - 2	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC104_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC204_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH203_0.9-1_181112	BH203	0.9 - 1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH203_0-0.1_181112	BH203	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_201211	SS075	0 - 0.1	11 Dec 2020	On-Base SA04	<0.0002	<0.0002	**0.0019**	**0.0003**	**0.0422**	-	<0.0002	<0.001	<0.0002	**0.0005**	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH204_0.4-0.5_181112	BH204	0.4 - 0.5	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH204_0-0.1_181112	BH204	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH204_1.7-1.8_181112	BH204	1.7 - 1.8	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH205_0-0.1_181112	BH205	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH206_0-0.1_181112	BH206	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH207_0-0.1_181112	BH207	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH208_0-0.1_181112	BH208	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH209_0-0.1_181112	BH209	0 - 0.1	12 Nov 2018	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH332_0.0_240906	BH332	0 - 0.5	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.0062**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH332_0.5_240906	BH332	0.5 - 0.6	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_2410124	BH342		24 Oct 2024	On-Base SA04	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	-	<0.0020	<0.0020	<0.0020	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050	<0.05
0927_BH333_0.0_240906	BH333	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH333_0.9_240906	BH333	0.9 - 1	06 Sep 2024	On-Base SA03	<0.005	<0.005	**0.0084**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH334_0.0_240906	BH334	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.044**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH334_0.8_240906	BH334	0.8 - 0.9	06 Sep 2024	On-Base SA03	<0.005	<0.005	**0.0100**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH335_0.0_240906	BH335	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.036**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH335_0.9_240906	BH335	0.9 - 1	06 Sep 2024	On-Base SA03	<0.005	<0.005	**0.078**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_201211	BH240	0.5 - 0.6	11 Dec 2020	On-Base SA04	<0.0002	<0.0002	**0.0004**	<0.0002	**0.0152**	-	<0.0002	<0.001	**0.0005**	**0.0007**	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH336_0.0_240906	BH336	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.022**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH336_0.5_240906	BH336	0.5 - 0.6	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH337_0.0_240906	BH337	0 - 0.2	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.017**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH337_0.6_240906	BH337	0.6 - 0.7	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH338_0.0_240906	BH338	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.14**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH338_0.3_240906	BH338	0.3 - 0.4	06 Sep 2024	On-Base SA03	<0.005	<0.005	**0.0095**	<0.005	**0.059**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH339_0.0_240906	BH339	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.028**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH339_0.9_240906	BH339	0.9 - 1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.0073**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH340_0.0_240906	BH340	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.0082**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH340_0.6_240906	BH340	0.6 - 0.7	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_201213	BH244	0.5 - 0.6	13 Dec 2020	On-Base SA04	<0.0002	<0.0002	**0.0009**	<0.0002	**0.0026**	-	<0.0002	<0.001	**0.0002**	**0.0007**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH341_0.0_240906	BH341	0 - 0.1	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH341_0.5_240906	BH341	0.5 - 0.6	06 Sep 2024	On-Base SA03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH225_0.9-1.0_200120	BH225	0.9 - 1	20 Jan 2020	On-Base SA04	<0.005	**0.0084**	**0.18**	<0.005	**0.018**	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH225_1.2-1.3_200120	BH225	1.2 - 1.3	20 Jan 2020	On-Base SA04	**0.0088**	**0.011**	**0.062**	<0.005	**0.019**	<0.005	<0.005	<0.005	<0.005	**0.015**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																
0927_BH226_0.4-0.5_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH226_1.9-2.0_200120	BH226	1.9 - 2	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC104_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0062**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC204_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.0002	**0.0004**	**0.0089**	**0.0002**	**0.0055**	-	<0.0002	<0.001	**0.0003**	**0.0009**	<0.0002	**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_QC204_201216	BH248	0.5 - 0.6	16 Dec 2020	On-Base SA04	<0.0002	<0.0002	**0.0005**	<0.0002	**0.0033**	-	<0.0002	<0.001	<0.0002	<0.0002	**0.0002**	**0.0012**	<0.0002	**0.0005**	<0.0002	**0.0002**	<0.0002	<0.0005
0927_BH228_0.0-0.1_200120	BH228	0 - 0.1	20 Jan 2020	On-Base SA04	**0.021**	**0.018**	**0.16**	**0.014**	**8.1**	**0.021**	<0.005	<0.005	**0.0084**	**0.059**	<0.005	**0.012**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH228_0.9-1.0_200120	BH228	0.9 - 1	20 Jan 2020	On-Base SA04	**0.27**	**0.23**	**1.5**	**0.061**	**0.44**	<0.005	<0.005	**0.02**	**0.051**	**0.34**	**0.026**	**0.051**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC207_240223	BH356	0.1	23 Feb 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC207_240223	BH356	0.1	23 Feb 2024	On-Base SA04	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0018**	<0.0001	<0.0001	<0.0005	**0.0001**	**0.0002**	<0.0001	**0.0007**	**0.0002**	**0.0018**	**0.0003**	**0.0010**	<0.0001	**0.0003**
0927_BH229_0.0-0.1_200120	BH229	0 - 0.1	20 Jan 2020	On-Base SA04	<0.005	<0.005	**0.013**	<0.005	**0.53**	<0.005	<0.005	<0.005	<0.005	**0.0073**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH230_0.0-0.1_200120	BH230	0 - 0.1	20 Jan 2020	On-Base SA04	<0.005	<0.005	**0.058**	<0.005	**0.23**	<0.005	<0.005	<0.005	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH231_0.4-0.5_200120	BH231	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.005	**0.0096**	**0.14**	**0.0068**	**0.3**	<0.005	<0.005	<0.005	<0.005	**0.02**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH232_0.0-0.1_200120	BH232	0 - 0.1	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.03**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH233_0.0-0.1_200120	BH233	0 - 0.1	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.086**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH234_0.4-0.5_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.005	<0.005	**0.0073**	<0.005	**0.036**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.036**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	<0.0002	**0.0002**	**0.0093**	**0.0006**	**0.0290**	-	<0.0002	**0.001**	**0.0007**	**0.0021**	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_BH319_0.0_240904	BH319	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH319_0.6_240904	BH319	0.6 - 0.7	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH319_1.8_240904	BH319	1.8 - 1.9	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240904	BH319		04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0067**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240904	BH319		04 Sep 2024	On-Base SA04	**0.00013**	**0.00046**	**0.0036**	**0.00027**	**0.01**	-	<0.00020	<0.00020	<0.00020	**0.0023**	**0.00013**	**0.00021**	<0.00010	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH320_0.0_240904	BH320	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH321_0.0_240904	BH321	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0072**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH321_1.1_240904	BH321	1.1 - 1.2	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH321_1.9_240904	BH321	1.9 - 2	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH322_0.0_240904	BH322	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0078**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH322_0.45_240904	BH322	0.45 - 0.55	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH323_0.0_240904	BH323	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.016**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH323_0.4_240904	BH323	0.4 - 0.5	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH324_0.0_240904	BH324	0 - 0.1	04 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.11**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH324_0.4_240904	BH324	0.4 - 0.5	04 Sep 2024	On-Base SA04	<0.005	<0.005	**0.0073**	<0.005	**0.18**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH325_0.0_240906	BH325	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.0051**	<0.005	**0.15**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH325_0.8_240906	BH325	0.8 - 0.9	06 Sep 2024	On-Base SA04	<0.005	**0.01**	**0.1**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_240906	BH325		06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.0071**	<0.005	**0.21**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_240906	BH325		06 Sep 2024	On-Base SA04	**0.00012**	**0.00018**	**0.0077**	**0.00092**	**0.18**	-	<0.0020	**0.00040**	**0.00039**	**0.00086**	**0.00015**	**0.0011**	<0.00010	<0.00050	<0.0050	<0.0050	<0.0050	<0.0050
0927_BH326_0.0_240906	BH326	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.025**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH326_1.6_240906	BH326	1.6 - 1.7	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_240906	BH326		06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.024**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_240906	BH326		06 Sep 2024	On-Base SA04	<0.00010	<0.00010	**0.0014**	**0.00014**	**0.024**	-	<0.0020	**0.00040**	**0.00031**	**0.00029**	<0.00010	**0.00019**	<0.00010	<0.00050	<0.0050	<0.0050	<0.0050	<0.0050
0927_BH327_0.0_240906	BH327	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.019**	<0.005	**0.51**	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH327_0.5_240906	BH327	0.5 - 0.6	06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.032**	<0.005	**1.4**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC103_240906	BH327		06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.049**	**0.015**	**1.2**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC203_240906	BH327		06 Sep 2024	On-Base SA04	**0.00043**	**0.0010**	**0.042**	**0.0054**	**1.1**	-	<0.00020	**0.0010**	**0.0010**	**0.0038**	**0.00026**	**0.0021**	<0.00030	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050
0927_BH328_0.0_240906	BH328	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH328_0.8_240906	BH328	0.8 - 0.9	06 Sep 2024	On-Base SA04	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0067**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH329_0.0_240906	BH329	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0065**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH329_0.9_240906	BH329	0.9 - 1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses					1							10						
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses					0.003							0.003						

Field ID	Location	Depth	Date	Area																	
0927_BH330_0.0_240906	BH330	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH330_0.2_240906	BH330	0.2 - 0.3	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH331_0.0_240906	BH331	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_BH331_0.3_240906	BH331	0.3 - 0.4	06 Sep 2024	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW138_0.0-0.1_200116	MW138	0 - 0.1	16 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW138_0.4-0.5_200116	MW138	0.4 - 0.5	16 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW138_0.9-1.0_200116	MW138	0.9 - 1	16 Jan 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW139_0.0-0.1_200117	MW139	0 - 0.1	17 Jan 2020	On-Base SA04	<0.005	<0.005	**0.11**	**0.0055**	**1.8**	**0.028**	**0.008**	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_MW139_0.9-1.0_200117	MW139	0.9 - 1	17 Jan 2020	On-Base SA04	**0.081**	**0.2**	**0.93**	**0.028**	**1.3**	**0.009**	<0.005	**0.008**	**0.034**	**0.26**	**0.017**	**0.03**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS014_191031	SS014	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0076**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS015_191031	SS015	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS016_191031	SS016	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.012**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS017_191031	SS017	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.013**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS019_191031	SS019	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.15**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS020_191031	SS020	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.16**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS021_191031	SS021	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	**0.051**	<0.005	**1.6**	<0.005	<0.005	<0.005	<0.005	**0.008**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS022_191031	SS022	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	**0.0063**	<0.005	**0.062**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS023_191031	SS023	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	**0.025**	<0.005	**0.38**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC105_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC205_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.0002	<0.0002	**0.0002**	<0.0002	**0.0036**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS024_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS025_191031	SS025	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS026_191031	SS026	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.017**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS043_200303	SS043	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.033**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS044_200303	SS044	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.024**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS045_200303	SS045	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.017**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS046_200303	SS046	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0076**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS047_200303	SS047	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.014**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS048_200303	SS048	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS049_200303	SS049	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS050_200303	SS050	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC101_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC201_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.0002	<0.0002	<0.0002	<0.0002	**0.0034**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS051_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS052_200303	SS052	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS053_200303	SS053	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS054_200303	SS054	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC102_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_QC202_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.0002	<0.0002	**0.0003**	<0.0002	**0.0048**	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	**0.0004**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
0927_SS055_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS056_200303	SS056	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS057_200303	SS057	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	**0.0063**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS058_200303	SS058	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS059_200303	SS059	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS060_200303	SS060	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS061_200303	SS061	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
0927_SS062_200303	SS062	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area													
0927_BH342_0.2_241024	BH342	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH342_0.5_241024	BH342	0.5 - 0.6	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH343_0.15_241024	BH343	0.15 - 0.25	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH343_0.3_241024	BH343	0.3 - 0.4	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH344_0.2_241024	BH344	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH344_0.5_241024	BH344	0.5 - 0.6	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC101_2410124	BH342	0.2 - 0.3	24 Oct 2024	Other - Unknown	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH01_0.2_240223	BH354	0.2	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0026**	**0.0030**	**0.0062**
0927_BH02_0.2_240223	BH355	0.2	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0036**	**0.0042**	**0.0063**
0927_BH03_0.1_240223	BH356	0.1	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0014**	**0.0020**	**0.0064**
0927_BH03_0.23_240223	BH356	0.23	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0030**	**0.0047**	**0.0047**
0927_BH04_0.15_240223	BH357	0.15	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0016**	**0.0039**	**0.0194**
0927_BH04_0.3_240223	BH357	0.3	23 Feb 2024	Other - Unknown	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0221**	**0.0282**	**0.0300**
0927_SS063_201026	SS063	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0045**	**0.0052**	**0.0052**
0927_SS064_201026	SS064	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.016**	**0.0166**	**0.0167**
0927_SS065_201026	SS065	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0255**	**0.0257**	**0.0259**
0927_QC101_201026	SS066	0 - 0.1	27 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0088**	**0.0088**	**0.0088**
0927_QC201_201026	SS066	0 - 0.1	27 Oct 2020	Off-base Laverton RAAF Swamp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0065**	**0.0065**	**0.0065**
0927_SS066_201026	SS066	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0088**	**0.0088**	**0.0088**
0927_SS067_201026	SS067	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0195**	**0.02**	**0.0203**
0927_SS068_201026	SS068	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0124**	**0.0129**	**0.0132**
0927_SS069_201026	SS069	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0067**	**0.0076**	**0.0076**
0927_SS070_201026	SS070	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0022**	**0.0025**	**0.0025**
0927_SS071_201026	SS071	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0085**	**0.0086**	**0.0086**
0927_SS072_201026	SS072	0 - 0.1	26 Oct 2020	Off-base Laverton RAAF Swamp	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.009**	**0.0091**	**0.0091**
0927_MW124_0.4-0.5_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW124_3.8-3.9_190708	MW124	3.8 - 3.9	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0054**	<0.01	<0.05
0927_QC133_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC233_190708	MW124	0.4 - 0.5	08 Jul 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW125_0.0-0.1_190619	MW125	0 - 0.1	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW125_0.4-0.5_190619	MW125	0.4 - 0.5	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW125_4.1-4.2_190619	MW125	4.1 - 4.2	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW125_9.0-9.1_190619	MW125	9 - 9.1	19 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW126_0.0-0.1_190620	MW126	0 - 0.1	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW126_0.4-0.5_190620	MW126	0.4 - 0.5	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW126_6.2-6.3_190620	MW126	6.2 - 6.3	20 Jun 2019	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW228_0.0-0.1_210301	MW228	0 - 0.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW228_1.0-1.1_210301	MW228	1 - 1.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW228_3.0-3.1_210301	MW228	3 - 3.1	01 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW229_0.0-0.1_210302	MW229	0 - 0.1	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW229_0.4-0.5_210302	MW229	0.4 - 0.5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW229_4.9-5.0_210302	MW229	4.9 - 5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC100_210302	MW229	0.4 - 0.5	02 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC200_210302	MW229	0.4 - 0.5	03 Mar 2021	Off-base Prices Freeway	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0004**	**0.0004**	**0.0004**
0927_MW230_0.0-0.1_210303	MW230	0 - 0.1	03 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW230_1.0-1.1_210303	MW230	1 - 1.1	03 Mar 2021	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW244_0.5_241204	MW244	0.5 - 0.6	04 Dec 2024	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW244_1.5-1.6_241204	MW244	1.5 - 1.6	04 Dec 2024	Off-base Prices Freeway	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_MW245_0.0_241203	MW245	0 - 0.1	03 Dec 2024	Off-base Prices Freeway	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW245_0.5_241203	MW245	0.5 - 0.6	03 Dec 2024	Off-base Prices Freeway	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW252_0.0_241203	MW252	0 - 0.1	03 Dec 2024	Off-base Prices Freeway	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW252_0.5_241203	MW252	0.5 - 0.6	03 Dec 2024	Off-base Prices Freeway	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW253_0.1_240730	MW253	0.1	30 Jul 2024	Off-base Prices Freeway	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0025**	**0.0025**	**0.0025**
0927_MW253_0.5_240730	MW253	0.5	30 Jul 2024	Off-base Prices Freeway	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW121_0.0-0.1_200113	MW121	0 - 0.1	13 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW121_0.9-1.0_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW121_2.4-2.5_200114	MW121	2.4 - 2.5	13 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC100_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC200_200113	MW121	0.9 - 1	13 Jan 2020	Off-Base Skeleton Creek	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW122_0.0-0.1_200114	MW122	0 - 0.1	14 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0096**	*<0.01*	*<0.05*
0927_MW122_0.9-1.0_200114	MW122	0.9 - 1	14 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW122_2.5-2.6_200114	MW122	2.5 - 2.6	14 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW123_0.4-0.5_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.012**	**0.012**	*<0.05*
0927_MW123_0.9-1.0_200115	MW123	0.9 - 1	15 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.01**	**0.01**	*<0.05*
0927_QC101_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0092**	*<0.01*	*<0.05*
0927_QC201_200115	MW123	0.4 - 0.5	15 Jan 2020	Off-Base Skeleton Creek	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0253**	**0.0258**	**0.0262**
0927_MW246_0.3_241204	MW246	0.3 - 0.4	04 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW246_1.5_241204	MW246	1.5 - 1.6	04 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_241204	MW246		04 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH235_0.2-0.3_201211	BH235	0.2 - 0.3	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0134**	**0.0149**	**0.0157**
0927_BH235_0.5-0.6_201211	BH235	0.5 - 0.6	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.77**	**0.7883**	**0.8227**
0927_BH236_0.1-0.2_201211	BH236	0.1 - 0.2	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0119**	**0.0122**	**0.0122**
0927_BH236_0.5-0.6_201211	BH236	0.5 - 0.6	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.009**	**0.0091**	**0.0091**
0927_BH237_0.3-0.4_201211	BH237	0.3 - 0.4	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0178**	**0.0185**	**0.0185**
0927_BH238_0.25-0.4_201211	BH238	0.25 - 0.4	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0361**	**0.0381**	**0.0385**
0927_BH239_0.5-0.6_201211	BH239	0.5 - 0.6	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0309**	**0.033**	**0.0333**
0927_BH240_0.5-0.6_201211	BH240	0.5 - 0.6	11 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0224**	**0.0238**	**0.0238**
0927_BH241_0.3-0.4_201213	BH241	0.3 - 0.4	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.1445**	**0.1461**	**0.1476**
0927_BH241_0.6-0.7_201213	BH241	0.6 - 0.7	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0613**	**0.0641**	**0.0657**
0927_BH242_0.3-0.4_201213	BH242	0.3 - 0.4	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.543**	**0.5506**	**0.5616**
0927_BH243_0.5-0.6_201213	BH243	0.5 - 0.6	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0022**	**0.0024**	**0.0024**
0927_BH244_0.1-0.2_201213	BH244	0.1 - 0.2	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0089**	**0.0092**	**0.0095**
0927_BH244_0.3-0.4_201213	BH244	0.3 - 0.4	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0033**	**0.0037**	**0.0037**
0927_BH244_0.5-0.6_201213	BH244	0.5 - 0.6	13 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0105**	**0.0112**	**0.0112**
0927_BH245_0.2-0.3_201216	BH245	0.2 - 0.3	16 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0071**	**0.0073**	**0.0077**
0927_BH246_0.6-0.7_201216	BH246	0.6 - 0.7	16 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0286**	**0.0296**	**0.0296**
0927_BH247_0.1-0.2_201216	BH247	0.1 - 0.2	17 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0283**	**0.0289**	**0.0293**
0927_BH247_0.4-0.5_201216	BH247	0.4 - 0.5	17 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0345**	**0.0351**	**0.0355**
0927_BH248_0.5-0.6_201216	BH248	0.5 - 0.6	17 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0042**	**0.0067**	**0.0075**
0927_BH249_0.3-0.4_201216	BH249	0.3 - 0.4	16 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0069**	**0.0073**	**0.0076**
0927_BH249_0.5-0.6_201216	BH249	0.5 - 0.6	16 Dec 2020	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0013**	**0.0036**	**0.0053**
0927_BH250_0.0-0.1_210709	BH250	0 - 0.1	09 Jul 2021	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0115**	**0.0123**	**0.0134**
0927_BH250_0.2-0.3_210709	BH250	0.2 - 0.3	09 Jul 2021	Other - Unknown	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0193**	**0.0195**	**0.0197**
0927_QC202_041224	MW246		04 Dec 2024	Off-Base Skeleton Creek	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	*<0.00010*	-	**0.0025**
0927_MW247_0.0_241202	MW247	0 - 0.1	02 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW247_2.0_241202	MW247	2 - 2.1	02 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														
Field ID	**Location**	**Depth**	**Date**	**Area**										
0927_MW248_0.3_241202	MW248	0.3 - 0.4	02 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW248_2.5_241202	MW248	2.5 - 2.6	02 Dec 2024	Off-Base Skeleton Creek	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW127_0.0-0.1_190626	MW127	0 - 0.1	26 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW127_0.4-0.5_190626	MW127	0.4 - 0.5	26 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW127_1.9-2.0_190626	MW127	1.9 - 2	26 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW128_0.0-0.1_190627	MW128	0 - 0.1	27 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW128_0.4-0.5_190627	MW128	0.4 - 0.5	27 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW129_0.0-0.1_190702	MW129	0 - 0.1	02 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW129_0.4-0.5_190702	MW129	0.4 - 0.5	02 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW129_0.9-1.0_190702	MW129	0.9 - 1	02 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW130_0.0-0.1_190703	MW130	0 - 0.1	03 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.022**	**0.022**	*<0.05*
0927_MW130_0.4-0.5_190703	MW130	0.4 - 0.5	03 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0206**	**0.0206**	*<0.05*
0927_MW130_0.9-1.0_190703	MW130	0.9 - 1	03 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW131_0.0-0.1_190701	MW131	0 - 0.1	01 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.03**	**0.03**	*<0.05*
0927_MW131_0.9-1.0_190701	MW131	0.9 - 1	01 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.031**	**0.031**	*<0.05*
0927_MW131_1.4-1.5_190701	MW131	1.4 - 1.5	01 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC131_190701	MW131	1.4 - 1.5	01 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC231_190701	MW131	1.4 - 1.5	07 Jan 2019	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.001**	**0.001**	**0.001**
0927_MW132_0.0-0.1_190628	MW132	0 - 0.1	28 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.006**	*<0.01*	*<0.05*
0927_MW132_0.4-0.5_190628	MW132	0.4 - 0.5	28 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW132_1.4-1.5_190628	MW132	1.4 - 1.5	28 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW133_0.4-0.5_190625	MW133	0.4 - 0.5	25 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW133_2.4-2.5_190625	MW133	2.4 - 2.5	25 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW133_5.2-5.3_190625	MW133	5.2 - 5.3	25 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW133_8.8-8.9_190625	MW133	8.8 - 8.9	25 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC130_190625	MW133	0.4 - 0.5	28 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC230_190625	MW133	0.4 - 0.5		Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW135_0.0-0.1_190624	MW135	0 - 0.1	24 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW135_0.4-0.5_190624	MW135	0.4 - 0.5	24 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW135_2.5-2.6_190624	MW135	2.5 - 2.6	24 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW135_8.2-8.3_190624	MW135	8.2 - 8.3	24 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW136_0.0-0.1_190621	MW136	0 - 0.1	21 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW136_0.4-0.5_190621	MW136	0.4 - 0.5	21 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW136_9.0-9.1_190621	MW136	9 - 9.1	21 Jun 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW137_0.4-0.5_190704	MW137	0.4 - 0.5	04 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0248**	**0.0248**	*<0.05*
0927_MW137_0.9-1.0_190704	MW137	0.9 - 1	04 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.072**	**0.072**	**0.072**
0927_MW137_1.2-1.3_190704	MW137	1.2 - 1.3	04 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.015**	**0.015**	*<0.05*
0927_MW137_3.9-4.0_190704	MW137	3.9 - 4	04 Jul 2019	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW249_0.1_240729	MW249	0.1	29 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0003**	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0846**	**0.0865**	**0.0901**
0927_MW249_1.0_240729	MW249	1	29 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0025**	**0.0108**	**0.0125**
0927_MW250_0.1_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.206**	**0.207**	**0.210**
0927_MW250_0.7_240729	MW250	0.7	29 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0006**	**0.0030**	**0.0032**
0927_QC101_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.154**	**0.157**	**0.158**
0927_QC201_240729	MW250	0.1	29 Jul 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.13**	**0.13**	**0.13**
0927_MW251_0.1_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0004**	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.212**	**0.214**	**0.220**
0927_MW251_1.0_240726	MW251	1	26 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0451**	**0.0537**	**0.0548**
0927_QC100_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0005**	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.230**	**0.232**	**0.240**
0927_QC200_240726	MW251	0.1	26 Jul 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.256**	**0.256**	**0.256**

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_MW254_0.3_241206	MW254	0.3 - 0.4	06 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.2059**	**0.2059**	**0.2059**
0927_MW254_1.0_241206	MW254	1 - 1.1	06 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.034**	**0.034**	*<0.05*
0927_QC101_241206	MW254		06 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.1655**	**0.1655**	**0.1655**
0927_QC201_061224 (QA09)	MW254		03 Dec 2024	Off-Base Williams Landing	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.28**	-	**0.29**
0927_MW255_0.3_241205	MW255	0.3 - 0.4	05 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW255_0.5_241205	MW255	0.5 - 0.6	05 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW256_0.3_241205	MW256	0.3 - 0.4	05 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.182**	**0.1888**	**0.1888**
0927_MW256_0.5_241205	MW256	0.5 - 0.6	05 Dec 2024	Off-Base Williams Landing	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.453**	**0.4605**	**0.4697**
0927_MW257_0.1_240725	MW257	0.1	25 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0328**	**0.0337**	**0.0341**
0927_MW257_1.0_240725	MW257	1	26 Jul 2024	Off-Base Williams Landing	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0266**	**0.0304**	**0.0325**
0927_MW108_0.4-0.5_181108	MW108	0.4 - 0.5	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW108_0-0.1_181108	MW108	0 - 0.1	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW108_2.9-3_181108	MW108	2.9 - 3	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW108_6.9-7_181108	MW108	6.9 - 7	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW109_0.4-0.5_181108	MW109	0.4 - 0.5	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW109_0-0.1_181108	MW109	0 - 0.1	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW109_2.9-3_181108	MW109	2.9 - 3	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW109_6.9-7_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC103_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC203_181108	MW109	6.9 - 7	08 Nov 2018	On-base (other)	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0003**	**0.0003**	**0.0003**
0927_MW110_0-0.1_181107	MW110	0 - 0.1	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0055**	*<0.01*	*<0.05*
0927_MW110_1.9-2_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW110_5.9-6_181107	MW110	5.9 - 6	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW110_8.9-9_181107	MW110	8.9 - 9	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.006**	*<0.01*	*<0.05*
0927_QC102_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC202_181107	MW110	1.9 - 2	07 Nov 2018	On-base (other)	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW111_0.9-1_181107	MW111	0.9 - 1	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW111_0-0.1_181107	MW111	0 - 0.1	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW111_3.9-4_181107	MW111	3.9 - 4	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW111_6.9-7_181107	MW111	6.9 - 7	07 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW112_0.4-0.5_181105	MW112	0.4 - 0.5	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW112_0-0.1_181105	MW112	0 - 0.1	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW112_4.9-5_181105	MW112	4.9 - 5	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW112_6.9-7_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC101_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC201_181105	MW112	6.9 - 7	05 Nov 2018	On-base (other)	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW113_0.4-0.5_181105	MW113	0.4 - 0.5	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW113_0-0.1_181105	MW113	0 - 0.1	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW113_2.9-3_181105	MW113	2.9 - 3	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW113_8.9-9_181105	MW113	8.9 - 9	05 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW114_0.1-0.2_181102	MW114	0.1 - 0.2	02 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW114_0.9-1_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW114_3.9-4_181102	MW114	3.9 - 4	02 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW114_6.9-7_181102	MW114	6.9 - 7	02 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC100_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC200_181102	MW114	0.9 - 1	02 Nov 2018	On-base (other)	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_MW115_0.1-0.2_181101	MW115	0.1 - 0.2	01 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0065**	*<0.01*	*<0.05*
0927_MW115_0.9-1_181101	MW115	0.9 - 1	01 Nov 2018	On-base (other)	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area													
0927_MW115_10.9-11_181102	MW115	10.9 - 11	02 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW115_6.9-7_181101	MW115	6.9 - 7	01 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW116_0.4-0.5_181109	MW116	0.4 - 0.5	09 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW116_0-0.1_181109	MW116	0 - 0.1	09 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0066**	<0.01	<0.05
0927_MW116_3.9-4_181109	MW116	3.9 - 4	09 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW116_8.9-9_181109	MW116	8.9 - 9	09 Nov 2018	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW117_0.0-0.1_190125	MW117	0 - 0.1	25 Jan 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.2472**	**0.2472**	**0.2549**
0927_MW134_0.0-0.1_190705	MW134	0 - 0.1	05 Jul 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.02**	**0.02**	<0.05
0927_MW134_0.7-0.8_190705	MW134	0.7 - 0.8	05 Jul 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW134_2.7-2.8_190705	MW134	2.7 - 2.8	05 Jul 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW134_5.9-6.0_190705	MW134	5.9 - 6	05 Jul 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC132_190705	MW134	0.7 - 0.8	05 Jul 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC232_190705	MW134	0.7 - 0.8	07 May 2019	On-base (other)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
0927_MW140_0.0-0.1_200117	MW140	0 - 0.1	17 Jan 2020	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS001_181202	SS001	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0014**	**0.0024**	<0.005
0927_SS002_181202	SS002	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0019**	**0.0023**	<0.005
0927_SS003_181202	SS003	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0048**	**0.0048**	**0.0053**
0927_SS004_181202	SS004	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	**0.0011**	<0.005
0927_SS007_181202	SS007	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0023**	**0.0027**	<0.005
0927_SS008_181202	SS008	0 - 0.1	02 Dec 2018	On-base (other)	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0051**	**0.0059**	**0.0065**
0927_SS013_190405	SS013	0 - 0.1	05 Apr 2019	On-base (other)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.001**	**0.001**	**0.001**
0927_SS018_191031	SS018	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.08**	**0.08**	**0.08**
0927_SS027_191031	SS027	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS028_191031	SS028	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.011**	**0.011**	<0.05
0927_SS033_191031	SS033	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS034_191031	SS034	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS035_191031	SS035	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC102_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC202_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0021**	**0.0021**	**0.0021**
0927_SS036_191031	SS036	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS037_191031	SS037	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS038_191031	SS038	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS039_191031	SS039	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.074**	**0.074**	**0.074**
0927_SS040_191031	SS040	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS041_191031	SS041	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS042_191031	SS042	0 - 0.1	31 Oct 2019	On-base (other)	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH215_1.5-1.6_190131	BH215	1.5 - 1.6	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH216_0.4-0.5_190131	BH216	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH216_0-0.1_190131	BH216	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.032**	**0.032**	<0.05
0927_BH217_0.4-0.5_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH217_0-0.1_190131	BH217	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC121_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC221_190131	BH217	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0011**	**0.0013**	**0.0013**
0927_BH218_0-0.1_190131	BH218	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0601**	**0.0601**	**0.0601**
0927_BH219_0.4-0.5_190131	BH219	0.4 - 0.5	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.031**	**0.031**	<0.05
0927_BH219_1.4-1.5_190131	BH219	1.4 - 1.5	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH220_0.9-1.0_190131	BH220	0.9 - 1	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0055**	<0.01	<0.05
0927_BH220_0-0.1_190131	BH220	0 - 0.1	31 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.2551**	**0.2551**	**0.2551**

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_BH222_0-0.1_190201	BH222	0 - 0.1	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH222_1.4-1.5_190201	BH222	1.4 - 1.5	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH223_0.9-1_190201	BH223	0.9 - 1	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH223_0-0.1_190201	BH223	0 - 0.1	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0065**	*<0.01*	*<0.05*
0927_BH224_0.4-0.5_190201	BH224	0.4 - 0.5	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0963**	**0.0963**	**0.0963**
0927_BH224_0-0.1_190201	BH224	0 - 0.1	01 Jan 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	**0.0076**	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.515**	**0.515**	**0.5226**
0927_QC122_190131	BH224	0.4 - 0.5	01 Feb 2019	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.096**	**0.096**	**0.096**
0927_QC222_190201	BH224	0.4 - 0.5	01 Feb 2019	On-Base SA01	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0831**	**0.0877**	**0.0903**
0927_BH299_0.0_240902	BH299	0 - 0.1	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.022**	**0.022**	*<0.05*
0927_BH299_0.6_240902	BH299	0.6 - 0.7	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC103_240902	BH299		02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.03**	**0.03**	*<0.05*
0927_QC203_240902	BH299		02 Sep 2024	On-Base SA01	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.048**	-	**0.051**
0927_BH300_0.0_240902	BH300	0 - 0.1	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.014**	**0.014**	*<0.05*
0927_BH300_0.6_240902	BH300	0.6 - 0.7	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH301_0.1_240902	BH301	0.1 - 0.2	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.16**	**0.16**	**0.16**
0927_BH301_0.6_240902	BH301	0.6 - 0.7	02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.063**	**0.063**	**0.063**
0927_QC104_240902	BH301		02 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.15**	**0.15**	**0.15**
0927_QC204_240902	BH301		02 Sep 2024	On-Base SA01	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.093**	-	**0.095**
0927_BH302_0.0_240903	BH302	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.09**	**0.118**	**0.1255**
0927_BH302_0.4_240903	BH302	0.4 - 0.5	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.025**	**0.025**	*<0.05*
0927_QC101_240903	BH302		03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.086**	**0.1159**	**0.1222**
0927_QC201_240903	BH302		03 Sep 2024	On-Base SA01	*<0.00020*	*<0.00020*	*<0.00040*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.092**	-	**0.15**
0927_BH303_0.0_240903	BH303	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.147**	**0.183**	**0.1916**
0927_BH303_0.1_240903	BH303	0.1 - 0.2	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.132**	**0.132**	**0.132**
0927_BH304_0.0_240903	BH304	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.164**	**0.1861**	**0.1861**
0927_BH305_0.0_240903	BH305	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.055**	**0.055**	**0.055**
0927_BH305_0.6_240903	BH305	0.6 - 0.7	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_240903	BH305		03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.132**	**0.132**	**0.132**
0927_QC202_240903	BH305		03 Sep 2024	On-Base SA01	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.12**	-	**0.13**
0927_BH306_0.0_240903	BH306	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0057**	**0.0108**	*<0.05*
0927_BH306_0.3_240903	BH306	0.3 - 0.4	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH307_0.0_240903	BH307	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0678**	**0.0678**	**0.0678**
0927_BH307_0.5_240903	BH307	0.5 - 0.6	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0053**	*<0.01*	*<0.05*
0927_BH308_0.0_240903	BH308	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.151**	**0.151**	**0.1578**
0927_BH308_0.6_240903	BH308	0.6 - 0.7	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**2.9**	**3.3374**	**3.6414**
0927_BH309_0.1_240903	BH309	0.1 - 0.2	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.085**	**0.085**	**0.085**
0927_BH309_0.9_240903	BH309	0.9 - 1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC103_240903	BH309		03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.072**	**0.072**	**0.072**
0927_QC203_240903	BH309		03 Sep 2024	On-Base SA01	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.062**	-	**0.063**
0927_BH310_0.0_240903	BH310	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.014**	**0.014**	*<0.05*
0927_BH310_0.9_240903	BH310	0.9 - 1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH311_0.0_240903	BH311	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH311_0.5_240903	BH311	0.5 - 0.6	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0056**	*<0.01*	*<0.05*
0927_BH312_0.0_240903	BH312	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH312_0.6_240903	BH312	0.6 - 0.7	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH313_0.0_240903	BH313	0 - 0.1	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.011**	**0.011**	*<0.05*
0927_BH313_0.5_240903	BH313	0.5 - 0.6	03 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0053**	*<0.01*	*<0.05*
0927_BH314_0.0_240904	BH314	0 - 0.1	04 Sep 2024	On-Base SA01	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.134**	**0.1408**	**0.1408**

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_BH314_0.4_240904	BH314	0.4 - 0.5	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.235**	**0.235**	**0.235**
0927_QC101_240904	BH314		04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.124**	**0.124**	**0.124**
0927_QC201_240904	BH314		04 Sep 2024	On-Base SA01	<0.00010	<0.00010	<0.00020	<0.00020	**0.0027**	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.12**	-	**0.14**
0927_BH315_0.0_240904	BH315	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.062**	**0.062**	**0.062**
0927_BH315_0.1_240904	BH315	0.1 - 0.2	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.371**	**0.371**	**0.371**
0927_BH315_0.5_240904	BH315	0.5 - 0.6	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0121**	**0.0121**	<0.05
0927_QC102_240904	BH315		04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.3478**	**0.3478**	**0.3478**
0927_QC202_240904	BH315		04 Sep 2024	On-Base SA01	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.33**	-	**0.35**
0927_BH316_0.0_240904	BH316	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH316_0.7_240904	BH316	0.7 - 0.8	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH317_0.0_240904	BH317	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH317_0.4_240904	BH317	0.4 - 0.5	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH318_0.0_240904	BH318	0 - 0.1	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.02**	**0.02**	<0.05
0927_BH318_0.45_240904	BH318	0.45 - 0.55	04 Sep 2024	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH391_0.1_250225	BH391	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.4281**	**0.4281**	**0.4281**
0927_QC101_250225	BH391	0 - 0.1	25 Feb 2025	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.49**	**0.49**	**0.4951**
0927_QC201_250225	BH391		25 Feb 2025	On-Base SA01	<0.00010	<0.00010	<0.00020	<0.00020	**0.0050**	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**2.1**	-	**2.2**
0927_BH392_0.1_250225	BH392	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.266**	**0.266**	**0.266**
0927_BH393_0.4_250225	BH393	0.4 - 0.5	25 Feb 2025	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.389**	**0.438**	**0.4702**
0927_BH394_0.1_250225	BH394	0.1 - 0.2	25 Feb 2025	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW117_0.9-1.0_190125	MW117	0.9 - 1	25 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**3.09**	**3.1863**	**3.2683**
0927_MW117_6.9-7.0_190125	MW117	6.9 - 7	25 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.012**	**0.012**	<0.05
0927_MW117_8.9-9.0_190125	MW117	8.9 - 9	25 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0078**	<0.01	<0.05
0927_QC117_190125	MW117	6.9 - 7	25 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.012**	**0.012**	<0.05
0927_QC217_190125	MW117	6.9 - 7	24 Jan 2019	On-Base SA01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0090**	**0.0098**	**0.0101**
0927_MW118_0-0.1_190130	MW118	0 - 0.1	30 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.013**	**0.013**	<0.05
0927_MW118_2.9-3.0_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW118_5.9-6.0_190130	MW118	5.9 - 6	30 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW118_7.9-8.0_190130	MW118	7.9 - 8	30 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.01**	**0.01**	<0.05
0927_QC119_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC219_190130	MW118	2.9 - 3	30 Jan 2019	On-Base SA01	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0013**	**0.0013**	**0.0013**
0927_MW119_0-0.1_190129	MW119	0 - 0.1	29 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.015**	**0.015**	<0.05
0927_MW119_1.9-2.0_190129	MW119	1.9 - 2	29 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW119_6.9-7.0_190129	MW119	6.9 - 7	29 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW119_8.9-9.0_190129	MW119	8.9 - 9	29 Jan 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.005**	<0.01	<0.05
0927_SS005_181202	SS005	0 - 0.1	02 Dec 2018	On-Base SA01	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0303**	**0.031**	**0.0321**
0927_SS006_181202	SS006	0 - 0.1	02 Dec 2018	On-Base SA01	<0.0001	<0.0005	<0.0001	<0.0001	**0.011**	<0.0005	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	**1.53**	**1.5704**	**1.8018**
0927_SS009_190405	SS009	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0762**	**0.0762**	**0.0831**
0927_SS010_190405	SS010	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**2.71**	**2.7409**	**2.7873**
0927_SS011_190405	SS011	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	**0.007**	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.401**	**0.401**	**0.47**
0927_SS012_190405	SS012	0 - 0.1	05 Apr 2019	On-Base SA01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.033**	**0.033**	<0.05
0927_BH210_0.4-0.5_190131	BH210	0.4 - 0.5	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH210_0.9-1_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH210_0-0.1_190131	BH210	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.018**	**0.018**	<0.05
0927_QC120_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC220_190131	BH210	0.9 - 1	31 Jan 2019	On-Base SA02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
0927_BH211_0.4-0.5_190131	BH211	0.4 - 0.5	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.035**	**0.0405**	<0.05
0927_BH211_1.4-1.5_190131	BH211	1.4 - 1.5	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														
Field ID	**Location**	**Depth**	**Date**	**Area**										
0927_BH212_0.7-0.8_190131	BH212	0.7 - 0.8	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH212_0-0.1_190131	BH212	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH213_0.9-1_190131	BH213	0.9 - 1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**2.38**	**3.33**	**3.773**
0927_BH213_0-0.1_190131	BH213	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**1.658**	**1.6857**	**1.6913**
0927_BH214_0-0.1_190131	BH214	0 - 0.1	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.024**	**0.024**	<0.05
0927_BH215_0.4-0.5_190131	BH215	0.4 - 0.5	31 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**1.012**	**1.562**	**1.732**
0927_BH221_0.4-0.5_190201	BH221	0.4 - 0.5	01 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH221_0.8-0.9_190201	BH221	0.8 - 0.9	01 Jan 2019	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH251_0.0_240826	BH251	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.009**	<0.01	<0.05
0927_BH251_0.7_240826	BH251	0.7 - 0.8	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.021**	**0.021**	<0.05
0927_QC101_240826	BH251		26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.01**	**0.01**	<0.05
0927_QC201_240826	BH251		26 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0085**	-	**0.0090**
0927_BH252_0.2_240826	BH252	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	**0.25**	<0.005	<0.01	<0.005	<0.005	**0.027**	<0.005	**0.23**	**0.2383**	**0.5153**
0927_BH252_0.9_240826	BH252	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0237**	**0.0318**	<0.05
0927_BH253_0.2_240826	BH253	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.056**	**0.056**	**0.056**
0927_BH253_0.9_240826	BH253	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.072**	**0.072**	**0.072**
0927_BH254_0.0_240826	BH254	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.034**	**0.034**	<0.05
0927_BH254_0.9_240826	BH254	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.028**	**0.028**	<0.05
0927_BH255_0.0_240826	BH255	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.028**	**0.028**	<0.05
0927_BH255_0.6_240826	BH255	0.6 - 0.7	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.094**	**0.094**	**0.094**
0927_BH256_0.0_240826	BH256	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0384**	**0.0384**	<0.05
0927_BH256_0.2_240826	BH256	0.2 - 0.3	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.068**	**0.068**	**0.068**
0927_BH257_0.0_240826	BH257	0 - 0.1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.018**	**0.018**	<0.05
0927_BH257_0.4_240826	BH257	0.4 - 0.5	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.01**	**0.01**	<0.05
0927_BH257_0.9_240826	BH257	0.9 - 1	26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC102_240826	BH257		26 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.013**	**0.013**	<0.05
0927_QC202_240826	BH257		26 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.02**	-	**0.021**
0927_BH258_0.0_240827	BH258	0 - 0.1	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.031**	**0.031**	<0.05
0927_BH258_0.6_240827	BH258	0.6 - 0.7	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0052**	<0.01	<0.05
0927_QC101_240827_240827	BH258		27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0099**	<0.01	<0.05
0927_QC102_240827	BH258		27 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0088**	-	**0.0090**
0927_QC201_240827_240827	BH258	0	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.02**	**0.02**	<0.05
0927_BH259_0.2_240827	BH259	0.2 - 0.3	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH259_0.9_240827	BH259	0.9 - 1	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0069**	<0.01	<0.05
0927_BH260_0.2_240827	BH260	0.2 - 0.3	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH260_0.9_240827	BH260	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH261_0.2_240827	BH261	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH261_0.9_240827	BH261	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0061**	<0.01	<0.05
0927_BH262_0.2_240827	BH262	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.014**	**0.014**	<0.05
0927_BH262_0.9_240827	BH262	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0098**	<0.01	<0.05
0927_BH263_0.2_240827	BH263	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0089**	<0.01	<0.05
0927_BH263_0.9_240827	BH263	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH264_0.0_240827	BH264	0	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0052**	<0.01	<0.05
0927_BH264_0.4_240827	BH264	0.4	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH264_0.9_240827	BH264	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC202_240827	BH264		27 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0086**	-	**0.0088**
0927_BH265_0.2_240827	BH265	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.011**	**0.011**	<0.05
0927_BH265_0.7_240827	BH265	0.7	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.006**	<0.01	<0.05

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_BH266_0.2_240827	BH266	0.2	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH266_0.9_240827	BH266	0.9	27 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH267_0.0_240828	BH267	0 - 0.1	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0086**	<0.01	<0.05
0927_BH267_0.6_240828	BH267	0.6 - 0.7	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC101_240828	BH267		28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0071**	<0.01	<0.05
0927_QC102_240828	BH267		28 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0070**	-	**0.0071**
0927_QC201_240828	BH267		28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH268_0.2-0.3_240828	BH268	0.2 - 0.3	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH268_0.5_240828	BH268	0.5 - 0.6	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH269_0.1_240828	BH269	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0056**	<0.01	<0.05
0927_BH269_0.5_240828	BH269	0.5 - 0.6	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH270_0.1_240828	BH270	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH270_0.4_240828	BH270	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH271_0.1_240828	BH271	0.1 - 0.2	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH271_0.4_240828	BH271	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC202_240828	BH271		28 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0090**	-	**0.0091**
0927_BH272_0.0_240828	BH272	0 - 0.1	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0365**	**0.0365**	<0.05
0927_BH272_0.4_240828	BH272	0.4 - 0.5	28 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH273_0.0_240829	BH273	0 - 0.1	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.074**	**0.074**	**0.074**
0927_BH273_0.3_240829	BH273	0.3 - 0.4	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC101_240829	BH273		29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.017**	**0.017**	<0.05
0927_QC201_240829	BH273		29 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.014**	-	**0.014**
0927_BH274_0.1_240829	BH274	0.1 - 0.2	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH274_0.5_240829	BH274	0.5 - 0.6	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH275_0.1_240829	BH275	0.1 - 0.2	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH275_0.5_240829	BH275	0.5 - 0.6	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH276_0.3_240830	BH276	0.3 - 0.4	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH276_0.6_240832	BH276	0.6 - 0.7	29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH277_0.0_240830	BH277	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH277_0.3_240830	BH277	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH277_0.6_240830	BH277	0.6 - 0.7	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH278_0.0_240830	BH278	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH278_0.2_240830	BH278	0.2 - 0.3	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH278_0.7_240833	BH278	0.7 - 0.8	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC103_240829	BH278		29 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC203_240829	BH278		29 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	<0.00010	-	<0.00010
0927_BH279_0.0_240830	BH279	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH279_0.3_240830	BH279	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH279_0.7_240830	BH279	0.7 - 0.8	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH280_0.1_240830	BH280	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH280_0.5_240830	BH280	0.5 - 0.6	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH280_0.8_240830	BH280	0.8 - 0.9	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC101_240830	BH280		30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC201_240830	BH280		30 Aug 2024	On-Base SA02	<0.00010	<0.00010	<0.00020	<0.00020	<0.0010	<0.0010	<0.00020	<0.0010	<0.0010	<0.00020	<0.0050	**0.0017**	-	**0.0017**
0927_BH281_0.0_240830	BH281	0 - 0.1	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.011**	**0.011**	<0.05
0927_BH281_0.3_240830	BH281	0.3 - 0.4	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH281_0.8_240830	BH281	0.8 - 0.9	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH282_0.1_240830	BH282	0.1 - 0.2	30 Aug 2024	On-Base SA02	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														
Field ID	**Location**	**Depth**	**Date**	**Area**										
0927_BH282_0.5_240830	BH282	0.5 - 0.6	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH283_0.1_240830	BH283	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH283_0.7_240830	BH283	0.7 - 0.8	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH284_0.0_240830	BH284	0 - 0.1	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH284_0.5_240830	BH284	0.5 - 0.6	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_240830	BH284		30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC202_240830	BH284		30 Aug 2024	On-Base SA02	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.0016**	-	**0.0016**
0927_BH285_0.1_240830	BH285	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW243_0.0_241203	MW243	0 - 0.1	03 Dec 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW243_1.5_241203	MW243	1.5 - 1.6	03 Dec 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH285_0.5_240830	BH285	0.5 - 0.6	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH286_0.1_240830	BH286	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH286_0.5_240830	BH286	0.5 - 0.6	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH287_0.1_240830	BH287	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH287_0.5_240830	BH287	0.5 - 0.6	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH288_0.1_240830	BH288	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH288_0.3_240830	BH288	0.3 - 0.4	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC103_240830	BH288		30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC203_240830	BH288		30 Aug 2024	On-Base SA02	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	*<0.00010*	-	*<0.00010*
0927_BH289_0.1_240830	BH289	0.1 - 0.2	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH289_0.4_240830	BH289	0.4 - 0.5	30 Aug 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH290_0.1_240902	BH290	0.1 - 0.2	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH290_0.4_240902	BH290	0.4 - 0.5	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC101_240902	BH290		02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC201_240902	BH290		02 Sep 2024	On-Base SA02	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	*<0.00010*	-	*<0.00010*
0927_BH291_0.0_240902	BH291	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH291_0.3_240902	BH291	0.3 - 0.4	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH292_0.0_240902	BH292	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH292_0.1_240902	BH292	0.1 - 0.2	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH293_0.0_240902	BH293	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH293_0.1_240902	BH293	0.1 - 0.2	02 Sep 2024	On-Base SA02	*<0.005*	**0.011**	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	**0.011**	*<0.05*
0927_BH294_0.0_240902	BH294	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH294_0.9_240902	BH294	0.9 - 1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH295_0.0_240902	BH295	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH295_0.3_240902	BH295	0.3 - 0.4	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_240902	BH295		02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC202_240902	BH295		02 Sep 2024	On-Base SA02	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	*<0.00010*	-	*<0.00010*
0927_BH296_0.0_240902	BH296	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.01**	**0.01**	*<0.05*
0927_BH296_0.4_240902	BH296	0.4 - 0.5	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH297_0.0_240902	BH297	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH297_0.4_240902	BH297	0.4 - 0.5	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH298_0.0_240902	BH298	0 - 0.1	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH298_0.5_240902	BH298	0.5 - 0.6	02 Sep 2024	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0085**	*<0.01*	*<0.05*
0927_BH395_0.3_250225	BH395	0.3	25 Feb 2025	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH396_0.3_250226	BH396	0.3 - 0.4	25 Feb 2025	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.222**	**0.222**	**0.222**
0927_MW100_0-0.1_190121	MW100	0 - 0.1	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC101_201211	SS075	0 - 0.1	11 Dec 2020	On-Base SA03	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.057**	**0.0578**	**0.0583**
0927_MW100_2.9-3_190121	MW100	2.9 - 3	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														
Field ID	**Location**	**Depth**	**Date**	**Area**										
0927_MW100_5.9-6_190121	MW100	5.9 - 6	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW100_8.9-9_190121	MW100	8.9 - 9	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW101_0.0-0.1_190124	MW101	0 - 0.1	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW101_1.9-2.0_190124	MW101	1.9 - 2	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW101_6.9-7.0_190124	MW101	6.9 - 7	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW101_9.9-10.0_190124	MW101	9.9 - 10	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW102_0.9-1_190121	MW102	0.9 - 1	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.041**	**0.0462**	**0.0525**
0927_MW102_0-0.1_190121	MW102	0 - 0.1	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.323**	**0.323**	**0.323**
0927_MW102_5.9-6_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW102_7.9-8_190121	MW102	7.9 - 8	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0081**	*<0.01*	*<0.05*
0927_QC110_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC210_190121	MW102	5.9 - 6	21 Jan 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0029**	**0.0029**	**0.0029**
0927_MW103_0.9-1_190122	MW103	0.9 - 1	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW103_0-0.1_190122	MW103	0 - 0.1	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.041**	**0.041**	*<0.05*
0927_MW103_1.9-2_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_201211	BH240	0.5 - 0.6	11 Dec 2020	On-Base SA04	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0165**	**0.0178**	**0.0178**
0927_MW103_5.9-6_190122	MW103	5.9 - 6	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.012**	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC111_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC211_190122	MW103	1.9 - 2	22 Jan 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0008**	**0.0008**	**0.0008**
0927_MW104_0-0.1_190122	MW104	0 - 0.1	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.011**	**0.011**	*<0.05*
0927_MW104_2.9-3_190122	MW104	2.9 - 3	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW104_4.9-5_190122	MW104	4.9 - 5	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW104_5.9-6_190122	MW104	5.9 - 6	22 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW105_0.0-0.1_190123	MW105	0 - 0.1	25 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.033**	**0.033**	*<0.05*
0927_MW105_1.9-2.0_190123	MW105	1.9 - 2	25 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.018**	**0.018**	*<0.05*
0927_MW105_3.9-4.0_190123	MW105	3.9 - 4	25 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.014**	**0.014**	*<0.05*
0927_MW105_5.9-6.0_190123	MW105	5.9 - 6	25 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0065**	*<0.01*	*<0.05*
0927_QC103_201213	BH244	0.5 - 0.6	13 Dec 2020	On-Base SA04	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0029**	**0.0035**	**0.0035**
0927_QC215_190123	MW105	1.9 - 2	23 Jan 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0202**	**0.0211**	**0.0214**
0927_MW106_0.0-0.1_190123	MW106	0 - 0.1	23 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.051**	**0.051**	**0.051**
0927_MW106_0.4-0.5_190123	MW106	0.4 - 0.5	23 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.067**	**0.067**	**0.067**
0927_MW106_3.9-4.0_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW106_5.9-6.0_190123	MW106	5.9 - 6	23 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC114_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC214_190123	MW106	3.9 - 4	23 Jan 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0003**	**0.0003**	**0.0003**
0927_MW107_0.0-0.1_190124	MW107	0 - 0.1	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0098**	*<0.01*	*<0.05*
0927_QC104_201216	BH248	0.5 - 0.6	17 Dec 2020	On-Base SA04	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0044**	**0.0065**	**0.007**
0927_MW107_2.9-3.0_190124	MW107	2.9 - 3	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW107_3.9-4.0_190124	MW107	3.9 - 4	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC107_240223	BH356	0.1	23 Feb 2024	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0018**	**0.0024**	**0.0060**
0927_MW107_7.9-8.0_190124	MW107	7.9 - 8	24 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW120_0.4-0.5_190129	MW120	0.4 - 0.5	29 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.014**	**0.014**	*<0.05*
0927_MW120_0-0.1_190129	MW120	0 - 0.1	29 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.033**	**0.033**	*<0.05*
0927_MW120_3.9-4.0_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_MW120_7.9-8.0_190129	MW120	7.9 - 8	29 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC118_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC218_190129	MW120	3.9 - 4	29 Jan 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_SS029_191031	SS029	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.405**	**0.4154**	**0.4154**

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_SS030_191031	SS030	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.091**	**0.091**	**0.091**
0927_QC103_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.053**	**0.053**	**0.053**
0927_QC203_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0407**	**0.0444**	**0.0451**
0927_SS031_191031	SS031	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.033**	**0.033**	*<0.05*
0927_SS032_191031	SS032	0 - 0.1	31 Oct 2019	On-Base SA02	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.074**	**0.074**	**0.074**
0927_BH200_0.9-1_181112	BH200	0.9 - 1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH200_0-0.1_181112	BH200	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.054**	**0.054**	**0.054**
0927_BH201_0-0.1_181112	BH201	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH202_0-0.1_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH202_1.9-2_181112	BH202	1.9 - 2	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC104_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC204_181112	BH202	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*
0927_BH203_0.9-1_181112	BH203	0.9 - 1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH203_0-0.1_181112	BH203	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC201_201211	SS075	0 - 0.1	11 Dec 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0441**	**0.0450**	**0.0453**
0927_BH204_0.4-0.5_181112	BH204	0.4 - 0.5	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH204_0-0.1_181112	BH204	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH204_1.7-1.8_181112	BH204	1.7 - 1.8	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH205_0-0.1_181112	BH205	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH206_0-0.1_181112	BH206	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH207_0-0.1_181112	BH207	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH208_0-0.1_181112	BH208	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH209_0-0.1_181112	BH209	0 - 0.1	12 Nov 2018	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH332_0.0_240906	BH332	0 - 0.5	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0062**	*<0.01*	*<0.05*
0927_BH332_0.5_240906	BH332	0.5 - 0.6	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC201_2410124	BH342		24 Oct 2024	On-Base SA04	*<0.0010*	*<0.0010*	*<0.0020*	*<0.0020*	*<0.01*	*<0.01*	*<0.0020*	*<0.01*	*<0.01*	*<0.0020*	*<0.05*	*<0.0010*	-	*<0.0010*
0927_BH333_0.0_240906	BH333	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.016**	**0.016**	*<0.05*
0927_BH333_0.9_240906	BH333	0.9 - 1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0084**	*<0.01*	*<0.05*
0927_BH334_0.0_240906	BH334	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.044**	**0.044**	*<0.05*
0927_BH334_0.8_240906	BH334	0.8 - 0.9	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.01**	**0.01**	*<0.05*
0927_BH335_0.0_240906	BH335	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.036**	**0.036**	*<0.05*
0927_BH335_0.9_240906	BH335	0.9 - 1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.078**	**0.078**	**0.078**
0927_QC202_201211	BH240	0.5 - 0.6	11 Dec 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0156**	**0.0172**	**0.0172**
0927_BH336_0.0_240906	BH336	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.022**	**0.022**	*<0.05*
0927_BH336_0.5_240906	BH336	0.5 - 0.6	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.013**	**0.013**	*<0.05*
0927_BH337_0.0_240906	BH337	0 - 0.2	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.017**	**0.017**	*<0.05*
0927_BH337_0.6_240906	BH337	0.6 - 0.7	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH338_0.0_240906	BH338	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.14**	**0.14**	**0.14**
0927_BH338_0.3_240906	BH338	0.3 - 0.4	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0685**	**0.0685**	**0.0685**
0927_BH339_0.0_240906	BH339	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.028**	**0.028**	*<0.05*
0927_BH339_0.9_240906	BH339	0.9 - 1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0073**	*<0.01*	*<0.05*
0927_BH340_0.0_240906	BH340	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0082**	*<0.01*	*<0.05*
0927_BH340_0.6_240906	BH340	0.6 - 0.7	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC203_201213	BH244	0.5 - 0.6	13 Dec 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0035**	**0.0044**	**0.0044**
0927_BH341_0.0_240906	BH341	0 - 0.1	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.014**	**0.014**	*<0.05*
0927_BH341_0.5_240906	BH341	0.5 - 0.6	06 Sep 2024	On-Base SA03	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH225_0.9-1.0_200120	BH225	0.9 - 1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.198**	**0.209**	**0.2174**
0927_BH225_1.2-1.3_200120	BH225	1.2 - 1.3	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.081**	**0.1048**	**0.1158**

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														

Field ID	Location	Depth	Date	Area												
0927_BH226_0.4-0.5_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH226_1.9-2.0_200120	BH226	1.9 - 2	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC104_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0062**	*<0.01*	*<0.05*
0927_QC204_200120	BH226	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0144**	**0.0161**	**0.0167**
0927_QC204_201216	BH248	0.5 - 0.6	16 Dec 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0038**	**0.0052**	**0.0059**
0927_BH228_0.0-0.1_200120	BH228	0 - 0.1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**8.26**	**8.3604**	**8.4274**
0927_BH228_0.9-1.0_200120	BH228	0.9 - 1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**1.94**	**2.698**	**3.169**
0927_QC207_240223	BH356	0.1	23 Feb 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC207_240223	BH356	0.1	23 Feb 2024	On-Base SA04	*<0.0001*	*<0.0005*	*<0.0001*	*<0.0001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.002**	**0.003**	**0.0066**
0927_BH229_0.0-0.1_200120	BH229	0 - 0.1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.543**	**0.5503**	**0.5503**
0927_BH230_0.0-0.1_200120	BH230	0 - 0.1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.288**	**0.304**	**0.304**
0927_BH231_0.4-0.5_200120	BH231	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.44**	**0.46**	**0.4764**
0927_BH232_0.0-0.1_200120	BH232	0 - 0.1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.03**	**0.03**	*<0.05*
0927_BH233_0.0-0.1_200120	BH233	0 - 0.1	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.086**	**0.086**	**0.086**
0927_BH234_0.4-0.5_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0433**	**0.0433**	*<0.05*
0927_QC102_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.036**	**0.036**	*<0.05*
0927_QC202_200120	BH234	0.4 - 0.5	20 Jan 2020	On-Base SA04	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	**0.0383**	**0.0425**	**0.0433**
0927_BH319_0.0_240904	BH319	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.011**	**0.011**	*<0.05*
0927_BH319_0.6_240904	BH319	0.6 - 0.7	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH319_1.8_240904	BH319	1.8 - 1.9	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC103_240904	BH319		04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0067**	*<0.01*	*<0.05*
0927_QC203_240904	BH319		04 Sep 2024	On-Base SA04	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00060*	*<0.0010*	*<0.0010*	*<0.00060*	*<0.0050*	**0.014**	-	**0.017**
0927_BH320_0.0_240904	BH320	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH321_0.0_240904	BH321	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0072**	*<0.01*	*<0.05*
0927_BH321_1.1_240904	BH321	1.1 - 1.2	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH321_1.9_240904	BH321	1.9 - 2	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH322_0.0_240904	BH322	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0078**	*<0.01*	*<0.05*
0927_BH322_0.45_240904	BH322	0.45 - 0.55	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH323_0.0_240904	BH323	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.016**	**0.016**	*<0.05*
0927_BH323_0.4_240904	BH323	0.4 - 0.5	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH324_0.0_240904	BH324	0 - 0.1	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.11**	**0.11**	**0.11**
0927_BH324_0.4_240904	BH324	0.4 - 0.5	04 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.1873**	**0.1873**	**0.1873**
0927_BH325_0.0_240906	BH325	0 - 0.1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.1551**	**0.1551**	**0.1551**
0927_BH325_0.8_240906	BH325	0.8 - 0.9	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.1**	**0.113**	**0.123**
0927_QC101_240906	BH325		06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.2171**	**0.2171**	**0.2171**
0927_QC201_240906	BH325		06 Sep 2024	On-Base SA04	*<0.00010*	*<0.00010*	*<0.00020*	*<0.0020*	*<0.01*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.19**	-	**0.19**
0927_BH326_0.0_240906	BH326	0 - 0.1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.025**	**0.025**	*<0.05*
0927_BH326_1.6_240906	BH326	1.6 - 1.7	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_QC102_240906	BH326		06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.024**	**0.024**	*<0.05*
0927_QC202_240906	BH326		06 Sep 2024	On-Base SA04	*<0.00010*	*<0.00010*	*<0.00020*	*<0.0020*	*<0.01*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**0.025**	-	**0.027**
0927_BH327_0.0_240906	BH327	0 - 0.1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.529**	**0.529**	**0.54**
0927_BH327_0.5_240906	BH327	0.5 - 0.6	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**1.432**	**1.432**	**1.432**
0927_QC103_240906	BH327		06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**1.249**	**1.249**	**1.264**
0927_QC203_240906	BH327		06 Sep 2024	On-Base SA04	*<0.00010*	*<0.00010*	*<0.00020*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0010*	*<0.0010*	*<0.00020*	*<0.0050*	**1.1**	-	**1.2**
0927_BH328_0.0_240906	BH328	0 - 0.1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*
0927_BH328_0.8_240906	BH328	0.8 - 0.9	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.01**	**0.0167**	*<0.05*
0927_BH329_0.0_240906	BH329	0 - 0.1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	**0.0065**	*<0.01*	*<0.05*
0927_BH329_0.9_240906	BH329	0.9 - 1	06 Sep 2024	On-Base SA04	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.01*	*<0.05*

Table B1 - Soil Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS		
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0002	0.0001
PFAS NEMP 2025 Ecological direct exposure – all land uses														
PFAS NEMP 2025 Interim ecological indirect exposure – all land uses														
Field ID	**Location**	**Depth**	**Date**	**Area**										
0927_BH330_0.0_240906	BH330	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH330_0.2_240906	BH330	0.2 - 0.3	06 Sep 2024	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH331_0.0_240906	BH331	0 - 0.1	06 Sep 2024	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_BH331_0.3_240906	BH331	0.3 - 0.4	06 Sep 2024	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW138_0.0-0.1_200116	MW138	0 - 0.1	16 Jan 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW138_0.4-0.5_200116	MW138	0.4 - 0.5	16 Jan 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW138_0.9-1.0_200116	MW138	0.9 - 1	16 Jan 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_MW139_0.0-0.1_200117	MW139	0 - 0.1	17 Jan 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**1.91**	**1.923**	**1.9645**
0927_MW139_0.9-1.0_200117	MW139	0.9 - 1	17 Jan 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**2.23**	**2.66**	**2.922**
0927_SS014_191031	SS014	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0076**	<0.01	<0.05
0927_SS015_191031	SS015	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS016_191031	SS016	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.012**	**0.012**	<0.05
0927_SS017_191031	SS017	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.013**	**0.013**	<0.05
0927_SS019_191031	SS019	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.15**	**0.15**	**0.15**
0927_SS020_191031	SS020	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.16**	**0.16**	**0.16**
0927_SS021_191031	SS021	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	**0.0053**	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**1.651**	**1.659**	**1.6643**
0927_SS022_191031	SS022	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0683**	**0.0683**	**0.0683**
0927_SS023_191031	SS023	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.405**	**0.405**	**0.405**
0927_QC105_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC205_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0038**	**0.0038**	**0.0038**
0927_SS024_191031	SS024	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS025_191031	SS025	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.014**	**0.014**	<0.05
0927_SS026_191031	SS026	0 - 0.1	31 Oct 2019	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.017**	**0.017**	<0.05
0927_SS043_200303	SS043	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.033**	**0.033**	<0.05
0927_SS044_200303	SS044	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.024**	**0.024**	<0.05
0927_SS045_200303	SS045	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.017**	**0.017**	<0.05
0927_SS046_200303	SS046	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0076**	<0.01	<0.05
0927_SS047_200303	SS047	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.014**	**0.014**	<0.05
0927_SS048_200303	SS048	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.01**	**0.01**	<0.05
0927_SS049_200303	SS049	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS050_200303	SS050	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC101_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC201_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0034**	**0.0034**	**0.0034**
0927_SS051_200303	SS051	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS052_200303	SS052	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS053_200303	SS053	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS054_200303	SS054	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC102_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_QC202_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0051**	**0.0055**	**0.0055**
0927_SS055_200303	SS055	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS056_200303	SS056	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS057_200303	SS057	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0063**	<0.01	<0.05
0927_SS058_200303	SS058	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS059_200303	SS059	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS060_200303	SS060	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS061_200303	SS061	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05
0927_SS062_200303	SS062	0 - 0.1	03 Mar 2020	On-Base SA04	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.05

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													

Investigation Area	Location Code	Field ID	Date																		
Addison Wetland	SW2	SW2	20 Sep 2018	-	-	**0.31**	-	**0.97**	-	-	-	-	-	-	**0.02**	-	-	-	-	-	-
Addison Wetland	SW093	0927_QC102_241125	25 Nov 2024	**0.009**	**0.009**	**0.13**	**0.010**	**0.63**	**0.003**	*<0.001*	**0.013**	**0.13**	**0.061**	**0.009**	**0.016**	**0.002**	**0.005**	*<0.001*	**0.001**	*<0.001*	*<0.001*
Addison Wetland	SW093	0927_QC202_241125	25 Nov 2024	**0.012**	**0.0083**	**0.081**	**0.0072**	**0.57**	-	*<0.0020*	*<0.020*	**0.018**	**0.033**	**0.0048**	**0.014**	**0.0018**	**0.0042**	*<0.0020*	*<0.0050*	*<0.010*	*<0.050*
Addison Wetland	SW093	0927_SW093_241125	25 Nov 2024	**0.009**	**0.010**	**0.13**	**0.010**	**0.6**	**0.003**	*<0.001*	**0.012**	**0.19**	**0.061**	**0.008**	**0.016**	**0.002**	**0.004**	**0.001**	**0.001**	*<0.001*	*<0.001*
Addison Wetland	SW093	0927_SW093_250506	06 May 2025	**0.004**	**0.004**	**0.056**	**0.003**	**0.18**	*<0.001*	*<0.001*	**0.010**	**0.009**	**0.017**	**0.003**	**0.008**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Addison Wetland Drain	SW094	0927_SW094_250307	07 Mar 2025	*<0.01*	*<0.01*	**0.01**	*<0.01*	**0.47**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW095	0927_SW095_01_250228	28 Feb 2025	*<0.01*	*<0.01*	**0.02**	*<0.01*	**0.18**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW095	0927_SW095_02_250228	28 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.05**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW096	0927_SW096_01_250228	28 Feb 2025	*<0.01*	*<0.01*	**0.05**	*<0.01*	**0.43**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.04**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW096	0927_SW096_02_250228	28 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.14**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW097	0927_SW097_01_250303	03 Mar 2025	**0.04**	**0.03**	**0.24**	**0.02**	**0.77**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.15**	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW097	0927_SW097_02_250303	03 Mar 2025	**0.03**	**0.03**	**0.23**	**0.02**	**1.1**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.13**	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW098	0927_QC102_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.04**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW098	0927_SW098_01_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.08**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW098	0927_SW098_02_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW099	0927_SW099_01_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW099	0927_SW099_02_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW100	0927_SW100_01_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW100	0927_SW100_02_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW101	0927_SW101_01_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW101	0927_SW101_02_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW102	0927_QC101_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Addison Wetland Drain	SW102	0927_QC201_250227	27 Feb 2025	*<0.010*	*<0.010*	*<0.010*	*<0.010*	**0.012**	-	*<0.020*	*<0.020*	*<0.020*	*<0.010*	*<0.010*	*<0.010*	*<0.010*	*<0.020*	*<0.020*	*<0.050*	*<0.10*	*<0.50*
Addison Wetland Drain	SW102	0927_SW102_01_250227	27 Feb 2025	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW4	SW4	20 Sep 2018	-	-	*<0.02*	-	**0.02**	-	-	-	-	-	-	**0.03**	-	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	0927_SW027_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.10**	*<0.02*	**0.47**	-	*<0.02*	*<0.1*	*<0.02*	**0.02**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW027	0927_SW027_230320	20 Mar 2023	*<0.02*	*<0.02*	**0.10**	*<0.02*	**0.47**	-	*<0.02*	*<0.1*	*<0.02*	**0.02**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW027	0927_SW027_230802	02 Aug 2023	*<0.02*	*<0.02*	**0.05**	*<0.02*	**0.15**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW027	0927_SW027_240221	21 Feb 2024	*<0.02*	*<0.02*	**0.01**	*<0.02*	**0.09**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW027	0927_SW027_241008	08 Oct 2024	**0.005**	**0.002**	**0.024**	**0.001**	**0.11**	*<0.001*	*<0.001*	**0.008**	*<0.005*	**0.009**	**0.001**	**0.005**	*<0.001*	**0.004**	*<0.001*	**0.002**	*<0.001*	*<0.001*
Ashcroft Avenue Ponds	SW027	0927_SW027_250602	02 Jun 2025	*<0.02*	*<0.02*	**0.02**	*<0.02*	**0.03**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW027	SW27_190603	03 Jun 2019	**0.01**	*<0.01*	**0.08**	*<0.01*	**0.24**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.04**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW028	0927_QC109_190117_SW	17 Jan 2019	**0.33**	**0.4**	**3.1**	**0.35**	**12**	-	*<0.01*	**0.12**	**0.18**	**1.1**	**0.09**	**0.29**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW028	0927_QC209_SW_190117	17 Jan 2019	**0.41**	**0.5**	**3.57**	**0.22**	**10.5**	-	*<0.05*	*<0.2*	**0.26**	**0.93**	**0.11**	**0.24**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*
Ashcroft Avenue Ponds	SW028	0927_SW28_190117	17 Jan 2019	**0.33**	**0.39**	**3.1**	**0.39**	**14**	-	*<0.01*	**0.12**	**0.18**	**1**	**0.09**	**0.28**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW029	0927_SW29_190117	17 Jan 2019	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.02**	-	*<0.01*	*<0.05*	**0.02**	**0.03**	**0.01**	**0.05**	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW030	0927_QC105_240221	21 Feb 2024	*<0.02*	*<0.02*	**0.01**	*<0.02*	**0.03**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW030	0927_QC205_240221	21 Feb 2024	*<0.01*	*<0.01*	**0.04**	*<0.01*	**0.21**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.01**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW030	0927_SW30_190117	17 Jan 2019	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.04**	-	*<0.01*	*<0.05*	**0.02**	**0.03**	**0.02**	**0.06**	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Ashcroft Avenue Ponds	SW030	0927_SW030_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.05**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.02**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW030	0927_SW030_230320	20 Mar 2023	*<0.02*	*<0.02*	**0.05**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.02**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW030	0927_SW030_230802	02 Aug 2023	*<0.02*	*<0.02*	*<0.01*	*<0.02*	**0.01**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW030	0927_SW030_240221	21 Feb 2024	*<0.02*	*<0.02*	**0.01**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW030	0927_SW030_241008	08 Oct 2024	**0.002**	*<0.001*	**0.005**	*<0.001*	**0.014**	*<0.001*	*<0.001*	**0.011**	**0.005**	**0.007**	**0.002**	**0.007**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Ashcroft Avenue Ponds	SW030	0927_SW030_250602	02 Jun 2025	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Ashcroft Avenue Ponds	SW110	0927_SW110_241008	08 Oct 2024	**0.002**	*<0.001*	**0.005**	*<0.001*	**0.014**	*<0.001*	*<0.001*	**0.011**	**0.009**	**0.007**	**0.002**	**0.008**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Bioretention Pond	SW5	SW5	20 Sep 2018	-	-	**0.56**	-	**0.59**	-	-	-	-	-	-	**0.03**	-	-	-	-	-	-

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													

Investigation Area	Location Code	Field ID	Date																		
Cheetham Wetlands	SW053	0927_SW53_200708	08 Jul 2020	**0.004**	**0.004**	**0.024**	**0.001**	**0.037**	*<0.001*	*<0.001*	**0.007**	**0.005**	**0.011**	**0.003**	**0.006**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW054	0927_SW54_200708	08 Jul 2020	**0.004**	**0.003**	**0.02**	*<0.001*	**0.029**	*<0.001*	*<0.001*	**0.007**	**0.006**	**0.012**	**0.003**	**0.006**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW055	0927_QC101_200805	05 Aug 2020	**0.019**	**0.024**	**0.12**	**0.003**	**0.084**	*<0.001*	*<0.001*	**0.018**	**0.011**	**0.032**	**0.005**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW055	0927_QC105_201028	28 Oct 2020	**0.005**	**0.005**	**0.048**	**0.003**	**0.15**	*<0.001*	*<0.001*	**0.006**	**0.006**	**0.013**	**0.003**	**0.008**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW055	0927_QC201_200805	05 Aug 2020	**0.0220**	**0.0234**	**0.140**	**0.0032**	**0.0846**	-	*<0.0005*	**0.014**	**0.0139**	**0.0457**	**0.0052**	**0.0095**	**0.0006**	**0.0018**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
Cheetham Wetlands	SW055	0927_QC205_201028	28 Oct 2020	**0.0057**	**0.0050**	**0.0488**	**0.0035**	**0.192**	-	*<0.0008*	**0.008**	**0.0066**	**0.0162**	**0.0034**	**0.0090**	**0.0016**	**0.0050**	*<0.0008*	*<0.0008*	*<0.0008*	*<0.0020*
Cheetham Wetlands	SW055	0927_SW55_200708	08 Jul 2020	**0.016**	**0.02**	**0.11**	**0.005**	**0.097**	*<0.001*	*<0.001*	**0.01**	**0.009**	**0.029**	**0.004**	**0.007**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW055	0927_SW55_200805	05 Aug 2020	**0.018**	**0.020**	**0.11**	**0.003**	**0.078**	*<0.001*	*<0.001*	**0.016**	**0.011**	**0.031**	**0.005**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW055	0927_SW55_201028	28 Oct 2020	**0.005**	**0.005**	**0.050**	**0.003**	**0.15**	*<0.001*	*<0.001*	**0.007**	**0.007**	**0.013**	**0.003**	**0.008**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW056	0927_QC101_200708	08 Jul 2020	**0.004**	**0.004**	**0.035**	**0.002**	**0.13**	*<0.001*	*<0.001*	*<0.005*	**0.003**	**0.007**	**0.002**	**0.004**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW056	0927_QC201_200708	08 Jul 2020	**0.0045**	**0.0042**	**0.0366**	**0.0024**	**0.0874**	-	*<0.0016*	*<0.002*	**0.0021**	**0.0080**	**0.0021**	**0.0054**	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0040*
Cheetham Wetlands	SW056	0927_SW56_200708	08 Jul 2020	**0.004**	**0.004**	**0.038**	**0.003**	**0.13**	*<0.001*	*<0.001*	*<0.005*	**0.003**	**0.008**	**0.002**	**0.004**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW056	0927_SW56_200805	05 Aug 2020	**0.003**	**0.003**	**0.020**	*<0.001*	**0.031**	*<0.001*	*<0.001*	**0.018**	**0.003**	**0.006**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW057	0927_SW57_200708	08 Jul 2020	**0.003**	**0.003**	**0.02**	**0.001**	**0.027**	*<0.001*	*<0.001*	*<0.005*	**0.002**	**0.006**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW057	0927_SW057_241121	21 Nov 2024	**0.002**	**0.001**	**0.009**	*<0.001*	**0.032**	*<0.001*	*<0.001*	*<0.005*	**0.001**	**0.002**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW057	0927_SW057_250508	08 May 2025	*<0.001*	*<0.001*	**0.002**	*<0.001*	**0.0054**	*<0.001*	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW058	0927_SW58_200708	08 Jul 2020	**0.006**	**0.006**	**0.036**	**0.002**	**0.048**	*<0.001*	*<0.001*	**0.013**	**0.004**	**0.019**	**0.003**	**0.004**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW058	0927_SW58_200805	05 Aug 2020	**0.007**	**0.005**	**0.016**	*<0.001*	**0.009**	*<0.001*	*<0.001*	**0.040**	**0.006**	**0.020**	**0.002**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW058	0927_SW58_201028	28 Oct 2020	**0.011**	**0.009**	**0.062**	**0.002**	**0.081**	*<0.001*	*<0.001*	**0.017**	**0.020**	**0.031**	**0.008**	**0.014**	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW058	0927_SW058_241122	22 Nov 2024	**0.013**	**0.011**	**0.060**	*<0.001*	**0.0052**	*<0.001*	*<0.001*	*<0.005*	**0.010**	**0.031**	**0.006**	**0.007**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW058	0927_SW058_250507	07 May 2025	**0.006**	**0.004**	**0.020**	*<0.001*	**0.0057**	*<0.001*	*<0.001*	*<0.005*	**0.006**	**0.017**	**0.003**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW059	0927_SW59_200708	08 Jul 2020	**0.007**	**0.008**	**0.049**	**0.005**	**0.16**	*<0.001*	*<0.001*	**0.009**	**0.006**	**0.015**	**0.003**	**0.006**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW060	0927_SW60_200708	08 Jul 2020	**0.013**	**0.01**	**0.022**	*<0.001*	**0.006**	*<0.001*	*<0.001*	**0.026**	**0.007**	**0.044**	**0.006**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW060	0927_SW60_200805	05 Aug 2020	**0.013**	**0.010**	**0.025**	*<0.001*	**0.007**	*<0.001*	*<0.001*	**0.038**	**0.013**	**0.046**	**0.007**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW061	0927_SW61_200708	09 Jul 2020	**0.011**	**0.016**	**0.17**	**0.007**	**0.16**	*<0.001*	*<0.001*	**0.016**	**0.005**	**0.024**	**0.004**	**0.007**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW062	0927_SW62_200709	09 Jul 2020	**0.002**	**0.001**	**0.010**	*<0.001*	**0.029**	*<0.001*	*<0.001*	*<0.005*	**0.003**	**0.004**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW063	0927_SW63_200708	08 Jul 2020	**0.012**	**0.01**	**0.021**	*<0.001*	**0.007**	*<0.001*	*<0.001*	**0.025**	**0.007**	**0.04**	**0.005**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW064	0927_SW64_201028	28 Oct 2020	**0.017**	**0.014**	**0.088**	**0.003**	**0.032**	*<0.001*	*<0.001*	**0.031**	**0.030**	**0.051**	**0.010**	**0.012**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW065	0927_SW65_201028	28 Oct 2020	**0.010**	**0.008**	**0.043**	**0.001**	**0.031**	*<0.001*	*<0.001*	**0.021**	**0.011**	**0.028**	**0.005**	**0.005**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW066	0927_SW66_201028	28 Oct 2020	**0.015**	**0.011**	**0.032**	*<0.001*	**0.004**	*<0.001*	*<0.001*	**0.027**	**0.025**	**0.050**	**0.008**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW067	0927_SW67_201028	28 Oct 2020	**0.019**	**0.014**	**0.033**	*<0.001*	**0.009**	*<0.001*	*<0.001*	**0.030**	**0.033**	**0.072**	**0.010**	**0.004**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW068	0927_SW68_201029	26 Oct 2020	**0.008**	**0.007**	**0.010**	**0.002**	**0.07**	*<0.001*	*<0.001*	**0.013**	**0.007**	**0.019**	**0.003**	**0.007**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW069	0927_SW69_201029	26 Oct 2020	**0.008**	**0.008**	**0.002**	**0.003**	**0.091**	*<0.001*	*<0.001*	**0.014**	**0.006**	**0.020**	**0.003**	**0.008**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW070	0927_QC101_241121	21 Nov 2024	**0.010**	**0.006**	**0.054**	**0.002**	**0.058**	*<0.001*	*<0.001*	*<0.005*	**0.012**	**0.017**	**0.004**	**0.005**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW070	0927_QC201_241121	21 Nov 2024	**0.0072**	**0.0061**	**0.045**	**0.0026**	**0.05**	-	*<0.0020*	*<0.010*	**0.0047**	**0.012**	**0.0042**	**0.0049**	*<0.0010*	*<0.0020*	*<0.0020*	*<0.0050*	*<0.010*	*<0.050*
Cheetham Wetlands	SW070	0927_SW70_201028	28 Oct 2020	**0.006**	**0.006**	**0.054**	**0.003**	**0.092**	*<0.001*	*<0.001*	**0.008**	**0.007**	**0.015**	**0.004**	**0.008**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW070	0927_SW070_241121	21 Nov 2024	**0.007**	**0.007**	**0.053**	**0.002**	**0.056**	*<0.001*	*<0.001*	*<0.005*	**0.005**	**0.012**	**0.003**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW070	0927_SW070_250507	07 May 2025	**0.014**	**0.009**	**0.024**	*<0.001*	**0.0033**	*<0.001*	*<0.001*	**0.022**	**0.014**	**0.036**	**0.003**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW071	0927_SW71_201028	28 Oct 2020	**0.010**	**0.008**	**0.069**	**0.003**	**0.061**	*<0.001*	*<0.001*	**0.017**	**0.012**	**0.029**	**0.008**	**0.014**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW071	0927_SW071_241121	21 Nov 2024	**0.057**	**0.013**	**0.036**	*<0.001*	**0.0031**	*<0.001*	*<0.001*	**0.008**	**0.063**	**0.18**	**0.018**	**0.007**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Cheetham Wetlands	SW071	0927_SW071_250507	07 May 2025	**0.002**	**0.002**	**0.012**	*<0.001*	**0.022**	*<0.001*	*<0.001*	*<0.005*	**0.001**	**0.003**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW087	0927_QC105_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.03**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW087	0927_QC205_230803	03 Aug 2023	*<0.01*	*<0.01*	**0.03**	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Sanctuary Lakes	SW087	0927_SW87_201029	29 Oct 2020	**0.004**	**0.004**	**0.042**	**0.003**	**0.16**	*<0.001*	*<0.001*	**0.016**	**0.006**	**0.012**	**0.003**	**0.008**	**0.002**	**0.005**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW087	0927_SW087_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.05**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW087	0927_SW087_230322	22 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.05**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW087	0927_SW087_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.03**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													
Investigation Area	**Location Code**	**Field ID**	**Date**															
Sanctuary Lakes	SW087	0927_SW087_240222	22 Feb 2024	<0.02	<0.02	**0.04**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW087	0927_SW087_241008	08 Oct 2024	**0.005**	**0.004**	**0.029**	**0.002**	**0.062**	<0.001	<0.001	<0.005	**0.010**	**0.016**	**0.004**	**0.007**	**0.001**	**0.002**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW087	0927_SW087_241119	19 Nov 2024	**0.006**	**0.004**	**0.032**	**0.002**	**0.091**	<0.001	<0.001	<0.005	**0.003**	**0.021**	**0.005**	**0.010**	**0.002**	**0.005**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW087	0927_SW087_250505	05 May 2025	**0.003**	**0.003**	**0.021**	<0.001	**0.025**	<0.001	<0.001	<0.005	**0.013**	**0.013**	**0.003**	**0.006**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW087	0927_SW087_250528	28 May 2025	<0.02	<0.02	**0.03**	<0.02	**0.03**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_QC104_230803	03 Aug 2023	<0.02	<0.02	**0.03**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_QC106_230317	17 Mar 2023	<0.02	<0.02	**0.04**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_QC106_230321	21 Mar 2023	<0.02	<0.02	**0.04**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_QC204_230803	03 Aug 2023	<0.01	<0.01	**0.03**	<0.01	**0.03**	<0.01	<0.01	<0.05	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sanctuary Lakes	SW088	0927_QC206_230321	21 Mar 2023	**0.01**	**0.01**	**0.08**	<0.01	**0.08**	<0.01	<0.01	<0.05	**0.03**	**0.03**	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sanctuary Lakes	SW088	0927_QC206_230321	21 Mar 2023	**0.01**	**0.01**	**0.08**	<0.01	**0.08**	<0.01	<0.01	<0.05	**0.03**	**0.03**	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sanctuary Lakes	SW088	0927_SW88_201030	30 Oct 2020	**0.006**	**0.004**	**0.025**	**0.002**	**0.033**	<0.001	<0.001	**0.017**	**0.008**	**0.014**	**0.003**	**0.007**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW088	0927_SW088_230317	17 Mar 2023	<0.02	<0.02	**0.04**	<0.02	**0.04**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_SW088_230321	21 Mar 2023	<0.02	<0.02	**0.04**	<0.02	**0.04**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_SW088_230803	03 Aug 2023	<0.02	<0.02	**0.03**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_SW088_240222	22 Feb 2024	<0.02	<0.02	**0.03**	<0.02	**0.05**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW088	0927_SW088_241008	08 Oct 2024	**0.005**	**0.004**	**0.027**	**0.001**	**0.037**	<0.001	<0.001	<0.005	**0.010**	**0.014**	**0.004**	**0.006**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW088	0927_SW088_241119	19 Nov 2024	**0.007**	**0.004**	**0.027**	**0.001**	**0.043**	<0.001	<0.001	<0.005	**0.004**	**0.020**	**0.005**	**0.007**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW088	0927_SW088_250505	05 May 2025	**0.003**	**0.002**	**0.018**	<0.001	**0.023**	<0.001	<0.001	<0.005	**0.020**	**0.013**	**0.003**	**0.007**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW088	0927_SW088_250528	28 May 2025	<0.02	<0.02	**0.03**	<0.02	**0.05**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Doherty's Drain	SW001	0927_SW01_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.02**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW002	0927_QC110_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.03**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW002	0927_QC210_180820	20 Aug 2018	<0.02	<0.02	<0.02	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Doherty's Drain	SW002	0927_SW02_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.03**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW003	0927_SW03_180820	20 Aug 2018	<0.01	<0.01	**0.01**	<0.01	**0.05**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW003	0927_SW03_190603	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	**0.02**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW004	0927_SW04_180820	20 Aug 2018	<0.01	<0.01	**0.01**	<0.01	**0.04**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW008	0927_SW08_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.04**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW008	0927_SW008_240404	04 Apr 2024	<0.02	<0.02	**0.01**	<0.02	**0.04**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Doherty's Drain	SW008	0927_SW008_241007	07 Oct 2024	**0.001**	<0.001	**0.001**	<0.001	**0.003**	<0.001	<0.001	**0.007**	**0.005**	**0.005**	**0.001**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Doherty's Drain	SW008	0927_SW008_250529	29 May 2025	<0.002	<0.002	<0.002	<0.002	**0.007**	-	<0.002	<0.01	**0.004**	**0.006**	<0.002	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005
Doherty's Drain	SW010	0927_SW10_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW010	0927_SW10_190603	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Doherty's Drain	SW103	0927_SW103_01_250311	11 Mar 2025	<0.01	<0.01	**0.02**	<0.01	**0.5**	<0.01	<0.01	<0.05	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Forsyth Road Drain	SW042	0927_QC100_231017	17 Oct 2023	<0.02	<0.02	**0.07**	<0.02	**0.17**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW042	0927_QC200_231017	17 Oct 2023	<0.01	<0.01	**0.06**	<0.01	**0.16**	<0.01	<0.01	<0.05	**0.01**	**0.02**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Forsyth Road Drain	SW042	0927_SW42_190603	03 Jun 2019	<0.01	<0.01	**0.03**	<0.01	**0.06**	<0.01	<0.01	<0.05	<0.01	**0.01**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Forsyth Road Drain	SW042	0927_SW42_200709	09 Jul 2020	**0.008**	**0.007**	**0.064**	**0.003**	**0.33**	<0.001	<0.001	**0.011**	**0.010**	**0.026**	**0.004**	**0.017**	**0.002**	**0.009**	<0.001	<0.001	<0.001	<0.001
Forsyth Road Drain	SW042	0927_SW42_200805	05 Aug 2020	**0.006**	**0.006**	**0.052**	**0.001**	**0.17**	<0.001	<0.001	**0.011**	**0.009**	**0.02**	**0.003**	**0.012**	**0.002**	**0.008**	<0.001	**0.002**	<0.001	<0.001
Forsyth Road Drain	SW042	0927_SW042_231017	17 Oct 2023	<0.02	<0.02	**0.07**	<0.02	**0.18**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW042	0927_SW042_240404	04 Apr 2024	<0.02	<0.02	**0.04**	<0.02	**0.16**	-	<0.02	<0.1	<0.02	<0.02	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW042	0927_SW042_241008	08 Oct 2024	**0.005**	**0.002**	**0.025**	**0.001**	**0.15**	<0.001	<0.001	**0.010**	**0.008**	**0.011**	**0.002**	**0.009**	**0.001**	**0.004**	<0.001	<0.001	<0.001	<0.001
Forsyth Road Drain	SW042	0927_SW042_241120	20 Nov 2024	**0.005**	**0.002**	**0.030**	<0.001	**0.083**	<0.001	<0.001	**0.010**	**0.012**	**0.013**	**0.004**	**0.014**	**0.002**	**0.006**	<0.001	**0.002**	<0.001	<0.001
Forsyth Road Drain	SW042	0927_SW042_250602	02 Jun 2025	<0.02	<0.02	**0.03**	<0.02	**0.06**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW045	0927_SW45_200708	08 Jul 2020	<0.001	<0.001	**0.002**	<0.001	**0.006**	<0.001	<0.001	**0.008**	**0.003**	**0.007**	**0.002**	**0.008**	**0.001**	**0.005**	<0.001	<0.001	<0.001	<0.001
Forsyth Road Drain	SW045	0927_SW45_200805	05 Aug 2020	<0.001	<0.001	**0.001**	<0.001	**0.009**	<0.001	<0.001	**0.01**	**0.003**	**0.007**	**0.002**	**0.009**	**0.001**	**0.008**	<0.001	<0.001	<0.001	<0.001
Forsyth Road Drain	SW045	0927_SW045_230317	17 Mar 2023	<0.02	<0.02	**0.01**	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													
Investigation Area	**Location Code**	**Field ID**	**Date**																
Forsyth Road Drain	SW045	0927_SW045_230320	20 Mar 2023	<0.02	<0.02	**0.01**	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW045	0927_SW045_230802	02 Aug 2023	<0.02	<0.02	<0.01	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW045	0927_SW045_240221	21 Feb 2024	<0.02	<0.02	**0.01**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Forsyth Road Drain	SW045	0927_SW045_241008	08 Oct 2024	**0.002**	<0.001	<0.001	<0.001	**0.005**	<0.001	<0.001	**0.008**	<0.001	**0.004**	**0.001**	**0.004**	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001
Forsyth Road Drain	SW045	0927_SW045_250602	02 Jun 2025	**0.002**	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.01	<0.002	**0.006**	**0.002**	**0.006**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005
Kidbroke Road Drain	SW043	0927_QC100_240404	04 Apr 2024	**0.03**	<0.02	**0.17**	<0.02	**0.19**	-	<0.02	<0.1	<0.02	**0.04**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW043	0927_QC101_241007	07 Oct 2024	**0.002**	**0.002**	**0.021**	<0.001	**0.064**	<0.001	<0.001	**0.009**	**0.006**	**0.009**	**0.003**	**0.005**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001
Kidbroke Road Drain	SW043	0927_QC101_250529	29 May 2025	<0.02	**0.02**	**0.17**	<0.02	**0.1**	<0.02	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW043	0927_QC127_190603	03 Jun 2019	<0.01	<0.01	**0.04**	<0.01	**0.11**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kidbroke Road Drain	SW043	0927_QC200_240404	04 Apr 2024	**0.03**	**0.02**	**0.16**	<0.02	**0.16**	-	<0.02	<0.1	<0.02	**0.04**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW043	0927_QC201_241007	07 Oct 2024	**0.0030**	**0.0029**	**0.025**	**0.0015**	**0.064**	-	<0.0020	**0.010**	**0.0069**	**0.0082**	**0.0033**	**0.0071**	**0.0026**	<0.0020	<0.0020	<0.0050	<0.010	<0.050
Kidbroke Road Drain	SW043	0927_QC201_250529	29 May 2025	**0.02**	**0.02**	**0.16**	<0.01	**0.12**	<0.01	<0.01	<0.05	**0.01**	**0.04**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kidbroke Road Drain	SW043	0927_QC227_190603	03 Jun 2019	<0.02	<0.02	**0.05**	<0.02	**0.1**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW043	0927_SW43_190603	03 Jun 2019	<0.01	<0.01	**0.04**	<0.01	**0.11**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kidbroke Road Drain	SW043	0927_SW043_240404	04 Apr 2024	**0.03**	**0.02**	**0.17**	<0.02	**0.19**	-	<0.02	<0.1	<0.02	**0.04**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW043	0927_SW043_241007	07 Oct 2024	**0.002**	**0.002**	**0.022**	**0.001**	**0.073**	<0.001	<0.001	**0.010**	**0.006**	**0.009**	**0.003**	**0.005**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001
Kidbroke Road Drain	SW043	0927_SW043_250529	29 May 2025	<0.02	**0.02**	**0.18**	<0.02	**0.11**	<0.02	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kidbroke Road Drain	SW044	0927_SW44_191031	31 Oct 2019	**0.01**	<0.01	**0.06**	<0.01	**1.1**	<0.01	<0.01	**0.05**	<0.01	**0.03**	<0.01	**0.03**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kingwell Wetland	SW1	SW1	20 Sep 2018	-	-	**0.2**	-	**0.11**	-	-	-	-	-	-	**0.01**	-	-	-	-	-	-
Kingwell Wetland	SW018	0927_QC107_190117_SW	17 Jan 2019	**0.02**	**0.03**	**0.25**	**0.01**	**0.22**	-	<0.01	<0.05	**0.02**	**0.06**	**0.01**	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kingwell Wetland	SW018	0927_QC207_SW_190117	17 Jan 2019	**0.03**	**0.04**	**0.26**	<0.02	**0.16**	-	<0.02	<0.1	**0.03**	**0.06**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Kingwell Wetland	SW018	0927_SW18_190117	17 Jan 2019	**0.02**	**0.03**	**0.26**	**0.02**	**0.23**	-	<0.01	<0.05	**0.02**	**0.06**	**0.01**	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Kingwell Wetland	SW019	0927_SW19_190117	17 Jan 2019	**0.05**	**0.06**	**0.51**	**0.03**	**0.51**	-	<0.01	<0.05	**0.03**	**0.13**	**0.02**	**0.04**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW005	0927_SW05_180820	20 Aug 2018	<0.01	<0.01	**0.02**	<0.01	**0.03**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW005	0927_SW05_190603	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW005	0927_SW005_230802	02 Aug 2023	<0.02	<0.02	**0.08**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW005	0927_SW005_240404	04 Apr 2024	<0.02	<0.02	**0.07**	<0.02	**0.04**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW005	0927_SW005_241007	07 Oct 2024	**0.002**	<0.001	**0.002**	<0.001	**0.004**	<0.001	<0.001	**0.010**	**0.008**	**0.007**	**0.003**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW005	0927_SW005_250529	29 May 2025	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW006	0927_QC104_230320	20 Mar 2023	<0.02	<0.02	**0.01**	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW006	0927_QC104_240220	20 Feb 2024	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW006	0927_QC204_230320	20 Mar 2023	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW006	0927_QC204_240220	20 Feb 2024	<0.01	<0.01	<0.01	<0.01	**0.01**	<0.01	<0.01	<0.05	**0.02**	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW006	0927_SW06_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW006	0927_SW006_230320	20 Mar 2023	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW006	0927_SW006_240220	20 Feb 2024	<0.02	<0.02	<0.01	<0.02	<0.01	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW006	0927_SW006_241007	07 Oct 2024	**0.002**	<0.001	**0.002**	<0.001	**0.005**	<0.001	<0.001	**0.009**	**0.009**	**0.008**	**0.003**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW006	0927_SW006_250529	29 May 2025	<0.002	<0.002	<0.002	<0.002	**0.008**	-	<0.002	<0.01	**0.004**	**0.006**	**0.002**	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005
Laverton Creek	SW007	0927_QC113_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW007	0927_QC115_180820	20 Aug 2018	**1.2**	**1**	**2**	<0.01	**0.13**	-	<0.01	**0.27**	**0.29**	**1.3**	**0.06**	**0.04**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW007	0927_SW07_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW009	0927_SW09_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW011	0927_SW11_180820	20 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW011	0927_SW11_190603	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW015	0927_QC102_200709	09 Jul 2020	**0.003**	**0.002**	**0.016**	<0.001	**0.015**	<0.001	<0.001	**0.008**	**0.005**	**0.010**	**0.002**	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW015	0927_QC202_200709	09 Jul 2020	**0.0054**	**0.0026**	**0.0206**	<0.0008	**0.0142**	-	<0.0008	**0.009**	**0.0066**	**0.0139**	**0.0026**	**0.0062**	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0020
Laverton Creek	SW015	0927_SW15_180821	21 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													
Investigation Area	**Location Code**	**Field ID**	**Date**															
Laverton Creek	SW015	0927_SW15_190603	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW015	0927_SW15_200709	09 Jul 2020	**0.003**	**0.002**	**0.017**	<0.001	**0.015**	<0.001	<0.001	**0.008**	**0.005**	**0.010**	**0.002**	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW015	0927_SW015_230317	17 Apr 2023	<0.02	<0.02	**0.01**	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW015	0927_SW015_230320	20 Mar 2023	<0.02	<0.02	**0.01**	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW015	0927_SW015_240223	23 Feb 2024	<0.02	<0.02	<0.01	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW015	0927_SW015_241008	08 Oct 2024	**0.003**	**0.001**	**0.018**	<0.001	**0.011**	<0.001	<0.001	**0.008**	**0.006**	**0.009**	**0.003**	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW015	0927_SW015_250528	28 May 2025	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Laverton Creek	SW015	SW15_190603_F	03 Jun 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW016	0927_SW16_180821	21 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.02**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW017	0927_SW17_180821	21 Aug 2018	<0.01	<0.01	<0.01	<0.01	**0.02**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Laverton Creek	SW046	0927_SW46_200709	09 Jul 2020	**0.015**	**0.012**	**0.070**	**0.004**	**0.17**	<0.001	<0.001	**0.018**	**0.041**	**0.044**	**0.012**	**0.012**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW047	0927_SW47_200709	09 Jul 2020	**0.005**	**0.003**	**0.020**	<0.001	**0.025**	<0.001	<0.001	**0.009**	**0.010**	**0.013**	**0.004**	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW047	0927_SW47_200805	05 Aug 2020	**0.009**	**0.005**	**0.046**	**0.003**	**0.24**	<0.001	<0.001	**0.022**	**0.03**	**0.032**	**0.013**	**0.016**	**0.006**	**0.005**	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW048	0927_SW48_200709	09 Jul 2020	**0.006**	**0.009**	**0.080**	**0.005**	**0.098**	<0.001	<0.001	**0.012**	**0.004**	**0.016**	**0.002**	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Laverton Creek	SW048	0927_SW48_200805	05 Aug 2020	<0.001	<0.001	**0.014**	**0.001**	**0.086**	<0.001	<0.001	**0.013**	**0.002**	**0.003**	**0.001**	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW3	SW3	20 Sep 2018	-	-	**0.26**	-	**0.22**	-	-	-	-	-	-	**0.03**	-	-	-	-	-	-
RAAF Laverton Swamp	SW035	0927_SW35_190206	06 Feb 2019	**0.08**	**0.08**	**0.69**	**0.02**	**1.6**	-	<0.01	**0.11**	**0.11**	**0.31**	**0.05**	**0.12**	**0.01**	**0.02**	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW035	0927_SW35_201027	27 Oct 2020	**0.010**	**0.010**	**0.11**	**0.011**	**2**	**0.006**	<0.001	**0.015**	**0.013**	**0.035**	**0.006**	**0.024**	**0.007**	**0.031**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW036	0927_QC102_201027	27 Oct 2020	**0.006**	**0.013**	**0.050**	**0.002**	**0.25**	<0.001	<0.001	**0.007**	**0.008**	**0.016**	**0.004**	**0.014**	**0.002**	**0.009**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW036	0927_QC125_190206_SW	06 Feb 2019	**0.03**	**0.03**	**0.28**	**0.02**	**0.56**	-	<0.01	<0.05	**0.02**	**0.1**	**0.01**	**0.05**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW036	0927_QC202_201027	27 Oct 2020	**0.0071**	**0.0061**	**0.0522**	**0.0023**	**0.233**	-	<0.0008	**0.008**	**0.0092**	**0.0209**	**0.0046**	**0.0158**	**0.0027**	**0.0107**	<0.0008	<0.0008	<0.0008	<0.0020
RAAF Laverton Swamp	SW036	0927_QC225_190206_SW	06 Feb 2019	**0.04**	**0.04**	**0.35**	**0.02**	**0.6**	-	<0.02	<0.1	**0.03**	**0.11**	**0.04**	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
RAAF Laverton Swamp	SW036	0927_SW36_190206	06 Feb 2019	**0.03**	**0.04**	**0.31**	**0.02**	**0.61**	-	<0.01	<0.05	**0.03**	**0.1**	**0.01**	**0.05**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW036	0927_SW36_201027	27 Oct 2020	**0.006**	**0.006**	**0.052**	**0.002**	**0.15**	<0.001	<0.001	**0.008**	**0.008**	**0.018**	**0.004**	**0.014**	**0.002**	**0.008**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW037	0927_SW37_190206	06 Feb 2019	<0.01	<0.01	<0.01	<0.01	**0.03**	-	<0.01	<0.05	**0.01**	**0.02**	<0.01	**0.04**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW038	0927_SW38_190206	06 Feb 2019	**0.03**	**0.03**	**0.27**	**0.01**	**0.69**	-	<0.01	<0.05	**0.04**	**0.12**	**0.02**	**0.06**	<0.01	**0.01**	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW039	0927_SW39_190206	06 Feb 2019	**0.03**	**0.03**	**0.28**	**0.01**	**1**	-	<0.01	**0.06**	**0.04**	**0.13**	**0.02**	**0.06**	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW039	0927_SW39_201027	27 Oct 2020	**0.008**	**0.009**	**0.078**	**0.003**	**0.23**	<0.001	<0.001	**0.012**	**0.012**	**0.029**	**0.005**	**0.013**	**0.001**	**0.004**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW040	0927_SW40_190206	06 Feb 2019	**0.09**	**0.09**	**0.69**	**0.02**	**0.67**	-	<0.01	**0.17**	**0.1**	**0.37**	**0.06**	**0.13**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
RAAF Laverton Swamp	SW079	0927_SW79_201027	27 Oct 2020	**0.008**	**0.009**	**0.087**	**0.008**	**1.6**	**0.006**	<0.001	**0.013**	**0.011**	**0.029**	**0.005**	**0.020**	**0.006**	**0.035**	**0.001**	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW080	0927_SW80_201027	27 Oct 2020	**0.007**	**0.007**	**0.071**	**0.004**	**0.29**	<0.001	<0.001	**0.010**	**0.009**	**0.024**	**0.005**	**0.014**	**0.002**	**0.008**	<0.001	**0.001**	<0.001	<0.001
RAAF Laverton Swamp	SW081	0927_SW81_201026	26 Oct 2020	**0.005**	**0.007**	**0.055**	**0.003**	**0.82**	**0.003**	<0.001	**0.008**	**0.009**	**0.018**	**0.004**	**0.012**	**0.003**	**0.023**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW082	0927_SW82_201027	27 Oct 2020	**0.006**	**0.006**	**0.059**	**0.004**	**0.61**	<0.001	<0.001	**0.009**	**0.008**	**0.020**	**0.004**	**0.013**	**0.003**	**0.016**	<0.001	<0.001	<0.001	<0.001
RAAF Laverton Swamp	SW083	0927_SW83_201027	27 Oct 2020	**0.009**	**0.009**	**0.092**	**0.005**	**0.51**	<0.001	<0.001	**0.014**	**0.014**	**0.031**	**0.006**	**0.016**	**0.003**	**0.007**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW052	0927_QC102_250528	28 May 2025	<0.02	<0.02	**0.02**	<0.02	**0.01**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW052	0927_QC202_250528	28 May 2025	<0.01	<0.01	**0.02**	<0.01	**0.01**	<0.01	<0.01	<0.05	**0.01**	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sanctuary Lakes	SW052	0927_SW52_200708	08 Jul 2020	**0.003**	**0.002**	**0.012**	<0.001	**0.016**	<0.001	<0.001	**0.007**	**0.005**	**0.008**	**0.002**	**0.005**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW052	0927_SW052_230317	17 Mar 2023	<0.02	<0.02	**0.02**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW052	0927_SW052_230321	21 Mar 2023	<0.02	<0.02	**0.02**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW052	0927_SW052_230803	03 Aug 2023	<0.02	<0.02	**0.03**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW052	0927_SW052_240222	22 Feb 2024	<0.02	<0.02	**0.03**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW052	0927_SW052_241008	08 Oct 2024	**0.004**	**0.002**	**0.015**	<0.001	**0.02**	<0.001	<0.001	**0.008**	**0.008**	**0.009**	**0.003**	**0.005**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW052	0927_SW052_250528	28 May 2025	<0.02	<0.02	**0.02**	<0.02	**0.01**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Sanctuary Lakes	SW084	0927_QC101_250505	05 May 2025	**0.003**	**0.002**	**0.017**	<0.001	**0.032**	<0.001	<0.001	<0.005	**0.027**	**0.011**	**0.003**	**0.007**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW084	0927_QC108_201030	30 Oct 2020	**0.003**	**0.002**	**0.011**	<0.001	**0.027**	<0.001	<0.001	**0.006**	**0.004**	**0.008**	**0.002**	**0.005**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Sanctuary Lakes	SW084	0927_QC201_250505	05 May 2025	**0.0067**	**0.0046**	**0.029**	**0.0014**	**0.049**	-	<0.0020	<0.020	**0.015**	**0.021**	**0.0060**	**0.011**	**0.0016**	**0.0039**	<0.0020	<0.0050	<0.010	<0.050
Sanctuary Lakes	SW084	0927_QC208_201030	30 Oct 2020	**0.0046**	**0.0020**	**0.0222**	**0.0009**	**0.0376**	-	<0.0005	<0.010	<0.0060	**0.0105**	**0.0031**	**0.0091**	**0.0010**	**0.0032**	<0.0005	**0.0008**	<0.0005	<0.0008

Table B2 – Surface Water Analytical Results

				PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
				Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%															632						
ANZG 2026 Freshwater 90%								4													
PFAS NEMP 3.0 2025 Freshwater 95%															220						
ANZG 2026 Freshwater 95%								0.9													
PFAS NEMP 3.0 2025 Freshwater 99%															19						
ANZG 2026 Freshwater 99%								0.02													
Investigation Area	**Location Code**	**Field ID**	**Date**																		
Sanctuary Lakes	SW084	0927_SW84_201030	30 Oct 2020	**0.003**	**0.003**	**0.012**	*<0.001*	**0.035**	*<0.001*	*<0.001*	**0.007**	**0.006**	**0.008**	**0.002**	**0.006**	**0.001**	**0.002**	**0.003**	**0.003**	*<0.001*	*<0.001*
Sanctuary Lakes	SW084	0927_SW084_241119	19 Nov 2024	**0.006**	**0.004**	**0.023**	*<0.001*	**0.018**	*<0.001*	*<0.001*	*<0.005*	**0.006**	**0.015**	**0.005**	**0.006**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW084	0927_SW084_250505	05 May 2025	**0.003**	**0.002**	**0.016**	*<0.001*	**0.027**	*<0.001*	*<0.001*	*<0.005*	**0.015**	**0.011**	**0.003**	**0.006**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW085	0927_SW85_201030	30 Oct 2020	**0.003**	**0.003**	**0.014**	*<0.001*	**0.022**	*<0.001*	*<0.001*	**0.009**	**0.006**	**0.010**	**0.003**	**0.006**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW085	0927_SW085_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW085	0927_SW085_230321	21 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW085	0927_SW085_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.03**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW085	0927_SW085_240222	22 Feb 2024	*<0.02*	*<0.02*	**0.02**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW085	0927_SW085_241008	08 Oct 2024	**0.005**	**0.004**	**0.024**	*<0.001*	**0.025**	*<0.001*	*<0.001*	*<0.005*	**0.010**	**0.015**	**0.004**	**0.006**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW085	0927_SW085_241119	19 Nov 2024	**0.007**	**0.004**	**0.024**	*<0.001*	**0.019**	*<0.001*	*<0.001*	*<0.005*	**0.003**	**0.018**	**0.005**	**0.006**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW085	0927_SW085_250505	05 May 2025	**0.003**	**0.002**	**0.019**	**0.001**	**0.042**	*<0.001*	*<0.001*	*<0.005*	**0.021**	**0.013**	**0.003**	**0.009**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW085	0927_SW085_250528	28 May 2025	*<0.02*	*<0.02*	**0.03**	*<0.02*	**0.04**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_QC106_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_QC206_230803	03 Aug 2023	*<0.01*	*<0.01*	**0.03**	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Sanctuary Lakes	SW086	0927_SW86_201029	29 Oct 2020	**0.004**	**0.004**	**0.022**	**0.001**	**0.038**	*<0.001*	*<0.001*	**0.012**	**0.006**	**0.010**	**0.003**	**0.007**	**0.001**	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW086	0927_SW086_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_SW086_230321	21 Mar 2023	*<0.02*	*<0.02*	**0.04**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_SW086_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.03**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_SW086_240222	22 Feb 2024	*<0.02*	*<0.02*	**0.02**	*<0.02*	**0.02**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Sanctuary Lakes	SW086	0927_SW086_241008	08 Oct 2024	**0.004**	**0.003**	**0.023**	*<0.001*	**0.024**	*<0.001*	*<0.001*	*<0.005*	**0.006**	**0.015**	**0.003**	**0.004**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Sanctuary Lakes	SW086	0927_SW086_250528	28 May 2025	*<0.02*	*<0.02*	**0.02**	*<0.02*	**0.02**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW012	0927_SW12_180821	21 Aug 2018	**0.02**	**0.02**	**0.13**	*<0.01*	**0.15**	-	*<0.01*	*<0.05*	*<0.01*	**0.04**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW012	0927_SW12_190603	03 Jun 2019	*<0.01*	*<0.01*	**0.06**	*<0.01*	**0.11**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW012	0927_SW12_200709	09 Jul 2020	**0.017**	**0.019**	**0.11**	**0.004**	**0.094**	*<0.001*	*<0.001*	**0.010**	**0.009**	**0.027**	**0.004**	**0.007**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW012	0927_SW12_200805	05 Aug 2020	**0.027**	**0.037**	**0.19**	**0.006**	**0.17**	*<0.001*	*<0.001*	**0.024**	**0.012**	**0.042**	**0.006**	**0.011**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW012	0927_SW12_201104	04 Nov 2020	**0.015**	**0.027**	**0.10**	**0.005**	**0.11**	*<0.001*	*<0.001*	**0.010**	**0.010**	**0.030**	**0.005**	**0.011**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW012	0927_SW012_230321	21 Mar 2023	**0.03**	*<0.02*	**0.14**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW012	0927_SW012_230321	21 Mar 2023	**0.03**	*<0.02*	**0.14**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW012	0927_SW012_240222	22 Feb 2024	**0.02**	**0.02**	**0.16**	*<0.02*	**0.14**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW012	0927_SW012_241008	08 Oct 2024	**0.012**	**0.011**	**0.079**	**0.003**	**0.12**	*<0.001*	*<0.001*	**0.009**	**0.016**	**0.023**	**0.004**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW012	0927_SW012_250528	28 May 2025	*<0.02*	*<0.02*	**0.12**	*<0.02*	**0.1**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW013	0927_SW13_180821	21 Aug 2018	*<0.01*	*<0.01*	**0.05**	*<0.01*	**0.08**	-	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW013	0927_SW013_230317	17 Apr 2023	**0.02**	*<0.02*	**0.15**	*<0.02*	**0.09**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW013	0927_SW013_230321	21 Mar 2023	**0.02**	*<0.02*	**0.15**	*<0.02*	**0.09**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW013	0927_SW013_240222	22 Feb 2024	*<0.02*	**0.02**	**0.17**	*<0.02*	**0.12**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW013	0927_SW013_241008	08 Oct 2024	**0.012**	**0.012**	**0.094**	**0.004**	**0.11**	*<0.001*	*<0.001*	**0.012**	**0.013**	**0.026**	**0.005**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW013	0927_SW013_250528	28 May 2025	**0.02**	**0.02**	**0.14**	*<0.02*	**0.1**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW014	0927_SW14_180821	21 Aug 2018	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.01**	-	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_QC101_201104	04 Nov 2020	**0.017**	**0.044**	**0.14**	**0.005**	**0.11**	**0.002**	**0.003**	**0.013**	**0.015**	**0.037**	**0.006**	**0.012**	*<0.001*	**0.003**	**0.003**	**0.005**	**0.003**	*<0.001*
Skeleton Creek	SW020	0927_QC101_250528	28 May 2025	**0.02**	**0.02**	**0.13**	*<0.02*	**0.08**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_QC103_200709	09 Jul 2020	**0.025**	**0.032**	**0.18**	**0.005**	**0.12**	*<0.001*	*<0.001*	**0.011**	**0.010**	**0.037**	**0.004**	**0.007**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW020	0927_QC105_230321	21 Mar 2023	**0.02**	**0.02**	**0.14**	*<0.02*	**0.12**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_QC105_230321	21 Mar 2023	**0.02**	**0.02**	**0.14**	*<0.02*	**0.12**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_QC106_240222	22 Feb 2024	*<0.02*	*<0.02*	**0.15**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_QC201_201104	04 Nov 2020	**0.0229**	**0.0195**	**0.14**	**0.0065**	**0.112**	-	*<0.0005*	**0.008**	**0.0146**	**0.0399**	**0.0058**	**0.0128**	**0.0013**	**0.0029**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
Skeleton Creek	SW020	0927_QC201_250528	28 May 2025	**0.02**	**0.02**	**0.13**	*<0.01*	**0.1**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.04**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_QC203_200709	09 Jul 2020	**0.0355**	**0.0451**	**0.265**	**0.0086**	**0.128**	-	*<0.0016*	**0.013**	**0.0144**	**0.0573**	**0.0053**	**0.0138**	*<0.0016*	**0.0024**	*<0.0016*	*<0.0016*	*<0.0016*	*<0.0040*

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													

Investigation Area	Location Code	Field ID	Date																	
Skeleton Creek	SW020	0927_QC205_230321	21 Mar 2023	**0.03**	**0.04**	**0.26**	**0.02**	**0.21**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.06**	**0.01**	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_QC205_230321	21 Mar 2023	**0.03**	**0.04**	**0.26**	**0.02**	**0.21**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.06**	**0.01**	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_QC206_240222	22 Feb 2024	**0.02**	**0.03**	**0.18**	**0.01**	**0.14**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.04**	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_SW20_190117	17 Jan 2019	**0.05**	**0.05**	**0.31**	**0.02**	**0.23**	-	*<0.01*	*<0.05*	**0.03**	**0.1**	**0.02**	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW020	0927_SW20_200709	09 Jul 2020	**0.025**	**0.033**	**0.17**	**0.004**	**0.11**	*<0.001*	*<0.001*	**0.011**	**0.010**	**0.038**	**0.004**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW020	0927_SW20_200805	05 Aug 2020	**0.012**	**0.014**	**0.081**	**0.002**	**0.11**	*<0.001*	*<0.001*	**0.024**	**0.009**	**0.021**	**0.004**	**0.007**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW020	0927_SW20_201104	04 Nov 2020	**0.019**	**0.037**	**0.14**	**0.005**	**0.12**	*<0.001*	*<0.001*	**0.012**	**0.010**	**0.037**	**0.005**	**0.012**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW020	0927_SW020_230317	17 Apr 2023	**0.02**	*<0.02*	**0.14**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_SW020_230321	21 Mar 2023	**0.02**	*<0.02*	**0.14**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_SW020_240222	22 Feb 2024	*<0.02*	*<0.02*	**0.15**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	0927_SW020_241008	08 Oct 2024	**0.014**	**0.012**	**0.088**	**0.004**	**0.12**	*<0.001*	*<0.001*	**0.014**	**0.012**	**0.024**	**0.005**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW020	0927_SW020_250528	28 May 2025	**0.02**	*<0.02*	**0.13**	*<0.02*	**0.08**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW020	SW20_190603	03 Jun 2019	**0.01**	**0.01**	**0.1**	*<0.01*	**0.11**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW021	0927_QC101_250506	06 May 2025	**0.009**	**0.009**	**0.066**	**0.003**	**0.05**	*<0.001*	*<0.001*	**0.008**	**0.004**	**0.017**	**0.003**	**0.005**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW021	0927_QC201_250506	06 May 2025	**0.023**	**0.017**	**0.12**	**0.0053**	**0.079**	-	*<0.0020*	*<0.020*	**0.014**	**0.025**	**0.0065**	**0.010**	*<0.0010*	*<0.0020*	*<0.0020*	*<0.0050*	*<0.010*	*<0.050*
Skeleton Creek	SW021	0927_SW21_190117	17 Jan 2019	**0.05**	**0.05**	**0.33**	**0.02**	**0.16**	-	*<0.01*	*<0.05*	**0.02**	**0.11**	**0.02**	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW021	0927_SW021_241120	20 Nov 2024	**0.024**	**0.026**	**0.17**	**0.006**	**0.11**	*<0.001*	*<0.001*	*<0.005*	**0.025**	**0.044**	**0.008**	**0.015**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW021	0927_SW021_250506	06 May 2025	**0.009**	**0.009**	**0.065**	**0.003**	**0.048**	*<0.001*	*<0.001*	**0.008**	**0.007**	**0.017**	**0.003**	**0.005**	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW021	SW21_190603	03 Jun 2019	*<0.01*	*<0.01*	**0.06**	*<0.01*	**0.04**	*<0.01*	*<0.01*	*<0.05*	**0.01**	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW024	0927_SW24_190117	17 Jan 2019	**0.03**	**0.03**	**0.23**	**0.02**	**0.39**	-	*<0.01*	*<0.05*	**0.02**	**0.08**	**0.02**	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW024	0927_SW024_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.12**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW024	0927_SW024_230321	21 Mar 2023	*<0.02*	*<0.02*	**0.12**	*<0.02*	**0.1**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.01**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW024	0927_SW024_230803	03 Aug 2023	*<0.02*	*<0.02*	**0.08**	*<0.02*	**0.07**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW024	0927_SW024_240222	22 Feb 2024	*<0.02*	*<0.02*	**0.13**	*<0.02*	**0.45**	-	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.02**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW024	0927_SW024_241008	08 Oct 2024	**0.011**	**0.010**	**0.081**	**0.004**	**0.15**	*<0.001*	*<0.001*	**0.010**	**0.009**	**0.022**	**0.004**	**0.007**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW024	0927_SW024_241120	20 Nov 2024	**0.018**	**0.022**	**0.17**	**0.007**	**0.18**	*<0.001*	*<0.001*	**0.007**	**0.035**	**0.050**	**0.008**	**0.014**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW024	0927_SW024_250506	06 May 2025	**0.007**	**0.008**	**0.056**	**0.003**	**0.083**	*<0.001*	*<0.001*	**0.008**	**0.008**	**0.016**	**0.003**	**0.006**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW024	0927_SW024_250528	28 May 2025	**0.02**	*<0.02*	**0.08**	*<0.02*	**0.06**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.02**	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW025	0927_QC108_190117_SW	17 Jan 2019	**0.03**	**0.03**	**0.23**	**0.01**	**0.34**	-	*<0.01*	*<0.05*	**0.02**	**0.08**	**0.02**	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW025	0927_QC208_SW_190117	17 Jan 2019	**0.04**	**0.05**	**0.23**	*<0.02*	**0.25**	-	*<0.02*	*<0.1*	**0.02**	**0.08**	*<0.02*	**0.03**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW025	0927_SW25_190117	17 Jan 2019	**0.03**	**0.03**	**0.23**	**0.02**	**0.31**	-	*<0.01*	*<0.05*	**0.02**	**0.08**	**0.02**	**0.03**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW026	0927_SW26_190117	17 Jan 2019	*<0.01*	*<0.01*	**0.03**	*<0.01*	**0.03**	-	*<0.01*	*<0.05*	**0.01**	**0.02**	**0.01**	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW041	0927_QC101_241008	08 Oct 2024	**0.003**	**0.001**	**0.009**	*<0.001*	**0.012**	*<0.001*	*<0.001*	**0.008**	**0.008**	**0.007**	**0.003**	**0.005**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW041	0927_QC201_241008	08 Oct 2024	**0.0021**	**0.0018**	**0.011**	*<0.0010*	**0.0092**	-	*<0.0020*	**0.0084**	**0.0065**	**0.0070**	**0.0022**	**0.0061**	*<0.0010*	*<0.0020*	*<0.0020*	*<0.0050*	*<0.010*	*<0.050*
Skeleton Creek	SW041	0927_SW41_190603	03 Jun 2019	*<0.01*	*<0.01*	**0.02**	*<0.01*	**0.16**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Skeleton Creek	SW041	0927_SW41_200709	09 Jul 2020	**0.002**	**0.001**	**0.007**	*<0.001*	**0.009**	*<0.001*	*<0.001*	**0.006**	**0.005**	**0.006**	**0.002**	**0.004**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW041	0927_SW41_200805	05 Aug 2020	**0.002**	*<0.001*	**0.006**	*<0.001*	**0.008**	*<0.001*	*<0.001*	**0.007**	**0.005**	**0.007**	**0.002**	**0.005**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW041	0927_SW041_230317	17 Mar 2023	*<0.02*	*<0.02*	**0.01**	*<0.02*	*<0.01*	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW041	0927_SW041_230321	21 Mar 2023	*<0.02*	*<0.02*	**0.01**	*<0.02*	*<0.01*	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW041	0927_SW041_230802	02 Aug 2023	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW041	0927_SW041_240223	23 Feb 2024	*<0.02*	*<0.02*	**0.01**	*<0.02*	*<0.01*	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*
Skeleton Creek	SW041	0927_SW041_241008	08 Oct 2024	**0.003**	**0.001**	**0.009**	*<0.001*	**0.01**	*<0.001*	*<0.001*	**0.010**	**0.005**	**0.008**	**0.003**	**0.004**	*<0.001*	**0.001**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW041	0927_SW041_250602	02 Jun 2025	*<0.002*	*<0.002*	**0.010**	*<0.002*	**0.006**	-	*<0.002*	*<0.01*	**0.003**	**0.006**	*<0.002*	**0.004**	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*
Skeleton Creek	SW049	0927_QC102_241008	08 Oct 2024	**0.016**	**0.015**	**0.12**	**0.006**	**0.26**	*<0.001*	*<0.001*	**0.013**	**0.012**	**0.030**	**0.005**	**0.009**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW049	0927_QC202_241008	08 Oct 2024	**0.019**	**0.019**	**0.12**	**0.0088**	**0.21**	-	*<0.0020*	**0.011**	**0.014**	**0.026**	**0.0046**	**0.011**	**0.0015**	**0.0021**	*<0.0020*	*<0.0050*	*<0.010*	*<0.050*
Skeleton Creek	SW049	0927_SW49_200709	09 Jul 2020	**0.021**	**0.028**	**0.17**	**0.007**	**0.15**	*<0.001*	*<0.001*	**0.011**	**0.011**	**0.038**	**0.005**	**0.008**	*<0.001*	**0.002**	*<0.001*	*<0.001*	*<0.001*	*<0.001*
Skeleton Creek	SW049	0927_SW49_200805	05 Aug 2020	**0.025**	**0.034**	**0.19**	**0.008**	**0.2**	*<0.001*	*<0.001*	**0.019**	**0.012**	**0.039**	**0.006**	**0.012**	**0.001**	**0.003**	*<0.001*	*<0.001*	*<0.001*	*<0.001*

Table B2 – Surface Water Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.0004	0.0005	0.0002	0.0005	0.0001	0.001	0.0005	0.002	0.0005	0.0004	0.0004	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 3.0 2025 Freshwater 90%												632						
ANZG 2026 Freshwater 90%					4													
PFAS NEMP 3.0 2025 Freshwater 95%												220						
ANZG 2026 Freshwater 95%					0.9													
PFAS NEMP 3.0 2025 Freshwater 99%												19						
ANZG 2026 Freshwater 99%					0.02													

Investigation Area	Location Code	Field ID	Date																	
Skeleton Creek	SW049	0927_SW49_201104	04 Nov 2020	**0.011**	**0.025**	**0.097**	**0.004**	**0.14**	<0.001	<0.001	**0.010**	**0.012**	**0.024**	**0.004**	**0.010**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW049	0927_SW049_230317	17 Apr 2023	**0.03**	<0.02	**0.12**	<0.02	**0.12**	-	<0.02	<0.1	<0.02	**0.03**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW049	0927_SW049_230321	21 Mar 2023	**0.03**	<0.02	**0.12**	<0.02	**0.12**	-	<0.02	<0.1	<0.02	**0.03**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW049	0927_SW049_240222	22 Feb 2024	<0.02	<0.02	**0.09**	<0.02	**0.1**	-	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW049	0927_SW049_241008	08 Oct 2024	**0.014**	**0.015**	**0.12**	**0.007**	**0.27**	<0.001	<0.001	**0.011**	**0.010**	**0.031**	**0.005**	**0.009**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW049	0927_SW049_250528	28 May 2025	<0.02	<0.02	**0.11**	<0.02	**0.11**	<0.02	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW050	0927_SW50_200709	09 Jul 2020	<0.001	<0.001	**0.003**	<0.001	**0.01**	<0.001	<0.001	**0.006**	**0.003**	**0.004**	**0.001**	**0.004**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW050	0927_SW50_200805	05 Aug 2020	<0.001	<0.001	**0.002**	<0.001	**0.008**	<0.001	<0.001	**0.006**	**0.001**	**0.003**	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW051	0927_SW51_200709	09 Jul 2020	<0.001	<0.001	<0.001	<0.001	**0.004**	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW051	0927_SW51_200805	05 Aug 2020	<0.001	<0.001	**0.001**	<0.001	**0.006**	<0.001	<0.001	<0.005	**0.002**	**0.002**	<0.001	**0.003**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW072	0927_SW72_201102	02 Nov 2020	**0.013**	**0.023**	**0.10**	**0.004**	**0.1**	<0.001	<0.001	**0.011**	**0.008**	**0.027**	**0.005**	**0.011**	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW073	0927_SW73_201102	02 Nov 2020	**0.014**	**0.029**	**0.11**	**0.003**	**0.079**	<0.001	<0.001	**0.012**	**0.010**	**0.027**	**0.004**	**0.010**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW073	0927_SW073_230317	17 Apr 2023	**0.10**	**0.11**	**0.87**	**0.03**	**0.43**	-	<0.02	<0.1	**0.02**	**0.13**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW073	0927_SW073_230321	21 Mar 2023	**0.10**	**0.11**	**0.87**	**0.03**	**0.43**	-	<0.02	<0.1	**0.02**	**0.13**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW073	0927_SW073_240404	04 Apr 2024	<0.02	<0.02	**0.04**	<0.02	**0.03**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW073	0927_SW073_241008	08 Oct 2024	**0.013**	**0.011**	**0.083**	**0.003**	**0.083**	<0.001	<0.001	**0.008**	**0.012**	**0.024**	**0.004**	**0.007**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW073	0927_SW073_250528	28 May 2025	**0.02**	**0.02**	**0.13**	<0.02	**0.08**	<0.02	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW074	0927_SW74_201102	02 Nov 2020	**0.013**	**0.021**	**0.10**	**0.004**	**0.098**	<0.001	<0.001	**0.010**	**0.008**	**0.027**	**0.005**	**0.011**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW075	0927_SW75_201102	02 Nov 2020	**0.012**	**0.028**	**0.10**	**0.005**	**0.14**	<0.001	<0.001	**0.011**	**0.010**	**0.027**	**0.005**	**0.011**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW076	0927_SW76_201102	02 Nov 2020	**0.029**	**0.053**	**0.20**	**0.010**	**0.27**	<0.001	<0.001	**0.021**	**0.018**	**0.051**	**0.010**	**0.021**	**0.002**	**0.005**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW077	0927_SW77_201104	04 Nov 2020	**0.013**	**0.031**	**0.096**	**0.004**	**0.13**	<0.001	<0.001	**0.010**	**0.009**	**0.026**	**0.004**	**0.010**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW078	0927_SW78_201104	04 Nov 2020	**0.010**	**0.024**	**0.10**	**0.005**	**0.18**	<0.001	<0.001	**0.009**	**0.013**	**0.024**	**0.004**	**0.010**	**0.001**	**0.004**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW078	0927_SW078_230317	17 Mar 2023	**0.02**	<0.02	**0.17**	<0.02	**0.24**	-	<0.02	<0.1	<0.02	**0.04**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW078	0927_SW078_230321	21 Mar 2023	**0.02**	<0.02	**0.17**	<0.02	**0.24**	-	<0.02	<0.1	<0.02	**0.04**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW078	0927_SW078_230803	03 Aug 2023	<0.02	<0.02	**0.13**	<0.02	**0.17**	-	<0.02	<0.1	<0.02	**0.02**	<0.02	**0.01**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW078	0927_SW078_240222	22 Feb 2024	**0.03**	**0.02**	**0.18**	<0.02	**0.28**	-	<0.02	<0.1	<0.02	**0.05**	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW078	0927_SW078_241008	08 Oct 2024	**0.009**	**0.009**	**0.072**	**0.004**	**0.18**	<0.001	<0.001	**0.011**	**0.009**	**0.021**	**0.004**	**0.008**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW078	0927_SW078_250528	28 May 2025	<0.02	<0.02	**0.06**	<0.02	**0.06**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05
Skeleton Creek	SW089	0927_SW89_201030	29 Oct 2020	**0.006**	**0.007**	**0.061**	**0.004**	**0.22**	<0.001	<0.001	**0.014**	**0.009**	**0.018**	**0.004**	**0.010**	**0.002**	**0.006**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW089	0927_SW089_241120	20 Nov 2024	**0.013**	**0.016**	**0.16**	**0.008**	**0.27**	<0.001	<0.001	<0.005	**0.018**	**0.027**	**0.005**	**0.017**	**0.002**	**0.002**	<0.001	<0.001	<0.001	<0.001
Skeleton Creek	SW089	0927_SW089_250506	06 May 2025	**0.002**	**0.010**	**0.020**	**0.001**	**0.036**	<0.001	<0.001	<0.005	**0.003**	**0.005**	**0.001**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Table B2 – Surface Water Analytical Results

				PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
				4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL				0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																						
ANZG 2026 Freshwater 90%																						
PFAS NEMP 3.0 2025 Freshwater 95%																						
ANZG 2026 Freshwater 95%																						
PFAS NEMP 3.0 2025 Freshwater 99%																						
ANZG 2026 Freshwater 99%																						
Investigation Area	**Location Code**	**Field ID**	**Date**																			
Addison Wetland	SW2	SW2	20 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	**1.28**	**1.28**	**1.28**	-	-	-	-	-
Addison Wetland	SW093	0927_QC102_241125	25 Nov 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.76**	**0.998**	**1.028**	2.62	20.1	-4.8	167.8	6.62
Addison Wetland	SW093	0927_QC202_241125	25 Nov 2024	*<0.0010*	*<0.00040*	*<0.00040*	*<0.0020*	*<0.010*	*<0.050*	*<0.0020*	*<0.050*	*<0.10*	*<0.0020*	*<0.50*	**0.65**	-	**0.75**	2.62	20.1	-4.8	167.8	6.62
Addison Wetland	SW093	0927_SW093_241125	25 Nov 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.73**	**1.026**	**1.057**	2.62	20.1	-4.8	167.8	6.62
Addison Wetland	SW093	0927_SW093_250506	06 May 2025	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.236**	**0.287**	**0.3**	-	-	-	-	-
Addison Wetland Drain	SW094	0927_SW094_250307	07 Mar 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.48**	**0.48**	**0.48**	-	-	-	-	-
Addison Wetland Drain	SW095	0927_SW095_01_250228	28 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.2**	**0.2**	**0.2**	-	-	-	-	-
Addison Wetland Drain	SW095	0927_SW095_02_250228	28 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.05**	**0.05**	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW096	0927_SW096_01_250228	28 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.48**	**0.52**	**0.52**	-	-	-	-	-
Addison Wetland Drain	SW096	0927_SW096_02_250228	28 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.14**	**0.14**	**0.14**	-	-	-	-	-
Addison Wetland Drain	SW097	0927_SW097_01_250303	03 Mar 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.01**	**1.26**	**1.33**	-	-	-	-	-
Addison Wetland Drain	SW097	0927_SW097_02_250303	03 Mar 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.33**	**1.54**	**1.6**	-	-	-	-	-
Addison Wetland Drain	SW098	0927_QC102_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.04**	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW098	0927_SW098_01_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.08**	**0.08**	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW098	0927_SW098_02_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.03**	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW099	0927_SW099_01_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW099	0927_SW099_02_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW100	0927_SW100_01_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW100	0927_SW100_02_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW101	0927_SW101_01_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW101	0927_SW101_02_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW102	0927_QC101_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.03**	*<0.05*	*<0.1*	-	-	-	-	-
Addison Wetland Drain	SW102	0927_QC201_250227	27 Feb 2025	*<0.010*	*<0.010*	*<0.020*	*<0.020*	*<0.10*	*<0.050*	*<0.020*	*<0.050*	*<0.10*	*<0.020*	*<0.50*	**0.012**	-	**0.012**	-	-	-	-	-
Addison Wetland Drain	SW102	0927_SW102_01_250227	27 Feb 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	*<0.05*	*<0.1*	-	-	-	-	-
Ashcroft Avenue Ponds	SW4	SW4	20 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.02**	**0.02**	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	0927_SW027_230317	17 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.57**	**0.60**	**0.60**	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	0927_SW027_230320	20 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.57**	**0.60**	**0.60**	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	0927_SW027_230802	02 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.20**	**0.20**	**0.20**	2.55	13.8	90.3	167.6	6.35
Ashcroft Avenue Ponds	SW027	0927_SW027_240221	21 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.10**	**0.10**	**0.10**	5.15	25.5	42.2	191.3	7.75
Ashcroft Avenue Ponds	SW027	0927_SW027_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.134**	**0.162**	**0.175**	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	0927_SW027_250602	02 Jun 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.05**	**0.05**	**0.05**	-	-	-	-	-
Ashcroft Avenue Ponds	SW027	SW27_190603	03 Jun 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.32**	**0.4**	**0.4**	9.09	11	105.9	90	7.37
Ashcroft Avenue Ponds	SW028	0927_QC109_190117_SW	17 Jan 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**15.1**	**17.21**	**17.97**	4.56	24.9	-8.8	638	7.58
Ashcroft Avenue Ponds	SW028	0927_QC209_SW_190117	17 Jan 2019	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	**14.1**	**16**	**16.7**	4.56	24.9	-8.8	638	7.58
Ashcroft Avenue Ponds	SW028	0927_SW28_190117	17 Jan 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**17.1**	**19.1**	**19.89**	4.56	24.9	-8.8	638	7.58
Ashcroft Avenue Ponds	SW029	0927_SW29_190117	17 Jan 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	**0.13**	**0.15**	9.1	25.2	59.2	246.4	8.85
Ashcroft Avenue Ponds	SW030	0927_QC105_240221	21 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_QC205_240221	21 Feb 2024	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.25**	**0.27**	**0.27**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_SW30_190117	17 Jan 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.04**	**0.17**	**0.19**	6.51	25.4	65.5	328.9	8.33
Ashcroft Avenue Ponds	SW030	0927_SW030_230317	17 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.09**	**0.14**	**0.14**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_SW030_230320	20 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.09**	**0.14**	**0.14**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_SW030_230802	02 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.01**	**0.01**	**0.01**	5.9	13.8	78.9	407.2	6.92
Ashcroft Avenue Ponds	SW030	0927_SW030_240221	21 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.03**	**0.03**	**0.03**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_SW030_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.019**	**0.053**	**0.057**	-	-	-	-	-
Ashcroft Avenue Ponds	SW030	0927_SW030_250602	02 Jun 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-	-
Ashcroft Avenue Ponds	SW110	0927_SW110_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.019**	**0.058**	**0.062**	-	-	-	-	-
Bioretention Pond	SW5	SW5	20 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	**1.15**	**1.15**	**1.15**	-	-	-	-	-

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Cheetham Wetlands	SW053	0927_SW53_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.061**	**0.097**	**0.105**	14.22	8.7	95.8	11,698	8.47
Cheetham Wetlands	SW054	0927_SW54_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.049**	**0.087**	**0.092**	12.93	6.6	88.8	10,731	8.22
Cheetham Wetlands	SW055	0927_QC101_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.204**	**0.297**	**0.332**	12.26	9.9	62.1	3,030	8.38
Cheetham Wetlands	SW055	0927_QC105_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.198**	**0.239**	**0.252**	7.12	17.5	74.7	1,123	8.08
Cheetham Wetlands	SW055	0927_QC201_200805	05 Aug 2020	<0.001	**0.005**	<0.001	<0.001	<0.0005	<0.001	<0.0005	<0.001	<0.001	<0.0005	<0.001	**0.225**	**0.340**	**0.369**	12.26	9.9	62.1	3,030	8.38
Cheetham Wetlands	SW055	0927_QC205_201028	28 Oct 2020	<0.001	**0.001**	<0.001	<0.001	<0.0008	<0.002	<0.0008	<0.002	<0.002	<0.0008	<0.002	**0.241**	**0.291**	**0.306**	7.12	17.5	74.7	1,123	8.08
Cheetham Wetlands	SW055	0927_SW55_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.207**	**0.282**	**0.314**	16.68	12.6	98.3	37,296	8.29
Cheetham Wetlands	SW055	0927_SW55_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.188**	**0.277**	**0.308**	12.26	9.9	62.1	3,030	8.38
Cheetham Wetlands	SW055	0927_SW55_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.2**	**0.243**	**0.256**	7.12	17.5	74.7	1,123	8.08
Cheetham Wetlands	SW056	0927_QC101_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.165**	**0.185**	**0.192**	7.56	10.1	101.5	35,810	2.18
Cheetham Wetlands	SW056	0927_QC201_200708	08 Jul 2020	<0.002	<0.002	<0.002	<0.002	<0.0016	<0.004	<0.0016	<0.004	<0.004	<0.0016	<0.004	**0.124**	**0.146**	**0.153**	7.56	10.1	101.5	35,810	2.18
Cheetham Wetlands	SW056	0927_SW56_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.168**	**0.189**	**0.196**	7.56	10.1	101.5	35,810	2.18
Cheetham Wetlands	SW056	0927_SW56_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.051**	**0.084**	**0.087**	8.51	10.6	68.3	36,171	8.38
Cheetham Wetlands	SW057	0927_SW57_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.047**	**0.061**	**0.065**	9.52	12.1	10.3	37,510	8.14
Cheetham Wetlands	SW057	0927_SW057_241121	21 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.041**	**0.048**	**0.049**	9.78	24	23.6	53,400	8.42
Cheetham Wetlands	SW057	0927_SW057_250508	08 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0074**	**0.0074**	**0.0074**	-	-	-	-	-
Cheetham Wetlands	SW058	0927_SW58_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.084**	**0.133**	**0.141**	9.33	13.4	-13.9	63,961	8.4
Cheetham Wetlands	SW058	0927_SW58_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.025**	**0.102**	**0.111**	6.53	12.8	107.1	66,759	8.57
Cheetham Wetlands	SW058	0927_SW58_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.143**	**0.244**	**0.262**	5.95	29.8	135.5	55,771	8.97
Cheetham Wetlands	SW058	0927_SW058_241122	22 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0652**	**0.1322**	**0.1462**	5.47	24.9	60.7	124,764	8.11
Cheetham Wetlands	SW058	0927_SW058_250507	07 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0257**	**0.0597**	**0.0657**	-	-	-	-	-
Cheetham Wetlands	SW059	0927_SW59_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.209**	**0.255**	**0.272**	5.41	15.6	-120.9	45,446	8.11
Cheetham Wetlands	SW060	0927_SW60_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.028**	**0.126**	**0.136**	4.19	12.5	78.5	97,566	7.79
Cheetham Wetlands	SW060	0927_SW60_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.032**	**0.152**	**0.165**	3.08	13.4	80	101,539	7.73
Cheetham Wetlands	SW061	0927_SW61_200708	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.33**	**0.397**	**0.423**	6.71	16.3	47.5	64,673	7.91
Cheetham Wetlands	SW062	0927_SW62_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.039**	**0.051**	**0.052**	6.82	10.3	78	36,488	8.22
Cheetham Wetlands	SW063	0927_SW63_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.028**	**0.119**	**0.129**	6.75	12.9	87.3	99,019	7.84
Cheetham Wetlands	SW064	0927_SW64_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.12**	**0.271**	**0.298**	0.32	25.4	61.4	105,646	8.34
Cheetham Wetlands	SW065	0927_SW65_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.074**	**0.154**	**0.169**	5.62	24.8	78.6	101,940	8.83
Cheetham Wetlands	SW066	0927_SW66_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.036**	**0.164**	**0.18**	9.15	30.5	172.5	128,379	8.24
Cheetham Wetlands	SW067	0927_SW67_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.042**	**0.21**	**0.23**	6.95	29	167.7	149,537	7.79
Cheetham Wetlands	SW068	0927_SW68_201029	26 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.08**	**0.137**	**0.146**	-	-	-	-	-
Cheetham Wetlands	SW069	0927_SW69_201029	26 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.093**	**0.152**	**0.163**	-	-	-	-	-
Cheetham Wetlands	SW070	0927_QC101_241121	21 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.112**	**0.16**	**0.169**	5.61	26.2	38.8	45,653	7.97
Cheetham Wetlands	SW070	0927_QC201_241121	21 Nov 2024	<0.0010	<0.00040	<0.00040	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**0.095**	-	**0.14**	5.61	26.2	38.8	45,653	7.97
Cheetham Wetlands	SW070	0927_SW70_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.146**	**0.194**	**0.207**	6.45	22.1	161.9	1,677	8.23
Cheetham Wetlands	SW070	0927_SW070_241121	21 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.109**	**0.139**	**0.15**	5.61	26.2	38.8	45,653	7.97
Cheetham Wetlands	SW070	0927_SW070_250507	07 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0273**	**0.1193**	**0.1373**	-	-	-	-	-
Cheetham Wetlands	SW071	0927_SW71_201028	28 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.13**	**0.22**	**0.233**	4.51	15.3	69.4	59,843	8.04
Cheetham Wetlands	SW071	0927_SW071_241121	21 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0391**	**0.3721**	**0.4011**	4.49	30.2	53.9	169,686	7.6
Cheetham Wetlands	SW071	0927_SW071_250507	07 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.034**	**0.042**	**0.044**	-	-	-	-	-
Sanctuary Lakes	SW087	0927_QC105_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.05**	**0.05**	**0.05**	7.85	12.5	4.7	14,464	8.49
Sanctuary Lakes	SW087	0927_QC205_230803	03 Aug 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	**0.07**	<0.1	7.85	12.5	4.7	14,464	8.49
Sanctuary Lakes	SW087	0927_SW87_201029	29 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.202**	**0.251**	**0.267**	5.43	20.3	132.5	8,558	9.05
Sanctuary Lakes	SW087	0927_SW087_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.09**	**0.09**	**0.09**	-	-	-	-	-
Sanctuary Lakes	SW087	0927_SW087_230322	22 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.09**	**0.09**	**0.09**	8.15	19.8	67.8	23,391	9.01
Sanctuary Lakes	SW087	0927_SW087_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.05**	**0.05**	**0.05**	7.85	12.5	4.7	14,464	8.49

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Sanctuary Lakes	SW087	0927_SW087_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.07**	**0.07**	**0.07**	6.48	27.3	70.3	11,041	9.27
Sanctuary Lakes	SW087	0927_SW087_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.091**	**0.133**	**0.143**	-	-	-	-	-
Sanctuary Lakes	SW087	0927_SW087_241119	19 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.123**	**0.168**	**0.181**	8.77	21.5	18.3	21,241	9.52
Sanctuary Lakes	SW087	0927_SW087_250505	05 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.046**	**0.084**	**0.087**	-	-	-	-	-
Sanctuary Lakes	SW087	0927_SW087_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.06**	**0.06**	**0.06**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_QC104_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.06**	**0.06**	**0.06**	8.28	11.8	8.6	13,943	8.51
Sanctuary Lakes	SW088	0927_QC106_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.07**	**0.07**	**0.07**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_QC106_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.07**	**0.07**	**0.07**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_QC204_230803	03 Aug 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	**0.07**	<0.1	8.28	11.8	8.6	13,943	8.51
Sanctuary Lakes	SW088	0927_QC206_230321	21 Mar 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.16**	**0.25**	**0.26**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_QC206_230321	21 Mar 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.16**	**0.25**	**0.26**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_SW88_201030	30 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.058**	**0.113**	**0.12**	2.56	19.8	137.5	9,952	9.71
Sanctuary Lakes	SW088	0927_SW088_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	**0.08**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_SW088_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	**0.08**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_SW088_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.05**	**0.05**	**0.05**	8.28	11.8	8.6	13,943	8.51
Sanctuary Lakes	SW088	0927_SW088_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	**0.08**	5.86	25.7	63.7	10,292	9.51
Sanctuary Lakes	SW088	0927_SW088_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.064**	**0.103**	**0.111**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_SW088_241119	19 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.07**	**0.113**	**0.12**	7.2	20.9	38.6	21,683	9.36
Sanctuary Lakes	SW088	0927_SW088_250505	05 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.041**	**0.087**	**0.089**	-	-	-	-	-
Sanctuary Lakes	SW088	0927_SW088_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	**0.08**	-	-	-	-	-
Doherty's Drain	SW001	0927_SW01_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.1	10.44	8.1	-32.2	1,402	8.02
Doherty's Drain	SW002	0927_QC110_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.1	10.66	8.2	-20.1	1,741	8.26
Doherty's Drain	SW002	0927_QC210_180820	20 Aug 2018	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.02**	**0.02**	**0.02**	10.66	8.2	-20.1	1,741	8.26
Doherty's Drain	SW002	0927_SW02_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.1	10.66	8.2	-20.1	1,741	8.26
Doherty's Drain	SW003	0927_SW03_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	**0.06**	<0.1	10.11	8.7	-46.7	1,852	8.39
Doherty's Drain	SW003	0927_SW03_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.1	9.25	11	105.2	389.6	7.79
Doherty's Drain	SW004	0927_SW04_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.05**	**0.05**	<0.1	9.36	9.1	-61.5	1,658	8.21
Doherty's Drain	SW008	0927_SW08_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.04**	<0.05	<0.1	9.63	8.19	-56.1	8.19	7.8
Doherty's Drain	SW008	0927_SW008_240404	04 Apr 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.05**	**0.05**	**0.05**	-	-	-	-	-
Doherty's Drain	SW008	0927_SW008_241007	07 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.004**	**0.025**	**0.025**	-	-	-	-	-
Doherty's Drain	SW008	0927_SW008_250529	29 May 2025	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**0.007**	**0.020**	**0.020**	-	-	-	-	-
Doherty's Drain	SW010	0927_SW10_180820	20 Aug 2018	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1	10.87	8.5	-20.9	137.5	7.75
Doherty's Drain	SW010	0927_SW10_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1	8.22	10.8	77	179.1	7.54
Doherty's Drain	SW103	0927_SW103_01_250311	11 Mar 2025	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.52**	**0.54**	**0.54**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_QC100_231017	17 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.24**	**0.27**	**0.27**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_QC200_231017	17 Oct 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.22**	**0.26**	**0.26**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_SW42_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.09**	**0.11**	**0.11**	4.84	11.1	80.2	1,288	7.52
Forsyth Road Drain	SW042	0927_SW42_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.394**	**0.47**	**0.494**	10.6	9.7	37.2	173.5	7.45
Forsyth Road Drain	SW042	0927_SW42_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.222**	**0.283**	**0.304**	9.16	9.8	51.7	169.3	7.83
Forsyth Road Drain	SW042	0927_SW042_231017	17 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.25**	**0.28**	**0.28**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_SW042_240404	04 Apr 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.20**	**0.21**	**0.21**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_SW042_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.175**	**0.22**	**0.231**	-	-	-	-	-
Forsyth Road Drain	SW042	0927_SW042_241120	20 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.113**	**0.171**	**0.185**	3.31	21.7	36.6	465	7.2
Forsyth Road Drain	SW042	0927_SW042_250602	02 Jun 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.09**	**0.09**	**0.09**	-	-	-	-	-
Forsyth Road Drain	SW045	0927_SW45_200708	08 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.008**	**0.036**	**0.042**	25.2	11.6	-30.1	131	9.8
Forsyth Road Drain	SW045	0927_SW45_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.01**	**0.041**	**0.05**	12.11	9.7	-16.1	257.6	8.96
Forsyth Road Drain	SW045	0927_SW045_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.02**	**0.02**	-	-	-	-	-

Table B2 – Surface Water Analytical Results

					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
					4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL					0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Investigation Area	**Location Code**	**Field ID**	**Date**																				
Forsyth Road Drain	SW045	0927_SW045_230320	20 Mar 2023		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.02**	**0.02**	-	-	-	-	-
Forsyth Road Drain	SW045	0927_SW045_230802	02 Aug 2023		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.02**	**0.02**	**0.02**	6.19	13.2	-14.8	162.2	6.88
Forsyth Road Drain	SW045	0927_SW045_240221	21 Feb 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.04**	**0.04**	**0.04**	-	-	-	-	-
Forsyth Road Drain	SW045	0927_SW045_241008	08 Oct 2024		<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.005**	**0.024**	**0.027**	-	-	-	-	-
Forsyth Road Drain	SW045	0927_SW045_250602	02 Jun 2025		<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	**0.016**	**0.016**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC100_240404	04 Apr 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.36**	**0.44**	**0.44**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC101_241007	07 Oct 2024		<0.005	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.085**	**0.119**	**0.123**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC101_250529	29 May 2025		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.27**	**0.30**	**0.32**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC127_190603	03 Jun 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.15**	**0.15**	**0.15**	9.45	11.3	122.5	68.1	7.69
Kidbroke Road Drain	SW043	0927_QC200_240404	04 Apr 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.32**	**0.40**	**0.42**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC201_241007	07 Oct 2024		<0.0010	<0.0010	<0.0020	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**0.089**	-	**0.13**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC201_250529	29 May 2025		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.28**	**0.36**	**0.38**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_QC227_190603	03 Jun 2019		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.15**	**0.15**	**0.15**	9.45	11.3	122.5	68.1	7.69
Kidbroke Road Drain	SW043	0927_SW43_190603	03 Jun 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.15**	**0.15**	**0.15**	9.45	11.3	122.5	68.1	7.69
Kidbroke Road Drain	SW043	0927_SW043_240404	04 Apr 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.36**	**0.44**	**0.46**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_SW043_241007	07 Oct 2024		<0.005	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.095**	**0.13**	**0.135**	-	-	-	-	-
Kidbroke Road Drain	SW043	0927_SW043_250529	29 May 2025		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.29**	**0.32**	**0.34**	-	-	-	-	-
Kidbroke Road Drain	SW044	0927_SW44_191031	31 Oct 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.16**	**1.28**	**1.28**	-	-	-	-	-
Kingwell Wetland	SW1	SW1	20 Sep 2018		-	-	-	-	-	-	-	-	-	-	-	**0.31**	**0.31**	**0.31**	-	-	-	-	-
Kingwell Wetland	SW018	0927_QC107_190117_SW	17 Jan 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.47**	**0.6**	**0.64**	7.42	25.5	94.2	360.2	7.15
Kingwell Wetland	SW018	0927_QC207_SW_190117	17 Jan 2019		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.42**	**0.56**	**0.6**	7.42	25.5	94.2	360.2	7.15
Kingwell Wetland	SW018	0927_SW18_190117	17 Jan 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.49**	**0.62**	**0.67**	7.42	25.5	94.2	360.2	7.15
Kingwell Wetland	SW019	0927_SW19_190117	17 Jan 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.02**	**1.29**	**1.38**	5.62	26.7	90.2	557	8.18
Laverton Creek	SW005	0927_SW05_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.05**	**0.05**	<0.1	6.93	9.3	-35.7	1,668	7.63
Laverton Creek	SW005	0927_SW05_190603	03 Jun 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1	10.48	10.5	102	221.6	7.91
Laverton Creek	SW005	0927_SW005_230802	02 Aug 2023		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.10**	**0.12**	**0.12**	4.78	13.2	-22	1,576	7.08
Laverton Creek	SW005	0927_SW005_240404	04 Apr 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.11**	**0.13**	**0.13**	-	-	-	-	-
Laverton Creek	SW005	0927_SW005_241007	07 Oct 2024		<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.006**	**0.038**	**0.038**	-	-	-	-	-
Laverton Creek	SW005	0927_SW005_250529	29 May 2025		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	-	-	-	-	-
Laverton Creek	SW006	0927_QC104_230320	20 Mar 2023		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.02**	**0.02**	**0.02**	-	-	-	-	-
Laverton Creek	SW006	0927_QC104_240220	20 Feb 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	6.39	25.8	74.2	7,588	7.74
Laverton Creek	SW006	0927_QC204_230320	20 Mar 2023		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	-	-	-	-	-
Laverton Creek	SW006	0927_QC204_240220	20 Feb 2024		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	6.39	25.8	74.2	7,588	7.74
Laverton Creek	SW006	0927_SW06_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	9.24	8.9	-54.2	225.1	7.56
Laverton Creek	SW006	0927_SW006_230320	20 Mar 2023		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	-	-	-	-	-
Laverton Creek	SW006	0927_SW006_240220	20 Feb 2024		<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	6.39	25.8	74.2	7,588	7.74
Laverton Creek	SW006	0927_SW006_241007	07 Oct 2024		<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.007**	**0.04**	**0.04**	-	-	-	-	-
Laverton Creek	SW006	0927_SW006_250529	29 May 2025		<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**0.008**	**0.023**	**0.023**	-	-	-	-	-
Laverton Creek	SW007	0927_QC113_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	10.12	9	-40.3	249.4	7.66
Laverton Creek	SW007	0927_QC115_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.13**	**5.29**	**6.29**	10.12	9	-40.3	249.4	7.66
Laverton Creek	SW007	0927_SW07_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	10.12	9	-40.3	249.4	7.66
Laverton Creek	SW009	0927_SW09_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	9.57	9.1	-48.2	240.1	7.94
Laverton Creek	SW011	0927_SW11_180820	20 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	10.57	9.1	-33.4	226	7.54
Laverton Creek	SW011	0927_SW11_190603	03 Jun 2019		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.1	7.17	10.7	110.5	242.5	7.32
Laverton Creek	SW015	0927_QC102_200709	09 Jul 2020		<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.031**	**0.063**	**0.065**	10.76	8.4	60.7	391	7.94
Laverton Creek	SW015	0927_QC202_200709	09 Jul 2020		<0.001	<0.001	<0.001	<0.001	<0.0008	<0.002	<0.0008	<0.002	<0.002	<0.0008	<0.002	**0.0348**	**0.0785**	**0.0811**	10.76	8.4	60.7	391	7.94
Laverton Creek	SW015	0927_SW15_180821	21 Aug 2018		<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	<0.1	9.69	8.4	-50.4	663	7.75

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Laverton Creek	SW015	0927_SW15_190603	03 Jun 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	10.67	10.5	128.9	103.1	7.55
Laverton Creek	SW015	0927_SW15_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.032**	**0.064**	**0.066**	10.76	8.4	60.7	391	7.94
Laverton Creek	SW015	0927_SW015_230317	17 Apr 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.02**	**0.02**	**0.02**	-	-	-	-	-
Laverton Creek	SW015	0927_SW015_230320	20 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.02**	**0.02**	**0.02**	-	-	-	-	-
Laverton Creek	SW015	0927_SW015_240223	23 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.01**	**0.01**	**0.01**	4.22	19.7	194.2	7,057	7.39
Laverton Creek	SW015	0927_SW015_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.029**	**0.061**	**0.062**	-	-	-	-	-
Laverton Creek	SW015	0927_SW015_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-	-
Laverton Creek	SW015	SW15_190603_F	03 Jun 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.1*	10.67	10.5	128.9	103.1	7.55
Laverton Creek	SW016	0927_SW16_180821	21 Aug 2018	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	*<0.05*	*<0.1*	8.55	9.1	-44.6	539	7.66
Laverton Creek	SW017	0927_SW17_180821	21 Aug 2018	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.02**	*<0.05*	*<0.1*	8.09	10.1	-58.9	453.2	7.56
Laverton Creek	SW046	0927_SW46_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.24**	**0.382**	**0.404**	6.65	6.9	72.5	1,368	7.72
Laverton Creek	SW047	0927_SW47_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.009**	**0.045**	**0.09**	**0.102**	13.6	8.4	68.2	4,167	8.53
Laverton Creek	SW047	0927_SW47_200805	05 Aug 2020	*<0.001*	**0.018**	**0.002**	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.286**	**0.428**	**0.448**	2.44	11.1	78	8,721	7.92
Laverton Creek	SW048	0927_SW48_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.018**	**0.178**	**0.222**	**0.254**	7.68	12	62.4	50,310	8.03
Laverton Creek	SW048	0927_SW48_200805	05 Aug 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.1**	**0.122**	**0.123**	9.27	9.6	76.5	33,574	8.03
RAAF Laverton Swamp	SW3	SW3	20 Sep 2018	-	-	-	-	-	-	-	-	-	-	-	**0.48**	**0.48**	**0.48**	-	-	-	-	-
RAAF Laverton Swamp	SW035	0927_SW35_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.29**	**3.07**	**3.22**	1.49	21.7	22.2	2,037	7.11
RAAF Laverton Swamp	SW035	0927_SW35_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**2.11**	**2.213**	**2.281**	0.82	13.3	236.1	212.8	6.93
RAAF Laverton Swamp	SW036	0927_QC102_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.3**	**0.355**	**0.383**	4.42	17	221.3	220.6	7.1
RAAF Laverton Swamp	SW036	0927_QC125_190206_SW	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.84**	**1.05**	**1.12**	4.15	18.8	40.2	253.5	8.1
RAAF Laverton Swamp	SW036	0927_QC202_201027	27 Oct 2020	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.0008*	*<0.002*	*<0.0008*	*<0.002*	*<0.002*	*<0.0008*	*<0.002*	**0.285**	**0.351**	**0.373**	4.42	17	221.3	220.6	7.1
RAAF Laverton Swamp	SW036	0927_QC225_190206_SW	06 Feb 2019	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.95**	**1.22**	**1.28**	4.15	18.8	40.2	253.5	8.1
RAAF Laverton Swamp	SW036	0927_SW36_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.92**	**1.14**	**1.21**	4.15	18.8	40.2	253.5	8.1
RAAF Laverton Swamp	SW036	0927_SW36_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.202**	**0.26**	**0.28**	4.42	17	221.3	220.6	7.1
RAAF Laverton Swamp	SW037	0927_SW37_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.03**	**0.1**	**0.11**	4.02	22.2	43.3	303	7.62
RAAF Laverton Swamp	SW038	0927_SW38_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.96**	**1.23**	**1.29**	1.02	22.5	-69.1	959	6.74
RAAF Laverton Swamp	SW039	0927_SW39_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.28**	**1.62**	**1.69**	1.92	21.7	9.9	1,200	6.71
RAAF Laverton Swamp	SW039	0927_SW39_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.308**	**0.387**	**0.406**	2.41	14.4	199.3	198.4	6.79
RAAF Laverton Swamp	SW040	0927_SW40_190206	06 Feb 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.36**	**2.28**	**2.42**	0.23	24	-140.5	1,964	7.65
RAAF Laverton Swamp	SW079	0927_SW79_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**1.687**	**1.773**	**1.84**	1.67	13.1	237.1	177.2	6.83
RAAF Laverton Swamp	SW080	0927_SW80_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.361**	**0.43**	**0.454**	5.84	14.7	223.2	170.9	6.87
RAAF Laverton Swamp	SW081	0927_SW81_201026	26 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.875**	**0.931**	**0.972**	4.88	18.9	100.2	179.9	6.91
RAAF Laverton Swamp	SW082	0927_SW82_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.669**	**0.729**	**0.759**	4.72	17.8	134.2	182.5	16.87
RAAF Laverton Swamp	SW083	0927_SW83_201027	27 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.602**	**0.692**	**0.718**	0.72	16.8	137.9	295	6.79
Sanctuary Lakes	SW052	0927_QC102_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.03**	**0.03**	**0.03**	-	-	-	-	-
Sanctuary Lakes	SW052	0927_QC202_250528	28 May 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.03**	**0.06**	*<0.1*	-	-	-	-	-
Sanctuary Lakes	SW052	0927_SW52_200708	08 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.015**	**0.028**	**0.058**	**0.076**	20.01	12.5	20.3	9,768	8.67
Sanctuary Lakes	SW052	0927_SW052_230317	17 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	-	-	-	-	-
Sanctuary Lakes	SW052	0927_SW052_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	-	-	-	-	-
Sanctuary Lakes	SW052	0927_SW052_230803	03 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.05**	**0.05**	**0.05**	9.06	13	-6.8	8,729	8.53
Sanctuary Lakes	SW052	0927_SW052_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.05**	**0.05**	**0.05**	10.38	28.1	73.6	9,912	8.77
Sanctuary Lakes	SW052	0927_SW052_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.035**	**0.072**	**0.076**	-	-	-	-	-
Sanctuary Lakes	SW052	0927_SW052_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.03**	**0.03**	**0.03**	-	-	-	-	-
Sanctuary Lakes	SW084	0927_QC101_250505	05 May 2025	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.049**	**0.1**	**0.103**	-	-	-	-	-
Sanctuary Lakes	SW084	0927_QC108_201030	30 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.038**	**0.066**	**0.069**	14.32	18.9	168	3,981	8.99
Sanctuary Lakes	SW084	0927_QC201_250505	05 May 2025	*<0.0010*	*<0.00040*	*<0.00040*	*<0.0020*	*<0.010*	*<0.050*	*<0.0020*	*<0.050*	*<0.10*	*<0.0020*	*<0.50*	**0.078**	-	**0.15**	-	-	-	-	-
Sanctuary Lakes	SW084	0927_QC208_201030	30 Oct 2020	*<0.001*	*<0.001*	*<0.001*	*<0.011*	*<0.0005*	*<0.001*	*<0.0005*	*<0.001*	*<0.001*	*<0.0005*	*<0.001*	**0.0598**	**0.0871**	**0.0950**	14.32	18.9	168	3,981	8.99

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Sanctuary Lakes	SW084	0927_SW84_201030	30 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.047**	**0.079**	**0.092**	14.32	18.9	168	3,981	8.99
Sanctuary Lakes	SW084	0927_SW084_241119	19 Nov 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.020**	**0.041**	**0.079**	**0.103**	8.62	17.8	74.2	18,179	9.15
Sanctuary Lakes	SW084	0927_SW084_250505	05 May 2025	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.043**	**0.081**	**0.083**	-	-	-	-	-
Sanctuary Lakes	SW085	0927_SW85_201030	30 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.036**	**0.073**	**0.078**	12.38	21.3	141.7	7,301	9.48
Sanctuary Lakes	SW085	0927_SW085_230317	17 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.06**	**0.06**	**0.06**	-	-	-	-	-
Sanctuary Lakes	SW085	0927_SW085_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.06**	**0.06**	**0.06**	-	-	-	-	-
Sanctuary Lakes	SW085	0927_SW085_230803	03 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.07**	**0.07**	**0.07**	6.09	12.9	-10.1	13,852	8.42
Sanctuary Lakes	SW085	0927_SW085_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	5.4	25.5	52.8	7,973	9.35
Sanctuary Lakes	SW085	0927_SW085_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.049**	**0.089**	**0.096**	-	-	-	-	-
Sanctuary Lakes	SW085	0927_SW085_241119	19 Nov 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.043**	**0.082**	**0.087**	9.05	23.6	22.7	19,198	9.43
Sanctuary Lakes	SW085	0927_SW085_250505	05 May 2025	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.061**	**0.11**	**0.115**	-	-	-	-	-
Sanctuary Lakes	SW085	0927_SW085_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.07**	**0.07**	**0.07**	-	-	-	-	-
Sanctuary Lakes	SW086	0927_QC106_230803	03 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.06**	**0.06**	**0.06**	6	13	-6.1	14,803	8.41
Sanctuary Lakes	SW086	0927_QC206_230803	03 Aug 2023	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.06**	**0.07**	*<0.1*	6	13	-6.1	14,803	8.41
Sanctuary Lakes	SW086	0927_SW86_201029	29 Oct 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.06**	**0.102**	**0.111**	6.65	21	111.5	8,958	9.2
Sanctuary Lakes	SW086	0927_SW086_230317	17 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.08**	**0.08**	**0.08**	-	-	-	-	-
Sanctuary Lakes	SW086	0927_SW086_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.08**	**0.08**	**0.08**	-	-	-	-	-
Sanctuary Lakes	SW086	0927_SW086_230803	03 Aug 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.05**	**0.05**	**0.05**	6	13	-6.1	14,803	8.41
Sanctuary Lakes	SW086	0927_SW086_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	5.32	25.8	66.5	8,943	9.2
Sanctuary Lakes	SW086	0927_SW086_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.047**	**0.079**	**0.085**	-	-	-	-	-
Sanctuary Lakes	SW086	0927_SW086_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.04**	**0.04**	**0.04**	-	-	-	-	-
Skeleton Creek	SW012	0927_SW12_180821	21 Aug 2018	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.28**	**0.34**	**0.36**	5.76	10	-44.7	3,140	76
Skeleton Creek	SW012	0927_SW12_190603	03 Jun 2019	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.17**	**0.19**	**0.19**	7.92	11.4	119.1	1,296	7.41
Skeleton Creek	SW012	0927_SW12_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.204**	**0.278**	**0.309**	9.75	10.1	66.2	3,563	7.93
Skeleton Creek	SW012	0927_SW12_200805	05 Aug 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.36**	**0.482**	**0.533**	18.5	10.6	75.4	4,349	8.73
Skeleton Creek	SW012	0927_SW12_201104	04 Nov 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.21**	**0.291**	**0.332**	5.1	21.3	163	2,552	7.54
Skeleton Creek	SW012	0927_SW012_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.24**	**0.31**	**0.31**	-	-	-	-	-
Skeleton Creek	SW012	0927_SW012_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.24**	**0.31**	**0.31**	-	-	-	-	-
Skeleton Creek	SW012	0927_SW012_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.30**	**0.37**	**0.39**	5.39	25.6	33.3	5,872	8.22
Skeleton Creek	SW012	0927_SW012_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.199**	**0.271**	**0.291**	-	-	-	-	-
Skeleton Creek	SW012	0927_SW012_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.22**	**0.25**	**0.25**	-	-	-	-	-
Skeleton Creek	SW013	0927_SW13_180821	21 Aug 2018	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.13**	**0.15**	**0.15**	6.76	8.9	-22.6	2,561	7.57
Skeleton Creek	SW013	0927_SW013_230317	17 Apr 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.24**	**0.29**	**0.29**	-	-	-	-	-
Skeleton Creek	SW013	0927_SW013_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.24**	**0.29**	**0.29**	-	-	-	-	-
Skeleton Creek	SW013	0927_SW013_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.29**	**0.34**	**0.36**	5.6	25.7	109.3	6,087	8.1
Skeleton Creek	SW013	0927_SW013_241008	08 Oct 2024	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.204**	**0.28**	**0.303**	-	-	-	-	-
Skeleton Creek	SW013	0927_SW013_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.24**	**0.29**	**0.31**	-	-	-	-	-
Skeleton Creek	SW014	0927_SW14_180821	21 Aug 2018	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.01**	*<0.05*	*<0.1*	7.64	9.5	-22.8	2,445	7.62
Skeleton Creek	SW020	0927_QC101_201104	04 Nov 2020	*<0.001*	*<0.005*	*<0.001*	**0.005**	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.25**	**0.35**	**0.433**	7.23	21.4	187.9	3,044	7.77
Skeleton Creek	SW020	0927_QC101_250528	28 May 2025	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.21**	**0.26**	**0.28**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC103_200709	09 Jul 2020	*<0.001*	*<0.005*	*<0.001*	*<0.001*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	**0.3**	**0.394**	**0.44**	12.2	11.2	66.7	1,755	8.11
Skeleton Creek	SW020	0927_QC105_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.26**	**0.33**	**0.35**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC105_230321	21 Mar 2023	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.26**	**0.33**	**0.35**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC106_240222	22 Feb 2024	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**0.25**	**0.30**	**0.30**	5.93	25.5	158.2	6,419	7.85
Skeleton Creek	SW020	0927_QC201_201104	04 Nov 2020	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.0005*	*<0.001*	*<0.0005*	*<0.001*	*<0.001*	*<0.0005*	*<0.001*	**0.252**	**0.356**	**0.386**	7.23	21.4	187.9	3,044	7.77
Skeleton Creek	SW020	0927_QC201_250528	28 May 2025	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.23**	**0.32**	**0.34**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC203_200709	09 Jul 2020	*<0.002*	**0.002**	*<0.002*	*<0.002*	*<0.0016*	*<0.004*	*<0.0016*	*<0.004*	*<0.004*	*<0.0016*	*<0.004*	**0.393**	**0.534**	**0.590**	12.2	11.2	66.7	1,755	8.11

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Skeleton Creek	SW020	0927_QC205_230321	21 Mar 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.47**	**0.62**	**0.69**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC205_230321	21 Mar 2023	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.47**	**0.62**	**0.69**	-	-	-	-	-
Skeleton Creek	SW020	0927_QC206_240222	22 Feb 2024	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.32**	**0.41**	**0.45**	5.93	25.5	158.2	6,419	7.85
Skeleton Creek	SW020	0927_SW20_190117	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.54**	**0.77**	**0.84**	2.43	24.4	112.4	6,280	7.15
Skeleton Creek	SW020	0927_SW20_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.28**	**0.376**	**0.423**	12.2	11.2	66.7	1,755	8.11
Skeleton Creek	SW020	0927_SW20_200805	05 Aug 2020	<0.001	**0.014**	**0.002**	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.191**	**0.284**	**0.305**	15.04	10.5	85.8	4,440	8.44
Skeleton Creek	SW020	0927_SW20_201104	04 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.26**	**0.355**	**0.409**	7.23	21.4	187.9	3,044	7.77
Skeleton Creek	SW020	0927_SW020_230317	17 Apr 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.24**	**0.30**	**0.30**	-	-	-	-	-
Skeleton Creek	SW020	0927_SW020_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.24**	**0.30**	**0.30**	-	-	-	-	-
Skeleton Creek	SW020	0927_SW020_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.25**	**0.30**	**0.30**	5.93	25.5	158.2	6,419	7.85
Skeleton Creek	SW020	0927_SW020_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.208**	**0.285**	**0.308**	-	-	-	-	-
Skeleton Creek	SW020	0927_SW020_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.21**	**0.26**	**0.26**	-	-	-	-	-
Skeleton Creek	SW020	SW20_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.21**	**0.25**	**0.26**	9.22	11.4	114.8	1,240	7.36
Skeleton Creek	SW021	0927_QC101_250506	06 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.116**	**0.162**	**0.177**	-	-	-	-	-
Skeleton Creek	SW021	0927_QC201_250506	06 May 2025	<0.0010	<0.00040	<0.00040	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**0.20**	-	**0.30**	-	-	-	-	-
Skeleton Creek	SW021	0927_SW21_190117	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.49**	**0.72**	**0.79**	4.74	24.7	53.9	7,569	7.66
Skeleton Creek	SW021	0927_SW021_241120	20 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.28**	**0.396**	**0.436**	8.03	27.1	63.6	7,403	8.44
Skeleton Creek	SW021	0927_SW021_250506	06 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.113**	**0.162**	**0.177**	-	-	-	-	-
Skeleton Creek	SW021	SW21_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	**0.13**	**0.13**	8.42	11.3	117.8	1,254	7.21
Skeleton Creek	SW024	0927_SW24_190117	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.62**	**0.8**	**0.85**	7.9	24.1	118.6	3,379	8.36
Skeleton Creek	SW024	0927_SW024_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.22**	**0.26**	**0.26**	-	-	-	-	-
Skeleton Creek	SW024	0927_SW024_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.22**	**0.26**	**0.26**	-	-	-	-	-
Skeleton Creek	SW024	0927_SW024_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.15**	**0.15**	**0.15**	9.66	11.1	75.8	4,252	7.9
Skeleton Creek	SW024	0927_SW024_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.58**	**0.63**	**0.63**	4.4	26.7	82.2	6,246	8.23
Skeleton Creek	SW024	0927_SW024_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.231**	**0.294**	**0.313**	-	-	-	-	-
Skeleton Creek	SW024	0927_SW024_241120	20 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.35**	**0.482**	**0.517**	4.21	21.2	49.3	9,400	8.28
Skeleton Creek	SW024	0927_SW024_250506	06 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.139**	**0.187**	**0.202**	-	-	-	-	-
Skeleton Creek	SW024	0927_SW024_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.14**	**0.18**	**0.18**	-	-	-	-	-
Skeleton Creek	SW025	0927_QC108_190117_SW	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.57**	**0.75**	**0.79**	7.42	25.5	94.2	3,455	8.06
Skeleton Creek	SW025	0927_QC208_SW_190117	17 Jan 2019	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.48**	**0.65**	**0.7**	7.42	25.5	94.2	3,455	8.06
Skeleton Creek	SW025	0927_SW25_190117	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.54**	**0.72**	**0.77**	7.42	25.5	94.2	3,455	8.06
Skeleton Creek	SW026	0927_SW26_190117	17 Jan 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	**0.12**	**0.12**	5.61	24.1	106.9	9,523	7.88
Skeleton Creek	SW041	0927_QC101_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.021**	**0.055**	**0.057**	-	-	-	-	-
Skeleton Creek	SW041	0927_QC201_241008	08 Oct 2024	<0.0010	<0.0010	<0.0020	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**0.020**	-	**0.054**	-	-	-	-	-
Skeleton Creek	SW041	0927_SW41_190603	03 Jun 2019	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.18**	**0.18**	**0.18**	8.57	10.7	137.2	1,371	7.15
Skeleton Creek	SW041	0927_SW41_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.016**	**0.041**	**0.043**	9.52	11.3	82.5	4,445	7.74
Skeleton Creek	SW041	0927_SW41_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.014**	**0.042**	**0.044**	9.13	10	74.6	2,712	7.97
Skeleton Creek	SW041	0927_SW041_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.01**	**0.01**	-	-	-	-	-
Skeleton Creek	SW041	0927_SW041_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.01**	**0.01**	-	-	-	-	-
Skeleton Creek	SW041	0927_SW041_230802	02 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	8.72	14.1	-18.1	5,062	8.02
Skeleton Creek	SW041	0927_SW041_240223	23 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.01**	**0.01**	4.67	22.8	160.5	8,533	7.87
Skeleton Creek	SW041	0927_SW041_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.019**	**0.052**	**0.054**	-	-	-	-	-
Skeleton Creek	SW041	0927_SW041_250602	02 Jun 2025	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**0.016**	**0.029**	**0.029**	-	-	-	-	-
Skeleton Creek	SW049	0927_QC102_241008	08 Oct 2024	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.38**	**0.465**	**0.494**	-	-	-	-	-
Skeleton Creek	SW049	0927_QC202_241008	08 Oct 2024	<0.0010	<0.0010	<0.0020	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**0.33**	-	**0.45**	-	-	-	-	-
Skeleton Creek	SW049	0927_SW49_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.32**	**0.414**	**0.457**	12.8	10.7	60.5	3,903	8.17
Skeleton Creek	SW049	0927_SW49_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.39**	**0.503**	**0.556**	9.15	11	76.1	3,627	8.28

Table B2 – Surface Water Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Field Chemistry				
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	°C	mV	µS/cm	pH Units
EQL	0.001	0.0004	0.0004	0.001	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.0002	0.0003	0.0002	-	-	-	-	-
PFAS NEMP 3.0 2025 Freshwater 90%																			
ANZG 2026 Freshwater 90%																			
PFAS NEMP 3.0 2025 Freshwater 95%																			
ANZG 2026 Freshwater 95%																			
PFAS NEMP 3.0 2025 Freshwater 99%																			
ANZG 2026 Freshwater 99%																			

Investigation Area	Location Code	Field ID	Date																	
Skeleton Creek	SW049	0927_SW49_201104	04 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.237**	**0.308**	**0.346**	4.37	21.3	165.4	1,944	7.7
Skeleton Creek	SW049	0927_SW049_230317	17 Apr 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.24**	**0.31**	**0.31**	-	-	-	-	-
Skeleton Creek	SW049	0927_SW049_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.24**	**0.31**	**0.31**	-	-	-	-	-
Skeleton Creek	SW049	0927_SW049_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.19**	**0.22**	**0.22**	-	-	-	-	-
Skeleton Creek	SW049	0927_SW049_241008	08 Oct 2024	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.39**	**0.47**	**0.501**	-	-	-	-	-
Skeleton Creek	SW049	0927_SW049_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.22**	**0.25**	**0.25**	-	-	-	-	-
Skeleton Creek	SW050	0927_SW50_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.013**	**0.031**	**0.033**	3.45	10.1	43.2	166.6	7.58
Skeleton Creek	SW050	0927_SW50_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	**0.005**	<0.005	<0.005	**0.01**	**0.023**	**0.028**	6.15	11.6	62.5	159	7.63
Skeleton Creek	SW051	0927_SW51_200709	09 Jul 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.004**	<0.005	<0.005	3.68	12.9	-62.4	124.8	8.6
Skeleton Creek	SW051	0927_SW51_200805	05 Aug 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.007**	**0.014**	**0.015**	6.89	10.9	-103.2	168.3	8.04
Skeleton Creek	SW072	0927_SW72_201102	02 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.2**	**0.275**	**0.312**	3.27	16.9	160.3	2,516	7.41
Skeleton Creek	SW073	0927_SW73_201102	02 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.189**	**0.266**	**0.308**	7.53	18.2	121	2,867	7.54
Skeleton Creek	SW073	0927_SW073_230317	17 Apr 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.30**	**1.57**	**1.71**	-	-	-	-	-
Skeleton Creek	SW073	0927_SW073_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.30**	**1.57**	**1.71**	-	-	-	-	-
Skeleton Creek	SW073	0927_SW073_240404	04 Apr 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.07**	**0.09**	**0.09**	-	-	-	-	-
Skeleton Creek	SW073	0927_SW073_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.166**	**0.234**	**0.255**	-	-	-	-	-
Skeleton Creek	SW073	0927_SW073_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.21**	**0.26**	**0.28**	-	-	-	-	-
Skeleton Creek	SW074	0927_SW74_201102	02 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.198**	**0.272**	**0.305**	6.17	22.6	57.6	2,165	7.31
Skeleton Creek	SW075	0927_SW75_201102	02 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.24**	**0.316**	**0.359**	7.09	20.7	63.6	2,074	7.87
Skeleton Creek	SW076	0927_SW76_201102	02 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.47**	**0.62**	**0.703**	7.4	22.7	42.6	2,163	7.53
Skeleton Creek	SW077	0927_SW77_201104	04 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.226**	**0.298**	**0.343**	2.74	20.9	140.2	2,082	7.5
Skeleton Creek	SW078	0927_SW78_201104	04 Nov 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.28**	**0.35**	**0.39**	4.9	20.6	132.9	1,632	7.57
Skeleton Creek	SW078	0927_SW078_230317	17 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.41**	**0.49**	**0.49**	-	-	-	-	-
Skeleton Creek	SW078	0927_SW078_230321	21 Mar 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.41**	**0.49**	**0.49**	-	-	-	-	-
Skeleton Creek	SW078	0927_SW078_230803	03 Aug 2023	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.30**	**0.33**	**0.33**	8.88	12	65.4	4,856	8.14
Skeleton Creek	SW078	0927_SW078_240222	22 Feb 2024	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.46**	**0.56**	**0.58**	4.02	26.5	65.6	6,904	8.17
Skeleton Creek	SW078	0927_SW078_241008	08 Oct 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.252**	**0.314**	**0.332**	-	-	-	-	-
Skeleton Creek	SW078	0927_SW078_250528	28 May 2025	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.12**	**0.12**	**0.12**	-	-	-	-	-
Skeleton Creek	SW089	0927_SW89_201030	29 Oct 2020	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.281**	**0.342**	**0.361**	-	-	-	-	-
Skeleton Creek	SW089	0927_SW089_241120	20 Nov 2024	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.43**	**0.51**	**0.542**	8.1	15.9	19.7	35,027	8.01
Skeleton Creek	SW089	0927_SW089_250506	06 May 2025	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.056**	**0.069**	**0.081**	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

				Field						Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																						632	
ANZG 2026 Freshwater 90%																																		4						
PFAS NEMP 3.0 2025 Freshwater 95%																																						220	
ANZG 2026 Freshwater 95%																																		0.9						
PFAS NEMP 3.0 2025 Freshwater 99%																																						19	
ANZG 2026 Freshwater 99%																																		0.02						
Field ID	**Location Code**	**Investigation Area**	**Date**																																					
0927_MW108_190204*	MW108	On-base (other)	04 Feb 2019	-	-	**2.93**	**19.2**	-	**19,215**	**7.15**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.05**	**0.28**	<0.01	**0.06**	-	<0.01	<0.05	**0.02**	**0.1**	<0.01	<0.01	<0.01
0927_MW108_190718*	MW108	On-base (other)	18 Jul 2019	-	-	**3.16**	**18**	-	**22,047**	**7.11**	-	-	-	<10	**1,200**	<20	**1,200**	-	-	**8,600**	-	**0.6**	-	**13,000,000**	-	**1,200**	-	**13,000**	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_190204*	MW109	On-base (other)	04 Feb 2019	-	-	**1.84**	**19.4**	-	**763**	**7.06**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.01**	**0.01**	**0.13**	<0.01	**0.17**	-	<0.01	<0.05	<0.01	**0.02**	<0.01	<0.01	<0.01
0927_MW109_190718*	MW109	On-base (other)	18 Jul 2019	-	-	**2.11**	**19.4**	-	**866**	**7.08**	-	-	-	<10	**450**	<20	**450**	-	-	**39**	-	**0.5**	-	**500,000**	-	**9.4**	-	**500**	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_230316*	MW109	On-base (other)	16 Mar 2023	-	-	**0.74**	**18.8**	**105.5**	**971**	**7.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_230801*	MW109	On-base (other)	01 Aug 2023	-	-	**0.41**	**16.2**	**67.4**	**1,087**	**6.72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.41**	<0.02	**0.47**	-	<0.02	<0.1	<0.02	**0.06**	<0.02	**0.02**	<0.02
0927_MW109_240219*	MW109	On-base (other)	19 Feb 2024	-	-	**1.08**	**22.1**	**38.8**	**1,124**	**7.07**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_241010*	MW109	On-base (other)	10 Oct 2024	-	-	**8.24**	**18.7**	**14.8**	**961**	**7.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_250603*	MW109	On-base (other)	03 Jun 2025	-	-	**2.33**	**19.5**	**99.8**	**938**	**7.36**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_190204*	MW110	On-base (other)	04 Feb 2019	-	-	**0.65**	**19.5**	-	**6,431**	**7.55**	-	-	-	<10	**710**	<20	**710**	-	-	**1,800**	-	**0.5**	-	**3,200,000**	-	**400**	-	**3,200**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_191031*	MW110	On-base (other)	31 Oct 2019	-	-	**5.05**	**19.7**	-	**7,443**	**7.51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.7**	**3.9**	**46**	**1.4**	**51**	<0.01	<0.01	**0.84**	**1.3**	**9.6**	**0.93**	**1.5**	**0.02**
0927_MW110_230316*	MW110	On-base (other)	16 Mar 2023	-	-	**3.32**	**20.2**	**77.7**	**6,054**	**7.46**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.88**	**5.54**	**35.6**	**2.37**	**59.1**	-	<0.02	**0.3**	**1.28**	**7.88**	**0.66**	**1.37**	<0.01
0927_MW110_230802*	MW110	On-base (other)	02 Aug 2023	-	-	**3.36**	**15**	**50.1**	**4,908**	**7.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.22**	**4.84**	**33.8**	**2.10**	**62**	-	<0.03	**0.3**	**1.12**	**7.00**	**0.63**	**1.28**	<0.03
0927_MW110_240219*	MW110	On-base (other)	19 Feb 2024	-	-	**2.52**	**21.3**	**89.2**	**6,035**	**2.51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_241010*	MW110	On-base (other)	10 Oct 2024	-	-	**6.08**	**17.7**	**40**	**6,079**	**7.79**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_250603*	MW110	On-base (other)	03 Jun 2025	-	-	**3.03**	**16.5**	**98.5**	**5,368**	**7.77**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW111_190204*	MW111	On-base (other)	04 Feb 2019	-	-	**3.45**	**19.3**	-	**6,890**	**7.48**	-	-	-	**21**	**690**	<20	**720**	-	-	**2,100**	-	**0.6**	-	**4,300,000**	-	**340**	-	**4,300**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW112_190204*	MW112	On-base (other)	04 Feb 2019	-	-	**4.62**	**17**	-	**6,840**	**7.36**	-	-	-	<10	**340**	<20	**340**	-	-	**2,400**	-	<0.5	-	**5,500,000**	-	**340**	-	**5,500**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW113_190204*	MW113	On-base (other)	04 Feb 2019	-	-	**3.29**	**17.9**	-	**5,050**	**7.34**	-	-	-	<10	**450**	<20	**450**	-	-	**1,700**	-	<0.5	-	**3,400,000**	-	**310**	-	**3,400**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW114_190204*	MW114	On-base (other)	04 Feb 2019	-	-	**4.64**	**17.5**	-	**8,636**	**7.32**	-	-	-	<10	**340**	<20	**340**	-	-	**3,100**	-	<0.5	-	**5,600,000**	-	**490**	-	**5,600**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_190204*	MW115	On-base (other)	04 Feb 2019	-	-	**4.44**	**18.5**	-	**9,679**	**7.45**	-	-	-	<10	**590**	<20	**590**	-	-	**3,200**	-	<0.5	-	**6,600,000**	-	**620**	-	**6,600**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_230316*	MW115	On-base (other)	16 Mar 2023	-	-	**1.03**	**24.3**	**73.9**	**6,036**	**7.79**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	**0.01**	<0.02	**0.02**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02
0927_MW115_230730*	MW115	On-base (other)	30 Jul 2023	-	-	**1.21**	**13.4**	**121**	**4,385**	**7.76**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_240219*	MW115	On-base (other)	19 Feb 2024	-	-	**1.15**	**22.5**	**-7**	**5,532**	**7.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_241009*	MW115	On-base (other)	09 Oct 2024	-	-	-	**18.5**	**48.9**	**5,840**	**7.88**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_250603*	MW115	On-base (other)	03 Jun 2025	-	-	**2.14**	**16.1**	**103.2**	**4,540**	**7.96**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW116_190206*	MW116	On-base (other)	06 Feb 2019	-	-	**0.49**	**18.6**	-	**7,399**	**7.53**	-	-	-	<10	**410**	<20	**420**	-	-	**2,400**	-	**0.5**	-	**4,900,000**	-	**420**	-	**4,900**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_190205*	MW117	On-base (other)	05 Feb 2019	-	-	**2.53**	**18.9**	-	**6,726**	**7.43**	-	-	-	<10	**640**	<20	**640**	-	-	**2,200**	-	**0.5**	-	**4,500,000**	-	**350**	-	**4,500**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_230316*	MW117	On-base (other)	16 Mar 2023	-	-	**3.43**	**21.7**	**64**	**7,576**	**7.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.3**	**12.3**	**54.3**	**1.81**	**12.1**	-	<0.02	**0.6**	**2.85**	**16.8**	**1.22**	**1.53**	<0.02
0927_MW117_230801*	MW117	On-base (other)	01 Aug 2023	-	-	**3.5**	**16.9**	**-14.8**	**6,508**	**7.55**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.07**	**4.31**	**29.4**	**0.74**	**13.4**	-	<0.02	**0.5**	**1.54**	**7.72**	**0.64**	**0.89**	<0.02
0927_MW117_240219*	MW117	On-base (other)	19 Feb 2024	-	-	**4.89**	**19.9**	**88.8**	**7,547**	**7.44**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_241010*	MW117	On-base (other)	10 Oct 2024	-	-	**5.3**	**17.6**	**67**	**8,404**	**7.64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_250603*	MW117	On-base (other)	03 Jun 2025	-	-	**3.57**	**16.4**	**93.2**	**6,559**	**7.82**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW134_190716*	MW134	On-base (other)	16 Jul 2019	-	-	**3.16**	**17**	-	**7,616**	**7.52**	-	-	-	<10	**370**	<20	**370**	-	-	**2,500**	-	**1.1**	-	**3,700,000**	-	**380**	-	**3,700**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_200124*	MW140	On-base (other)	24 Jan 2020	-	-	**2.21**	**18.3**	-	**8,449**	**7.09**	-	-	-	<10	**630**	<20	**630**	-	-	**3,300**	-	<0.5	-	**5,100,000**	-	**490**	-	**5,100**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_230316*	MW140	On-base (other)	16 Mar 2023	-	-	**1.59**	**21**	**-11**	**9,913**	**7.01**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.08**	**0.52**	<0.02	**0.44**	-	<0.02	<0.1	**0.03**	**0.12**	<0.02	**0.02**	<0.02
0927_MW140_230801*	MW140	On-base (other)	01 Aug 2023	-	-	**1.76**	**16.6**	**37.9**	**8,536**	**7.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.07**	**0.55**	<0.02	**0.73**	-	<0.02	<0.1	<0.02	**0.09**	<0.02	**0.02**	<0.02
0927_MW140_240219*	MW140	On-base (other)	19 Feb 2024	-	-	**0.66**	**20.9**	**-95.6**	**1,205**	**7.19**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_241009*	MW140	On-base (other)	09 Oct 2024	-	-	**0.45**	**17.9**	**57.1**	**11,036**	**7.29**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_250603*	MW140	On-base (other)	03 Jun 2025	-	-	**2.66**	**16.5**	**89.7**	**9,017**	**7.75**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_180816*	MW144	On-base (other)	16 Aug 2018	-	-	**3.9**	**17.6**	-	**10,080**	**7.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.1**	**0.8**	**0.03**	**1.5**	-	<0.01	<0.05	**0.03**	**0.13**	**0.01**	**0.03**	<0.01
0927_MW144_230316*	MW144	On-base (other)	16 Mar 2023	-	-	**2.17**	**23.3**	**78.2**	**9,847**	**7.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.07**	**0.52**	**0.02**	**0.83**	-	<0.02	<0.1	<0.02	**0.09**	<0.02	**0.02**	<0.02
0927_MW144_230801*	MW144	On-base (other)	01 Aug 2023	-	-	**3.44**	**16**	**51.1**	**8,490**	**7.54**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.07**	**0.55**	**0.02**	**0.86**	-	<0.02	<0.1	**0.03**	**0.09**	<0.02	**0.02**	<0.02
0927_MW144_240219*	MW144	On-base (other)	19 Feb 2024	-	-	**3.31**	**20.7**	**-1.7**	**8,398**	**7.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_241009*	MW144	On-base (other)	09 Oct 2024	-	-	**0**	**18**	**56.3**	**8,748**	**7.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_250603*	MW144	On-base (other)	03 Jun 2025	-	-	**3.36**	**17.6**	**83.3**	**7,399**	**8.15**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW130/1_180816	MW144	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**560**	-	**560**	-	-	**2,700**	-	-	-	**6,300,000**	-	**460**	-	**6,300**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_240220	MW144	On-base (other)	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.08**	**0.57**	**0.03**	**0.96**	-	<0.02	<0.1	**0.03**	**0.09**	<0.02	**0.02**	<0.02
0927_MW144_241009	MW144	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.12**	**0.90**	**0.027**	**1.2**	<0.002	<0.001	**0.015**	**0.045**	**0.14**	**0.011**	**0.022**	<0.001
0927_MW144_250603	MW144	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.09**	**0.64**	**0.03**	**0.91**	<0.02	<0.02	<0.1	**0.03**	**0.10**	<0.02	**0.02**	<0.02
0927_MW145_180816*	MW145	On-base (other)	16 Aug 2018	-	-	**7.02**	**17.3**	-	**9,354**	**7.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.09**	**0.14**	**0.84**	**0.05**	**1.3**	-	<0.01	<0.05	**0.02**	**0.13**	**0.01**	**0.03**	<0.01
0927_GW130/2_180816	MW145	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**580**	-	**580**	-	-	**2,700**	-	-	-	**6,300,000**	-	**440**	-	**6,300**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_180816*	MW146	On-base (other)	16 Aug 2018	-	-	**2.5**	**17.3**	-	**9,610**	**7.42**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.09**	**0.71**	**0.04**	**1.7**	-	<0.01	<0.05	**0.03**	**0.11**	**0.01**	**0.02**	<0.01
0927_MW146_230316*	MW146	On-base (other)	16 Mar 2023	-	-	**2.31**	**24**	**77.2**	**10,238**	**7.29**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.08**	**0.48**	**0.02**	**0.97**	-	<0.02	<0.1	<0.02	**0.09**	<0.02	**0.02**	<0.02
0927_MW146_230801*	MW146	On-base (other)	01 Aug 2023	-	-	**2.39**	**16.4**	**4.4**	**7,769**	**7.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.07**	**0.49**	<0.02	**1**	-	<0.02	<0.1	<0.02	**0.08**	<0.02	**0.02**	<0.02
0927_MW146_240219*	MW146	On-base (other)	19 Feb 2024	-	-	**2.29**	**22.5**	**-0.8**	**9,115**	**7.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_241009*	MW146	On-base (other)	09 Oct 2024	-	-	**2.04**	**16.7**	**60.8**	**6,152**	**7.42**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_250603*	MW146	On-base (other)	03 Jun 2025	-	-	**2.9**	**16.1**	**97.5**	**7,906**	**7.82**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW130/3_180816	MW146	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**470**	-	**470**	-	-	**2,700**	-	-	-	**5,000,000**	-	**420**	-	**5,000**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_240220	MW146	On-base (other)	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.08**	**0.53**	**0.02**	**0.8**	-	<0.02	<0.1	<0.02	**0.08**	<0.02	**0.01**	<0.02
0927_MW146_241009	MW146	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.080**	**0.072**	**0.55**	**0.023**	**0.66**	<0.001	<0.001	**0.007**	**0.016**	**0.069**	**0.010**	**0.009**	<0.001
0927_MW146_250603	MW146	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.08**	**0.50**	**0.02**	**0.91**	<0.02	<0.02	<0.1	<0.02	**0.08**	<0.02	**0.01**	<0.02
0927_MW165_180816*	MW165	On-base (other)	16 Aug 2018	-	-	**4.79**	**17.3**	-	**8,604**	**7.37**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.34**	**0.01**	**0.53**	-	<0.01	<0.05	**0.02**	**0.07**	<0.01	**0.01**	<0.01
0927_MW165_191031*	MW165	On-base (other)	31 Oct 2019	-	-	**0.42**	**19.3**	-	**10,562**	**5.46**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.04**	**0.34**	<0.01	**0.35**	<0.01	<0.01	<0.05	**0.02**	**0.08**	<0.01	**0.01**	<0.01
0927_GW514/1_180816	MW165	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**430**	-	**430**	-	-	**2,600**	-	-	-	**5,200,000**	-	**380**	-	**5,200**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW166_191031*	MW166	On-base (other)	31 Oct 2019	-	-	**2.44**	**18.7**	-	**10,876**	**7.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.05**	**0.52**	**0.01**	**0.67**	<0.01	<0.01	<0.05	**0.02**	**0.11**	<0.01	**0.02**	<0.01
0927_GW549/1_191031	MW166	On-base (other)	31 Oct 2019	-	-	-	-	-	-	-	-	-	-	<10	**470**	-	**470**	-	-	**3,700**	-	-	-	**5,200,000**	-	**490**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_131115*	MW175	On-base (other)	15 Nov 2013	-	-	**4.18**	**18**	**106.6**	**8,403**	**7.53**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,000**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_160519*	MW175	On-base (other)	19 May 2016	-	-	**3.86**	**18**	**130**	**9,070**	**7.24**	-	-	-	<10	**490**	-	-	-	-	**2,500**	-	<0.5	-	-	-	-	**140**	**5,200**	**0.06**	-	**0.51**	-	**0.67**	-	<0.01	<0.05	**0.02**	**0.08**	**0.01**	**0.01**	<0.01
0927_MW175_180816*	MW175	On-base (other)	16 Aug 2018	-	-	**4.65**	**17.7**	-	**7,955**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.36**	**0.01**	**0.49**	-	<0.01	<0.05	**0.02**	**0.07**	<0.01	**0.01**	<0.01
0927_MW175_191031*	MW175	On-base (other)	31 Oct 2019	-	-	**2.56**	**18.5**	-	**10,661**	**7.24**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.04**	**0.43**	<0.01	**0.57**	<0.01	<0.01	<0.05	**0.02**	**0.08**	<0.01	**0.02**	<0.01
0927_MW175_210705*	MW175	On-base (other)	05 Jul 2021	-	**4.09**	**3.04**	**16.7**	**255.8**	**10,903**	**7.28**	-	-	-	-	-	-	-	-	**3.04**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_220617*	MW175	On-base (other)	17 Jun 2022	-	-	**3.01**	**17.02**	**147.5**	**10,751**	**7.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_230621*	MW175	On-base (other)	21 Jun 2023	-	**3.89**	**3.34**	**15.5**	**-0.1**	**10,214**	**7.26**	-	-	-	-	-	-	-	-	**3.34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW598/1_180816	MW175	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**370**	-	**370**	-	-	**2,300**	-	-	-	**4,400,000**	-	**340**	-	**4,400**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW108_190718	MW108	On-base (other)	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.05**	**0.29**	<0.01	**0.07**	<0.01	<0.01	<0.05	**0.02**	**0.11**	<0.01	**0.01**	<0.01
0927_MW109_190718	MW109	On-base (other)	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.01**	**0.01**	**0.15**	<0.01	**0.18**	<0.01	<0.01	<0.05	<0.01	**0.02**	<0.01	<0.01	<0.01
0927_MW109_230317	MW109	On-base (other)	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.40**	<0.02	**0.41**	-	<0.02	<0.1	<0.02	**0.06**	<0.02	**0.01**	<0.02
0927_MW109_240220	MW109	On-base (other)	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	**0.21**	<0.02	**0.29**	-	<0.02	<0.1	<0.02	**0.03**	<0.02	<0.01	<0.02
0927_MW109_241010	MW109	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.007**	**0.009**	**0.095**	**0.004**	**0.19**	<0.001	<0.001	<0.005	**0.003**	**0.011**	**0.001**	**0.004**	<0.001
0927_MW109_250603	MW109	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	<0.02	**0.14**	<0.02	**0.2**	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02
0927_MW110_190204	MW110	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.8**	**5**	**36**	**1.8**	**40**	-	<0.01	**0.93**	**1.2**	**8.8**	**0.74**	**1.6**	<0.01
0927_MW110_191031	MW110	On-base (other)	31 Oct 2019	-	-	-	-	-	-	-	-	-	-	**36**	**770**	-	-	-	-	**1,700**	-	-	-	-	-	**470**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_191031	MW110	On-base (other)	31 Oct 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.2**	**3.3**	**52**	**1.4**	**56**	<0.01	<0.01	**0.88**	**1.2**	**11**	**0.87**	**2.3**	**0.02**
0927_MW110_240220	MW110	On-base (other)	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.38**	**4.92**	**48.3**	**2.20**	**89.5**	-	<0.03	**0.5**	**1.67**	**7.98**	**0.82**	**1.59**	<0.03
0927_MW110_241010	MW110	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.4**	**3.6**	**31**	**1.2**	**56**	<0.0625	<0.0625	**0.51**	**1.3**	**6.6**	**0.49**	**1.00**	**0.007**
0927_MW110_250603	MW110	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.65**	**6.41**	**38.1**	**2.62**	**80.3**	**0.21**	<0.02	**0.9**	**1.33**	**7.38**	**0.62**	**1.38**	<0.02
0927_MW111_190204	MW111	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.07**	**0.48**	<0.01	**0.07**	-	<0.01	<0.05	**0.02**	**0.14**	<0.01	**0.02**	<0.01
0927_MW112_190204	MW112	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	**0.01**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
0927_MW113_190204	MW113	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	**0.02**	<0.01	**0.03**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
0927_MW114_190204	MW114	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
0927_MW115_190204	MW115	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.01	**0.01**	<0.01	<0.01	-	<0.01	<0.05	<0.01	**0.01**	<0.01	<0.01	<0.01
0927_MW115_230802	MW115	On-base (other)	02 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02
0927_MW115_240220	MW115	On-base (other)	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	<0.02	<0.01	<0.02	**0.01**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02
0927_MW115_241009	MW115

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Table B3 – Groundwater Analytical Results

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Table B3 – Groundwater Analytical Results

			Field							Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
			Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
			µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																						632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																						220	
ANZG 2026 Freshwater 95%																																0.9								
PFAS NEMP 3.0 2025 Freshwater 99%																																						19	
ANZG 2026 Freshwater 99%																																0.02								
Field ID	**Location Code**	**Investigation Area**	**Date**																																					
0927_MW208_250603	MW208	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.80**	**5.11**	**34.4**	**2.43**	**75**	**0.44**	**0.07**	**0.9**	**1.48**	**7.06**	**0.87**	**1.56**	*<0.02*
0927_QC101_230801	MW208	On-base SA01	01 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.82**	**2.24**	**15.7**	**1.26**	**43.6**	-	**0.05**	**0.2**	**0.62**	**3.20**	**0.41**	**0.85**	*<0.03*
0927_QC102_230316	MW208	On-base SA01	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6.90**	**8.76**	**55.7**	**4.01**	**120**	-	**0.06**	**1.2**	**2.58**	**10.1**	**1.78**	**3.45**	*<0.02*
0927_QC103_250603	MW208	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.75**	**4.58**	**30.5**	**2.11**	**74.2**	**0.40**	**0.07**	**0.9**	**1.47**	**7.16**	**0.94**	**1.56**	*<0.02*
0927_QC201_230801	MW208	On-base SA01	01 Jan 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.9**	**2.3**	**17**	**1.1**	**54**	*<0.1*	*<0.1*	**0.21**	**0.84**	**2.9**	**0.55**	**1.2**	**0.01**
0927_QC202_230316	MW208	On-base SA01	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**	**11**	**80**	**5.0**	**210**	*<1*	*<1*	**2.1**	**3.0**	**14**	**2.3**	**5.3**	*<1*
0927_QC203_250603	MW208	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.2**	**4.4**	**33**	**2.0**	**81**	**0.26**	*<0.01*	**0.55**	**1.5**	**6.0**	**0.89**	**1.9**	*<0.01*
0927_MW209_180806*	MW209	On-base SA01	06 Aug 2018	-	-	**4.79**	**17.8**	-	**10,790**	**7.49**	-	-	-	**23**	**980**	-	**1,000**	-	-	**2,800**	-	-	-	**6,800,000**	-	**680**	-	**6,800**	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC102_230801	MW118	On-base SA01	01 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.35**	**3.75**	**25.1**	**1.13**	**21.5**	-	*<0.02*	**0.3**	**1.15**	**5.86**	**0.60**	**1.16**	*<0.02*
0927_QC124_190205	MW118	On-base SA01	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	**17**	**420**	*<20*	**440**	-	-	**930**	-	**1.2**	-	**2,200,000**	-	**270**	-	**2,200**	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC124_190205	MW118	On-base SA01	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.7**	**1.8**	**14**	**1.2**	**21**	-	*<0.01*	**0.35**	**0.63**	**3.7**	**0.32**	**0.53**	*<0.01*
0927_QC202_230801	MW118	On-base SA01	01 Jan 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.2**	**4.2**	**29**	**1.2**	**28**	*<0.06*	*<0.06*	**0.30**	**0.99**	**5.5**	**0.69**	**1.0**	**0.01**
0927_MW233_231017*	MW233	On-base SA01	17 Oct 2023	-	-	**4.37**	**31.4**	**40.8**	**1.6**	**5.83**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW239_231017*	MW239	On-base SA01	17 Oct 2023	-	-	**0.3**	**18.2**	**-95.9**	**880**	**6.93**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW240_240517*	MW240	On-base SA01	17 May 2024	-	-	**0.67**	**17.4**	**23.1**	**932**	**5.99**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW240_240517	MW240	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW241_240517*	MW241	On-base SA01	17 May 2024	-	-	**2.31**	**18.7**	**22.6**	**859**	**6.06**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW241_240517	MW241	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**11**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW242_240517*	MW242	On-base SA01	17 May 2024	-	-	**0.04**	**20.1**	**11.3**	**1,066**	**6.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW242_240517	MW242	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**104**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW243_250113	MW243	On-base SA01	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,200**	**0.03**	**0.04**	**0.39**	**0.01**	**0.21**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.06**	*<0.01*	**0.01**	*<0.01*
0927_MW243_250113	MW243	On-base SA01	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW100_190205*	MW100	On-base SA02	05 Feb 2019	-	-	**5.34**	**18.2**	-	**7,851**	**7.6**	-	-	-	*<10*	**340**	*<20*	**340**	-	-	**2,600**	-	*<0.5*	-	**2,300,000**	-	**370**	-	**2,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW101_190205*	MW101	On-base SA02	05 Feb 2019	-	-	**5.8**	**19.2**	-	**3,930**	**8.01**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.06**	**0.4**	*<0.02*	**0.31**	-	*<0.02*	*<0.1*	**0.05**	**0.11**	**0.02**	**0.02**	*<0.02*
0927_MW102_190205*	MW102	On-base SA02	05 Feb 2019	-	-	**3.02**	**18.4**	-	**7,523**	**7.61**	-	-	-	*<10*	**360**	*<20*	**360**	-	-	**2,500**	-	*<0.5*	-	**4,500,000**	-	**420**	-	**4,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_230316*	MW102	On-base SA02	16 Mar 2023	-	-	**4.34**	**22.4**	**79**	**7,790**	**7.66**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.18**	**1.37**	**8.10**	**0.74**	**9.32**	-	*<0.02*	**0.2**	**0.44**	**2.05**	**0.25**	**0.37**	*<0.02*
0927_MW102_230801*	MW102	On-base SA02	01 Aug 2023	-	-	**3.49**	**16.4**	**-6.2**	**8,404**	**7.53**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.15**	**1.23**	**8.05**	**0.64**	**10.1**	-	*<0.02*	**0.2**	**0.46**	**1.90**	**0.24**	**0.39**	*<0.02*
0927_MW102_240219*	MW102	On-base SA02	19 Feb 2024	-	-	**4.88**	**19.9**	**82.8**	**7,502**	**7.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_241010*	MW102	On-base SA02	10 Oct 2024	-	-	**4.37**	**18.1**	**46.8**	**7,960**	**7.78**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_250603*	MW102	On-base SA02	03 Jun 2025	-	-	**4.57**	**15.5**	**115.1**	**5,904**	**7.76**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_190205*	MW103	On-base SA02	05 Feb 2019	-	-	**2.36**	**19.5**	-	**2,663**	**7.63**	-	-	-	**11**	**880**	*<20*	**900**	-	-	**330**	-	**1.2**	-	**1,600,000**	-	**120**	-	**1,600**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_230315*	MW103	On-base SA02	15 Mar 2023	-	-	**1.16**	**19.3**	**31.9**	**4,979**	**7.65**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_230802*	MW103	On-base SA02	02 Aug 2023	-	-	**1.72**	**15.1**	**3.4**	**3,221**	**7.84**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.58**	**2.34**	**12.2**	**0.44**	**9.46**	-	*<0.02*	**0.3**	**0.85**	**3.69**	**0.26**	**0.47**	*<0.02*
0927_MW103_240219*	MW103	On-base SA02	19 Feb 2024	-	-	**2.05**	**18.7**	**71.5**	**2,570**	**7.69**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_241010*	MW103	On-base SA02	10 Oct 2024	-	-	**1.7**	**17.4**	**38.2**	**2,215**	**7.99**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_250603*	MW103	On-base SA02	03 Jun 2025	-	-	**5.14**	**17.2**	**69.8**	**1,725**	**8.65**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW104_190205*	MW104	On-base SA02	05 Feb 2019	-	-	**5.43**	**18.1**	-	**1,185**	**8.25**	-	-	-	**25**	**500**	*<20*	**530**	-	-	**110**	-	**0.9**	-	**860,000**	-	**48**	-	**860**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_190205*	MW105	On-base SA02	05 Feb 2019	-	-	**3.8**	**18.6**	-	**2,239**	**8.04**	-	-	-	**32**	**1,200**	*<20*	**1,200**	-	-	**160**	-	**1.7**	-	**1,700,000**	-	**110**	-	**1,700**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_230316*	MW105	On-base SA02	16 Mar 2023	-	-	**0.88**	**21.3**	**-97.5**	**4,449**	**7.54**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15.5**	**17.4**	**113**	**3.76**	**69.8**	-	*<0.02*	**1.3**	**7.88**	**51.6**	**2.86**	**4.04**	**0.02**
0927_MW105_230802*	MW105	On-base SA02	02 Aug 2023	-	-	**1.6**	**15.6**	**86.4**	**2,852**	**7.37**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9.39**	**12.1**	**82.5**	**3.28**	**51.7**	-	*<0.02*	**1.8**	**5.58**	**33.2**	**2.19**	**3.20**	**0.02**
0927_MW105_240219*	MW105	On-base SA02	19 Feb 2024	-	-	**1.41**	**21.2**	**-20.4**	**3,270**	**7.46**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_241010*	MW105	On-base SA02	10 Oct 2024	-	-	**4.1**	**17.3**	**31.6**	**1,600**	**7.81**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_250603*	MW105	On-base SA02	03 Jun 2025	-	-	**2.05**	**17.1**	**61.9**	**2,898**	**8.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW106_190204*	MW106	On-base SA02	04 Feb 2019	-	-	**0.66**	**20.7**	-	**4,717**	**7.7**	-	-	-	**58**	**1,400**	*<20*	**1,500**	-	-	**720**	-	**1.4**	-	**3,200,000**	-	**380**	-	**3,200**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_190204*	MW107	On-base SA02	04 Feb 2019	-	-	**3.96**	**18.6**	-	**6,220**	**7.31**	-	-	-	*<10*	**1,600**	*<20*	**1,600**	-	-	**1,600**	-	**0.6**	-	**4,300,000**	-	**270**	-	**4,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_230316*	MW107	On-base SA02	16 Mar 2023	-	-	**1.04**	**21.1**	**-97.2**	**8,242**	**6.92**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.64**	**0.76**	**4.36**	**0.15**	**0.42**	-	*<0.02*	*<0.1*	**0.20**	**1.08**	**0.14**	**0.17**	*<0.02*
0927_MW107_230801*	MW107	On-base SA02	01 Aug 2023	-	-	**1.38**	**15.6**	**-52**	**6,053**	**7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.62**	**0.70**	**5.12**	**0.12**	**0.43**	-	*<0.02*	*<0.1*	**0.20**	**1.08**	**0.15**	**0.17**	*<0.02*
0927_MW107_240219*	MW107	On-base SA02	19 Feb 2024	-	-	**0.91**	**21**	**84.9**	**8,121**	**7.02**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_241010*	MW107	On-base SA02	10 Oct 2024	-	-	**4.62**	**17.5**	**61.8**	**8,503**	**7.02**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_250603*	MW107	On-base SA02	03 Jun 2025	-	-	**2.07**	**17**	**146.4**	**7,241**	**7.37**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_190205*	MW120	On-base SA02	05 Feb 2019	-	-	**4.35**	**19**	-	**5,742**	**7.72**	-	-	-	*<10*	**400**	*<20*	**400**	-	-	**1,800**	-	*<0.5*	-	**3,500,000**	-	**340**	-	**3,500**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_230315*	MW120	On-base SA02	15 Mar 2023	-	-	**1.34**	**21.4**	**60.3**	**3,099**	**8.55**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_230802*	MW120	On-base SA02	02 Aug 2023	-	-	**0.89**	**16.6**	**-26.1**	**2,154**	**8.69**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.68**	**0.68**	**3.91**	**0.19**	**4.56**	-	*<0.02*	**0.1**	**0.33**	**1.26**	**0.12**	**0.21**	*<0.02*
0927_MW120_240219*	MW120	On-base SA02	19 Feb 2024	-	-	**1.07**	**22.8**	**-16.5**	**2,486**	**8.62**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_241010*	MW120	On-base SA02	10 Oct 2024	-	-	**1.45**	**18**	**29.3**	**2,324**	**8.72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_250603*	MW120	On-base SA02	03 Jun 2025	-	-	**1.6**	**16.7**	**70.1**	**2,415**	**8.77**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW141_180806*	MW141	On-base SA02	06 Aug 2018	-	-	**0.19**	**18.3**	-	**8,065**	**7.15**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.04**	**0.31**	**0.01**	**0.32**	-	*<0.01*	*<0.05*	**0.02**	**0.03**	*<0.01*	**0.01**	*<0.01*
0927_MWA_180806	MW141	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**410**	-	**410**	-	-	**2,200**	-	-	-	**4,600,000**	-	**380**	-	**4,600**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW142_180806*	MW142	On-base SA02	06 Aug 2018	-	-	**6.9**	**18.6**	-	**8,231**	**7.44**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.04**	**0.32**	**0.01**	**0.26**	-	*<0.01*	*<0.05*	**0.03**	**0.07**	*<0.01*	**0.01**	*<0.01*
0927_MWB_180806	MW142	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**420**	-	**420**	-	-	**2,200**	-	-	-	**4,900,000**	-	**450**	-	**4,900**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MWB_180806	MW142	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.04**	**0.32**	**0.01**	**0.23**	-	*<0.01*	*<0.05*	**0.03**	**0.07**	*<0.01*	**0.01**	*<0.01*
0927_QC203_180806	MW142	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.02*	*<0.02*	**0.1**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*
0927_MW143_180806*	MW143	On-base SA02	06 Aug 2018	-	-	**9.11**	**18.1**	-	**5,204**	**7.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.04**	**0.31**	**0.01**	**1.3**	-	**0.02**	**0.05**	**0.06**	**0.07**	**0.01**	**0.02**	*<0.01*
0927_PW1_180806	MW143	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**190**	-	**190**	-	-	**1,500**	-	-	-	**3,300,000**	-	**230**	-	**3,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_121030*	MW148	On-base SA02	30 Oct 2012	-	-	**0.41**	**22.3**	**-82.9**	**982**	**7.56**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_131111*	MW148	On-base SA02	11 Nov 2013	-	-	**0.11**	**19.2**	**-7.1**	**1,054**	**7.71**	-	-	-	*<2*	**440**	*<2*	**440**	-	-	**52**	-	**1**	-	-	-	**28**	-	**620**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_160519*	MW148	On-base SA02	19 May 2016	-	-	**0.51**	**18.5**	**109**	**958**	**6.04**	-	-	-	*<10*	**580**	-	-	-	-	**43**	-	*<0.5*	-	-	-	-	**9.7**	**690**	**0.02**	-	**0.08**	-	*<0.01*	-	*<0.01*	*<0.05*	*<0.01*	**0.03**	*<0.01*	*<0.01*	*<0.01*
0927_MW148_210628*	MW148	On-base SA02	28 Jun 2021	**1,010**	**4.79**	**0.36**	**17.2**	**13.1**	**1,008**	**7.57**	-	-	-	-	-	-	-	-	-	-	**0.36**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_220614*	MW148	On-base SA02	14 Jun 2022	-	-	**0.5**	**18.86**	**108.9**	**1,015**	**7.49**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_230613*	MW148	On-base SA02	13 Jun 2023	-	**4.47**	**0.35**	**18.1**	**-1.8**	**929**	**7.78**	-	-	-	-	-	-	-	-	-	-	**0.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_231016*	MW148	On-base SA02	16 Oct 2023	-	-	**6.57**	**17.7**	**118.6**	**891**	**5.96**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_231211*	MW148	On-base SA02	11 Dec 2023	-	-	**0.9**	**18.42**	**41.1**	**712**	**6.71**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_121030*	MW149	On-base SA02	30 Oct 2012	-	-	**0.68**	**22.3**	**-226.3**	**2,897**	**7.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,680**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_140430*	MW149	On-base SA02	30 Apr 2014	-	-	**0.45**	**17.9**	**-229.3**	**2,483**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**40**	**1,800**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_180807*	MW149	On-base SA02	07 Aug 2018	-	-	**0.23**	**18**	-	**3,847**	**7.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.1**	**0.14**	**1.5**	**0.06**	**3**	-	*<0.01*	**0.05**	**0.06**	**0.36**	**0.05**	**0.06**	*<0.01*
0927_MW149_231016*	MW149	On-base SA02	16 Oct 2023	-	-	**7.67**	**19.9**	**92.7**	**52.2**	**6.44**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**122**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_231211*	MW149	On-base SA02	11 Dec 2023	-	-	**0.94**	**17.3**	**16.4**	**2,357**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**132**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_250603*	MW149	On-base SA02	03 Jun 2025	-	-	**2.13**	**16.7**	**-39**	**2,489**	**8.34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/3_180807	MW149	On-base SA02	07 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**910**	-	**910**	-	-	**810**	-	-	-	**2,300,000**	-	**190**	-	**2,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_250604	MW149	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.05**	**0.51**	*<0.02*	**0.68**	*<0.02*	*<0.02*	*<0.10*	*<0.02*	**0.12**	*<0.02*	**0.02**	*<0.02*
0927_MW150_121030*	MW150	On-base SA02	30 Oct 2012	-	-	**0.58**	**21.7**	**-219.1**	**938**	**7.83**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**584**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_140430*	MW150	On-base SA02	30 Apr 2014	-	-	**0.78**	**18.3**	**-265.8**	**1,537**	**7.72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**36**	**1,200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_180807*	MW150	On-base SA02	07 Aug 2018	-	-	**0.32**	**19.2**	-	**1,045**	**7.75**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.47**	**0.52**	**3.5**	**0.27**	**8.1**	-	**0.02**	**0.24**	**0.24**	**1.8**	**0.14**	**0.19**	*<0.01*
0927_MW150_231016*	MW150	On-base SA02	16 Oct 2023	-	-	**1.58**	**18.7**	**120.5**	**878**	**5.66**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**23**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_231211*	MW150	On-base SA02	11 Dec 2023	-	-	**4.87**	**18.8**	**13.4**	**343**	**7.47**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**20**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/4_180807	MW150	On-base SA02	07 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**580**	-	**590**	-	-	**39**	-	-	-	**680,000**	-	**18**	-	**680**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_121030*	MW151	On-base SA02	30 Oct 2012	-	-	**2.39**	**18.5**	**85.7**	**4,152**	**7.45**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,790**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_131112*	MW151	On-base SA02	12 Nov 2013	-	-	**3.14**	**17.1**	**107**	**5,237**	**7.51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,500**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_140430*	MW151	On-base SA02	30 Apr 2014	-	-	**1.97**	**17.5**	**-256.6**	**4,109**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**50**	**2,600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_160519*	MW151	On-base SA02	19 May 2016	-	-	**1.6**	**19.5**	**165**	**4,680**	**5.83**	-	-	-	*<10*	**390**	-	-	-	-	**1,300**	-	*<0.5*	-	-	-	-	**48**	**3,000**	**0.65**	-	**1.2**	-	**0.06**	-	*<0.01*	**0.1**	**0.15**	**0.77**	**0.13**	**0.15**	*<0.01*
0927_MW151_180817*	MW151	On-base SA02	17 Aug 2018	-	-	**2.04**	**18.2**	-	**4,538**	**7.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.42**	**0.48**	**3.2**	**0.27**	**7.1**	-	*<0.01*	**0.12**	**0.15**	**0.65**	**0.1**	**0.18**	*<0.01*
0927_MW151_210701*	MW151	On-base SA02	01 Jul 2021	-	-	**0.81**	**18.5**	**-31.4**	**4,519**	**7.46**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_220616*	MW151	On-base SA02	16 Jun 2022	-	-	**0.12**	**18.6**	**71.1**	**3,793**	**7.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_230615*	MW151	On-base SA02	15 Jun 2023	-	**4.81**	**0.92**	**18.2**	**98.1**	**4,012**	**7.33**	-	-	-	-	-	-	-	-	-	-	**0.92**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_231016*	MW151	On-base SA02	16 Oct 2023	-	-	**7.01**	**19.5**	**52.1**	**7.8**	**51.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_241212*	MW151	On-base SA02	12 Dec 2024	-	-	**3.17**	**19.35**	**42.5**	**247**	**5.17**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/5_180817	MW151	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**340**	-	**340**	-	-	**1,300**	-	-	-	**2,800,000

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Table B3 – Groundwater Analytical Results

				Field							Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																							632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																							220	
ANZG 2026 Freshwater 95%																																0.9								
PFAS NEMP 3.0 2025 Freshwater 99%																																							19	
ANZG 2026 Freshwater 99%																																0.02								
Field ID	**Location Code**	**Investigation Area**	**Date**																																						
0927_MW152_160519*	MW152	On-base SA02	19 May 2016	-	-	**0.81**	**20**	-	**1,033**	**6.11**	-	-	-	*<10*	**790**	-	-	-	-	**57**	-	*<0.5*	-	-	-	*<5*	**930**	**1.4**	-	**3.4**	-	**0.55**	-	*<0.01*	**0.16**	**0.44**	**2.3**	**0.4**	**0.31**	**0.01**
0927_MW152_180817*	MW152	On-base SA02	17 Aug 2018	-	-	**0.1**	**18.3**	-	**1,088**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.98**	**1.6**	**8.4**	**0.58**	**19**	-	**0.02**	**0.37**	**0.54**	**2.1**	**0.36**	**0.4**	**0.02**
0927_MW152_210701*	MW152	On-base SA02	01 Jul 2021	-	-	**0.17**	**18.1**	**-137.9**	**1,177**	**7.27**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_220616*	MW152	On-base SA02	16 Jun 2022	-	-	**1.01**	**18.97**	**-80**	**1,019**	**7.17**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230316*	MW152	On-base SA02	16 Mar 2023	-	-	**0.83**	**20.9**	**-43.9**	**1,142**	**7.11**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230613*	MW152	On-base SA02	13 Jun 2023	-	**4.37**	**0.36**	**18.5**	**42.5**	**997**	**4.84**	-	-	-	-	-	-	-	-	-	-	**0.36**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230802*	MW152	On-base SA02	02 Aug 2023	-	-	**1.6**	**18.1**	**-19**	**670**	**7.28**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231016*	MW152	On-base SA02	16 Oct 2023	-	-	**5.17**	**21.1**	**155.2**	**2.6**	**5.53**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231211*	MW152	On-base SA02	11 Dec 2023	-	-	**0.23**	**18.8**	**6.4**	**1,003**	**7.21**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_240221*	MW152	On-base SA02	21 Feb 2024	-	-	**1.43**	**22.8**	**-47.6**	**1,017**	**7.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.02**	**1.86**	**8.79**	**0.48**	**10.6**	-	*<0.02*	**0.2**	**0.65**	**1.89**	**0.34**	**0.39**	**0.03**
0927_MW152_241010*	MW152	On-base SA02	10 Oct 2024	-	-	**1.52**	**18.8**	**35.7**	**1,072**	**7.73**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_250603*	MW152	On-base SA02	03 Jun 2025	-	-	**1.34**	**18**	**39.8**	**810**	**7.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/6_180817	MW152	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**660**	-	**660**	-	-	**53**	-	-	-	**820,000**	-	**7.7**	-	**820**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230317	MW152	On-base SA02	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.30**	**3.04**	**10.5**	**0.49**	**8.53**	-	*<0.02*	**0.4**	**0.69**	**2.58**	**0.42**	**0.40**	**0.02**
0927_MW152_230801	MW152	On-base SA02	01 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.20**	**1.20**	**4.93**	**0.24**	**4.84**	-	*<0.02*	*<0.1*	**0.32**	**1.11**	**0.18**	**0.20**	*<0.02*
0927_MW152_231017	MW152	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231212	MW152	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<1*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_241010	MW152	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.19**	**0.80**	**7.6**	**0.49**	**16**	**0.11**	*<0.03*	**0.19**	**0.48**	**1.7**	**0.61**	**0.27**	**0.047**
0927_MW152_250603	MW152	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.44**	**0.43**	**2.55**	**0.15**	**3.38**	**0.03**	*<0.02*	**0.2**	**0.18**	**0.66**	**0.11**	**0.13**	*<0.02*
0927_QC202_241010	MW152	On-base SA02	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.74**	**0.77**	**6.6**	**0.44**	**20**	-	**0.035**	**0.26**	**0.57**	**1.9**	**0.56**	**0.44**	**0.066**
0927_MW153_121101*	MW153	On-base SA02	01 Nov 2012	-	-	**4.15**	**16.9**	**442.8**	**1,630**	**6.94**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,060**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_131113*	MW153	On-base SA02	13 Nov 2013	-	-	**1.86**	**15.5**	**254.3**	**1,875**	**7.11**	-	-	-	*<2*	**720**	*<2*	**720**	-	-	**180**	-	**0.27**	-	-	-	**93**	-	**1,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_140430*	MW153	On-base SA02	30 Apr 2014	-	-	**2.6**	**17.8**	**-111**	**1,552**	**7.21**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**29**	**1,200**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_160518*	MW153	On-base SA02	18 May 2016	-	-	**0.55**	**19.2**	**93**	**1,214**	**6.22**	-	-	-	*<10*	**610**	-	-	-	-	**130**	-	*<0.5*	-	-	-	-	**38**	**940**	**1.3**	-	**4.8**	-	**0.97**	-	*<0.01*	**0.22**	**0.45**	**1.8**	**0.24**	**0.22**	*<0.01*
0927_MW153_180808*	MW153	On-base SA02	08 Aug 2018		-	**5.12**	**18.2**	-	**1,457**	**7.11**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.4**	**1.5**	**6.1**	**0.22**	**3.6**	-	*<0.01*	**0.37**	**0.46**	**2.4**	**0.2**	**0.21**	*<0.01*
0927_MW153_210628*	MW153	On-base SA02	28 Jun 2021	**1,600**	**6.05**	**0.31**	**15.2**	**44.7**	**1,605**	**7.04**	-	-	-	-	-	-	-	-	-	-	**0.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_220614*	MW153	On-base SA02	14 Jun 2022	-	-	**0.1**	**17.6**	**-4.4**	**1,468**	**7.04**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_230613*	MW153	On-base SA02	13 Jun 2023	-	**5.73**	**0.32**	**17.5**	**0.32**	**1,646**	**7.3**	-	-	-	-	-	-	-	-	-	-	**0.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_250604*	MW153	On-base SA02	04 Jun 2025	-	-	**2.72**	**14.4**	**51.6**	**1,487**	**7.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/7_180808	MW153	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**660**	-	**660**	-	-	**120**	-	-	-	**910,000**	-	**70**	-	**910**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_250604	MW153	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.10**	**1.84**	**7.19**	**0.17**	**2.69**	*<0.02*	*<0.02*	**0.5**	**0.77**	**3.13**	**0.28**	**0.22**	*<0.02*
0927_MW154_121102*	MW154	On-base SA02	02 Nov 2012	-	-	**6.46**	**17.7**	**31.5**	**1,657**	**8.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_131106*	MW154	On-base SA02	06 Nov 2013	-	-	**4.43**	**21**	**118.3**	**4,039**	**8.1**	-	-	-	*<2*	**710**	*<2*	**710**	-	-	**840**	-	**1**	-	-	-	**250**	-	**2,200**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_140430*	MW154	On-base SA02	30 Apr 2014	-	-	**5.14**	**18.2**	**-7**	**5,313**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_160519*	MW154	On-base SA02	19 May 2016	-	-	**3.25**	**19**	**162**	**7,870**	**6.17**	-	-	-	*<10*	**500**	-	-	-	-	**2,200**	-	*<0.5*	-	-	-	**130**	**4,500**	**0.09**	-	**0.33**	-	**0.3**	-	*<0.01*	*<0.05*	**0.04**	**0.14**	**0.02**	**0.02**	*<0.01*
0927_MW154_180813*	MW154	On-base SA02	13 Aug 2018	-	-	**7.71**	**18.7**	-	**4,643**	**7.73**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.09**	**0.16**	**0.86**	**0.05**	**1.6**	-	*<0.01*	*<0.05*	**0.05**	**0.17**	**0.03**	**0.04**	*<0.01*
0927_MW154_210701*	MW154	On-base SA02	01 Jul 2021	-	-	**5.45**	**17.8**	**187.4**	**8,492**	**7.38**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_220615*	MW154	On-base SA02	15 Jun 2022	-	-	**0.15**	**17.8**	**30**	**1,300**	**8.59**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_230616*	MW154	On-base SA02	16 Jun 2023	-	**4.92**	**4.25**	**18**	**6.5**	**4,710**	**7.95**	-	-	-	-	-	-	-	-	-	-	**4.25**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_250604*	MW154	On-base SA02	04 Jun 2025	-	-	**4.54**	**19.8**	**75**	**7,951**	**7.95**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_250604	MW154	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.12**	**0.74**	**0.03**	**0.62**	*<0.02*	*<0.02*	*<0.1*	**0.05**	**0.17**	**0.02**	**0.03**	*<0.02*
0927_MW155_131114*	MW155	On-base SA02	14 Nov 2013	-	-	**4.84**	**17.8**	**152.8**	**1,707**	**8.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_160519*	MW155	On-base SA02	19 May 2016	-	-	**5.04**	**19.4**	**74**	**4,440**	**8.63**	-	-	-	**62**	**740**	-	-	-	-	**500**	-	**1.2**	-	-	-	**43**	**1,800**	**0.16**	-	**0.86**	-	**0.79**	-	*<0.01*	**0.19**	**0.51**	**0.51**	**0.3**	**0.22**	**0.01**
0927_MW155_180813*	MW155	On-base SA02	13 Aug 2018	-	-	**4.53**	**19.9**	-	**2,422**	**8.27**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.16**	**0.19**	**1.5**	**0.09**	**5.1**	-	*<0.01*	**0.33**	**0.79**	**0.73**	**0.43**	**0.38**	**0.02**
0927_MW155_230315*	MW155	On-base SA02	15 Mar 2023	-	-	**1.67**	**20.5**	**62.8**	**1,315**	**8.53**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_230801*	MW155	On-base SA02	01 Aug 2023	-	-	**3.1**	**16.6**	**58.9**	**674**	**8.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.08**	**0.62**	**0.04**	**1.36**	-	*<0.02*	*<0.1*	**0.26**	**0.26**	**0.15**	**0.14**	*<0.02*
0927_MW155_240219*	MW155	On-base SA02	19 Feb 2024	-	-	**1.93**	**22.1**	**44.7**	**3,156**	**7.99**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_241010*	MW155	On-base SA02	10 Oct 2024	-	-	**4.92**	**19.9**	**11.5**	**1,061**	**8.76**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_250603*	MW155	On-base SA02	03 Jun 2025	-	-	**2.54**	**18.5**	**86.2**	**1,129**	**8.01**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/2_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	**41**	**700**	-	**740**	-	-	**390**	-	-	-	**1,600,000**	-	**100**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_230316	MW155	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.11**	**0.14**	**1.05**	**0.07**	**2.65**	-	*<0.02*	*<0.1*	**0.38**	**0.45**	**0.23**	**0.24**	*<0.02*
0927_MW155_240220	MW155	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.30**	**0.28**	**2.20**	**0.09**	**1.94**	-	*<0.02*	**0.1**	**0.46**	**0.61**	**0.15**	**0.17**	*<0.02*
0927_MW155_241010	MW155	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.13**	**0.24**	**1.1**	**0.056**	**2.7**	*<0.00625*	*<0.001*	**0.074**	**0.69**	**0.51**	**0.26**	**0.23**	**0.021**
0927_MW155_250603	MW155	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.15**	**0.17**	**1.22**	**0.05**	**1.96**	*<0.02*	*<0.02*	**0.2**	**0.45**	**0.42**	**0.18**	**0.12**	*<0.02*
0927_QC101_240220	MW155	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.29**	**0.30**	**2.13**	**0.09**	**1.9**	-	*<0.02*	**0.1**	**0.44**	**0.65**	**0.18**	**0.17**	*<0.02*
0927_QC107_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	**36**	**700**	-	**740**	-	-	**380**	-	-	-	**1,600,000**	-	**98**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC107_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.2**	**0.37**	**1.8**	**0.18**	**4.4**	-	**0.02**	**0.37**	**0.86**	**0.96**	**0.48**	**0.44**	**0.02**
0927_QC201_240220	MW155	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.29**	**0.33**	**2.3**	**0.12**	**2.5**	**0.02**	*<0.01*	**0.30**	**0.53**	**0.65**	**0.19**	**0.18**	**0.02**
0927_QC207_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	**1,410**	**84**	**636**	*<1*	**720**	**29.2**	**22.8**	**452**	-	-	**12.3**	-	**102**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC207_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.18**	**0.21**	**2.16**	**0.11**	**4.02**	-	*<0.02*	**0.3**	**0.97**	**0.96**	**0.49**	**0.45**	**0.02**
0927_MW156_121031*	MW156	On-base SA02	31 Oct 2012	-	-	**1.35**	**19.5**	**-97**	**1,555**	**7.74**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_131113*	MW156	On-base SA02	13 Nov 2013	-	-	**1.48**	**15.9**	**81.4**	**1,404**	**8.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**810**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_140429*	MW156	On-base SA02	29 Apr 2014	-	-	**0.37**	**18.9**	**4**	**1,375**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**950**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_160519*	MW156	On-base SA02	19 May 2016	-	-	**0.59**	**19.4**	**71**	**1,591**	**8.28**	-	-	-	**32**	**560**	-	-	-	-	**83**	-	**1.9**	-	-	-	**14**	**860**	**0.12**	-	**1.4**	-	**2.5**	-	*<0.01*	*<0.05*	**0.08**	**0.19**	**0.05**	**0.05**	*<0.01*
0927_MW156_180813*	MW156	On-base SA02	13 Aug 2018	-	-	**2.4**	**19.2**	-	**1,084**	**8.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.08**	**0.8**	**0.04**	**2.1**	-	*<0.01*	*<0.05*	**0.07**	**0.2**	**0.04**	**0.05**	*<0.01*
0927_MW156_250604*	MW156	On-base SA02	04 Jun 2025	-	-	**2.45**	**18.7**	**38.1**	**1,097**	**9.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/3_180813	MW156	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	**35**	**500**	-	**530**	-	-	**61**	-	-	-	**700,000**	-	**26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_250604	MW156	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.07**	**0.70**	**0.04**	**1.14**	*<0.02*	*<0.02*	*<0.1*	**0.04**	**0.10**	**0.02**	**0.03**	*<0.02*
0927_MW157_121101*	MW157	On-base SA02	01 Nov 2012	-	-	**4.94**	**17.8**	**-2.9**	**768**	**8.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**392**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_131114*	MW157	On-base SA02	14 Nov 2013	-	-	**4.68**	**17.9**	**41.2**	**565**	**9.33**	-	-	-	**36**	**170**	*<2*	**210**	-	-	**47**	-	**0.83**	-	-	-	**17**	-	**320**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_160519*	MW157	On-base SA02	19 May 2016	-	-	**0.47**	**19.4**	**128**	**1,640**	**5.85**	-	-	-	*<10*	**470**	-	-	-	-	**200**	-	*<0.5*	-	-	-	**14**	**870**	**0.02**	-	**0.08**	-	**0.02**	-	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
0927_MW157_180810*	MW157	On-base SA02	10 Aug 2018	-	-	**6.56**	**18.6**	-	**705**	**8.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.03**	**0.23**	*<0.01*	**0.35**	-	*<0.01*	*<0.05*	**0.01**	**0.03**	*<0.01*	*<0.01*	*<0.01*
0927_MW157_210628*	MW157	On-base SA02	28 Jun 2021	**710**	**4.85**	**5.38**	**18.1**	**17.2**	**710**	**8.91**	-	-	-	-	-	-	-	-	-	-	**5.38**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_220615*	MW157	On-base SA02	15 Jun 2022	-	-	**4.21**	**17.8**	**100**	**715**	**8.85**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_230616*	MW157	On-base SA02	16 Jun 2023	-	**4.56**	**1.95**	**18.2**	**-10.3**	**908**	**8.7**	-	-	-	-	-	-	-	-	-	-	**1.95**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/4_180810	MW157	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	**31**	**260**	-	**290**	-	-	**43**	-	-	-	**450,000**	-	**19**	-	**450**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_131118*	MW158	On-base SA02	18 Nov 2013	-	-	**6.96**	**21.1**	**21.3**	**841**	**8.76**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**520**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_160519*	MW158	On-base SA02	19 May 2016	-	-	**2.63**	**19.3**	**132**	**953**	**6.16**	-	-	-	*<10*	**480**	-	-	-	-	**30**	-	**0.6**	-	-	-	**6**	**540**	**0.01**	-	**0.15**	-	**0.28**	-	*<0.01*	*<0.05*	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.01*	*<0.01*
0927_MW158_180814*	MW158	On-base SA02	14 Aug 2018	-	-	**6.33**	**18.1**	-	**1,332**	**8.61**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.03**	**0.25**	**0.01**	**0.4**	-	*<0.01*	*<0.05*	*<0.01*	**0.03**	*<0.01*	**0.01**	*<0.01*
0927_MW158_210702*	MW158	On-base SA02	02 Jul 2021	-	-	**4.72**	**18**	**140.1**	**1,449**	**8.67**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_220615*	MW158	On-base SA02	15 Jun 2022	-	-	**4.6**	**18.4**	**4.9**	**1,494**	**8.93**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_230619*	MW158	On-base SA02	19 Jun 2023	-	**4.91**	**2.92**	**17.1**	**-8.44**	**1,237**	**8.62**	-	-	-	-	-	-	-	-	-	-	**2.92**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_121101*	MW159	On-base SA02	01 Nov 2012	-	-	**4.58**	**17.5**	**52.1**	**422**	**7.66**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**320**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_131114*	MW159	On-base SA02	14 Nov 2013	-	-	**5.71**	**17.3**	**151.5**	**471**	**8**	-	-	-	*<2*	**230**	*<2*	**230**	-	-	**9**	-	**0.67**	-	-	-	**10**	-	**320**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_160519*	MW159	On-base SA02	19 May 2016	-	-	**0.45**	**20.3**	**126**	**746**	**5.68**	-	-	-	*<10*	**400**	-	-	-	-	**17**	-	*<0.5*	-	-	-	*<5*	**410**	**0.03**	-	**0.09**	-	*<0.01*	-	*<0.01*	*<0.05*	**0.04**	**0.06**	**0.01**	**0.02**	*<0.01*
0927_MW159_180810*	MW159	On-base SA02	10 Aug 2018	-	-	**3.62**	**19.3**	-	**626**	**7.74**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.04**	**0.4**	**0.01**	**0.5**	-	*<0.01*	*<0.05*	**0.02**	**0.05**	*<0.01*	**0.02**	*<0.01*
0927_MW159_210701*	MW159	On-base SA02	01 Jul 2021	-	-	**3.07**	**19**	**21.4**	**522**	**7.71**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_220615*	MW159	On-base SA02	15 Jun 2022	-	-	**3.78**	**17.57**	**134**	**592**	**7.65**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_230616*	MW159	On-base SA02	16 Jun 2023	-	**3.91**	**2.16**	**18.1**	**56.2**	**965**	**6.46**	-	-	-	-	-	-	-	-	-	-	**2.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/6_180810	MW159	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	*<10*	**300**	-	**300**	-	-	**36**	-	-	-	**400,000**	-	**17**	-	**400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_121102*	MW160	On-base SA02	02 Nov 2012	-	-	**0.03**	**17.7**	**68.7**	**2,104**	**8.11**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,410**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_131114*	MW160	On-base SA02	14 Nov 2013	-	-	**0.42**	**17.9**	**70.5**	**1,701**	**8.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**960**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_160519*	MW160	On-base SA02	19 May 2016	-	-	**0.12**	**19.4**	**98**	**3,750**	**7.29**	-	-	-	*<10*	**760**	-	-	-	-	**330**	-	**1.4**	-	-	-	**52**	**1,500**	**0.04**	-	**0.42**	-	**0.41**	-	*<0.01*	*<0.05*	**0.01**	**0.05**	**0.01**	**0.01**	*<0.01*
0927_MW160_180810*	MW160	On-base SA02	10 Aug 2018	-	-	**2.81**	**18.5**	-	**3,162**	**8.03**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.08**	**0.77**	**0.03**	**1.1**	-	*<0.01*	**0.06**	**0.03**	**0.11**	**0.01**	**0.03**	*<0.01*
0927_MW160_210629*	MW160	On-base SA02	29 Jun 2021	**1,880**	**5.20**	**1.75**	**18.1**	**41.5**	**1,883**	**8.38**	-	-	-	-	-	-	-	-	-	-	**1.75**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_220615*	MW160	On-base SA02	15 Jun 2022	-	-	**1.59**	**18.3**	**-18.4**	**1,781**	**8.45**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_230616*	MW160	On-base SA02	16

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Table B3 – Groundwater Analytical Results

				Field						Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids					
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																						632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																						220	
ANZG 2026 Freshwater 95%																																0.9							
PFAS NEMP 3.0 2025 Freshwater 99%																																						19	
ANZG 2026 Freshwater 99%																																0.02							
Field ID	**Location Code**	**Investigation Area**	**Date**																																				
0927_MW167_121031*	MW167	On-base SA02	31 Oct 2012	-	-	**1.27**	**18.4**	**-166.8**	**786**	**7.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**524**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW167_131107*	MW167	On-base SA02	07 Nov 2013	-	-	**0.27**	**19**	**-195.6**	**791**	**8.14**	-	-	-	<2	**430**	<2	**430**	-	-	**25**	-	**0.81**	-	-	**20**	-	**490**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW167_231117*	MW167	On-base SA02	17 Nov 2023	-	-	**0.26**	**17.7**	**71.3**	**2,071**	**7.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**71**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_121101*	MW168	On-base SA02	01 Nov 2012	-	-	**0.93**	**18.3**	**-49.1**	**859**	**8.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**496**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_131111*	MW168	On-base SA02	11 Nov 2013	-	-	**0.3**	**19.9**	**86.4**	**980**	**8.64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**530**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_160519*	MW168	On-base SA02	19 May 2016	-	-	**2.05**	**18.2**	**21**	**1,333**	**8.57**	-	-	-	**46**	**530**	-	-	-	-	**38**	-	**1**	-	-	-	-	**9.5**	**740**	**0.02**	-	**0.2**	-	**0.15**	-	<0.01	<0.05	<0.01	**0.02**	<0.01	<0.01	<0.01
0927_MW168_180810*	MW168	On-base SA02	10 Aug 2018	-	-	**0.99**	**19.3**	-	**926**	**8.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.01**	**0.01**	**0.15**	<0.01	**0.32**	-	<0.01	<0.05	<0.01	**0.02**	<0.01	<0.01	<0.01
0927_MW168_210629*	MW168	On-base SA02	29 Jun 2021	**800**	**5.31**	**0.28**	**19.3**	**53.3**	**800**	**8.39**	-	-	-	-	-	-	-	-	-	-	**0.28**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_220615*	MW168	On-base SA02	15 Jun 2022	-	-	**1.5**	**18.29**	**117**	**930**	**8.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_230616*	MW168	On-base SA02	16 Jun 2023	-	**5.00**	**0.18**	**19.1**	**-107.9**	**786**	**8.14**	-	-	-	-	-	-	-	-	-	-	**0.18**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/2_180810	MW168	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	**23**	**400**	-	-	**420**	-	-	-	-	-	-	**580,000**	-	**21**	-	**580**	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_121102*	MW169	On-base SA02	02 Nov 2012	-	-	**0.99**	**17.1**	**71.6**	**2,039**	**8.04**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,360**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_131111*	MW169	On-base SA02	11 Nov 2013	-	-	**0.31**	**19.6**	**-172.3**	**2,477**	**8.02**	-	-	-	<2	**1,100**	<2	**1,100**	-	-	**110**	-	**1.4**	-	-	-	-	**54**	**1,400**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_160519*	MW169	On-base SA02	19 May 2016	-	-	**0.15**	**19.9**	**48**	**2,470**	**7.15**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	-	**0.36**	-	**0.61**	-	<0.01	<0.05	**0.01**	**0.04**	<0.01	**0.01**	<0.01
0927_MW169_180810*	MW169	On-base SA02	10 Aug 2018	-	-	**2.22**	**19**	-	**2,012**	**7.41**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.01**	**0.02**	**0.17**	<0.01	**0.3**	-	<0.01	<0.05	<0.01	**0.03**	<0.01	<0.01	<0.01
0927_MW169_210629*	MW169	On-base SA02	29 Jun 2021	**2,160**	**5.47**	**0.06**	**17.9**	**36**	**2,158**	**7.7**	-	-	-	-	-	-	-	-	-	**2,400**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/3_180810	MW169	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**890**	-	**890**	-	-	**90**	-	-	-	**1,400,000**	-	**32**	-	**1,400**	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/8_180817	MW169	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**330**	-	**330**	-	-	**2,400**	-	-	-	**5,000,000**	-	**410**	-	**5,000**	-	-	-	-	-	-	-	-	-	-	-
0927-GW582/3	MW169	On-base SA02	19 May 2016	-	-	-	-	-	-	-	-	-	-	<10	**1,100**	-	-	-	-	**110**	-	**1.1**	-	-	-	-	**19**	**1,300**	**0.02**	-	**0.29**	-	**0.59**	-	<0.01	<0.05	<0.01	**0.03**	<0.01	**0.01**	<0.01
0927_MW170_121031*	MW170	On-base SA02	31 Oct 2012	-	-	**6.01**	**20.3**	**-75.2**	**918**	**7.76**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**560**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_131111*	MW170	On-base SA02	11 Nov 2013	-	-	**4.5**	**17.7**	**135.4**	**1,006**	**7.82**	-	-	-	<2	**430**	<2	**430**	-	-	**34**	-	**0.72**	-	-	**25**	-	**570**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_160518*	MW170	On-base SA02	18 May 2016	-	-	**6.17**	**15.3**	**134**	**937**	**8.15**	-	-	-	**17**	**460**	-	-	-	-	**23**	-	**0.5**	-	-	-	-	**7.7**	**560**	**0.06**	-	**0.24**	-	**0.03**	-	<0.01	<0.05	**0.02**	**0.09**	**0.02**	**0.02**	<0.01
0927_MW170_180809*	MW170	On-base SA02	09 Aug 2018	-	-	**3.54**	**18.6**	-	**845**	**7.78**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.08**	**0.71**	**0.03**	**1.1**	-	<0.01	<0.05	**0.02**	**0.1**	**0.01**	**0.02**	<0.01
0927_MW170_210701*	MW170	On-base SA02	01 Jul 2021	-	-	**3.49**	**16.9**	**135.3**	**790**	**7.75**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_220614*	MW170	On-base SA02	14 Jun 2022	-	-	**3.44**	**16.99**	**72.5**	**757**	**7.81**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_230615*	MW170	On-base SA02	15 Jun 2023	-	**5.87**	**2.67**	**17.8**	**-16.4**	**828**	**7.66**	-	-	-	-	-	-	-	-	-	-	**2.67**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_231116*	MW170	On-base SA02	16 Nov 2023	-	-	**0.48**	**18.1**	**68**	**1,079**	**5.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**22**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/4_180809	MW170	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**380**	-	**390**	-	-	**28**	-	-	-	**570,000**	-	**21**	-	**570**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_121030*	MW171	On-base SA02	30 Oct 2012	-	-	**2.17**	**17.6**	**38.1**	**1,721**	**7.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,200**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_131111*	MW171	On-base SA02	11 Nov 2013	-	-	**0.18**	**16**	**-72.5**	**1,597**	**7.6**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**940**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_140428*	MW171	On-base SA02	28 Apr 2014	-	-	**0.6**	**18.8**	**109.1**	**1,349**	**7.59**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**950**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_160519*	MW171	On-base SA02	19 May 2016	-	-	**5.71**	**17.3**	**66**	**1,955**	**7.68**	-	-	-	<10	**990**	-	-	-	-	**50**	-	**0.6**	-	-	-	-	**12**	**1,100**	**0.04**	-	**0.22**	-	**0.03**	-	<0.01	<0.05	**0.01**	**0.08**	<0.01	**0.02**	<0.01
0927_MW171_180809*	MW171	On-base SA02	09 Aug 2018	-	-	**0.13**	**17.8**	-	**1,114**	**7.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.03**	**0.32**	**0.01**	**0.66**	-	<0.01	<0.05	**0.01**	**0.04**	<0.01	**0.02**	<0.01
0927_MW171_210701*	MW171	On-base SA02	01 Jul 2021	-	-	**0.08**	**17.3**	**-47.5**	**1,267**	**7.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_220609*	MW171	On-base SA02	09 Jun 2022	-	-	**0.55**	**16.07**	**68.8**	**1,450**	**7.64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_230615*	MW171	On-base SA02	15 Jun 2023	-	**5.57**	**0.47**	**17.4**	**-14.2**	**1,337**	**7.46**	-	-	-	-	-	-	-	-	-	-	**0.47**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_231116*	MW171	On-base SA02	16 Nov 2023	-	-	**0.22**	**17.7**	**8.2**	**726**	**5.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/5_180809	MW171	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**670**	-	**670**	-	-	**37**	-	-	-	**780,000**	-	**18**	-	**780**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_121030*	MW172	On-base SA02	30 Oct 2012	-	-	**1.38**	**19.2**	**60.5**	**5,840**	**7.28**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,760**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_131108*	MW172	On-base SA02	08 Nov 2013	-	-	**0.21**	**17.4**	**-145.1**	**5,339**	**7.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,900**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_140429*	MW172	On-base SA02	29 Apr 2014	-	-	**1.46**	**17.7**	**40.8**	**3,055**	**7.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,200**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_121031*	MW173	On-base SA02	31 Oct 2012	-	-	**4.67**	**20.2**	**-59.8**	**1,940**	**7.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,180**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_131108*	MW173	On-base SA02	08 Nov 2013	-	-	**0.79**	**16**	**74.3**	**1,741**	**7.66**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**950**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_140428*	MW173	On-base SA02	28 Apr 2014	-	-	**3.18**	**19.1**	**104.3**	**1,491**	**7.26**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,000**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_160519*	MW173	On-base SA02	19 May 2016	-	-	**4.38**	**17**	-	**5,310**	**7.84**	-	-	-	**190**	**2,500**	-	-	-	-	**320**	-	**1.7**	-	-	-	-	**6.7**	**3,000**	**0.12**	-	**0.41**	-	**0.03**	-	<0.01	<0.05	**0.04**	**0.15**	**0.02**	**0.02**	<0.01
0927_MW173_180809*	MW173	On-base SA02	09 Aug 2018	-	-	**1.8**	**16.9**	-	**2,606**	**7.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.52**	**0.02**	**0.73**	-	<0.01	<0.05	**0.02**	**0.07**	<0.01	**0.02**	<0.01
0927_MW173_210630*	MW173	On-base SA02	30 Jun 2021	-	-	**0.19**	**17.3**	**-128**	**1,164**	**6.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_220614*	MW173	On-base SA02	14 Jun 2022	-	-	**0.39**	**17.623**	**-113**	**1,532**	**6.97**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_230616*	MW173	On-base SA02	16 Jun 2023	-	**6.80**	**0.27**	**17.7**	**-93**	**3,286**	**6.89**	-	-	-	-	-	-	-	-	-	-	**0.27**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_231116*	MW173	On-base SA02	16 Nov 2023	-	-	**0.82**	**17.6**	**-110.6**	**2,493**	**6.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**37**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/7_180809	MW173	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**1,600**	-	**1,600**	-	-	**130**	-	-	-	**1,900,000**	-	<5	-	**1,900**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_131108*	MW174	On-base SA02	08 Nov 2013	-	-	**7.15**	**18.3**	**154**	**9,518**	**7.45**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,000**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_140429*	MW174	On-base SA02	29 Apr 2014	-	-	**6.52**	**18.5**	**104.4**	**8,126**	**7.42**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,320**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_160519*	MW174	On-base SA02	19 May 2016	-	-	**10.9**	**17.7**	**103**	**10,040**	**7.6**	-	-	-	<10	**360**	-	-	-	-	**2,800**	-	<0.5	-	-	-	-	**150**	**5,600**	**0.03**	-	**0.06**	-	**0.02**	-	<0.01	<0.05	**0.02**	**0.05**	<0.01	<0.01	<0.01
0927_MW174_180817*	MW174	On-base SA02	17 Aug 2018	-	-	**7.33**	**18**	-	**8,093**	**7.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.03**	**0.29**	**0.01**	**0.27**	-	<0.01	<0.05	**0.04**	**0.06**	<0.01	**0.01**	<0.01
0927_MW174_231117*	MW174	On-base SA02	17 Nov 2023	-	-	**2.14**	**16.8**	**91.1**	**3,178**	**6.07**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**147**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FD01	MW174	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
GW582/8	MW174	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_121102*	MW176	On-base SA02	02 Nov 2012	-	-	**5.43**	**17.8**	**-37.4**	**756**	**8.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**452**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_131106*	MW176	On-base SA02	06 Nov 2013	-	-	**3.12**	**23.9**	**69.1**	**1,040**	**9.88**	-	-	-	**35**	**310**	<2	**340**	-	-	**94**	-	**1.3**	-	-	-	**38**	-	**580**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_140430*	MW176	On-base SA02	30 Apr 2014	-	-	**3.96**	**18.9**	**-244.1**	**835**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**480**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_160519*	MW176	On-base SA02	19 May 2016	-	-	**2.01**	**19.7**	**140**	**1,288**	**6.49**	-	-	-	<10	**400**	-	-	-	-	**120**	-	**1**	-	-	-	**16**	**690**	**0.12**	-	**1**	-	**1.3**	-	<0.01	**0.05**	**0.09**	**0.19**	**0.06**	**0.05**	<0.01
0927_MW176_180813*	MW176	On-base SA02	13 Aug 2018	-	-	**2.82**	**19.2**	-	**2,737**	**8.45**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.09**	**0.87**	**0.04**	**2.8**	-	<0.01	**0.07**	**0.1**	**0.18**	**0.05**	**0.06**	<0.01
0927_MW176_210702*	MW176	On-base SA02	02 Jul 2021	-	-	**3.08**	**18.3**	**233.2**	**4,172**	**8.28**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_220617*	MW176	On-base SA02	17 Jun 2022	-	-	**3.86**	**19.2**	**30.6**	**4,076**	**8.23**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_230619*	MW176	On-base SA02	19 Jun 2023	-	**4.37**	**3.15**	**18**	**1.2**	**3,990**	**8.29**	-	-	-	-	-	-	-	-	-	-	**3.15**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_250603*	MW176	On-base SA02	03 Jun 2025	-	-	**3.28**	**17.8**	**73.6**	**1,052**	**9.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/1_180813	MW176	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	**33**	**390**	-	**420**	-	-	**630**	-	-	-	**1,600,000**	-	**120**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_250603	MW176	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.11**	**0.13**	**1.03**	**0.04**	**1.39**	<0.02	<0.02	<0.1	**0.08**	**0.19**	**0.05**	**0.05**	<0.02
0927_MW177_121102*	MW177	On-base SA02	02 Nov 2012	-	-	**4.52**	**17.3**	**69.8**	**1,000**	**8.72**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**704**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW177_131118*	MW177	On-base SA02	18 Nov 2013	-	-	**7.56**	**19.7**	**108.7**	**1,049**	**8.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**600**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW177_160519*	MW177	On-base SA02	19 May 2016	-	-	**5.86**	**19.4**	**129**	**1,215**	**8.39**	-	-	-	**64**	**450**	-	-	-	-	**44**	-	**1.8**	-	-	-	-	**12**	**700**	**0.09**	-	**0.93**	-	**0.48**	-	<0.01	<0.05	**0.04**	**0.15**	**0.03**	**0.04**	<0.01
0927_MW177_180814*	MW177	On-base SA02	14 Aug 2018	-	-	**5.61**	**18.8**	-	**1,072**	**8.61**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.11**	**1.2**	**0.06**	**2.6**	-	<0.01	<0.05	**0.04**	**0.17**	**0.02**	**0.06**	<0.01
0927_GW7/10_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	**48**	**480**	-	**530**	-	-	**50**	-	-	-	**640,000**	-	**34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC108_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	**44**	**500**	-	**540**	-	-	**50**	-	-	-	**750,000**	-	**34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC108_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.1**	**0.22**	**1.6**	**0.1**	**2.4**	-	<0.01	<0.05	**0.04**	**0.22**	**0.03**	**0.06**	<0.01
0927_QC208_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	**663**	**70**	**455**	<1	**525**	**12.5**	**10.5**	**44**	-	-	**8.81**	-	**38**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC208_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.12**	**1.65**	**0.06**	**2.12**	-	<0.02	<0.1	**0.04**	**0.24**	**0.03**	**0.07**	<0.02
0927_MW179_121101*	MW179	On-base SA02	01 Nov 2012	-	-	**7.95**	**16.9**	**110.3**	**6,780**	**7.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,810**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_131108*	MW179	On-base SA02	08 Nov 2013	-	-	**7.26**	**17.6**	**161.5**	**9,348**	**7.72**	-	-	-	<2	**300**	<2	**300**	-	-	**480**	-	**0.21**	-	-	-	**100**	-	**4,800**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_140429*	MW179	On-base SA02	29 Apr 2014	-	-	**6.91**	**17.7**	**63.8**	**7,598**	**9.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,800**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_160519*	MW179	On-base SA02	19 May 2016	-	-	**7.84**	**15.7**	**135**	**10,330**	**7.71**	-	-	-	<10	**410**	-	-	-	-	**2,300**	-	<0.5	-	-	-	-	**130**	**5,400**	**0.09**	-	**0.21**	-	**0.01**	-	<0.01	<0.05	**0.03**	**0.15**	**0.02**	**0.02**	<0.01
0927_MW179_220616*	MW179	On-base SA02	16 Jun 2022	-	-	**5.05**	**17.4**	**215**	**6,870**	**7.47**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_230619*	MW179	On-base SA02	19 Jun 2023	-	**5.98**	**3.68**	**17.7**	**129.5**	**6,460**	**5.84**	-	-	-	-	-	-	-	-	-	-	**3.68**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_231120*	MW179	On-base SA02	20 Nov 2023	-	-	**4.95**	**17.1**	**108.4**	**9,076**	**5.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**386**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_121030*	MW180	On-base SA02	30 Oct 2012	-	-	**7.64**	**20.8**	**55.7**	**8,889**	**7.47**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,780**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_131108*	MW180	On-base SA02	08 Nov 2013	-	-	**8.12**	**17**	**168.8**	**9,706**	**7.36**	-	-	-	<2	**300**	<2	**300**	-	-	**3,100**	-	**0.19**	-	-	-	**530**	-	**5,100**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_140429*	MW180	On-base SA02	29 Apr 2014	-	-	**6.97**	**18**	**78**	**8,021**	**7.53**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_160519*	MW180	On-base SA02	19 May 2016	-	-	**9.23**	**17.7**	**143**	**10,030**	**7.5**	-	-	-	<10	**420**	-	-	-	-	**1,800**	-	<0.5	-	-	-	-	**150**	**5,300**	**0.06**	-	**0.16**	-	<0.01	-	<0.01	<0.05	**0.03**	**0.1**	**0.02**	**0.02**	<0.01
0927_MW180_180817*	MW180	On-base SA02	17 Aug 2018	-	-	**8.21**	**17.7**	-	**8,315**	**7.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.06**	**0.45**	**0.02**	**0.74**	-	<0.01	<0.05	**0.05**	**0.11**	**0.02**	**0.03**	<0.01
0927_MW180_210630*	MW180	On-base SA02	30 Jun 2021	-	-	**7.11**	**18**	**62.2**	**9,516**	**7.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_220616*	MW180	On-base SA02	16 Jun 2022	-	-	**7.71**	**17.6**	**74.6**	**9,522**	**7.36**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_230619*	MW180	On-base SA02	19 Jun 2023	-	**5.53**	**5.5**	**17.7**	**124.1**	**9,097**	**6.24**	-	-	-	-	-	-	-	-	-	-	**5.54**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_231117*	MW180	On-base SA02	17 Nov 2023	-	-	**6.27**	**17.2**	**107.7**	**8,744**	**6.18**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**434**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_250604*	MW180	On-base SA02	04 Jun 2025	-	-	**5.4**	**17.8**	**83.8**	**7,961**	**7.87**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/13_180817	MW180	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**330**	-	**330**	-	-	**2,600**	-	-	-	**4,900,000**	-	**430**	-	**4,900**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_250604	MW180	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.08**	**0.47**	**0.02**	**0.46**	<0.02	<0.02	<0.1	**0.06**	**0.12**	**0.02**	**0.03**	<0.02
0927_MW181_121030*	MW181	On-base SA02	30 Oct 2012	-	-	**0.13**	**20.9**	**-256.9**	**550**	**8.18**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**340**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW181_131118*	MW181	On-base SA02	18 Nov 2013	-	-	**1.06**	**20.4**	**-212.6**	**680**	**7.98**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW181_160519*	MW181	On-base SA02	19 May 2016	-	-	**3.53**	**20.2**	-	**704**	**8.56**	-	-	-	**27**	**370**	-	-	-	-	**13**	-	**1.8**	-	-	-	-	<5

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Table B3 – Groundwater Analytical Results

				Field						Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																							632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																							220	
ANZG 2026 Freshwater 95%																																0.9								
PFAS NEMP 3.0 2025 Freshwater 99%																																							19	
ANZG 2026 Freshwater 99%																																0.02								
Field ID	**Location Code**	**Investigation Area**	**Date**																																					
0927_MW182_230801*	MW182	On-base SA02	01 Aug 2023	-	-	1.43	15.8	39.3	4,897	7.57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.26	2.03	0.06	0.79	-	<0.02	<0.1	0.06	0.32	0.02	0.05	<0.02
0927_MW182_231120*	MW182	On-base SA02	20 Nov 2023	-	-	0.46	17	68.2	6,636	6.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	461	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_240219*	MW182	On-base SA02	19 Feb 2024	-	-	0.5	20.7	-22.5	5,000	7.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_241010*	MW182	On-base SA02	10 Oct 2024	-	-	10.05	18.2	20.8	3,476	7.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_250603*	MW182	On-base SA02	03 Jun 2025	-	-	3.91	17.2	89.5	2,113	8.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/15_180816	MW182	On-base SA02	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	1,200	-	1,200	-	-	450	-	-	-	2,500,000	-	210	-	2,500	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_230316	MW182	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.31	0.31	2.58	0.07	1.1	-	<0.02	<0.1	0.07	0.39	0.03	0.07	<0.02
0927_MW182_240220	MW182	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	0.16	1.72	0.05	0.77	-	<0.02	<0.1	0.05	0.27	<0.02	0.05	<0.02
0927_MW182_241010	MW182	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	0.18	1.6	0.051	1.4	<0.001	<0.001	0.036	0.062	0.28	0.023	0.079	0.003
0927_MW182_250603	MW182	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	0.07	0.56	0.02	0.49	<0.02	<0.02	<0.1	0.02	0.09	<0.02	0.02	<0.02
0927_MW183_121102*	MW183	On-base SA02	02 Nov 2012	-	-	7.68	17.8	72.4	1,169	8.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	788	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_131106*	MW183	On-base SA02	06 Nov 2013	-	-	3.66	20	145.7	5,961	7.66	-	-	-	<2	600	<2	600	-	-	1,300	-	0.95	-	-	-	360	-	3,000	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_140429*	MW183	On-base SA02	29 Apr 2014	-	-	3.45	18.5	78.7	5,088	7.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,300	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_160519*	MW183	On-base SA02	19 May 2016	-	-	6.65	18.1	152	5,820	7.63	-	-	-	10	780	-	-	-	-	1,100	-	0.5	-	-	-	110	3,200	0.1	-	0.05	-	0.06	-	<0.01	<0.05	0.05	0.17	0.03	0.03	<0.01
0927_MW183_180814*	MW183	On-base SA02	14 Aug 2018	-	-	1.45	18	-	3,214	7.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.06	0.63	0.03	1.6	-	<0.01	<0.05	0.04	0.09	0.02	0.03	<0.01
0927_MW183_210705*	MW183	On-base SA02	05 Jul 2021	-	4.84	1.66	17.3	200.7	4,897	7.71	-	-	-	-	-	-	-	-	-	-	1.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_220615*	MW183	On-base SA02	15 Jun 2022	-	-	1.24	17.9	38.5	5,210	7.62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_230619*	MW183	On-base SA02	19 Jun 2023	-	4.51	1.95	16.8	5	5,054	7.75	-	-	-	-	-	-	-	-	-	-	1.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_250604*	MW183	On-base SA02	04 Jun 2025	-	-	2.67	18.8	55.4	2,993	8.64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/3_180814	MW183	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	23	910	-	940	-	-	630	-	-	-	2,200,000	-	190	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_250604	MW183	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06	0.07	0.59	0.03	0.98	<0.02	<0.02	<0.1	0.03	0.09	<0.02	0.03	<0.02
GW7/3_DUPLICATE	MW183	On-base SA02	06 Nov 2013	-	-	-	-	-	-	-	-	-	-	<2	610	<2	610	-	-	1,400	-	0.91	-	-	-	350	-	3,000	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_121101*	MW185	On-base SA02	01 Nov 2012	-	-	2.5	18.5	-401	1,371	8.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	768	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_131113*	MW185	On-base SA02	13 Nov 2013	-	-	3.51	16.1	148.4	1,326	8.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	750	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_140429*	MW185	On-base SA02	29 Apr 2014	-	-	2.45	18.7	-17	1,149	8.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	790	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_160519*	MW185	On-base SA02	19 May 2016	-	-	5.54	20.2	75	1,469	9.02	-	-	-	79	540	-	-	-	-	75	-	2	-	-	-	18	900	0.16	-	0.57	-	0.08	-	<0.01	0.06	0.13	0.3	0.08	0.06	<0.01
0927_MW185_180813*	MW185	On-base SA02	13 Aug 2018	-	-	5.25	19.5	-	1,246	8.73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.11	0.17	1.6	0.07	2.4	-	<0.01	0.07	0.1	0.26	0.05	0.07	<0.01
0927_MW185_210701*	MW185	On-base SA02	01 Jul 2021	-	-	1.84	19.4	12.7	1,031	8.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_220617*	MW185	On-base SA02	17 Jun 2022	-	-	2.97	18.8	268	920	8.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230315*	MW185	On-base SA02	15 Mar 2023	-	-	2.36	20.6	37.1	1,001	9.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230619*	MW185	On-base SA02	19 Jun 2023	-	4.81	2.39	19.2	-12.9	990	8.92	-	-	-	-	-	-	-	-	-	-	2.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230802*	MW185	On-base SA02	02 Aug 2023	-	-	2.37	17.6	-30.6	860	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.11	1.02	0.05	1.6	-	<0.02	<0.1	0.04	0.15	0.02	0.04	<0.02
0927_MW185_240219*	MW185	On-base SA02	19 Feb 2024	-	-	2.67	22.7	141.4	1,028	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_241011*	MW185	On-base SA02	11 Oct 2024	-	-	3.7	18.6	16.6	1,099	9.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_250603*	MW185	On-base SA02	03 Jun 2025	-	-	2.44	18.1	69.3	841	9.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/5_180813	MW185	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	61	540	-	600	-	-	73	-	-	-	840,000	-	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230316	MW185	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.07	0.12	1.17	0.07	1.62	-	<0.02	<0.1	0.04	0.17	0.03	0.05	<0.02
0927_MW185_240221	MW185	On-base SA02	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09	0.09	1.09	0.07	1.92	-	<0.02	<0.1	0.03	0.12	0.03	0.04	<0.02
0927_MW185_241011	MW185	On-base SA02	11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.074	0.17	0.85	0.068	1.1	0.005	<0.001	<0.005	0.042	0.17	0.024	0.036	0.002
0927_MW185_250603	MW185	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	0.16	1.25	0.07	2.66	<0.02	<0.02	<0.1	0.04	0.19	0.03	0.04	<0.02
0927_QC101_241011	MW185	On-base SA02	11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.070	0.15	1.4	0.073	1.6	0.007	<0.001	0.006	0.027	0.17	0.040	0.027	0.002
0927_QC201_241011	MW185	On-base SA02	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.10	0.16	1.1	0.070	1.4	-	0.0022	0.054	0.049	0.14	0.032	0.042	0.0027
0927_MW186_131113*	MW186	On-base SA02	13 Nov 2013	-	-	5.15	16.7	105.2	3,167	8.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,700	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_160519*	MW186	On-base SA02	19 May 2016	-	-	2.76	19.7	160	2,630	6.28	-	-	-	<10	520	-	-	-	-	670	-	0.5	-	-	-	46	1,800	0.32	-	2.2	-	2.9	-	<0.01	0.1	0.19	0.67	0.09	0.08	<0.01
0927_MW186_180817*	MW186	On-base SA02	17 Aug 2018	-	-	6.95	18.6	-	4,211	7.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.15	1.1	0.06	2.4	-	<0.01	0.06	0.13	0.34	0.05	0.05	<0.01
0927_MW186_210702*	MW186	On-base SA02	02 Jul 2021	-	-	4.42	17.8	182.9	3,834	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_220617*	MW186	On-base SA02	17 Jun 2022	-	-	5.77	17.47	140	890	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_230620*	MW186	On-base SA02	20 Jun 2023	-	4.12	3.23	17.8	-17.7	1,929	8.38	-	-	-	-	-	-	-	-	-	-	3.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/6_180817	MW186	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	430	-	430	-	-	1,400	-	-	-	3,000,000	-	260	-	3,000	-	-	-	-	-	-	-	-	-	-	-	-
0927-QC102	MW186	On-base SA02	19 May 2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	0.98	-	0.26	-	<0.01	0.08	0.15	0.87	0.07	0.07	<0.01
0927_MW187_131118*	MW187	On-base SA02	18 Nov 2013	-	-	2.3	17.9	118.5	908	7.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	510	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_160519*	MW187	On-base SA02	19 May 2016	-	-	3.19	18.8	183	1,272	7.16	-	-	-	<10	460	-	-	-	-	160	-	0.6	-	-	-	25	870	0.32	-	1.5	-	0.93	-	<0.01	0.09	0.19	0.79	0.11	0.07	<0.01
0927_MW187_180814*	MW187	On-base SA02	14 Aug 2018	-	-	2.33	19.5	-	1,922	7.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.36	0.28	1.9	0.1	3.6	-	<0.01	0.31	0.4	1.7	0.14	0.1	<0.01
0927_MW187_210705*	MW187	On-base SA02	05 Jul 2021	-	4.77	2.8	18.7	169.5	1,897	7.35	-	-	-	-	-	-	-	-	-	-	2.80	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_220616*	MW187	On-base SA02	16 Jun 2022	-	-	2.51	19.3	19.2	880	7.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_230620*	MW187	On-base SA02	20 Jun 2023	-	4.54	5.47	18.8	-26.9	841	7.57	-	-	-	-	-	-	-	-	-	-	5.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/7_180814	MW187	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	410	-	410	-	-	400	-	-	-	1,200,000	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW7/7_DUP	MW187	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	530	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW188_180814*	MW188	On-base SA02	14 Aug 2018	-	-	6.08	18.1	-	1,458	8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.04	0.49	0.02	0.79	-	<0.01	<0.05	0.03	0.08	0.01	0.03	<0.01
0927_GW7/8_180814	MW188	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	52	610	-	660	-	-	95	-	-	-	990,000	-	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW188_241009	MW188	On-base SA02	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	1.4	12	0.68	8.6	<0.02	<0.02	0.13	0.30	1.8	0.21	0.31	0.003
0927_MW189_131118*	MW189	On-base SA02	18 Nov 2013	-	-	5.27	19.5	94.2	1,443	8.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	830	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_160519*	MW189	On-base SA02	19 May 2016	-	-	5.48	18.9	88	1,520	8.57	-	-	-	72	620	-	-	-	-	74	-	1.6	-	-	-	14	890	0.06	-	0.55	-	0.41	-	<0.01	<0.05	0.03	0.13	0.02	0.02	<0.01
0927_MW189_210705*	MW189	On-base SA02	05 Jul 2021	-	4.92	2.44	18.5	139	1,874	8.32	-	-	-	-	-	-	-	-	2.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_220607*	MW189	On-base SA02	07 Jun 2022	-	-	0.47	15.17	103.6	5,780	7.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_230620*	MW189	On-base SA02	20 Jun 2023	-	4.73	1.58	18.6	-28.5	1,515	8.41	-	-	-	-	-	-	-	-	-	-	1.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_121101*	MW190	On-base SA02	01 Nov 2012	-	-	2.68	16.6	17.1	696	7.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	540	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_131107*	MW190	On-base SA02	07 Nov 2013	-	-	2.76	18.5	141.2	734	8.49	-	-	-	14	380	<2	400	-	-	27	-	0.9	-	-	-	26	-	490	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_140501*	MW190	On-base SA02	01 May 2014	-	-	3.76	17.7	-219.1	723	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	570	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_160519*	MW190	On-base SA02	19 May 2016	-	-	0.99	18.2	119	898	5.87	-	-	-	<10	450	-	-	-	-	22	-	0.5	-	-	-	9.8	590	0.05	-	0.54	-	0.18	-	<0.01	<0.05	0.02	0.11	0.02	0.01	<0.01
0927_MW190_180809*	MW190	On-base SA02	09 Aug 2018	-	-	2.31	17.6	-	751	7.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	0.05	0.63	0.02	0.81	-	<0.01	<0.05	0.02	0.11	0.01	0.02	<0.01
0927_MW190_231016*	MW190	On-base SA02	16 Oct 2023	-	-	2.3	16.8	17.2	793	7.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_231212*	MW190	On-base SA02	12 Dec 2023	-	-	2.24	20.18	24.8	811	7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/1_180809	MW190	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	420	-	420	-	-	27	-	-	-	530,000	-	21	-	530	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_121031*	MW191	On-base SA02	31 Oct 2012	-	-	5.19	21.8	35.7	7,418	7.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,400	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_131113*	MW191	On-base SA02	13 Nov 2013	-	-	1.47	15.9	108.3	6,714	7.55	-	-	-	<2	1,100	<2	1,100	-	-	1,600	-	0.44	-	-	-	390	-	3,700	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_180808*	MW191	On-base SA02	08 Aug 2018	-	-	1.69	19	-	5,949	7.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.18	0.19	1.5	0.05	2.5	-	<0.01	0.05	0.07	0.39	0.04	0.06	<0.01
0927_MW191_231016*	MW191	On-base SA02	16 Oct 2023	-	-	4.91	18.4	30	6,662	7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	363	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_231211*	MW191	On-base SA02	11 Dec 2023	-	-	2.6	18.9	87	5,118	6.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	349	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/2_180808	MW191	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	870	-	870	-	-	1,400	-	-	-	2,700,000	-	330	-	2,700	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_121031*	MW192	On-base SA02	31 Oct 2012	-	-	5.75	21.4	-49.2	1,800	8.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,150	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_131112*	MW192	On-base SA02	12 Nov 2013	-	-	0.94	17.6	98.7	182	8.38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_160519*	MW192	On-base SA02	19 May 2016	-	-	0.54	20.2	127	1,854	6.53	-	-	-	<10	810	-	-	-	-	110	-	0.7	-	-	-	29	1,200	0.59	-	2.7	-	1.9	-	<0.01	0.11	0.22	1.1	0.13	0.13	<0.01
0927_MW192_180809*	MW192	On-base SA02	09 Aug 2018	-	-	0.99	19.5	-	2,077	8.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.58	0.84	5.3	0.27	6.9	-	<0.01	0.17	0.34	1.6	0.14	0.21	<0.01
0927_MW192_210628*	MW192	On-base SA02	28 Jun 2021	2,170	5.23	1.32	19	25	2,172	8.38	-	-	-	-	-	-	-	-	-	-	1.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_220614*	MW192	On-base SA02	14 Jun 2022	-	-	1.16	18.5	13	3,140	8.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230315*	MW192	On-base SA02	15 Mar 2023	-	-	1.65	20.7	72.6	4,092	8.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230615*	MW192	On-base SA02	15 Jun 2023	-	4.96	0.91	19.1	28.9	2,886	7.93	-	-	-	-	-	-	-	-	-	-	0.91	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230802*	MW192	On-base SA02	02 Aug 2023	-	-	2.83	16.2	-21.4	1,187	8.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	0.10	0.90	0.04	1.91	-	<0.02	<0.1	0.03	0.15	0.02	0.04	<0.02
0927_MW192_231016*	MW192	On-base SA02	16 Oct 2023	-	-	2.03	18.7	4.7	1,976	8.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	102	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_231211*	MW192	On-base SA02	11 Dec 2023	-	-	1.27	19.2	120.8	1,050	5.83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_240219*	MW192	On-base SA02	19 Feb 2024	-	-	6.98	20.4	57.3	1,937	8.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_241010*	MW192	On-base SA02	10 Oct 2024	-	-	9.5	18.7	25.7	409	8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_250603*	MW192	On-base SA02	03 Jun 2025	-	-	3.96	17.9	62.8	885	9.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/3_180809	MW192	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	26	760	-	790	-	-	200	-	-	-	1,400,000	-	120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230316	MW192	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.25	0.23	1.80	0.11	2.66	-	<0.02	<0.1	0.07	0.44	0.04	0.09	<0.02
0927_MW192_240220	MW192	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.14	0.20	2.18	0.13	5.14	-	<0.02	<0.1	0.06	0.32	0.05	0.10	<0.02
0927_MW192_241010	MW192	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.048	0.081	0.49	0.043	0.88	0.010	<0.001	<0.005	0.

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Table B3 – Groundwater Analytical Results

				Field						Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																							632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																							220	
ANZG 2026 Freshwater 95%																																0.9								
PFAS NEMP 3.0 2025 Freshwater 99%																																							19	
ANZG 2026 Freshwater 99%																																0.02								
Field ID	**Location Code**	**Investigation Area**	**Date**																																					
0927_MW193_180808*	MW193	On-base SA02	08 Aug 2018	-	-	**2.23**	**19.1**	-	**3,314**	**7.85**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.13**	**0.19**	**1.9**	**0.1**	**4.2**	-	<0.01	**0.07**	**0.07**	**0.54**	**0.07**	**0.09**	<0.01
0927_MW193_210628*	MW193	On-base SA02	28 Jun 2021	**4,410**	**5.39**	**0.13**	**18.4**	**47.3**	**4,407**	**7.76**	-	-	-	-	-	-	-	-	-	-	**0.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_220614*	MW193	On-base SA02	14 Jun 2022	-	-	**0.5**	**18.94**	**107.2**	**3,713**	**7.77**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_230615*	MW193	On-base SA02	15 Jun 2023	-	**5.35**	**0.14**	**18.9**	**63.9**	**3,663**	**7.74**	-	-	-	-	-	-	-	-	-	-	**0.14**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231016*	MW193	On-base SA02	16 Oct 2023	-	-	**6.77**	**20.8**	**130.8**	**134.2**	**6.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231211*	MW193	On-base SA02	11 Dec 2023	-	-	**0.71**	**19.04**	**67.8**	**1,772**	**5.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**92**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/4_180808	MW193	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**790**	-	**800**	-	-	**640**	-	-	-	**2,000,000**	-	**190**	-	**2,000**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231017	MW193	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**147**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_180809*	MW194	On-base SA02	09 Aug 2018	-	-	**0.35**	**18.9**	-	**1,970**	**8.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.2**	**2.1**	**0.1**	**5**	-	<0.01	**0.06**	**0.09**	**0.42**	**0.06**	**0.09**	<0.01
0927_MW194_231016*	MW194	On-base SA02	16 Oct 2023	-	-	**0.98**	**17.4**	**96.1**	**1,214**	**6.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_231212*	MW194	On-base SA02	12 Dec 2023	-	-	**0.28**	**18.2**	**161.1**	**1,210**	**5.47**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**38**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/5_180809	MW194	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	**25**	**600**	-	**620**	-	-	**240**	-	-	-	**1,300,000**	-	**100**	-	**1,300**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_231017	MW194	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**46**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_121031*	MW195	On-base SA02	31 Oct 2012	-	-	**4.25**	**25**	**-52.8**	**1,339**	**7.74**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_131112*	MW195	On-base SA02	12 Nov 2013	-	-	**3.11**	**17.2**	**107.9**	**1,352**	**7.84**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**740**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_160518*	MW195	On-base SA02	18 May 2016	-	-	**6.76**	**15.9**	**127**	**1,140**	**8.24**	-	-	-	**41**	**600**	-	-	-	-	**12**	-	<0.5	-	-	-	**5.6**	**670**	**0.09**	-	**1.3**	-	**1.8**	-	<0.01	<0.05	**0.02**	**0.1**	**0.02**	**0.03**	<0.01
0927_MW195_180808*	MW195	On-base SA02	08 Aug 2018	-	-	**1.85**	**18.7**	-	**954**	**7.51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.09**	**0.93**	**0.03**	**1.6**	-	<0.01	<0.05	**0.02**	**0.1**	**0.01**	**0.03**	<0.01
0927_MW195_210629*	MW195	On-base SA02	29 Jun 2021	**870**	**5.99**	**1.61**	**17.7**	**63.7**	**870**	**7.68**	-	-	-	-	-	-	-	-	-	**1.61**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_220609*	MW195	On-base SA02	09 Jun 2022	-	-	**1.32**	**17.63**	**63.1**	**880**	**7.88**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_230615*	MW195	On-base SA02	15 Jun 2023	-	**5.64**	**0.54**	**18.1**	**-20.8**	**756**	**7.87**	-	-	-	-	-	-	-	-	-	**0.54**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_231016*	MW195	On-base SA02	16 Oct 2023	-	-	**1.22**	**17.8**	**4.3**	**810**	**8.08**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_231212*	MW195	On-base SA02	12 Dec 2023	-	-	**1.75**	**19.8**	**161**	**874**	**5.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/6_180808	MW195	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**520**	-	**520**	-	-	**15**	-	-	-	**690,000**	-	**16**	-	**690**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_121029*	MW196	On-base SA02	29 Oct 2012	-	-	**9.36**	**20.4**	**70.4**	**8,327**	**7.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5,500**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_131112*	MW196	On-base SA02	12 Nov 2013	-	-	**7.82**	**17**	**141.6**	**9,926**	**7.51**	-	-	-	<2	**290**	<2	**290**	-	-	**3,000**	-	**0.19**	-	-	-	**440**	-	**5,400**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_160519*	MW196	On-base SA02	19 May 2016	-	-	**11.1**	**15.9**	**183**	**9,450**	**7.55**	-	-	-	<10	**400**	-	-	-	-	**2,600**	-	<0.5	-	-	-	-	**150**	**5,700**	**0.09**	-	**0.74**	-	**0.37**	-	<0.01	<0.05	**0.03**	**0.12**	**0.02**	**0.02**	<0.01
0927_MW196_180817*	MW196	On-base SA02	17 Aug 2018	-	-	**7.58**	**17.6**	-	**9,226**	**7.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.06**	**0.55**	**0.02**	**0.59**	-	<0.01	<0.05	**0.03**	**0.1**	**0.01**	**0.02**	<0.01
0927_MW196_210629*	MW196	On-base SA02	29 Jun 2021	**9,110**	**6.23**	**8**	**17.7**	**71.4**	**9,108**	**7.56**	-	-	-	-	-	-	-	-	-	**8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_220609*	MW196	On-base SA02	09 Jun 2022	-	-	**8.2**	**16.87**	**110.8**	**9,348**	**7.62**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_230615*	MW196	On-base SA02	15 Jun 2023	-	**5.88**	**5.86**	**17.7**	**31.1**	**9,485**	**7.15**	-	-	-	-	-	-	-	-	-	**5.86**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_231016*	MW196	On-base SA02	16 Oct 2023	-	-	**7.39**	**17.8**	**70.9**	**9,800**	**6.68**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**494**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_231212*	MW196	On-base SA02	12 Dec 2023	-	-	**7.32**	**19.46**	**53**	**10,150**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**495**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/7_180817	MW196	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**330**	-	**330**	-	-	**2,600**	-	-	-	**4,700,000**	-	**410**	-	**4,700**	-	-	-	-	-	-	-	-	-	-	-	-
GW81/7_DUPLICATE	MW196	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	<2	**290**	<2	**290**	-	-	**3,000**	-	**0.19**	-	-	-	**430**	-	**5,300**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_131107*	MW197	On-base SA02	07 Nov 2013	-	-	**0.17**	**19.3**	**150.7**	**998**	**7.43**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**570**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_180808*	MW197	On-base SA02	08 Aug 2018	-	-	**0.17**	**18.6**	-	**860**	**6.99**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.08**	**0.81**	**0.04**	**1.9**	-	<0.01	<0.05	**0.05**	**0.15**	**0.04**	**0.06**	<0.01
0927_MW197_210628*	MW197	On-base SA02	28 Jun 2021	**950**	**4.63**	**0.27**	**17.1**	**-27.2**	**950**	**7.12**	-	-	-	-	-	-	-	-	-	**0.27**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_220614*	MW197	On-base SA02	14 Jun 2022	-	-	**0.7**	**17.7**	**177**	**987**	**7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_230613*	MW197	On-base SA02	13 Jun 2023	-	**4.26**	**0.52**	**17.8**	**-13.1**	**1,102**	**7.1**	-	-	-	-	-	-	-	-	-	**0.52**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88A/1_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**460**	-	**460**	-	-	**46**	-	-	-	**540,000**	-	**31**	-	**540**	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88A/1_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.09**	**0.86**	**0.04**	**2.2**	-	<0.01	<0.05	**0.06**	**0.16**	**0.04**	**0.06**	<0.01
0927_QC105_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**400**	-	**400**	-	-	**89**	-	-	-	**590,000**	-	**36**	-	**590**	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC205_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	<1	**507**	<1	**507**	**11.9**	**9.67**	**39**	-	-	**10.2**	-	**31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC205_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.1**	**0.06**	**1.3**	**0.05**	**1.62**	-	<0.02	<0.1	<0.02	**0.16**	**0.08**	**0.06**	<0.02
0927-GW 88A/1	MW197	On-base SA02	19 May 2016	-	-	-	**20.2**	**12**	**942**	**5.82**	-	-	-	<10	**530**	-	-	-	-	**38**	-	<0.5	-	-	-	-	**9.8**	**640**	**0.02**	-	<0.01	-	<0.01	-	<0.01	<0.05	**0.02**	**0.08**	**0.01**	**0.01**	<0.01
0927_MW198_131107*	MW198	On-base SA02	07 Nov 2013	-	-	**1.1**	**20.1**	**131.4**	**1,107**	**8.16**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**650**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_160519*	MW198	On-base SA02	19 May 2016	-	-	**0.11**	**19.9**	**116**	**1,008**	**6.21**	-	-	-	<10	**480**	-	-	-	-	**37**	-	**0.7**	-	-	-	-	**13**	**680**	**0.02**	-	**0.07**	-	<0.01	-	<0.01	<0.05	<0.01	**0.01**	<0.01	<0.01	<0.01
0927_MW198_180806*	MW198	On-base SA02	06 Aug 2018	-	-	**3.18**	**18.7**	-	**868**	**8.07**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.02**	**0.24**	<0.01	**0.31**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
0927_MW198_210628*	MW198	On-base SA02	28 Jun 2021	**1,010**	**4.83**	**0.01**	**18.6**	**15.5**	**1,006**	**7.9**	-	-	-	-	-	-	-	-	-	**0.01**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_220614*	MW198	On-base SA02	14 Jun 2022	-	-	**0**	**18.8**	**-57.5**	**1,229**	**7.69**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_230613*	MW198	On-base SA02	13 Jun 2023	-	**4.45**	**0.48**	**16.4**	**48.2**	**960**	**7.89**	-	-	-	-	-	-	-	-	-	**0.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88B/1_180806	MW198	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	<10	**390**	-	**400**	-	-	**46**	-	-	-	**590,000**	-	**28**	-	**590**	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88B/1_180806	MW198	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	**0.02**	**0.26**	<0.01	**0.37**	-	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01
0927_QC204_180806	MW198	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	**0.02**	**0.37**	<0.02	**0.31**	-	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02
0927_MW199_131107*	MW199	On-base SA02	07 Nov 2013	-	-	**0.44**	**19.1**	**-39.7**	**1,526**	**8.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**950**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_160519*	MW199	On-base SA02	19 May 2016	-	-	**4.3**	**17.2**	-	**1,839**	**8.11**	-	-	-	**26**	**750**	-	-	-	-	**75**	-	<0.5	-	-	-	-	**17**	**1,000**	**0.98**	-	**5.4**	-	**3.6**	-	<0.01	**0.14**	**0.34**	**1.9**	**0.22**	**0.2**	<0.01
0927_MW199_210705*	MW199	On-base SA02	05 Jul 2021	-	**5.12**	**0.13**	**17.2**	**135.1**	**3,329**	**7.96**	-	-	-	-	-	-	-	-	-	**0.13**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_220617*	MW199	On-base SA02	17 Jun 2022	-	-	**0.54**	**17.97**	**114**	**1,147**	**8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_230619*	MW199	On-base SA02	19 Jun 2023	-	**4.73**	**0.38**	**16.2**	**77**	**1,486**	**6.55**	-	-	-	-	-	-	-	-	-	**0.87**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_180814*	MW200	On-base SA02	14 Aug 2018	-	-	**1.05**	**19.1**	-	**3,050**	**7.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.92**	**1.8**	**5.8**	**1.1**	**18**	-	**0.03**	**0.39**	**0.56**	**3.3**	**0.46**	**0.41**	<0.01
0927_MW200_230316*	MW200	On-base SA02	16 Mar 2023	-	-	**1.72**	**20.8**	**103.9**	**4,555**	**7.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.83**	**0.74**	**4.13**	**0.28**	**7.94**	-	<0.02	**0.2**	**0.32**	**1.69**	**0.23**	**0.23**	<0.02
0927_MW200_230801*	MW200	On-base SA02	01 Aug 2023	-	-	**2.35**	**17.2**	**-9.9**	**4,080**	**7.57**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.93**	**0.76**	**4.43**	**0.25**	**7.68**	-	<0.02	**0.1**	**0.33**	**1.77**	**0.25**	**0.23**	<0.02
0927_MW200_240219*	MW200	On-base SA02	19 Feb 2024	-	-	**2.48**	**20.7**	**72.5**	**4,615**	**7.51**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_241010*	MW200	On-base SA02	10 Oct 2024	-	-	**7.48**	**18.1**	**46**	**5,055**	**7.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_250603*	MW200	On-base SA02	03 Jun 2025	-	-	**2.31**	**18.3**	**111.1**	**3,854**	**7.73**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_240220	MW200	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.94**	**0.89**	**4.90**	**0.30**	**7.41**	-	<0.02	**0.2**	**0.37**	**1.78**	**0.24**	**0.24**	<0.02
0927_MW200_241010	MW200	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.91**	**0.72**	**4.2**	**0.15**	**5.4**	<0.02	<0.001	**0.12**	**0.29**	**1.5**	**0.24**	**0.20**	**0.005**
0927_MW200_250603	MW200	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.95**	**0.90**	**4.55**	**0.21**	**6.89**	**0.07**	<0.02	**0.2**	**0.41**	**1.97**	**0.27**	**0.21**	<0.02
0927_QC100_230316	MW200	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.86**	**0.75**	**4.19**	**0.29**	**8.44**	-	<0.02	**0.1**	**0.32**	**1.71**	**0.23**	**0.23**	<0.02
0927_QC200_230316	MW200	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.98**	**0.77**	**4.9**	**0.26**	**11**	**0.09**	<0.01	**0.33**	**0.41**	**2.0**	**0.31**	**0.28**	<0.01
0927_MW201_131115*	MW201	On-base SA02	15 Nov 2013	-	-	**8.23**	**19.6**	**80.7**	**1,588**	**8.81**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**880**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW201_160519*	MW201	On-base SA02	19 May 2016	-	-	**6.7**	**18.8**	**82**	**1,680**	**8.62**	-	-	-	**57**	**520**	-	-	-	-	**100**	-	**2**	-	-	-	**28**	**890**	**0.03**	-	**0.1**	-	<0.01	-	<0.01	<0.05	**0.01**	**0.04**	<0.01	**0.01**	<0.01
0927_MW201_180814*	MW201	On-base SA02	14 Aug 2018	-	-	**2.83**	**18.7**	-	**971**	**8.84**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.04**	**0.35**	**0.01**	**0.6**	-	<0.01	<0.05	**0.02**	**0.03**	<0.01	**0.01**	<0.01
0927_MW201_210630*	MW201	On-base SA02	30 Jun 2021	-	-	**0.11**	**18.9**	**-33.6**	**1,267**	**8.65**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW201_220617*	MW201	On-base SA02	17 Jun 2022	-	-	**2.1**	**18.7**	**-24.9**	**1,162**	**8.67**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW100_190205	MW100	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.37**	<0.01	**0.19**	-	<0.01	<0.05	**0.01**	**0.07**	<0.01	**0.02**	<0.01
0927_MW101_190205	MW101	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	<10	**310**	<20	**310**	-	-	**1,300**	-	<0.5	-	**2,300,000**	-	**220**	-	**2,500**	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW101_190205	MW101	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.06**	**0.4**	**0.01**	**0.26**	-	<0.01	<0.05	**0.05**	**0.12**	**0.01**	**0.02**	<0.01
0927_MW102_190205	MW102	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	**1.4**	**8.1**	**0.8**	**9.4**	-	<0.01	**0.26**	**0.37**	**2**	**0.21**	**0.36**	<0.01
0927_MW102_240220	MW102	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.06**	**1.11**	**7.56**	**0.63**	**10.5**	-	<0.02	**0.2**	**0.44**	**1.62**	**0.20**	**0.35**	<0.02
0927_MW102_241010	MW102	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.1**	**0.94**	**6.9**	**0.38**	**7.8**	<0.0125	<0.001	**0.17**	**0.43**	**1.7**	**0.17**	**0.28**	**0.005**
0927_MW102_250603	MW102	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.05**	**1.18**	**6.70**	**0.45**	**9.16**	<0.02	<0.02	**0.2**	**0.41**	**1.71**	**0.23**	**0.30**	<0.02
0927_MW103_190205	MW103	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.85**	**1.3**	**7.2**	**0.32**	**6.8**	-	<0.01	**0.27**	**0.36**	**2.1**	**0.16**	**0.27**	<0.01
0927_MW103_230316	MW103	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.17**	**2.41**	**8.75**	**0.24**	**5.91**	-	<0.02	**0.3**	**0.82**	**4.01**	**0.20**	**0.28**	<0.02
0927_MW103_240220	MW103	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.56**	**2.60**	**13.9**	**0.34**	**9**	-	<0.02	**0.4**	**0.88**	**3.65**	**0.27**	**0.36**	<0.02
0927_MW103_241010	MW103	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.2**	**1.8**	**11**	**0.17**	**5.8**	**0.014**	<0.0125	**0.27**	**0.72**	**3.1**	**0.17**	**0.23**	**0.004**
0927_MW103_250603	MW103	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.45**	**1.78**	**8.41**	**0.24**	**6.15**	**0.04**	<0.02	**0.4**	**0.45**	**2.11**	**0.14**	**0.19**	<0.02
0927_MW104_190205	MW104	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.15**	**0.19**	**1.8**	**0.08**	**4.3**	-	<0.01	**0.08**	**0.09**	**0.43**	**0.05**	**0.08**	<0.01
0927_MW105_190205	MW105	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.7**	**2.3**	**22**	**1.5**	**41**	-	<0.01	**0.58**	**0.7**	**5**	**0.42**	**1.2**	<0.01
0927_MW105_240220	MW105	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5.87**	**8.51**	**57.2**	**3.46**	**45**	-	<0.02	**1.1**	**3.50**	**19.6**	**1.23**	**2.60**	<0.02
0927_MW105_241010	MW105	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.7**	**5.3**	**44**	**1.7**	**30**	<0.0625	<0.0625	**0.89**	**3.0**	**17**	**0.87**	**1.7**	**0.006**
0927_MW105_250603	MW105	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3.10**	**5.65**	**33.1**	**2.33**	**33.9**	**0.20**	<0.02	**1.1**	**1.63**	**10.6**	**0.64**	**1.36**	<0.02
0927_MW106_190204	MW106	On-base SA02	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.16**	**0.22**	**2.1**	**0.06**	**1.1**	-	<0.01	**0.06**	**0.06**	**0.42**	**0.03**	**0.07**	<0.01
0927_MW107_190204	MW107	On-base SA02	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.51**	**0.69**	**4**	**0.13**	**0.25**	-	<0.01	**0.11**	**0.15**	**0.93**	**0.1**	**0.14**	<0.01
0927_MW107_240220	MW107	On-base SA02	20 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.73**	**0.78**	**5.40**	**0.18**	**0.64**	-	<0.02	<0.1	**0.26**	**1.14**	**0.15**	**0.21**	<0.02
0927_MW107_241010	MW107	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.84**	**0.89**	**5.8**	**0.25**	**0.55**	<0.001	<0.001	**0.15**	**0.31**	**1.4**	**0.19**	**0.18**	<0.001
0927_MW107_250603	MW107	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

| | | | | | Field | | | | |

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Table B3 – Groundwater Analytical Results

				Field						Inorganics																PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (Field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																						632	
ANZG 2026 Freshwater 90%																																4								
PFAS NEMP 3.0 2025 Freshwater 95%																																						220	
ANZG 2026 Freshwater 95%																																0.9								
PFAS NEMP 3.0 2025 Freshwater 99%																																						19	
ANZG 2026 Freshwater 99%																																0.02								
Field ID	**Location Code**	**Investigation Area**	**Date**																																					
0927_MW229_230801*	MW229	Princes Freeway	01 Aug 2023	-	-	**2.77**	**16.7**	**77.8**	**6,475**	**7.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_240219*	MW229	Princes Freeway	19 Feb 2024	-	-	**2.3**	**21.9**	**7.8**	**8,565**	**7.28**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_241011*	MW229	Princes Freeway	11 Oct 2024	-	-	**9.4**	**15.6**	**60**	**8,761**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_250604*	MW229	Princes Freeway	04 Jun 2025	-	-	**2.7**	**17.2**	**78.5**	**7,528**	**7.96**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW230_210310*	MW230	Princes Freeway	10 Mar 2021	-	-	**0.47**	**19.9**	-	**5,376**	**6.34**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.03**	**0.20**	**0.01**	**0.15**	*<0.01*	*<0.01*	*<0.05*	**0.01**	**0.05**	*<0.01*	**0.02**	*<0.01*
0927_MW230_250604*	MW230	Princes Freeway	04 Jun 2025	-	-	**2.45**	**17.1**	**97**	**18,744**	**7.64**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250605*	MW252	Princes Freeway	05 Jun 2025	-	-	**1.14**	**16.4**	**74.1**	**1,886**	**8.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_241009*	MW253	Princes Freeway	09 Oct 2024	-	-	**0.5**	**17.4**	**59.4**	**6,291**	**7.61**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_250605*	MW253	Princes Freeway	05 Jun 2025	-	-	**2.81**	**17.2**	**52.9**	**5,328**	**8.01**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_190718	MW124	Princes Freeway	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.11**	**0.86**	**0.05**	**3.1**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.13**	**0.03**	**0.2**	**0.01**
0927_MW124_230317	MW124	Princes Freeway	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.05**	**0.48**	**0.02**	**1.11**	-	*<0.02*	*<0.1*	**0.02**	**0.07**	**0.02**	**0.07**	*<0.02*
0927_MW124_230317	MW124	Princes Freeway	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.05**	**0.48**	**0.02**	**1.11**	-	*<0.02*	*<0.1*	**0.02**	**0.07**	**0.02**	**0.07**	*<0.02*
0927_MW124_240216	MW124	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_240221	MW124	Princes Freeway	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.04**	**0.35**	**0.02**	**1.23**	-	*<0.02*	*<0.1*	**0.03**	**0.04**	*<0.02*	**0.07**	*<0.02*
0927_MW124_240312	MW124	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_250110	MW124	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.07**	**0.12**	**0.08**	**4.3**	*<0.01*	*<0.01*	**0.07**	**0.07**	**0.12**	**0.08**	**0.79**	**0.04**
0927_MW124_250110	MW124	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_250605	MW124	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.04**	**0.29**	**0.02**	**1.04**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.04**	*<0.02*	**0.06**	*<0.02*
0927_MW125_190718	MW125	Princes Freeway	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.03**	**0.3**	**0.01**	**0.13**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.06**	*<0.01*	**0.01**	*<0.01*
0927_MW125_240216	MW125	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW125_240312	MW125	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_190717	MW126	Princes Freeway	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	**0.03**	**0.22**	*<0.01*	**0.06**	*<0.01*	*<0.01*	*<0.05*	**0.02**	**0.05**	*<0.01*	**0.01**	*<0.01*
0927_MW126_230317	MW126	Princes Freeway	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.03**	**0.17**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	**0.13**	**0.13**	**0.03**	**0.03**	*<0.02*
0927_MW126_230317	MW126	Princes Freeway	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.03**	**0.17**	*<0.02*	**0.04**	-	*<0.02*	*<0.1*	**0.13**	**0.13**	**0.03**	**0.03**	*<0.02*
0927_MW126_240216	MW126	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_240221	MW126	Princes Freeway	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.04**	**0.21**	*<0.02*	**0.07**	-	*<0.02*	*<0.1*	**0.25**	**0.16**	**0.06**	**0.08**	*<0.02*
0927_MW126_240312	MW126	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_250110	MW126	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.04**	**0.27**	*<0.01*	**0.11**	*<0.01*	*<0.01*	*<0.05*	**0.09**	**0.09**	**0.03**	**0.06**	*<0.01*
0927_MW126_250110	MW126	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_250605	MW126	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.04**	**0.19**	*<0.02*	**0.09**	*<0.02*	*<0.02*	*<0.1*	**0.13**	**0.11**	**0.04**	**0.08**	*<0.02*
0927_MW228_210310	MW228	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	*<10*	**590**	-	**590**	-	-	**2,300**	-	-	-	**4,800,000**	-	**440**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_230317	MW228	Princes Freeway	17 Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.25**	**0.23**	**2.01**	**0.13**	**2.35**	-	*<0.02*	*<0.1*	**0.07**	**0.46**	**0.05**	**0.08**	*<0.02*
0927_MW228_240221	MW228	Princes Freeway	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.60**	**0.63**	**4.79**	**0.29**	**4.25**	-	*<0.02*	*<0.1*	**0.18**	**0.92**	**0.12**	**0.19**	*<0.02*
0927_MW228_250110	MW228	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,000**	-	-	-	**4,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_250110	MW228	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,000**	-	-	-	**4,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_250605	MW228	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.31**	**1.72**	**11.1**	**0.57**	**8.34**	*<0.02*	*<0.02*	**0.3**	**0.44**	**2.15**	**0.24**	**0.43**	*<0.02*
0927_MW229_210310	MW229	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	*<10*	**470**	-	**470**	-	-	**2,300**	-	-	-	**4,700,000**	-	**460**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_230317	MW229	Princes Freeway	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.10**	**0.93**	**0.04**	**0.9**	-	*<0.02*	*<0.1*	**0.03**	**0.17**	*<0.02*	**0.03**	*<0.02*
0927_MW229_230317	MW229	Princes Freeway	17 Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.10**	**0.93**	**0.04**	**0.9**	-	*<0.02*	*<0.1*	**0.03**	**0.17**	*<0.02*	**0.03**	*<0.02*
0927_MW229_240221	MW229	Princes Freeway	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.11**	**0.13**	**1.02**	**0.02**	**0.98**	-	*<0.02*	*<0.1*	**0.05**	**0.16**	*<0.02*	**0.03**	*<0.02*
0927_MW229_241011	MW229	Princes Freeway	11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.13**	**0.18**	**0.92**	**0.068**	**0.88**	**0.002**	*<0.001*	**0.016**	**0.056**	**0.16**	**0.021**	**0.036**	*<0.001*
0927_MW229_250604	MW229	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.11**	**0.12**	**0.89**	**0.03**	**0.96**	*<0.02*	*<0.02*	*<0.1*	**0.10**	**0.19**	**0.02**	**0.03**	*<0.02*
0927_MW230_210310	MW230	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	*<10*	**200**	-	-	-	-	**1,100**	-	-	-	-	-	**460**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW230_250604	MW230	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.17**	**0.14**	**1.19**	**0.09**	**2.19**	*<0.02*	*<0.02*	*<0.1*	**0.07**	**0.24**	**0.04**	**0.10**	*<0.02*
0927_MW244_250114	MW244	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,300**	**0.09**	**0.12**	**0.72**	**0.04**	**0.54**	*<0.01*	*<0.01*	**0.05**	**0.09**	**0.17**	**0.05**	**0.15**	*<0.01*
0927_MW244_250114	MW244	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW245_250114	MW245	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,300**	**0.08**	**0.13**	**1.2**	**0.11**	**3.6**	**0.04**	**0.02**	*<0.05*	**0.05**	**0.15**	**0.02**	**0.05**	*<0.01*
0927_MW245_250114	MW245	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,300**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250113	MW252	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,900**	**0.06**	**0.09**	**0.60**	**0.03**	**1.2**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.11**	**0.01**	**0.03**	*<0.01*
0927_MW252_250113	MW252	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,900**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250605	MW252	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.04**	**0.33**	*<0.02*	**0.81**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.06**	*<0.02*	**0.02**	*<0.02*
0927_MW253_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,200**	**0.46**	**0.68**	**3.8**	**0.52**	**7.8**	*<0.01*	*<0.01*	**0.14**	**0.22**	**0.94**	**0.09**	**0.24**	*<0.01*
0927_MW253_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,200**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_250605	MW253	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.48**	**0.44**	**3.67**	**0.30**	**6.73**	*<0.02*	*<0.02*	**0.1**	**0.19**	**0.83**	**0.09**	**0.22**	*<0.02*
0927_QC100_210310	MW229	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.08**	**0.11**	**0.85**	**0.04**	**1.4**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.17**	**0.02**	**0.04**	*<0.01*
0927_QC101_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,300**	**0.55**	**0.85**	**9.0**	**0.62**	**19**	*<0.01*	*<0.01*	**0.17**	**0.30**	**1.1**	**0.12**	**0.31**	*<0.01*
0927_QC101_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.78**	**0.87**	**4.75**	**0.26**	**3.48**	*<0.02*	*<0.02*	*<0.1*	**0.24**	**0.91**	**0.14**	**0.21**	*<0.02*
0927_QC101_250604	MW229	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.10**	**0.12**	**0.90**	**0.03**	**0.94**	*<0.02*	*<0.02*	*<0.1*	**0.10**	**0.19**	**0.02**	**0.03**	*<0.02*
0927_QC200_210310	MW229	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.09**	**0.07**	**0.91**	**0.02**	**0.74**	-	*<0.02*	*<0.10*	*<0.02*	**0.14**	*<0.02*	**0.02**	*<0.02*
0927_QC201_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,400**	**0.53**	**0.56**	**4.2**	**0.30**	**8**	-	*<0.020*	**0.14**	**0.18**	**1.0**	**0.10**	**0.24**	*<0.010*
0927_QC201_250604	MW229	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.14**	**0.95**	**0.04**	**1.3**	*<0.01*	*<0.01*	*<0.05*	**0.09**	**0.22**	**0.03**	**0.04**	*<0.01*
0927_MW121_200124*	MW121	Skeleton Creek	24 Jan 2020	-	-	**2.4**	**17.9**	-	**5,989**	**5.6**	-	-	-	*<10*	**340**	*<20*	**340**	-	-	**2,400**	-	*<0.5*	-	**4,500,000**	-	**410**	-	**4,500**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_230317*	MW121	Skeleton Creek	17 Mar 2023	-	-	**3.33**	**23.6**	**66.8**	**8,244**	**7.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.46**	**0.02**	**0.35**	-	*<0.02*	*<0.1*	**0.02**	**0.10**	*<0.02*	**0.02**	*<0.02*
0927_MW121_230802*	MW121	Skeleton Creek	02 Aug 2023	-	-	**5.18**	**17.2**	**104.3**	**6,520**	**7.08**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_240219*	MW121	Skeleton Creek	19 Feb 2024	-	-	**4.22**	**21.9**	**66**	**7,613**	**7.32**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_241018*	MW121	Skeleton Creek	18 Oct 2024	-	-	-	**16.7**	**70.9**	**6,866**	**7.56**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.064**	**0.084**	**0.59**	**0.028**	**0.52**	*<0.001*	*<0.001*	**0.019**	**0.030**	**0.11**	**0.013**	**0.025**	*<0.001*
0927_MW121_250605*	MW121	Skeleton Creek	05 Jun 2025	-	-	**4.48**	**15.4**	**120.3**	**6,123**	**7.62**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW122_200124*	MW122	Skeleton Creek	24 Jan 2020	-	-	**5.29**	**17.5**	-	**6,351**	**6.14**	-	-	-	*<10*	**350**	*<20*	**350**	-	-	**3,500**	-	*<0.5*	-	**3,600,000**	-	**390**	-	**3,600**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_200124*	MW123	Skeleton Creek	24 Jan 2020	-	-	**2.24**	**18.2**	-	**6,455**	**7.26**	-	-	-	*<10*	**300**	*<20*	**300**	-	-	**2,600**	-	*<0.5*	-	**4,200,000**	-	**450**	-	**4,200**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_230317*	MW123	Skeleton Creek	17 Mar 2023	-	-	**3.85**	**19.8**	**84.5**	**7,997**	**7.03**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.14**	**0.14**	**1.18**	**0.08**	**1.6**	-	*<0.02*	*<0.1*	**0.05**	**0.26**	**0.03**	**0.05**	*<0.02*
0927_MW123_230802*	MW123	Skeleton Creek	02 Aug 2023	-	-	**5.57**	**14.1**	**140.3**	**4,546**	**6.89**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_240219*	MW123	Skeleton Creek	19 Feb 2024	-	-	**3.41**	**21.6**	**81.5**	**7,738**	**7.14**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_241018*	MW123	Skeleton Creek	18 Oct 2024	-	-	-	**17.6**	**69.6**	**7,361**	**7.3**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.16**	**0.23**	**2.0**	**0.090**	**2.1**	*<0.001*	*<0.001*	**0.037**	**0.062**	**0.39**	**0.034**	**0.064**	*<0.001*
0927_MW123_250605*	MW123	Skeleton Creek	05 Jun 2025	-	-	**2.36**	**15.9**	**113.6**	**6,404**	**7.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_200124	MW121	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.35**	*<0.01*	**0.15**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.08**	*<0.01*	**0.01**	*<0.01*
0927_MW121_230317	MW121	Skeleton Creek	17 Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.46**	**0.02**	**0.35**	-	*<0.02*	*<0.1*	**0.02**	**0.10**	*<0.02*	**0.02**	*<0.02*
0927_MW121_240221	MW121	Skeleton Creek	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.06**	**0.06**	**0.52**	*<0.02*	**0.37**	-	*<0.02*	*<0.1*	**0.02**	**0.09**	*<0.02*	**0.02**	*<0.02*
0927_MW121_250113	MW121	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,400**	-	-	-	**4,400**	**0.06**	**0.08**	**0.56**	**0.03**	**0.64**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.10**	**0.01**	**0.02**	*<0.01*
0927_MW121_250113	MW121	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,400**	-	-	-	**4,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_250605	MW121	Skeleton Creek	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.07**	**0.07**	**0.54**	**0.02**	**0.47**	*<0.02*	*<0.02*	*<0.1*	**0.03**	**0.10**	*<0.02*	**0.02**	*<0.02*
0927_MW122_200124	MW122	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.06**	**0.48**	**0.02**	**0.38**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.08**	**0.01**	**0.02**	*<0.01*
0927_MW123_200124	MW123	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.14**	**1.1**	**0.06**	**0.71**	*<0.01*	*<0.01*	*<0.05*	**0.05**	**0.22**	**0.03**	**0.05**	*<0.01*
0927_MW123_230317	MW123	Skeleton Creek	17 Apr 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.14**	**0.14**	**1.18**	**0.08**	**1.6**	-	*<0.02*	*<0.1*	**0.05**	**0.26**	**0.03**	**0.05**	*<0.02*
0927_MW123_240221	MW123	Skeleton Creek	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.18**	**0.16**	**1.33**	**0.08**	**1.75**	-	*<0.02*	*<0.1*	**0.05**	**0.24**	**0.03**	**0.06**	*<0.02*
0927_MW123_240405	MW123	Skeleton Creek	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,100**	**0.14**	**0.16**	**1.24**	**0.06**	**1.58**	-	*<0.02*	*<0.1*	**0.05**	**0.25**	**0.03**	**0.06**	*<0.02*
0927_MW123_250113	MW123	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,500**	-	-	-	**4,500**	**0.15**	**0.18**	**1.0**	**0.12**	**1.8**	*<0.01*	*<0.01*	*<0.05*	**0.06**	**0.26**	**0.03**	**0.06**	*<0.01*
0927_MW123_250113	MW123	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,500**	-	-	-	**4,500**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_250605	MW123	Skeleton Creek	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.16**	**0.16**	**1.26**	**0.08**	**1.62**	*<0.02*	*<0.02*	*<0.1*	**0.06**	**0.25**	**0.03**	**0.05**	*<0.02*
0927_MW246_250113	MW246	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,400**	-	-	-	**4,400**	**0.08**	**0.10**	**0.72**	**0.03**	**0.54**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.13**	**0.02**	**0.03**	*<0.01*
0927_MW246_250113	MW246	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,400**	-	-	-	**4,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW247_250113	MW247	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,400**	-	-	-	**3,400**	**0.21**	**0.27**	**1.6**	**0.11**	**1.1**	*<0.01*	*<0.01*	**0.06**	**0.11**	**0.38**	**0.05**	**0.07**	*<0.01*
0927_MW247_250113	MW247	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,400**	-	-	-	**3,400**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW248_250114	MW248	Skeleton Creek	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,000**	-	-	-	**4,000**	**0.05**	**0.07**	**0.49**	**0.02**	**0.49**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.09**	**0.01**	**0.02**	*<0.01*
0927_MW248_250114	MW248	Skeleton Creek	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,000**	-	-	-	**4,000**	-	-	-	-

JBS&G

Table B3 – Groundwater Analytical Results

				Field							Inorganics																	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids						
				Electrical Conductivity (Non Compensated)	Standing Water Level	DO (Field)	Temperature (Field)	Redox Potential (Field)	Electrical Conductivity (field)	pH (Field)	Free Carbon Dioxide as CO2	Total Carbon Dioxide as CO2	Total Dissolved Solids (Calc.)	Carbonate Alkalinity (as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Anions Total	Cations Total	Chloride	Dissolved Oxygen	Fluoride	Ionic Balance	Salinity	Sulphate as SO4 - Turbidimetric (filtered)	Sulphate	Sulphate as S	TDS	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
				µS/cm	m	mg/L	°C	mV	µS/cm	pH Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	mg/L	mg/L	mg/L	%	µg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	0.01					0.01	1	1	1	1	1	1	1	0.01	0.01	1	0.1	0.05	0.01	10,000	1	1	5	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																																								632	
ANZG 2026 Freshwater 90%																																4									
PFAS NEMP 3.0 2025 Freshwater 95%																																								220	
ANZG 2026 Freshwater 95%																																0.9									
PFAS NEMP 3.0 2025 Freshwater 99%																																								19	
ANZG 2026 Freshwater 99%																																0.02									
Field ID	**Location Code**	**Investigation Area**	**Date**																																							
0927_MW131_230316*	MW131	Williams Landing	16 Mar 2023	-	-	**0.55**	**19.2**	**98.5**	**14,404**	**7.35**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_230801*	MW131	Williams Landing	01 Aug 2023	-	-	**0.63**	**16**	**-68.6**	**13,228**	**7.39**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15.0**	**17.3**	**105**	**4.88**	**79.1**	-	*<0.03*	**1.8**	**6.71**	**39.6**	**3.50**	**5.26**	*<0.03*
0927_MW131_240219*	MW131	Williams Landing	19 Feb 2024	-	-	**0.58**	**22.9**	**97.3**	**15,310**	**7.31**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_241009*	MW131	Williams Landing	09 Oct 2024	-	-	**0.86**	**16.9**	**79.6**	**15,812**	**0.86**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_250605*	MW131	Williams Landing	05 Jun 2025	-	-	**2.77**	**13.3**	**19.7**	**12,519**	**7.61**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW132_190717*	MW132	Williams Landing	17 Jul 2019	-	-	**0.51**	**17.7**	-	**1,067**	**8.7**	-	-	-	**20**	**280**	*<20*	**300**	-	-	**150**	-	**1.2**	-	**640,000**	-	**42**	-	**640**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW133_190717*	MW133	Williams Landing	17 Jul 2019	-	-	**6.75**	**17.3**	-	**7,707**	**7.97**	-	-	-	**16**	**370**	*<20*	**380**	-	-	**2,600**	-	**0.6**	-	**3,500,000**	-	**280**	-	**3,500**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW135_190716*	MW135	Williams Landing	16 Jul 2019	-	-	**6.52**	**18.1**	-	**15,212**	**7.44**	-	-	-	*<10*	**280**	*<20*	**280**	-	-	**4,700**	-	**0.5**	-	**7,900,000**	-	**810**	-	**7,900**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW136_190716*	MW136	Williams Landing	16 Jul 2019	-	-	**6.49**	**17.8**	-	**11,159**	**7.46**	-	-	-	*<10*	**370**	*<20*	**370**	-	-	**3,300**	-	*<0.5*	-	**6,700,000**	-	**560**	-	**6,700**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_190716*	MW137	Williams Landing	16 Jul 2019	-	-	**4.08**	**17.5**	-	**7,744**	**8.11**	-	-	-	**34**	**610**	*<20*	**640**	-	-	**2,500**	-	**1.1**	-	**4,100,000**	-	**440**	-	**4,100**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_230316*	MW137	Williams Landing	16 Mar 2023	-	-	**1.66**	**17.9**	**54.8**	**5,486**	**7.78**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_230801*	MW137	Williams Landing	01 Aug 2023	-	-	**2.47**	**16.8**	**-14.5**	**4,519**	**7.8**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.02**	**0.16**	*<0.02*	**0.25**	-	*<0.02*	*<0.1*	**0.03**	**0.08**	*<0.02*	**0.03**	*<0.02*
0927_MW137_240219*	MW137	Williams Landing	19 Feb 2024	-	-	**4.4**	**20.6**	**2.6**	**4,565**	**7.83**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_241009*	MW137	Williams Landing	09 Oct 2024	-	-	**4.76**	**17.8**	**49.3**	**4,166**	**8.17**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_250605*	MW137	Williams Landing	05 Jun 2025	-	-	**3.89**	**14.9**	**24.3**	**3,533**	**8.63**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250605*	MW250	Williams Landing	05 Jun 2025	-	-	**3.9**	**15.7**	**49.5**	**5,835**	**7.96**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW127_190717	MW127	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.01*	*<0.01*	**0.07**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.01*
0927_MW128_190717	MW128	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.12**	**0.12**	**0.8**	**0.02**	**0.34**	*<0.01*	*<0.01*	*<0.05*	**0.04**	**0.18**	**0.01**	**0.02**	*<0.01*
0927_MW129_190719	MW129	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.04**	**0.05**	**0.44**	**0.01**	**0.42**	*<0.01*	*<0.01*	*<0.05*	**0.05**	**0.13**	**0.02**	**0.04**	*<0.01*
0927_MW130_190719	MW130	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	*<10*	**280**	*<20*	**280**	-	-	**3,800**	-	**1.1**	-	**4,700,000**	-	**490**	-	**4,700**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_190719	MW130	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.4**	**2.9**	**12**	**0.85**	**3.4**	*<0.01*	*<0.01*	**0.81**	**1.4**	**6.7**	**0.46**	**0.57**	*<0.01*
0927_MW130_230317	MW130	Williams Landing	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.7**	**14.2**	**47.4**	**1.27**	**6.51**	-	*<0.02*	**0.9**	**4.33**	**20.8**	**1.91**	**2.12**	*<0.02*
0927_MW130_230317	MW130	Williams Landing	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.7**	**14.2**	**47.4**	**1.27**	**6.51**	-	*<0.02*	**0.9**	**4.33**	**20.8**	**1.91**	**2.12**	*<0.02*
0927_MW130_240221	MW130	Williams Landing	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.47**	**3.55**	**20.0**	**0.74**	**7.01**	-	*<0.02*	**0.7**	**1.72**	**7.41**	**0.59**	**0.80**	*<0.02*
0927_MW130_240405	MW130	Williams Landing	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.94**	**2.89**	**14.8**	**0.58**	**9.76**	-	*<0.02*	**0.6**	**1.06**	**5.24**	**0.50**	**0.60**	*<0.02*
0927_MW130_241009	MW130	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.5**	**1.4**	**7.9**	**0.22**	**5**	*<0.0125*	*<0.001*	**0.15**	**0.57**	**3.0**	**0.21**	**0.29**	**0.007**
0927_MW130_250605	MW130	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.73**	**5.60**	**28.0**	**1.23**	**13.6**	*<0.02*	*<0.02*	**1.0**	**1.96**	**9.96**	**0.95**	**1.22**	*<0.02*
0927_MW131_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	*<10*	**750**	*<20*	**750**	-	-	**4,300**	-	*<0.5*	-	**7,800,000**	-	**610**	-	**7,800**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.7**	**1.9**	**9.7**	**0.74**	**2.2**	*<0.01*	*<0.01*	**0.68**	**1.1**	**4.2**	**0.36**	**0.55**	*<0.01*
0927_MW131_230317	MW131	Williams Landing	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.1**	**15.0**	**62.5**	**3.40**	**43.4**	-	*<0.02*	**0.9**	**4.32**	**21.2**	**2.08**	**3.28**	**0.02**
0927_MW131_230317	MW131	Williams Landing	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**10.1**	**15.0**	**62.5**	**3.40**	**43.4**	-	*<0.02*	**0.9**	**4.32**	**21.2**	**2.08**	**3.28**	**0.02**
0927_MW131_240221	MW131	Williams Landing	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**15.9**	**16.1**	**104**	**6.15**	**79.8**	-	*<0.02*	**2.0**	**7.43**	**31.4**	**2.97**	**5.02**	**0.04**
0927_MW131_240405	MW131	Williams Landing	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14.6**	**17.3**	**105**	**4.99**	**74**	-	*<0.02*	**4.6**	**7.26**	**36.1**	**3.48**	**5.04**	**0.03**
0927_MW131_241009	MW131	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**21**	**23**	**130**	**4.9**	**90**	*<0.0625*	*<0.0625*	**4.5**	**11**	**51**	**3.7**	**5.7**	**0.014**
0927_MW131_250109	MW131	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**14**	**16**	**100**	**4.2**	**80**	*<0.2*	*<0.2*	**3.8**	**7.6**	**35**	**2.9**	**4.1**	**0.02**
0927_MW131_250109	MW131	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,200**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_250605	MW131	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**13.0**	**17.0**	**87.5**	**4.64**	**40.7**	**0.05**	*<0.02*	**4.2**	**6.94**	**31.4**	**3.04**	**4.37**	**0.02**
0927_MW132_190717	MW132	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**0.01**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.01**	*<0.01*	**0.03**	*<0.01*
0927_MW133_190717	MW133	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	*<0.01*	**0.08**	*<0.01*	**0.02**	*<0.01*	*<0.01*	*<0.05*	**0.01**	**0.04**	*<0.01*	*<0.01*	*<0.01*
0927_MW135_190716	MW135	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.05**	**0.04**	**0.24**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	**0.01**	**0.06**	*<0.01*	*<0.01*	*<0.01*
0927_MW136_190716	MW136	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
0927_MW137_190716	MW137	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.13**	**0.09**	**0.27**	*<0.01*	**0.04**	*<0.01*	*<0.01*	**0.07**	**0.04**	**0.17**	**0.01**	**0.01**	*<0.01*
0927_MW137_230317	MW137	Williams Landing	17 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.09**	**0.05**	**0.30**	*<0.02*	**0.68**	-	*<0.02*	*<0.1*	**0.04**	**0.10**	*<0.02*	**0.04**	*<0.02*
0927_MW137_230322	MW137	Williams Landing	22 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.09**	**0.05**	**0.30**	*<0.02*	**0.68**	-	*<0.02*	*<0.1*	**0.04**	**0.10**	*<0.02*	**0.04**	*<0.02*
0927_MW137_240221	MW137	Williams Landing	21 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.02*	*<0.02*	**0.10**	*<0.02*	**0.3**	-	*<0.02*	*<0.1*	**0.03**	**0.04**	*<0.02*	**0.02**	*<0.02*
0927_MW137_240405	MW137	Williams Landing	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.02**	*<0.02*	**0.11**	*<0.02*	**0.15**	-	*<0.02*	*<0.1*	**0.02**	**0.05**	*<0.02*	**0.02**	*<0.02*
0927_MW137_241009	MW137	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.51**	**0.55**	**4.8**	**0.37**	**6.6**	*<0.02*	*<0.02*	**0.070**	**0.14**	**0.77**	**0.10**	**0.15**	**0.003**
0927_MW137_250605	MW137	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.03**	*<0.02*	**0.07**	*<0.02*	**0.13**	*<0.02*	*<0.02*	*<0.1*	*<0.02*	**0.03**	*<0.02*	**0.02**	*<0.02*
0927_MW249_250109	MW249	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4.0**	**4.7**	**27**	**0.99**	**17**	*<0.05*	*<0.01*	**1.1**	**2.3**	**10**	**0.81**	**0.94**	*<0.01*
0927_MW249_250109	MW249	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,900**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250109	MW250	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,700**	**0.20**	**0.27**	**1.7**	**0.05**	**0.87**	*<0.01*	*<0.01*	**0.07**	**0.12**	**0.36**	**0.04**	**0.06**	*<0.01*
0927_MW250_250109	MW250	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,700**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250605	MW250	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.45**	**0.36**	**2.48**	**0.07**	**1.07**	*<0.02*	*<0.02*	**0.1**	**0.21**	**0.70**	**0.06**	**0.08**	*<0.02*
0927_MW251_250109	MW251	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,600**	**1.2**	**1.6**	**12**	**0.08**	**2.7**	*<0.01*	*<0.01*	**0.69**	**1.4**	**6.8**	**0.26**	**0.29**	*<0.01*
0927_MW251_250109	MW251	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**4,600**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW254_250110	MW254	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**170**	*<0.01*	**0.01**	**0.06**	*<0.01*	**0.22**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	**0.01**	*<0.01*
0927_MW254_250110	MW254	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**170**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW255_250110	MW255	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**340**	*<0.01*	**0.01**	**0.11**	*<0.01*	**0.34**	*<0.01*	*<0.01*	*<0.05*	*<0.01*	**0.02**	*<0.01*	**0.02**	*<0.01*
0927_MW255_250110	MW255	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**340**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW256_250110	MW256	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,500**	**0.38**	**0.61**	**2.2**	**0.13**	**5.4**	**0.03**	**0.01**	**0.08**	**0.13**	**0.56**	**0.07**	**0.12**	*<0.01*
0927_MW256_250110	MW256	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,500**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW257_250109	MW257	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6,000**	**18**	**24**	**140**	**4.8**	**70**	*<0.2*	*<0.01*	**3.2**	**7.8**	**41**	**4.2**	**6.5**	*<0.2*
0927_MW257_250109	MW257	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6,000**	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC100_240405	MW137	Williams Landing	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2,670**	**0.03**	*<0.02*	**0.09**	*<0.02*	**0.13**	-	*<0.02*	*<0.1*	**0.02**	**0.05**	*<0.02*	**0.02**	*<0.02*
0927_QC101_250109	MW257	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**6,500**	**20**	**27**	**150**	**7.0**	**76**	*<0.2*	*<0.01*	**3.9**	**9.5**	**47**	**4.6**	**6.2**	*<0.2*
0927_QC101_250110	MW256	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,400**	**0.41**	**0.40**	**2.2**	**0.11**	**3.7**	*<0.01*	*<0.01*	**0.07**	**0.12**	**0.59**	**0.06**	**0.11**	*<0.01*
0927_QC134_190719	MW130	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2.5**	**2.8**	**10**	**1.2**	**2.9**	*<0.01*	*<0.01*	**0.91**	**1.7**	**6.1**	**0.49**	**0.63**	*<0.01*
0927_QC135_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	*<10*	**720**	*<20*	**730**	-	-	**4,000**	-	*<0.5*	-	**7,000,000**	-	**580**	-	**7,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC135_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1.7**	**1.8**	**8.9**	**0.7**	**2.6**	*<0.01*	*<0.01*	**0.67**	**0.99**	**4.9**	**0.37**	**0.5**	*<0.01*
0927_QC200_240405	MW137	Williams Landing	05 Apr 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3,300**	**0.03**	**0.02**	**0.08**	*<0.01*	**0.13**	*<0.01*	*<0.01*	*<0.05*	**0.03**	**0.05**	**0.01**	**0.02**	*<0.01*
0927_QC201_250101	MW256	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1,800**	**0.36**	**0.38**	**2.1**	**0.082**	**4.1**	-	*<0.020*	**0.057**	**0.13**	**0.63**	**0.061**	**0.093**	*<0.010*
0927_QC201_250109	MW257	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7,900**	**15**	**20**	**120**	**5.7**	**77**	-	*<0.020*	**3.5**	**8.3**	**41**	**4.5**	**9.2**	**0.035**

Notes: * Where indicated, the field ID was not present in ESDAT and has been inferred from available sample identifiers.

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW108_190204*	MW108	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.34**	**0.52**	-	**0.6**
0927_MW108_190718*	MW108	On-base (other)	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_190204*	MW109	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.3**	**0.33**	-	**0.34**
0927_MW109_190718*	MW109	On-base (other)	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_230316*	MW109	On-base (other)	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_230801*	MW109	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.88**	**1.00**	-	**1.05**
0927_MW109_240219*	MW109	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_241010*	MW109	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW109_250603*	MW109	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_190204*	MW110	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_191031*	MW110	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**97**	**114.87**	-	**122.39**
0927_MW110_230316*	MW110	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**94.7**	**110**	-	**118**
0927_MW110_230802*	MW110	On-base (other)	02 Aug 2023	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**95.8**	**109**	-	**116**
0927_MW110_240219*	MW110	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_241010*	MW110	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_250603*	MW110	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW111_190204*	MW111	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW112_190204*	MW112	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW113_190204*	MW113	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW114_190204*	MW114	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_190204*	MW115	On-base (other)	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_230316*	MW115	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.03**	**0.03**	-	**0.03**
0927_MW115_230730*	MW115	On-base (other)	30 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_240219*	MW115	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_241009*	MW115	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW115_250603*	MW115	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW116_190206*	MW116	On-base (other)	06 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_190205*	MW117	On-base (other)	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_230316*	MW117	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**66.4**	**99.7**	-	**114**
0927_MW117_230801*	MW117	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**42.8**	**58.2**	-	**63.2**
0927_MW117_240219*	MW117	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_241010*	MW117	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW117_250603*	MW117	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW134_190716*	MW134	On-base (other)	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_200124*	MW140	On-base (other)	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_230316*	MW140	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.96**	**1.23**	-	**1.31**
0927_MW140_230801*	MW140	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.28**	**1.46**	-	**1.53**
0927_MW140_240219*	MW140	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_241009*	MW140	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW140_250603*	MW140	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_180816*	MW144	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.3**	**2.58**	-	**2.71**
0927_MW144_230316*	MW144	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.35**	**1.53**	-	**1.62**
0927_MW144_230801*	MW144	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.41**	**1.62**	-	**1.71**
0927_MW144_240219*	MW144	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_241009*	MW144	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_250603*	MW144	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW130/1_180816	MW144	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW144_240220	MW144	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.53**	**1.73**	-	**1.84**
0927_MW144_241009	MW144	On-base (other)	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**2.1**	**2.453**	-	**2.653**
0927_MW144_250603	MW144	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.55**	**1.78**	<0.05	**1.93**
0927_MW145_180816*	MW145	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.14**	**2.42**	-	**2.61**
0927_GW130/2_180816	MW145	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_180816*	MW146	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.41**	**2.66**	-	**2.79**
0927_MW146_230316*	MW146	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.45**	**1.63**	-	**1.73**
0927_MW146_230801*	MW146	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.49**	**1.65**	-	**1.72**
0927_MW146_240219*	MW146	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_241009*	MW146	On-base (other)	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_250603*	MW146	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW130/3_180816	MW146	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW146_240220	MW146	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.33**	**1.49**	-	**1.59**
0927_MW146_241009	MW146	On-base (other)	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.21**	**1.401**	-	**1.529**
0927_MW146_250603	MW146	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.41**	**1.57**	<0.05	**1.69**
0927_MW165_180816*	MW165	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.87**	**1.01**	-	**1.07**
0927_MW165_191031*	MW165	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.69**	**0.84**	-	**0.9**
0927_GW514/1_180816	MW165	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW166_191031*	MW166	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.19**	**1.39**	-	**1.47**
0927_GW549/1_191031	MW166	On-base (other)	31 Oct 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_131115*	MW175	On-base (other)	15 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_160519*	MW175	On-base (other)	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	<0.05	-	<0.05	-	-	-	-	-
0927_MW175_180816*	MW175	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.85**	**0.99**	-	**1.05**
0927_MW175_191031*	MW175	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1**	**1.16**	-	**1.21**
0927_MW175_210705*	MW175	On-base (other)	05 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_220617*	MW175	On-base (other)	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW175_230621*	MW175	On-base (other)	21 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW598/1_180816	MW175	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW108_190718	MW108	On-base (other)	18 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.36**	**0.58**	-	**0.66**
0927_MW109_190718	MW109	On-base (other)	18 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.33**	**0.36**	-	**0.37**
0927_MW109_230317	MW109	On-base (other)	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.81**	**0.92**	-	**0.97**
0927_MW109_240220	MW109	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.50**	**0.53**	-	**0.53**
0927_MW109_241010	MW109	On-base (other)	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.285**	**0.311**	-	**0.326**
0927_MW109_250603	MW109	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.34**	**0.36**	<0.05	**0.36**
0927_MW110_190204	MW110	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**76**	**94.07**	-	**104.3**
0927_MW110_191031	MW110	On-base (other)	31 Oct 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW110_191031	MW110	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**108**	**127.45**	-	**133.77**
0927_MW110_240220	MW110	On-base (other)	20 Feb 2024	<0.03	<0.03	<0.03	<0.03	<0.09	<0.05	<0.05	<0.05	<0.05	<0.03	<0.09	<0.03	<0.09	<0.09	<0.03	<0.09	**138**	**155**	-	**162**
0927_MW110_241010	MW110	On-base (other)	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**87**	**100.3**	-	**106.807**
0927_MW110_250603	MW110	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**118**	**134**	<0.05	**144**
0927_MW111_190204	MW111	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.55**	**0.78**	-	**0.87**
0927_MW112_190204	MW112	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	-	<0.1
0927_MW113_190204	MW113	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.05**	**0.05**	-	<0.1
0927_MW114_190204	MW114	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	-	<0.1
0927_MW115_190204	MW115	On-base (other)	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	-	<0.1
0927_MW115_230802	MW115	On-base (other)	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.01**	-	**0.01**
0927_MW115_240220	MW115	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.01**	**0.01**	-	**0.01**
0927_MW115_241009	MW115	On-base (other)	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.034**	**0.059**	-	**0.061**
0927_MW115_250603	MW115	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	<0.01
0927_MW116_190206	MW116	On-base (other)	06 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.06**	**0.07**	-	<0.1
0927_MW117_190205	MW117	On-base (other)	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**78**	**111.5**	-	**128.42**
0927_MW117_240220	MW117	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**43.7**	**61.8**	-	**67.5**
0927_MW117_241010	MW117	On-base (other)	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**22.1**	**29.19**	-	**32.314**
0927_MW117_250603	MW117	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**16.5**	**21.3**	<0.05	**23.8**
0927_MW134_190716	MW134	On-base (other)	16 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.08**	**0.11**	-	**0.11**
0927_MW140_200124	MW140	On-base (other)	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.19**	**1.46**	-	**1.615**
0927_MW140_240220	MW140	On-base (other)	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.25**	**0.30**	-	**0.30**
0927_MW140_241009	MW140	On-base (other)	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.94**	**1.197**	-	**1.37**

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW140_250603	MW140	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.31**	**1.50**	<0.05	**1.63**
0927_MW203_180815*	MW203	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW211_180815*	MW211	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.48**	**0.66**	-	**0.75**
0927_MW211_230316*	MW211	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.55**	**0.71**	-	**0.78**
0927_MW211_230731*	MW211	On-base (other)	31 Jul 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW211_240219*	MW211	On-base (other)	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW211_241010*	MW211	On-base (other)	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW211_250603*	MW211	On-base (other)	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GWB/2_180815	MW211	On-base (other)	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW211_230801	MW211	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.56**	**0.74**	-	**0.81**
0927_MW211_240221	MW211	On-base (other)	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.62**	**0.77**	-	**0.85**
0927_MW211_241010	MW211	On-base (other)	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.73**	**0.975**	-	**1.118**
0927_MW211_250603	MW211	On-base (other)	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.57**	**0.74**	<0.05	**0.81**
0927_QC103_230316	MW211	On-base (other)	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.55**	**0.71**	-	**0.77**
0927_QC103_230801	MW211	On-base (other)	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.52**	**0.67**	-	**0.74**
0927_QC203_230316	MW211	On-base (other)	16 Mar 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.75**	**1**	-	**1.16**
0927_QC203_230801	MW211	On-base (other)	01 Jan 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.58**	**0.75**	-	**0.87**
0927_MW212_180816*	MW212	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.23**	**1.59**	-	**1.78**
0927_GWC/1_180815	MW212	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.04**	<0.05	-	<0.1
0927_GWC/1_180816	MW212	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW214_180816*	MW214	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.04**	<0.05	-	<0.1
0927_GWE/1_180816	MW214	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW215_180815*	MW215	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	-	<0.1
0927_GWG/1_180815	MW215	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW218_180815*	MW218	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	-	<0.1
0927_GWH/1_180815	MW218	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW219_180815*	MW219	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	<0.05	-	<0.1
0927_GWH/2_180815	MW219	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW220_180816*	MW220	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.13**	**0.14**	-	**0.14**
0927_GWI/1_180816	MW220	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW221_180816*	MW221	On-base (other)	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.96**	**1.21**	-	**1.29**
0927_MW221_191031*	MW221	On-base (other)	31 Oct 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.93**	**1.24**	-	**1.3**
0927_GWJ/1_180816	MW221	On-base (other)	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW222_180815*	MW222	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.13**	**0.13**	-	**0.13**
0927_GWK/1_180815	MW222	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW223_131115*	MW223	On-base (other)	15 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW223_180815*	MW223	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.07**	**0.07**	-	<0.1
0927_GWM/1_180815	MW223	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW224_180815*	MW224	On-base (other)	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.21**	**0.21**	-	**0.21**
0927_GWOFF/1_180815	MW224	On-base (other)	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC201_191031	MW110	On-base (other)	31 Oct 2019	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**134**	**156**	-	**165**
0927_MW118_190205*	MW118	On-base SA01	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW118_230316*	MW118	On-base SA01	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**51.9**	**66.5**	-	**74.5**
0927_MW118_230801*	MW118	On-base SA01	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**58.0**	**72.8**	-	**78.8**
0927_MW118_240219*	MW118	On-base SA01	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW118_241010*	MW118	On-base SA01	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW118_250603*	MW118	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW119_190206*	MW119	On-base SA01	06 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW162_231017*	MW162	On-base SA01	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_131115*	MW163	On-base SA01	15 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_160519*	MW163	On-base SA01	19 May 2016	<0.01	**0.02**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	<0.05	-	-	-	-	-	-	-
0927_MW163_180803*	MW163	On-base SA01	03 Aug 2018	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.54**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**1,360**	**1,721**	-	**1,842.54**
0927_MW163_210630*	MW163	On-base SA01	30 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_220617*	MW163	On-base SA01	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_230316*	MW163	On-base SA01	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.41**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**821**	**964**	-	**1,030**
0927_MW163_230621*	MW163	On-base SA01	21 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_230801*	MW163	On-base SA01	01 Aug 2023	<0.04	<0.04	<0.04	<0.04	<0.09	<0.05	<0.05	<0.05	<0.05	**0.49**	<0.09	<0.04	<0.09	<0.09	<0.04	<0.09	**801**	**939**	-	**1,010**
0927_MW163_240219*	MW163	On-base SA01	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_241010*	MW163	On-base SA01	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_250603*	MW163	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW163_240220	MW163	On-base SA01	20 Feb 2024	<0.35	<0.35	<0.35	<0.35	<0.88	<0.35	<0.35	<0.35	<0.35	**0.43**	<0.88	<0.35	<0.88	<0.88	<0.35	<0.88	**1,510**	**1,720**	-	**1,830**
0927_MW163_241010	MW163	On-base SA01	10 Oct 2024	<0.02	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.02	<0.02	<0.001	**0.30**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**920**	**1,060.5**	-	**1,161.441**
0927_MW163_250603	MW163	On-base SA01	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.37**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**919**	**1,080**	<0.05	**1,190**
0927_MW164_180801*	MW164	On-base SA01	01 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.2**	**3.7**	-	**4.04**
0927_GW36/1_180801	MW164	On-base SA01	01 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.6**	**3.12**	-	**3.43**
0927_QC201_180801	MW164	On-base SA01	01 Aug 2018	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**2.59**	**2.99**	-	**3.11**
0927_MW118_190205	MW118	On-base SA01	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW118_190205	MW118	On-base SA01	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**30**	**36.9**	-	**40.96**
0927_MW118_240220	MW118	On-base SA01	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**56.4**	**66.3**	-	**70.8**
0927_MW118_241010	MW118	On-base SA01	10 Oct 2024	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	**0.012**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**46**	**58.28**	-	**63.975**
0927_MW118_250603	MW118	On-base SA01	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**24.0**	**28.5**	<0.05	**31.2**
0927_MW119_190206	MW119	On-base SA01	06 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.2**	**4.36**	-	**4.94**
0927_MW204_180801*	MW204	On-base SA01	01 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**53**	**66.84**	-	**73.76**
0927_GWAM/1_180801	MW204	On-base SA01	01 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**50**	**64.61**	-	**71.31**
0927_GWAM/6_180806	MW204	On-base SA01	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**16.2**	**19.5**	-	**21.27**
0927_QC202_180801	MW204	On-base SA01	01 Aug 2018	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**51.4**	**64.7**	-	**68.1**
0927_MW205_180801*	MW205	On-base SA01	01 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**41**	**47.51**	-	**50.14**
0927_MW206_180803*	MW206	On-base SA01	03 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**13**	**14.46**	-	**15.3**
0927_MW207_180806*	MW207	On-base SA01	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**23.4**	**27.44**	-	**29.67**
0927_MW207_230316*	MW207	On-base SA01	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**21.3**	**25.0**	-	**26.8**
0927_MW207_230801*	MW207	On-base SA01	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**20.6**	**23.7**	-	**25.3**
0927_MW207_240219*	MW207	On-base SA01	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW207_241010*	MW207	On-base SA01	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW207_250603*	MW207	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GWAM/4_180806	MW207	On-base SA01	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW207_240220	MW207	On-base SA01	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**20.7**	**23.0**	-	**24.4**
0927_MW207_241010	MW207	On-base SA01	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	**0.021**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**13.5**	**15.131**	-	**15.918**
0927_MW207_250603	MW207	On-base SA01	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.94**	**10.4**	<0.05	**11.2**
0927_QC100_230801	MW207	On-base SA01	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**19.7**	**22.5**	-	**24.1**
0927_QC103_240220	MW207	On-base SA01	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.2**	**20.4**	-	**21.8**
0927_QC200_230801	MW207	On-base SA01	01 Jan 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**16.3**	**19.03**	-	**20.63**
0927_QC203_240220	MW207	On-base SA01	20 Feb 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**19.2**	**21.82**	-	**23.86**
0927_MW208_131115*	MW208	On-base SA01	15 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_160519*	MW208	On-base SA01	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	<0.05	-	-	-	-	-	-	-
0927_MW208_180803*	MW208	On-base SA01	03 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	**0.26**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**87**	**94.93**	-	**98.99**
0927_MW208_210630*	MW208	On-base SA01	30 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_220617*	MW208	On-base SA01	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_230316*	MW208	On-base SA01	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.41**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**185**	**213**	-	**228**
0927_MW208_230620*	MW208	On-base SA01	20 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_230801*	MW208	On-base SA01	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.24**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**81.4**	**90.9**	-	**95.7**
0927_MW208_240219*	MW208	On-base SA01	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_241010*	MW208	On-base SA01	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_250603*	MW208	On-base SA01	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW208_240220	MW208	On-base SA01	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.46**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**162**	**184**	-	**196**
0927_MW208_241010	MW208	On-base SA01	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.007**	<0.001	<0.001	**0.22**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**154**	**171.017**	-	**181.307**

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW208_250603	MW208	On-base SA01	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.28**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**109**	**125**	<0.05	**136**
0927_QC101_230801	MW208	On-base SA01	01 Aug 2023	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	<0.05	<0.05	<0.05	**0.18**	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**59.3**	**66.4**	-	**70.1**
0927_QC102_230316	MW208	On-base SA01	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.42**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**176**	**202**	-	**215**
0927_QC103_250603	MW208	On-base SA01	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.29**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**105**	**120**	<0.05	**130**
0927_QC201_230801	MW208	On-base SA01	01 Jan 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	**0.21**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**71**	**78.6**	-	**83.06**
0927_QC202_230316	MW208	On-base SA01	16 Mar 2023	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	**0.59**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**290**	**326.7**	-	**348.99**
0927_QC203_250603	MW208	On-base SA01	03 Jun 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	**0.34**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**114**	**129.04**	-	**138.64**
0927_MW209_180806*	MW209	On-base SA01	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC102_230801	MW118	On-base SA01	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**46.6**	**59.0**	-	**63.9**
0927_QC124_190205	MW118	On-base SA01	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	
0927_QC124_190205	MW118	On-base SA01	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**35**	**42.23**	-	**46.49**
0927_QC202_230801	MW118	On-base SA01	01 Jan 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**57**	**68.68**	-	**75.29**
0927_MW233_231017*	MW233	On-base SA01	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW239_231017*	MW239	On-base SA01	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW240_240517*	MW240	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW240_240517	MW240	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW241_240517*	MW241	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW241_240517	MW241	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW242_240517*	MW242	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW242_240517	MW242	On-base SA01	17 May 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW243_250113	MW243	On-base SA01	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.6**	**0.72**	-	**0.78**
0927_MW243_250113	MW243	On-base SA01	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW100_190205*	MW100	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW101_190205*	MW101	On-base SA02	05 Feb 2019	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.71**	**0.98**	-	**1.04**
0927_MW102_190205*	MW102	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_230316*	MW102	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**17.4**	**21.9**	-	**24.0**
0927_MW102_230801*	MW102	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.2**	**22.5**	-	**24.4**
0927_MW102_240219*	MW102	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_241010*	MW102	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW102_250603*	MW102	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_190205*	MW103	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_230315*	MW103	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_230802*	MW103	On-base SA02	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**21.7**	**29.8**	-	**32.6**
0927_MW103_240219*	MW103	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_241010*	MW103	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW103_250603*	MW103	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW104_190205*	MW104	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_190205*	MW105	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_230316*	MW105	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**183**	**266**	-	**290**
0927_MW105_230802*	MW105	On-base SA02	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**134**	**190**	-	**205**
0927_MW105_240219*	MW105	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_241010*	MW105	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW105_250603*	MW105	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW106_190204*	MW106	On-base SA02	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_190204*	MW107	On-base SA02	04 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_230316*	MW107	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.78**	**7.01**	-	**7.92**
0927_MW107_230801*	MW107	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.55**	**7.77**	-	**8.59**
0927_MW107_240219*	MW107	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_241010*	MW107	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW107_250603*	MW107	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_190205*	MW120	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_230315*	MW120	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_230802*	MW120	On-base SA02	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.47**	**11.2**	-	**12.0**
0927_MW120_240219*	MW120	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_241010*	MW120	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW120_250603*	MW120	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW141_180806*	MW141	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.63**	**0.72**	-	**0.77**
0927_MWA_180806	MW141	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	
0927_MW142_180806*	MW142	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.58**	**0.73**	-	**0.78**
0927_MWB_180806	MW142	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MWB_180806	MW142	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.55**	**0.69**	-	**0.74**
0927_QC203_180806	MW142	On-base SA02	06 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.14**	**0.14**	-	**0.14**
0927_MW143_180806*	MW143	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.61**	**1.87**	-	**1.94**
0927_PW1_180806	MW143	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_121030*	MW148	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_131111*	MW148	On-base SA02	11 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_160519*	MW148	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	<0.05	-	-	-	-	-	-	-
0927_MW148_210628*	MW148	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_220614*	MW148	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_230613*	MW148	On-base SA02	13 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_231016*	MW148	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW148_231211*	MW148	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_121030*	MW149	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_140430*	MW149	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_180807*	MW149	On-base SA02	07 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4.5**	**5.18**	-	**5.38**
0927_MW149_231016*	MW149	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_231211*	MW149	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_250603*	MW149	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/3_180807	MW149	On-base SA02	07 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW149_250604	MW149	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.19**	**1.39**	-	**1.44**
0927_MW150_121030*	MW150	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_140430*	MW150	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_180807*	MW150	On-base SA02	07 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**11.6**	**14.68**	-	**15.49**
0927_MW150_231016*	MW150	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW150_231211*	MW150	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/4_180807	MW150	On-base SA02	07 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_121030*	MW151	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_131112*	MW151	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_140430*	MW151	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_160519*	MW151	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	<0.05	-	-	-	-	-	-	-
0927_MW151_180817*	MW151	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**10.3**	**11.92**	-	**12.67**
0927_MW151_210701*	MW151	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_220616*	MW151	On-base SA02	16 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_230615*	MW151	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_231016*	MW151	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_241212*	MW151	On-base SA02	12 Dec 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/5_180817	MW151	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW151_231212	MW151	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC109_180817	MW151	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC109_180817	MW151	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**9.9**	**11.51**	-	**12.32**
0927_QC209_180817	MW151	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC209_180817	MW151	On-base SA02	17 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.44**	**10.2**	-	**10.9**
0927_MW152_121101*	MW152	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_131112*	MW152	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_140430*	MW152	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

	PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																				
ANZG 2026 Freshwater 90%																				
PFAS NEMP 3.0 2025 Freshwater 95%																				
ANZG 2026 Freshwater 95%																				
PFAS NEMP 3.0 2025 Freshwater 99%																				
ANZG 2026 Freshwater 99%																				
Field ID	**Location Code**	**Investigation Area**	**Date**																		
0927_MW152_160519*	MW152	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**0.01**	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-
0927_MW152_180817*	MW152	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**0.06**	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**27.4**	**32.21**	-	**34.43**
0927_MW152_210701*	MW152	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_220616*	MW152	On-base SA02	16 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230316*	MW152	On-base SA02	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230613*	MW152	On-base SA02	13 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230802*	MW152	On-base SA02	02 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231016*	MW152	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231211*	MW152	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_240221*	MW152	On-base SA02	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	**0.05**	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**19.4**	**24.9**	-	**27.3**
0927_MW152_241010*	MW152	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_250603*	MW152	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/6_180817	MW152	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_230317	MW152	On-base SA02	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**19.0**	**26.8**	-	**30.4**
0927_MW152_230801	MW152	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.77**	**12.8**	-	**14.2**
0927_MW152_231017	MW152	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_231212	MW152	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW152_241010	MW152	On-base SA02	10 Oct 2024	**0.011**	**0.009**	<0.001	<0.001	<0.001	**0.13**	**0.083**	<0.001	-	**0.029**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**23.6**	**27.253**	-	**28.909**
0927_MW152_250603	MW152	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.93**	**7.65**	<0.05	**8.44**
0927_QC202_241010	MW152	On-base SA02	09 Oct 2024	**0.013**	**0.012**	**0.0056**	<0.010	<0.050	<0.0010	**0.093**	**0.099**	<0.0020	**0.058**	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**27**	-	-	**33**
0927_MW153_121101*	MW153	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_131113*	MW153	On-base SA02	13 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_140430*	MW153	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_160518*	MW153	On-base SA02	18 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW153_180808*	MW153	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**9.7**	**14.74**	-	**16.46**
0927_MW153_210628*	MW153	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_220614*	MW153	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_230613*	MW153	On-base SA02	13 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_250604*	MW153	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW155/7_180808	MW153	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW153_250604	MW153	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.88**	**16.9**	<0.05	**20.0**
0927_MW154_121102*	MW154	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_131106*	MW154	On-base SA02	06 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_140430*	MW154	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_160519*	MW154	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW154_180813*	MW154	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.46**	**2.84**	-	**3.05**
0927_MW154_210701*	MW154	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_220615*	MW154	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_230616*	MW154	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_250604*	MW154	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW154_250604	MW154	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.36**	**1.73**	<0.05	**1.92**
0927_MW155_131114*	MW155	On-base SA02	14 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_160519*	MW155	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.11**	**0.08**	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW155_180813*	MW155	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.12**	**0.16**	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**6.6**	**9.7**	-	**10**
0927_MW155_230315*	MW155	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_230801*	MW155	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	**0.07**	**0.12**	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.98**	**3.04**	-	**3.16**
0927_MW155_240219*	MW155	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_241010*	MW155	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_250603*	MW155	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/2_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW155_230316	MW155	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	**0.10**	**0.27**	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.70**	**5.48**	-	**5.69**
0927_MW155_240220	MW155	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.14**	**5.93**	-	**6.30**
0927_MW155_241010	MW155	On-base SA02	10 Oct 2024	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	**0.14**	**0.26**	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**3.8**	**6.094**	-	**6.485**
0927_MW155_250603	MW155	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	**0.05**	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.18**	**4.75**	<0.05	**5.04**
0927_QC101_240220	MW155	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.03**	**5.86**	-	**6.25**
0927_QC107_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC107_180813	MW155	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**0.23**	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**6.2**	**9.74**	-	**10.33**
0927_QC201_240220	MW155	On-base SA02	20 Feb 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	**0.04**	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4.8**	**6.98**	-	**7.63**
0927_QC207_180813	MW155	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC207_180813	MW155	On-base SA02	13 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	**0.12**	**0.15**	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.18**	**9.80**	-	**10.1**
0927_MW156_121031*	MW156	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_131113*	MW156	On-base SA02	13 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_140429*	MW156	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_160519*	MW156	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW156_180813*	MW156	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.9**	**3.31**	-	**3.43**
0927_MW156_250604*	MW156	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/3_180813	MW156	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW156_250604	MW156	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.84**	**2.08**	<0.05	**2.19**
0927_MW157_121101*	MW157	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_131114*	MW157	On-base SA02	14 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_160519*	MW157	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW157_180810*	MW157	On-base SA02	10 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.58**	**0.64**	-	**0.67**
0927_MW157_210628*	MW157	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_220615*	MW157	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW157_230616*	MW157	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/4_180810	MW157	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_131118*	MW158	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_160519*	MW158	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW158_180814*	MW158	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.65**	**0.71**	-	**0.75**
0927_MW158_210702*	MW158	On-base SA02	02 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_220615*	MW158	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW158_230619*	MW158	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_121101*	MW159	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_131114*	MW159	On-base SA02	14 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_160519*	MW159	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW159_180810*	MW159	On-base SA02	10 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.9**	**1.02**	-	**1.07**
0927_MW159_210701*	MW159	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_220615*	MW159	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW159_230616*	MW159	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/6_180810	MW159	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_121102*	MW160	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_131114*	MW160	On-base SA02	14 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_160519*	MW160	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW160_180810*	MW160	On-base SA02	10 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.87**	**2.17**	-	**2.28**
0927_MW160_210629*	MW160	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_220615*	MW160	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW160_230616*	MW160	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW2/7_180810	MW160	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW161_131114*	MW161	On-base SA02	14 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW161_140429*	MW161	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW161_160519*	MW161	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW161_210629*	MW161	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW161_220615*	MW161	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW161_230619*	MW161	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927-QC101	MW161	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW167_121031*	MW167	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW167_131107*	MW167	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW167_231117*	MW167	On-base SA02	17 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_121101*	MW168	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_131111*	MW168	On-base SA02	11 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_160519*	MW168	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW168_180810*	MW168	On-base SA02	10 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.47**	**0.5**	-	**0.51**
0927_MW168_210629*	MW168	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_220615*	MW168	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW168_230616*	MW168	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/2_180810	MW168	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_121102*	MW169	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_131111*	MW169	On-base SA02	11 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW169_160519*	MW169	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW169_180810*	MW169	On-base SA02	10 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.47**	**0.51**	-	**0.53**
0927_MW169_210629*	MW169	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/3_180810	MW169	On-base SA02	10 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/8_180817	MW169	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927-GW582/3	MW169	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW170_121031*	MW170	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_131111*	MW170	On-base SA02	11 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_160518*	MW170	On-base SA02	18 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW170_180809*	MW170	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.81**	**2.01**	-	**2.12**
0927_MW170_210701*	MW170	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_220614*	MW170	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_230615*	MW170	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW170_231116*	MW170	On-base SA02	16 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/4_180809	MW170	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_121030*	MW171	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_131111*	MW171	On-base SA02	11 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_140428*	MW171	On-base SA02	28 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_160519*	MW171	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW171_180809*	MW171	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.98**	**1.07**	-	**1.11**
0927_MW171_210701*	MW171	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_220609*	MW171	On-base SA02	09 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_230615*	MW171	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW171_231116*	MW171	On-base SA02	16 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/5_180809	MW171	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_121030*	MW172	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_131108*	MW172	On-base SA02	08 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW172_140429*	MW172	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_121031*	MW173	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_131108*	MW173	On-base SA02	08 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_140428*	MW173	On-base SA02	28 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_160519*	MW173	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW173_180809*	MW173	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.25**	**1.4**	-	**1.47**
0927_MW173_210630*	MW173	On-base SA02	30 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_220614*	MW173	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_230616*	MW173	On-base SA02	16 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW173_231116*	MW173	On-base SA02	16 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW582/7_180809	MW173	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_131108*	MW174	On-base SA02	08 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_140429*	MW174	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW174_160519*	MW174	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW174_180817*	MW174	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.56**	**0.7**	-	**0.74**
0927_MW174_231117*	MW174	On-base SA02	17 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FD01	MW174	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW582/8	MW174	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_121102*	MW176	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_131106*	MW176	On-base SA02	06 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_140430*	MW176	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_160519*	MW176	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW176_180813*	MW176	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.67**	**4.21**	-	**4.34**
0927_MW176_210702*	MW176	On-base SA02	02 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_220617*	MW176	On-base SA02	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_230619*	MW176	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_250603*	MW176	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/1_180813	MW176	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW176_250603	MW176	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.42**	**2.90**	<0.05	**3.11**
0927_MW177_121102*	MW177	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW177_131118*	MW177	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW177_160519*	MW177	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW177_180814*	MW177	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.8**	**4.16**	-	**4.33**
0927_GW7/10_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC108_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC108_180814	MW177	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4**	**4.45**	-	**4.77**
0927_QC208_180814	MW177	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC208_180814	MW177	On-base SA02	14 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.77**	**4.23**	-	**4.41**
0927_MW179_121101*	MW179	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_131108*	MW179	On-base SA02	08 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_140429*	MW179	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_160519*	MW179	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW179_220616*	MW179	On-base SA02	16 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_230619*	MW179	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW179_231120*	MW179	On-base SA02	20 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_121030*	MW180	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_131108*	MW180	On-base SA02	08 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_140429*	MW180	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_160519*	MW180	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW180_180817*	MW180	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.19**	**1.45**	-	**1.53**
0927_MW180_210630*	MW180	On-base SA02	30 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_220616*	MW180	On-base SA02	16 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_230619*	MW180	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_231117*	MW180	On-base SA02	17 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_250604*	MW180	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/13_180817	MW180	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW180_250604	MW180	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.93**	**1.22**	<0.05	**1.35**
0927_MW181_121030*	MW181	On-base SA02	30 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW181_131118*	MW181	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW181_160519*	MW181	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW181_180814*	MW181	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.8**	**1.91**	-	**1.98**
0927-QC103	MW181	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
GW7/14_180814	MW181	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_180816*	MW182	On-base SA02	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**5.8**	**7.49**	-	**8.78**
0927_MW182_230315*	MW182	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW182_230801*	MW182	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.82**	**3.52**	-	**3.84**
0927_MW182_231120*	MW182	On-base SA02	20 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_240219*	MW182	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_241010*	MW182	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_250603*	MW182	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/15_180816	MW182	On-base SA02	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW182_230316	MW182	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.68**	**4.55**	-	**4.93**
0927_MW182_240220	MW182	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.49**	**3.05**	-	**3.26**
0927_MW182_241010	MW182	On-base SA02	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**3**	**3.64**	-	**3.957**
0927_MW182_250603	MW182	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.05**	**1.28**	<0.05	**1.39**
0927_MW183_121102*	MW183	On-base SA02	02 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_131106*	MW183	On-base SA02	06 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_140429*	MW183	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_160519*	MW183	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW183_180814*	MW183	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.23**	**2.45**	-	**2.54**
0927_MW183_210705*	MW183	On-base SA02	05 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_220615*	MW183	On-base SA02	15 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_230619*	MW183	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_250604*	MW183	On-base SA02	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/3_180814	MW183	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW183_250604	MW183	On-base SA02	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.57**	**1.78**	<0.05	**1.88**
GW7/3_DUPLICATE	MW183	On-base SA02	06 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_121101*	MW185	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_131113*	MW185	On-base SA02	13 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_140429*	MW185	On-base SA02	29 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_160519*	MW185	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW185_180813*	MW185	On-base SA02	13 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4**	**4.66**	-	**4.9**
0927_MW185_210701*	MW185	On-base SA02	01 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_220617*	MW185	On-base SA02	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230315*	MW185	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230619*	MW185	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230802*	MW185	On-base SA02	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.62**	**2.94**	-	**3.10**
0927_MW185_240219*	MW185	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_241011*	MW185	On-base SA02	11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_250603*	MW185	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/5_180813	MW185	On-base SA02	13 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW185_230316	MW185	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.79**	**3.15**	-	**3.34**
0927_MW185_240221	MW185	On-base SA02	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.01**	**3.32**	-	**3.48**
0927_MW185_241011	MW185	On-base SA02	11 Oct 2024	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.95**	**2.296**	-	**2.559**
0927_MW185_250603	MW185	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.91**	**4.31**	<0.05	**4.57**
0927_QC101_241011	MW185	On-base SA02	11 Oct 2024	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**3**	**3.34**	-	**3.595**
0927_QC201_241011	MW185	On-base SA02	09 Oct 2024	**0.0023**	<0.0020	<0.0050	<0.010	<0.050	<0.0010	<0.0010	<0.0020	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**2.5**	-	-	**3.2**
0927_MW186_131113*	MW186	On-base SA02	13 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_160519*	MW186	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW186_180817*	MW186	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.5**	**4.27**	-	**4.48**
0927_MW186_210702*	MW186	On-base SA02	02 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_220617*	MW186	On-base SA02	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW186_230620*	MW186	On-base SA02	20 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/6_180817	MW186	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927-QC102	MW186	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW187_131118*	MW187	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_160519*	MW187	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW187_180814*	MW187	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**5.5**	**8.51**	-	**8.89**
0927_MW187_210705*	MW187	On-base SA02	05 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_220616*	MW187	On-base SA02	16 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW187_230620*	MW187	On-base SA02	20 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW7/7_180814	MW187	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW7/7_DUP	MW187	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW188_180814*	MW188	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.28**	**1.46**	-	**1.52**
0927_GW7/8_180814	MW188	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW188_241009	MW188	On-base SA02	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**20.6**	**24.55**	-	**27.333**
0927_MW189_131118*	MW189	On-base SA02	18 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_160519*	MW189	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW189_210705*	MW189	On-base SA02	05 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_220607*	MW189	On-base SA02	07 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW189_230620*	MW189	On-base SA02	20 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_121101*	MW190	On-base SA02	01 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_131107*	MW190	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_140501*	MW190	On-base SA02	01 May 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_160519*	MW190	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW190_180809*	MW190	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.44**	**1.64**	-	**1.71**
0927_MW190_231016*	MW190	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW190_231212*	MW190	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/1_180809	MW190	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_121031*	MW191	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_131113*	MW191	On-base SA02	13 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_180808*	MW191	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4**	**4.79**	-	**5.03**
0927_MW191_231016*	MW191	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW191_231211*	MW191	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/2_180808	MW191	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_121031*	MW192	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_131112*	MW192	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_160519*	MW192	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW192_180809*	MW192	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**12.2**	**15.24**	-	**16.35**
0927_MW192_210628*	MW192	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_220614*	MW192	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230315*	MW192	On-base SA02	15 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230615*	MW192	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230802*	MW192	On-base SA02	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.81**	**3.13**	-	**3.27**
0927_MW192_231016*	MW192	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_231211*	MW192	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_240219*	MW192	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_241010*	MW192	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_250603*	MW192	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/3_180809	MW192	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW192_230316	MW192	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.46**	**5.35**	-	**5.69**
0927_MW192_240220	MW192	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.32**	**7.99**	-	**8.32**
0927_MW192_241010	MW192	On-base SA02	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.37**	**1.565**	-	**1.719**
0927_MW192_250603	MW192	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.17**	**2.41**	<0.05	**2.58**
0927_QC100_240220	MW192	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.94**	**7.65**	-	**8.02**
0927_QC200_240220	MW192	On-base SA02	20 Feb 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**7.9**	**8.74**	-	**9.29**
0927_MW193_121031*	MW193	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_131112*	MW193	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_140430*	MW193	On-base SA02	30 Apr 2014	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_160519*	MW193	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW193_180808*	MW193	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**6.1**	**7.07**	-	**7.36**
0927_MW193_210628*	MW193	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_220614*	MW193	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_230615*	MW193	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231016*	MW193	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231211*	MW193	On-base SA02	11 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/4_180808	MW193	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW193_231017	MW193	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_180809*	MW194	On-base SA02	09 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**7.1**	**7.94**	-	**8.24**
0927_MW194_231016*	MW194	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_231212*	MW194	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/5_180809	MW194	On-base SA02	09 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW194_231017	MW194	On-base SA02	17 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_121031*	MW195	On-base SA02	31 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_131112*	MW195	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_160518*	MW195	On-base SA02	18 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW195_180808*	MW195	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.53**	**2.75**	-	**2.87**
0927_MW195_210629*	MW195	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_220609*	MW195	On-base SA02	09 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_230615*	MW195	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_231016*	MW195	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW195_231212*	MW195	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/6_180808	MW195	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_121029*	MW196	On-base SA02	29 Oct 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_131112*	MW196	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_160519*	MW196	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW196_180817*	MW196	On-base SA02	17 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.14**	**1.34**	-	**1.42**
0927_MW196_210629*	MW196	On-base SA02	29 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_220609*	MW196	On-base SA02	09 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_230615*	MW196	On-base SA02	15 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_231016*	MW196	On-base SA02	16 Oct 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW196_231212*	MW196	On-base SA02	12 Dec 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW81/7_180817	MW196	On-base SA02	17 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW81/7_DUPLICATE	MW196	On-base SA02	12 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_131107*	MW197	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_180808*	MW197	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.71**	**3.08**	-	**3.2**
0927_MW197_210628*	MW197	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_220614*	MW197	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW197_230613*	MW197	On-base SA02	13 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88A/1_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88A/1_180808	MW197	On-base SA02	08 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.06**	**3.45**	-	**3.58**
0927_QC105_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC205_180808	MW197	On-base SA02	08 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC205_180808	MW197	On-base SA02	08 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.92**	**3.32**	-	**3.43**
0927-GW 88A/1	MW197	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW198_131107*	MW198	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_160519*	MW198	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW198_180806*	MW198	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.55**	**0.57**	-	**0.59**
0927_MW198_210628*	MW198	On-base SA02	28 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_220614*	MW198	On-base SA02	14 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW198_230613*	MW198	On-base SA02	13 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88B/1_180806	MW198	On-base SA02	06 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW88B/1_180806	MW198	On-base SA02	06 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.63**	**0.65**	-	**0.67**
0927_QC204_180806	MW198	On-base SA02	06 Aug 2018	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.68**	**0.68**	-	**0.7**
0927_MW199_131107*	MW199	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_160519*	MW199	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW199_210705*	MW199	On-base SA02	05 Jul 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_220617*	MW199	On-base SA02	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW199_230619*	MW199	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_180814*	MW200	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**23.8**	**29.84**	-	**32.77**
0927_MW200_230316*	MW200	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.1**	**15.6**	-	**16.6**
0927_MW200_230801*	MW200	On-base SA02	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.1**	**15.7**	-	**16.8**
0927_MW200_240219*	MW200	On-base SA02	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_241010*	MW200	On-base SA02	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_250603*	MW200	On-base SA02	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW200_240220	MW200	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.3**	**16.1**	-	**17.3**
0927_MW200_241010	MW200	On-base SA02	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	**0.021**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**9.6**	**12.86**	-	**14.316**
0927_MW200_250603	MW200	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11.4**	**15.4**	<0.05	**17.1**
0927_QC100_230316	MW200	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.03**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.6**	**16.1**	-	**17.2**
0927_QC200_230316	MW200	On-base SA02	16 Mar 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**15.9**	**20.21**	-	**21.89**
0927_MW201_131115*	MW201	On-base SA02	15 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW201_160519*	MW201	On-base SA02	19 May 2016	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	-	<0.05	<0.05	-	-	<0.05	-	-	-	-	-	-
0927_MW201_180814*	MW201	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.95**	**1.04**	-	**1.09**
0927_MW201_210630*	MW201	On-base SA02	30 Jun 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW201_220617*	MW201	On-base SA02	17 Jun 2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW100_190205	MW100	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.56**	**0.7**	-	**0.76**
0927_MW101_190205	MW101	On-base SA02	05 Feb 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW101_190205	MW101	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.66**	**0.92**	-	**1.02**
0927_MW102_190205	MW102	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**17.5**	**21.7**	-	**24.53**
0927_MW102_240220	MW102	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.1**	**21.9**	-	**23.7**
0927_MW102_241010	MW102	On-base SA02	10 Oct 2024	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**14.7**	**18.55**	-	**20.556**
0927_MW102_250603	MW102	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**15.9**	**19.8**	<0.05	**21.8**
0927_MW103_190205	MW103	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**14**	**18.01**	-	**20.08**
0927_MW103_230316	MW103	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**14.7**	**23.4**	-	**26.1**
0927_MW103_240220	MW103	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**22.9**	**31.0**	-	**34.0**
0927_MW103_241010	MW103	On-base SA02	10 Oct 2024	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**16.8**	**23.49**	-	**26.879**
0927_MW103_250603	MW103	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**14.6**	**19.3**	<0.05	**22.1**
0927_MW104_190205	MW104	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**6.1**	**6.98**	-	**7.33**
0927_MW105_190205	MW105	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**63**	**72.6**	-	**78.24**
0927_MW105_240220	MW105	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**102**	**136**	-	**148**
0927_MW105_241010	MW105	On-base SA02	10 Oct 2024	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**74**	**102.16**	-	**111.27**
0927_MW105_250603	MW105	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**67.0**	**85.4**	<0.05	**94.8**
0927_MW106_190204	MW106	On-base SA02	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.2**	**4**	-	**4.34**
0927_MW107_190204	MW107	On-base SA02	04 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4.25**	**6.19**	-	**7.25**
0927_MW107_240220	MW107	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.04**	**8.53**	-	**9.49**
0927_MW107_241010	MW107	On-base SA02	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**6.35**	**9.42**	-	**11.02**
0927_MW107_250603	MW107	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.81**	**10.0**	<0.05	**11.7**
0927_MW120_190205	MW120	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.4**	**4.57**	-	**5.14**
0927_MW120_230316	MW120	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11.2**	**16.4**	-	**17.8**
0927_MW120_240220	MW120	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**14.9**	**19.1**	-	**20.4**
0927_MW120_241010	MW120	On-base SA02	10 Oct 2024	**0.008**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**15.6**	**19.356**	-	**21.698**
0927_MW120_250603	MW120	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.27**	**6.76**	<0.05	**7.37**
0927_MW201_230619*	MW201	On-base SA02	19 Jun 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW201_231120*	MW201	On-base SA02	20 Nov 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GW90/3_180814	MW201	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

	PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																				
ANZG 2026 Freshwater 90%																				
PFAS NEMP 3.0 2025 Freshwater 95%																				
ANZG 2026 Freshwater 95%																				
PFAS NEMP 3.0 2025 Freshwater 99%																				
ANZG 2026 Freshwater 99%																				
Field ID	**Location Code**	**Investigation Area**	**Date**																		
0927_MW202_131107*	MW202	On-base SA02	07 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC101_230316	MW102	On-base SA02	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.1**	**22.2**	-	**24.1**
0927_QC101_250603	MW102	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**14.1**	**18.0**	<0.05	**20.0**
0927_QC102_240220	MW102	On-base SA02	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.4**	**22.4**	-	**24.5**
0927_QC104_250603	MW103	On-base SA02	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**13.7**	**18.4**	<0.05	**21.1**
0927_QC123_190205	MW101	On-base SA02	05 Feb 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.62**	**0.87**	-	**0.96**
0927_MW225_180814*	MW225	On-base SA02	14 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**11.9**	**13.91**	-	**14.56**
0927_GWSTP/1_180814	MW225	On-base SA02	14 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW226_131119*	MW226	On-base SA02	19 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW226_240919*	MW226	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC201_230316	MW102	On-base SA02	16 Mar 2023	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**21.4**	**26.12**	-	**28.51**
0927_MW226_240919	MW226	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC100_240919	MW226	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC200_240919	MW226	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC201_250603	MW102	On-base SA02	03 Jun 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**19.6**	**24.2**	-	**26.89**
GW81/8	MW226	On-base SA02	07 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW227_121107*	MW227	On-base SA02	07 Nov 2012	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC202_240220	MW102	On-base SA02	20 Feb 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**16.1**	**20.53**	-	**23.38**
0927_MW227_131119*	MW227	On-base SA02	19 Nov 2013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW227_240919*	MW227	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW227_240919	MW227	On-base SA02	19 Sep 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC204_250603	MW103	On-base SA02	03 Jun 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.12**	<0.01	<0.01	<0.05	**0.15**	<0.05	<0.05	**0.06**	<0.05	<0.05	**13**	**18.56**	-	**21.26**
0927_MW258_250113*	MW258	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW258_250113	MW258	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC224_190205	MW118	On-base SA02	05 Feb 2019	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**33.4**	**40.8**	-	**43.8**
0927_QC235_190719	MW131	On-base SA02	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW258_250113	MW258	On-base SA02	13 Jan 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**24.3**	**34.3**	-	**39.7**
0927_MW259_250113*	MW259	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW259_250113	MW259	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW259_250113	MW259	On-base SA02	13 Jan 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.99**	**10.3**	-	**11.7**
0927_MW260_250113*	MW260	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW260_250113	MW260	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW260_250113	MW260	On-base SA02	13 Jan 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**20.0**	**23.6**	-	**25.9**
0927_MW261_250113*	MW261	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW261_250113	MW261	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW261_250113	MW261	On-base SA02	13 Jan 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.02**	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**14.0**	**17.4**	-	**19.7**
0927_MW262_250113*	MW262	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW262_250113	MW262	On-base SA02	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW210_180815*	MW210	On-base SA03	15 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.2**	**0.27**	-	**0.31**
0927_GWB/1_180815	MW210	On-base SA03	15 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW213_180816*	MW213	On-base SA03	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.25**	**0.32**	-	**0.37**
0927_GWD/1_180816	MW213	On-base SA03	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW217_180816*	MW217	On-base SA03	16 Aug 2018	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.24**	**0.3**	-	**0.33**
0927_MW217_230316*	MW217	On-base SA03	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW217_230801*	MW217	On-base SA03	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.09**	**0.09**	-	**0.09**
0927_MW217_240219*	MW217	On-base SA03	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW217_241009*	MW217	On-base SA03	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW217_250604*	MW217	On-base SA03	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_GWGA01_180816	MW217	On-base SA03	16 Aug 2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW217_230317	MW217	On-base SA03	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.12**	**0.12**	-	**0.12**
0927_MW217_240221	MW217	On-base SA03	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.17**	**0.17**	-	**0.17**
0927_MW217_241009	MW217	On-base SA03	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.089**	**0.127**	-	**0.141**
0927_MW217_250603	MW217	On-base SA03	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.08**	**0.08**	<0.05	**0.08**
0927_MW138_200124*	MW138	On-base SA04	24 Jan 2020	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.74**	**11.8**	-	**12.7**
0927_MW138_230316*	MW138	On-base SA04	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.89**	**11.5**	-	**12.6**
0927_MW138_230801*	MW138	On-base SA04	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**18.0**	**21.3**	-	**22.9**
0927_MW138_240219*	MW138	On-base SA04	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW138_241010*	MW138	On-base SA04	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW138_250603*	MW138	On-base SA04	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW139_200124*	MW139	On-base SA04	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW139_230316*	MW139	On-base SA04	16 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**22.3**	**29.1**	-	**31.8**
0927_MW139_230801*	MW139	On-base SA04	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**40.2**	**53.4**	-	**58.2**
0927_MW139_240219*	MW139	On-base SA04	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW139_241010*	MW139	On-base SA04	10 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW139_250603*	MW139	On-base SA04	03 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW138_200124	MW138	On-base SA04	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW138_200124	MW138	On-base SA04	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**8.1**	**10.16**	-	**11.27**
0927_MW138_240220	MW138	On-base SA04	20 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**19.1**	**22.3**	-	**24.0**
0927_MW138_241010	MW138	On-base SA04	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**21.8**	**24.895**	-	**27.191**
0927_MW138_250603	MW138	On-base SA04	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.3**	**14.9**	<0.05	**16.3**
0927_MW139_200124	MW139	On-base SA04	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**87**	**106.68**	-	**113.38**
0927_MW139_240220	MW139	On-base SA04	20 Feb 2024	<0.03	<0.03	<0.03	<0.03	<0.09	<0.05	<0.05	<0.05	<0.05	<0.03	<0.09	<0.03	<0.09	<0.09	<0.03	<0.09	**171**	**219**	-	**235**
0927_MW139_241010	MW139	On-base SA04	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**11**	**13.346**	-	**14.425**
0927_MW139_250603	MW139	On-base SA04	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**17.6**	**22.7**	<0.05	**25.1**
0927_QC101_200124	MW138	On-base SA04	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**6.7**	**8.69**	-	**9.78**
0927_QC101_241010	MW138	On-base SA04	10 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**15.2**	**17.851**	-	**19.325**
0927_QC102_241010	MW138	On-base SA04	10 Oct 2024	**0.010**	**0.009**	<0.001	<0.001	<0.001	<0.001	**0.13**	**0.092**	<0.005	**0.034**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**24.9**	**28.672**	-	**30.454**
0927_QC102_250603	MW138	On-base SA04	03 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.1**	**14.7**	<0.05	**16.3**
0927_QC201_241010	MW138	On-base SA04	09 Oct 2024	<0.0020	<0.0020	**0.0050**	<0.010	<0.050	<0.0010	**0.0028**	<0.0020	<0.0020	<0.010	<0.050	<0.0020	<0.050	<0.10	<0.0020	<0.50	**20**	-	-	**24**
0927_QC202_250603	MW138	On-base SA04	03 Jun 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**1.4**	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	**0.39**	<0.05	<0.05	**14.6**	**19.28**	-	**21.38**
0927_MW124_190718*	MW124	Princes Freeway	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_230316*	MW124	Princes Freeway	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_230801*	MW124	Princes Freeway	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.69**	**3.11**	-	**3.22**
0927_MW124_240216*	MW124	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_240219*	MW124	Princes Freeway	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_240312*	MW124	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_250605*	MW124	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW125_190718*	MW125	Princes Freeway	18 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW125_240216*	MW125	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW125_240312*	MW125	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_190717*	MW126	Princes Freeway	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_230316*	MW126	Princes Freeway	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_230802*	MW126	Princes Freeway	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.26**	**0.77**	-	**0.81**
0927_MW126_240216*	MW126	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_240219*	MW126	Princes Freeway	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_240312*	MW126	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_250605*	MW126	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_210310*	MW228	Princes Freeway	10 Mar 2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**18.4**	**21.97**	-	**24.4**
0927_MW228_230317*	MW228	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.36**	**5.27**	-	**5.63**
0927_MW228_230802*	MW228	Princes Freeway	02 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_240219*	MW228	Princes Freeway	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_241009*	MW228	Princes Freeway	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_250605*	MW228	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_210310*	MW229	Princes Freeway	10 Mar 2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.33**	**2.68**	-	**2.87**
0927_MW229_230316*	MW229	Princes Freeway	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Table B3 – Groundwater Analytical Results

				PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
				Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																							
ANZG 2026 Freshwater 90%																							
PFAS NEMP 3.0 2025 Freshwater 95%																							
ANZG 2026 Freshwater 95%																							
PFAS NEMP 3.0 2025 Freshwater 99%																							
ANZG 2026 Freshwater 99%																							
Field ID	**Location Code**	**Investigation Area**	**Date**																				
0927_MW229_230801*	MW229	Princes Freeway	01 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_240219*	MW229	Princes Freeway	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_241011*	MW229	Princes Freeway	11 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_250604*	MW229	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW230_210310*	MW230	Princes Freeway	10 Mar 2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.35**	**0.46**	-	**0.5**
0927_MW230_250604*	MW230	Princes Freeway	04 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250605*	MW252	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_241009*	MW253	Princes Freeway	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_250605*	MW253	Princes Freeway	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_190718	MW124	Princes Freeway	18 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**3.96**	**4.48**	-	**4.69**
0927_MW124_230317	MW124	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.59**	**1.83**	-	**1.90**
0927_MW124_230317	MW124	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.59**	**1.83**	-	**1.90**
0927_MW124_240216	MW124	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_240221	MW124	Princes Freeway	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.58**	**1.76**	-	**1.82**
0927_MW124_240312	MW124	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_250110	MW124	Princes Freeway	10 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4.79**	**6.12**	-	**6.43**
0927_MW124_250110	MW124	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW124_250605	MW124	Princes Freeway	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.33**	**1.48**	<0.05	**1.54**
0927_MW125_190718	MW125	Princes Freeway	18 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.43**	**0.56**	-	**0.61**
0927_MW125_240216	MW125	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW125_240312	MW125	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_190717	MW126	Princes Freeway	17 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.28**	**0.39**	-	**0.43**
0927_MW126_230317	MW126	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.21**	**0.61**	-	**0.64**
0927_MW126_230317	MW126	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.21**	**0.61**	-	**0.64**
0927_MW126_240216	MW126	Princes Freeway	16 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_240221	MW126	Princes Freeway	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.28**	**0.93**	-	**0.97**
0927_MW126_240312	MW126	Princes Freeway	12 Mar 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_250110	MW126	Princes Freeway	10 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.38**	**0.71**	-	**0.76**
0927_MW126_250110	MW126	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW126_250605	MW126	Princes Freeway	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	**0.12**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.28**	**0.84**	<0.05	**0.88**
0927_MW228_210310	MW228	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_230317	MW228	Princes Freeway	17 Apr 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.36**	**5.27**	-	**5.63**
0927_MW228_240221	MW228	Princes Freeway	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.04**	**11.0**	-	**12.0**
0927_MW228_250110	MW228	Princes Freeway	10 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**20.1**	**24.67**	-	**27.28**
0927_MW228_250110	MW228	Princes Freeway	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW228_250605	MW228	Princes Freeway	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**19.4**	**24.3**	<0.05	**27.2**
0927_MW229_210310	MW229	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW229_230317	MW229	Princes Freeway	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.83**	**2.16**	-	**2.30**
0927_MW229_230317	MW229	Princes Freeway	17 Apr 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.83**	**2.16**	-	**2.30**
0927_MW229_240221	MW229	Princes Freeway	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.00**	**2.35**	-	**2.50**
0927_MW229_241011	MW229	Princes Freeway	11 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.8**	**2.219**	-	**2.526**
0927_MW229_250604	MW229	Princes Freeway	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.85**	**2.30**	<0.05	**2.49**
0927_MW230_210310	MW230	Princes Freeway	10 Mar 2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW230_250604	MW230	Princes Freeway	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.38**	**4.00**	<0.05	**4.29**
0927_MW244_250114	MW244	Princes Freeway	14 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.26**	**1.86**	-	**2.05**
0927_MW244_250114	MW244	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW245_250114	MW245	Princes Freeway	14 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**4.8**	**5.15**	-	**5.48**
0927_MW245_250114	MW245	Princes Freeway	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250113	MW252	Princes Freeway	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.8**	**2.05**	-	**2.19**
0927_MW252_250113	MW252	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW252_250605	MW252	Princes Freeway	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.14**	**1.26**	<0.05	**1.30**
0927_MW253_250113	MW253	Princes Freeway	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**11.6**	**13.69**	-	**15.07**
0927_MW253_250113	MW253	Princes Freeway	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW253_250605	MW253	Princes Freeway	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**10.4**	**12.3**	<0.05	**13.2**
0927_QC100_210310	MW229	Princes Freeway	10 Mar 2021	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.25**	**2.6**	-	**2.78**
0927_QC101_250113	MW253	Princes Freeway	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**28**	**30.55**	-	**32.22**
0927_QC101_250113	MW253	Princes Freeway	13 Jan 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.24**	**10.5**	-	**12.0**
0927_QC101_250604	MW229	Princes Freeway	04 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.84**	**2.28**	<0.05	**2.47**
0927_QC200_210310	MW229	Princes Freeway	10 Mar 2021	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.65**	**1.90**	-	**1.99**
0927_QC201_250113	MW253	Princes Freeway	13 Jan 2025	<0.020	<0.020	<0.050	<0.10	<0.50	<0.010	<0.010	<0.020	<0.020	<0.10	<0.050	<0.020	<0.050	<0.10	<0.020	<0.50	**12**	-	-	**15**
0927_QC201_250604	MW229	Princes Freeway	04 Jun 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.25**	**2.75**	-	**2.99**
0927_MW121_200124*	MW121	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_230317*	MW121	Skeleton Creek	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.81**	**0.99**	-	**1.06**
0927_MW121_230802*	MW121	Skeleton Creek	02 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_240219*	MW121	Skeleton Creek	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_241018*	MW121	Skeleton Creek	18 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.007**	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.11**	**1.378**	-	**1.516**
0927_MW121_250605*	MW121	Skeleton Creek	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW122_200124*	MW122	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_200124*	MW123	Skeleton Creek	24 Jan 2020	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_230317*	MW123	Skeleton Creek	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.78**	**3.31**	-	**3.53**
0927_MW123_230802*	MW123	Skeleton Creek	02 Aug 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_240219*	MW123	Skeleton Creek	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_241018*	MW123	Skeleton Creek	18 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**4.1**	**4.847**	-	**5.248**
0927_MW123_250605*	MW123	Skeleton Creek	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_200124	MW121	Skeleton Creek	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.5**	**0.66**	-	**0.73**
0927_MW121_230317	MW121	Skeleton Creek	17 Apr 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.81**	**0.99**	-	**1.06**
0927_MW121_240221	MW121	Skeleton Creek	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.89**	**1.08**	-	**1.14**
0927_MW121_250113	MW121	Skeleton Creek	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.2**	**1.42**	-	**1.55**
0927_MW121_250113	MW121	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW121_250605	MW121	Skeleton Creek	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**1.01**	**1.23**	<0.05	**1.34**
0927_MW122_200124	MW122	Skeleton Creek	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.86**	**1.04**	-	**1.14**
0927_MW123_200124	MW123	Skeleton Creek	24 Jan 2020	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.81**	**2.28**	-	**2.54**
0927_MW123_230317	MW123	Skeleton Creek	17 Apr 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.78**	**3.31**	-	**3.53**
0927_MW123_240221	MW123	Skeleton Creek	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.08**	**3.64**	-	**3.88**
0927_MW123_240405	MW123	Skeleton Creek	05 Apr 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.82**	**3.35**	-	**3.57**
0927_MW123_250113	MW123	Skeleton Creek	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.8**	**3.36**	-	**3.73**
0927_MW123_250113	MW123	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW123_250605	MW123	Skeleton Creek	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.88**	**3.43**	<0.05	**3.74**
0927_MW246_250113	MW246	Skeleton Creek	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.26**	**1.56**	-	**1.72**
0927_MW246_250113	MW246	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW247_250113	MW247	Skeleton Creek	13 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.7**	**3.58**	-	**4.06**
0927_MW247_250113	MW247	Skeleton Creek	13 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW248_250114	MW248	Skeleton Creek	14 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.98**	**1.18**	-	**1.29**
0927_MW248_250114	MW248	Skeleton Creek	14 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC101_241018	MW121	Skeleton Creek	18 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.006**	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**1.21**	**1.472**	-	**1.609**
0927_MW127_190717*	MW127	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW128_190717*	MW128	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW129_190719*	MW129	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_190719*	MW130	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_230316*	MW130	Williams Landing	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_230802*	MW130	Williams Landing	02 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**34.6**	**57.9**	-	**64.5**
0927_MW130_240219*	MW130	Williams Landing	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_241009*	MW130	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_250605*	MW130	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_190719*	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	PFAS - Perfluoroalkyl Carboxylic Acids					PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			
	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Perfluorohexadecanoic acid (PFHxDA)	Sum of PFAS
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.005	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.005	0.05	0.001
PFAS NEMP 3.0 2025 Freshwater 90%																		
ANZG 2026 Freshwater 90%																		
PFAS NEMP 3.0 2025 Freshwater 95%																		
ANZG 2026 Freshwater 95%																		
PFAS NEMP 3.0 2025 Freshwater 99%																		
ANZG 2026 Freshwater 99%																		
Field ID	**Location Code**	**Investigation Area**	**Date**																	
0927_MW131_230316*	MW131	Williams Landing	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_230801*	MW131	Williams Landing	01 Aug 2023	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**184**	**256**	-	**278**
0927_MW131_240219*	MW131	Williams Landing	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_241009*	MW131	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_250605*	MW131	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW132_190717*	MW132	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW133_190717*	MW133	Williams Landing	17 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW135_190716*	MW135	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW136_190716*	MW136	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_190716*	MW137	Williams Landing	16 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_230316*	MW137	Williams Landing	16 Mar 2023	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_230801*	MW137	Williams Landing	01 Aug 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.41**	**0.60**	-	**0.62**
0927_MW137_240219*	MW137	Williams Landing	19 Feb 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_241009*	MW137	Williams Landing	09 Oct 2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW137_250605*	MW137	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250605*	MW250	Williams Landing	05 Jun 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW127_190717	MW127	Williams Landing	17 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.07**	**0.09**	-	<0.1
0927_MW128_190717	MW128	Williams Landing	17 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.14**	**1.51**	-	**1.68**
0927_MW129_190719	MW129	Williams Landing	19 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.86**	**1.14**	-	**1.22**
0927_MW130_190719	MW130	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW130_190719	MW130	Williams Landing	19 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**15.4**	**27.74**	-	**32.79**
0927_MW130_230317	MW130	Williams Landing	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**53.9**	**94.7**	-	**110**
0927_MW130_230317	MW130	Williams Landing	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**53.9**	**94.7**	-	**110**
0927_MW130_240221	MW130	Williams Landing	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**27.0**	**42.7**	-	**47.0**
0927_MW130_240405	MW130	Williams Landing	05 Apr 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**24.6**	**35.5**	-	**39.0**
0927_MW130_241009	MW130	Williams Landing	09 Oct 2024	**0.002**	<0.001	<0.001	<0.001	<0.001	**0.012**	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**12.9**	**18.632**	-	**21.131**
0927_MW130_250605	MW130	Williams Landing	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	**0.14**	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**41.6**	**61.6**	<0.05	**70.4**
0927_MW131_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_190719	MW131	Williams Landing	19 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**11.9**	**20.49**	-	**24.23**
0927_MW131_230317	MW131	Williams Landing	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**106**	**148**	-	**166**
0927_MW131_230317	MW131	Williams Landing	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**106**	**148**	-	**166**
0927_MW131_240221	MW131	Williams Landing	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**184**	**248**	-	**271**
0927_MW131_240405	MW131	Williams Landing	05 Apr 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**179**	**250**	-	**272**
0927_MW131_241009	MW131	Williams Landing	09 Oct 2024	**0.002**	<0.001	<0.001	<0.001	<0.001	**0.064**	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**220**	**316.964**	-	**357.88**
0927_MW131_250109	MW131	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**180**	**247.4**	-	**273.32**
0927_MW131_250109	MW131	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW131_250605	MW131	Williams Landing	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**128**	**191**	<0.05	**219**
0927_MW132_190717	MW132	Williams Landing	17 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.01**	**0.05**	-	<0.1
0927_MW133_190717	MW133	Williams Landing	17 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	**0.17**	-	**0.17**
0927_MW135_190716	MW135	Williams Landing	16 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.24**	**0.36**	-	**0.42**
0927_MW136_190716	MW136	Williams Landing	16 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	-	<0.1
0927_MW137_190716	MW137	Williams Landing	16 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.31**	**0.74**	-	**0.89**
0927_MW137_230317	MW137	Williams Landing	17 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.98**	**1.25**	-	**1.30**
0927_MW137_230322	MW137	Williams Landing	22 Mar 2023	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.98**	**1.25**	-	**1.30**
0927_MW137_240221	MW137	Williams Landing	21 Feb 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.40**	**0.49**	-	**0.49**
0927_MW137_240405	MW137	Williams Landing	05 Apr 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.26**	**0.37**	-	**0.37**
0927_MW137_241009	MW137	Williams Landing	09 Oct 2024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**11.4**	**13.14**	-	**14.293**
0927_MW137_250605	MW137	Williams Landing	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.20**	**0.28**	<0.05	**0.28**
0927_MW249_250109	MW249	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**44**	**63.15**	-	**70.64**
0927_MW249_250109	MW249	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250109	MW250	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**2.57**	**3.42**	-	**3.82**
0927_MW250_250109	MW250	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW250_250605	MW250	Williams Landing	05 Jun 2025	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.55**	**5.15**	<0.05	**5.78**
0927_MW251_250109	MW251	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**14.7**	**25.34**	-	**27.6**
0927_MW251_250109	MW251	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW254_250110	MW254	Williams Landing	10 Jan 2025	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.28**	**0.31**	-	**0.33**
0927_MW254_250110	MW254	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW255_250110	MW255	Williams Landing	10 Jan 2025	**0.01**	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.45**	**0.49**	-	**0.51**
0927_MW255_250110	MW255	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW256_250110	MW256	Williams Landing	10 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**7.6**	**8.94**	-	**9.89**
0927_MW256_250110	MW256	Williams Landing	10 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_MW257_250109	MW257	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**210**	**290.7**	-	**326.6**
0927_MW257_250109	MW257	Williams Landing	09 Jan 2025	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC100_240405	MW137	Williams Landing	05 Apr 2024	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**0.22**	**0.34**	-	**0.34**
0927_QC101_250109	MW257	Williams Landing	09 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.2	<0.05	<0.05	<0.2	<0.05	<0.05	**226**	**317.2**	-	**359**
0927_QC101_250110	MW256	Williams Landing	10 Jan 2025	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**5.9**	**7.26**	-	**7.97**
0927_QC134_190719	MW130	Williams Landing	19 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**12.9**	**25.23**	-	**30.53**
0927_QC135_190719	MW131	Williams Landing	19 Jul 2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
0927_QC135_190719	MW131	Williams Landing	19 Jul 2019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**11.5**	**20.63**	-	**24.23**
0927_QC200_240405	MW137	Williams Landing	05 Apr 2024	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.21**	**0.35**	-	**0.39**
0927_QC201_250101	MW256	Williams Landing	10 Jan 2025	<0.020	<0.020	<0.050	<0.10	<0.50	<0.010	<0.010	<0.020	<0.020	<0.10	<0.050	<0.020	<0.050	<0.10	<0.020	<0.50	**6.2**	-	-	**8.0**
0927_QC201_250109	MW257	Williams Landing	09 Jan 2025	<0.020	<0.020	<0.050	<0.10	<0.50	<0.010	**0.020**	<0.020	<0.020	<0.10	<0.050	<0.020	<0.050	<0.10	<0.020	<0.50	**200**	-	-	**300**

Notes: * Where indicated, the field ID was not present in ESDAT and has been inferred from available sample identifiers.

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonic Acids						
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0003	0.0005	0.0003	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)									0.0082		0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)									0.0031		0.0031		
Field ID	**Location Code**	**Investigation Area**	**Investigation Round**	**Ecological Food Group**	**Date**	**Common Name**							
0927_BIO001_190405	BIO001_19	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0027**	<0.0005	<0.0005
0927_BIO002_190405	BIO002_19	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	<0.0003	<0.0005	**0.0028**	<0.0005	<0.0005
0927_QC126_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0029**	<0.0005	<0.0005
0927_QC226_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002
0927_QC226_190405(a)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.001	<0.001	<0.001	<0.001	**0.002**	-	<0.002
0927_QC226_190405(b)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.001	<0.001	<0.001	<0.001	**0.001**	-	<0.002
0927_QC205_201211	-	Addison East	Historical	Terrestrial Plant	11-Dec-20	Radish Root	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002
0927_BIOTFL025_201213	BIOTFL025	Addison East	Historical	Terrestrial Plant	13-Dec-20	Peach	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL026_201213	BIOTFL026	Addison East	Historical	Terrestrial Plant	13-Dec-20	Leafy Green	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL027_201213	BIOTFL027	Addison East	Historical	Terrestrial Plant	13-Dec-20	Celery	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL028_201216	BIOTFL028	Addison East	Historical	Terrestrial Plant	16-Dec-20	Potato	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL029_201216	BIOTFL029	Addison East	Historical	Terrestrial Plant	16-Dec-20	Strawberry	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	<0.0005	<0.0005
0927_BIOTFL031_201216	BIOTFL031	Addison East	Historical	Terrestrial Plant	16-Dec-20	Rocket	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0038**	<0.0005	<0.0005
0927_BIOTFL032_201216	BIOTFL032	Addison East	Historical	Terrestrial Plant	16-Dec-20	Snow Pea	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL033_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.0005	<0.0005	<0.0003	<0.0005	**0.002**	<0.0005	<0.0005
0927_BIOTFL034_201216	BIOTFL034	Addison East	Historical	Terrestrial Plant	16-Dec-20	Spring Onion	<0.0005	<0.0005	<0.0003	<0.0005	**0.0003**	<0.0005	<0.0005
0927_BIOTFL035_201216	BIOTFL035	Addison East	Historical	Terrestrial Plant	16-Dec-20	Parsley	<0.0005	<0.0005	**0.0020**	<0.0005	**0.031**	<0.0005	<0.0005
0927_QC106_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.0005	<0.0005	<0.0003	<0.0005	**0.0019**	<0.0005	<0.0005
0927_QC206_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.001	<0.001	<0.001	<0.001	**0.001**	-	<0.002
0927_BIOTFL022_201211	BIOTFL022	Addison West	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL023_201211	BIOTFL023	Addison West	Historical	Terrestrial Plant	11-Dec-20	Mint	<0.0005	<0.0005	<0.0003	<0.0005	**0.0012**	<0.0005	<0.0005
0927_BIOTFL036_201216	BIOTFL036	Addison West	Historical	Terrestrial Plant	16-Dec-20	Rosemary	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL037_201216	BIOTFL037	Addison West	Historical	Terrestrial Plant	16-Dec-20	Lemon	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL038_201216	BIOTFL038	Addison West	Historical	Terrestrial Plant	16-Dec-20	Herb	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL011_201211	BIOTFL011	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL012_201211	BIOTFL012	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Celery	<0.0005	<0.0005	**0.0004**	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL016_201211	BIOTFL016	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Orange	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL017_201211	BIOTFL017	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0006**	<0.0005	<0.0005
0927_BIOTFL018_201211	BIOTFL018	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Leafy Green	**0.0006**	**0.0010**	**0.021**	**0.0015**	**0.02**	<0.0005	<0.0005
0927_BIOTFL024_LEAF_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	**0.0009**	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL024_ROOT_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL039_201216	BIOTFL039	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Fig	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL041_201216	BIOTFL041	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL045_210709	BIOTFL045	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Pumpkin	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL046_210709	BIOTFL046	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Silverbeet	<0.0005	<0.0005	**0.0010**	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL047_210709	BIOTFL047	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL048_210709	BIOTFL048	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0007**	<0.0005	<0.0005
0927_BIOTFL049_210709	BIOTFL049	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL050_210709	BIOTFL050	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spring Onion	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL051_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.016**	**0.019**	**0.11**	**0.011**	**0.2**	<0.0005	<0.0005
0927_BIOTFL052_210709	BIOTFL052	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Herb	<0.0005	<0.0005	**0.0019**	<0.0005	**0.0028**	<0.0005	<0.0005
0927_BIOTFL053_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.011**	**0.011**	**0.096**	**0.0081**	**0.099**	<0.0005	<0.0005
0927_BIOTFL054_210709	BIOTFL054	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Beetroot	**0.0022**	**0.0036**	**0.026**	**0.0010**	**0.017**	<0.0005	<0.0005
0927_QC100_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.0076**	**0.0079**	**0.052**	**0.0029**	**0.028**	<0.0005	<0.0005
0927_QC101_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.013**	**0.018**	**0.13**	**0.024**	**0.21**	<0.0005	<0.0005
0927_QC200_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002
0927_QC201_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.017**	**0.023**	**0.127**	**0.011**	**0.097**	-	<0.002
0927_BIOAFL017_201028	BIOAFL017	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0021**	<0.0005	<0.0005
0927_BIOAFA091_201105	BIOAFA091	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0019**	<0.0005	**0.02**	<0.0005	<0.0005
0927_QC120_201105	QC120_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0016**	<0.0005	**0.024**	<0.0005	<0.0005
0927_BIOAFL021_201028	BIOAFL021	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	<0.0005	<0.0005	<0.0003	<0.0005	**0.0031**	<0.0005	<0.0005
0927_BIOAFA089_201105	BIOAFA089	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	<0.0005	<0.0005	**0.0093**	**0.0048**	**0.28**	**0.0020**	**0.0034**
0927_BIOAFL042_241121	BIOAFL042	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0013**	<0.0005	<0.0005
0927_BIOAFL051_201104	BIOAFL051	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0003	<0.0005	**0.0079**	<0.0005	<0.0005
0927_QC103_241121	QC103_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0023**	<0.0005	<0.0005
0927_BIOAFA086_201105	BIOAFA086	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0023**	<0.0005	**0.033**	<0.0005	<0.0005
0927_BIOAFA081_201105_EE	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	**0.0007**	**0.014**	**0.0012**	**0.19**	**0.0010**	**0.0013**
0927_BIOAFL053_250507	BIOAFL053	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Saltbush	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0012**	<0.0005	<0.0005
0927_BIOAFL054_250507	BIOAFL054	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Phragmites	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0021**	<0.0005	<0.0005
0927_BIOAFL055_250507	BIOAFL055	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOAFL056_250508	BIOAFL056	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOAFA081_201105_HH	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	**0.0007**	**0.013**	**0.0012**	**0.19**	**0.0010**	**0.0014**
0927_BIOAFA083_250508	BIOAFA083	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	European Green Crab	<0.0005	<0.0005	<0.0003	<0.0005	**0.0017**	<0.0005	<0.0005
0927_BIOAFA083_201105	BIOAFA083	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Flathead gudgeon	<0.0005	<0.0005	**0.0062**	**0.0018**	**0.2**	**0.0012**	**0.0024**
0927_BIOAFA085_250508	BIOAFA085	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Pond Snails	<0.0005	<0.0005	<0.0003	<0.0005	**0.0011**	<0.0005	<0.0005
0927_QC119_201105	QC119_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	**0.0008**	**0.015**	**0.0012**	**0.2**	**0.0010**	**0.0015**
0927_BIOAFA082_201105_HH	BIOAFA082	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	<0.0005	<0.0005	**0.0028**	<0.0005	**0.058**	<0.0005	<0.0005
0927_BIOAFA084_201105	BIOAFA084	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	<0.0005	<0.0005	**0.0051**	**0.0062**	**0.24**	**0.0020**	**0.0030**
0927_BIOAFA024_201028	BIOAFA024	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed Invertebrates	<0.0005	<0.0005	**0.0008**	<0.0005	**0.0021**	<0.0005	<0.0005
0927_QC215_201028	QC215_201	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	<0.001	<0.001	<0.001	<0.001	**0.005**	-	<0.002
0927_BIOAFA052_241121	BIOAFA052	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Brine Shrimp	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0009**	<0.0005	<0.0005
0927_BIOAFA085_201105	BIOAFA085	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Blue-spot Goby	<0.0005	<0.0005	**0.0008**	**0.0008**	**0.21**	**0.0013**	**0.0017**
0927_BIOAFA078_250506	BIOAFA078	Skeleton Creek	May-25	Predator Fish	6-May-25	Short Finned Eel	<0.0005	<0.0005	**0.0051**	**0.0023**	**0.079**	<0.0005	**0.0009**
0927_QC101_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	<0.0005	<0.0005	**0.0052**	**0.0022**	**0.088**	<0.0005	**0.0009**
0927_QC201_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	<0.001	<0.001	**0.002**	<0.001	**0.004**	-	<0.001
0927_BIOAFA048_241120	BIOAFA048	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Carp	<0.0005	<0.0005	**0.0094**	**0.0029**	**0.13**	**0.0009**	**0.0011**

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonic Acids						
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0003	0.0005	0.0003	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)									0.0082		0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)									0.0031		0.0031		
0927_BIOAFA072_250506	BIOAFA072	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.0005	<0.0005	**0.0006**	<0.0005	**0.013**	<0.0005	<0.0005
0927_BIOAFA073_250506	BIOAFA073	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.001	<0.001	**0.02**	**0.0037**	**0.23**	<0.001	**0.0034**
0927_BIOAFA053_241121	BIOAFA053	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.0005	<0.0005	<0.0003	<0.0005	**0.0019**	<0.0005	<0.0005
0927_BIOAFL049_250506	BIOAFL049	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Common Rush	<0.0005	<0.0005	**0.0014**	<0.0005	**0.015**	<0.0005	<0.0005
0927_BIOAFA045_241120	BIOAFA045	Skeleton Creek	Nov-24	Pelagic Invertebrate	20-Nov-24	Shrimp	<0.0005	<0.0005	**0.0023**	<0.0005	**0.0094**	<0.0005	**0.0008**
0927_BIOAFA047_241120	BIOAFA047	Skeleton Creek	Nov-24	Predator Fish	20-Nov-24	Short Finned Eel	<0.0005	**0.0006**	**0.018**	**0.0056**	**1.7**	**0.017**	**0.031**
0927_QC104_241121	QC104_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.0005	<0.0005	<0.0003	<0.0005	**0.0019**	<0.0005	<0.0005
0927_QC204_241121	QC204_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.001	<0.001	<0.001	<0.001	**0.002**	-	<0.001
0927_BIOAFA080_250507	BIOAFA080	Cheetham Wetlands	May-25	Prey Fish	7-May-25	Bream	<0.0005	<0.0005	<0.0003	<0.0005	**0.0015**	<0.0005	<0.0005
0927_BIOAFA046_241120	BIOAFA046	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flathead Gudgeon	<0.0005	<0.0005	**0.0026**	**0.0007**	**0.072**	**0.0006**	**0.0017**
0927_BIOAFA086_250508	BIOAFA086	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Bream (juvenile)	<0.001	<0.001	<0.001	<0.001	**0.0021**	<0.001	<0.001
0927_BIOAFA069_250506	BIOAFA069	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.001	<0.001	**0.0013**	<0.001	**0.032**	<0.001	**0.0022**
0927_BIOTFL019_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL020_201211	BIOTFL020	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Rosemary	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL021_201211	BIOTFL021	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Raspberry	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_QC204_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002
0927_BIOTFL043_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL044_201216	BIOTFL044	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Silverbeet	<0.0005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.0005
0927_QC107_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_QC207_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002
0927_BIOAFA070_250506	BIOAFA070	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.0005	**0.0007**	**0.0090**	**0.0015**	**0.093**	**0.0011**	**0.0035**
0927_BIOAFL039_241120	BIOAFL039	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	**0.0012**	<0.0005	**0.0033**	<0.0005	<0.0005
0927_BIOAFL001_201027	BIOAFL001	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0003	<0.0005	**0.011**	<0.0005	<0.0005
0927_BIOTFL013_201211	BIOTFL013	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Rosemary	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL014_201211	BIOTFL014	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Apple	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL015_201211	BIOTFL015	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Passionfruit	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOAFL002_201027	BIOAFL002	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0003	<0.0005	**0.0052**	<0.0005	<0.0005
0927_BIOAFA002_201027	BIOAFA002	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	**0.0009**	**0.013**	**0.0006**	**0.043**	<0.0005	<0.0005
0927_BIOAFL004_201027	BIOAFL004	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0003	<0.0005	**0.0026**	<0.0005	<0.0005
0927_BIOAFA003_201027	BIOAFA003	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0026**	<0.0005	**0.051**	<0.0005	<0.0005
0927_BIOAFL006_201027	BIOAFL006	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0003	<0.0005	**0.0028**	<0.0005	<0.0005
0927_BIOAFA001_201027	BIOAFA001	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	**0.0075**	**0.0094**	**1**	**0.046**	**0.0026**
0927_BIOAFA004_201027	BIOAFA004	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	**0.0010**	**0.021**	**0.0022**	**1**	**0.0068**	**0.0031**
0927_QC113_201027	QC113_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	**0.0061**	**0.0067**	**1.1**	**0.035**	**0.0021**
0927_BIOAFL014_201027	BIOAFL014	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0003	<0.0005	**0.0007**	<0.0005	<0.0005
0927_BIOAFL016_201027	BIOAFL016	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0003	<0.0005	**0.0021**	<0.0005	<0.0005
0927_BIOAFL005_201027	BIOAFL005	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0003	<0.0005	**0.015**	<0.0005	<0.0005
0927_QC214_201027	QC214_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.001	<0.001	<0.001	<0.001	**0.002**	-	<0.002
0927_BIOAFA010_201027	BIOAFA010	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	**0.0013**	**0.0006**	**0.66**	**0.011**	**0.0021**
0927_BIOAFA021_201027	BIOAFA021	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	**0.0019**	**0.0008**	**1.2**	**0.016**	**0.0039**
0927_BIOAFL055_201104	BIOAFL055	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	<0.0005	<0.0005	<0.0003	<0.0005	**0.015**	<0.0005	<0.0005
0927_QC118_201104	QC118_201	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	<0.0005	<0.0005	<0.0003	<0.0005	**0.016**	<0.0005	<0.0005
0927_BIOAFA080_201105	BIOAFA080	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0016**	<0.0005	**0.015**	<0.0005	<0.0005
0927_BIOAFA072_201105_HH	BIOAFA072	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	**0.0098**	**0.0009**	**0.3**	**0.0016**	**0.0022**
0927_BIOAFA074_201105_EE	BIOAFA074	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	**0.0007**	**0.037**	**0.0064**	**1.2**	**0.0085**	**0.0097**
0927_BIOAFA075_201105_HH	BIOAFA075	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	<0.0005	<0.0005	**0.0067**	**0.0019**	**0.26**	**0.0030**	**0.0059**
0927_BIOAFA078_201105	BIOAFA078	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	<0.0005	<0.0005	**0.0058**	**0.0049**	**0.25**	**0.0019**	**0.0029**
0927_BIOAFA079_201105_HH	BIOAFA079	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Oriental weatherloach	**0.0007**	**0.0046**	**0.045**	**0.0052**	**1.1**	**0.0097**	**0.0086**
0927_BIOAFL022_201028	BIOAFL022	Skeleton Creek	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0071**	<0.0005	<0.0005
0927_QC203_241121	QC203_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.001	<0.001	<0.001	<0.001	**0.004**	-	<0.001
0927_BIOAFA056_241121	BIOAFA056	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Sand Shrimp	<0.0005	<0.0005	**0.0034**	<0.0005	**0.0072**	<0.0005	<0.0005
0927_BIOAFA081_250507	BIOAFA081	Cheetham Wetlands	May-25	Pelagic Invertebrate	8-May-25	Southern Calamari	<0.0005	<0.0005	**0.0015**	**0.0006**	**0.033**	<0.0005	**0.0006**
0927_BIOAFA054_241121	BIOAFA054	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Flounder	<0.0005	<0.0005	**0.031**	**0.0011**	**0.034**	<0.0005	**0.0007**
0927_BIOAFA055_241121	BIOAFA055	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0094**	<0.0005	<0.0005
0927_BIOAFA082_250507	BIOAFA082	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Hardyheads	<0.0005	<0.0005	<0.0003	<0.0005	**0.0035**	<0.0005	<0.0005
0927_QC213_201027	QC213_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.001	<0.001	**0.013**	<0.001	**0.934**	-	**0.019**
0927_BIOTFA001_201026	BIOTFA001	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0060**	<0.0005	<0.0005
0927_BIOTFA002_201026	BIOTFA002	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0026**	<0.0005	**0.033**	<0.0005	<0.0005
0927_BIOTFA003_201026	BIOTFA003	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0080**	**0.0007**	**0.16**	**0.0020**	<0.0005
0927_BIOTFA004_201026	BIOTFA004	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0018**	<0.0005	**0.027**	<0.0005	<0.0005
0927_BIOTFA005_201026	BIOTFA005	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0059**	**0.0005**	**0.08**	**0.0006**	<0.0005
0927_BIOTFA006_201026	BIOTFA006	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.015**	**0.0015**	**0.29**	**0.0008**	**0.0005**
0927_BIOTFA007_201026	BIOTFA007	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0021**	<0.0005	**0.051**	<0.0005	**0.0014**
0927_QC112_201026	QC112_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	**0.0009**	<0.0005	**0.0061**	<0.0005	<0.0005
0927_QC212_201026	QC212_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.001	<0.001	**0.002**	<0.001	**0.01**	-	<0.002
0927_BIOTFL001_201026	BIOTFL001	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0007**	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL002_201026	BIOTFL002	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0008**	<0.0005	**0.0011**	<0.0005	<0.0005
0927_BIOTFL003_201026	BIOTFL003	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0007**	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL004_201026	BIOTFL004	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL005_201026	BIOTFL005	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0008**	<0.0005	<0.0005
0927_BIOTFL006_201026	BIOTFL006	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0005**	<0.0005	<0.0005
0927_BIOTFL007_201026	BIOTFL007	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL008_201026	BIOTFL008	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOTFL009_201026	BIOTFL009	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0011**	<0.0005	**0.0004**	<0.0005	<0.0005
0927_BIOTFL010_201026	BIOTFL010	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0017**	<0.0005	<0.0003	<0.0005	<0.0005
0927_QC111_201026	QC111_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	**0.0003**	<0.0005	<0.0003	<0.0005	<0.0005
0927_QC211_201026	QC211_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.002

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonic Acids						
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0003	0.0005	0.0003	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)									0.0082		0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)									0.0031		0.0031		
0927_BIOAFL020_201028	BIOAFL020	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	**0.0003**	<0.0005	**0.017**	<0.0005	<0.0005
0927_BIOAFL036_201029	BIOAFL036	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0016**	<0.0005	<0.0005
0927_QC118_201029	QC118_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0018**	<0.0005	<0.0005
0927_QC218_201029	QC218_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.001	<0.001	<0.001	<0.001	**0.004**	-	<0.002
0927_BIOAFL037_201030	BIOAFL037	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0003	<0.0005	**0.0008**	<0.0005	<0.0005
0927_BIOAFL039_201030	BIOAFL039	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0015**	<0.0005	<0.0005
0927_BIOAFL041_201030	BIOAFL041	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0003	<0.0005	**0.0016**	<0.0005	<0.0005
0927_BIOAFL034_241119	BIOAFL034	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	**0.0059**	<0.0003	<0.0005	**0.0024**	<0.005	<0.005
0927_BIOAFL035_241119	BIOAFL035	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Seagrass, Sea Lettuce, filamentous algae	<0.0005	**0.0048**	<0.0003	<0.0005	**0.0023**	<0.0005	<0.0005
0927_BIOAFL036_241119	BIOAFL036	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	**0.0015**	<0.0003	<0.0005	**0.0010**	<0.0005	<0.0005
0927_BIOAFL037_241119	BIOAFL037	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Mullet	<0.0005	**0.0024**	<0.0003	<0.0005	**0.0016**	<0.0005	<0.0005
0927_BIOAFL044_241122	BIOAFL044	Cheetham Wetlands	Nov-24	Aquatic Vegetation	22-Nov-24	Green filamentous algae	<0.0005	<0.0005	**0.0018**	<0.0005	**0.0035**	<0.0005	<0.0005
0927_BIOAFA059_241122	BIOAFA059	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	22-Nov-24	Brine Shrimp	<0.0005	<0.0005	**0.0020**	<0.0005	**0.0025**	<0.0005	<0.0005
0927_BIOAFA023_201028	BIOAFA023	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed invertebrates	<0.0005	<0.0005	**0.0014**	<0.0005	**0.0098**	<0.0005	<0.0005
0927_BIOAFL019_201028	BIOAFL019	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0048**	<0.0005	<0.0005
0927_BIOAFL030_201029	BIOAFL030	Cheetham Wetlands	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	**0.0004**	<0.0005	**0.032**	<0.0005	<0.0005
0927_BIOAFL043_241121	BIOAFL043	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Green filamentous algae	<0.0005	**0.0025**	<0.0003	<0.0005	**0.0057**	<0.0005	<0.0005
0927_BIOAFA050_241121	BIOAFA050	Cheetham Wetlands	Nov-24	Benthic Invertebrate	21-Nov-24	Pond Snails	<0.0005	<0.0005	**0.0004**	<0.0005	**0.018**	<0.0005	<0.0005
0927_BIOAFA084_250508	BIOAFA084	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	**0.0057**	<0.005	<0.005
0927_BIOAFA049_241121	BIOAFA049	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Toadfish	<0.0005	<0.0005	**0.0044**	**0.0005**	**0.017**	<0.0005	<0.0005
0927_BIOAFA058_241121	BIOAFA058	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Short Finned Eel	<0.0005	<0.0005	**0.01**	**0.0008**	**0.043**	**0.0007**	**0.0015**
0927_BIOAFA079_250507	BIOAFA079	Cheetham Wetlands	May-25	Predator Fish	7-May-25	Toadfish	<0.001	<0.001	<0.001	<0.001	**0.014**	<0.001	<0.001
0927_BIOAFA051_241121	BIOAFA051	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	<0.0005	<0.0005	**0.0018**	<0.0005	**0.025**	<0.0005	**0.0007**
0927_BIOAFA057_241121	BIOAFA057	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Mullet	<0.0005	<0.0005	<0.0003	<0.0005	**0.0041**	<0.0005	<0.0005
0927_QC220_201030	QC220_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.001	<0.001	**0.002**	<0.001	**0.031**	-	<0.002
0927_BIOAFA087_250508	BIOAFA087	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Yellowfin Goby	<0.0005	<0.0005	**0.0016**	<0.0005	**0.018**	<0.0005	**0.0006**
0927_BIOAFL023_201029	BIOAFL023	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0068**	<0.0005	<0.0005
0927_BIOAFA029_201029	BIOAFA029	Skeleton Creek	Historical	Pelagic Invertebrate	29-Oct-20	Mixed crustacean	<0.0005	<0.0005	**0.0014**	<0.0005	**0.026**	<0.0005	<0.0005
0927_BIOAFA026_201029	BIOAFA026	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Southern Black Bream	<0.0005	<0.0005	<0.0003	<0.0005	**0.0046**	<0.0005	<0.0005
0927_BIOAFA027_201029	BIOAFA027	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Flathead gudgeon	<0.0005	<0.0005	**0.0010**	<0.0005	**0.091**	**0.0009**	**0.0005**
0927_BIOAFA028_201029	BIOAFA028	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.0005	<0.0005	**0.0019**	**0.0007**	**0.099**	**0.0008**	**0.0012**
0927_QC115_201029	QC115_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.0005	<0.0005	**0.0019**	**0.0008**	**0.096**	**0.0008**	**0.0012**
0927_BIOAFA088_250508	BIOAFA088	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Yellowfin Goby	**0.0006**	**0.0016**	**0.029**	**0.0016**	**0.029**	<0.0005	<0.0005
0927_BIOAFA022_201028	BIOAFA022	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0100**	<0.0005	<0.0005
0927_BIOAFL042_201102	BIOAFL042	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	**0.0020**	<0.0005	**0.0091**	<0.0005	<0.0005
0927_BIOAFA054_201102_EE	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	**0.0016**	**0.0042**	**0.064**	**0.0030**	**0.17**	**0.0006**	**0.0008**
0927_BIOAFA054_201102_HH	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	**0.0015**	**0.0033**	**0.045**	**0.0022**	**0.14**	**0.0005**	**0.0007**
0927_BIOAFA056_201102	BIOAFA056	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0013**	<0.0005	**0.019**	<0.0005	<0.0005
0927_BIOAFA062_201102	BIOAFA062	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	<0.0005	<0.0005	<0.0003	<0.0005	**0.14**	**0.0011**	**0.0019**
0927_BIOAFL044_201102	BIOAFL044	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0003	<0.0005	**0.013**	<0.0005	<0.0005
0927_BIOAFA059_201102_EE	BIOAFA059	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	**0.0012**	**0.029**	**0.0032**	**0.63**	**0.0033**	**0.0067**
0927_QC117_201102	QC117_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	**0.0012**	**0.029**	**0.0030**	**0.61**	**0.0031**	**0.0070**
0927_BIOAFA061_201102	BIOAFA061	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Blue-spot Goby	<0.0005	<0.0005	**0.0009**	**0.0011**	**0.18**	**0.0014**	**0.0022**
0927_BIOAFL047_201102	BIOAFL047	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Sea Lettuce	<0.0005	<0.0005	<0.0003	<0.0005	**0.0069**	<0.0005	<0.0005
0927_BIOAFA064_201102	BIOAFA064	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0009**	<0.0005	**0.0073**	<0.0005	<0.0005
0927_BIOAFA063_201102	BIOAFA063	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	**0.0023**	<0.0005	**0.0006**	**0.0009**	**0.43**	**0.0037**	**0.0073**
0927_BIOAFL048_201104	BIOAFL048	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0037**	<0.0005	<0.0005
0927_QC219_201030	QC219_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.001	<0.001	**0.001**	<0.001	**0.108**	-	<0.002
0927_BIOAFA067_201104	BIOAFA067	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0016**	<0.0005	**0.018**	<0.0005	<0.0005
0927_BIOAFA068_201104	BIOAFA068	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Blue-spot Goby	<0.0005	<0.0005	<0.0003	<0.0005	**0.21**	**0.0015**	**0.0026**
0927_BIOAFL049_201104	BIOAFL049	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0003	<0.0005	**0.0057**	<0.0005	<0.0005
0927_BIOAFA069_201104	BIOAFA069	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	**0.0014**	<0.0005	**0.03**	<0.0005	<0.0005
0927_BIOAFA071_201104	BIOAFA071	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Gambusia	<0.0005	<0.0005	**0.0010**	**0.0015**	**0.5**	**0.0056**	**0.0097**
0927_BIOAFA006_201027	BIOAFA006	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	**0.0060**	<0.0005	**0.029**	<0.0005	<0.0005
0927_BIOAFA007_201027	BIOAFA007	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	**0.012**	**0.0022**	**1.2**	**0.014**	**0.013**
0927_BIOAFL007_201027	BIOAFL007	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.013**	<0.0005	<0.0005
0927_BIOAFA013_201027	BIOAFA013	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	**0.0016**	<0.0005	**0.014**	<0.0005	<0.0005
0927_BIOAFA011_201027	BIOAFA011	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish/Hybrid	<0.0005	<0.0005	**0.011**	**0.0023**	**1.1**	**0.011**	**0.0019**
0927_BIOAFA012_201027	BIOAFA012	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	**0.0018**	**0.023**	**0.0037**	**0.96**	**0.015**	**0.0039**
0927_BIOAFL024_201029	BIOAFL024	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0012**	<0.0005	<0.0005
0927_BIOAFL025_201029	BIOAFL025	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0003	<0.0005	**0.0016**	<0.0005	<0.0005
0927_BIOAFL031_201029	BIOAFL031	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0003	<0.0005	**0.0028**	<0.0005	<0.0005
0927_QC116_201029	QC116_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0003	<0.0005	**0.0017**	<0.0005	<0.0005
0927_QC216_201029	QC216_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.001	<0.001	<0.001	<0.001	**0.002**	-	<0.002
0927_BIOAFL009_201027	BIOAFL009	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	**0.0003**	<0.0005	**0.026**	<0.0005	<0.0005
0927_BIOAFL043_201102	BIOAFL043	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	<0.0005	<0.0005
0927_BIOAFA018_201027	BIOAFA018	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed invertebrates	<0.0005	<0.0005	**0.0064**	<0.0005	**0.16**	**0.0022**	<0.0005
0927_BIOAFL045_201102	BIOAFL045	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	<0.0005	<0.0005	**0.0015**	<0.0005	**0.0012**	<0.0005	<0.0005
0927_BIOAFA015_201027	BIOAFA015	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	**0.01**	**0.0022**	**1**	**0.0082**	**0.0012**
0927_BIOAFA016_201027	BIOAFA016	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	**0.0010**	**0.019**	**0.0025**	**0.86**	**0.011**	**0.0025**
0927_BIOAFL011_201027	BIOAFL011	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0003	<0.0005	**0.0046**	<0.0005	<0.0005
0927_QC114_201027	QC114_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0003	<0.0005	**0.0041**	<0.0005	<0.0005
0927_BIOAFL053_201104	BIOAFL053	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	<0.0005	<0.0005	<0.0003	<0.0005	**0.0029**	<0.0005	<0.0005
0927_BIOAFA019_201027	BIOAFA019	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	**0.0009**	<0.0005	**0.71**	**0.014**	**0.0028**
0927_BIOAFA020_201027	BIOAFA020	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	**0.0026**	<0.0005	**0.016**	<0.0005	<0.0005
0927_BIOAFL045_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0100**	<0.0005	<0.0005

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonic Acids						
							Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0003	0.0005	0.0003	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)									0.0082		0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)									0.0031		0.0031		
0927_QC103_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	**0.0008**	**0.0004**	<0.0005	**0.015**	<0.0005	<0.0005
0927_BIOAFL040_241120	BIOAFL040	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Reed	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0018**	<0.0005	<0.0005
0927_BIOAFL041_241120	BIOAFL041	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	<0.0005	<0.0005
0927_QC203_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.001	<0.001	<0.001	<0.001	**0.015**	-	<0.001
0927_BIOAFL050_250506	BIOAFL050	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Cumbungi	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0004**	<0.0005	<0.0005
0927_BIOAFL051_250506	BIOAFL051	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Slender Knotweed	<0.0005	<0.0005	<0.0003	<0.0005	<0.0003	<0.0005	<0.0005
0927_BIOAFL052_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0003	<0.0005	**0.0020**	<0.0005	<0.0005
0927_BIOAFA050_201030	BIOAFA050	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	**0.0005**	<0.0005	**0.01**	<0.0005	<0.0005
0927_BIOAFA034_241119	BIOAFA034	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	**0.0004**	<0.0005	**0.032**	<0.0005	<0.0005
0927_BIOAFA061_250505	BIOAFA061	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0057**	<0.0005	<0.0005
0927_BIOAFA049_201030	BIOAFA049	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	**0.0005**	<0.0005	**0.034**	<0.0005	<0.0005
0927_BIOAFA035_241119	BIOAFA035	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	**0.0023**	<0.0005	**0.077**	<0.0005	**0.0006**
0927_BIOAFA060_250505	BIOAFA060	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0097**	<0.0005	<0.0005
0927_BIOAFL047_250505	BIOAFL047	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.012**	<0.0005	<0.0005
0927_BIOAFA044_201030	BIOAFA044	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0097**	<0.0005	<0.0005
0927_BIOAFA046_201030	BIOAFA046	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	**0.0011**	<0.0005	**0.04**	<0.0005	<0.0005
0927_BIOAFA055_201102	BIOAFA055	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0003	<0.0005	**0.0030**	<0.0005	<0.0005
0927_BIOAFA036_241119	BIOAFA036	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	**0.0018**	**0.0014**	**0.2**	<0.005	<0.005
0927_BIOAFA066_250505	BIOAFA066	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0003	<0.0005	**0.0093**	<0.0005	<0.0005
0927_BIOAFA045_201030	BIOAFA045	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	**0.0011**	<0.0005	**0.049**	<0.0005	<0.0005
0927_BIOAFA037_241119	BIOAFA037	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	**0.0014**	**0.0015**	**0.18**	<0.005	<0.005
0927_BIOAFA064_250505	BIOAFA064	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (adult)	<0.001	<0.001	<0.001	<0.001	**0.0046**	<0.001	<0.001
0927_BIOAFA065_250505	BIOAFA065	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	<0.0003	<0.0005	**0.0094**	<0.0005	<0.0005
0927_BIOAFA040_201030	BIOAFA040	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	Estuarine Sea Spider	<0.0005	<0.0005	**0.0019**	<0.0005	**0.0058**	<0.0005	<0.0005
0927_BIOAFA041_201030	BIOAFA041	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0003	<0.0005	**0.019**	<0.0005	<0.0005
0927_QC220_201105	QC220_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.001	<0.001	**0.002**	<0.001	**0.02**	-	<0.002
0927_BIOAFL034_201029	BIOAFL034	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0003	<0.0005	**0.0057**	<0.0005	<0.0005
0927_BIOAFL046_250505	BIOAFL046	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.017**	<0.0005	<0.0005
0927_BIOAFA031_201029	BIOAFA031	Sanctuary Lakes	Historical	Benthic Invertebrate	29-Oct-20	Snails	<0.0005	<0.0005	<0.0003	<0.0005	**0.025**	**0.0005**	**0.0023**
0927_BIOAFA032_201030	BIOAFA032	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	European Shore Crab	<0.0005	<0.0005	**0.0044**	<0.0005	**0.017**	<0.0005	<0.0005
0927_BIOAFA038_201030	BIOAFA038	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	**0.0009**	<0.0005	**0.019**	<0.0005	<0.0005
0927_QC120_201030	QC120_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	**0.0009**	<0.0005	**0.02**	<0.0005	<0.0005
0927_BIOAFA033_201030_EE	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0093**	<0.0005	<0.0005
0927_QC217_201102	QC217_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.001	**0.001**	**0.025**	**0.004**	**0.447**	-	**0.011**
0927_BIOAFA033_201030_HH	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0059**	<0.0005	<0.0005
0927_BIOAFA039_201030	BIOAFA039	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	**0.0004**	<0.0005	**0.025**	<0.0005	<0.0005
0927_BIOAFA038_241119	BIOAFA038	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	**0.0008**	**0.0008**	<0.0005	**0.016**	<0.0005	<0.0005
0927_QC101_241119	QC101_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	**0.0012**	**0.0012**	<0.0005	**0.022**	<0.0005	<0.0005
0927_QC201_241119	QC201_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.001	<0.001	**0.004**	<0.001	**0.055**	-	<0.001
0927_BIOAFA063_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0003	<0.0005	**0.0039**	<0.0005	<0.0005
0927_QC219_201105	QC219_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.001	<0.001	**0.014**	**0.001**	**0.139**	-	**0.002**
0927_QC104_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0003	<0.0005	**0.0036**	<0.0005	<0.0005
0927_QC204_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.001	<0.001	<0.001	<0.001	**0.004**	-	<0.001
0927_BIOAFA034_201030	BIOAFA034	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	**0.0007**	<0.0005	**0.038**	<0.0005	<0.0005
0927_BIOAFA037_201030	BIOAFA037	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Common Galaxia	<0.0005	<0.0005	**0.0017**	**0.0008**	**0.059**	<0.0005	**0.0010**
0927_QC119_201030	QC119_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	**0.0008**	<0.0005	**0.04**	<0.0005	<0.0005
0927_BIOAFA039_241119	BIOAFA039	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0003	<0.0005	**0.046**	<0.0005	<0.0005
0927_QC215_201029	QC215_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.001	<0.001	**0.001**	<0.001	**0.076**	-	<0.002
0927_BIOAFA062_250505	BIOAFA062	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	**0.0007**	<0.0005	**0.04**	<0.0005	<0.0005
0927_BIOAFL048_250505	BIOAFL048	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0003	<0.0005	**0.0036**	<0.0005	<0.0005
0927_BIOAFA040_241119	BIOAFA040	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	**0.0015**	**0.0026**	**0.0011**	**0.099**	<0.0005	<0.0005
0927_BIOAFA067_250505	BIOAFA067	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	**0.0012**	<0.0005	**0.0023**	<0.0005	<0.0005
0927_BIOAFA041_241119	BIOAFA041	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	**0.0009**	**0.0005**	**0.1**	<0.005	<0.005
0927_BIOAFA068_250505	BIOAFA068	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	<0.0005	<0.0005	**0.0022**	<0.0005	**0.02**	<0.0005	<0.0005
0927_BIOAFL038_241120	BIOAFL038	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Green filamentous algae	**0.0008**	**0.0012**	<0.0003	<0.0005	**0.0055**	<0.0005	<0.0005
0927_QC103_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0003	<0.0005	**0.0032**	<0.0005	<0.0005
0927_QC203_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.001	<0.001	<0.001	<0.001	**0.01**	-	<0.001
0927_BIOAFA042_241120	BIOAFA042	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	**0.0050**	<0.0005	**0.019**	<0.0005	<0.0005
0927_QC101_241120	QC101_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	**0.0044**	<0.0005	**0.018**	<0.0005	<0.0005
0927_QC201_241120	QC201_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.001	<0.001	**0.018**	**0.004**	**0.99**	-	**0.011**
0927_BIOAFA075_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	**0.0058**	<0.005	<0.005
0927_QC104_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	**0.0056**	<0.005	<0.005
0927_QC204_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.001	<0.001	**0.003**	<0.001	**0.01**	-	<0.001
0927_BIOAFA043_241120	BIOAFA043	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Hardyheads	<0.0005	<0.0005	**0.0038**	<0.0005	**0.041**	<0.0005	**0.0008**
0927_BIOAFA044_241120	BIOAFA044	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flounder	<0.0005	**0.0010**	**0.061**	**0.0040**	**0.088**	<0.0005	**0.0023**
0927_BIOAFA076_250506	BIOAFA076	Skeleton Creek	May-25	Prey Fish	6-May-25	Gobies	<0.0005	<0.0005	**0.0062**	**0.0010**	**0.062**	<0.0005	**0.0020**
0927_BIOAFA077_250506	BIOAFA077	Skeleton Creek	May-25	Prey Fish	6-May-25	Hardyheads	<0.001	<0.001	**0.0016**	<0.001	**0.027**	<0.001	**0.0015**
0927_BIOTFA009_201211	BIOTFA009	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0047**	<0.0005	<0.0005
0927_BIOTFA010_201211	BIOTFA010	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	**0.0009**	<0.0005	**0.0045**	<0.0005	<0.0005
0927_BIOTFA011_201211	BIOTFA011	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0045**	<0.0005	<0.0005

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic Acids			
							Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)											0.0024										
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)											0.0028										
Field ID	**Location Code**	**Investigation Area**	**Investigation Round**	**Ecological Food Group**	**Date**	**Common Name**															
0927_BIO001_190405	BIO001_19	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIO002_190405	BIO002_19	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC126_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC226_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_QC226_190405(a)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_QC226_190405(b)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_QC205_201211	-	Addison East	Historical	Terrestrial Plant	11-Dec-20	Radish Root	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOTFL025_201213	BIOTFL025	Addison East	Historical	Terrestrial Plant	13-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL026_201213	BIOTFL026	Addison East	Historical	Terrestrial Plant	13-Dec-20	Leafy Green	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL027_201213	BIOTFL027	Addison East	Historical	Terrestrial Plant	13-Dec-20	Celery	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL028_201216	BIOTFL028	Addison East	Historical	Terrestrial Plant	16-Dec-20	Potato	<0.0005	<0.0005	**0.0014**	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL029_201216	BIOTFL029	Addison East	Historical	Terrestrial Plant	16-Dec-20	Strawberry	**0.012**	**0.0098**	**0.0074**	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL031_201216	BIOTFL031	Addison East	Historical	Terrestrial Plant	16-Dec-20	Rocket	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL032_201216	BIOTFL032	Addison East	Historical	Terrestrial Plant	16-Dec-20	Snow Pea	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL033_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL034_201216	BIOTFL034	Addison East	Historical	Terrestrial Plant	16-Dec-20	Spring Onion	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL035_201216	BIOTFL035	Addison East	Historical	Terrestrial Plant	16-Dec-20	Parsley	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC106_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC206_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOTFL022_201211	BIOTFL022	Addison West	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL023_201211	BIOTFL023	Addison West	Historical	Terrestrial Plant	11-Dec-20	Mint	**0.0018**	**0.0009**	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL036_201216	BIOTFL036	Addison West	Historical	Terrestrial Plant	16-Dec-20	Rosemary	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL037_201216	BIOTFL037	Addison West	Historical	Terrestrial Plant	16-Dec-20	Lemon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL038_201216	BIOTFL038	Addison West	Historical	Terrestrial Plant	16-Dec-20	Herb	<0.0005	**0.0010**	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL011_201211	BIOTFL011	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL012_201211	BIOTFL012	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Celery	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL016_201211	BIOTFL016	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Orange	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL017_201211	BIOTFL017	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	**0.0012**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL018_201211	BIOTFL018	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Leafy Green	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL024_LEAF_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	<0.0005	**0.0006**	**0.0008**	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL024_ROOT_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL039_201216	BIOTFL039	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Fig	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL041_201216	BIOTFL041	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL045_210709	BIOTFL045	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Pumpkin	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL046_210709	BIOTFL046	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Silverbeet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL047_210709	BIOTFL047	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL048_210709	BIOTFL048	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL049_210709	BIOTFL049	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL050_210709	BIOTFL050	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spring Onion	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL051_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.0047**	**0.0046**	**0.014**	**0.0017**	**0.0047**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL052_210709	BIOTFL052	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Herb	**0.0017**	**0.0007**	**0.0006**	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL053_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.0051**	**0.0044**	**0.012**	**0.0010**	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL054_210709	BIOTFL054	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Beetroot	**0.0010**	**0.0017**	**0.0060**	**0.0005**	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC100_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.0060**	**0.022**	**0.057**	**0.0009**	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC101_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.0055**	**0.0059**	**0.02**	**0.0020**	**0.0042**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC200_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_QC201_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	**0.006**	**0.009**	**0.019**	**0.003**	**0.004**	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFL017_201028	BIOAFL017	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA091_201105	BIOAFA091	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0007**	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0013**	<0.0005	**0.0012**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC120_201105	QC120_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0009**	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0016**	<0.0005	**0.0014**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL021_201028	BIOAFL021	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA089_201105	BIOAFA089	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	**0.0013**	<0.0005	<0.0005	<0.0005	**0.0011**	**0.0013**	**0.011**	**0.0011**	**0.0080**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL042_241121	BIOAFL042	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL051_201104	BIOAFL051	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC103_241121	QC103_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA086_201105	BIOAFA086	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0023**	<0.0005	**0.0016**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA081_201105_EE	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0075**	**0.0027**	**0.012**	**0.0039**	**0.0049**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL053_250507	BIOAFL053	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL054_250507	BIOAFL054	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Phragmites	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL055_250507	BIOAFL055	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL056_250508	BIOAFL056	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA081_201105_HH	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0072**	**0.0028**	**0.012**	**0.0046**	**0.0052**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA083_250508	BIOAFA083	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	European Green Crab	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA083_201105	BIOAFA083	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0010**	**0.016**	**0.0037**	**0.018**	**0.0031**	**0.0057**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA085_250508	BIOAFA085	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Pond Snails	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC119_201105	QC119_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0085**	**0.0031**	**0.012**	**0.0053**	**0.0060**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA082_201105_HH	BIOAFA082	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	**0.0009**	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0076**	**0.0013**	**0.0047**	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA084_201105	BIOAFA084	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	**0.0021**	<0.0005	<0.0005	<0.0005	**0.0007**	**0.0010**	**0.0055**	<0.0005	**0.0059**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA024_201028	BIOAFA024	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed Invertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC215_201028	QC215_201	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA052_241121	BIOAFA052	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Brine Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA085_201105	BIOAFA085	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Blue-spot Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0067**	**0.0012**	**0.0071**	**0.0008**	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA078_250506	BIOAFA078	Skeleton Creek	May-25	Predator Fish	6-May-25	Short Finned Eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0031**	**0.0010**	**0.0039**	**0.0010**	**0.0018**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC101_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0030**	**0.0010**	**0.0038**	**0.0010**	**0.0017**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC201_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA048_241120	BIOAFA048	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Carp	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	**0.0009**	**0.011**	**0.0036**	**0.0092**	**0.0014**	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic Acids			
							Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)											0.0024										
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)											0.0028										
0927_BIOAFA072_250506	BIOAFA072	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0006**	<0.0005	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA073_250506	BIOAFA073	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0061**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA053_241121	BIOAFA053	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL049_250506	BIOAFL049	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA045_241120	BIOAFA045	Skeleton Creek	Nov-24	Pelagic Invertebrate	20-Nov-24	Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA047_241120	BIOAFA047	Skeleton Creek	Nov-24	Predator Fish	20-Nov-24	Short Finned Eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0058**	**0.0032**	**0.011**	**0.0020**	**0.0026**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC104_241121	QC104_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC204_241121	QC204_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA080_250507	BIOAFA080	Cheetham Wetlands	May-25	Prey Fish	7-May-25	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA046_241120	BIOAFA046	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flathead Gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0020**	**0.0008**	**0.0028**	<0.0005	**0.0012**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA086_250508	BIOAFA086	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Bream (juvenile)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA069_250506	BIOAFA069	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0013**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOTFL019_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL020_201211	BIOTFL020	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Rosemary	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL021_201211	BIOTFL021	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Raspberry	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC204_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOTFL043_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL044_201216	BIOTFL044	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Silverbeet	<0.0005	<0.0005	<0.005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC107_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC207_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA070_250506	BIOAFA070	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0011**	<0.0005	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL039_241120	BIOAFL039	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL001_201027	BIOAFL001	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL013_201211	BIOTFL013	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Rosemary	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL014_201211	BIOTFL014	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Apple	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL015_201211	BIOTFL015	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Passionfruit	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL002_201027	BIOAFL002	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA002_201027	BIOAFA002	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	**0.0006**	**0.0051**	**0.0010**	**0.0029**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL004_201027	BIOAFL004	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA003_201027	BIOAFA003	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0015**	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL006_201027	BIOAFL006	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	**0.0038**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA001_201027	BIOAFA001	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0008**	**0.025**	**0.0032**	**0.0048**	**0.0009**	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA004_201027	BIOAFA004	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	<0.0005	<0.0005	<0.0005	**0.0025**	**0.0030**	**0.04**	**0.0076**	**0.012**	<0.0005	**0.0018**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC113_201027	QC113_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0006**	**0.017**	**0.0022**	**0.0034**	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL014_201027	BIOAFL014	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL016_201027	BIOAFL016	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL005_201027	BIOAFL005	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC214_201027	QC214_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA010_201027	BIOAFA010	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.013**	**0.0046**	**0.01**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA021_201027	BIOAFA021	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0006**	**0.031**	**0.0055**	**0.0065**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL055_201104	BIOAFL055	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	**0.0013**	<0.0005	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0019**	**0.0005**	**0.0018**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0010**	<0.0005
0927_QC118_201104	QC118_201	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	**0.0011**	<0.0005	<0.0005	<0.0005	**0.0009**	<0.0005	**0.0016**	<0.0005	**0.0017**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA080_201105	BIOAFA080	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0008**	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0013**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA072_201105_HH	BIOAFA072	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.011**	**0.0039**	**0.015**	**0.0036**	**0.0038**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA074_201105_EE	BIOAFA074	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0009**	**0.015**	**0.0062**	**0.016**	**0.0047**	**0.0053**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA075_201105_HH	BIOAFA075	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	<0.0005	<0.0005	<0.0005	<0.0005	**0.0003**	**0.0005**	**0.011**	**0.0007**	**0.0075**	**0.0007**	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA078_201105	BIOAFA078	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	**0.0008**	**0.0077**	**0.0007**	**0.0058**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA079_201105_HH	BIOAFA079	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Oriental weatherloach	**0.0007**	<0.0005	<0.0005	<0.0005	**0.0021**	**0.0025**	**0.054**	**0.0060**	**0.029**	<0.0005	**0.0059**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL022_201028	BIOAFL022	Skeleton Creek	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0022**	**0.0008**	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC203_241121	QC203_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA056_241121	BIOAFA056	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Sand Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA081_250507	BIOAFA081	Cheetham Wetlands	May-25	Pelagic Invertebrate	8-May-25	Southern Calamari	<0.0005	<0.0005	<0.0005	<0.0005	**0.0023**	<0.0005	**0.0022**	**0.0008**	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA054_241121	BIOAFA054	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Flounder	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA055_241121	BIOAFA055	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA082_250507	BIOAFA082	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Hardyheads	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC213_201027	QC213_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.005	<0.002	<0.001	<0.001	<0.001	**0.001**	**0.03**	**0.004**	**0.01**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOTFA001_201026	BIOTFA001	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA002_201026	BIOTFA002	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA003_201026	BIOTFA003	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0017**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA004_201026	BIOTFA004	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA005_201026	BIOTFA005	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0011**	**0.0005**	**0.0061**	**0.0009**	**0.0021**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA006_201026	BIOTFA006	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0051**	**0.0008**	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA007_201026	BIOTFA007	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0019**	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC112_201026	QC112_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC212_201026	QC212_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOTFL001_201026	BIOTFL001	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL002_201026	BIOTFL002	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL003_201026	BIOTFL003	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL004_201026	BIOTFL004	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL005_201026	BIOTFL005	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL006_201026	BIOTFL006	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL007_201026	BIOTFL007	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL008_201026	BIOTFL008	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL009_201026	BIOTFL009	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL010_201026	BIOTFL010	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC111_201026	QC111_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC211_201026	QC211_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic Acids			
							Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)											0.0024										
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)											0.0028										
0927_BIOAFL020_201028	BIOAFL020	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL036_201029	BIOAFL036	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC118_201029	QC118_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC218_201029	QC218_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFL037_201030	BIOAFL037	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL039_201030	BIOAFL039	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL041_201030	BIOAFL041	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL034_241119	BIOAFL034	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL035_241119	BIOAFL035	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Seagrass, Sea Lettuce, filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL036_241119	BIOAFL036	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL037_241119	BIOAFL037	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL044_241122	BIOAFL044	Cheetham Wetlands	Nov-24	Aquatic Vegetation	22-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA059_241122	BIOAFA059	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	22-Nov-24	Brine Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA023_201028	BIOAFA023	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed invertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL019_201028	BIOAFL019	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL030_201029	BIOAFL030	Cheetham Wetlands	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	**0.0005**	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL043_241121	BIOAFL043	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA050_241121	BIOAFA050	Cheetham Wetlands	Nov-24	Benthic Invertebrate	21-Nov-24	Pond Snails	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0005**	<0.0005	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA084_250508	BIOAFA084	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
0927_BIOAFA049_241121	BIOAFA049	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Toadfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0006**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA058_241121	BIOAFA058	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Short Finned Eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA079_250507	BIOAFA079	Cheetham Wetlands	May-25	Predator Fish	7-May-25	Toadfish	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA051_241121	BIOAFA051	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA057_241121	BIOAFA057	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC220_201030	QC220_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.004**	**0.002**	**0.008**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA087_250508	BIOAFA087	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Yellowfin Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0012**	**0.0007**	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL023_201029	BIOAFL023	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA029_201029	BIOAFA029	Skeleton Creek	Historical	Pelagic Invertebrate	29-Oct-20	Mixed crustacean	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0018**	<0.0005	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA026_201029	BIOAFA026	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Southern Black Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA027_201029	BIOAFA027	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0038**	**0.0012**	**0.0033**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA028_201029	BIOAFA028	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0058**	**0.0014**	**0.0034**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC115_201029	QC115_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0054**	**0.0014**	**0.0034**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA088_250508	BIOAFA088	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Yellowfin Goby	<0.0005	<0.0005	**0.0014**	**0.0015**	**0.0039**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA022_201028	BIOAFA022	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL042_201102	BIOAFL042	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA054_201102_EE	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0013**	**0.0008**	**0.0072**	**0.0021**	**0.01**	**0.0044**	**0.0057**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA054_201102_HH	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	**0.0006**	**0.0054**	**0.0015**	**0.0079**	**0.0036**	**0.0041**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA056_201102	BIOAFA056	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0020**	<0.0005	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA062_201102	BIOAFA062	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0042**	**0.0017**	**0.0087**	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL044_201102	BIOAFL044	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA059_201102_EE	BIOAFA059	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0011**	**0.0009**	**0.018**	**0.0079**	**0.027**	**0.0090**	**0.011**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC117_201102	QC117_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	**0.0010**	**0.0010**	**0.017**	**0.0066**	**0.027**	**0.0083**	**0.01**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA061_201102	BIOAFA061	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Blue-spot Goby	**0.0006**	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0082**	**0.0012**	**0.0068**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL047_201102	BIOAFL047	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Sea Lettuce	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA064_201102	BIOAFA064	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	**0.0006**	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0006**	<0.0005	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA063_201102	BIOAFA063	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	**0.0006**	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.018**	**0.0046**	**0.023**	**0.0022**	**0.0028**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL048_201104	BIOAFL048	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC219_201030	QC219_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.005**	**0.002**	**0.005**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA067_201104	BIOAFA067	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	**0.0008**	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0013**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005
0927_BIOAFA068_201104	BIOAFA068	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Blue-spot Goby	**0.0015**	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.011**	**0.0031**	**0.0085**	**0.0008**	**0.0018**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL049_201104	BIOAFL049	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA069_201104	BIOAFA069	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	**0.0008**	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	**0.0023**	<0.0005	**0.0016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA071_201104	BIOAFA071	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Gambusia	**0.0007**	<0.0005	<0.0005	<0.0005	**0.0004**	**0.0007**	**0.022**	**0.0029**	**0.015**	**0.0013**	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA006_201027	BIOAFA006	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	<0.0005	**0.0018**	<0.0005	**0.0019**	**0.0009**	**0.0057**	**0.0009**	**0.0033**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA007_201027	BIOAFA007	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0007**	**0.03**	**0.0048**	**0.01**	**0.0006**	**0.0027**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL007_201027	BIOAFL007	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA013_201027	BIOAFA013	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	<0.0005	**0.0010**	<0.0005	**0.0015**	<0.0005	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA011_201027	BIOAFA011	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish/Hybrid	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0007**	**0.029**	**0.0038**	**0.0080**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA012_201027	BIOAFA012	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	<0.0005	<0.0005	<0.0005	**0.0020**	**0.0027**	**0.048**	**0.0070**	**0.012**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL024_201029	BIOAFL024	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL025_201029	BIOAFL025	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL031_201029	BIOAFL031	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC116_201029	QC116_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC216_201029	QC216_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFL009_201027	BIOAFL009	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL043_201102	BIOAFL043	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA018_201027	BIOAFA018	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed invertebrates	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0046**	**0.0008**	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL045_201102	BIOAFL045	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA015_201027	BIOAFA015	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0010**	**0.019**	**0.0026**	**0.0035**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA016_201027	BIOAFA016	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	<0.0005	<0.0005	<0.0005	<0.0005	**0.0029**	**0.0035**	**0.079**	**0.011**	**0.029**	<0.0005	**0.0075**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL011_201027	BIOAFL011	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC114_201027	QC114_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL053_201104	BIOAFL053	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA019_201027	BIOAFA019	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.017**	**0.0072**	**0.027**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA020_201027	BIOAFA020	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL045_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0009**	<0.0005	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - (n:2) Fluorotelomer Sulfonic Acids			
							Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0003	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)											0.0024										
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)											0.0028										
0927_QC103_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	**0.0007**	**0.0019**	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL040_241120	BIOAFL040	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL041_241120	BIOAFL041	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC203_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.002	<0.002	<0.001	<0.001	**0.001**	<0.001	**0.002**	<0.002	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFL050_250506	BIOAFL050	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Cumbungi	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL051_250506	BIOAFL051	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Slender Knotweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL052_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0084**	<0.0005	<0.0005
0927_BIOAFA050_201030	BIOAFA050	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0011**	**0.0006**	**0.0044**	**0.0007**	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA034_241119	BIOAFA034	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0024**	**0.0006**	**0.0020**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA061_250505	BIOAFA061	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0017**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA049_201030	BIOAFA049	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0015**	**0.0007**	**0.0030**	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA035_241119	BIOAFA035	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0063**	**0.0015**	**0.0041**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA060_250505	BIOAFA060	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0007**	**0.0006**	**0.0019**	**0.0006**	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL047_250505	BIOAFL047	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	<0.0005	**0.0015**	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA044_201030	BIOAFA044	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0011**	**0.0005**	**0.0041**	**0.0007**	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA046_201030	BIOAFA046	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0045**	**0.0018**	**0.0071**	**0.0007**	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA055_201102	BIOAFA055	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA036_241119	BIOAFA036	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0014**	**0.019**	**0.0030**	**0.0048**	<0.0005	**0.0012**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA066_250505	BIOAFA066	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0010**	**0.0006**	**0.0022**	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA045_201030	BIOAFA045	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0023**	**0.0007**	**0.0026**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA037_241119	BIOAFA037	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	**0.0012**	**0.022**	**0.0038**	**0.0098**	<0.0005	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA064_250505	BIOAFA064	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (adult)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA065_250505	BIOAFA065	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0020**	**0.0008**	**0.0019**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA040_201030	BIOAFA040	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	Estuarine Sea Spider	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0010**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA041_201030	BIOAFA041	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0032**	**0.0011**	**0.0036**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC220_201105	QC220_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFL034_201029	BIOAFL034	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0010**	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL046_250505	BIOAFL046	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	**0.0004**	<0.0005	**0.0016**	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA031_201029	BIOAFA031	Sanctuary Lakes	Historical	Benthic Invertebrate	29-Oct-20	Snails	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0046**	**0.0043**	**0.014**	**0.0010**	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA032_201030	BIOAFA032	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	European Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0026**	**0.0009**	**0.0029**	**0.0005**	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA038_201030	BIOAFA038	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0022**	**0.0007**	**0.0037**	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC120_201030	QC120_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0022**	**0.0007**	**0.0040**	**0.0005**	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA033_201030_EE	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC217_201102	QC217_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.011**	**0.004**	**0.02**	**0.006**	**0.007**	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA033_201030_HH	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA039_201030	BIOAFA039	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0027**	**0.0009**	**0.0031**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA038_241119	BIOAFA038	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	**0.0006**	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC101_241119	QC101_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0015**	**0.0005**	**0.0018**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC201_241119	QC201_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	**0.004**	<0.002	**0.005**	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA063_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0007**	<0.0005	**0.0016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC219_201105	QC219_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.007**	**0.002**	**0.011**	**0.002**	**0.003**	<0.002	<0.002	<0.002	<0.002
0927_QC104_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0006**	<0.0005	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC204_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	**0.002**	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA034_201030	BIOAFA034	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0024**	**0.0007**	**0.0020**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA037_201030	BIOAFA037	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Common Galaxia	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0007**	**0.0049**	**0.0014**	**0.0041**	<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC119_201030	QC119_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	**0.0003**	<0.0005	**0.0022**	**0.0007**	**0.0020**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA039_241119	BIOAFA039	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0038**	**0.0007**	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC215_201029	QC215_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.005	<0.002	<0.001	<0.001	<0.001	<0.001	**0.004**	**0.001**	**0.003**	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
0927_BIOAFA062_250505	BIOAFA062	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0039**	**0.0010**	**0.0017**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL048_250505	BIOAFL048	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA040_241119	BIOAFA040	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0006**	**0.0043**	**0.0007**	**0.0027**	<0.0005	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA067_250505	BIOAFA067	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA041_241119	BIOAFA041	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0064**	**0.0022**	**0.0051**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA068_250505	BIOAFA068	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	**0.0007**	**0.0028**	<0.0005	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL038_241120	BIOAFL038	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC103_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC203_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA042_241120	BIOAFA042	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0024**	**0.0020**	**0.01**	**0.0015**	**0.0021**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC101_241120	QC101_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	**0.0025**	**0.0018**	**0.0099**	**0.0014**	**0.0031**	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC201_241120	QC201_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	**0.005**	**0.003**	**0.008**	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA075_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
0927_QC104_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0069**	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005
0927_QC204_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	**0.008**	<0.002	<0.005	<0.001	<0.001	<0.001	<0.001
0927_BIOAFA043_241120	BIOAFA043	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Hardyheads	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0009**	<0.0005	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA044_241120	BIOAFA044	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flounder	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0013**	<0.0005	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA076_250506	BIOAFA076	Skeleton Creek	May-25	Prey Fish	6-May-25	Gobies	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	**0.0007**	<0.0005	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFA077_250506	BIOAFA077	Skeleton Creek	May-25	Prey Fish	6-May-25	Hardyheads	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
0927_BIOTFA009_201211	BIOTFA009	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA010_201211	BIOTFA010	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFA011_201211	BIOTFA011	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)														0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)														0.0031		
Field ID	**Location Code**	**Investigation Area**	**Investigation Round**	**Ecological Food Group**	**Date**	**Common Name**										
0927_BIO001_190405	BIO001_19	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.003**	**0.003**	**0.003**
0927_BIO002_190405	BIO002_19	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0028**	**0.0028**	**0.0028**
0927_QC126_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0032**	**0.0032**	**0.0032**
0927_QC226_190405	-	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	<0.001	-	*<0.001*
0927_QC226_190405(a)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	0.002	-	**0.002**
0927_QC226_190405(b)	-	-	Historical	Terrestrial Plant	5-Apr-19	-	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	0.001	-	**0.001**
0927_QC205_201211	-	Addison East	Historical	Terrestrial Plant	11-Dec-20	Radish Root	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	<0.001	-	*<0.001*
0927_BIOTFL025_201213	BIOTFL025	Addison East	Historical	Terrestrial Plant	13-Dec-20	Peach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL026_201213	BIOTFL026	Addison East	Historical	Terrestrial Plant	13-Dec-20	Leafy Green	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL027_201213	BIOTFL027	Addison East	Historical	Terrestrial Plant	13-Dec-20	Celery	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL028_201216	BIOTFL028	Addison East	Historical	Terrestrial Plant	16-Dec-20	Potato	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0014**	**0.0014**
0927_BIOTFL029_201216	BIOTFL029	Addison East	Historical	Terrestrial Plant	16-Dec-20	Strawberry	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0009**	**0.0301**	**0.0301**
0927_BIOTFL031_201216	BIOTFL031	Addison East	Historical	Terrestrial Plant	16-Dec-20	Rocket	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0044**	**0.0044**	**0.0044**
0927_BIOTFL032_201216	BIOTFL032	Addison East	Historical	Terrestrial Plant	16-Dec-20	Snow Pea	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL033_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.002**	**0.002**	**0.002**
0927_BIOTFL034_201216	BIOTFL034	Addison East	Historical	Terrestrial Plant	16-Dec-20	Spring Onion	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL035_201216	BIOTFL035	Addison East	Historical	Terrestrial Plant	16-Dec-20	Parsley	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.033**	**0.033**	**0.0337**
0927_QC106_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0019**	**0.0019**	**0.0019**
0927_QC206_201216	BIOTFL033	Addison East	Historical	Terrestrial Plant	16-Dec-20	Carrot	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	0.001	-	**0.001**
0927_BIOTFL022_201211	BIOTFL022	Addison West	Historical	Terrestrial Plant	11-Dec-20	Lemon	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0005**	**0.0005**
0927_BIOTFL023_201211	BIOTFL023	Addison West	Historical	Terrestrial Plant	11-Dec-20	Mint	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0012**	**0.0039**	**0.0039**
0927_BIOTFL036_201216	BIOTFL036	Addison West	Historical	Terrestrial Plant	16-Dec-20	Rosemary	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.005*	*<0.01*	*<0.05*
0927_BIOTFL037_201216	BIOTFL037	Addison West	Historical	Terrestrial Plant	16-Dec-20	Lemon	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.005*	*<0.01*	*<0.05*
0927_BIOTFL038_201216	BIOTFL038	Addison West	Historical	Terrestrial Plant	16-Dec-20	Herb	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.005*	*<0.01*	*<0.05*
0927_BIOTFL011_201211	BIOTFL011	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL012_201211	BIOTFL012	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Celery	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL016_201211	BIOTFL016	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Orange	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL017_201211	BIOTFL017	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Peach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0011**	**0.0023**	**0.0023**
0927_BIOTFL018_201211	BIOTFL018	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Leafy Green	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.041**	**0.0416**	**0.0441**
0927_BIOTFL024_LEAF_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0023**	**0.0023**
0927_BIOTFL024_ROOT_201211	BIOTFL024	Ashcroft	Historical	Terrestrial Plant	11-Dec-20	Radish	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL039_201216	BIOTFL039	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Fig	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL041_201216	BIOTFL041	Ashcroft	Historical	Terrestrial Plant	16-Dec-20	Peach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL045_210709	BIOTFL045	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Pumpkin	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0005**	**0.0005**
0927_BIOTFL046_210709	BIOTFL046	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Silverbeet	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.001**	**0.001**	**0.001**
0927_BIOTFL047_210709	BIOTFL047	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL048_210709	BIOTFL048	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0017**	**0.0017**	**0.0017**
0927_BIOTFL049_210709	BIOTFL049	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Parsley	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL050_210709	BIOTFL050	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spring Onion	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOTFL051_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.31**	**0.3557**	**0.3915**
0927_BIOTFL052_210709	BIOTFL052	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Herb	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0047**	**0.0077**	**0.0077**
0927_BIOTFL053_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.195**	**0.2307**	**0.2531**
0927_BIOTFL054_210709	BIOTFL054	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Beetroot	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.043**	**0.0554**	**0.0605**
0927_QC100_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.08**	**0.1748**	**0.1905**
0927_QC101_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.34**	**0.3906**	**0.4407**
0927_QC200_210709	BIOTFL053	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	<0.001	-	*<0.001*
0927_QC201_210709	BIOTFL051	Ashcroft	Historical	Terrestrial Plant	9-Jul-21	Spinach	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	0.224	-	**0.316**
0927_BIOAFL017_201028	BIOAFL017	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0025**	**0.0025**	**0.0025**
0927_BIOAFA091_201105	BIOAFA091	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0009**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0219**	**0.023**	**0.0264**
0927_QC120_201105	QC120_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0011**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0256**	**0.027**	**0.0318**
0927_BIOAFL021_201028	BIOAFL021	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0031**	**0.0031**	**0.0031**
0927_BIOAFA089_201105	BIOAFA089	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	**0.0039**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.2893**	**0.2917**	**0.3272**
0927_BIOAFL042_241121	BIOAFL042	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0013**	**0.0013**	**0.0013**
0927_BIOAFL051_201104	BIOAFL051	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0079**	**0.0088**	**0.0088**
0927_QC103_241121	QC103_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0023**	**0.0023**	**0.0023**
0927_BIOAFA086_201105	BIOAFA086	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0008**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0353**	**0.0358**	**0.0412**
0927_BIOAFA081_201105_EE	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.204**	**0.204**	**0.2392**
0927_BIOAFL053_250507	BIOAFL053	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Saltbush	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0018**	**0.0018**	**0.0018**
0927_BIOAFL054_250507	BIOAFL054	Cheetham Wetlands	May-25	Aquatic Vegetation	7-May-25	Phragmites	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0027**	**0.0027**	**0.0027**
0927_BIOAFL055_250507	BIOAFL055	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOAFL056_250508	BIOAFL056	Cheetham Wetlands	May-25	Aquatic Vegetation	8-May-25	Saltbush	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*
0927_BIOAFA081_201105_HH	BIOAFA081	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.203**	**0.203**	**0.2391**
0927_BIOAFA083_250508	BIOAFA083	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	European Green Crab	**0.0007**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0017**	**0.0017**	**0.003**
0927_BIOAFA083_201105	BIOAFA083	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Flathead gudgeon	**0.0046**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.2062**	**0.2067**	**0.2642**
0927_BIOAFA085_250508	BIOAFA085	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Pond Snails	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0011**	**0.0011**	**0.0011**
0927_QC119_201105	QC119_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.215**	**0.215**	**0.2544**
0927_BIOAFA082_201105_HH	BIOAFA082	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	**0.0007**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0608**	**0.0621**	**0.0769**
0927_BIOAFA084_201105	BIOAFA084	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	**0.0021**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.2451**	**0.2479**	**0.2736**
0927_BIOAFA024_201028	BIOAFA024	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed Invertebrates	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0029**	**0.0029**	**0.0029**
0927_QC215_201028	QC215_201	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	*<0.005*	*<0.005*	*<0.001*	*<0.002*	*<0.002*	*<0.001*	*<0.002*	0.005	-	**0.006**
0927_BIOAFA052_241121	BIOAFA052	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Brine Shrimp	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0015**	**0.0015**	**0.0015**
0927_BIOAFA085_201105	BIOAFA085	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Blue-spot Goby	**0.0021**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.2108**	**0.2108**	**0.234**
0927_BIOAFA078_250506	BIOAFA078	Skeleton Creek	May-25	Predator Fish	6-May-25	Short Finned Eel	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0841**	**0.0841**	**0.0981**
0927_QC101_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.0932**	**0.0932**	**0.1068**
0927_QC201_250507	BIOAFA078	Skeleton Creek	May-25	Predator Fish	7-May-25	Short Finned Eel	*<0.005*	*<0.005*	*<0.002*	*<0.01*	*<0.005*	*<0.002*	*<0.05*	**0.006**	-	**0.006**
0927_BIOAFA048_241120	BIOAFA048	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Carp	**0.0018**	*<0.0005*	**0.0007**	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	**0.1394**	**0.14**	**0.1757**

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)														0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)														0.0031		
0927_BIOAFA072_250506	BIOAFA072	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0136**	**0.0136**	**0.0152**
0927_BIOAFA073_250506	BIOAFA073	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.25**	**0.25**	**0.2632**
0927_BIOAFA053_241121	BIOAFA053	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0019**	**0.0019**	**0.0034**
0927_BIOAFL049_250506	BIOAFL049	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0164**	**0.0164**	**0.0172**
0927_BIOAFA045_241120	BIOAFA045	Skeleton Creek	Nov-24	Pelagic Invertebrate	20-Nov-24	Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0117**	**0.0117**	**0.0125**
0927_BIOAFA047_241120	BIOAFA047	Skeleton Creek	Nov-24	Predator Fish	20-Nov-24	Short Finned Eel	<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005	<0.0005	<0.0005	**1.718**	**1.718**	**1.7981**
0927_QC104_241121	QC104_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0019**	**0.0019**	**0.0033**
0927_QC204_241121	QC204_241	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Bream	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	**0.002**	-	**0.002**
0927_BIOAFA080_250507	BIOAFA080	Cheetham Wetlands	May-25	Prey Fish	7-May-25	Bream	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0015**	**0.0015**	**0.0027**
0927_BIOAFA046_241120	BIOAFA046	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flathead Gudgeon	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0746**	**0.0746**	**0.0857**
0927_BIOAFA086_250508	BIOAFA086	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Bream (juvenile)	**0.0022**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0021**	**0.0021**	**0.0043**
0927_BIOAFA069_250506	BIOAFA069	Skeleton Creek	May-25	Prey Fish	6-May-25	Flathead Gudgeon	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0333**	**0.0333**	**0.0368**
0927_BIOTFL019_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL020_201211	BIOTFL020	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Rosemary	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0005**
0927_BIOTFL021_201211	BIOTFL021	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Raspberry	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0006**	**0.0006**
0927_QC204_201211	BIOTFL019	Elmstead	Historical	Terrestrial Plant	11-Dec-20	Lemon	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	-	<0.001
0927_BIOTFL043_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL044_201216	BIOTFL044	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Silverbeet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0038**	**0.0043**	**0.0043**
0927_QC107_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_QC207_201216	BIOTFL043	Elmstead	Historical	Terrestrial Plant	16-Dec-20	Peach	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	-	<0.001
0927_BIOAFA070_250506	BIOAFA070	Skeleton Creek	May-25	Prey Fish	6-May-25	Common Galaxias	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.102**	**0.1026**	**0.1118**
0927_BIOAFL039_241120	BIOAFL039	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0045**	**0.0045**	**0.0045**
0927_BIOAFL001_201027	BIOAFL001	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.011**	**0.011**	**0.011**
0927_BIOTFL013_201211	BIOTFL013	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Rosemary	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL014_201211	BIOTFL014	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Apple	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL015_201211	BIOTFL015	Kingwell	Historical	Terrestrial Plant	11-Dec-20	Passionfruit	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL002_201027	BIOAFL002	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0052**	**0.0052**	**0.0052**
0927_BIOAFA002_201027	BIOAFA002	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.056**	**0.0617**	**0.0671**
0927_BIOAFL004_201027	BIOAFL004	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0026**	**0.0026**	**0.0026**
0927_BIOAFA003_201027	BIOAFA003	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed macroinvertebrates	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0536**	**0.0541**	**0.0568**
0927_BIOAFL006_201027	BIOAFL006	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0028**	**0.0028**	**0.0066**
0927_BIOAFA001_201027	BIOAFA001	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	**0.0028**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.0075**	**1.0075**	**1.1037**
0927_BIOAFA004_201027	BIOAFA004	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	**0.0060**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.021**	**1.0235**	**1.107**
0927_QC113_201027	QC113_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	**0.0016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.1061**	**1.1061**	**1.1752**
0927_BIOAFL014_201027	BIOAFL014	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	**0.0007**	**0.0007**
0927_BIOAFL016_201027	BIOAFL016	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Plantain	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0021**	**0.0026**	**0.0026**
0927_BIOAFL005_201027	BIOAFL005	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.015**	**0.015**	**0.015**
0927_QC214_201027	QC214_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	-	**0.002**
0927_BIOAFA010_201027	BIOAFA010	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.6613**	**0.6613**	**0.7041**
0927_BIOAFA021_201027	BIOAFA021	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.2019**	**1.2019**	**1.2684**
0927_BIOAFL055_201104	BIOAFL055	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	**0.0007**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.015**	**0.0183**	**0.0232**
0927_QC118_201104	QC118_201	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Water Cress	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.016**	**0.018**	**0.0218**
0927_BIOAFA080_201105	BIOAFA080	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0166**	**0.018**	**0.0214**
0927_BIOAFA072_201105_HH	BIOAFA072	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.3098**	**0.3102**	**0.3522**
0927_BIOAFA074_201105_EE	BIOAFA074	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.237**	**1.2375**	**1.3109**
0927_BIOAFA075_201105_HH	BIOAFA075	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Goldfish	**0.0026**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.2667**	**0.267**	**0.3017**
0927_BIOAFA078_201105	BIOAFA078	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Common Galaxia	**0.0019**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.2558**	**0.2564**	**0.283**
0927_BIOAFA079_201105_HH	BIOAFA079	Skeleton Creek	Historical	Prey Fish	5-Nov-20	Oriental weatherloach	**0.0022**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**1.145**	**1.1485**	**1.2762**
0927_BIOAFL022_201028	BIOAFL022	Skeleton Creek	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0071**	**0.0071**	**0.0115**
0927_QC203_241121	QC203_241	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Red filamentous algae	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	**0.004**	-	**0.004**
0927_BIOAFA056_241121	BIOAFA056	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	21-Nov-24	Sand Shrimp	**0.0013**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0106**	**0.0106**	**0.0119**
0927_BIOAFA081_250507	BIOAFA081	Cheetham Wetlands	May-25	Pelagic Invertebrate	8-May-25	Southern Calamari	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0345**	**0.0368**	**0.0416**
0927_BIOAFA054_241121	BIOAFA054	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Flounder	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.065**	**0.0662**	**0.069**
0927_BIOAFA055_241121	BIOAFA055	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0101**	**0.0101**	**0.0112**
0927_BIOAFA082_250507	BIOAFA082	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Hardyheads	**0.0010**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0035**	**0.0035**	**0.0045**
0927_QC213_201027	QC213_201	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.947	-	**1.01**
0927_BIOTFA001_201026	BIOTFA001	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.007**	**0.007**	**0.007**
0927_BIOTFA002_201026	BIOTFA002	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0356**	**0.0356**	**0.037**
0927_BIOTFA003_201026	BIOTFA003	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.168**	**0.1684**	**0.1728**
0927_BIOTFA004_201026	BIOTFA004	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0288**	**0.0288**	**0.0299**
0927_BIOTFA005_201026	BIOTFA005	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0859**	**0.087**	**0.0977**
0927_BIOTFA006_201026	BIOTFA006	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.305**	**0.3057**	**0.3154**
0927_BIOTFA007_201026	BIOTFA007	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0531**	**0.0535**	**0.0573**
0927_QC112_201026	QC112_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.007**	**0.007**	**0.007**
0927_QC212_201026	QC212_201	Laverton RAAF Swamp	Historical	Terrestrial Invertebrate	26-Oct-20	Mixed macroinvertebrates	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.012	-	**0.012**
0927_BIOTFL001_201026	BIOTFL001	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	**0.0007**	**0.0007**
0927_BIOTFL002_201026	BIOTFL002	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0019**	**0.0023**	**0.0023**
0927_BIOTFL003_201026	BIOTFL003	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0007**	**0.0013**	**0.0013**
0927_BIOTFL004_201026	BIOTFL004	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL005_201026	BIOTFL005	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	**0.0012**	**0.0012**
0927_BIOTFL006_201026	BIOTFL006	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0015**	**0.0021**	**0.0021**
0927_BIOTFL007_201026	BIOTFL007	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL008_201026	BIOTFL008	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOTFL009_201026	BIOTFL009	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0015**	**0.0028**	**0.0028**
0927_BIOTFL010_201026	BIOTFL010	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0017**	**0.0025**	**0.0025**
0927_QC111_201026	QC111_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0008**	**0.0008**
0927_QC211_201026	QC211_201	Laverton RAAF Swamp	Historical	Terrestrial Plant	26-Oct-20	Grass	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	<0.001	-	<0.001

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)														0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)														0.0031		
0927_BIOAFL020_201028	BIOAFL020	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0173	0.0179	0.0179
0927_BIOAFL036_201029	BIOAFL036	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	0.0016	0.0021
0927_QC118_201029	QC118_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0018	0.0018	0.0024
0927_QC218_201029	QC218_201	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.004	-	0.006
0927_BIOAFL037_201030	BIOAFL037	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	0.0008	0.0008
0927_BIOAFL039_201030	BIOAFL039	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0015	0.0015	0.0015
0927_BIOAFL041_201030	BIOAFL041	Sanctuary Lakes	Historical	Aquatic Vegetation	30-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	0.0016	0.0016
0927_BIOAFL034_241119	BIOAFL034	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0024	0.0024	0.0083
0927_BIOAFL035_241119	BIOAFL035	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Seagrass, Sea Lettuce, filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0023	0.0023	0.0071
0927_BIOAFL036_241119	BIOAFL036	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.001	0.0025
0927_BIOAFL037_241119	BIOAFL037	Sanctuary Lakes	Nov-24	Aquatic Vegetation	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	0.0016	0.004
0927_BIOAFL044_241122	BIOAFL044	Cheetham Wetlands	Nov-24	Aquatic Vegetation	22-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0053	0.0057	0.0057
0927_BIOAFA059_241122	BIOAFA059	Cheetham Wetlands	Nov-24	Pelagic Invertebrate	22-Nov-24	Brine Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0045	0.0049	0.0049
0927_BIOAFA023_201028	BIOAFA023	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Mixed invertebrates	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0112	0.0112	0.0118
0927_BIOAFL019_201028	BIOAFL019	Cheetham Wetlands	Historical	Aquatic Vegetation	28-Oct-20	Seagrass	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0055	0.0055	0.0055
0927_BIOAFL030_201029	BIOAFL030	Cheetham Wetlands	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0324	0.0331	0.0343
0927_BIOAFL043_241121	BIOAFL043	Cheetham Wetlands	Nov-24	Aquatic Vegetation	21-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	0.0057	0.0082
0927_BIOAFA050_241121	BIOAFA050	Cheetham Wetlands	Nov-24	Benthic Invertebrate	21-Nov-24	Pond Snails	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0184	0.0184	0.0204
0927_BIOAFA084_250508	BIOAFA084	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Shore Crab	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	0.0057	<0.01	<0.05
0927_BIOAFA049_241121	BIOAFA049	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Toadfish	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0214	0.0214	0.0236
0927_BIOAFA058_241121	BIOAFA058	Cheetham Wetlands	Nov-24	Predator Fish	21-Nov-24	Short Finned Eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.053	0.053	0.057
0927_BIOAFA079_250507	BIOAFA079	Cheetham Wetlands	May-25	Predator Fish	7-May-25	Toadfish	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.014	0.014	0.014
0927_BIOAFA051_241121	BIOAFA051	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Hardyheads	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0268	0.0268	0.0289
0927_BIOAFA057_241121	BIOAFA057	Cheetham Wetlands	Nov-24	Prey Fish	21-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0041	0.0041	0.0041
0927_QC220_201030	QC220_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	<0.005	<0.005	**0.002**	<0.002	<0.002	<0.001	<0.002	0.033	-	0.049
0927_BIOAFA087_250508	BIOAFA087	Cheetham Wetlands	May-25	Prey Fish	8-May-25	Yellowfin Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0196	0.0196	0.0232
0927_BIOAFL023_201029	BIOAFL023	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0071	0.0071	0.0079
0927_BIOAFA029_201029	BIOAFA029	Skeleton Creek	Historical	Pelagic Invertebrate	29-Oct-20	Mixed crustacean	**0.0012**	<0.0005	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	0.0274	0.0274	0.0329
0927_BIOAFA026_201029	BIOAFA026	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Southern Black Bream	**0.0023**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	0.0046	0.008
0927_BIOAFA027_201029	BIOAFA027	Skeleton Creek	Historical	Predator Fish	29-Oct-20	Flathead gudgeon	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.092	0.092	0.1038
0927_BIOAFA028_201029	BIOAFA028	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	**0.0014**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1009	0.1009	0.1156
0927_QC115_201029	QC115_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0979	0.0979	0.1124
0927_BIOAFA088_250508	BIOAFA088	Cheetham Wetlands	May-25	Benthic Invertebrate	8-May-25	Yellowfin Goby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.058	0.0654	0.0686
0927_BIOAFA022_201028	BIOAFA022	Cheetham Wetlands	Historical	Pelagic Invertebrate	28-Oct-20	Brine shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.011	0.0117	0.0123
0927_BIOAFL042_201102	BIOAFL042	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0111	0.0111	0.0116
0927_BIOAFA054_201102_EE	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.234	0.2369	0.2757
0927_BIOAFA054_201102_HH	BIOAFA054	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.185	0.1877	0.2175
0927_BIOAFA056_201102	BIOAFA056	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0203	0.0206	0.0241
0927_BIOAFA062_201102	BIOAFA062	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	**0.0016**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.14	0.14	0.1601
0927_BIOAFL044_201102	BIOAFL044	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.013	0.013	0.0135
0927_BIOAFA059_201102_EE	BIOAFA059	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.659	0.6601	0.7483
0927_QC117_201102	QC117_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.639	0.64	0.7242
0927_BIOAFA061_201102	BIOAFA061	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Blue-spot Goby	**0.0030**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1809	0.1819	0.2058
0927_BIOAFL047_201102	BIOAFL047	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Sea Lettuce	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0069	0.0078	0.0086
0927_BIOAFA064_201102	BIOAFA064	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0082	0.0091	0.0106
0927_BIOAFA063_201102	BIOAFA063	Skeleton Creek	Historical	Prey Fish	2-Nov-20	Gambusia	**0.0047**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.4306	0.4338	0.501
0927_BIOAFL048_201104	BIOAFL048	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0041	0.0051	0.0051
0927_QC219_201030	QC219_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.109	-	0.121
0927_BIOAFA067_201104	BIOAFA067	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	**0.0008**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0196	0.0216	0.0248
0927_BIOAFA068_201104	BIOAFA068	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Blue-spot Goby	**0.0015**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.21	0.212	0.2428
0927_BIOAFL049_201104	BIOAFL049	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Curly-leaf Pondweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	0.0057	0.0057
0927_BIOAFA069_201104	BIOAFA069	Skeleton Creek	Historical	Pelagic Invertebrate	4-Nov-20	Freshwater Shrimp	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0314	0.0328	0.0378
0927_BIOAFA071_201104	BIOAFA071	Skeleton Creek	Historical	Prey Fish	4-Nov-20	Gambusia	**0.0029**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.501	0.5021	0.565
0927_BIOAFA006_201027	BIOAFA006	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.035	0.0368	0.0506
0927_BIOAFA007_201027	BIOAFA007	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	**0.0039**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	1.212	1.212	1.2939
0927_BIOAFL007_201027	BIOAFL007	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.013	0.013	0.013
0927_BIOAFA013_201027	BIOAFA013	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0156	0.0166	0.0199
0927_BIOAFA011_201027	BIOAFA011	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish/Hybrid	**0.0040**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	1.111	1.111	1.1717
0927_BIOAFA012_201027	BIOAFA012	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	**0.0064**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.983	0.985	1.0855
0927_BIOAFL024_201029	BIOAFL024	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	0.0012	0.0012
0927_BIOAFL025_201029	BIOAFL025	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	0.0016	0.0016
0927_BIOAFL031_201029	BIOAFL031	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0028	0.0028	0.0028
0927_QC116_201029	QC116_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	0.0017	0.0017
0927_QC216_201029	QC216_201	Skeleton Creek	Historical	Aquatic Vegetation	29-Oct-20	Sea Lettuce	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.002	-	0.002
0927_BIOAFL009_201027	BIOAFL009	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0263	0.0263	0.0285
0927_BIOAFL043_201102	BIOAFL043	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	0.0016	0.0016
0927_BIOAFA018_201027	BIOAFA018	Laverton RAAF Swamp	Historical	Pelagic Invertebrate	27-Oct-20	Mixed invertebrates	**0.0011**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1664	0.1669	0.1766
0927_BIOAFL045_201102	BIOAFL045	Skeleton Creek	Historical	Aquatic Vegetation	2-Nov-20	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0027	0.0038	0.0038
0927_BIOAFA015_201027	BIOAFA015	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Goldfish	**0.0026**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	1.01	1.01	1.0503
0927_BIOAFA016_201027	BIOAFA016	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Oriental weatherloach	**0.0046**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.879	0.8819	1.0335
0927_BIOAFL011_201027	BIOAFL011	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	0.0046	0.0046
0927_QC114_201027	QC114_201	Laverton RAAF Swamp	Historical	Aquatic Vegetation	27-Oct-20	Water Milfoil	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0041	0.0041	0.0041
0927_BIOAFL053_201104	BIOAFL053	Skeleton Creek	Historical	Aquatic Vegetation	4-Nov-20	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0029	0.0036	0.0036
0927_BIOAFA019_201027	BIOAFA019	Laverton RAAF Swamp	Historical	Prey Fish	27-Oct-20	Gambusia	**0.0017**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.7109	0.7109	0.7806
0927_BIOAFA020_201027	BIOAFA020	Laverton RAAF Swamp	Historical	Benthic Invertebrate	27-Oct-20	Common Yabby	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0186	0.0198	0.0209
0927_BIOAFL045_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.01	0.0109	0.0131

Table B4 - Biota Analytical Results

							PFAS - Perfluoroalkyl Sulfonamides							PFAS		
							Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL							0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Avian diet)														0.0082		
PFAS NEMP 2025 Ecological direct exposure for wildlife diet (Mammalian)														0.0031		
0927_QC103_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0154	0.0166	0.0215
0927_BIOAFL040_241120	BIOAFL040	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Reed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0028	0.0028	0.0028
0927_BIOAFL041_241120	BIOAFL041	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Common Rush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	0.0009	0.0009
0927_QC203_250505	BIOAFL045	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	0.015	-	0.018
0927_BIOAFL050_250506	BIOAFL050	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Cumbungi	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	0.0008	0.0008
0927_BIOAFL051_250506	BIOAFL051	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Slender Knotweed	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
0927_BIOAFL052_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002	0.0104	0.0104
0927_BIOAFA050_201030	BIOAFA050	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	0.0011	<0.0005	0.0012	<0.0005	<0.0005	0.0008	<0.0005	0.0105	0.0105	0.0218
0927_BIOAFA034_241119	BIOAFA034	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0324	0.0324	0.0374
0927_BIOAFA061_250505	BIOAFA061	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0062	0.0062	0.0086
0927_BIOAFA049_201030	BIOAFA049	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0345	0.0345	0.0412
0927_BIOAFA035_241119	BIOAFA035	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0793	0.0793	0.0918
0927_BIOAFA060_250505	BIOAFA060	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0107	0.0107	0.0154
0927_BIOAFL047_250505	BIOAFL047	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.012	0.0127	0.0147
0927_BIOAFA044_201030	BIOAFA044	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	0.0009	<0.0005	0.0010	<0.0005	<0.0005	0.0009	<0.0005	0.0103	0.0103	0.0204
0927_BIOAFA046_201030	BIOAFA046	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0411	0.0411	0.056
0927_BIOAFA055_201102	BIOAFA055	Skeleton Creek	Historical	Pelagic Invertebrate	2-Nov-20	Freshwater Shrimp	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.003	0.003	0.003
0927_BIOAFA036_241119	BIOAFA036	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Tupong	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.2018	0.2018	0.2326
0927_BIOAFA066_250505	BIOAFA066	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0093	0.0093	0.0137
0927_BIOAFA045_201030	BIOAFA045	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0501	0.0504	0.056
0927_BIOAFA037_241119	BIOAFA037	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1814	0.1814	0.2211
0927_BIOAFA064_250505	BIOAFA064	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (adult)	<0.0005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0046	0.0046	0.0046
0927_BIOAFA065_250505	BIOAFA065	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0094	0.0094	0.0141
0927_BIOAFA040_201030	BIOAFA040	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	Estuarine Sea Spider	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0077	0.0082	0.0103
0927_BIOAFA041_201030	BIOAFA041	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.019	0.019	0.0269
0927_QC220_201105	QC220_201	Skeleton Creek	Historical	Pelagic Invertebrate	5-Nov-20	Freshwater Shrimp	<0.005	<0.005	0.002	<0.002	<0.002	<0.001	<0.002	0.02	-	0.025
0927_BIOAFL034_201029	BIOAFL034	Sanctuary Lakes	Historical	Aquatic Vegetation	29-Oct-20	Sea Tassel	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0057	0.0057	0.0075
0927_BIOAFL046_250505	BIOAFL046	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.017	0.0174	0.0202
0927_BIOAFA031_201029	BIOAFA031	Sanctuary Lakes	Historical	Benthic Invertebrate	29-Oct-20	Snails	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0010	<0.0005	0.025	0.025	0.0545
0927_BIOAFA032_201030	BIOAFA032	Sanctuary Lakes	Historical	Benthic Invertebrate	30-Oct-20	European Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0214	0.0214	0.029
0927_BIOAFA038_201030	BIOAFA038	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	0.0008	<0.0005	0.0009	<0.0005	<0.0005	0.0006	<0.0005	0.0199	0.0199	0.0296
0927_QC120_201030	QC120_201	Sanctuary Lakes	Historical	Pelagic Invertebrate	30-Oct-20	Glass Shrimp	0.0008	<0.0005	0.0010	<0.0005	<0.0005	0.0006	<0.0005	0.0209	0.0209	0.0314
0927_BIOAFA033_201030_EE	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	0.0044	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0098	0.0098	0.0142
0927_QC217_201102	QC217_201	Skeleton Creek	Historical	Predator Fish	2-Nov-20	Short-finned eel	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.472	-	0.536
0927_BIOAFA033_201030_HH	BIOAFA033	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Short-headed Lamprey	0.0017	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0062	0.0062	0.0079
0927_BIOAFA039_201030	BIOAFA039	Sanctuary Lakes	Historical	Predator Fish	30-Oct-20	Flathead gudgeon	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0254	0.0254	0.0321
0927_BIOAFA038_241119	BIOAFA038	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0168	0.0168	0.0206
0927_QC101_241119	QC101_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0232	0.0232	0.0282
0927_QC201_241119	QC201_241	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	0.06	-	0.069
0927_BIOAFA063_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0039	0.0039	0.0062
0927_QC219_201105	QC219_201	Skeleton Creek	Historical	Predator Fish	5-Nov-20	Short-finned eel	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.153	-	0.181
0927_QC104_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	0.0036	0.0057
0927_QC204_250505	BIOAFA063	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	0.004	-	0.006
0927_BIOAFA034_201030	BIOAFA034	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0387	0.039	0.0441
0927_BIOAFA037_201030	BIOAFA037	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Common Galaxia	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0607	0.0612	0.0749
0927_QC119_201030	QC119_201	Sanctuary Lakes	Historical	Prey Fish	30-Oct-20	Smallmouth Hardyhead	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0408	0.0411	0.046
0927_BIOAFA039_241119	BIOAFA039	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.046	0.046	0.0527
0927_QC215_201029	QC215_201	Skeleton Creek	Historical	Prey Fish	29-Oct-20	Blue-spot Goby	<0.005	<0.005	<0.001	<0.002	<0.002	<0.001	<0.002	0.077	-	0.085
0927_BIOAFA062_250505	BIOAFA062	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0407	0.0407	0.0473
0927_BIOAFL048_250505	BIOAFL048	Sanctuary Lakes	May-25	Aquatic Vegetation	5-May-25	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0036	0.0036	0.0041
0927_BIOAFA040_241119	BIOAFA040	Sanctuary Lakes	Nov-24	Predator Fish	19-Nov-24	Bream	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1016	0.1021	0.1137
0927_BIOAFA067_250505	BIOAFA067	Sanctuary Lakes	May-25	Predator Fish	5-May-25	Bream (adult)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0035	0.0035	0.0041
0927_BIOAFA041_241119	BIOAFA041	Sanctuary Lakes	Nov-24	Prey Fish	19-Nov-24	Mullet	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.1009	0.1009	0.1151
0927_BIOAFA068_250505	BIOAFA068	Sanctuary Lakes	May-25	Prey Fish	5-May-25	Bream (juvenile)	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0222	0.0228	0.0289
0927_BIOAFL038_241120	BIOAFL038	Skeleton Creek	Nov-24	Aquatic Vegetation	20-Nov-24	Green filamentous algae	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0055	0.0063	0.0087
0927_QC103_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0032	0.0032	0.0032
0927_QC203_250506	BIOAFL052	Skeleton Creek	May-25	Aquatic Vegetation	6-May-25	Saltbush	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	0.01	-	0.01
0927_BIOAFA042_241120	BIOAFA042	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.024	0.0245	0.0425
0927_QC101_241120	QC101_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0224	0.0229	0.0416
0927_QC201_241120	QC201_241	Skeleton Creek	Nov-24	Benthic Invertebrate	20-Nov-24	Shore Crab	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	1	-	1
0927_BIOAFA075_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	0.0058	<0.01	<0.05
0927_QC104_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	0.0056	<0.01	<0.05
0927_QC204_250506	BIOAFA075	Skeleton Creek	May-25	Benthic Invertebrate	6-May-25	Shore Crab	<0.005	<0.005	<0.002	<0.01	<0.005	<0.002	<0.05	0.013	-	0.021
0927_BIOAFA043_241120	BIOAFA043	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Hardyheads	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0448	0.0448	0.0489
0927_BIOAFA044_241120	BIOAFA044	Skeleton Creek	Nov-24	Prey Fish	20-Nov-24	Flounder	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.149	0.149	0.1602
0927_BIOAFA076_250506	BIOAFA076	Skeleton Creek	May-25	Prey Fish	6-May-25	Gobies	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0682	0.0682	0.0734
0927_BIOAFA077_250506	BIOAFA077	Skeleton Creek	May-25	Prey Fish	6-May-25	Hardyheads	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0286	0.0286	0.0317
0927_BIOTFA009_201211	BIOTFA009	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0054	0.0054	0.0054
0927_BIOTFA010_201211	BIOTFA010	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0054	0.0054	0.0054
0927_BIOTFA011_201211	BIOTFA011	Kingwell	Historical	Poultry	11-Dec-20	Egg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0051	0.0051	0.0051

Table B5 – Sediment Analytical Results

	PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids											
	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

Investigation Area	Field ID	Location Code	Date																	
Addison Wetlands	0927_QC103_241125	SD091	25 Nov 2024	<0.0001	<0.0001	**0.0010**	<0.0001	**0.027**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	<0.0001	<0.0001
Addison Wetlands	0927_QC203_241125	SD091	25 Nov 2024	<0.00020	<0.00020	**0.0033**	**0.00034**	**0.045**	-	**0.0017**	<0.00040	<0.00040	**0.00046**	<0.00020	<0.00020	<0.00020	<0.0010	<0.0020	**0.0045**	<0.0010	<0.01
Addison Wetlands	0927_SD091_0.15_241125	SD091	25 Nov 2024	<0.0001	<0.0001	**0.0009**	<0.0001	**0.023**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001
Addison Wetlands	0927_SD091_250506	SD091	06 May 2025	<0.0001	<0.0001	**0.0005**	<0.0001	**0.0093**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0005**	<0.0001	<0.0001
Ashcroft Wetland	0927_SD29_190117	SD029	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Ashcroft Wetland	0927_SD30_190117	SD030	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.031**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Bioretention Pond	0927_SD27_190603	SD027	03 Jun 2019	<0.005	<0.005	**<0.005**	<0.005	**0.019**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Bioretention Pond	0927_QC109_190117_SD	SD028	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.026**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Bioretention Pond	0927_QC209_190117_SD	SD028	17 Jan 2019	0.0003	<0.0002	**0.0011**	<0.0002	**0.0135**	-	<0.0002	<0.001	<0.0002	**<0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**<0.0002**	<0.0002	<0.0005
Bioretention Pond	0927_SD28_190117	SD028	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.024**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Cheetham Wetlands	0927_QC106_201028	SD055	28 Oct 2020	<0.0001	<0.0001	**0.0032**	0.0005	**0.08**	-	0.0016	<0.0005	<0.0001	**0.0001**	<0.0001	0.0002	<0.0001	0.0006	0.0003	**0.0006**	<0.0001	<0.0001
Cheetham Wetlands	0927_QC206_201028	SD055	28 Oct 2020	<0.0002	<0.0002	**0.0008**	<0.0002	**0.0317**	-	<0.0002	<0.001	<0.0002	**<0.0002**	<0.0002	<0.0002	<0.0002	0.0008	0.0002	**0.0004**	<0.0002	<0.0005
Cheetham Wetlands	0927_SD55_201028	SD055	28 Oct 2020	<0.0001	<0.0001	**0.0021**	0.0003	**0.049**	-	0.002	<0.0005	<0.0001	**0.0002**	<0.0001	0.0002	0.0001	0.0013	0.0007	**0.0015**	0.0001	0.0002
Cheetham Wetlands	0927_SD58_201028	SD058	28 Oct 2020	<0.0001	<0.0001	**0.0051**	0.0013	**0.023**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	0.001	0.0003	0.0002	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD64_201028	SD064	28 Oct 2020	<0.0001	<0.0001	**0.0044**	0.0009	**0.028**	-	<0.0001	<0.0005	<0.0001	**0.0002**	0.0001	0.0008	0.0003	0.0003	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD65_201028	SD065	28 Oct 2020	<0.0001	<0.0001	**0.0016**	0.0005	**0.014**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	0.0005	0.0001	<0.0001	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD66_201028	SD066	28 Oct 2020	<0.0001	0.0003	**0.025**	0.0059	**0.14**	-	<0.0001	<0.0005	0.0001	**0.0005**	0.0006	0.0062	0.0017	0.0013	0.0002	**0.0002**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD67_201028	SD067	28 Oct 2020	<0.0001	0.0002	**0.0057**	0.0011	**0.032**	-	<0.0001	<0.0005	<0.0001	**0.0003**	0.0003	0.0016	0.0004	0.0003	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD68_201029	SD068	29 Oct 2020	<0.0001	<0.0001	**0.0016**	0.0004	**0.019**	-	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	0.0004	0.0002	0.0003	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD69_201029	SD069	29 Oct 2020	<0.0001	<0.0001	**0.0014**	0.0004	**0.017**	-	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	0.0005	0.0002	0.0002	<0.0001	**<0.0001**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD70_201028	SD070	28 Oct 2020	<0.0001	<0.0001	**0.0013**	0.0002	**0.016**	-	0.0008	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	0.0003	0.0002	**0.0006**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD71_201028	SD071	28 Oct 2020	<0.0001	<0.0001	**0.0012**	0.0002	**0.013**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	0.0002	<0.0001	0.0005	0.0001	**0.0002**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD058_0.15_241122	SD058	22 Nov 2024	<0.0001	<0.0001	**0.0007**	<0.0001	**0.0039**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cheetham Wetlands	0927_SD058_250507	SD058	07 May 2025	<0.0001	<0.0001	**0.0018**	**0.0002**	**0.02**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0006**	**0.0003**	**0.0004**	<0.0001	<0.0001	<0.0001	<0.0001
Cheetham Wetlands	0927_QC102_241121	SD070	21 Nov 2024	<0.0001	<0.0001	**0.0012**	**0.0001**	**0.13**	**0.0020**	**0.0014**	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0002**	**0.0003**	**0.0002**	<0.0001	<0.0001
Cheetham Wetlands	0927_QC202_241121	SD070	21 Nov 2024	<0.00020	<0.00020	**0.0010**	**0.00023**	**0.1**	-	**0.013**	<0.00040	<0.00040	<0.00020	<0.00020	<0.00020	<0.00020	<0.0010	<0.0010	<0.0010	<0.0010	<0.01
Cheetham Wetlands	0927_SD070_0.15_241121	SD070	21 Nov 2024	<0.0001	<0.0001	**0.0022**	**0.0001**	**0.029**	**0.0007**	**0.0005**	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	**0.0001**	**0.0003**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD070_250507	SD070	07 May 2025	<0.0001	<0.0001	**0.0007**	<0.0001	**0.0091**	<0.0001	**0.0002**	<0.0005	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	**0.0002**	**0.0009**	**0.0001**	**0.0003**
Cheetham Wetlands	0927_SD071_0.45_241121	SD071	21 Nov 2024	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0016**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cheetham Wetlands	0927_SD071_250507	SD071	07 May 2025	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0006**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cheetham Wetlands	0927_SD090_0.2_241121	SD090	21 Nov 2024	<0.0001	<0.0001	**0.0016**	<0.0001	**0.0022**	**0.0001**	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001
Cheetham Wetlands	0927_SD090_250508	SD090	08 May 2025	<0.0001	<0.0001	<0.0001	<0.0001	**0.0005**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Doherty's Drain	0927_SD10_180820	SD010	20 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Forsyth Road Drain	0927_SD42_190603	SD042	03 Jun 2019	<0.005	<0.005	**<0.005**	<0.005	**0.023**		<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Forsyth Road Drain	0927_SD042_0.1_241120	SD042	20 Nov 2024	<0.0001	<0.0001	**0.0004**	<0.0001	**0.02**	**0.0002**	**0.0002**	<0.0005	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	<0.0001	**0.0004**	<0.0001	**0.0002**
Forsyth Road Drain	0927_SD042_250506	SD042	06 May 2025	**0.0001**	<0.0001	**0.0008**	<0.0001	**0.018**	**0.0002**	**0.0004**	<0.0005	**0.0002**	**0.0002**	<0.0001	**0.0003**	<0.0001	**0.0015**	<0.0004	<0.0004	**0.0003**	<0.0004
Kingwell Wetland	0927_QC107_190117_SD	SD018	17 Jan 2019	<0.005	<0.005	**0.0052**	<0.005	**0.036**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Kingwell Wetland	0927_QC207_190117_SD	SD018	17 Jan 2019	0.0002	0.0003	**0.0026**	<0.0002	**0.0153**	-	<0.0002	<0.001	<0.0002	**0.0005**	<0.0002	0.0003	<0.0002	0.001	0.0003	**0.0003**	<0.0002	<0.0005
Kingwell Wetland	0927_SD18_190117	SD018	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.016**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Kingwell Wetland	0927_SD19_190117	SD019	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton Creek	0927_SD11_180820	SD011	20 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**0.0052**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton Creek	0927_SD15_180821	SD015	21 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**0.0051**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton Creek	0927_SD16_180821	SD016	21 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton Creek	0927_SD17_180821	SD017	21 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD35_190206	SD035	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.051**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD35_201027	SD035	27 Oct 2020	<0.0001	<0.0001	**0.0013**	0.0003	**0.079**	-	0.001	<0.0005	<0.0001	**0.0002**	<0.0001	0.0002	0.0001	0.0007	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_QC125_190206_SD	SD036	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.014**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_QC225_190206_SD	SD036	06 Feb 2019	<0.0002	<0.0002	**0.0012**	<0.0002	**0.0071**	-	<0.0002	<0.001	0.0002	**0.0004**	<0.0002	0.0004	<0.0002	0.0003	<0.0002	**<0.0002**	<0.0002	<0.0005
Laverton RAAF Swamp	0927_SD36_190206	SD036	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.01**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_QC103_201027	SD036	27 Oct 2020	<0.0001	<0.0001	**0.0002**	<0.0001	**0.0031**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_QC203_201027	SD036	27 Oct 2020	<0.0002	<0.0002	**<0.0002**	<0.0002	**0.0016**	-	<0.0002	<0.001	<0.0002	**<0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**<0.0002**	<0.0002	<0.0005
Laverton RAAF Swamp	0927_SD36_201027	SD036	27 Oct 2020	<0.0001	<0.0001	**0.0003**	<0.0001	**0.0069**	-	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	0.0002	<0.0001	0.0002	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD37_190206	SD037	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD38_190206	SD038	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.074**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD39_190206	SD039	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.1**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD39_201027	SD039	27 Oct 2020	<0.0001	<0.0001	**0.0013**	0.0005	**0.031**	-	0.0003	<0.0005	0.0003	**0.0005**	0.0001	0.0007	<0.0001	<0.0001	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD40_190206	SD040	06 Feb 2019	<0.005	<0.005	**<0.005**	<0.005	**0.047**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Laverton RAAF Swamp	0927_SD79_201027	SD079	27 Oct 2020	<0.0001	<0.0001	**0.0011**	0.0003	**0.058**	-	0.0015	<0.0005	<0.0001	**0.0002**	<0.0001	0.0003	<0.0001	0.0001	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD80_201027	SD080	27 Oct 2020	<0.0001	<0.0001	**0.0023**	0.0005	**0.07**	-	0.0014	<0.0005	<0.0001	**0.0002**	<0.0001	0.0003	<0.0001	0.0002	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_PW81_201026	SD081	26 Oct 2020	<0.0001	0.0001	**0.0012**	0.0001	**0.052**	-	0.0009	<0.0005	0.0001	**0.0002**	<0.0001	0.0003	<0.0001	0.0006	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD81_201026	SD081	26 Oct 2020	<0.0001	<0.0001	**0.0014**	0.0002	**0.053**	-	0.0009	<0.0005	<0.0001	**0.0002**	<0.0001	0.0003	0.0001	0.0003	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD82_201027	SD082	27 Oct 2020	<0.0001	<0.0001	**0.0016**	0.0001	**0.033**	-	0.0011	<0.0005	<0.0001	**0.0002**	0.0001	0.0005	<0.0001	0.0003	<0.0001	**<0.0001**	<0.0001	<0.0001
Laverton RAAF Swamp	0927_SD83_201027	SD083	27 Oct 2020	<0.0001	<0.0001	**0.0008**	<0.0001	**0.0096**	-	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	0.0003	<0.0001	0.0002	<0.0001	**<0.0001**	<0.0001	<0.0001
Sanctuary Lakes	0927_QC109_201030	SD084	30 Oct 2020	<0.0001	<0.0001	**0.0006**	0.0002	**0.0048**	-	0.0002	<0.0005	0.0001	**<0.0001**	<0.0001	0.0002	<0.0001	0.0005	0.0007	**0.0051**	<0.0001	0.0023
Sanctuary Lakes	0927_SD84_201030	SD084	30 Oct 2020	<0.0001	<0.0001	**0.0002**	<0.0001	**0.003**	-	0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	0.0001	<0.0001	0.0003	0.0003	**0.0016**	0.0003	0.0006
Sanctuary Lakes	0927_SD85_201030	SD085	30 Oct 2020	<0.0001	<0.0001	**<0.0001**	<0.0001	**0.0007**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0003**	<0.0001	<0.0001
Sanctuary Lakes	0927_SD86_201029	SD086	29 Oct 2020	0.0001	<0.0001	**0.0002**	<0.0001	**0.0007**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001
Sanctuary Lakes	0927_SD87_201029	SD087	29 Oct 2020	<0.0001	<0.0001	**<0.0001**	<0.0001	**0.0017**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	**0.0003**	<0.0001	<0.0001
Sanctuary Lakes	0927_SD88_201030	SD088	30 Oct 2020	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0009**	-	<0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	0.0002	0.0001	**0.0003**	<0.0001	<0.0001
Sanctuary Lakes	0927_SD084_0.365_241119	SD084	19 Nov 2024	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0006**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001
Sanctuary Lakes	0927_QC102_250505	SD084	05 May 2025	<0.0002	<0.0001	**0.0004**	<0.0001	**0.0018**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0002**	<0.0001	**0.0002**	**0.0001**	**0.0010**	**0.0001**	<0.0002

Table B5 – Sediment Analytical Results

				PFAS - Perfluoroalkyl Sulfonic Acids							PFAS - Perfluoroalkyl Carboxylic Acids										
				Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononanesulfonic acid (PFNS)	Perfluorodecane sulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Investigation Area	**Field ID**	**Location Code**	**Date**																		
Sanctuary Lakes	0927_QC202_250505	SD084	05 May 2025	<0.00040	<0.00040	<0.00040	<0.00040	**0.0026**	-	<0.00080	<0.00080	<0.00080	<0.00040	<0.00040	<0.00040	<0.00040	<0.0020	<0.0020	<0.0020	<0.0020	<0.02
Sanctuary Lakes	0927_SD084_250505	SD084	05 May 2025	<0.0002	<0.0001	**0.0006**	**0.0001**	**0.0037**	**0.0004**	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	**0.0003**	<0.0001	**0.0003**	**0.0002**	**0.0021**	**0.0002**	<0.0002
Sanctuary Lakes	0927_SD085_0.5_241119	SD085	19 Nov 2024	<0.0001	<0.0001	**0.0006**	<0.0001	**0.0005**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sanctuary Lakes	0927_SD085_250505	SD085	05 May 2025	<0.0002	<0.0001	**0.0006**	<0.0001	**0.0050**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0005**	**0.0003**	**0.0024**	**0.0002**	<0.0002
Sanctuary Lakes	0927_SD087_1.82_241119	SD087	19 Nov 2024	<0.0001	<0.0001	**0.0008**	<0.0001	**0.0056**	<0.0002	**0.0002**	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0004**	**0.0004**	**0.0007**	<0.0001	**0.0001**
Sanctuary Lakes	0927_SD087_250505	SD087	05 May 2025	<0.0002	<0.0001	**0.0008**	**0.0001**	**0.0064**	**0.0003**	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	**0.0001**	<0.0001	**0.0003**	**0.0002**	**0.0016**	**0.0002**	<0.0002
Sanctuary Lakes	0927_SD088_0.9_241119	SD088	19 Nov 2024	<0.0001	<0.0001	**0.0004**	<0.0001	**0.0021**	**0.0001**	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0004**	<0.0001	**0.0002**
Sanctuary Lakes	0927_SD088_250505	SD088	05 May 2025	<0.0002	<0.0001	**0.0006**	**0.0002**	**0.0052**	**0.0001**	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0001**	<0.0001	**0.0005**	**0.0005**	**0.0028**	**0.0002**	<0.0002
Skeleton Creek	0927_SD12_180821	SD012	21 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**0.0067**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD12_201104	SD012	04 Nov 2020	<0.0001	<0.0001	**0.0006**	<0.0001	**0.01**	-	0.0012	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	0.0003	0.0001	**0.0001**	<0.0001	<0.0001
Skeleton Creek	0927_SD13_180821	SD013	21 Aug 2018	<0.005	<0.005	**0.0074**	<0.005	**0.11**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD14_180821	SD014	21 Aug 2018	<0.005	<0.005	**<0.005**	<0.005	**<0.005**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD20_190117	SD020	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.19**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_QC102_201104	SD020	04 Nov 2020	0.0002	0.0003	**0.0066**	0.0012	**0.18**	-	0.0081	<0.0005	0.0001	**0.0007**	0.0001	0.0004	<0.0001	0.0002	0.0003	**0.0006**	<0.0001	<0.0001
Skeleton Creek	0927_QC202_201104	SD020	04 Nov 2020	<0.0002	<0.0002	**0.0012**	0.0003	**0.0337**	-	0.0017	<0.001	<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	**<0.0002**	<0.0002	<0.0005
Skeleton Creek	0927_SD20_201104	SD020	04 Nov 2020	0.0001	0.0002	**0.0043**	0.0009	**0.16**	-	0.01	<0.0005	0.0001	**0.0006**	0.0001	0.0003	<0.0001	0.0001	0.0003	**0.0005**	0.0001	<0.0001
Skeleton Creek	0927_SD21_190117	SD021	17 Jan 2019	<0.005	<0.005	**0.046**	<0.005	**0.39**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD22_190117	SD022	17 Jan 2019	<0.005	0.0062	**0.087**	0.0053	**0.14**	-	<0.005	<0.005	<0.005	**0.011**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD23_190117	SD023	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.044**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD24_190117	SD024	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.068**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_QC108_190117_SD	SD025	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.021**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_QC208_190117_SD	SD025	17 Jan 2019	<0.0002	<0.0002	**0.0008**	<0.0002	**0.0088**	-	<0.0002	<0.001	<0.0002	**<0.0002**	<0.0002	0.0003	<0.0002	0.0002	<0.0002	**<0.0002**	<0.0002	<0.0005
Skeleton Creek	0927_SD25_190117	SD025	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.015**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD26_190117	SD026	17 Jan 2019	<0.005	<0.005	**<0.005**	<0.005	**0.0081**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD41_190603	SD041	03 Jun 2019	<0.005	<0.005	**<0.005**	<0.005	**0.0071**	-	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005	<0.005	<0.005	<0.005	**<0.005**	<0.005	<0.005
Skeleton Creek	0927_SD49_201104	SD049	04 Nov 2020	<0.0001	<0.0001	**0.0008**	0.0002	**0.21**	-	0.0056	<0.0005	<0.0001	**0.0003**	<0.0001	0.0001	<0.0001	0.0006	0.0002	**0.0001**	<0.0001	<0.0001
Skeleton Creek	0927_SD72_201102	SD072	02 Nov 2020	0.0006	0.0011	**0.01**	0.0008	**0.017**	-	<0.0001	<0.0005	0.0004	**0.0015**	0.0003	0.001	0.0002	0.0007	<0.0001	**<0.0001**	<0.0001	<0.0001
Skeleton Creek	0927_SD73_201102	SD073	02 Nov 2020	0.0004	0.0004	**0.0073**	0.0002	**0.032**	-	0.0002	<0.0005	0.0002	**0.0004**	0.0001	0.0003	0.0001	0.001	0.0009	**0.002**	0.0002	0.0005
Skeleton Creek	0927_SD74_201102	SD074	02 Nov 2020	<0.0001	0.0001	**0.002**	0.0002	**0.036**	-	0.0007	<0.0005	0.0001	**0.0003**	0.0001	0.0004	0.0002	0.0005	0.0001	**0.0002**	<0.0001	<0.0001
Skeleton Creek	0927_SD75_201102	SD075	02 Nov 2020	0.0001	0.0001	**0.0023**	0.0005	**0.076**	-	<0.0001	<0.0005	0.0001	**0.0003**	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	**<0.0001**	<0.0001	<0.0001
Skeleton Creek	0927_SD76_201102	SD076	02 Nov 2020	0.0002	0.0002	**0.0053**	0.0005	**0.11**	-	0.0035	<0.0005	0.0003	**0.0007**	0.0003	0.0013	0.0007	0.0063	0.0025	**0.0059**	0.0004	0.0005
Skeleton Creek	0927_SD77_201104	SD077	04 Nov 2020	<0.0001	<0.0001	**0.0005**	<0.0001	**0.017**	-	0.0001	<0.0005	<0.0001	**<0.0001**	<0.0001	<0.0001	<0.0001	0.0003	0.0001	**<0.0001**	<0.0001	<0.0001
Skeleton Creek	0927_SD78_201104	SD078	04 Nov 2020	<0.0001	<0.0001	**0.001**	0.0001	**0.029**	-	0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	0.0001	<0.0001	0.0006	0.0002	**0.0002**	<0.0001	<0.0001
Skeleton Creek	0927_SD89_201030	SD089	30 Oct 2020	0.0001	0.0002	**0.0024**	0.0002	**0.02**	-	0.0003	<0.0005	0.0001	**0.0002**	<0.0001	0.0003	0.0001	0.001	0.0005	**0.0017**	0.0002	0.0007
Skeleton Creek	0927_SD021_0.25_241120	SD021	20 Nov 2024	<0.0001	<0.0001	**0.0004**	<0.0001	**0.0029**	<0.0001	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Skeleton Creek	0927_QC102_250506	SD021	06 May 2025	**0.0001**	<0.0001	**0.0011**	<0.0001	**0.014**	**0.0002**	**0.0002**	<0.0005	<0.0001	**0.0001**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0002**	<0.0001	<0.0001
Skeleton Creek	0927_QC202_250506	SD021	06 May 2025	<0.00030	<0.00030	**0.00054**	<0.00030	**0.0057**	-	<0.00060	<0.00060	<0.00060	<0.00030	<0.00030	<0.00030	<0.00030	<0.0015	<0.0015	<0.0015	<0.0015	<0.015
Skeleton Creek	0927_SD021_250506	SD021	06 May 2025	<0.0001	<0.0001	**0.0008**	<0.0001	**0.0095**	<0.0001	**0.0002**	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0003**	<0.0001	**0.0001**
Skeleton Creek	0927_SD024_0.3_241120	SD024	20 Nov 2024	<0.0001	<0.0001	**0.0010**	**0.0002**	**0.025**	**0.0002**	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
Skeleton Creek	0927_SD024_250506	SD024	06 May 2025	<0.0001	<0.0001	**0.0010**	**0.0002**	**0.027**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0001	**0.0004**	**0.0001**	**0.0003**	<0.0001	<0.0001	<0.0001	<0.0001
Skeleton Creek	0927_SD089_0.15_241120	SD089	20 Nov 2024	**0.0020**	**0.0004**	**0.011**	**0.0008**	**0.053**	<0.0001	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0001	**0.0003**	<0.0001	**0.0007**	**0.0003**	**0.0007**	**0.0002**	**0.0004**
Skeleton Creek	0927_SD089_250506	SD089	06 May 2025	<0.0001	**0.0001**	**0.0022**	**0.0002**	**0.019**	**0.0002**	**0.0001**	<0.0005	**0.0003**	**0.0001**	<0.0001	**0.0002**	<0.0001	**0.0005**	**0.0002**	<0.0004	**0.0002**	**0.0004**

Table B5 – Sediment Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Organic
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	TOC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
EQL	0.0001	0.0001	0.0001	0.0001	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0005	0.0001	0.1
Addison Wetlands	0927_QC103_241125	SD091	25 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.028**	**0.0282**	**0.0285**	**0.085**
Addison Wetlands	0927_QC203_241125	SD091	25 Nov 2024	<0.00020	<0.00020	<0.00040	<0.00040	<0.0040	<0.0020	<0.00040	<0.0020	<0.0020	<0.00040	<0.01	**0.048**	-	**0.055**	**0.091**
Addison Wetlands	0927_SD091_0.15_241125	SD091	25 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0239**	**0.0241**	**0.0243**	**0.052**
Addison Wetlands	0927_SD091_250506	SD091	06 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0098**	**0.0099**	**0.0105**	-
Ashcroft Wetland	0927_SD29_190117	SD029	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Ashcroft Wetland	0927_SD30_190117	SD030	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.031**	**0.031**	**<0.05**	-
Bioretention Pond	0927_SD27_190603	SD027	03 Jun 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.019**	**0.019**	**<0.05**	-
Bioretention Pond	0927_QC109_190117_SD	SD028	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.026**	**0.026**	**<0.05**	-
Bioretention Pond	0927_QC209_190117_SD	SD028	17 Jan 2019	<0.0005	<0.0005	<0.0005	-	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0146**	-	-	-
Bioretention Pond	0927_SD28_190117	SD028	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.024**	**0.024**	**<0.05**	-
Cheetham Wetlands	0927_QC106_201028	SD055	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0832**	**0.0835**	**0.0887**	-
Cheetham Wetlands	0927_QC206_201028	SD055	28 Oct 2020	<0.0005	<0.0005	<0.0005	-	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0325**	-	-	-
Cheetham Wetlands	0927_SD55_201028	SD055	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0511**	**0.0515**	**0.0584**	-
Cheetham Wetlands	0927_SD58_201028	SD058	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0281**	**0.0291**	**0.0309**	-
Cheetham Wetlands	0927_SD64_201028	SD064	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0324**	**0.0335**	**0.035**	-
Cheetham Wetlands	0927_SD65_201028	SD065	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0156**	**0.0161**	**0.0167**	-
Cheetham Wetlands	0927_SD66_201028	SD066	28 Oct 2020	<0.0001	<0.0005	0.0002	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0001	**0.165**	**0.1726**	**0.1827**	-
Cheetham Wetlands	0927_SD67_201028	SD067	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0377**	**0.0399**	**0.0419**	-
Cheetham Wetlands	0927_SD68_201029	SD068	29 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0206**	**0.0212**	**0.0221**	-
Cheetham Wetlands	0927_SD69_201029	SD069	29 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0184**	**0.019**	**0.0198**	-
Cheetham Wetlands	0927_SD70_201028	SD070	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0173**	**0.0173**	**0.0194**	-
Cheetham Wetlands	0927_SD71_201028	SD071	28 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0142**	**0.0144**	**0.0154**	-
Cheetham Wetlands	0927_SD058_0.15_241122	SD058	22 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0046**	**0.0048**	**0.0048**	-
Cheetham Wetlands	0927_SD058_250507	SD058	07 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0218**	**0.0224**	**0.0233**	-
Cheetham Wetlands	0927_QC102_241121	SD070	21 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	**0.0017**	<0.001875	<0.0005	<0.001875	<0.001875	**0.0009**	<0.001875	**0.1312**	**0.1312**	**0.138**	-
Cheetham Wetlands	0927_QC202_241121	SD070	21 Nov 2024	<0.00020	<0.00020	<0.00040	<0.00040	<0.0020	<0.0020	<0.00040	<0.0020	<0.0020	**0.0012**	<0.01	**0.1**	-	**0.12**	-
Cheetham Wetlands	0927_SD070_0.15_241121	SD070	21 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0312**	**0.0312**	**0.033**	-
Cheetham Wetlands	0927_SD070_250507	SD070	07 May 2025	<0.0001	**0.0008**	<0.0001	**0.0002**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0098**	**0.0107**	**0.0129**	-
Cheetham Wetlands	0927_SD071_0.45_241121	SD071	21 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0022**	**0.0023**	**0.0023**	-
Cheetham Wetlands	0927_SD071_250507	SD071	07 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0008**	**0.001**	**0.001**	-
Cheetham Wetlands	0927_SD090_0.2_241121	SD090	21 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	**0.0008**	<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005	**0.0038**	**0.0039**	**0.0059**	-
Cheetham Wetlands	0927_SD090_250508	SD090	08 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	**0.0005**	**0.0005**	-
Doherty's Drain	0927_SD10_180820	SD010	20 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Forsyth Road Drain	0927_SD42_190603	SD042	03 Jun 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.023**	**0.023**	**<0.05**	-
Forsyth Road Drain	0927_SD042_0.1_241120	SD042	20 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005	<0.0005	**0.0204**	**0.0205**	**0.0231**	-
Forsyth Road Drain	0927_SD042_250506	SD042	06 May 2025	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0188**	**0.0196**	**0.0228**	-
Kingwell Wetland	0927_QC107_190117_SD	SD018	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0412**	**0.0412**	**<0.05**	-
Kingwell Wetland	0927_QC207_190117_SD	SD018	17 Jan 2019	<0.0005	<0.0005	<0.0005	-	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0179**	-	-	-
Kingwell Wetland	0927_SD18_190117	SD018	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.016**	**0.016**	**<0.05**	-
Kingwell Wetland	0927_SD19_190117	SD019	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Laverton Creek	0927_SD11_180820	SD011	20 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0052**	**<0.01**	**<0.05**	-
Laverton Creek	0927_SD15_180821	SD015	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0051**	**<0.01**	**<0.05**	-
Laverton Creek	0927_SD16_180821	SD016	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Laverton Creek	0927_SD17_180821	SD017	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Laverton RAAF Swamp	0927_SD35_190206	SD035	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.051**	**0.051**	**0.051**	-
Laverton RAAF Swamp	0927_SD35_201027	SD035	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0803**	**0.0807**	**0.0838**	-
Laverton RAAF Swamp	0927_QC125_190206_SD	SD036	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.014**	**0.014**	**<0.05**	-
Laverton RAAF Swamp	0927_QC225_190206_SD	SD036	06 Feb 2019	<0.0005	<0.0005	<0.0005	-	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0083**	-	-	-
Laverton RAAF Swamp	0927_SD36_190206	SD036	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.01**	**0.01**	**<0.05**	-
Laverton RAAF Swamp	0927_QC103_201027	SD036	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0033**	**0.0033**	**0.0034**	-
Laverton RAAF Swamp	0927_QC203_201027	SD036	27 Oct 2020	<0.0005	<0.0005	<0.0005	-	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0016**	-	-	-
Laverton RAAF Swamp	0927_SD36_201027	SD036	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0072**	**0.0075**	**0.0077**	-
Laverton RAAF Swamp	0927_SD37_190206	SD037	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	-
Laverton RAAF Swamp	0927_SD38_190206	SD038	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.074**	**0.074**	**0.074**	-
Laverton RAAF Swamp	0927_SD39_190206	SD039	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.1**	**0.1**	**0.1**	-
Laverton RAAF Swamp	0927_SD39_201027	SD039	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0323**	**0.0339**	**0.0349**	-
Laverton RAAF Swamp	0927_SD40_190206	SD040	06 Feb 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.047**	**0.047**	**<0.05**	-
Laverton RAAF Swamp	0927_SD79_201027	SD079	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0591**	**0.0596**	**0.0622**	-
Laverton RAAF Swamp	0927_SD80_201027	SD080	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0723**	**0.0728**	**0.0757**	-
Laverton RAAF Swamp	0927_PW81_201026	SD081	26 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0532**	**0.0538**	**0.0561**	-
Laverton RAAF Swamp	0927_SD81_201026	SD081	26 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0544**	**0.0549**	**0.057**	-
Laverton RAAF Swamp	0927_SD82_201027	SD082	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0346**	**0.0354**	**0.0374**	-
Laverton RAAF Swamp	0927_SD83_201027	SD083	27 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0104**	**0.0109**	**0.0111**	-
Sanctuary Lakes	0927_QC109_201030	SD084	30 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	**0.0054**	**0.0057**	**0.0151**	-
Sanctuary Lakes	0927_SD84_201030	SD084	30 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0001	**0.0032**	**0.0033**	**0.0066**	-
Sanctuary Lakes	0927_SD85_201030	SD085	30 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0007**	**0.0007**	**0.001**	-
Sanctuary Lakes	0927_SD86_201029	SD086	29 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0009**	**0.001**	**0.0013**	-
Sanctuary Lakes	0927_SD87_201029	SD087	29 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0017**	**0.0017**	**0.0021**	-
Sanctuary Lakes	0927_SD88_201030	SD088	30 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.001**	**0.001**	**0.0016**	-
Sanctuary Lakes	0927_SD084_0.365_241119	SD084	19 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0012**	**0.0012**	**0.0015**	-
Sanctuary Lakes	0927_QC102_250505	SD084	05 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0022**	**0.0025**	**0.0039**	-

Table B5 – Sediment Analytical Results

	PFAS - (n:2) Fluorotelomer Sulfonic Acids				PFAS - Perfluoroalkyl Sulfonamides							PFAS			Organic
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-methyl perfluorooctane sulfonamidoethanol (MeFOSE)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	Sum of PFHxS and PFOS	Sum of PFAS (WA DER List)	Sum of PFAS	TOC
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
EQL	0.0001	0.0001	0.0001	0.0001	0.0005	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0005	0.0001	0.1

Investigation Area	Field ID	Location Code	Date													
Sanctuary Lakes	0927_QC202_250505	SD084	05 May 2025	<0.00040	<0.00040	<0.00080	<0.00080	<0.0040	<0.0040	<0.00080	<0.0040	<0.0080	<0.00080	<0.02	**0.0026**	-	**0.0026**	-
Sanctuary Lakes	0927_SD084_250505	SD084	05 May 2025	<0.0001	<0.0005	<0.0001	**0.0002**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0043**	**0.0048**	**0.0083**	-
Sanctuary Lakes	0927_SD085_0.5_241119	SD085	19 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0011**	**0.0011**	**0.0013**	-
Sanctuary Lakes	0927_SD085_250505	SD085	05 May 2025	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0056**	**0.0057**	**0.0092**	-
Sanctuary Lakes	0927_SD087_1.82_241119	SD087	19 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0064**	**0.0064**	**0.0083**	-
Sanctuary Lakes	0927_SD087_250505	SD087	05 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0072**	**0.0075**	**0.0102**	-
Sanctuary Lakes	0927_SD088_0.9_241119	SD088	19 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0025**	**0.0025**	**0.0034**	-
Sanctuary Lakes	0927_SD088_250505	SD088	05 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0058**	**0.006**	**0.0103**	-
Skeleton Creek	0927_SD12_180821	SD012	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0067**	**<0.01**	**<0.05**	-
Skeleton Creek	0927_SD12_201104	SD012	04 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0106**	**0.0107**	**0.0128**	-
Skeleton Creek	0927_SD13_180821	SD013	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.1174**	**0.1174**	**0.1174**	-
Skeleton Creek	0927_SD14_180821	SD014	21 Aug 2018	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**<0.005**	**<0.01**	**<0.05**	**0.061**
Skeleton Creek	0927_SD20_190117	SD020	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.19**	**0.19**	**0.19**	**0.026**
Skeleton Creek	0927_QC102_201104	SD020	04 Nov 2020	<0.0001	<0.0005	<0.0001	-	0.0049	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.1866**	**0.1881**	**0.2068**	**0.031**
Skeleton Creek	0927_QC202_201104	SD020	04 Nov 2020	<0.0005	<0.0005	<0.0005	-	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0349**	-	-	**0.032**
Skeleton Creek	0927_SD20_201104	SD020	04 Nov 2020	<0.0001	<0.0005	0.0002	-	0.0047	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.1643**	**0.1657**	**0.1858**	**0.026**
Skeleton Creek	0927_SD21_190117	SD021	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.436**	**0.436**	**0.436**	**0.002**
Skeleton Creek	0927_SD22_190117	SD022	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.227**	**0.238**	**0.2495**	-
Skeleton Creek	0927_SD23_190117	SD023	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.044**	**0.044**	**<0.05**	-
Skeleton Creek	0927_SD24_190117	SD024	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.068**	**0.068**	**0.068**	**0.021**
Skeleton Creek	0927_QC108_190117_SD	SD025	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.021**	**0.021**	**<0.05**	**0.028**
Skeleton Creek	0927_QC208_190117_SD	SD025	17 Jan 2019	<0.0005	<0.0005	<0.0005	-	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	**0.0096**	-	-	-
Skeleton Creek	0927_SD25_190117	SD025	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.015**	**0.015**	**<0.05**	**0.008**
Skeleton Creek	0927_SD26_190117	SD026	17 Jan 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0081**	**<0.01**	**<0.05**	-
Skeleton Creek	0927_SD41_190603	SD041	03 Jun 2019	<0.005	<0.01	<0.005	-	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	**0.0071**	**<0.01**	**<0.05**	-
Skeleton Creek	0927_SD49_201104	SD049	04 Nov 2020	<0.0001	<0.0005	<0.0001	-	0.0036	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.2108**	**0.2112**	**0.2268**	-
Skeleton Creek	0927_SD72_201102	SD072	02 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.027**	**0.0308**	**0.0336**	-
Skeleton Creek	0927_SD73_201102	SD073	02 Nov 2020	<0.0001	<0.0005	<0.0001	-	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0001	**0.0393**	**0.0407**	**0.0472**	**0.036**
Skeleton Creek	0927_SD74_201102	SD074	02 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.038**	**0.0389**	**0.0414**	**0.05**
Skeleton Creek	0927_SD75_201102	SD075	02 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0783**	**0.079**	**0.0797**	**0.041**
Skeleton Creek	0927_SD76_201102	SD076	02 Nov 2020	<0.0001	<0.0005	<0.0001	-	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0001	**0.1153**	**0.1181**	**0.1411**	**0.044**
Skeleton Creek	0927_SD77_201104	SD077	04 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0175**	**0.0175**	**0.0186**	-
Skeleton Creek	0927_SD78_201104	SD078	04 Nov 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.03**	**0.0302**	**0.0316**	-
Skeleton Creek	0927_SD89_201030	SD089	30 Oct 2020	<0.0001	<0.0005	<0.0001	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	**0.0224**	**0.0231**	**0.0314**	**0.035**
Skeleton Creek	0927_SD021_0.25_241120	SD021	20 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0033**	**0.0033**	**0.0034**	**0.076**
Skeleton Creek	0927_QC102_250506	SD021	06 May 2025	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0151**	**0.0153**	**0.0161**	**0.073**
Skeleton Creek	0927_QC202_250506	SD021	06 May 2025	<0.00030	<0.00030	<0.00060	<0.00060	<0.0030	<0.0030	<0.00060	<0.0030	<0.0030	<0.00060	<0.015	**0.0062**	-	**0.0062**	**0.043**
Skeleton Creek	0927_SD021_250506	SD021	06 May 2025	<0.0001	**0.0046**	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0103**	**0.0149**	**0.0157**	**0.0121**
Skeleton Creek	0927_SD024_0.3_241120	SD024	20 Nov 2024	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.026**	**0.0261**	**0.0268**	**0.066**
Skeleton Creek	0927_SD024_250506	SD024	06 May 2025	<0.0001	<0.0005	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.028**	**0.0285**	**0.0291**	**0.045**
Skeleton Creek	0927_SD089_0.15_241120	SD089	20 Nov 2024	<0.0001	<0.0005	<0.0001	**0.0001**	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.064**	**0.0665**	**0.0708**	**0.02**
Skeleton Creek	0927_SD089_250506	SD089	06 May 2025	<0.0001	<0.0005	<0.0001	**0.0004**	<0.0005	<0.0005	<0.0005	<0.0005	**0.0005**	<0.0005	<0.0005	**0.0212**	**0.0218**	**0.0246**	**0.024**

ProUCL Outputs

			PFOS + PFHxS					PFOS				PFOA		
Cheetham Wetlands	***N***	***D***	***Mean***	***EPC***	***Basis***	***Error***	***D***	***EPC***	***Basis***	***D***	***EPC***	***Basis***
Aquatic Vegetation	12	10	0.0066	0.025	95% KM Bootstrap t UCL	279%	10	0.026	95% KM Bootstrap t UCL	3	0.0007	Maximum
Benthic Invertebrate	5	5	0.017	0.058	Maximum	241%	5	0.029	Maximum	1	#N/A	Maximum
Pelagic Invertebrate	7	7	0.011	0.035	Maximum	218%	7	0.033	Maximum	3	0.0023	Maximum
Predator Fish	3	3	0.03	0.053	Maximum	77%	3	0.043	Maximum	0	#N/A	Maximum
Prey Fish	9	9	0.015	0.065	Maximum	333%	9	0.034	Maximum	1	#N/A	Maximum
Laverton RAAF Swamp												
Aquatic Vegetation	10	10	0.0083	0.013	95% Student's-t UCL	57%	10	0.013	95% Student's-t UCL	0	#N/A	Maximum
Benthic Invertebrate	4	4	0.0313	0.056	Maximum	79%	4	0.043	Maximum	4	0.0051	Maximum
Pelagic Invertebrate	2	2	0.11	0.17	Maximum	55%	2	0.16	Maximum	2	0.0005	Maximum
Predator Fish	-	-		-	-		-	-	-	-	-	-
Prey Fish	10	10	0.98	1.1	95% Student's-t UCL	12%	10	1.1	95% Student's-t UCL	3	0.0029	Maximum
Sanctuary Lakes												
Aquatic Vegetation	13	13	0.0047	0.011	95% H-UCL	134%	13	0.011	95% H-UCL	3	0.0009	Maximum
Benthic Invertebrate	3	3	0.018	0.025	Maximum	39%	3	0.025	Maximum	1	#N/A	Maximum
Pelagic Invertebrate	3	3	0.0136	0.02	Maximum	47%	3	0.019	Maximum	0	#N/A	Maximum
Predator Fish	13	13	0.037	0.08	95% Adjusted Gamma UCL	116%	13	0.08	95% Adjusted Gamma UCL	1	#N/A	Maximum
Prey Fish	13	13	0.0522	0.076	95% Student's-t UCL	46%	13	0.075	95% Student's-t UCL	3	0.0005	Maximum
Skeleton Creek												
Aquatic Vegetation	23	22	0.00537	0.007	95% KM (t) UCL	30%	22	0.0066	95% KM (t) UCL	1	#N/A	Maximum
Benthic Invertebrate	2	2	0.0149	0.024	Maximum	61%	2	0.019	Maximum	1	#N/A	Maximum
Pelagic Invertebrate	10	10	0.0195	0.025	95% Student's-t UCL	28%	10	0.024	95% Student's-t UCL	7	0.0006	Maximum
Predator Fish	12	12	0.428	0.97	95% Adjusted Gamma UCL	127%	12	0.94	95% Adjusted Gamma UCL	6	0.0013	Maximum
Prey Fish	23	23	0.215	0.32	95% Adjusted Gamma UCL	49%	23	0.31	95% Adjusted Gamma UCL	12	0.0007	95% KM Adjusted Gamma UCL

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 16/09/2025 9:02:47 AM
From File	WorkSheet_c.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PFOS + PFHxS_Cheetham Wetlands_Aquatic Vegetation

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
Number of Detects	10	Number of Non-Detects	2
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	0.0013	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.0324	Maximum Non-Detect	5.0000E-4
Variance Detects	9.6198E-5	Percent Non-Detects	16.67%
Mean Detects	0.00776	SD Detects	0.00981
Median Detects	0.0042	CV Detects	1.264
Skewness Detects	2.199	Kurtosis Detects	4.667
Mean of Logged Detects	-5.374	SD of Logged Detects	0.997

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.669	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.781	Detected Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.383	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.304	Detected Data Not Normal at 1% Significance Level

Detected Data Not Normal at 1% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.00655	KM Standard Error of Mean	0.00271
90KM SD	0.00891	95% KM (BCA) UCL	0.0114
95% KM (t) UCL	0.0114	95% KM (Percentile Bootstrap) UCL	0.0111
95% KM (z) UCL	0.011	95% KM Bootstrap t UCL	0.0246
90% KM Chebyshev UCL	0.0147	95% KM Chebyshev UCL	0.0184
97.5% KM Chebyshev UCL	0.0235	99% KM Chebyshev UCL	0.0335

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.732	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.293	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.273	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.106	k star (bias corrected MLE)	0.841
Theta hat (MLE)	0.00701	Theta star (bias corrected MLE)	0.00922
nu hat (MLE)	22.13	nu star (bias corrected)	16.82
Mean (detects)	0.00776		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

108	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
109	This is especially true when the sample size is small.												
110	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
111					Minimum	0.0013					Mean	0.00813	
112					Maximum	0.0324					Median	0.0054	
113					SD	0.00891					CV	1.096	
114					k hat (MLE)	1.292					k star (bias corrected MLE)	1.025	
115					Theta hat (MLE)	0.00629					Theta star (bias corrected MLE)	0.00794	
116					nu hat (MLE)	31.01					nu star (bias corrected)	24.59	
117					Adjusted Level of Significance (β)	0.029							
118					Approximate Chi Square Value (24.59, α)	14.3					Adjusted Chi Square Value (24.59, β)	13.11	
119					95% Gamma Approximate UCL	0.014					95% Gamma Adjusted UCL	0.0153	
120													
121	**Estimates of Gamma Parameters using KM Estimates**												
122					Mean (KM)	0.00655					SD (KM)	0.00891	
123					Variance (KM)	7.9469E-5					SE of Mean (KM)	0.00271	
124					k hat (KM)	0.54					k star (KM)	0.46	
125					nu hat (KM)	12.96					nu star (KM)	11.05	
126					theta hat (KM)	0.0121					theta star (KM)	0.0142	
127					80% gamma percentile (KM)	0.0107					90% gamma percentile (KM)	0.018	
128					95% gamma percentile (KM)	0.0259					99% gamma percentile (KM)	0.0455	
129													
130	**Gamma Kaplan-Meier (KM) Statistics**												
131					Approximate Chi Square Value (11.05, α)	4.609					Adjusted Chi Square Value (11.05, β)	3.993	
132					95% KM Approximate Gamma UCL	0.0157					95% KM Adjusted Gamma UCL	0.0181	
133													
134	**Lognormal GOF Test on Detected Observations Only**												
135					Shapiro Wilk Test Statistic	0.924					**Shapiro Wilk GOF Test**		
136					10% Shapiro Wilk Critical Value	0.869					Detected Data appear Lognormal at 10% Significance Level		
137					Lilliefors Test Statistic	0.218					**Lilliefors GOF Test**		
138					10% Lilliefors Critical Value	0.241					Detected Data appear Lognormal at 10% Significance Level		
139	**Detected Data appear Lognormal at 10% Significance Level**												
140													
141	**Lognormal ROS Statistics Using Imputed Non-Detects**												
142					Mean in Original Scale	0.00654					Mean in Log Scale	-5.772	
143					SD in Original Scale	0.00932					SD in Log Scale	1.3	
144					95% t UCL (assumes normality of ROS data)	0.0114					95% Percentile Bootstrap UCL	0.0112	
145					95% BCA Bootstrap UCL	0.0133					95% Bootstrap t UCL	0.0245	
146					95% H-UCL (Log ROS)	0.0284							
147													
148	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
149					KM Mean (logged)	-5.746					KM Geo Mean	0.0032	
150					KM SD (logged)	1.198					95% Critical H Value (KM-Log)	3.286	
151					KM Standard Error of Mean (logged)	0.364					95% H-UCL (KM -Log)	0.0215	
152					KM SD (logged)	1.198					95% Critical H Value (KM-Log)	3.286	
153					KM Standard Error of Mean (logged)	0.364							
154													
155	**DL/2 Statistics**												
156	**DL/2 Normal**										**DL/2 Log-Transformed**		
157					Mean in Original Scale	0.00651					Mean in Log Scale	-5.861	
158					SD in Original Scale	0.00934					SD in Log Scale	1.451	
159					95% t UCL (Assumes normality)	0.0114					95% H-Stat UCL	0.0429	
160	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
161													
162	**Nonparametric Distribution Free UCL Statistics**												
163	**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**												
164													
165	**Suggested UCL to Use**												
166					95% KM Bootstrap t UCL	0.0246					95% Hall's Bootstrap	0.0215	
167													
168	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
169	**Please verify the data were collected from random locations.**												
170	**If the data were collected using judgmental or other non-random methods,**												
171	**then contact a statistician to correctly calculate UCLs.**												
172													
173	When a data set follows an approximate distribution passing only one of the GOF tests,												
174	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
175													
176	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
177	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
178	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
179													
180													
181	**PFOS + PFHxS_Cheetham Wetlands_Benthic Invertebrate**												
182													
183	**General Statistics**												
184					Total Number of Observations	5					Number of Distinct Observations	5	
185											Number of Missing Observations	0	
186					Minimum	0.0011					Mean	0.017	
187					Maximum	0.058					Median	0.0057	
188					SD	0.024					Std. Error of Mean	0.0107	

189	Coefficient of Variation				1.411					Skewness	1.817		
190													
191	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
192	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
193	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
194	**The Chebyshev UCL often results in gross overestimates of the mean.**												
195	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
196													
197	**Normal GOF Test**												
198	Shapiro Wilk Test Statistic				0.762	**Shapiro Wilk GOF Test**							
199	1% Shapiro Wilk Critical Value				0.686	Data appear Normal at 1% Significance Level							
200	Lilliefors Test Statistic				0.281	**Lilliefors GOF Test**							
201	1% Lilliefors Critical Value				0.396	Data appear Normal at 1% Significance Level							
202	**Data appear Normal at 1% Significance Level**												
203	**Note GOF tests may be unreliable for small sample sizes**												
204													
205	**Assuming Normal Distribution**												
206	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**							
207	95% Student's-t UCL				0.0398	95% Adjusted-CLT UCL (Chen-1995)					0.0439		
208						95% Modified-t UCL (Johnson-1978)					0.0413		
209													
210	**Gamma GOF Test**												
211	A-D Test Statistic				0.308	**Anderson-Darling Gamma GOF Test**							
212	5% A-D Critical Value				0.704	Detected data appear Gamma Distributed at 5% Significance Level							
213	K-S Test Statistic				0.215	**Kolmogorov-Smirnov Gamma GOF Test**							
214	5% K-S Critical Value				0.369	Detected data appear Gamma Distributed at 5% Significance Level							
215	**Detected data appear Gamma Distributed at 5% Significance Level**												
216	**Note GOF tests may be unreliable for small sample sizes**												
217													
218	**Gamma Statistics**												
219	k hat (MLE)				0.635	k star (bias corrected MLE)					0.388		
220	Theta hat (MLE)				0.0267	Theta star (bias corrected MLE)					0.0438		
221	nu hat (MLE)				6.355	nu star (bias corrected)					3.875		
222	MLE Mean (bias corrected)				0.017	MLE Sd (bias corrected)					0.0273		
223						Approximate Chi Square Value (0.05)					0.673		
224	Adjusted Level of Significance				0.0086	Adjusted Chi Square Value					0.273		
225													
226	**Assuming Gamma Distribution**												
227	95% Approximate Gamma UCL				0.0978	95% Adjusted Gamma UCL					0.241		
228													
229	**Lognormal GOF Test**												
230	Shapiro Wilk Test Statistic				0.95	**Shapiro Wilk Lognormal GOF Test**							
231	10% Shapiro Wilk Critical Value				0.806	Data appear Lognormal at 10% Significance Level							
232	Lilliefors Test Statistic				0.192	**Lilliefors Lognormal GOF Test**							
233	10% Lilliefors Critical Value				0.319	Data appear Lognormal at 10% Significance Level							
234	**Data appear Lognormal at 10% Significance Level**												
235	**Note GOF tests may be unreliable for small sample sizes**												
236													
237	**Lognormal Statistics**												
238	Minimum of Logged Data				-6.812	Mean of logged Data					-5.04		
239	Maximum of Logged Data				-2.847	SD of logged Data					1.647		
240													
241	**Assuming Lognormal Distribution**												
242	95% H-UCL				15.21	90% Chebyshev (MVUE) UCL					0.0487		
243	95% Chebyshev (MVUE) UCL				0.0633	97.5% Chebyshev (MVUE) UCL					0.0835		
244	99% Chebyshev (MVUE) UCL				0.123								
245													
246	**Nonparametric Distribution Free UCL Statistics**												
247	**Data appear to follow a Discernible Distribution**												
248													
249	**Nonparametric Distribution Free UCLs**												
250	95% CLT UCL				0.0346	95% BCA Bootstrap UCL					0.0396		
251	95% Standard Bootstrap UCL				0.0326	95% Bootstrap-t UCL					0.16		
252	95% Hall's Bootstrap UCL				0.176	95% Percentile Bootstrap UCL					0.0352		
253	90% Chebyshev(Mean, Sd) UCL				0.0491	95% Chebyshev(Mean, Sd) UCL					0.0637		
254	97.5% Chebyshev(Mean, Sd) UCL				0.0839	99% Chebyshev(Mean, Sd) UCL					0.124		
255													
256	**Suggested UCL to Use**												
257	95% Student's-t UCL				0.0398								
258													
259	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
260	**Please verify the data were collected from random locations.**												
261	**If the data were collected using judgmental or other non-random methods,**												
262	**then contact a statistician to correctly calculate UCLs.**												
263													
264	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
265	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
266	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
267													
268													
269	**PFOS + PFHxS_Cheetham Wetlands_Pelagic Invertebrate**												

270													
271	**General Statistics**												
272					Total Number of Observations	7				Number of Distinct Observations	7		
273										Number of Missing Observations	0		
274					Minimum	0.0015				Mean	0.0109		
275					Maximum	0.0345				Median	0.0106		
276					SD	0.0112				Std. Error of Mean	0.00423		
277					Coefficient of Variation	1.027				Skewness	1.93		
278													
279	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
280	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
281	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
282	**The Chebyshev UCL often results in gross overestimates of the mean.**												
283	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
284													
285	**Normal GOF Test**												
286					Shapiro Wilk Test Statistic	0.767				**Shapiro Wilk GOF Test**			
287					1% Shapiro Wilk Critical Value	0.73				Data appear Normal at 1% Significance Level			
288					Lilliefors Test Statistic	0.346				**Lilliefors GOF Test**			
289					1% Lilliefors Critical Value	0.35				Data appear Normal at 1% Significance Level			
290	**Data appear Normal at 1% Significance Level**												
291	**Note GOF tests may be unreliable for small sample sizes**												
292													
293	**Assuming Normal Distribution**												
294					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**			
295					95% Student's-t UCL	0.0191				95% Adjusted-CLT UCL (Chen-1995)	0.0211		
296										95% Modified-t UCL (Johnson-1978)	0.0196		
297													
298	**Gamma GOF Test**												
299					A-D Test Statistic	0.342				**Anderson-Darling Gamma GOF Test**			
300					5% A-D Critical Value	0.724				Detected data appear Gamma Distributed at 5% Significance Level			
301					K-S Test Statistic	0.229				**Kolmogorov-Smirnov Gamma GOF Test**			
302					5% K-S Critical Value	0.318				Detected data appear Gamma Distributed at 5% Significance Level			
303	**Detected data appear Gamma Distributed at 5% Significance Level**												
304	**Note GOF tests may be unreliable for small sample sizes**												
305													
306	**Gamma Statistics**												
307					k hat (MLE)	1.299				k star (bias corrected MLE)	0.838		
308					Theta hat (MLE)	0.00838				Theta star (bias corrected MLE)	0.013		
309					nu hat (MLE)	18.19				nu star (bias corrected)	11.73		
310					MLE Mean (bias corrected)	0.0109				MLE Sd (bias corrected)	0.0119		
311										Approximate Chi Square Value (0.05)	5.049		
312					Adjusted Level of Significance	0.0158				Adjusted Chi Square Value	3.81		
313													
314	**Assuming Gamma Distribution**												
315					95% Approximate Gamma UCL	0.0253				95% Adjusted Gamma UCL	0.0335		
316													
317	**Lognormal GOF Test**												
318					Shapiro Wilk Test Statistic	0.955				**Shapiro Wilk Lognormal GOF Test**			
319					10% Shapiro Wilk Critical Value	0.838				Data appear Lognormal at 10% Significance Level			
320					Lilliefors Test Statistic	0.223				**Lilliefors Lognormal GOF Test**			
321					10% Lilliefors Critical Value	0.28				Data appear Lognormal at 10% Significance Level			
322	**Data appear Lognormal at 10% Significance Level**												
323	**Note GOF tests may be unreliable for small sample sizes**												
324													
325	**Lognormal Statistics**												
326					Minimum of Logged Data	-6.502				Mean of logged Data	-4.952		
327					Maximum of Logged Data	-3.367				SD of logged Data	1.04		
328													
329	**Assuming Lognormal Distribution**												
330					95% H-UCL	0.0612				90% Chebyshev (MVUE) UCL	0.0239		
331					95% Chebyshev (MVUE) UCL	0.0298				97.5% Chebyshev (MVUE) UCL	0.038		
332					99% Chebyshev (MVUE) UCL	0.054							
333													
334	**Nonparametric Distribution Free UCL Statistics**												
335	**Data appear to follow a Discernible Distribution**												
336													
337	**Nonparametric Distribution Free UCLs**												
338					95% CLT UCL	0.0178				95% BCA Bootstrap UCL	0.0209		
339					95% Standard Bootstrap UCL	0.0174				95% Bootstrap-t UCL	0.0266		
340					95% Hall's Bootstrap UCL	0.0453				95% Percentile Bootstrap UCL	0.0178		
341					90% Chebyshev(Mean, Sd) UCL	0.0236				95% Chebyshev(Mean, Sd) UCL	0.0293		
342					97.5% Chebyshev(Mean, Sd) UCL	0.0373				99% Chebyshev(Mean, Sd) UCL	0.0529		
343													
344	**Suggested UCL to Use**												
345					95% Student's-t UCL	0.0191							
346													
347	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
348	**Please verify the data were collected from random locations.**												
349	**If the data were collected using judgmental or other non-random methods,**												
350	**then contact a statistician to correctly calculate UCLs.**												

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS + PFHxS_Cheetham Wetlands_Predator Fish

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.014	Mean	0.0295
Maximum	0.053	Median	0.0214
SD	0.0207	Std. Error of Mean	0.012
Coefficient of Variation	0.703	Skewness	1.487

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.753	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.429	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0644	95% Adjusted-CLT UCL (Chen-1995)	0.0601
		95% Modified-t UCL (Johnson-1978)	0.0661

Gamma GOF Test

A-D Test Statistic	0.337	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.636	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.308	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.434	Detected data appear Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.302	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00892	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	19.81	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A
		Approximate Chi Square Value (0.05)	N/A
Adjusted Level of Significance	N/A	Adjusted Chi Square Value	N/A

Assuming Gamma Distribution

95% Approximate Gamma UCL	N/A	95% Adjusted Gamma UCL	N/A

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.789	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.26	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.389	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-4.269	Mean of logged Data	-3.684
Maximum of Logged Data	-2.937	SD of logged Data	0.68

Assuming Lognormal Distribution

95% H-UCL	2.241	90% Chebyshev (MVUE) UCL	0.0617
95% Chebyshev (MVUE) UCL	0.0764	97.5% Chebyshev (MVUE) UCL	0.0968
99% Chebyshev (MVUE) UCL	0.137		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0491	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.0653	95% Chebyshev(Mean, Sd) UCL	0.0816
97.5% Chebyshev(Mean, Sd) UCL	0.104	99% Chebyshev(Mean, Sd) UCL	0.148

Suggested UCL to Use

95% Student's-t UCL	0.0644		

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS + PFHxS_Cheetham Wetlands_Prey Fish

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.0015	Mean	0.015
Maximum	0.065	Median	0.0041
SD	0.0208	Std. Error of Mean	0.00693
Coefficient of Variation	1.39	Skewness	2.102

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.71	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.764	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.316	Data appear Normal at 1% Significance Level	

Data appear Approximate Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0278	95% Adjusted-CLT UCL (Chen-1995)	0.0315
		95% Modified-t UCL (Johnson-1978)	0.0286

Gamma GOF Test

A-D Test Statistic	0.513	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.751	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.252	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.289	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	0.754	k star (bias corrected MLE)	0.577
Theta hat (MLE)	0.0198	Theta star (bias corrected MLE)	0.0259
nu hat (MLE)	13.57	nu star (bias corrected)	10.38
MLE Mean (bias corrected)	0.015	MLE Sd (bias corrected)	0.0197
		Approximate Chi Square Value (0.05)	4.18
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	3.391

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.0371	95% Adjusted Gamma UCL	0.0458

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.202	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.252	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-6.502	Mean of logged Data	-4.996
Maximum of Logged Data	-2.733	SD of logged Data	1.334

Assuming Lognormal Distribution

95% H-UCL	0.11	90% Chebyshev (MVUE) UCL	0.0337
95% Chebyshev (MVUE) UCL	0.0426	97.5% Chebyshev (MVUE) UCL	0.0549
99% Chebyshev (MVUE) UCL	0.0791		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0264	95% BCA Bootstrap UCL	0.0316
95% Standard Bootstrap UCL	0.0258	95% Bootstrap-t UCL	0.0426
95% Hall's Bootstrap UCL	0.0658	95% Percentile Bootstrap UCL	0.0269
90% Chebyshev(Mean, Sd) UCL	0.0357	95% Chebyshev(Mean, Sd) UCL	0.0452

513					97.5% Chebyshev(Mean, Sd) UCL	0.0582				99% Chebyshev(Mean, Sd) UCL		0.0839	
514													
515					**Suggested UCL to Use**								
516					95% Student's-t UCL	0.0278							
517													
518					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**								
519					**Please verify the data were collected from random locations.**								
520					**If the data were collected using judgmental or other non-random methods,**								
521					**then contact a statistician to correctly calculate UCLs.**								
522													
523					When a data set follows an approximate distribution passing only one of the GOF tests,								
524					it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL								
525													
526					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
527					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
528					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
529													
530													
531	**PFOS + PFHxS_Laverton RAAF Swamp_Aquatic Vegetation**												
532													
533					**General Statistics**								
534					Total Number of Observations	10				Number of Distinct Observations		10	
535										Number of Missing Observations		0	
536					Minimum	7.0000E-4				Mean		0.00833	
537					Maximum	0.0263				Median		0.0049	
538					SD	0.00803				Std. Error of Mean		0.00254	
539					Coefficient of Variation	0.964				Skewness		1.366	
540													
541					**Normal GOF Test**								
542					Shapiro Wilk Test Statistic	0.848				**Shapiro Wilk GOF Test**			
543					1% Shapiro Wilk Critical Value	0.781				Data appear Normal at 1% Significance Level			
544					Lilliefors Test Statistic	0.252				**Lilliefors GOF Test**			
545					1% Lilliefors Critical Value	0.304				Data appear Normal at 1% Significance Level			
546					**Data appear Normal at 1% Significance Level**								
547													
548					**Assuming Normal Distribution**								
549					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**			
550					95% Student's-t UCL	0.013				95% Adjusted-CLT UCL (Chen-1995)		0.0137	
551										95% Modified-t UCL (Johnson-1978)		0.0132	
552													
553					**Gamma GOF Test**								
554					A-D Test Statistic	0.259				**Anderson-Darling Gamma GOF Test**			
555					5% A-D Critical Value	0.745				Detected data appear Gamma Distributed at 5% Significance Level			
556					K-S Test Statistic	0.164				**Kolmogorov-Smirnov Gamma GOF Test**			
557					5% K-S Critical Value	0.273				Detected data appear Gamma Distributed at 5% Significance Level			
558					**Detected data appear Gamma Distributed at 5% Significance Level**								
559													
560					**Gamma Statistics**								
561					k hat (MLE)	1.2				k star (bias corrected MLE)		0.907	
562					Theta hat (MLE)	0.00694				Theta star (bias corrected MLE)		0.00919	
563					nu hat (MLE)	24				nu star (bias corrected)		18.14	
564					MLE Mean (bias corrected)	0.00833				MLE Sd (bias corrected)		0.00875	
565										Approximate Chi Square Value (0.05)		9.489	
566					Adjusted Level of Significance	0.0267				Adjusted Chi Square Value		8.423	
567													
568					**Assuming Gamma Distribution**								
569					95% Approximate Gamma UCL	0.0159				95% Adjusted Gamma UCL		0.0179	
570													
571					**Lognormal GOF Test**								
572					Shapiro Wilk Test Statistic	0.969				**Shapiro Wilk Lognormal GOF Test**			
573					10% Shapiro Wilk Critical Value	0.869				Data appear Lognormal at 10% Significance Level			
574					Lilliefors Test Statistic	0.152				**Lilliefors Lognormal GOF Test**			
575					10% Lilliefors Critical Value	0.241				Data appear Lognormal at 10% Significance Level			
576					**Data appear Lognormal at 10% Significance Level**								
577													
578					**Lognormal Statistics**								
579					Minimum of Logged Data	-7.264				Mean of logged Data		-5.259	
580					Maximum of Logged Data	-3.638				SD of logged Data		1.099	
581													
582					**Assuming Lognormal Distribution**								
583					95% H-UCL	0.032				90% Chebyshev (MVUE) UCL		0.0183	
584					95% Chebyshev (MVUE) UCL	0.0227				97.5% Chebyshev (MVUE) UCL		0.0287	
585					99% Chebyshev (MVUE) UCL	0.0406							
586													
587					**Nonparametric Distribution Free UCL Statistics**								
588					**Data appear to follow a Discernible Distribution**								
589													
590					**Nonparametric Distribution Free UCLs**								
591					95% CLT UCL	0.0125				95% BCA Bootstrap UCL		0.013	
592					95% Standard Bootstrap UCL	0.0123				95% Bootstrap-t UCL		0.0153	
593					95% Hall's Bootstrap UCL	0.0142				95% Percentile Bootstrap UCL		0.0124	

594	90% Chebyshev(Mean, Sd) UCL				0.0159				95% Chebyshev(Mean, Sd) UCL		0.0194	
595	97.5% Chebyshev(Mean, Sd) UCL				0.0242				99% Chebyshev(Mean, Sd) UCL		0.0336	
596												
597	**Suggested UCL to Use**											
598	95% Student's-t UCL				0.013							
599												
600	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
601	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
602	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
603												
604												
605	**PFOS + PFHxS_Laverton RAAF Swamp_Benthic Invertebrate**											
606												
607	**General Statistics**											
608	Total Number of Observations				4				Number of Distinct Observations		4	
609									Number of Missing Observations		0	
610	Minimum				0.0156				Mean		0.0313	
611	Maximum				0.056				Median		0.0268	
612	SD				0.0185				Std. Error of Mean		0.00927	
613	Coefficient of Variation				0.592				Skewness		0.962	
614												
615	**Note: Sample size is small (e.g., <10), if data are collected using Incremental sampling methodology (ISM) approach,**											
616	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**											
617	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**											
618	**The Chebyshev UCL often results in gross overestimates of the mean.**											
619	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**											
620												
621	**Normal GOF Test**											
622	Shapiro Wilk Test Statistic				0.903				**Shapiro Wilk GOF Test**			
623	1% Shapiro Wilk Critical Value				0.687				Data appear Normal at 1% Significance Level			
624	Lilliefors Test Statistic				0.253				**Lilliefors GOF Test**			
625	1% Lilliefors Critical Value				0.413				Data appear Normal at 1% Significance Level			
626	**Data appear Normal at 1% Significance Level**											
627	**Note GOF tests may be unreliable for small sample sizes**											
628												
629	**Assuming Normal Distribution**											
630	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**			
631	95% Student's-t UCL				0.0531				95% Adjusted-CLT UCL (Chen-1995)		0.0513	
632									95% Modified-t UCL (Johnson-1978)		0.0539	
633												
634	**Gamma GOF Test**											
635	A-D Test Statistic				0.319				**Anderson-Darling Gamma GOF Test**			
636	5% A-D Critical Value				0.659				Detected data appear Gamma Distributed at 5% Significance Level			
637	K-S Test Statistic				0.283				**Kolmogorov-Smirnov Gamma GOF Test**			
638	5% K-S Critical Value				0.396				Detected data appear Gamma Distributed at 5% Significance Level			
639	**Detected data appear Gamma Distributed at 5% Significance Level**											
640	**Note GOF tests may be unreliable for small sample sizes**											
641												
642	**Gamma Statistics**											
643	k hat (MLE)				3.981				k star (bias corrected MLE)		1.162	
644	Theta hat (MLE)				0.00786				Theta star (bias corrected MLE)		0.0269	
645	nu hat (MLE)				31.85				nu star (bias corrected)		9.295	
646	MLE Mean (bias corrected)				0.0313				MLE Sd (bias corrected)		0.029	
647									Approximate Chi Square Value (0.05)		3.506	
648	Adjusted Level of Significance				N/A				Adjusted Chi Square Value		N/A	
649												
650	**Assuming Gamma Distribution**											
651	95% Approximate Gamma UCL				0.083				95% Adjusted Gamma UCL		N/A	
652												
653	**Lognormal GOF Test**											
654	Shapiro Wilk Test Statistic				0.933				**Shapiro Wilk Lognormal GOF Test**			
655	10% Shapiro Wilk Critical Value				0.792				Data appear Lognormal at 10% Significance Level			
656	Lilliefors Test Statistic				0.246				**Lilliefors Lognormal GOF Test**			
657	10% Lilliefors Critical Value				0.346				Data appear Lognormal at 10% Significance Level			
658	**Data appear Lognormal at 10% Significance Level**											
659	**Note GOF tests may be unreliable for small sample sizes**											
660												
661	**Lognormal Statistics**											
662	Minimum of Logged Data				-4.16				Mean of logged Data		-3.595	
663	Maximum of Logged Data				-2.882				SD of logged Data		0.588	
664												
665	**Assuming Lognormal Distribution**											
666	95% H-UCL				0.133				90% Chebyshev (MVUE) UCL		0.058	
667	95% Chebyshev (MVUE) UCL				0.0701				97.5% Chebyshev (MVUE) UCL		0.087	
668	99% Chebyshev (MVUE) UCL				0.12							
669												
670	**Nonparametric Distribution Free UCL Statistics**											
671	**Data appear to follow a Discernible Distribution**											
672												
673	**Nonparametric Distribution Free UCLs**											
674	95% CLT UCL				0.0466				95% BCA Bootstrap UCL		N/A	

675	95% Standard Bootstrap UCL				N/A				95% Bootstrap-t UCL		N/A		
676	95% Hall's Bootstrap UCL				N/A				95% Percentile Bootstrap UCL		N/A		
677	90% Chebyshev(Mean, Sd) UCL				0.0591				95% Chebyshev(Mean, Sd) UCL		0.0717		
678	97.5% Chebyshev(Mean, Sd) UCL				0.0892				99% Chebyshev(Mean, Sd) UCL		0.124		
679													
680	**Suggested UCL to Use**												
681	95% Student's-t UCL				0.0531								
682													
683	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
684	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
685	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
686													
687													
688	**PFOS + PFHxS_Laverton RAAF Swamp_Pelagic Invertebrate**												
689													
690	**General Statistics**												
691	Total Number of Observations				2				Number of Distinct Observations		2		
692									Number of Missing Observations		0		
693	Minimum				0.0536				Mean		0.11		
694	Maximum				0.166				Median		0.11		
695													
696	**Warning: This data set only has 2 observations!**												
697	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
698	**The data set for variable PFOS + PFHxS_Laverton RAAF Swamp_Pelagic Invertebrate was not processed!**												
699													
700	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
701	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
702													
703													
704													
705	**PFOS + PFHxS_Laverton RAAF Swamp_Prey Fish**												
706													
707	**General Statistics**												
708	Total Number of Observations				10				Number of Distinct Observations		10		
709									Number of Missing Observations		0		
710	Minimum				0.661				Mean		0.98		
711	Maximum				1.212				Median		1.009		
712	SD				0.185				Std. Error of Mean		0.0585		
713	Coefficient of Variation				0.189				Skewness		-0.591		
714													
715	**Normal GOF Test**												
716	Shapiro Wilk Test Statistic				0.92				**Shapiro Wilk GOF Test**				
717	1% Shapiro Wilk Critical Value				0.781				Data appear Normal at 1% Significance Level				
718	Lilliefors Test Statistic				0.207				**Lilliefors GOF Test**				
719	1% Lilliefors Critical Value				0.304				Data appear Normal at 1% Significance Level				
720	**Data appear Normal at 1% Significance Level**												
721													
722	**Assuming Normal Distribution**												
723	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**				
724	95% Student's-t UCL				1.087				95% Adjusted-CLT UCL (Chen-1995)		1.064		
725									95% Modified-t UCL (Johnson-1978)		1.085		
726													
727	**Gamma GOF Test**												
728	A-D Test Statistic				0.486				**Anderson-Darling Gamma GOF Test**				
729	5% A-D Critical Value				0.725				Detected data appear Gamma Distributed at 5% Significance Level				
730	K-S Test Statistic				0.232				**Kolmogorov-Smirnov Gamma GOF Test**				
731	5% K-S Critical Value				0.266				Detected data appear Gamma Distributed at 5% Significance Level				
732	**Detected data appear Gamma Distributed at 5% Significance Level**												
733													
734	**Gamma Statistics**												
735	k hat (MLE)				28.45				k star (bias corrected MLE)		19.98		
736	Theta hat (MLE)				0.0344				Theta star (bias corrected MLE)		0.049		
737	nu hat (MLE)				569				nu star (bias corrected)		399.6		
738	MLE Mean (bias corrected)				0.98				MLE Sd (bias corrected)		0.219		
739									Approximate Chi Square Value (0.05)		354.3		
740	Adjusted Level of Significance				0.0267				Adjusted Chi Square Value		346.9		
741													
742	**Assuming Gamma Distribution**												
743	95% Approximate Gamma UCL				1.105				95% Adjusted Gamma UCL		1.129		
744													
745	**Lognormal GOF Test**												
746	Shapiro Wilk Test Statistic				0.889				**Shapiro Wilk Lognormal GOF Test**				
747	10% Shapiro Wilk Critical Value				0.869				Data appear Lognormal at 10% Significance Level				
748	Lilliefors Test Statistic				0.241				**Lilliefors Lognormal GOF Test**				
749	10% Lilliefors Critical Value				0.241				Data Not Lognormal at 10% Significance Level				
750	**Data appear Approximate Lognormal at 10% Significance Level**												
751													
752	**Lognormal Statistics**												
753	Minimum of Logged Data				-0.414				Mean of logged Data		-0.0381		
754	Maximum of Logged Data				0.192				SD of logged Data		0.203		
755													

756	**Assuming Lognormal Distribution**												
757					95% H-UCL	1.117				90% Chebyshev (MVUE) UCL		1.17	
758					95% Chebyshev (MVUE) UCL	1.256				97.5% Chebyshev (MVUE) UCL		1.376	
759					99% Chebyshev (MVUE) UCL	1.61							
760													
761	**Nonparametric Distribution Free UCL Statistics**												
762	**Data appear to follow a Discernible Distribution**												
763													
764	**Nonparametric Distribution Free UCLs**												
765					95% CLT UCL	1.076				95% BCA Bootstrap UCL		1.067	
766					95% Standard Bootstrap UCL	1.071				95% Bootstrap-t UCL		1.075	
767					95% Hall's Bootstrap UCL	1.067				95% Percentile Bootstrap UCL		1.067	
768					90% Chebyshev(Mean, Sd) UCL	1.155				95% Chebyshev(Mean, Sd) UCL		1.235	
769					97.5% Chebyshev(Mean, Sd) UCL	1.345				99% Chebyshev(Mean, Sd) UCL		1.562	
770													
771	**Suggested UCL to Use**												
772					95% Student's-t UCL	1.087							
773													
774	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
775	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
776	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
777													
778	**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**												
779	**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**												
780													
781													
782	**PFOS + PFHxS_Sanctuary Lakes_Aquatic Vegetation**												
783													
784	**General Statistics**												
785					Total Number of Observations	13				Number of Distinct Observations		11	
786										Number of Missing Observations		0	
787					Minimum	8.0000E-4				Mean		0.0047	
788					Maximum	0.017				Median		0.0023	
789					SD	0.00511				Std. Error of Mean		0.00142	
790					Coefficient of Variation	1.088				Skewness		1.576	
791													
792	**Normal GOF Test**												
793					Shapiro Wilk Test Statistic	0.751				**Shapiro Wilk GOF Test**			
794					1% Shapiro Wilk Critical Value	0.814				Data Not Normal at 1% Significance Level			
795					Lilliefors Test Statistic	0.289				**Lilliefors GOF Test**			
796					1% Lilliefors Critical Value	0.271				Data Not Normal at 1% Significance Level			
797	**Data Not Normal at 1% Significance Level**												
798													
799	**Assuming Normal Distribution**												
800					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**			
801					95% Student's-t UCL	0.00723				95% Adjusted-CLT UCL (Chen-1995)		0.0077	
802										95% Modified-t UCL (Johnson-1978)		0.00733	
803													
804	**Gamma GOF Test**												
805					A-D Test Statistic	0.816				**Anderson-Darling Gamma GOF Test**			
806					5% A-D Critical Value	0.755				Data Not Gamma Distributed at 5% Significance Level			
807					K-S Test Statistic	0.248				**Kolmogorov-Smirnov Gamma GOF Test**			
808					5% K-S Critical Value	0.242				Data Not Gamma Distributed at 5% Significance Level			
809	**Data Not Gamma Distributed at 5% Significance Level**												
810													
811	**Gamma Statistics**												
812					k hat (MLE)	1.192				k star (bias corrected MLE)		0.968	
813					Theta hat (MLE)	0.00394				Theta star (bias corrected MLE)		0.00486	
814					nu hat (MLE)	30.98				nu star (bias corrected)		25.17	
815					MLE Mean (bias corrected)	0.0047				MLE Sd (bias corrected)		0.00478	
816										Approximate Chi Square Value (0.05)		14.74	
817					Adjusted Level of Significance	0.0301				Adjusted Chi Square Value		13.61	
818													
819	**Assuming Gamma Distribution**												
820					95% Approximate Gamma UCL	0.00803				95% Adjusted Gamma UCL		0.00869	
821													
822	**Lognormal GOF Test**												
823					Shapiro Wilk Test Statistic	0.914				**Shapiro Wilk Lognormal GOF Test**			
824					10% Shapiro Wilk Critical Value	0.889				Data appear Lognormal at 10% Significance Level			
825					Lilliefors Test Statistic	0.195				**Lilliefors Lognormal GOF Test**			
826					10% Lilliefors Critical Value	0.215				Data appear Lognormal at 10% Significance Level			
827	**Data appear Lognormal at 10% Significance Level**												
828													
829	**Lognormal Statistics**												
830					Minimum of Logged Data	-7.131				Mean of logged Data		-5.835	
831					Maximum of Logged Data	-4.075				SD of logged Data		0.981	
832													
833	**Assuming Lognormal Distribution**												
834					95% H-UCL	0.0105				90% Chebyshev (MVUE) UCL		0.00845	
835					95% Chebyshev (MVUE) UCL	0.0102				97.5% Chebyshev (MVUE) UCL		0.0127	
836					99% Chebyshev (MVUE) UCL	0.0176							

837													
838	**Nonparametric Distribution Free UCL Statistics**												
839	**Data appear to follow a Discernible Distribution**												
840													
841	**Nonparametric Distribution Free UCLs**												
842					95% CLT UCL	0.00703				95% BCA Bootstrap UCL	0.00762		
843					95% Standard Bootstrap UCL	0.00699				95% Bootstrap-t UCL	0.00897		
844					95% Hall's Bootstrap UCL	0.00754				95% Percentile Bootstrap UCL	0.00722		
845					90% Chebyshev(Mean, Sd) UCL	0.00896				95% Chebyshev(Mean, Sd) UCL	0.0109		
846					97.5% Chebyshev(Mean, Sd) UCL	0.0136				99% Chebyshev(Mean, Sd) UCL	0.0188		
847													
848	**Suggested UCL to Use**												
849					95% H-UCL	0.0105							
850													
851	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
852	**Please verify the data were collected from random locations.**												
853	**If the data were collected using judgmental or other non-random methods,**												
854	**then contact a statistician to correctly calculate UCLs.**												
855													
856	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
857	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
858	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
859													
860													
861	**PFOS + PFHxS_Sanctuary Lakes_Benthic Invertebrate**												
862													
863	**General Statistics**												
864					Total Number of Observations	3				Number of Distinct Observations	3		
865										Number of Missing Observations	0		
866					Minimum	0.0077				Mean	0.018		
867					Maximum	0.025				Median	0.0214		
868					SD	0.00913				Std. Error of Mean	0.00527		
869					Coefficient of Variation	0.506				Skewness	-1.434		
870													
871	**Note: Sample size is small (e.g., <10), If data are collected using Incremental sampling methodology (ISM) approach,**												
872	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
873	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
874	**The Chebyshev UCL often results in gross overestimates of the mean.**												
875	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
876													
877	**Normal GOF Test**												
878					Shapiro Wilk Test Statistic	0.898				**Shapiro Wilk GOF Test**			
879					1% Shapiro Wilk Critical Value	0.753				Data appear Normal at 1% Significance Level			
880					Lilliefors Test Statistic	0.311				**Lilliefors GOF Test**			
881					1% Lilliefors Critical Value	0.429				Data appear Normal at 1% Significance Level			
882	**Data appear Normal at 1% Significance Level**												
883	**Note GOF tests may be unreliable for small sample sizes**												
884													
885	**Assuming Normal Distribution**												
886					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**			
887					95% Student's-t UCL	0.0334				95% Adjusted-CLT UCL (Chen-1995)	0.022		
888										95% Modified-t UCL (Johnson-1978)	0.0327		
889													
890	**Gamma GOF Test**												
891					A-D Test Statistic	0.445				**Anderson-Darling Gamma GOF Test**			
892					5% A-D Critical Value	0.637				Detected data appear Gamma Distributed at 5% Significance Level			
893					K-S Test Statistic	0.368				**Kolmogorov-Smirnov Gamma GOF Test**			
894					5% K-S Critical Value	0.434				Detected data appear Gamma Distributed at 5% Significance Level			
895	**Data Not Gamma Distributed at 5% Significance Level**												
896													
897	**Gamma Statistics**												
898					k hat (MLE)	4.407				k star (bias corrected MLE)	N/A		
899					Theta hat (MLE)	0.00409				Theta star (bias corrected MLE)	N/A		
900					nu hat (MLE)	26.44				nu star (bias corrected)	N/A		
901					MLE Mean (bias corrected)	N/A				MLE Sd (bias corrected)	N/A		
902										Approximate Chi Square Value (0.05)	N/A		
903					Adjusted Level of Significance	N/A				Adjusted Chi Square Value	N/A		
904													
905	**Assuming Gamma Distribution**												
906					95% Approximate Gamma UCL	N/A				95% Adjusted Gamma UCL	N/A		
907													
908	**Lognormal GOF Test**												
909					Shapiro Wilk Test Statistic	0.847				**Shapiro Wilk Lognormal GOF Test**			
910					10% Shapiro Wilk Critical Value	0.789				Data appear Lognormal at 10% Significance Level			
911					Lilliefors Test Statistic	0.341				**Lilliefors Lognormal GOF Test**			
912					10% Lilliefors Critical Value	0.389				Data appear Lognormal at 10% Significance Level			
913	**Data appear Lognormal at 10% Significance Level**												
914	**Note GOF tests may be unreliable for small sample sizes**												
915													
916	**Lognormal Statistics**												
917					Minimum of Logged Data	-4.867				Mean of logged Data	-4.133		

918	Maximum of Logged Data					-3.689					SD of logged Data		0.64
919													
920	**Assuming Lognormal Distribution**												
921	95% H-UCL					0.852					90% Chebyshev (MVUE) UCL		0.0376
922	95% Chebyshev (MVUE) UCL					0.0463					97.5% Chebyshev (MVUE) UCL		0.0585
923	99% Chebyshev (MVUE) UCL					0.0823							
924													
925	**Nonparametric Distribution Free UCL Statistics**												
926	**Data appear to follow a Discernible Distribution**												
927													
928	**Nonparametric Distribution Free UCLs**												
929	95% CLT UCL					0.0267					95% BCA Bootstrap UCL		N/A
930	95% Standard Bootstrap UCL					N/A					95% Bootstrap-t UCL		N/A
931	95% Hall's Bootstrap UCL					N/A					95% Percentile Bootstrap UCL		N/A
932	90% Chebyshev(Mean, Sd) UCL					0.0338					95% Chebyshev(Mean, Sd) UCL		0.041
933	97.5% Chebyshev(Mean, Sd) UCL					0.0509					99% Chebyshev(Mean, Sd) UCL		0.0705
934													
935	**Suggested UCL to Use**												
936	95% Student's-t UCL					0.0334							
937	**Recommended UCL exceeds the maximum observation**												
938													
939	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
940	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
941	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
942													
943	**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**												
944	**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**												
945													
946													
947	**PFOS + PFHxS_Sanctuary Lakes_Pelagic Invertebrate**												
948													
949	**General Statistics**												
950	Total Number of Observations					3					Number of Distinct Observations		3
951											Number of Missing Observations		0
952	Minimum					0.0103					Mean		0.0136
953	Maximum					0.0199					Median		0.0105
954	SD					0.00549					Std. Error of Mean		0.00317
955	Coefficient of Variation					0.404					Skewness		1.729
956													
957	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
958	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
959	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
960	**The Chebyshev UCL often results in gross overestimates of the mean.**												
961	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
962													
963	**Normal GOF Test**												
964	Shapiro Wilk Test Statistic					0.766					**Shapiro Wilk GOF Test**		
965	1% Shapiro Wilk Critical Value					0.753					Data appear Normal at 1% Significance Level		
966	Lilliefors Test Statistic					0.379					**Lilliefors GOF Test**		
967	1% Lilliefors Critical Value					0.429					Data appear Normal at 1% Significance Level		
968	**Data appear Normal at 1% Significance Level**												
969	**Note GOF tests may be unreliable for small sample sizes**												
970													
971	**Assuming Normal Distribution**												
972	**95% Normal UCL**										**95% UCLs (Adjusted for Skewness)**		
973	95% Student's-t UCL					0.0228					95% Adjusted-CLT UCL (Chen-1995)		0.0222
974											95% Modified-t UCL (Johnson-1978)		0.0233
975													
976	**Gamma GOF Test**												
977	A-D Test Statistic					0.588					**Anderson-Darling Gamma GOF Test**		
978	5% A-D Critical Value					0.635					Detected data appear Gamma Distributed at 5% Significance Level		
979	K-S Test Statistic					0.419					**Kolmogorov-Smirnov Gamma GOF Test**		
980	5% K-S Critical Value					0.432					Detected data appear Gamma Distributed at 5% Significance Level		
981	**Data Not Gamma Distributed at 5% Significance Level**												
982													
983	**Gamma Statistics**												
984	k hat (MLE)					10.26					k star (bias corrected MLE)		N/A
985	Theta hat (MLE)					0.00132					Theta star (bias corrected MLE)		N/A
986	nu hat (MLE)					61.54					nu star (bias corrected)		N/A
987	MLE Mean (bias corrected)					N/A					MLE Sd (bias corrected)		N/A
988											Approximate Chi Square Value (0.05)		N/A
989	Adjusted Level of Significance					N/A					Adjusted Chi Square Value		N/A
990													
991	**Assuming Gamma Distribution**												
992	95% Approximate Gamma UCL					N/A					95% Adjusted Gamma UCL		N/A
993													
994	**Lognormal GOF Test**												
995	Shapiro Wilk Test Statistic					0.772					**Shapiro Wilk Lognormal GOF Test**		
996	10% Shapiro Wilk Critical Value					0.789					Data Not Lognormal at 10% Significance Level		
997	Lilliefors Test Statistic					0.376					**Lilliefors Lognormal GOF Test**		
998	10% Lilliefors Critical Value					0.389					Data appear Lognormal at 10% Significance Level		

999	**Data appear Approximate Lognormal at 10% Significance Level**												
1000	**Note GOF tests may be unreliable for small sample sizes**												
1001													
1002	**Lognormal Statistics**												
1003					Minimum of Logged Data	-4.576					Mean of logged Data	-4.35	
1004					Maximum of Logged Data	-3.917					SD of logged Data	0.375	
1005													
1006	**Assuming Lognormal Distribution**												
1007					95% H-UCL	0.0509					90% Chebyshev (MVUE) UCL	0.0222	
1008					95% Chebyshev (MVUE) UCL	0.0261					97.5% Chebyshev (MVUE) UCL	0.0315	
1009					99% Chebyshev (MVUE) UCL	0.0421							
1010													
1011	**Nonparametric Distribution Free UCL Statistics**												
1012	**Data appear to follow a Discernible Distribution**												
1013													
1014	**Nonparametric Distribution Free UCLs**												
1015					95% CLT UCL	0.0188					95% BCA Bootstrap UCL	N/A	
1016					95% Standard Bootstrap UCL	N/A					95% Bootstrap-t UCL	N/A	
1017					95% Hall's Bootstrap UCL	N/A					95% Percentile Bootstrap UCL	N/A	
1018					90% Chebyshev(Mean, Sd) UCL	0.0231					95% Chebyshev(Mean, Sd) UCL	0.0274	
1019					97.5% Chebyshev(Mean, Sd) UCL	0.0333					99% Chebyshev(Mean, Sd) UCL	0.0451	
1020													
1021	**Suggested UCL to Use**												
1022					95% Student's-t UCL	0.0228							
1023	**Recommended UCL exceeds the maximum observation**												
1024													
1025	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1026	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1027	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1028													
1029													
1030	**PFOS + PFHxS_Sanctuary Lakes_Predator Fish**												
1031													
1032	**General Statistics**												
1033					Total Number of Observations	13					Number of Distinct Observations	12	
1034											Number of Missing Observations	0	
1035					Minimum	0.0035					Mean	0.0367	
1036					Maximum	0.202					Median	0.0168	
1037					SD	0.0562					Std. Error of Mean	0.0156	
1038					Coefficient of Variation	1.531					Skewness	2.552	
1039													
1040	**Normal GOF Test**												
1041					Shapiro Wilk Test Statistic	0.626					**Shapiro Wilk GOF Test**		
1042					1% Shapiro Wilk Critical Value	0.814					Data Not Normal at 1% Significance Level		
1043					Lilliefors Test Statistic	0.315					**Lilliefors GOF Test**		
1044					1% Lilliefors Critical Value	0.271					Data Not Normal at 1% Significance Level		
1045	**Data Not Normal at 1% Significance Level**												
1046													
1047	**Assuming Normal Distribution**												
1048					**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**		
1049					95% Student's-t UCL	0.0645					95% Adjusted-CLT UCL (Chen-1995)	0.0741	
1050											95% Modified-t UCL (Johnson-1978)	0.0663	
1051													
1052	**Gamma GOF Test**												
1053					A-D Test Statistic	0.68					**Anderson-Darling Gamma GOF Test**		
1054					5% A-D Critical Value	0.769					Detected data appear Gamma Distributed at 5% Significance Level		
1055					K-S Test Statistic	0.171					**Kolmogorov-Smirnov Gamma GOF Test**		
1056					5% K-S Critical Value	0.246					Detected data appear Gamma Distributed at 5% Significance Level		
1057	**Detected data appear Gamma Distributed at 5% Significance Level**												
1058													
1059	**Gamma Statistics**												
1060					k hat (MLE)	0.779					k star (bias corrected MLE)	0.651	
1061					Theta hat (MLE)	0.0471					Theta star (bias corrected MLE)	0.0564	
1062					nu hat (MLE)	20.26					nu star (bias corrected)	16.92	
1063					MLE Mean (bias corrected)	0.0367					MLE Sd (bias corrected)	0.0455	
1064											Approximate Chi Square Value (0.05)	8.614	
1065					Adjusted Level of Significance	0.0301					Adjusted Chi Square Value	7.783	
1066													
1067	**Assuming Gamma Distribution**												
1068					95% Approximate Gamma UCL	0.0721					95% Adjusted Gamma UCL	0.0798	
1069													
1070	**Lognormal GOF Test**												
1071					Shapiro Wilk Test Statistic	0.95					**Shapiro Wilk Lognormal GOF Test**		
1072					10% Shapiro Wilk Critical Value	0.889					Data appear Lognormal at 10% Significance Level		
1073					Lilliefors Test Statistic	0.136					**Lilliefors Lognormal GOF Test**		
1074					10% Lilliefors Critical Value	0.215					Data appear Lognormal at 10% Significance Level		
1075	**Data appear Lognormal at 10% Significance Level**												
1076													
1077	**Lognormal Statistics**												
1078					Minimum of Logged Data	-5.655					Mean of logged Data	-4.069	
1079					Maximum of Logged Data	-1.6					SD of logged Data	1.227	

1080													
1081	**Assuming Lognormal Distribution**												
1082					95% H-UCL	0.115				90% Chebyshev (MVUE) UCL	0.0703		
1083					95% Chebyshev (MVUE) UCL	0.0872				97.5% Chebyshev (MVUE) UCL	0.111		
1084					99% Chebyshev (MVUE) UCL	0.156							
1085													
1086	**Nonparametric Distribution Free UCL Statistics**												
1087	**Data appear to follow a Discernible Distribution**												
1088													
1089	**Nonparametric Distribution Free UCLs**												
1090					95% CLT UCL	0.0623				95% BCA Bootstrap UCL	0.0756		
1091					95% Standard Bootstrap UCL	0.0613				95% Bootstrap-t UCL	0.143		
1092					95% Hall's Bootstrap UCL	0.181				95% Percentile Bootstrap UCL	0.0645		
1093					90% Chebyshev(Mean, Sd) UCL	0.0834				95% Chebyshev(Mean, Sd) UCL	0.105		
1094					97.5% Chebyshev(Mean, Sd) UCL	0.134				99% Chebyshev(Mean, Sd) UCL	0.192		
1095													
1096	**Suggested UCL to Use**												
1097					95% Adjusted Gamma UCL	0.0798							
1098													
1099	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1100	**Please verify the data were collected from random locations.**												
1101	**If the data were collected using judgmental or other non-random methods,**												
1102	**then contact a statistician to correctly calculate UCLs.**												
1103													
1104	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1105	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1106	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1107													
1108													
1109	**PFOS + PFHxS_Sanctuary Lakes_Prey Fish**												
1110													
1111	**General Statistics**												
1112					Total Number of Observations	13				Number of Distinct Observations	13		
1113										Number of Missing Observations	0		
1114					Minimum	0.0046				Mean	0.0522		
1115					Maximum	0.181				Median	0.0407		
1116					SD	0.0477				Std. Error of Mean	0.0132		
1117					Coefficient of Variation	0.912				Skewness	1.814		
1118													
1119	**Normal GOF Test**												
1120					Shapiro Wilk Test Statistic	0.83				**Shapiro Wilk GOF Test**			
1121					1% Shapiro Wilk Critical Value	0.814				Data appear Normal at 1% Significance Level			
1122					Lilliefors Test Statistic	0.21				**Lilliefors GOF Test**			
1123					1% Lilliefors Critical Value	0.271				Data appear Normal at 1% Significance Level			
1124	**Data appear Normal at 1% Significance Level**												
1125													
1126	**Assuming Normal Distribution**												
1127	**95% Normal UCL**									**95% UCLs (Adjusted for Skewness)**			
1128					95% Student's-t UCL	0.0758				95% Adjusted-CLT UCL (Chen-1995)	0.0811		
1129										95% Modified-t UCL (Johnson-1978)	0.0769		
1130													
1131	**Gamma GOF Test**												
1132					A-D Test Statistic	0.204				**Anderson-Darling Gamma GOF Test**			
1133					5% A-D Critical Value	0.752				Detected data appear Gamma Distributed at 5% Significance Level			
1134					K-S Test Statistic	0.128				**Kolmogorov-Smirnov Gamma GOF Test**			
1135					5% K-S Critical Value	0.241				Detected data appear Gamma Distributed at 5% Significance Level			
1136	**Detected data appear Gamma Distributed at 5% Significance Level**												
1137													
1138	**Gamma Statistics**												
1139					k hat (MLE)	1.381				k star (bias corrected MLE)	1.113		
1140					Theta hat (MLE)	0.0378				Theta star (bias corrected MLE)	0.0469		
1141					nu hat (MLE)	35.9				nu star (bias corrected)	28.95		
1142					MLE Mean (bias corrected)	0.0522				MLE Sd (bias corrected)	0.0495		
1143										Approximate Chi Square Value (0.05)	17.67		
1144					Adjusted Level of Significance	0.0301				Adjusted Chi Square Value	16.42		
1145													
1146	**Assuming Gamma Distribution**												
1147					95% Approximate Gamma UCL	0.0856				95% Adjusted Gamma UCL	0.0921		
1148													
1149	**Lognormal GOF Test**												
1150					Shapiro Wilk Test Statistic	0.96				**Shapiro Wilk Lognormal GOF Test**			
1151					10% Shapiro Wilk Critical Value	0.889				Data appear Lognormal at 10% Significance Level			
1152					Lilliefors Test Statistic	0.188				**Lilliefors Lognormal GOF Test**			
1153					10% Lilliefors Critical Value	0.215				Data appear Lognormal at 10% Significance Level			
1154	**Data appear Lognormal at 10% Significance Level**												
1155													
1156	**Lognormal Statistics**												
1157					Minimum of Logged Data	-5.382				Mean of logged Data	-3.356		
1158					Maximum of Logged Data	-1.707				SD of logged Data	1.02		
1159													
1160	**Assuming Lognormal Distribution**												

1161					95% H-UCL	0.137					90% Chebyshev (MVUE) UCL	0.106	
1162					95% Chebyshev (MVUE) UCL	0.13					97.5% Chebyshev (MVUE) UCL	0.162	
1163					99% Chebyshev (MVUE) UCL	0.224							
1164													
1165					**Nonparametric Distribution Free UCL Statistics**								
1166					**Data appear to follow a Discernible Distribution**								
1167													
1168					**Nonparametric Distribution Free UCLs**								
1169					95% CLT UCL	0.074					95% BCA Bootstrap UCL	0.082	
1170					95% Standard Bootstrap UCL	0.0731					95% Bootstrap-t UCL	0.0894	
1171					95% Hall's Bootstrap UCL	0.183					95% Percentile Bootstrap UCL	0.0745	
1172					90% Chebyshev(Mean, Sd) UCL	0.0919					95% Chebyshev(Mean, Sd) UCL	0.11	
1173					97.5% Chebyshev(Mean, Sd) UCL	0.135					99% Chebyshev(Mean, Sd) UCL	0.184	
1174													
1175					**Suggested UCL to Use**								
1176					95% Student's-t UCL	0.0758							
1177													
1178					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
1179					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
1180					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
1181													
1182	**PFOS + PFHxS_Skeleton Creek_Aquatic Vegetation**												
1183													
1184					**General Statistics**								
1185					Total Number of Observations	23					Number of Distinct Observations	20	
1186					Number of Detects	22					Number of Non-Detects	1	
1187					Number of Distinct Detects	19					Number of Distinct Non-Detects	1	
1188					Minimum Detect	8.0000E-4					Minimum Non-Detect	5.0000E-4	
1189					Maximum Detect	0.0164					Maximum Non-Detect	5.0000E-4	
1190					Variance Detects	2.1518E-5					Percent Non-Detects	4.348%	
1191					Mean Detects	0.00559					SD Detects	0.00464	
1192					Median Detects	0.0043					CV Detects	0.83	
1193					Skewness Detects	1.099					Kurtosis Detects	0.358	
1194					Mean of Logged Detects	-5.554					SD of Logged Detects	0.929	
1195													
1196					**Normal GOF Test on Detects Only**								
1197					Shapiro Wilk Test Statistic	0.87					**Shapiro Wilk GOF Test**		
1198					1% Shapiro Wilk Critical Value	0.878					Detected Data Not Normal at 1% Significance Level		
1199					Lilliefors Test Statistic	0.173					**Lilliefors GOF Test**		
1200					1% Lilliefors Critical Value	0.214					Detected Data appear Normal at 1% Significance Level		
1201					**Detected Data appear Approximate Normal at 1% Significance Level**								
1202													
1203					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**								
1204					KM Mean	0.00537					KM Standard Error of Mean	9.7155E-4	
1205					90KM SD	0.00455					95% KM (BCA) UCL	0.00699	
1206					95% KM (t) UCL	0.00703					95% KM (Percentile Bootstrap) UCL	0.00697	
1207					95% KM (z) UCL	0.00696					95% KM Bootstrap t UCL	0.00733	
1208					90% KM Chebyshev UCL	0.00828					95% KM Chebyshev UCL	0.0096	
1209					97.5% KM Chebyshev UCL	0.0114					99% KM Chebyshev UCL	0.015	
1210													
1211					**Gamma GOF Tests on Detected Observations Only**								
1212					A-D Test Statistic	0.288					**Anderson-Darling GOF Test**		
1213					5% A-D Critical Value	0.759					Detected data appear Gamma Distributed at 5% Significance Level		
1214					K-S Test Statistic	0.125					**Kolmogorov-Smirnov GOF**		
1215					5% K-S Critical Value	0.189					Detected data appear Gamma Distributed at 5% Significance Level		
1216					**Detected data appear Gamma Distributed at 5% Significance Level**								
1217													
1218					**Gamma Statistics on Detected Data Only**								
1219					k hat (MLE)	1.509					k star (bias corrected MLE)	1.334	
1220					Theta hat (MLE)	0.0037					Theta star (bias corrected MLE)	0.00419	
1221					nu hat (MLE)	66.41					nu star (bias corrected)	58.69	
1222					Mean (detects)	0.00559							
1223													
1224					**Gamma ROS Statistics using Imputed Non-Detects**								
1225					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs								
1226					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)								
1227					For such situations, GROS method may yield incorrect values of UCLs and BTVs								
1228					This is especially true when the sample size is small.								
1229					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates								
1230					Minimum	8.0000E-4					Mean	0.00578	
1231					Maximum	0.0164					Median	0.0045	
1232					SD	0.00462					CV	0.8	
1233					k hat (MLE)	1.538					k star (bias corrected MLE)	1.367	
1234					Theta hat (MLE)	0.00376					Theta star (bias corrected MLE)	0.00423	
1235					nu hat (MLE)	70.76					nu star (bias corrected)	62.86	
1236					Adjusted Level of Significance (β)	0.0389							
1237					Approximate Chi Square Value (62.86, α)	45.62					Adjusted Chi Square Value (62.86, β)	44.56	
1238					95% Gamma Approximate UCL	0.00796					95% Gamma Adjusted UCL	0.00815	
1239													
1240					**Estimates of Gamma Parameters using KM Estimates**								
1241					Mean (KM)	0.00537					SD (KM)	0.00455	

	A	B	C	D	E	F	G	H	I	J	K	L	M
1242					Variance (KM)	2.0723E-5					SE of Mean (KM)	9.7155E-4	
1243					k hat (KM)	1.389					k star (KM)	1.237	
1244					nu hat (KM)	63.9					nu star (KM)	56.9	
1245					theta hat (KM)	0.00386					theta star (KM)	0.00434	
1246					80% gamma percentile (KM)	0.00847					90% gamma percentile (KM)	0.0117	
1247					95% gamma percentile (KM)	0.0149					99% gamma percentile (KM)	0.0222	
1248													
1249	**Gamma Kaplan-Meier (KM) Statistics**												
1250					Approximate Chi Square Value (56.90, α)	40.56					Adjusted Chi Square Value (56.90, β)	39.56	
1251					95% KM Approximate Gamma UCL	0.00753					95% KM Adjusted Gamma UCL	0.00772	
1252													
1253	**Lognormal GOF Test on Detected Observations Only**												
1254					Shapiro Wilk Test Statistic	0.954				**Shapiro Wilk GOF Test**			
1255					10% Shapiro Wilk Critical Value	0.926				Detected Data appear Lognormal at 10% Significance Level			
1256					Lilliefors Test Statistic	0.102				**Lilliefors GOF Test**			
1257					10% Lilliefors Critical Value	0.169				Detected Data appear Lognormal at 10% Significance Level			
1258	**Detected Data appear Lognormal at 10% Significance Level**												
1259													
1260	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1261					Mean in Original Scale	0.00536					Mean in Log Scale	-5.654	
1262					SD in Original Scale	0.00466					SD in Log Scale	1.027	
1263					95% t UCL (assumes normality of ROS data)	0.00703					95% Percentile Bootstrap UCL	0.0069	
1264					95% BCA Bootstrap UCL	0.00709					95% Bootstrap t UCL	0.0074	
1265					95% H-UCL (Log ROS)	0.0104							
1266													
1267	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1268					KM Mean (logged)	-5.643					KM Geo Mean	0.00354	
1269					KM SD (logged)	0.981					95% Critical H Value (KM-Log)	2.501	
1270					KM Standard Error of Mean (logged)	0.209					95% H-UCL (KM -Log)	0.00967	
1271					KM SD (logged)	0.981					95% Critical H Value (KM-Log)	2.501	
1272					KM Standard Error of Mean (logged)	0.209							
1273													
1274	**DL/2 Statistics**												
1275	**DL/2 Normal**						**DL/2 Log-Transformed**						
1276					Mean in Original Scale	0.00535					Mean in Log Scale	-5.673	
1277					SD in Original Scale	0.00467					SD in Log Scale	1.073	
1278					95% t UCL (Assumes normality)	0.00703					95% H-Stat UCL	0.0111	
1279	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1280													
1281	**Nonparametric Distribution Free UCL Statistics**												
1282	**Detected Data appear Approximate Normal Distributed at 1% Significance Level**												
1283													
1284	**Suggested UCL to Use**												
1285					95% KM (t) UCL	0.00703							
1286													
1287	When a data set follows an approximate distribution passing only one of the GOF tests,												
1288	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
1289													
1290	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1291	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1292	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1293													
1294													
1295	**PFOS + PFHxS_Skeleton Creek_Benthic Invertebrate**												
1296													
1297	**General Statistics**												
1298					Total Number of Observations	2					Number of Distinct Observations	2	
1299											Number of Missing Observations	0	
1300					Minimum	0.0058					Mean	0.0149	
1301					Maximum	0.024					Median	0.0149	
1302													
1303	**Warning: This data set only has 2 observations!**												
1304	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
1305	**The data set for variable PFOS + PFHxS_Skeleton Creek_Benthic Invertebrate was not processed!**												
1306													
1307	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
1308	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
1309													
1310													
1311													
1312	**PFOS + PFHxS_Skeleton Creek_Pelagic Invertebrate**												
1313													
1314	**General Statistics**												
1315					Total Number of Observations	10					Number of Distinct Observations	10	
1316											Number of Missing Observations	0	
1317					Minimum	0.003					Mean	0.0195	
1318					Maximum	0.0353					Median	0.02	
1319					SD	0.0102					Std. Error of Mean	0.00321	
1320					Coefficient of Variation	0.52					Skewness	-0.0541	
1321													
1322	**Normal GOF Test**												

1323	Shapiro Wilk Test Statistic				0.982	**Shapiro Wilk GOF Test**							
1324	1% Shapiro Wilk Critical Value				0.781	Data appear Normal at 1% Significance Level							
1325	Lilliefors Test Statistic				0.108	**Lilliefors GOF Test**							
1326	1% Lilliefors Critical Value				0.304	Data appear Normal at 1% Significance Level							
1327	**Data appear Normal at 1% Significance Level**												
1328													
1329	**Assuming Normal Distribution**												
1330	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**							
1331	95% Student's-t UCL				0.0254	95% Adjusted-CLT UCL (Chen-1995)						0.0248	
1332						95% Modified-t UCL (Johnson-1978)						0.0254	
1333													
1334	**Gamma GOF Test**												
1335	A-D Test Statistic				0.321	**Anderson-Darling Gamma GOF Test**							
1336	5% A-D Critical Value				0.733	Detected data appear Gamma Distributed at 5% Significance Level							
1337	K-S Test Statistic				0.181	**Kolmogorov-Smirnov Gamma GOF Test**							
1338	5% K-S Critical Value				0.269	Detected data appear Gamma Distributed at 5% Significance Level							
1339	**Detected data appear Gamma Distributed at 5% Significance Level**												
1340													
1341	**Gamma Statistics**												
1342	k hat (MLE)				2.845	k star (bias corrected MLE)						2.058	
1343	Theta hat (MLE)				0.00687	Theta star (bias corrected MLE)						0.00949	
1344	nu hat (MLE)				56.91	nu star (bias corrected)						41.17	
1345	MLE Mean (bias corrected)				0.0195	MLE Sd (bias corrected)						0.0136	
1346						Approximate Chi Square Value (0.05)						27.46	
1347	Adjusted Level of Significance				0.0267	Adjusted Chi Square Value						25.53	
1348													
1349	**Assuming Gamma Distribution**												
1350	95% Approximate Gamma UCL				0.0293	95% Adjusted Gamma UCL						0.0315	
1351													
1352	**Lognormal GOF Test**												
1353	Shapiro Wilk Test Statistic				0.876	**Shapiro Wilk Lognormal GOF Test**							
1354	10% Shapiro Wilk Critical Value				0.869	Data appear Lognormal at 10% Significance Level							
1355	Lilliefors Test Statistic				0.212	**Lilliefors Lognormal GOF Test**							
1356	10% Lilliefors Critical Value				0.241	Data appear Lognormal at 10% Significance Level							
1357	**Data appear Lognormal at 10% Significance Level**												
1358													
1359	**Lognormal Statistics**												
1360	Minimum of Logged Data				-5.809	Mean of logged Data						-4.121	
1361	Maximum of Logged Data				-3.344	SD of logged Data						0.739	
1362													
1363	**Assuming Lognormal Distribution**												
1364	95% H-UCL				0.0404	90% Chebyshev (MVUE) UCL						0.0356	
1365	95% Chebyshev (MVUE) UCL				0.0424	97.5% Chebyshev (MVUE) UCL						0.0518	
1366	99% Chebyshev (MVUE) UCL				0.0702								
1367													
1368	**Nonparametric Distribution Free UCL Statistics**												
1369	**Data appear to follow a Discernible Distribution**												
1370													
1371	**Nonparametric Distribution Free UCLs**												
1372	95% CLT UCL				0.0248	95% BCA Bootstrap UCL						0.0244	
1373	95% Standard Bootstrap UCL				0.0246	95% Bootstrap-t UCL						0.0256	
1374	95% Hall's Bootstrap UCL				0.0251	95% Percentile Bootstrap UCL						0.0243	
1375	90% Chebyshev(Mean, Sd) UCL				0.0292	95% Chebyshev(Mean, Sd) UCL						0.0335	
1376	97.5% Chebyshev(Mean, Sd) UCL				0.0396	99% Chebyshev(Mean, Sd) UCL						0.0515	
1377													
1378	**Suggested UCL to Use**												
1379	95% Student's-t UCL				0.0254								
1380													
1381	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1382	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1383	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1384													
1385	**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**												
1386	**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**												
1387													
1388													
1389	**PFOS + PFHxS_Skeleton Creek_Predator Fish**												
1390													
1391	**General Statistics**												
1392	Total Number of Observations				12	Number of Distinct Observations						12	
1393						Number of Missing Observations						0	
1394	Minimum				0.0046	Mean						0.428	
1395	Maximum				1.718	Median						0.205	
1396	SD				0.526	Std. Error of Mean						0.152	
1397	Coefficient of Variation				1.229	Skewness						1.857	
1398													
1399	**Normal GOF Test**												
1400	Shapiro Wilk Test Statistic				0.717	**Shapiro Wilk GOF Test**							
1401	1% Shapiro Wilk Critical Value				0.805	Data Not Normal at 1% Significance Level							
1402	Lilliefors Test Statistic				0.339	**Lilliefors GOF Test**							
1403	1% Lilliefors Critical Value				0.281	Data Not Normal at 1% Significance Level							

1404	**Data Not Normal at 1% Significance Level**												
1405													
1406	**Assuming Normal Distribution**												
1407	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**						
1408	95% Student's-t UCL				0.701		95% Adjusted-CLT UCL (Chen-1995)					0.765	
1409							95% Modified-t UCL (Johnson-1978)					0.714	
1410													
1411	**Gamma GOF Test**												
1412	A-D Test Statistic				0.547		**Anderson-Darling Gamma GOF Test**						
1413	5% A-D Critical Value				0.764		Detected data appear Gamma Distributed at 5% Significance Level						
1414	K-S Test Statistic				0.208		**Kolmogorov-Smirnov Gamma GOF Test**						
1415	5% K-S Critical Value				0.254		Detected data appear Gamma Distributed at 5% Significance Level						
1416	**Detected data appear Gamma Distributed at 5% Significance Level**												
1417													
1418	**Gamma Statistics**												
1419	k hat (MLE)				0.808		k star (bias corrected MLE)					0.662	
1420	Theta hat (MLE)				0.53		Theta star (bias corrected MLE)					0.647	
1421	nu hat (MLE)				19.4		nu star (bias corrected)					15.88	
1422	MLE Mean (bias corrected)				0.428		MLE Sd (bias corrected)					0.526	
1423							Approximate Chi Square Value (0.05)					7.879	
1424	Adjusted Level of Significance				0.029		Adjusted Chi Square Value					7.035	
1425													
1426	**Assuming Gamma Distribution**												
1427	95% Approximate Gamma UCL				0.863		95% Adjusted Gamma UCL					0.966	
1428													
1429	**Lognormal GOF Test**												
1430	Shapiro Wilk Test Statistic				0.876		**Shapiro Wilk Lognormal GOF Test**						
1431	10% Shapiro Wilk Critical Value				0.883		Data Not Lognormal at 10% Significance Level						
1432	Lilliefors Test Statistic				0.222		**Lilliefors Lognormal GOF Test**						
1433	10% Lilliefors Critical Value				0.223		Data appear Lognormal at 10% Significance Level						
1434	**Data appear Approximate Lognormal at 10% Significance Level**												
1435													
1436	**Lognormal Statistics**												
1437	Minimum of Logged Data				-5.382		Mean of logged Data					-1.582	
1438	Maximum of Logged Data				0.541		SD of logged Data					1.513	
1439													
1440	**Assuming Lognormal Distribution**												
1441	95% H-UCL				3.86		90% Chebyshev (MVUE) UCL					1.33	
1442	95% Chebyshev (MVUE) UCL				1.685		97.5% Chebyshev (MVUE) UCL					2.177	
1443	99% Chebyshev (MVUE) UCL				3.145								
1444													
1445	**Nonparametric Distribution Free UCL Statistics**												
1446	**Data appear to follow a Discernible Distribution**												
1447													
1448	**Nonparametric Distribution Free UCLs**												
1449	95% CLT UCL				0.678		95% BCA Bootstrap UCL					0.801	
1450	95% Standard Bootstrap UCL				0.672		95% Bootstrap-t UCL					1.132	
1451	95% Hall's Bootstrap UCL				1.644		95% Percentile Bootstrap UCL					0.704	
1452	90% Chebyshev(Mean, Sd) UCL				0.884		95% Chebyshev(Mean, Sd) UCL					1.09	
1453	97.5% Chebyshev(Mean, Sd) UCL				1.376		99% Chebyshev(Mean, Sd) UCL					1.939	
1454													
1455	**Suggested UCL to Use**												
1456	95% Adjusted Gamma UCL				0.966								
1457													
1458	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1459	**Please verify the data were collected from random locations.**												
1460	**If the data were collected using judgmental or other non-random methods,**												
1461	**then contact a statistician to correctly calculate UCLs.**												
1462													
1463	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1464	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1465	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1466													
1467													
1468	**PFOS + PFHxS_Skeleton Creek_Prey Fish**												
1469													
1470	**General Statistics**												
1471	Total Number of Observations				23		Number of Distinct Observations					23	
1472							Number of Missing Observations					0	
1473	Minimum				0.0136		Mean					0.215	
1474	Maximum				1.145		Median					0.149	
1475	SD				0.238		Std. Error of Mean					0.0497	
1476	Coefficient of Variation				1.11		Skewness					2.94	
1477													
1478	**Normal GOF Test**												
1479	Shapiro Wilk Test Statistic				0.687		**Shapiro Wilk GOF Test**						
1480	1% Shapiro Wilk Critical Value				0.881		Data Not Normal at 1% Significance Level						
1481	Lilliefors Test Statistic				0.247		**Lilliefors GOF Test**						
1482	1% Lilliefors Critical Value				0.209		Data Not Normal at 1% Significance Level						
1483	**Data Not Normal at 1% Significance Level**												
1484													

1485	**Assuming Normal Distribution**												
1486	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**						
1487				95% Student's-t UCL		0.3				95% Adjusted-CLT UCL (Chen-1995)		0.329	
1488										95% Modified-t UCL (Johnson-1978)		0.305	
1489													
1490	**Gamma GOF Test**												
1491				A-D Test Statistic		0.288	**Anderson-Darling Gamma GOF Test**						
1492				5% A-D Critical Value		0.765	Detected data appear Gamma Distributed at 5% Significance Level						
1493				K-S Test Statistic		0.129	**Kolmogorov-Smirnov Gamma GOF Test**						
1494				5% K-S Critical Value		0.186	Detected data appear Gamma Distributed at 5% Significance Level						
1495	**Detected data appear Gamma Distributed at 5% Significance Level**												
1496													
1497	**Gamma Statistics**												
1498				k hat (MLE)		1.243	k star (bias corrected MLE)					1.11	
1499				Theta hat (MLE)		0.173	Theta star (bias corrected MLE)					0.194	
1500				nu hat (MLE)		57.19	nu star (bias corrected)					51.06	
1501				MLE Mean (bias corrected)		0.215	MLE Sd (bias corrected)					0.204	
1502							Approximate Chi Square Value (0.05)					35.65	
1503				Adjusted Level of Significance		0.0389	Adjusted Chi Square Value					34.72	
1504													
1505	**Assuming Gamma Distribution**												
1506				95% Approximate Gamma UCL		0.308	95% Adjusted Gamma UCL					0.316	
1507													
1508	**Lognormal GOF Test**												
1509				Shapiro Wilk Test Statistic		0.981	**Shapiro Wilk Lognormal GOF Test**						
1510				10% Shapiro Wilk Critical Value		0.928	Data appear Lognormal at 10% Significance Level						
1511				Lilliefors Test Statistic		0.117	**Lilliefors Lognormal GOF Test**						
1512				10% Lilliefors Critical Value		0.165	Data appear Lognormal at 10% Significance Level						
1513	**Data appear Lognormal at 10% Significance Level**												
1514													
1515	**Lognormal Statistics**												
1516				Minimum of Logged Data		-4.298	Mean of logged Data					-1.991	
1517				Maximum of Logged Data		0.135	SD of logged Data					1.018	
1518													
1519	**Assuming Lognormal Distribution**												
1520				95% H-UCL		0.398	90% Chebyshev (MVUE) UCL					0.382	
1521				95% Chebyshev (MVUE) UCL		0.454	97.5% Chebyshev (MVUE) UCL					0.555	
1522				99% Chebyshev (MVUE) UCL		0.753							
1523													
1524	**Nonparametric Distribution Free UCL Statistics**												
1525	**Data appear to follow a Discernible Distribution**												
1526													
1527	**Nonparametric Distribution Free UCLs**												
1528				95% CLT UCL		0.297	95% BCA Bootstrap UCL					0.344	
1529				95% Standard Bootstrap UCL		0.295	95% Bootstrap-t UCL					0.38	
1530				95% Hall's Bootstrap UCL		0.67	95% Percentile Bootstrap UCL					0.301	
1531				90% Chebyshev(Mean, Sd) UCL		0.364	95% Chebyshev(Mean, Sd) UCL					0.431	
1532				97.5% Chebyshev(Mean, Sd) UCL		0.525	99% Chebyshev(Mean, Sd) UCL					0.709	
1533													
1534	**Suggested UCL to Use**												
1535				95% Adjusted Gamma UCL		0.316							
1536													
1537	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1538	**Please verify the data were collected from random locations.**												
1539	**If the data were collected using judgmental or other non-random methods,**												
1540	**then contact a statistician to correctly calculate UCLs.**												
1541													
1542	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1543	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1544	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1545													
1546	**PFOS_Cheetham Wetlands_Aquatic Vegetation**												
1547													
1548	**General Statistics**												
1549				Total Number of Observations		12	Number of Distinct Observations					10	
1550				Number of Detects		10	Number of Non-Detects					2	
1551				Number of Distinct Detects		9	Number of Distinct Non-Detects					1	
1552				Minimum Detect		0.0012	Minimum Non-Detect					3.0000E-4	
1553				Maximum Detect		0.032	Maximum Non-Detect					3.0000E-4	
1554				Variance Detects		9.6928E-5	Percent Non-Detects					16.67%	
1555				Mean Detects		0.00728	SD Detects					0.00985	
1556				Median Detects		0.0033	CV Detects					1.352	
1557				Skewness Detects		2.207	Kurtosis Detects					4.651	
1558				Mean of Logged Detects		-5.516	SD of Logged Detects					1.065	
1559													
1560	**Normal GOF Test on Detects Only**												
1561				Shapiro Wilk Test Statistic		0.658	**Shapiro Wilk GOF Test**						
1562				1% Shapiro Wilk Critical Value		0.781	Detected Data Not Normal at 1% Significance Level						
1563				Lilliefors Test Statistic		0.364	**Lilliefors GOF Test**						
1564				1% Lilliefors Critical Value		0.304	Detected Data Not Normal at 1% Significance Level						
1565	**Detected Data Not Normal at 1% Significance Level**												

1566													
1567	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
1568					KM Mean	0.00612				KM Standard Error of Mean	0.00271		
1569					90KM SD	0.00891				95% KM (BCA) UCL	0.011		
1570					95% KM (t) UCL	0.011				95% KM (Percentile Bootstrap) UCL	0.0106		
1571					95% KM (z) UCL	0.0106				95% KM Bootstrap t UCL	0.0256		
1572					90% KM Chebyshev UCL	0.0143				95% KM Chebyshev UCL	0.0179		
1573					97.5% KM Chebyshev UCL	0.0231				99% KM Chebyshev UCL	0.0331		
1574													
1575	**Gamma GOF Tests on Detected Observations Only**												
1576					A-D Test Statistic	0.761				**Anderson-Darling GOF Test**			
1577					5% A-D Critical Value	0.749				Detected Data Not Gamma Distributed at 5% Significance Level			
1578					K-S Test Statistic	0.254				**Kolmogorov-Smirnov GOF**			
1579					5% K-S Critical Value	0.274				Detected data appear Gamma Distributed at 5% Significance Level			
1580	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**												
1581													
1582	**Gamma Statistics on Detected Data Only**												
1583					k hat (MLE)	0.976				k star (bias corrected MLE)	0.75		
1584					Theta hat (MLE)	0.00746				Theta star (bias corrected MLE)	0.00971		
1585					nu hat (MLE)	19.52				nu star (bias corrected)	15		
1586					Mean (detects)	0.00728							
1587													
1588	**Gamma ROS Statistics using Imputed Non-Detects**												
1589	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1590	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1591	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1592	This is especially true when the sample size is small.												
1593	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1594					Minimum	0.0012				Mean	0.00773		
1595					Maximum	0.032				Median	0.00415		
1596					SD	0.00897				CV	1.16		
1597					k hat (MLE)	1.134				k star (bias corrected MLE)	0.906		
1598					Theta hat (MLE)	0.00682				Theta star (bias corrected MLE)	0.00853		
1599					nu hat (MLE)	27.22				nu star (bias corrected)	21.75		
1600					Adjusted Level of Significance (β)	0.029							
1601					Approximate Chi Square Value (21.75, α)	12.15				Adjusted Chi Square Value (21.75, β)	11.07		
1602					95% Gamma Approximate UCL	0.0138				95% Gamma Adjusted UCL	0.0152		
1603													
1604	**Estimates of Gamma Parameters using KM Estimates**												
1605					Mean (KM)	0.00612				SD (KM)	0.00891		
1606					Variance (KM)	7.9463E-5				SE of Mean (KM)	0.00271		
1607					k hat (KM)	0.471				k star (KM)	0.409		
1608					nu hat (KM)	11.3				nu star (KM)	9.808		
1609					theta hat (KM)	0.013				theta star (KM)	0.015		
1610					80% gamma percentile (KM)	0.0099				90% gamma percentile (KM)	0.0172		
1611					95% gamma percentile (KM)	0.0252				99% gamma percentile (KM)	0.0453		
1612													
1613	**Gamma Kaplan-Meier (KM) Statistics**												
1614					Approximate Chi Square Value (9.81, α)	3.822				Adjusted Chi Square Value (9.81, β)	3.272		
1615					95% KM Approximate Gamma UCL	0.0157				95% KM Adjusted Gamma UCL	0.0183		
1616													
1617	**Lognormal GOF Test on Detected Observations Only**												
1618					Shapiro Wilk Test Statistic	0.912				**Shapiro Wilk GOF Test**			
1619					10% Shapiro Wilk Critical Value	0.869				Detected Data appear Lognormal at 10% Significance Level			
1620					Lilliefors Test Statistic	0.172				**Lilliefors GOF Test**			
1621					10% Lilliefors Critical Value	0.241				Detected Data appear Lognormal at 10% Significance Level			
1622	**Detected Data appear Lognormal at 10% Significance Level**												
1623													
1624	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1625					Mean in Original Scale	0.00612				Mean in Log Scale	-5.941		
1626					SD in Original Scale	0.00931				SD in Log Scale	1.389		
1627					95% t UCL (assumes normality of ROS data)	0.0109				95% Percentile Bootstrap UCL	0.0108		
1628					95% BCA Bootstrap UCL	0.0128				95% Bootstrap t UCL	0.0262		
1629					95% H-UCL (Log ROS)	0.0321							
1630													
1631	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1632					KM Mean (logged)	-5.948				KM Geo Mean	0.00261		
1633					KM SD (logged)	1.336				95% Critical H Value (KM-Log)	3.561		
1634					KM Standard Error of Mean (logged)	0.407				95% H-UCL (KM -Log)	0.0268		
1635					KM SD (logged)	1.336				95% Critical H Value (KM-Log)	3.561		
1636					KM Standard Error of Mean (logged)	0.407							
1637													
1638	**DL/2 Statistics**												
1639	**DL/2 Normal**									**DL/2 Log-Transformed**			
1640					Mean in Original Scale	0.00609				Mean in Log Scale	-6.064		
1641					SD in Original Scale	0.00933				SD in Log Scale	1.602		
1642					95% t UCL (Assumes normality)	0.0109				95% H-Stat UCL	0.0611		
1643	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1644													
1645	**Nonparametric Distribution Free UCL Statistics**												
1646	**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**												

Suggested UCL to Use			
95% KM Bootstrap t UCL	0.0256	95% Hall's Bootstrap	0.0268

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

When a data set follows an approximate distribution passing only one of the GOF tests,
it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS_Cheetham Wetlands_Benthic Invertebrate

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.0011	Mean	0.0111
Maximum	0.029	Median	0.0057
SD	0.0121	Std. Error of Mean	0.00541
Coefficient of Variation	1.09	Skewness	0.959

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.863	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.686	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.396	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0226	95% Adjusted-CLT UCL (Chen-1995)	0.0225
		95% Modified-t UCL (Johnson-1978)	0.023

Gamma GOF Test

A-D Test Statistic	0.311	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.695	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.227	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.366	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	0.862	k star (bias corrected MLE)	0.478
Theta hat (MLE)	0.0129	Theta star (bias corrected MLE)	0.0232
nu hat (MLE)	8.617	nu star (bias corrected)	4.78
MLE Mean (bias corrected)	0.0111	MLE Sd (bias corrected)	0.0161
		Approximate Chi Square Value (0.05)	1.052
Adjusted Level of Significance	0.0086	Adjusted Chi Square Value	0.477

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.0504	95% Adjusted Gamma UCL	0.111

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.806	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.199	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.319	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-6.812	Mean of logged Data	-5.183
Maximum of Logged Data	-3.54	SD of logged Data	1.426

Assuming Lognormal Distribution

95% H-UCL	1.965	90% Chebyshev (MVUE) UCL	0.0318
95% Chebyshev (MVUE) UCL	0.041	97.5% Chebyshev (MVUE) UCL	0.0537
99% Chebyshev (MVUE) UCL	0.0786		

Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.02	95% BCA Bootstrap UCL	0.0212
95% Standard Bootstrap UCL	0.0191	95% Bootstrap-t UCL	0.0525
95% Hall's Bootstrap UCL	0.11	95% Percentile Bootstrap UCL	0.019
90% Chebyshev(Mean, Sd) UCL	0.0273	95% Chebyshev(Mean, Sd) UCL	0.0347
97.5% Chebyshev(Mean, Sd) UCL	0.0449	99% Chebyshev(Mean, Sd) UCL	0.0649
Suggested UCL to Use			
95% Student's-t UCL	0.0226		

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS_Cheetham Wetlands_Pelagic Invertebrate

General Statistics			
Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	9.0000E-4	Mean	0.00936
Maximum	0.033	Median	0.0072
SD	0.0111	Std. Error of Mean	0.00418
Coefficient of Variation	1.183	Skewness	2.045

Note: Sample size is small (e.g., <10), If data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test			
Shapiro Wilk Test Statistic	0.746	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.73	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.35	Data appear Normal at 1% Significance Level	
Data appear Normal at 1% Significance Level			
Note GOF tests may be unreliable for small sample sizes			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0175	95% Adjusted-CLT UCL (Chen-1995)	0.0197
		95% Modified-t UCL (Johnson-1978)	0.018

Gamma GOF Test			
A-D Test Statistic	0.313	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.728	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.201	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.32	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Note GOF tests may be unreliable for small sample sizes			

Gamma Statistics			
k hat (MLE)	0.999	k star (bias corrected MLE)	0.666
Theta hat (MLE)	0.00937	Theta star (bias corrected MLE)	0.014
nu hat (MLE)	13.99	nu star (bias corrected)	9.326
MLE Mean (bias corrected)	0.00936	MLE Sd (bias corrected)	0.0115
		Approximate Chi Square Value (0.05)	3.525
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	2.537
Assuming Gamma Distribution			
95% Approximate Gamma UCL	0.0248	95% Adjusted Gamma UCL	0.0344

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.964	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.838	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.174	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.28	Data appear Lognormal at 10% Significance Level	
Data appear Lognormal at 10% Significance Level			
Note GOF tests may be unreliable for small sample sizes			
Lognormal Statistics			

1809	Minimum of Logged Data				-7.013				Mean of logged Data		-5.249		
1810	Maximum of Logged Data				-3.411				SD of logged Data		1.21		
1811													
1812	**Assuming Lognormal Distribution**												
1813	95% H-UCL				0.0916				90% Chebyshev (MVUE) UCL		0.0223		
1814	95% Chebyshev (MVUE) UCL				0.0281				97.5% Chebyshev (MVUE) UCL		0.0362		
1815	99% Chebyshev (MVUE) UCL				0.0521								
1816													
1817	**Nonparametric Distribution Free UCL Statistics**												
1818	**Data appear to follow a Discernible Distribution**												
1819													
1820	**Nonparametric Distribution Free UCLs**												
1821	95% CLT UCL				0.0162				95% BCA Bootstrap UCL		0.0191		
1822	95% Standard Bootstrap UCL				0.0158				95% Bootstrap-t UCL		0.0274		
1823	95% Hall's Bootstrap UCL				0.0429				95% Percentile Bootstrap UCL		0.0164		
1824	90% Chebyshev(Mean, Sd) UCL				0.0219				95% Chebyshev(Mean, Sd) UCL		0.0276		
1825	97.5% Chebyshev(Mean, Sd) UCL				0.0355				99% Chebyshev(Mean, Sd) UCL		0.051		
1826													
1827	**Suggested UCL to Use**												
1828	95% Student's-t UCL				0.0175								
1829													
1830	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1831	**Please verify the data were collected from random locations.**												
1832	**If the data were collected using judgmental or other non-random methods,**												
1833	**then contact a statistician to correctly calculate UCLs.**												
1834													
1835	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1836	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1837	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1838													
1839													
1840	**PFOS_Cheetham Wetlands_Predator Fish**												
1841													
1842	**General Statistics**												
1843	Total Number of Observations				3				Number of Distinct Observations		3		
1844									Number of Missing Observations		0		
1845	Minimum				0.014				Mean		0.0247		
1846	Maximum				0.043				Median		0.017		
1847	SD				0.0159				Std. Error of Mean		0.00921		
1848	Coefficient of Variation				0.647				Skewness		1.663		
1849													
1850	**Note: Sample size is small (e.g., <10), if data are collected using Incremental sampling methodology (ISM) approach,**												
1851	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
1852	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
1853	**The Chebyshev UCL often results in gross overestimates of the mean.**												
1854	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
1855													
1856	**Normal GOF Test**												
1857	Shapiro Wilk Test Statistic				0.827				**Shapiro Wilk GOF Test**				
1858	1% Shapiro Wilk Critical Value				0.753				Data appear Normal at 1% Significance Level				
1859	Lilliefors Test Statistic				0.351				**Lilliefors GOF Test**				
1860	1% Lilliefors Critical Value				0.429				Data appear Normal at 1% Significance Level				
1861	**Data appear Normal at 1% Significance Level**												
1862	**Note GOF tests may be unreliable for small sample sizes**												
1863													
1864	**Assuming Normal Distribution**												
1865	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**				
1866	95% Student's-t UCL				0.0516				95% Adjusted-CLT UCL (Chen-1995)		0.0493		
1867									95% Modified-t UCL (Johnson-1978)		0.053		
1868													
1869	**Gamma GOF Test**												
1870	A-D Test Statistic				0.452				**Anderson-Darling Gamma GOF Test**				
1871	5% A-D Critical Value				0.637				Detected data appear Gamma Distributed at 5% Significance Level				
1872	K-S Test Statistic				0.371				**Kolmogorov-Smirnov Gamma GOF Test**				
1873	5% K-S Critical Value				0.434				Detected data appear Gamma Distributed at 5% Significance Level				
1874	**Data Not Gamma Distributed at 5% Significance Level**												
1875													
1876	**Gamma Statistics**												
1877	k hat (MLE)				4.077				k star (bias corrected MLE)		N/A		
1878	Theta hat (MLE)				0.00605				Theta star (bias corrected MLE)		N/A		
1879	nu hat (MLE)				24.46				nu star (bias corrected)		N/A		
1880	MLE Mean (bias corrected)				N/A				MLE Sd (bias corrected)		N/A		
1881									Approximate Chi Square Value (0.05)		N/A		
1882	Adjusted Level of Significance				N/A				Adjusted Chi Square Value		N/A		
1883													
1884	**Assuming Gamma Distribution**												
1885	95% Approximate Gamma UCL				N/A				95% Adjusted Gamma UCL		N/A		
1886													
1887	**Lognormal GOF Test**												
1888	Shapiro Wilk Test Statistic				0.875				**Shapiro Wilk Lognormal GOF Test**				
1889	10% Shapiro Wilk Critical Value				0.789				Data appear Lognormal at 10% Significance Level				

1890					Lilliefors Test Statistic	0.325			**Lilliefors Lognormal GOF Test**				
1891					10% Lilliefors Critical Value	0.389			Data appear Lognormal at 10% Significance Level				
1892					**Data appear Lognormal at 10% Significance Level**								
1893					**Note GOF tests may be unreliable for small sample sizes**								
1894													
1895					**Lognormal Statistics**								
1896					Minimum of Logged Data	-4.269			Mean of logged Data	-3.83			
1897					Maximum of Logged Data	-3.147			SD of logged Data	0.6			
1898													
1899					**Assuming Lognormal Distribution**								
1900					95% H-UCL	0.711			90% Chebyshev (MVUE) UCL	0.0487			
1901					95% Chebyshev (MVUE) UCL	0.0597			97.5% Chebyshev (MVUE) UCL	0.0749			
1902					99% Chebyshev (MVUE) UCL	0.105							
1903													
1904					**Nonparametric Distribution Free UCL Statistics**								
1905					**Data appear to follow a Discernible Distribution**								
1906													
1907					**Nonparametric Distribution Free UCLs**								
1908					95% CLT UCL	0.0398			95% BCA Bootstrap UCL	N/A			
1909					95% Standard Bootstrap UCL	N/A			95% Bootstrap-t UCL	N/A			
1910					95% Hall's Bootstrap UCL	N/A			95% Percentile Bootstrap UCL	N/A			
1911					90% Chebyshev(Mean, Sd) UCL	0.0523			95% Chebyshev(Mean, Sd) UCL	0.0648			
1912					97.5% Chebyshev(Mean, Sd) UCL	0.0822			99% Chebyshev(Mean, Sd) UCL	0.116			
1913													
1914					**Suggested UCL to Use**								
1915					95% Student's-t UCL	0.0516							
1916					**Recommended UCL exceeds the maximum observation**								
1917													
1918					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
1919					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
1920					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
1921													
1922													
1923	**PFOS_Cheetham Wetlands_Prey Fish**												
1924													
1925					**General Statistics**								
1926					Total Number of Observations	9			Number of Distinct Observations	9			
1927									Number of Missing Observations	0			
1928					Minimum	0.0015			Mean	0.0111			
1929					Maximum	0.034			Median	0.0041			
1930					SD	0.0119			Std. Error of Mean	0.00397			
1931					Coefficient of Variation	1.076			Skewness	1.144			
1932													
1933					**Note: Sample size is small (e.g., <10), If data are collected using Incremental sampling methodology (ISM) approach,**								
1934					**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**								
1935					**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**								
1936					**The Chebyshev UCL often results in gross overestimates of the mean.**								
1937					**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**								
1938													
1939					**Normal GOF Test**								
1940					Shapiro Wilk Test Statistic	0.812			**Shapiro Wilk GOF Test**				
1941					1% Shapiro Wilk Critical Value	0.764			Data appear Normal at 1% Significance Level				
1942					Lilliefors Test Statistic	0.276			**Lilliefors GOF Test**				
1943					1% Lilliefors Critical Value	0.316			Data appear Normal at 1% Significance Level				
1944					**Data appear Normal at 1% Significance Level**								
1945					**Note GOF tests may be unreliable for small sample sizes**								
1946													
1947					**Assuming Normal Distribution**								
1948					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**				
1949					95% Student's-t UCL	0.0184			95% Adjusted-CLT UCL (Chen-1995)	0.0192			
1950									95% Modified-t UCL (Johnson-1978)	0.0187			
1951													
1952					**Gamma GOF Test**								
1953					A-D Test Statistic	0.496			**Anderson-Darling Gamma GOF Test**				
1954					5% A-D Critical Value	0.744			Detected data appear Gamma Distributed at 5% Significance Level				
1955					K-S Test Statistic	0.242			**Kolmogorov-Smirnov Gamma GOF Test**				
1956					5% K-S Critical Value	0.287			Detected data appear Gamma Distributed at 5% Significance Level				
1957					**Detected data appear Gamma Distributed at 5% Significance Level**								
1958					**Note GOF tests may be unreliable for small sample sizes**								
1959													
1960					**Gamma Statistics**								
1961					k hat (MLE)	0.983			k star (bias corrected MLE)	0.729			
1962					Theta hat (MLE)	0.0112			Theta star (bias corrected MLE)	0.0152			
1963					nu hat (MLE)	17.69			nu star (bias corrected)	13.13			
1964					MLE Mean (bias corrected)	0.0111			MLE Sd (bias corrected)	0.0129			
1965									Approximate Chi Square Value (0.05)	5.978			
1966					Adjusted Level of Significance	0.0231			Adjusted Chi Square Value	4.998			
1967													
1968					**Assuming Gamma Distribution**								
1969					95% Approximate Gamma UCL	0.0243			95% Adjusted Gamma UCL	0.029			
1970													

	A	B	C	D	E	F	G	H	I	J	K	L	M
1971	**Lognormal GOF Test**												
1972					Shapiro Wilk Test Statistic	0.907			**Shapiro Wilk Lognormal GOF Test**				
1973					10% Shapiro Wilk Critical Value	0.859			Data appear Lognormal at 10% Significance Level				
1974					Lilliefors Test Statistic	0.189			**Lilliefors Lognormal GOF Test**				
1975					10% Lilliefors Critical Value	0.252			Data appear Lognormal at 10% Significance Level				
1976	**Data appear Lognormal at 10% Significance Level**												
1977	**Note GOF tests may be unreliable for small sample sizes**												
1978													
1979	**Lognormal Statistics**												
1980					Minimum of Logged Data	-6.502				Mean of logged Data		-5.093	
1981					Maximum of Logged Data	-3.381				SD of logged Data		1.185	
1982													
1983	**Assuming Lognormal Distribution**												
1984					95% H-UCL	0.0575				90% Chebyshev (MVUE) UCL		0.0247	
1985					95% Chebyshev (MVUE) UCL	0.0309				97.5% Chebyshev (MVUE) UCL		0.0394	
1986					99% Chebyshev (MVUE) UCL	0.0562							
1987													
1988	**Nonparametric Distribution Free UCL Statistics**												
1989	**Data appear to follow a Discernible Distribution**												
1990													
1991	**Nonparametric Distribution Free UCLs**												
1992					95% CLT UCL	0.0176				95% BCA Bootstrap UCL		0.0188	
1993					95% Standard Bootstrap UCL	0.0172				95% Bootstrap-t UCL		0.0212	
1994					95% Hall's Bootstrap UCL	0.0183				95% Percentile Bootstrap UCL		0.0177	
1995					90% Chebyshev(Mean, Sd) UCL	0.023				95% Chebyshev(Mean, Sd) UCL		0.0283	
1996					97.5% Chebyshev(Mean, Sd) UCL	0.0358				99% Chebyshev(Mean, Sd) UCL		0.0505	
1997													
1998	**Suggested UCL to Use**												
1999					95% Student's-t UCL	0.0184							
2000													
2001	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
2002	**Please verify the data were collected from random locations.**												
2003	**If the data were collected using judgmental or other non-random methods,**												
2004	**then contact a statistician to correctly calculate UCLs.**												
2005													
2006	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
2007	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
2008	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
2009													
2010													
2011	**PFOS_Laverton RAAF Swamp_Aquatic Vegetation**												
2012													
2013	**General Statistics**												
2014					Total Number of Observations	10				Number of Distinct Observations		10	
2015										Number of Missing Observations		0	
2016					Minimum	7.0000E-4				Mean		0.0083	
2017					Maximum	0.026				Median		0.0049	
2018					SD	0.00796				Std. Error of Mean		0.00252	
2019					Coefficient of Variation	0.959				Skewness		1.34	
2020													
2021	**Normal GOF Test**												
2022					Shapiro Wilk Test Statistic	0.851			**Shapiro Wilk GOF Test**				
2023					1% Shapiro Wilk Critical Value	0.781			Data appear Normal at 1% Significance Level				
2024					Lilliefors Test Statistic	0.252			**Lilliefors GOF Test**				
2025					1% Lilliefors Critical Value	0.304			Data appear Normal at 1% Significance Level				
2026	**Data appear Normal at 1% Significance Level**												
2027													
2028	**Assuming Normal Distribution**												
2029	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**				
2030					95% Student's-t UCL	0.0129				95% Adjusted-CLT UCL (Chen-1995)		0.0136	
2031										95% Modified-t UCL (Johnson-1978)		0.0131	
2032													
2033	**Gamma GOF Test**												
2034					A-D Test Statistic	0.259			**Anderson-Darling Gamma GOF Test**				
2035					5% A-D Critical Value	0.745			Detected data appear Gamma Distributed at 5% Significance Level				
2036					K-S Test Statistic	0.164			**Kolmogorov-Smirnov Gamma GOF Test**				
2037					5% K-S Critical Value	0.273			Detected data appear Gamma Distributed at 5% Significance Level				
2038	**Detected data appear Gamma Distributed at 5% Significance Level**												
2039													
2040	**Gamma Statistics**												
2041					k hat (MLE)	1.206				k star (bias corrected MLE)		0.911	
2042					Theta hat (MLE)	0.00688				Theta star (bias corrected MLE)		0.00911	
2043					nu hat (MLE)	24.12				nu star (bias corrected)		18.21	
2044					MLE Mean (bias corrected)	0.0083				MLE Sd (bias corrected)		0.0087	
2045										Approximate Chi Square Value (0.05)		9.546	
2046					Adjusted Level of Significance	0.0267				Adjusted Chi Square Value		8.477	
2047													
2048	**Assuming Gamma Distribution**												
2049					95% Approximate Gamma UCL	0.0158				95% Adjusted Gamma UCL		0.0178	
2050													
2051	**Lognormal GOF Test**												

2052	Shapiro Wilk Test Statistic				0.968	**Shapiro Wilk Lognormal GOF Test**							
2053	10% Shapiro Wilk Critical Value				0.869	Data appear Lognormal at 10% Significance Level							
2054	Lilliefors Test Statistic				0.153	**Lilliefors Lognormal GOF Test**							
2055	10% Lilliefors Critical Value				0.241	Data appear Lognormal at 10% Significance Level							
2056	**Data appear Lognormal at 10% Significance Level**												
2057													
2058	**Lognormal Statistics**												
2059	Minimum of Logged Data				-7.264	Mean of logged Data					-5.26		
2060	Maximum of Logged Data				-3.65	SD of logged Data					1.097		
2061													
2062	**Assuming Lognormal Distribution**												
2063	95% H-UCL				0.0318	90% Chebyshev (MVUE) UCL					0.0183		
2064	95% Chebyshev (MVUE) UCL				0.0226	97.5% Chebyshev (MVUE) UCL					0.0286		
2065	99% Chebyshev (MVUE) UCL				0.0404								
2066													
2067	**Nonparametric Distribution Free UCL Statistics**												
2068	**Data appear to follow a Discernible Distribution**												
2069													
2070	**Nonparametric Distribution Free UCLs**												
2071	95% CLT UCL				0.0124	95% BCA Bootstrap UCL					0.013		
2072	95% Standard Bootstrap UCL				0.0122	95% Bootstrap-t UCL					0.0151		
2073	95% Hall's Bootstrap UCL				0.014	95% Percentile Bootstrap UCL					0.0123		
2074	90% Chebyshev(Mean, Sd) UCL				0.0158	95% Chebyshev(Mean, Sd) UCL					0.0193		
2075	97.5% Chebyshev(Mean, Sd) UCL				0.024	99% Chebyshev(Mean, Sd) UCL					0.0333		
2076													
2077	**Suggested UCL to Use**												
2078	95% Student's-t UCL				0.0129								
2079													
2080	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
2081	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
2082	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
2083													
2084													
2085	**PFOS_Laverton RAAF Swamp_Benthic Invertebrate**												
2086													
2087	**General Statistics**												
2088	Total Number of Observations				4	Number of Distinct Observations					4		
2089						Number of Missing Observations					0		
2090	Minimum				0.014	Mean					0.0255		
2091	Maximum				0.043	Median					0.0225		
2092	SD				0.0134	Std. Error of Mean					0.00671		
2093	Coefficient of Variation				0.527	Skewness					0.832		
2094													
2095	**Note: Sample size is small (e.g., <10), If data are collected using Incremental sampling methodology (ISM) approach,**												
2096	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
2097	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
2098	**The Chebyshev UCL often results in gross overestimates of the mean.**												
2099	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
2100													
2101	**Normal GOF Test**												
2102	Shapiro Wilk Test Statistic				0.904	**Shapiro Wilk GOF Test**							
2103	1% Shapiro Wilk Critical Value				0.687	Data appear Normal at 1% Significance Level							
2104	Lilliefors Test Statistic				0.26	**Lilliefors GOF Test**							
2105	1% Lilliefors Critical Value				0.413	Data appear Normal at 1% Significance Level							
2106	**Data appear Normal at 1% Significance Level**												
2107	**Note GOF tests may be unreliable for small sample sizes**												
2108													
2109	**Assuming Normal Distribution**												
2110	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**							
2111	95% Student's-t UCL				0.0413	95% Adjusted-CLT UCL (Chen-1995)					0.0395		
2112						95% Modified-t UCL (Johnson-1978)					0.0418		
2113													
2114	**Gamma GOF Test**												
2115	A-D Test Statistic				0.337	**Anderson-Darling Gamma GOF Test**							
2116	5% A-D Critical Value				0.659	Detected data appear Gamma Distributed at 5% Significance Level							
2117	K-S Test Statistic				0.291	**Kolmogorov-Smirnov Gamma GOF Test**							
2118	5% K-S Critical Value				0.396	Detected data appear Gamma Distributed at 5% Significance Level							
2119	**Detected data appear Gamma Distributed at 5% Significance Level**												
2120	**Note GOF tests may be unreliable for small sample sizes**												
2121													
2122	**Gamma Statistics**												
2123	k hat (MLE)				4.985	k star (bias corrected MLE)					1.413		
2124	Theta hat (MLE)				0.00512	Theta star (bias corrected MLE)					0.018		
2125	nu hat (MLE)				39.88	nu star (bias corrected)					11.3		
2126	MLE Mean (bias corrected)				0.0255	MLE Sd (bias corrected)					0.0215		
2127						Approximate Chi Square Value (0.05)					4.772		
2128	Adjusted Level of Significance				N/A	Adjusted Chi Square Value					N/A		
2129													
2130	**Assuming Gamma Distribution**												
2131	95% Approximate Gamma UCL				0.0604	95% Adjusted Gamma UCL					N/A		
2132													

2133	**Lognormal GOF Test**												
2134					Shapiro Wilk Test Statistic	0.921			**Shapiro Wilk Lognormal GOF Test**				
2135					10% Shapiro Wilk Critical Value	0.792			Data appear Lognormal at 10% Significance Level				
2136					Lilliefors Test Statistic	0.255			**Lilliefors Lognormal GOF Test**				
2137					10% Lilliefors Critical Value	0.346			Data appear Lognormal at 10% Significance Level				
2138	**Data appear Lognormal at 10% Significance Level**												
2139	**Note GOF tests may be unreliable for small sample sizes**												
2140													
2141	**Lognormal Statistics**												
2142					Minimum of Logged Data	-4.269			Mean of logged Data	-3.773			
2143					Maximum of Logged Data	-3.147			SD of logged Data	0.524			
2144													
2145	**Assuming Lognormal Distribution**												
2146					95% H-UCL	0.0828			90% Chebyshev (MVUE) UCL	0.045			
2147					95% Chebyshev (MVUE) UCL	0.0539			97.5% Chebyshev (MVUE) UCL	0.0662			
2148					99% Chebyshev (MVUE) UCL	0.0904							
2149													
2150	**Nonparametric Distribution Free UCL Statistics**												
2151	**Data appear to follow a Discernible Distribution**												
2152													
2153	**Nonparametric Distribution Free UCLs**												
2154					95% CLT UCL	0.0365			95% BCA Bootstrap UCL	N/A			
2155					95% Standard Bootstrap UCL	N/A			95% Bootstrap-t UCL	N/A			
2156					95% Hall's Bootstrap UCL	N/A			95% Percentile Bootstrap UCL	N/A			
2157					90% Chebyshev(Mean, Sd) UCL	0.0456			95% Chebyshev(Mean, Sd) UCL	0.0548			
2158					97.5% Chebyshev(Mean, Sd) UCL	0.0674			99% Chebyshev(Mean, Sd) UCL	0.0923			
2159													
2160	**Suggested UCL to Use**												
2161					95% Student's-t UCL	0.0413							
2162													
2163	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
2164	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
2165	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
2166													
2167													
2168	**PFOS_Laverton RAAF Swamp_Pelagic Invertebrate**												
2169													
2170	**General Statistics**												
2171					Total Number of Observations	2			Number of Distinct Observations	2			
2172									Number of Missing Observations	0			
2173					Minimum	0.051			Mean	0.106			
2174					Maximum	0.16			Median	0.106			
2175													
2176	**Warning: This data set only has 2 observations!**												
2177	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
2178	**The data set for variable PFOS_Laverton RAAF Swamp_Pelagic Invertebrate was not processed!**												
2179													
2180	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
2181	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
2182													
2183													
2184													
2185	**PFOS_Laverton RAAF Swamp_Prey Fish**												
2186													
2187	**General Statistics**												
2188					Total Number of Observations	10			Number of Distinct Observations	7			
2189									Number of Missing Observations	0			
2190					Minimum	0.66			Mean	0.969			
2191					Maximum	1.2			Median	1			
2192					SD	0.183			Std. Error of Mean	0.0579			
2193					Coefficient of Variation	0.189			Skewness	-0.48			
2194													
2195	**Normal GOF Test**												
2196					Shapiro Wilk Test Statistic	0.923			**Shapiro Wilk GOF Test**				
2197					1% Shapiro Wilk Critical Value	0.781			Data appear Normal at 1% Significance Level				
2198					Lilliefors Test Statistic	0.18			**Lilliefors GOF Test**				
2199					1% Lilliefors Critical Value	0.304			Data appear Normal at 1% Significance Level				
2200	**Data appear Normal at 1% Significance Level**												
2201													
2202	**Assuming Normal Distribution**												
2203	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**				
2204					95% Student's-t UCL	1.075			95% Adjusted-CLT UCL (Chen-1995)	1.055			
2205									95% Modified-t UCL (Johnson-1978)	1.074			
2206													
2207	**Gamma GOF Test**												
2208					A-D Test Statistic	0.448			**Anderson-Darling Gamma GOF Test**				
2209					5% A-D Critical Value	0.725			Detected data appear Gamma Distributed at 5% Significance Level				
2210					K-S Test Statistic	0.205			**Kolmogorov-Smirnov Gamma GOF Test**				
2211					5% K-S Critical Value	0.266			Detected data appear Gamma Distributed at 5% Significance Level				
2212	**Detected data appear Gamma Distributed at 5% Significance Level**												
2213													

2214						**Gamma Statistics**							
2215					k hat (MLE)	28.77				k star (bias corrected MLE)		20.21	
2216					Theta hat (MLE)	0.0337				Theta star (bias corrected MLE)		0.048	
2217					nu hat (MLE)	575.4				nu star (bias corrected)		404.1	
2218					MLE Mean (bias corrected)	0.969				MLE Sd (bias corrected)		0.216	
2219										Approximate Chi Square Value (0.05)		358.5	
2220					Adjusted Level of Significance	0.0267				Adjusted Chi Square Value		351.1	
2221													
2222						**Assuming Gamma Distribution**							
2223					95% Approximate Gamma UCL	1.092				95% Adjusted Gamma UCL		1.115	
2224													
2225						**Lognormal GOF Test**							
2226					Shapiro Wilk Test Statistic	0.899				**Shapiro Wilk Lognormal GOF Test**			
2227					10% Shapiro Wilk Critical Value	0.869				Data appear Lognormal at 10% Significance Level			
2228					Lilliefors Test Statistic	0.216				**Lilliefors Lognormal GOF Test**			
2229					10% Lilliefors Critical Value	0.241				Data appear Lognormal at 10% Significance Level			
2230						**Data appear Lognormal at 10% Significance Level**							
2231													
2232						**Lognormal Statistics**							
2233					Minimum of Logged Data	-0.416				Mean of logged Data		-0.049	
2234					Maximum of Logged Data	0.182				SD of logged Data		0.202	
2235													
2236						**Assuming Lognormal Distribution**							
2237					95% H-UCL	1.103				90% Chebyshev (MVUE) UCL		1.156	
2238					95% Chebyshev (MVUE) UCL	1.24				97.5% Chebyshev (MVUE) UCL		1.357	
2239					99% Chebyshev (MVUE) UCL	1.587							
2240													
2241						**Nonparametric Distribution Free UCL Statistics**								
2242						**Data appear to follow a Discernible Distribution**								
2243													
2244						**Nonparametric Distribution Free UCLs**								
2245					95% CLT UCL	1.064				95% BCA Bootstrap UCL		1.057	
2246					95% Standard Bootstrap UCL	1.059				95% Bootstrap-t UCL		1.065	
2247					95% Hall's Bootstrap UCL	1.058				95% Percentile Bootstrap UCL		1.057	
2248					90% Chebyshev(Mean, Sd) UCL	1.143				95% Chebyshev(Mean, Sd) UCL		1.221	
2249					97.5% Chebyshev(Mean, Sd) UCL	1.33				99% Chebyshev(Mean, Sd) UCL		1.545	
2250													
2251						**Suggested UCL to Use**								
2252					95% Student's-t UCL	1.075							
2253													
2254						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
2255						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
2256						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
2257													
2258						**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**								
2259						**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**								
2260													
2261													
2262	**PFOS_Sanctuary Lakes_Aquatic Vegetation**												
2263													
2264						**General Statistics**							
2265					Total Number of Observations	13				Number of Distinct Observations		11	
2266										Number of Missing Observations		0	
2267					Minimum	8.0000E-4				Mean		0.0047	
2268					Maximum	0.017				Median		0.0023	
2269					SD	0.00511				Std. Error of Mean		0.00142	
2270					Coefficient of Variation	1.088				Skewness		1.576	
2271													
2272						**Normal GOF Test**							
2273					Shapiro Wilk Test Statistic	0.751				**Shapiro Wilk GOF Test**			
2274					1% Shapiro Wilk Critical Value	0.814				Data Not Normal at 1% Significance Level			
2275					Lilliefors Test Statistic	0.289				**Lilliefors GOF Test**			
2276					1% Lilliefors Critical Value	0.271				Data Not Normal at 1% Significance Level			
2277						**Data Not Normal at 1% Significance Level**								
2278													
2279						**Assuming Normal Distribution**								
2280						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
2281					95% Student's-t UCL	0.00723				95% Adjusted-CLT UCL (Chen-1995)		0.0077	
2282										95% Modified-t UCL (Johnson-1978)		0.00733	
2283													
2284						**Gamma GOF Test**							
2285					A-D Test Statistic	0.816				**Anderson-Darling Gamma GOF Test**			
2286					5% A-D Critical Value	0.755				Data Not Gamma Distributed at 5% Significance Level			
2287					K-S Test Statistic	0.248				**Kolmogorov-Smirnov Gamma GOF Test**			
2288					5% K-S Critical Value	0.242				Data Not Gamma Distributed at 5% Significance Level			
2289						**Data Not Gamma Distributed at 5% Significance Level**								
2290													
2291						**Gamma Statistics**							
2292					k hat (MLE)	1.192				k star (bias corrected MLE)		0.968	
2293					Theta hat (MLE)	0.00394				Theta star (bias corrected MLE)		0.00486	
2294					nu hat (MLE)	30.98				nu star (bias corrected)		25.17	

2295					MLE Mean (bias corrected)	0.0047					MLE Sd (bias corrected)		0.00478	
2296											Approximate Chi Square Value (0.05)		14.74	
2297					Adjusted Level of Significance	0.0301					Adjusted Chi Square Value		13.61	
2298														
2299					**Assuming Gamma Distribution**									
2300					95% Approximate Gamma UCL	0.00803					95% Adjusted Gamma UCL		0.00869	
2301														
2302					**Lognormal GOF Test**									
2303					Shapiro Wilk Test Statistic	0.914					**Shapiro Wilk Lognormal GOF Test**			
2304					10% Shapiro Wilk Critical Value	0.889					Data appear Lognormal at 10% Significance Level			
2305					Lilliefors Test Statistic	0.195					**Lilliefors Lognormal GOF Test**			
2306					10% Lilliefors Critical Value	0.215					Data appear Lognormal at 10% Significance Level			
2307					**Data appear Lognormal at 10% Significance Level**									
2308														
2309					**Lognormal Statistics**									
2310					Minimum of Logged Data	-7.131					Mean of logged Data		-5.835	
2311					Maximum of Logged Data	-4.075					SD of logged Data		0.981	
2312														
2313					**Assuming Lognormal Distribution**									
2314					95% H-UCL	0.0105					90% Chebyshev (MVUE) UCL		0.00845	
2315					95% Chebyshev (MVUE) UCL	0.0102					97.5% Chebyshev (MVUE) UCL		0.0127	
2316					99% Chebyshev (MVUE) UCL	0.0176								
2317														
2318					**Nonparametric Distribution Free UCL Statistics**									
2319					**Data appear to follow a Discernible Distribution**									
2320														
2321					**Nonparametric Distribution Free UCLs**									
2322					95% CLT UCL	0.00703					95% BCA Bootstrap UCL		0.00762	
2323					95% Standard Bootstrap UCL	0.00699					95% Bootstrap-t UCL		0.00897	
2324					95% Hall's Bootstrap UCL	0.00754					95% Percentile Bootstrap UCL		0.00722	
2325					90% Chebyshev(Mean, Sd) UCL	0.00896					95% Chebyshev(Mean, Sd) UCL		0.0109	
2326					97.5% Chebyshev(Mean, Sd) UCL	0.0136					99% Chebyshev(Mean, Sd) UCL		0.0188	
2327														
2328					**Suggested UCL to Use**									
2329					95% H-UCL	0.0105								
2330														
2331					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**									
2332					**Please verify the data were collected from random locations.**									
2333					**If the data were collected using judgmental or other non-random methods,**									
2334					**then contact a statistician to correctly calculate UCLs.**									
2335														
2336					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
2337					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
2338					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
2339														
2340														
2341	**PFOS_Sanctuary Lakes_Benthic Invertebrate**													
2342														
2343					**General Statistics**									
2344					Total Number of Observations	3					Number of Distinct Observations		3	
2345											Number of Missing Observations		0	
2346					Minimum	0.0058					Mean		0.0159	
2347					Maximum	0.025					Median		0.017	
2348					SD	0.00964					Std. Error of Mean		0.00557	
2349					Coefficient of Variation	0.605					Skewness		-0.492	
2350														
2351					**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**									
2352					**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**									
2353					**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**									
2354					**The Chebyshev UCL often results in gross overestimates of the mean.**									
2355					**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**									
2356														
2357					**Normal GOF Test**									
2358					Shapiro Wilk Test Statistic	0.991					**Shapiro Wilk GOF Test**			
2359					1% Shapiro Wilk Critical Value	0.753					Data appear Normal at 1% Significance Level			
2360					Lilliefors Test Statistic	0.211					**Lilliefors GOF Test**			
2361					1% Lilliefors Critical Value	0.429					Data appear Normal at 1% Significance Level			
2362					**Data appear Normal at 1% Significance Level**									
2363					**Note GOF tests may be unreliable for small sample sizes**									
2364														
2365					**Assuming Normal Distribution**									
2366					**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**			
2367					95% Student's-t UCL	0.0322					95% Adjusted-CLT UCL (Chen-1995)		0.0234	
2368											95% Modified-t UCL (Johnson-1978)		0.0319	
2369														
2370					**Gamma GOF Test**									
2371					A-D Test Statistic	0.31					**Anderson-Darling Gamma GOF Test**			
2372					5% A-D Critical Value	0.636					Detected data appear Gamma Distributed at 5% Significance Level			
2373					K-S Test Statistic	0.286					**Kolmogorov-Smirnov Gamma GOF Test**			
2374					5% K-S Critical Value	0.434					Detected data appear Gamma Distributed at 5% Significance Level			
2375					**Data Not Gamma Distributed at 5% Significance Level**									

2376													
2377						**Gamma Statistics**							
2378					k hat (MLE)	3.185				k star (bias corrected MLE)	N/A		
2379					Theta hat (MLE)	0.005				Theta star (bias corrected MLE)	N/A		
2380					nu hat (MLE)	19.11				nu star (bias corrected)	N/A		
2381					MLE Mean (bias corrected)	N/A				MLE Sd (bias corrected)	N/A		
2382										Approximate Chi Square Value (0.05)	N/A		
2383					Adjusted Level of Significance	N/A				Adjusted Chi Square Value	N/A		
2384													
2385						**Assuming Gamma Distribution**							
2386					95% Approximate Gamma UCL	N/A				95% Adjusted Gamma UCL	N/A		
2387													
2388						**Lognormal GOF Test**							
2389					Shapiro Wilk Test Statistic	0.931				**Shapiro Wilk Lognormal GOF Test**			
2390					10% Shapiro Wilk Critical Value	0.789				Data appear Lognormal at 10% Significance Level			
2391					Lilliefors Test Statistic	0.286				**Lilliefors Lognormal GOF Test**			
2392					10% Lilliefors Critical Value	0.389				Data appear Lognormal at 10% Significance Level			
2393						**Data appear Lognormal at 10% Significance Level**							
2394						**Note GOF tests may be unreliable for small sample sizes**							
2395													
2396						**Lognormal Statistics**							
2397					Minimum of Logged Data	-5.15				Mean of logged Data	-4.304		
2398					Maximum of Logged Data	-3.689				SD of logged Data	0.757		
2399													
2400						**Assuming Lognormal Distribution**							
2401					95% H-UCL	3.547				90% Chebyshev (MVUE) UCL	0.0361		
2402					95% Chebyshev (MVUE) UCL	0.0451				97.5% Chebyshev (MVUE) UCL	0.0576		
2403					99% Chebyshev (MVUE) UCL	0.0821							
2404													
2405						**Nonparametric Distribution Free UCL Statistics**							
2406						**Data appear to follow a Discernible Distribution**							
2407													
2408						**Nonparametric Distribution Free UCLs**							
2409					95% CLT UCL	0.0251				95% BCA Bootstrap UCL	N/A		
2410					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL	N/A		
2411					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL	N/A		
2412					90% Chebyshev(Mean, Sd) UCL	0.0326				95% Chebyshev(Mean, Sd) UCL	0.0402		
2413					97.5% Chebyshev(Mean, Sd) UCL	0.0507				99% Chebyshev(Mean, Sd) UCL	0.0713		
2414													
2415						**Suggested UCL to Use**							
2416					95% Student's-t UCL	0.0322							
2417						**Recommended UCL exceeds the maximum observation**							
2418													
2419						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
2420						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
2421						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
2422													
2423						**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**							
2424						**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**							
2425													
2426													
2427	**PFOS_Sanctuary Lakes_Pelagic Invertebrate**												
2428													
2429						**General Statistics**							
2430					Total Number of Observations	3				Number of Distinct Observations	3		
2431										Number of Missing Observations	0		
2432					Minimum	0.0097				Mean	0.0129		
2433					Maximum	0.019				Median	0.01		
2434					SD	0.00528				Std. Error of Mean	0.00305		
2435					Coefficient of Variation	0.41				Skewness	1.726		
2436													
2437						**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**							
2438						**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**							
2439						**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**							
2440						**The Chebyshev UCL often results in gross overestimates of the mean.**							
2441						**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**							
2442													
2443						**Normal GOF Test**							
2444					Shapiro Wilk Test Statistic	0.774				**Shapiro Wilk GOF Test**			
2445					1% Shapiro Wilk Critical Value	0.753				Data appear Normal at 1% Significance Level			
2446					Lilliefors Test Statistic	0.375				**Lilliefors GOF Test**			
2447					1% Lilliefors Critical Value	0.429				Data appear Normal at 1% Significance Level			
2448						**Data appear Normal at 1% Significance Level**							
2449						**Note GOF tests may be unreliable for small sample sizes**							
2450													
2451						**Assuming Normal Distribution**							
2452						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
2453					95% Student's-t UCL	0.0218				95% Adjusted-CLT UCL (Chen-1995)	0.0212		
2454										95% Modified-t UCL (Johnson-1978)	0.0223		
2455													
2456						**Gamma GOF Test**							

2457					A-D Test Statistic	0.571	**Anderson-Darling Gamma GOF Test**						
2458					5% A-D Critical Value	0.635	Detected data appear Gamma Distributed at 5% Significance Level						
2459					K-S Test Statistic	0.414	**Kolmogorov-Smirnov Gamma GOF Test**						
2460					5% K-S Critical Value	0.432	Detected data appear Gamma Distributed at 5% Significance Level						
2461	**Data Not Gamma Distributed at 5% Significance Level**												
2462													
2463	**Gamma Statistics**												
2464					k hat (MLE)	9.998	k star (bias corrected MLE)	N/A					
2465					Theta hat (MLE)	0.00129	Theta star (bias corrected MLE)	N/A					
2466					nu hat (MLE)	59.99	nu star (bias corrected)	N/A					
2467					MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A					
2468							Approximate Chi Square Value (0.05)	N/A					
2469					Adjusted Level of Significance	N/A	Adjusted Chi Square Value	N/A					
2470													
2471	**Assuming Gamma Distribution**												
2472					95% Approximate Gamma UCL	N/A	95% Adjusted Gamma UCL	N/A					
2473													
2474	**Lognormal GOF Test**												
2475					Shapiro Wilk Test Statistic	0.784	**Shapiro Wilk Lognormal GOF Test**						
2476					10% Shapiro Wilk Critical Value	0.789	Data Not Lognormal at 10% Significance Level						
2477					Lilliefors Test Statistic	0.371	**Lilliefors Lognormal GOF Test**						
2478					10% Lilliefors Critical Value	0.389	Data appear Lognormal at 10% Significance Level						
2479	**Data appear Approximate Lognormal at 10% Significance Level**												
2480	**Note GOF tests may be unreliable for small sample sizes**												
2481													
2482	**Lognormal Statistics**												
2483					Minimum of Logged Data	-4.636	Mean of logged Data	-4.401					
2484					Maximum of Logged Data	-3.963	SD of logged Data	0.38					
2485													
2486	**Assuming Lognormal Distribution**												
2487					95% H-UCL	0.05	90% Chebyshev (MVUE) UCL	0.0212					
2488					95% Chebyshev (MVUE) UCL	0.0249	97.5% Chebyshev (MVUE) UCL	0.0301					
2489					99% Chebyshev (MVUE) UCL	0.0404							
2490													
2491	**Nonparametric Distribution Free UCL Statistics**												
2492	**Data appear to follow a Discernible Distribution**												
2493													
2494	**Nonparametric Distribution Free UCLs**												
2495					95% CLT UCL	0.0179	95% BCA Bootstrap UCL	N/A					
2496					95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A					
2497					95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A					
2498					90% Chebyshev(Mean, Sd) UCL	0.0221	95% Chebyshev(Mean, Sd) UCL	0.0262					
2499					97.5% Chebyshev(Mean, Sd) UCL	0.032	99% Chebyshev(Mean, Sd) UCL	0.0433					
2500													
2501	**Suggested UCL to Use**												
2502					95% Student's-t UCL	0.0218							
2503	**Recommended UCL exceeds the maximum observation**												
2504													
2505	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
2506	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
2507	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
2508													
2509													
2510	**PFOS_Sanctuary Lakes_Predator Fish**												
2511													
2512	**General Statistics**												
2513					Total Number of Observations	13	Number of Distinct Observations	12					
2514							Number of Missing Observations	0					
2515					Minimum	0.0023	Mean	0.036					
2516					Maximum	0.2	Median	0.016					
2517					SD	0.0556	Std. Error of Mean	0.0154					
2518					Coefficient of Variation	1.547	Skewness	2.568					
2519													
2520	**Normal GOF Test**												
2521					Shapiro Wilk Test Statistic	0.627	**Shapiro Wilk GOF Test**						
2522					1% Shapiro Wilk Critical Value	0.814	Data Not Normal at 1% Significance Level						
2523					Lilliefors Test Statistic	0.317	**Lilliefors GOF Test**						
2524					1% Lilliefors Critical Value	0.271	Data Not Normal at 1% Significance Level						
2525	**Data Not Normal at 1% Significance Level**												
2526													
2527	**Assuming Normal Distribution**												
2528	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**						
2529					95% Student's-t UCL	0.0634	95% Adjusted-CLT UCL (Chen-1995)	0.0731					
2530							95% Modified-t UCL (Johnson-1978)	0.0653					
2531													
2532	**Gamma GOF Test**												
2533					A-D Test Statistic	0.594	**Anderson-Darling Gamma GOF Test**						
2534					5% A-D Critical Value	0.771	Detected data appear Gamma Distributed at 5% Significance Level						
2535					K-S Test Statistic	0.168	**Kolmogorov-Smirnov Gamma GOF Test**						
2536					5% K-S Critical Value	0.246	Detected data appear Gamma Distributed at 5% Significance Level						
2537	**Detected data appear Gamma Distributed at 5% Significance Level**												

2538													
2539						**Gamma Statistics**							
2540						k hat (MLE)	0.747				k star (bias corrected MLE)	0.626	
2541						Theta hat (MLE)	0.0481				Theta star (bias corrected MLE)	0.0574	
2542						nu hat (MLE)	19.43				nu star (bias corrected)	16.28	
2543						MLE Mean (bias corrected)	0.036				MLE Sd (bias corrected)	0.0454	
2544											Approximate Chi Square Value (0.05)	8.162	
2545						Adjusted Level of Significance	0.0301				Adjusted Chi Square Value	7.356	
2546													
2547						**Assuming Gamma Distribution**							
2548						95% Approximate Gamma UCL	0.0717				95% Adjusted Gamma UCL	0.0796	
2549													
2550						**Lognormal GOF Test**							
2551						Shapiro Wilk Test Statistic	0.974				**Shapiro Wilk Lognormal GOF Test**		
2552						10% Shapiro Wilk Critical Value	0.889				Data appear Lognormal at 10% Significance Level		
2553						Lilliefors Test Statistic	0.128				**Lilliefors Lognormal GOF Test**		
2554						10% Lilliefors Critical Value	0.215				Data appear Lognormal at 10% Significance Level		
2555						**Data appear Lognormal at 10% Significance Level**							
2556													
2557						**Lognormal Statistics**							
2558						Minimum of Logged Data	-6.075				Mean of logged Data	-4.127	
2559						Maximum of Logged Data	-1.609				SD of logged Data	1.28	
2560													
2561						**Assuming Lognormal Distribution**							
2562						95% H-UCL	0.126				90% Chebyshev (MVUE) UCL	0.072	
2563						95% Chebyshev (MVUE) UCL	0.0896				97.5% Chebyshev (MVUE) UCL	0.114	
2564						99% Chebyshev (MVUE) UCL	0.162						
2565													
2566						**Nonparametric Distribution Free UCL Statistics**							
2567						**Data appear to follow a Discernible Distribution**							
2568													
2569						**Nonparametric Distribution Free UCLs**							
2570						95% CLT UCL	0.0613				95% BCA Bootstrap UCL	0.0744	
2571						95% Standard Bootstrap UCL	0.0604				95% Bootstrap-t UCL	0.14	
2572						95% Hall's Bootstrap UCL	0.179				95% Percentile Bootstrap UCL	0.0635	
2573						90% Chebyshev(Mean, Sd) UCL	0.0822				95% Chebyshev(Mean, Sd) UCL	0.103	
2574						97.5% Chebyshev(Mean, Sd) UCL	0.132				99% Chebyshev(Mean, Sd) UCL	0.189	
2575													
2576						**Suggested UCL to Use**							
2577						95% Adjusted Gamma UCL	0.0796						
2578													
2579						**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
2580						**Please verify the data were collected from random locations.**							
2581						**If the data were collected using judgmental or other non-random methods,**							
2582						**then contact a statistician to correctly calculate UCLs.**							
2583													
2584						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
2585						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
2586						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
2587													
2588													
2589	**PFOS_Sanctuary Lakes_Prey Fish**												
2590													
2591						**General Statistics**							
2592						Total Number of Observations	13				Number of Distinct Observations	13	
2593											Number of Missing Observations	0	
2594						Minimum	0.0046				Mean	0.0513	
2595						Maximum	0.18				Median	0.04	
2596						SD	0.0474				Std. Error of Mean	0.0131	
2597						Coefficient of Variation	0.924				Skewness	1.832	
2598													
2599						**Normal GOF Test**							
2600						Shapiro Wilk Test Statistic	0.825				**Shapiro Wilk GOF Test**		
2601						1% Shapiro Wilk Critical Value	0.814				Data appear Normal at 1% Significance Level		
2602						Lilliefors Test Statistic	0.212				**Lilliefors GOF Test**		
2603						1% Lilliefors Critical Value	0.271				Data appear Normal at 1% Significance Level		
2604						**Data appear Normal at 1% Significance Level**							
2605													
2606						**Assuming Normal Distribution**							
2607						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
2608						95% Student's-t UCL	0.0747				95% Adjusted-CLT UCL (Chen-1995)	0.08	
2609											95% Modified-t UCL (Johnson-1978)	0.0758	
2610													
2611						**Gamma GOF Test**							
2612						A-D Test Statistic	0.222				**Anderson-Darling Gamma GOF Test**		
2613						5% A-D Critical Value	0.752				Detected data appear Gamma Distributed at 5% Significance Level		
2614						K-S Test Statistic	0.133				**Kolmogorov-Smirnov Gamma GOF Test**		
2615						5% K-S Critical Value	0.242				Detected data appear Gamma Distributed at 5% Significance Level		
2616						**Detected data appear Gamma Distributed at 5% Significance Level**							
2617													
2618						**Gamma Statistics**							

2619					k hat (MLE)	1.355					k star (bias corrected MLE)		1.094	
2620					Theta hat (MLE)	0.0378					Theta star (bias corrected MLE)		0.0469	
2621					nu hat (MLE)	35.24					nu star (bias corrected)		28.44	
2622					MLE Mean (bias corrected)	0.0513					MLE Sd (bias corrected)		0.049	
2623											Approximate Chi Square Value (0.05)		17.27	
2624					Adjusted Level of Significance	0.0301					Adjusted Chi Square Value		16.04	
2625														
2626					**Assuming Gamma Distribution**									
2627					95% Approximate Gamma UCL	0.0844					95% Adjusted Gamma UCL		0.0909	
2628														
2629					**Lognormal GOF Test**									
2630					Shapiro Wilk Test Statistic	0.958					**Shapiro Wilk Lognormal GOF Test**			
2631					10% Shapiro Wilk Critical Value	0.889					Data appear Lognormal at 10% Significance Level			
2632					Lilliefors Test Statistic	0.193					**Lilliefors Lognormal GOF Test**			
2633					10% Lilliefors Critical Value	0.215					Data appear Lognormal at 10% Significance Level			
2634					**Data appear Lognormal at 10% Significance Level**									
2635														
2636					**Lognormal Statistics**									
2637					Minimum of Logged Data	-5.382					Mean of logged Data		-3.383	
2638					Maximum of Logged Data	-1.715					SD of logged Data		1.028	
2639														
2640					**Assuming Lognormal Distribution**									
2641					95% H-UCL	0.136					90% Chebyshev (MVUE) UCL		0.105	
2642					95% Chebyshev (MVUE) UCL	0.128					97.5% Chebyshev (MVUE) UCL		0.159	
2643					99% Chebyshev (MVUE) UCL	0.221								
2644														
2645					**Nonparametric Distribution Free UCL Statistics**									
2646					**Data appear to follow a Discernible Distribution**									
2647														
2648					**Nonparametric Distribution Free UCLs**									
2649					95% CLT UCL	0.0729					95% BCA Bootstrap UCL		0.0816	
2650					95% Standard Bootstrap UCL	0.0721					95% Bootstrap-t UCL		0.089	
2651					95% Hall's Bootstrap UCL	0.183					95% Percentile Bootstrap UCL		0.0734	
2652					90% Chebyshev(Mean, Sd) UCL	0.0907					95% Chebyshev(Mean, Sd) UCL		0.109	
2653					97.5% Chebyshev(Mean, Sd) UCL	0.133					99% Chebyshev(Mean, Sd) UCL		0.182	
2654														
2655					**Suggested UCL to Use**									
2656					95% Student's-t UCL	0.0747								
2657														
2658					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
2659					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
2660					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
2661														
2662	**PFOS_Skeleton Creek_Aquatic Vegetation**													
2663														
2664					**General Statistics**									
2665					Total Number of Observations	23					Number of Distinct Observations		20	
2666					Number of Detects	22					Number of Non-Detects		1	
2667					Number of Distinct Detects	19					Number of Distinct Non-Detects		1	
2668					Minimum Detect	4.0000E-4					Minimum Non-Detect		3.0000E-4	
2669					Maximum Detect	0.015					Maximum Non-Detect		3.0000E-4	
2670					Variance Detects	2.0405E-5					Percent Non-Detects		4.348%	
2671					Mean Detects	0.00521					SD Detects		0.00452	
2672					Median Detects	0.0035					CV Detects		0.866	
2673					Skewness Detects	1.069					Kurtosis Detects		0.26	
2674					Mean of Logged Detects	-5.676					SD of Logged Detects		1.012	
2675														
2676					**Normal GOF Test on Detects Only**									
2677					Shapiro Wilk Test Statistic	0.861					**Shapiro Wilk GOF Test**			
2678					1% Shapiro Wilk Critical Value	0.878					Detected Data Not Normal at 1% Significance Level			
2679					Lilliefors Test Statistic	0.177					**Lilliefors GOF Test**			
2680					1% Lilliefors Critical Value	0.214					Detected Data appear Normal at 1% Significance Level			
2681					**Detected Data appear Approximate Normal at 1% Significance Level**									
2682														
2683					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**									
2684					KM Mean	0.005					KM Standard Error of Mean		9.4569E-4	
2685					90KM SD	0.00443					95% KM (BCA) UCL		0.00659	
2686					95% KM (t) UCL	0.00662					95% KM (Percentile Bootstrap) UCL		0.00659	
2687					95% KM (z) UCL	0.00656					95% KM Bootstrap t UCL		0.00695	
2688					90% KM Chebyshev UCL	0.00784					95% KM Chebyshev UCL		0.00912	
2689					97.5% KM Chebyshev UCL	0.0109					99% KM Chebyshev UCL		0.0144	
2690														
2691					**Gamma GOF Tests on Detected Observations Only**									
2692					A-D Test Statistic	0.308					**Anderson-Darling GOF Test**			
2693					5% A-D Critical Value	0.763					Detected data appear Gamma Distributed at 5% Significance Level			
2694					K-S Test Statistic	0.105					**Kolmogorov-Smirnov GOF**			
2695					5% K-S Critical Value	0.189					Detected data appear Gamma Distributed at 5% Significance Level			
2696					**Detected data appear Gamma Distributed at 5% Significance Level**									
2697														
2698					**Gamma Statistics on Detected Data Only**									
2699					k hat (MLE)	1.333					k star (bias corrected MLE)		1.182	

	Theta hat (MLE)	0.00391	Theta star (bias corrected MLE) 0.00441
	nu hat (MLE)	58.67	nu star (bias corrected) 52
	Mean (detects)	0.00521	

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.0000E-4	Mean	0.00542
Maximum	0.015	Median	0.0037
SD	0.00452	CV	0.835
k hat (MLE)	1.355	k star (bias corrected MLE)	1.208
Theta hat (MLE)	0.004	Theta star (bias corrected MLE)	0.00449
nu hat (MLE)	62.34	nu star (bias corrected)	55.55
Adjusted Level of Significance (β)	0.0389		
Approximate Chi Square Value (55.55, α)	39.42	Adjusted Chi Square Value (55.55, β)	38.43
95% Gamma Approximate UCL	0.00764	95% Gamma Adjusted UCL	0.00784

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.005	SD (KM)	0.00443
Variance (KM)	1.9635E-5	SE of Mean (KM)	9.4569E-4
k hat (KM)	1.273	k star (KM)	1.136
nu hat (KM)	58.57	nu star (KM)	52.26
theta hat (KM)	0.00393	theta star (KM)	0.0044
80% gamma percentile (KM)	0.00796	90% gamma percentile (KM)	0.0112
95% gamma percentile (KM)	0.0143	99% gamma percentile (KM)	0.0216

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (52.26, α)	36.66	Adjusted Chi Square Value (52.26, β)	35.71
95% KM Approximate Gamma UCL	0.00713	95% KM Adjusted Gamma UCL	0.00732

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.962	**Shapiro Wilk GOF Test**
10% Shapiro Wilk Critical Value	0.926	Detected Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**
10% Lilliefors Critical Value	0.169	Detected Data appear Lognormal at 10% Significance Level

Detected Data appear Lognormal at 10% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.005	Mean in Log Scale	-5.785
SD in Original Scale	0.00453	SD in Log Scale	1.118
95% t UCL (assumes normality of ROS data)	0.00662	95% Percentile Bootstrap UCL	0.00651
95% BCA Bootstrap UCL	0.00667	95% Bootstrap t UCL	0.00701
95% H-UCL (Log ROS)	0.0109		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-5.782	KM Geo Mean	0.00308
KM SD (logged)	1.087	95% Critical H Value (KM-Log)	2.642
KM Standard Error of Mean (logged)	0.232	95% H-UCL (KM -Log)	0.0103
KM SD (logged)	1.087	95% Critical H Value (KM-Log)	2.642
KM Standard Error of Mean (logged)	0.232		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00499	Mean in Log Scale	-5.812
SD in Original Scale	0.00454	SD in Log Scale	1.185
95% t UCL (Assumes normality)	0.00662	95% H-Stat UCL	0.0122

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 1% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00662		

When a data set follows an approximate distribution passing only one of the GOF tests,

it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS_Skeleton Creek_Benthic Invertebrate

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	0.0058	Mean	0.0124

	A	B	C	D	E	F	G	H	I	J	K	L	M
2781					Maximum	0.019					Median	0.0124	
2782													
2783	**Warning: This data set only has 2 observations!**												
2784	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
2785	**The data set for variable PFOS_Skeleton Creek_Benthic Invertebrate was not processed!**												
2786													
2787	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
2788	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
2789													
2790													
2791													
2792	**PFOS_Skeleton Creek_Pelagic Invertebrate**												
2793													
2794	**General Statistics**												
2795					Total Number of Observations	10					Number of Distinct Observations	10	
2796											Number of Missing Observations	0	
2797					Minimum	0.003					Mean	0.0181	
2798					Maximum	0.033					Median	0.0185	
2799					SD	0.00978					Std. Error of Mean	0.00309	
2800					Coefficient of Variation	0.541					Skewness	0.0268	
2801													
2802	**Normal GOF Test**												
2803					Shapiro Wilk Test Statistic	0.97				**Shapiro Wilk GOF Test**			
2804					1% Shapiro Wilk Critical Value	0.781				Data appear Normal at 1% Significance Level			
2805					Lilliefors Test Statistic	0.122				**Lilliefors GOF Test**			
2806					1% Lilliefors Critical Value	0.304				Data appear Normal at 1% Significance Level			
2807	**Data appear Normal at 1% Significance Level**												
2808													
2809	**Assuming Normal Distribution**												
2810					**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**		
2811					95% Student's-t UCL	0.0237					95% Adjusted-CLT UCL (Chen-1995)	0.0232	
2812											95% Modified-t UCL (Johnson-1978)	0.0237	
2813													
2814	**Gamma GOF Test**												
2815					A-D Test Statistic	0.299				**Anderson-Darling Gamma GOF Test**			
2816					5% A-D Critical Value	0.733				Detected data appear Gamma Distributed at 5% Significance Level			
2817					K-S Test Statistic	0.178				**Kolmogorov-Smirnov Gamma GOF Test**			
2818					5% K-S Critical Value	0.269				Detected data appear Gamma Distributed at 5% Significance Level			
2819	**Detected data appear Gamma Distributed at 5% Significance Level**												
2820													
2821	**Gamma Statistics**												
2822					k hat (MLE)	2.758					k star (bias corrected MLE)	1.997	
2823					Theta hat (MLE)	0.00655					Theta star (bias corrected MLE)	0.00905	
2824					nu hat (MLE)	55.16					nu star (bias corrected)	39.95	
2825					MLE Mean (bias corrected)	0.0181					MLE Sd (bias corrected)	0.0128	
2826											Approximate Chi Square Value (0.05)	26.47	
2827					Adjusted Level of Significance	0.0267					Adjusted Chi Square Value	24.57	
2828													
2829	**Assuming Gamma Distribution**												
2830					95% Approximate Gamma UCL	0.0273					95% Adjusted Gamma UCL	0.0294	
2831													
2832	**Lognormal GOF Test**												
2833					Shapiro Wilk Test Statistic	0.896				**Shapiro Wilk Lognormal GOF Test**			
2834					10% Shapiro Wilk Critical Value	0.869				Data appear Lognormal at 10% Significance Level			
2835					Lilliefors Test Statistic	0.203				**Lilliefors Lognormal GOF Test**			
2836					10% Lilliefors Critical Value	0.241				Data appear Lognormal at 10% Significance Level			
2837	**Data appear Lognormal at 10% Significance Level**												
2838													
2839	**Lognormal Statistics**												
2840					Minimum of Logged Data	-5.809					Mean of logged Data	-4.206	
2841					Maximum of Logged Data	-3.411					SD of logged Data	0.738	
2842													
2843	**Assuming Lognormal Distribution**												
2844					95% H-UCL	0.0371					90% Chebyshev (MVUE) UCL	0.0327	
2845					95% Chebyshev (MVUE) UCL	0.0389					97.5% Chebyshev (MVUE) UCL	0.0475	
2846					99% Chebyshev (MVUE) UCL	0.0645							
2847													
2848	**Nonparametric Distribution Free UCL Statistics**												
2849	**Data appear to follow a Discernible Distribution**												
2850													
2851	**Nonparametric Distribution Free UCLs**												
2852					95% CLT UCL	0.0232					95% BCA Bootstrap UCL	0.0228	
2853					95% Standard Bootstrap UCL	0.0229					95% Bootstrap-t UCL	0.024	
2854					95% Hall's Bootstrap UCL	0.0233					95% Percentile Bootstrap UCL	0.0226	
2855					90% Chebyshev(Mean, Sd) UCL	0.0273					95% Chebyshev(Mean, Sd) UCL	0.0315	
2856					97.5% Chebyshev(Mean, Sd) UCL	0.0374					99% Chebyshev(Mean, Sd) UCL	0.0488	
2857													
2858	**Suggested UCL to Use**												
2859					95% Student's-t UCL	0.0237							
2860													
2861	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS_Skeleton Creek_Predator Fish

General Statistics

Total Number of Observations	12	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	0.0046	Mean	0.408
Maximum	1.7	Median	0.19
SD	0.522	Std. Error of Mean	0.151
Coefficient of Variation	1.279	Skewness	1.895

Normal GOF Test

Shapiro Wilk Test Statistic	0.707	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.805	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.332	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.281	Data Not Normal at 1% Significance Level	

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.678	95% Adjusted-CLT UCL (Chen-1995)	0.744
		95% Modified-t UCL (Johnson-1978)	0.692

Gamma GOF Test

A-D Test Statistic	0.544	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.765	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.232	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.779	k star (bias corrected MLE)	0.64
Theta hat (MLE)	0.524	Theta star (bias corrected MLE)	0.638
nu hat (MLE)	18.69	nu star (bias corrected)	15.35
MLE Mean (bias corrected)	0.408	MLE Sd (bias corrected)	0.51
		Approximate Chi Square Value (0.05)	7.507
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	6.686

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.834	95% Adjusted Gamma UCL	0.937

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.892	**Shapiro Wilk Lognormal GOF Test**	
10% Shapiro Wilk Critical Value	0.883	Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.198	**Lilliefors Lognormal GOF Test**	
10% Lilliefors Critical Value	0.223	Data appear Lognormal at 10% Significance Level	

Data appear Lognormal at 10% Significance Level

Lognormal Statistics

Minimum of Logged Data	-5.382	Mean of logged Data	-1.662
Maximum of Logged Data	0.531	SD of logged Data	1.511

Assuming Lognormal Distribution

95% H-UCL	3.543	90% Chebyshev (MVUE) UCL	1.224
95% Chebyshev (MVUE) UCL	1.551	97.5% Chebyshev (MVUE) UCL	2.005
99% Chebyshev (MVUE) UCL	2.895		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.656	95% BCA Bootstrap UCL	0.776
95% Standard Bootstrap UCL	0.65	95% Bootstrap-t UCL	1.128
95% Hall's Bootstrap UCL	1.578	95% Percentile Bootstrap UCL	0.683
90% Chebyshev(Mean, Sd) UCL	0.86	95% Chebyshev(Mean, Sd) UCL	1.065
97.5% Chebyshev(Mean, Sd) UCL	1.349	99% Chebyshev(Mean, Sd) UCL	1.907

Suggested UCL to Use

95% Adjusted Gamma UCL	0.937		

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.
Please verify the data were collected from random locations.
If the data were collected using judgmental or other non-random methods,
then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

2943												
2944												
2945	**PFOS_Skeleton Creek_Prey Fish**											
2946												
2947	**General Statistics**											
2948	Total Number of Observations				23			Number of Distinct Observations			22	
2949								Number of Missing Observations			0	
2950	Minimum				0.013			Mean			0.206	
2951	Maximum				1.1			Median			0.14	
2952	SD				0.232			Std. Error of Mean			0.0484	
2953	Coefficient of Variation				1.125			Skewness			2.848	
2954												
2955	**Normal GOF Test**											
2956	Shapiro Wilk Test Statistic				0.694			**Shapiro Wilk GOF Test**				
2957	1% Shapiro Wilk Critical Value				0.881			Data Not Normal at 1% Significance Level				
2958	Lilliefors Test Statistic				0.245			**Lilliefors GOF Test**				
2959	1% Lilliefors Critical Value				0.209			Data Not Normal at 1% Significance Level				
2960	**Data Not Normal at 1% Significance Level**											
2961												
2962	**Assuming Normal Distribution**											
2963	**95% Normal UCL**							**95% UCLs (Adjusted for Skewness)**				
2964	95% Student's-t UCL				0.289			95% Adjusted-CLT UCL (Chen-1995)			0.317	
2965								95% Modified-t UCL (Johnson-1978)			0.294	
2966												
2967	**Gamma GOF Test**											
2968	A-D Test Statistic				0.295			**Anderson-Darling Gamma GOF Test**				
2969	5% A-D Critical Value				0.766			Detected data appear Gamma Distributed at 5% Significance Level				
2970	K-S Test Statistic				0.126			**Kolmogorov-Smirnov Gamma GOF Test**				
2971	5% K-S Critical Value				0.186			Detected data appear Gamma Distributed at 5% Significance Level				
2972	**Detected data appear Gamma Distributed at 5% Significance Level**											
2973												
2974	**Gamma Statistics**											
2975	k hat (MLE)				1.199			k star (bias corrected MLE)			1.072	
2976	Theta hat (MLE)				0.172			Theta star (bias corrected MLE)			0.193	
2977	nu hat (MLE)				55.15			nu star (bias corrected)			49.29	
2978	MLE Mean (bias corrected)				0.206			MLE Sd (bias corrected)			0.199	
2979								Approximate Chi Square Value (0.05)			34.17	
2980	Adjusted Level of Significance				0.0389			Adjusted Chi Square Value			33.26	
2981												
2982	**Assuming Gamma Distribution**											
2983	95% Approximate Gamma UCL				0.298			95% Adjusted Gamma UCL			0.306	
2984												
2985	**Lognormal GOF Test**											
2986	Shapiro Wilk Test Statistic				0.985			**Shapiro Wilk Lognormal GOF Test**				
2987	10% Shapiro Wilk Critical Value				0.928			Data appear Lognormal at 10% Significance Level				
2988	Lilliefors Test Statistic				0.117			**Lilliefors Lognormal GOF Test**				
2989	10% Lilliefors Critical Value				0.165			Data appear Lognormal at 10% Significance Level				
2990	**Data appear Lognormal at 10% Significance Level**											
2991												
2992	**Lognormal Statistics**											
2993	Minimum of Logged Data				-4.343			Mean of logged Data			-2.05	
2994	Maximum of Logged Data				0.0953			SD of logged Data			1.034	
2995												
2996	**Assuming Lognormal Distribution**											
2997	95% H-UCL				0.387			90% Chebyshev (MVUE) UCL			0.369	
2998	95% Chebyshev (MVUE) UCL				0.439			97.5% Chebyshev (MVUE) UCL			0.538	
2999	99% Chebyshev (MVUE) UCL				0.731							
3000												
3001	**Nonparametric Distribution Free UCL Statistics**											
3002	**Data appear to follow a Discernible Distribution**											
3003												
3004	**Nonparametric Distribution Free UCLs**											
3005	95% CLT UCL				0.286			95% BCA Bootstrap UCL			0.329	
3006	95% Standard Bootstrap UCL				0.285			95% Bootstrap-t UCL			0.363	
3007	95% Hall's Bootstrap UCL				0.648			95% Percentile Bootstrap UCL			0.289	
3008	90% Chebyshev(Mean, Sd) UCL				0.351			95% Chebyshev(Mean, Sd) UCL			0.417	
3009	97.5% Chebyshev(Mean, Sd) UCL				0.508			99% Chebyshev(Mean, Sd) UCL			0.688	
3010												
3011	**Suggested UCL to Use**											
3012	95% Adjusted Gamma UCL				0.306							
3013												
3014	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
3015	**Please verify the data were collected from random locations.**											
3016	**If the data were collected using judgmental or other non-random methods,**											
3017	**then contact a statistician to correctly calculate UCLs.**											
3018												
3019	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
3020	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
3021	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
3022												
3023	**PFOA_Cheetham Wetlands_Aquatic Vegetation**											

3024													
3025	**General Statistics**												
3026	Total Number of Observations					12				Number of Distinct Observations		4	
3027	Number of Detects					3				Number of Non-Detects		9	
3028	Number of Distinct Detects					3				Number of Distinct Non-Detects		1	
3029	Minimum Detect					4.0000E-4				Minimum Non-Detect		3.0000E-4	
3030	Maximum Detect					7.0000E-4				Maximum Non-Detect		3.0000E-4	
3031	Variance Detects					2.3333E-8				Percent Non-Detects		75%	
3032	Mean Detects					5.6667E-4				SD Detects		1.5275E-4	
3033	Median Detects					6.0000E-4				CV Detects		0.27	
3034	Skewness Detects					-0.935				Kurtosis Detects		N/A	
3035	Mean of Logged Detects					-7.502				SD of Logged Detects		0.289	
3036													
3037	**Warning: Data set has only 3 Detected Values.**												
3038	**This is not enough to compute meaningful or reliable statistics and estimates.**												
3039													
3040													
3041	**Normal GOF Test on Detects Only**												
3042	Shapiro Wilk Test Statistic					0.964				**Shapiro Wilk GOF Test**			
3043	1% Shapiro Wilk Critical Value					0.753				Detected Data appear Normal at 1% Significance Level			
3044	Lilliefors Test Statistic					0.253				**Lilliefors GOF Test**			
3045	1% Lilliefors Critical Value					0.429				Detected Data appear Normal at 1% Significance Level			
3046	**Detected Data appear Normal at 1% Significance Level**												
3047	**Note GOF tests may be unreliable for small sample sizes**												
3048													
3049	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
3050	KM Mean					3.6667E-4				KM Standard Error of Mean		4.6398E-5	
3051	90KM SD					1.3123E-4				95% KM (BCA) UCL		N/A	
3052	95% KM (t) UCL					4.4999E-4				95% KM (Percentile Bootstrap) UCL		N/A	
3053	95% KM (z) UCL					4.4298E-4				95% KM Bootstrap t UCL		N/A	
3054	90% KM Chebyshev UCL					5.0586E-4				95% KM Chebyshev UCL		5.6891E-4	
3055	97.5% KM Chebyshev UCL					6.5642E-4				99% KM Chebyshev UCL		8.2832E-4	
3056													
3057	**Gamma GOF Tests on Detected Observations Only**												
3058	A-D Test Statistic					0.321				**Anderson-Darling GOF Test**			
3059	5% A-D Critical Value					0.635				Detected data appear Gamma Distributed at 5% Significance Level			
3060	K-S Test Statistic					0.295				**Kolmogorov-Smirnov GOF**			
3061	5% K-S Critical Value					0.431				Detected data appear Gamma Distributed at 5% Significance Level			
3062	**Detected Data Not Gamma Distributed at 5% Significance Level**												
3063													
3064	**Gamma Statistics on Detected Data Only**												
3065	k hat (MLE)					18.95				k star (bias corrected MLE)		N/A	
3066	Theta hat (MLE)					2.9899E-5				Theta star (bias corrected MLE)		N/A	
3067	nu hat (MLE)					113.7				nu star (bias corrected)		N/A	
3068	Mean (detects)					5.6667E-4							
3069													
3070	**Gamma ROS Statistics using Imputed Non-Detects**												
3071	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
3072	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
3073	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
3074	This is especially true when the sample size is small.												
3075	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
3076	Minimum					4.0000E-4				Mean		0.00764	
3077	Maximum					0.01				Median		0.01	
3078	SD					0.00427				CV		0.558	
3079	k hat (MLE)					1.238				k star (bias corrected MLE)		0.984	
3080	Theta hat (MLE)					0.00617				Theta star (bias corrected MLE)		0.00776	
3081	nu hat (MLE)					29.72				nu star (bias corrected)		23.62	
3082	Adjusted Level of Significance (β)					0.029							
3083	Approximate Chi Square Value (23.62, α)					13.56				Adjusted Chi Square Value (23.62, β)		12.41	
3084	95% Gamma Approximate UCL					0.0133				95% Gamma Adjusted UCL		N/A	
3085													
3086	**Estimates of Gamma Parameters using KM Estimates**												
3087	Mean (KM)					3.6667E-4				SD (KM)		1.3123E-4	
3088	Variance (KM)					1.7222E-8				SE of Mean (KM)		4.6398E-5	
3089	k hat (KM)					7.806				k star (KM)		5.91	
3090	nu hat (KM)					187.4				nu star (KM)		141.8	
3091	theta hat (KM)					4.6970E-5				theta star (KM)		6.2038E-5	
3092	80% gamma percentile (KM)					4.8392E-4				90% gamma percentile (KM)		5.6832E-4	
3093	95% gamma percentile (KM)					6.4473E-4				99% gamma percentile (KM)		8.0497E-4	
3094													
3095	**Gamma Kaplan-Meier (KM) Statistics**												
3096	Approximate Chi Square Value (141.85, α)					115.3				Adjusted Chi Square Value (141.85, β)		111.7	
3097	95% KM Approximate Gamma UCL					4.5099E-4				95% KM Adjusted Gamma UCL		4.6572E-4	
3098													
3099	**Lognormal GOF Test on Detected Observations Only**												
3100	Shapiro Wilk Test Statistic					0.937				**Shapiro Wilk GOF Test**			
3101	10% Shapiro Wilk Critical Value					0.789				Detected Data appear Lognormal at 10% Significance Level			
3102	Lilliefors Test Statistic					0.281				**Lilliefors GOF Test**			
3103	10% Lilliefors Critical Value					0.389				Detected Data appear Lognormal at 10% Significance Level			
3104	**Detected Data appear Lognormal at 10% Significance Level**												

3105	**Note GOF tests may be unreliable for small sample sizes**												
3106													
3107	**Lognormal ROS Statistics Using Imputed Non-Detects**												
3108					Mean in Original Scale	2.6677E-4				Mean in Log Scale	-8.482		
3109					SD in Original Scale	2.0362E-4				SD in Log Scale	0.747		
3110					95% t UCL (assumes normality of ROS data)	3.7234E-4				95% Percentile Bootstrap UCL	3.6631E-4		
3111					95% BCA Bootstrap UCL	3.7757E-4				95% Bootstrap t UCL	4.2982E-4		
3112					95% H-UCL (Log ROS)	4.7894E-4							
3113													
3114	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
3115					KM Mean (logged)	-7.959				KM Geo Mean	3.4937E-4		
3116					KM SD (logged)	0.289				95% Critical H Value (KM-Log)	1.917		
3117					KM Standard Error of Mean (logged)	0.102				95% H-UCL (KM -Log)	4.3051E-4		
3118					KM SD (logged)	0.289				95% Critical H Value (KM-Log)	1.917		
3119					KM Standard Error of Mean (logged)	0.102							
3120													
3121	**DL/2 Statistics**												
3122	**DL/2 Normal**						**DL/2 Log-Transformed**						
3123					Mean in Original Scale	2.5417E-4				Mean in Log Scale	-8.479		
3124					SD in Original Scale	1.9938E-4				SD in Log Scale	0.602		
3125					95% t UCL (Assumes normality)	3.5753E-4				95% H-Stat UCL	3.7613E-4		
3126	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
3127													
3128	**Nonparametric Distribution Free UCL Statistics**												
3129	**Detected Data appear Normal Distributed at 1% Significance Level**												
3130													
3131	**Suggested UCL to Use**												
3132					95% KM (t) UCL	4.4999E-4							
3133													
3134	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
3135	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
3136	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
3137													
3138	**PFOA_Cheetham Wetlands_Benthic Invertebrate**												
3139													
3140	**General Statistics**												
3141					Total Number of Observations	5				Number of Distinct Observations	3		
3142					Number of Detects	1				Number of Non-Detects	4		
3143					Number of Distinct Detects	1				Number of Distinct Non-Detects	2		
3144													
3145	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**												
3146	**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**												
3147													
3148	**The data set for variable PFOA_Cheetham Wetlands_Benthic Invertebrate was not processed!**												
3149													
3150													
3151	**PFOA_Cheetham Wetlands_Pelagic Invertebrate**												
3152													
3153	**General Statistics**												
3154					Total Number of Observations	7				Number of Distinct Observations	4		
3155					Number of Detects	3				Number of Non-Detects	4		
3156					Number of Distinct Detects	3				Number of Distinct Non-Detects	1		
3157					Minimum Detect	4.0000E-4				Minimum Non-Detect	3.0000E-4		
3158					Maximum Detect	0.0023				Maximum Non-Detect	3.0000E-4		
3159					Variance Detects	1.0433E-6				Percent Non-Detects	57.14%		
3160					Mean Detects	0.00113				SD Detects	0.00102		
3161					Median Detects	7.0000E-4				CV Detects	0.901		
3162					Skewness Detects	1.565				Kurtosis Detects	N/A		
3163					Mean of Logged Detects	-7.054				SD of Logged Detects	0.893		
3164													
3165	**Warning: Data set has only 3 Detected Values.**												
3166	**This is not enough to compute meaningful or reliable statistics and estimates.**												
3167													
3168													
3169	**Note: Sample size is small (e.g., <10), if data are collected using Incremental sampling methodology (ISM) approach,**												
3170	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
3171	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
3172	**The Chebyshev UCL often results in gross overestimates of the mean.**												
3173	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
3174													
3175	**Normal GOF Test on Detects Only**												
3176					Shapiro Wilk Test Statistic	0.865				**Shapiro Wilk GOF Test**			
3177					1% Shapiro Wilk Critical Value	0.753				Detected Data appear Normal at 1% Significance Level			
3178					Lilliefors Test Statistic	0.331				**Lilliefors GOF Test**			
3179					1% Lilliefors Critical Value	0.429				Detected Data appear Normal at 1% Significance Level			
3180	**Detected Data appear Normal at 1% Significance Level**												
3181	**Note GOF tests may be unreliable for small sample sizes**												
3182													
3183	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
3184					KM Mean	6.5714E-4				KM Standard Error of Mean	3.1673E-4		
3185					90KM SD	6.8422E-4				95% KM (BCA) UCL	N/A		

3186				95% KM (t) UCL	0.00127				95% KM (Percentile Bootstrap) UCL		N/A		
3187				95% KM (z) UCL	0.00118				95% KM Bootstrap t UCL		N/A		
3188				90% KM Chebyshev UCL	0.00161				95% KM Chebyshev UCL		0.00204		
3189				97.5% KM Chebyshev UCL	0.00264				99% KM Chebyshev UCL		0.00381		
3190													
3191					**Gamma GOF Tests on Detected Observations Only**								
3192				A-D Test Statistic	0.345				**Anderson-Darling GOF Test**				
3193				5% A-D Critical Value	0.637				Detected data appear Gamma Distributed at 5% Significance Level				
3194				K-S Test Statistic	0.316				**Kolmogorov-Smirnov GOF**				
3195				5% K-S Critical Value	0.435				Detected data appear Gamma Distributed at 5% Significance Level				
3196					**Detected Data Not Gamma Distributed at 5% Significance Level**								
3197													
3198					**Gamma Statistics on Detected Data Only**								
3199				k hat (MLE)	1.99				k star (bias corrected MLE)		N/A		
3200				Theta hat (MLE)	5.6957E-4				Theta star (bias corrected MLE)		N/A		
3201				nu hat (MLE)	11.94				nu star (bias corrected)		N/A		
3202				Mean (detects)	0.00113								
3203													
3204					**Gamma ROS Statistics using Imputed Non-Detects**								
3205					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs								
3206					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)								
3207					For such situations, GROS method may yield incorrect values of UCLs and BTVs								
3208					This is especially true when the sample size is small.								
3209					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates								
3210				Minimum	4.0000E-4				Mean		0.0062		
3211				Maximum	0.01				Median		0.01		
3212				SD	0.00478				CV		0.77		
3213				k hat (MLE)	1.009				k star (bias corrected MLE)		0.672		
3214				Theta hat (MLE)	0.00615				Theta star (bias corrected MLE)		0.00923		
3215				nu hat (MLE)	14.12				nu star (bias corrected)		9.403		
3216				Adjusted Level of Significance (β)	0.0158								
3217				Approximate Chi Square Value (9.40, α)	3.572				Adjusted Chi Square Value (9.40, β)		2.576		
3218				95% Gamma Approximate UCL	0.0163				95% Gamma Adjusted UCL		N/A		
3219													
3220					**Estimates of Gamma Parameters using KM Estimates**								
3221				Mean (KM)	6.5714E-4				SD (KM)		6.8422E-4		
3222				Variance (KM)	4.6816E-7				SE of Mean (KM)		3.1673E-4		
3223				k hat (KM)	0.922				k star (KM)		0.622		
3224				nu hat (KM)	12.91				nu star (KM)		8.713		
3225				theta hat (KM)	7.1242E-4				theta star (KM)		0.00106		
3226				80% gamma percentile (KM)	0.00108				90% gamma percentile (KM)		0.0017		
3227				95% gamma percentile (KM)	0.00233				99% gamma percentile (KM)		0.00387		
3228													
3229					**Gamma Kaplan-Meier (KM) Statistics**								
3230				Approximate Chi Square Value (8.71, α)	3.154				Adjusted Chi Square Value (8.71, β)		2.234		
3231				95% KM Approximate Gamma UCL	0.00182				95% KM Adjusted Gamma UCL		0.00256		
3232													
3233					**Lognormal GOF Test on Detected Observations Only**								
3234				Shapiro Wilk Test Statistic	0.959				**Shapiro Wilk GOF Test**				
3235				10% Shapiro Wilk Critical Value	0.789				Detected Data appear Lognormal at 10% Significance Level				
3236				Lilliefors Test Statistic	0.26				**Lilliefors GOF Test**				
3237				10% Lilliefors Critical Value	0.389				Detected Data appear Lognormal at 10% Significance Level				
3238					**Detected Data appear Lognormal at 10% Significance Level**								
3239					**Note GOF tests may be unreliable for small sample sizes**								
3240													
3241					**Lognormal ROS Statistics Using Imputed Non-Detects**								
3242				Mean in Original Scale	5.1237E-4				Mean in Log Scale		-8.933		
3243				SD in Original Scale	8.2826E-4				SD in Log Scale		1.982		
3244				95% t UCL (assumes normality of ROS data)	0.00112				95% Percentile Bootstrap UCL		0.00106		
3245				95% BCA Bootstrap UCL	0.00126				95% Bootstrap t UCL		0.00299		
3246				95% H-UCL (Log ROS)	0.21								
3247													
3248					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**								
3249				KM Mean (logged)	-7.659				KM Geo Mean		4.7197E-4		
3250				KM SD (logged)	0.708				95% Critical H Value (KM-Log)		2.924		
3251				KM Standard Error of Mean (logged)	0.328				95% H-UCL (KM -Log)		0.00141		
3252				KM SD (logged)	0.708				95% Critical H Value (KM-Log)		2.924		
3253				KM Standard Error of Mean (logged)	0.328								
3254													
3255					**DL/2 Statistics**								
3256				**DL/2 Normal**					**DL/2 Log-Transformed**				
3257				Mean in Original Scale	5.7143E-4				Mean in Log Scale		-8.055		
3258				SD in Original Scale	7.8997E-4				SD in Log Scale		1.068		
3259				95% t UCL (Assumes normality)	0.00115				95% H-Stat UCL		0.00307		
3260					**DL/2 is not a recommended method, provided for comparisons and historical reasons**								
3261													
3262					**Nonparametric Distribution Free UCL Statistics**								
3263					**Detected Data appear Normal Distributed at 1% Significance Level**								
3264													
3265					**Suggested UCL to Use**								
3266				95% KM (t) UCL	0.00127								

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOA_Cheetham Wetlands_Predator Fish

General Statistics

Total Number of Observations	3	Number of Distinct Observations	2
Number of Detects	0	Number of Non-Detects	3
Number of Distinct Detects	0	Number of Distinct Non-Detects	2

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable PFOA_Cheetham Wetlands_Predator Fish was not processed!

PFOA_Cheetham Wetlands_Prey Fish

General Statistics

Total Number of Observations	9	Number of Distinct Observations	3
Number of Detects	1	Number of Non-Detects	8
Number of Distinct Detects	1	Number of Distinct Non-Detects	2

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable PFOA_Cheetham Wetlands_Prey Fish was not processed!

PFOA_Laverton RAAF Swamp_Aquatic Vegetation

General Statistics

Total Number of Observations	10	Number of Distinct Observations	1
Number of Detects	0	Number of Non-Detects	10
Number of Distinct Detects	0	Number of Distinct Non-Detects	1

Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable PFOA_Laverton RAAF Swamp_Aquatic Vegetation was not processed!

PFOA_Laverton RAAF Swamp_Benthic Invertebrate

General Statistics

Total Number of Observations	4	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.001	Mean	0.00228
Maximum	0.0051	Median	0.0015
SD	0.00191	Std. Error of Mean	9.5688E-4
Coefficient of Variation	0.841	Skewness	1.819

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.775	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.687	Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.348	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.413	Data appear Normal at 1% Significance Level	

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.00453	95% Adjusted-CLT UCL (Chen-1995)	0.00478
		95% Modified-t UCL (Johnson-1978)	0.00467

Gamma GOF Test

A-D Test Statistic	0.466	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.66	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.301	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.397	Detected data appear Gamma Distributed at 5% Significance Level	

3348	**Detected data appear Gamma Distributed at 5% Significance Level**												
3349	**Note GOF tests may be unreliable for small sample sizes**												
3350													
3351	**Gamma Statistics**												
3352					k hat (MLE)	2.404				k star (bias corrected MLE)	0.768		
3353					Theta hat (MLE)	9.4621E-4				Theta star (bias corrected MLE)	0.00296		
3354					nu hat (MLE)	19.23				nu star (bias corrected)	6.142		
3355					MLE Mean (bias corrected)	0.00228				MLE Sd (bias corrected)	0.0026		
3356										Approximate Chi Square Value (0.05)	1.713		
3357					Adjusted Level of Significance	N/A				Adjusted Chi Square Value	N/A		
3358													
3359	**Assuming Gamma Distribution**												
3360					95% Approximate Gamma UCL	0.00816				95% Adjusted Gamma UCL	N/A		
3361													
3362	**Lognormal GOF Test**												
3363					Shapiro Wilk Test Statistic	0.885				**Shapiro Wilk Lognormal GOF Test**			
3364					10% Shapiro Wilk Critical Value	0.792				Data appear Lognormal at 10% Significance Level			
3365					Lilliefors Test Statistic	0.257				**Lilliefors Lognormal GOF Test**			
3366					10% Lilliefors Critical Value	0.346				Data appear Lognormal at 10% Significance Level			
3367	**Data appear Lognormal at 10% Significance Level**												
3368	**Note GOF tests may be unreliable for small sample sizes**												
3369													
3370	**Lognormal Statistics**												
3371					Minimum of Logged Data	-6.908				Mean of logged Data	-6.308		
3372					Maximum of Logged Data	-5.279				SD of logged Data	0.729		
3373													
3374	**Assuming Lognormal Distribution**												
3375					95% H-UCL	0.0193				90% Chebyshev (MVUE) UCL	0.00453		
3376					95% Chebyshev (MVUE) UCL	0.00558				97.5% Chebyshev (MVUE) UCL	0.00704		
3377					99% Chebyshev (MVUE) UCL	0.0099							
3378													
3379	**Nonparametric Distribution Free UCL Statistics**												
3380	**Data appear to follow a Discernible Distribution**												
3381													
3382	**Nonparametric Distribution Free UCLs**												
3383					95% CLT UCL	0.00385				95% BCA Bootstrap UCL	N/A		
3384					95% Standard Bootstrap UCL	N/A				95% Bootstrap-t UCL	N/A		
3385					95% Hall's Bootstrap UCL	N/A				95% Percentile Bootstrap UCL	N/A		
3386					90% Chebyshev(Mean, Sd) UCL	0.00515				95% Chebyshev(Mean, Sd) UCL	0.00645		
3387					97.5% Chebyshev(Mean, Sd) UCL	0.00825				99% Chebyshev(Mean, Sd) UCL	0.0118		
3388													
3389	**Suggested UCL to Use**												
3390					95% Student's-t UCL	0.00453							
3391													
3392	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
3393	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
3394	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
3395													
3396													
3397	**PFOA_Laverton RAAF Swamp_Pelagic Invertebrate**												
3398													
3399	**General Statistics**												
3400					Total Number of Observations	2				Number of Distinct Observations	1		
3401										Number of Missing Observations	0		
3402					Minimum	5.0000E-4				Mean	5.0000E-4		
3403					Maximum	5.0000E-4				Median	5.0000E-4		
3404													
3405	**Warning: This data set only has 2 observations!**												
3406	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
3407	**The data set for variable PFOA_Laverton RAAF Swamp_Pelagic Invertebrate was not processed!**												
3408													
3409	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
3410	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
3411													
3412													
3413	**PFOA_Laverton RAAF Swamp_Prey Fish**												
3414													
3415	**General Statistics**												
3416					Total Number of Observations	10				Number of Distinct Observations	4		
3417					Number of Detects	3				Number of Non-Detects	7		
3418					Number of Distinct Detects	3				Number of Distinct Non-Detects	1		
3419					Minimum Detect	0.002				Minimum Non-Detect	3.0000E-4		
3420					Maximum Detect	0.0029				Maximum Non-Detect	3.0000E-4		
3421					Variance Detects	2.0333E-7				Percent Non-Detects	70%		
3422					Mean Detects	0.00247				SD Detects	4.5092E-4		
3423					Median Detects	0.0025				CV Detects	0.183		
3424					Skewness Detects	-0.331				Kurtosis Detects	N/A		
3425					Mean of Logged Detects	-6.016				SD of Logged Detects	0.187		
3426													
3427	**Warning: Data set has only 3 Detected Values.**												
3428	**This is not enough to compute meaningful or reliable statistics and estimates.**												

3429												
3430												
3431	**Normal GOF Test on Detects Only**											
3432	Shapiro Wilk Test Statistic				0.996	**Shapiro Wilk GOF Test**						
3433	1% Shapiro Wilk Critical Value				0.753	Detected Data appear Normal at 1% Significance Level						
3434	Lilliefors Test Statistic				0.196	**Lilliefors GOF Test**						
3435	1% Lilliefors Critical Value				0.429	Detected Data appear Normal at 1% Significance Level						
3436	**Detected Data appear Normal at 1% Significance Level**											
3437	**Note GOF tests may be unreliable for small sample sizes**											
3438												
3439	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
3440	KM Mean				9.5000E-4	KM Standard Error of Mean					3.9240E-4	
3441	90KM SD				0.00101	95% KM (BCA) UCL					N/A	
3442	95% KM (t) UCL				0.00167	95% KM (Percentile Bootstrap) UCL					N/A	
3443	95% KM (z) UCL				0.0016	95% KM Bootstrap t UCL					N/A	
3444	90% KM Chebyshev UCL				0.00213	95% KM Chebyshev UCL					0.00266	
3445	97.5% KM Chebyshev UCL				0.0034	99% KM Chebyshev UCL					0.00485	
3446												
3447	**Gamma GOF Tests on Detected Observations Only**											
3448	A-D Test Statistic				0.259	**Anderson-Darling GOF Test**						
3449	5% A-D Critical Value				0.634	Detected data appear Gamma Distributed at 5% Significance Level						
3450	K-S Test Statistic				0.235	**Kolmogorov-Smirnov GOF**						
3451	5% K-S Critical Value				0.431	Detected data appear Gamma Distributed at 5% Significance Level						
3452	**Detected Data Not Gamma Distributed at 5% Significance Level**											
3453												
3454	**Gamma Statistics on Detected Data Only**											
3455	k hat (MLE)				43.7	k star (bias corrected MLE)					N/A	
3456	Theta hat (MLE)				5.6443E-5	Theta star (bias corrected MLE)					N/A	
3457	nu hat (MLE)				262.2	nu star (bias corrected)					N/A	
3458	Mean (detects)				0.00247							
3459												
3460	**Gamma ROS Statistics using Imputed Non-Detects**											
3461	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
3462	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
3463	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
3464	This is especially true when the sample size is small.											
3465	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
3466	Minimum				0.002	Mean					0.00774	
3467	Maximum				0.01	Median					0.01	
3468	SD				0.00365	CV					0.471	
3469	k hat (MLE)				3.148	k star (bias corrected MLE)					2.27	
3470	Theta hat (MLE)				0.00246	Theta star (bias corrected MLE)					0.00341	
3471	nu hat (MLE)				62.95	nu star (bias corrected)					45.4	
3472	Adjusted Level of Significance (β)				0.0267							
3473	Approximate Chi Square Value (45.40, α)				30.94	Adjusted Chi Square Value (45.40, β)					28.88	
3474	95% Gamma Approximate UCL				0.0114	95% Gamma Adjusted UCL					N/A	
3475												
3476	**Estimates of Gamma Parameters using KM Estimates**											
3477	Mean (KM)				9.5000E-4	SD (KM)					0.00101	
3478	Variance (KM)				1.0265E-6	SE of Mean (KM)					3.9240E-4	
3479	k hat (KM)				0.879	k star (KM)					0.682	
3480	nu hat (KM)				17.58	nu star (KM)					13.64	
3481	theta hat (KM)				0.00108	theta star (KM)					0.00139	
3482	80% gamma percentile (KM)				0.00156	90% gamma percentile (KM)					0.0024	
3483	95% gamma percentile (KM)				0.00326	99% gamma percentile (KM)					0.00533	
3484												
3485	**Gamma Kaplan-Meier (KM) Statistics**											
3486	Approximate Chi Square Value (13.64, α)				6.327	Adjusted Chi Square Value (13.64, β)					5.485	
3487	95% KM Approximate Gamma UCL				0.00205	95% KM Adjusted Gamma UCL					0.00236	
3488												
3489	**Lognormal GOF Test on Detected Observations Only**											
3490	Shapiro Wilk Test Statistic				0.987	**Shapiro Wilk GOF Test**						
3491	10% Shapiro Wilk Critical Value				0.789	Detected Data appear Lognormal at 10% Significance Level						
3492	Lilliefors Test Statistic				0.22	**Lilliefors GOF Test**						
3493	10% Lilliefors Critical Value				0.389	Detected Data appear Lognormal at 10% Significance Level						
3494	**Detected Data appear Lognormal at 10% Significance Level**											
3495	**Note GOF tests may be unreliable for small sample sizes**											
3496												
3497	**Lognormal ROS Statistics Using Imputed Non-Detects**											
3498	Mean in Original Scale				0.00153	Mean in Log Scale					-6.582	
3499	SD in Original Scale				7.3112E-4	SD in Log Scale					0.472	
3500	95% t UCL (assumes normality of ROS data)				0.00195	95% Percentile Bootstrap UCL					0.00191	
3501	95% BCA Bootstrap UCL				0.00193	95% Bootstrap t UCL					0.00208	
3502	95% H-UCL (Log ROS)				0.00218							
3503												
3504	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
3505	KM Mean (logged)				-7.483	KM Geo Mean					5.6250E-4	
3506	KM SD (logged)				0.964	95% Critical H Value (KM-Log)					3.029	
3507	KM Standard Error of Mean (logged)				0.373	95% H-UCL (KM -Log)					0.00237	
3508	KM SD (logged)				0.964	95% Critical H Value (KM-Log)					3.029	
3509	KM Standard Error of Mean (logged)				0.373							

	DL/2 Statistics											
	DL/2 Normal						**DL/2 Log-Transformed**					
	Mean in Original Scale	8.4500E-4					Mean in Log Scale	-7.968				
	SD in Original Scale	0.00114					SD in Log Scale	1.35				
	95% t UCL (Assumes normality)	0.00151					95% H-Stat UCL	0.0049				
	DL/2 is not a recommended method, provided for comparisons and historical reasons											
	Nonparametric Distribution Free UCL Statistics											
	Detected Data appear Normal Distributed at 1% Significance Level											
	Suggested UCL to Use											
	95% KM (t) UCL	0.00167										
	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
	PFOA_Sanctuary Lakes_Aquatic Vegetation											
	General Statistics											
	Total Number of Observations	13					Number of Distinct Observations	4				
	Number of Detects	3					Number of Non-Detects	10				
	Number of Distinct Detects	3					Number of Distinct Non-Detects	1				
	Minimum Detect	4.0000E-4					Minimum Non-Detect	3.0000E-4				
	Maximum Detect	9.0000E-4					Maximum Non-Detect	3.0000E-4				
	Variance Detects	6.3333E-8					Percent Non-Detects	76.92%				
	Mean Detects	6.6667E-4					SD Detects	2.5166E-4				
	Median Detects	7.0000E-4					CV Detects	0.377				
	Skewness Detects	-0.586					Kurtosis Detects	N/A				
	Mean of Logged Detects	-7.367					SD of Logged Detects	0.415				
	Warning: Data set has only 3 Detected Values.											
	This is not enough to compute meaningful or reliable statistics and estimates.											
	Normal GOF Test on Detects Only											
	Shapiro Wilk Test Statistic	0.987					**Shapiro Wilk GOF Test**					
	1% Shapiro Wilk Critical Value	0.753					Detected Data appear Normal at 1% Significance Level					
	Lilliefors Test Statistic	0.219					**Lilliefors GOF Test**					
	1% Lilliefors Critical Value	0.429					Detected Data appear Normal at 1% Significance Level					
	Detected Data appear Normal at 1% Significance Level											
	Note GOF tests may be unreliable for small sample sizes											
	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs											
	KM Mean	3.8462E-4					KM Standard Error of Mean	6.2274E-5				
	90KM SD	1.8333E-4					95% KM (BCA) UCL	N/A				
	95% KM (t) UCL	4.9561E-4					95% KM (Percentile Bootstrap) UCL	N/A				
	95% KM (z) UCL	4.8705E-4					95% KM Bootstrap t UCL	N/A				
	90% KM Chebyshev UCL	5.7144E-4					95% KM Chebyshev UCL	6.5606E-4				
	97.5% KM Chebyshev UCL	7.7351E-4					99% KM Chebyshev UCL	0.001				
	Gamma GOF Tests on Detected Observations Only											
	A-D Test Statistic	0.293					**Anderson-Darling GOF Test**					
	5% A-D Critical Value	0.636					Detected data appear Gamma Distributed at 5% Significance Level					
	K-S Test Statistic	0.269					**Kolmogorov-Smirnov GOF**					
	5% K-S Critical Value	0.432					Detected data appear Gamma Distributed at 5% Significance Level					
	Detected Data Not Gamma Distributed at 5% Significance Level											
	Gamma Statistics on Detected Data Only											
	k hat (MLE)	9.427					k star (bias corrected MLE)	N/A				
	Theta hat (MLE)	7.0720E-5					Theta star (bias corrected MLE)	N/A				
	nu hat (MLE)	56.56					nu star (bias corrected)	N/A				
	Mean (detects)	6.6667E-4										
	Gamma ROS Statistics using Imputed Non-Detects											
	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
	This is especially true when the sample size is small.											
	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
	Minimum	4.0000E-4					Mean	0.00785				
	Maximum	0.01					Median	0.01				
	SD	0.00409					CV	0.522				
	k hat (MLE)	1.41					k star (bias corrected MLE)	1.136				
	Theta hat (MLE)	0.00557					Theta star (bias corrected MLE)	0.00691				
	nu hat (MLE)	36.65					nu star (bias corrected)	29.53				
	Adjusted Level of Significance (β)	0.0301										
	Approximate Chi Square Value (29.53, α)	18.12					Adjusted Chi Square Value (29.53, β)	16.86				
	95% Gamma Approximate UCL	0.0128					95% Gamma Adjusted UCL	N/A				

3591	**Estimates of Gamma Parameters using KM Estimates**												
3592					Mean (KM)	3.8462E-4				SD (KM)	1.8333E-4		
3593					Variance (KM)	3.3609E-8				SE of Mean (KM)	6.2274E-5		
3594					k hat (KM)	4.401				k star (KM)	3.437		
3595					nu hat (KM)	114.4				nu star (KM)	89.36		
3596					theta hat (KM)	8.7385E-5				theta star (KM)	1.1191E-4		
3597					80% gamma percentile (KM)	5.3980E-4				90% gamma percentile (KM)	6.6280E-4		
3598					95% gamma percentile (KM)	7.7680E-4				99% gamma percentile (KM)	0.00102		
3599													
3600	**Gamma Kaplan-Meier (KM) Statistics**												
3601					Approximate Chi Square Value (89.36, α)	68.57				Adjusted Chi Square Value (89.36, β)	65.98		
3602					95% KM Approximate Gamma UCL	5.0126E-4				95% KM Adjusted Gamma UCL	5.2095E-4		
3603													
3604	**Lognormal GOF Test on Detected Observations Only**												
3605					Shapiro Wilk Test Statistic	0.954				**Shapiro Wilk GOF Test**			
3606					10% Shapiro Wilk Critical Value	0.789				Detected Data appear Lognormal at 10% Significance Level			
3607					Lilliefors Test Statistic	0.264				**Lilliefors GOF Test**			
3608					10% Lilliefors Critical Value	0.389				Detected Data appear Lognormal at 10% Significance Level			
3609	**Detected Data appear Lognormal at 10% Significance Level**												
3610	**Note GOF tests may be unreliable for small sample sizes**												
3611													
3612	**Lognormal ROS Statistics Using Imputed Non-Detects**												
3613					Mean in Original Scale	2.4061E-4				Mean in Log Scale	-8.884		
3614					SD in Original Scale	2.7220E-4				SD in Log Scale	1.115		
3615					95% t UCL (assumes normality of ROS data)	3.7517E-4				95% Percentile Bootstrap UCL	3.7124E-4		
3616					95% BCA Bootstrap UCL	4.0507E-4				95% Bootstrap t UCL	5.1264E-4		
3617					95% H-UCL (Log ROS)	6.8942E-4							
3618													
3619	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
3620					KM Mean (logged)	-7.94				KM Geo Mean	3.5624E-4		
3621					KM SD (logged)	0.353				95% Critical H Value (KM-Log)	1.957		
3622					KM Standard Error of Mean (logged)	0.12				95% H-UCL (KM -Log)	4.6301E-4		
3623					KM SD (logged)	0.353				95% Critical H Value (KM-Log)	1.957		
3624					KM Standard Error of Mean (logged)	0.12							
3625													
3626	**DL/2 Statistics**												
3627	**DL/2 Normal**									**DL/2 Log-Transformed**			
3628					Mean in Original Scale	2.6923E-4				Mean in Log Scale	-8.473		
3629					SD in Original Scale	2.4878E-4				SD in Log Scale	0.653		
3630					95% t UCL (Assumes normality)	3.9221E-4				95% H-Stat UCL	3.9940E-4		
3631	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
3632													
3633	**Nonparametric Distribution Free UCL Statistics**												
3634	**Detected Data appear Normal Distributed at 1% Significance Level**												
3635													
3636	**Suggested UCL to Use**												
3637					95% KM (t) UCL	4.9561E-4							
3638													
3639	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
3640	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
3641	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
3642													
3643	**PFOA_Sanctuary Lakes_Benthic Invertebrate**												
3644													
3645	**General Statistics**												
3646					Total Number of Observations	3				Number of Distinct Observations	2		
3647					Number of Detects	1				Number of Non-Detects	2		
3648					Number of Distinct Detects	1				Number of Distinct Non-Detects	1		
3649													
3650	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**												
3651	**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**												
3652													
3653	**The data set for variable PFOA_Sanctuary Lakes_Benthic Invertebrate was not processed!**												
3654													
3655													
3656	**PFOA_Sanctuary Lakes_Pelagic Invertebrate**												
3657													
3658	**General Statistics**												
3659					Total Number of Observations	3				Number of Distinct Observations	1		
3660					Number of Detects	0				Number of Non-Detects	3		
3661					Number of Distinct Detects	0				Number of Distinct Non-Detects	1		
3662													
3663	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**												
3664	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**												
3665	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**												
3666													
3667	**The data set for variable PFOA_Sanctuary Lakes_Pelagic Invertebrate was not processed!**												
3668													
3669													
3670	**PFOA_Sanctuary Lakes_Predator Fish**												
3671													

3672	**General Statistics**												
3673					Total Number of Observations	13				Number of Distinct Observations	2		
3674					Number of Detects	1				Number of Non-Detects	12		
3675					Number of Distinct Detects	1				Number of Distinct Non-Detects	1		
3676													
3677	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**												
3678	**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**												
3679													
3680	**The data set for variable PFOA_Sanctuary Lakes_Predator Fish was not processed!**												
3681													
3682													
3683	**PFOA_Sanctuary Lakes_Prey Fish**												
3684													
3685	**General Statistics**												
3686					Total Number of Observations	13				Number of Distinct Observations	3		
3687					Number of Detects	3				Number of Non-Detects	10		
3688					Number of Distinct Detects	2				Number of Distinct Non-Detects	2		
3689					Minimum Detect	3.0000E-4				Minimum Non-Detect	3.0000E-4		
3690					Maximum Detect	5.0000E-4				Maximum Non-Detect	0.001		
3691					Variance Detects	1.3333E-8				Percent Non-Detects	76.92%		
3692					Mean Detects	3.6667E-4				SD Detects	1.1547E-4		
3693					Median Detects	3.0000E-4				CV Detects	0.315		
3694					Skewness Detects	1.732				Kurtosis Detects	N/A		
3695					Mean of Logged Detects	-7.941				SD of Logged Detects	0.295		
3696													
3697	**Warning: Data set has only 3 Detected Values.**												
3698	**This is not enough to compute meaningful or reliable statistics and estimates.**												
3699													
3700													
3701	**Normal GOF Test on Detects Only**												
3702					Shapiro Wilk Test Statistic	0.75				**Shapiro Wilk GOF Test**			
3703					1% Shapiro Wilk Critical Value	0.753				Detected Data Not Normal at 1% Significance Level			
3704					Lilliefors Test Statistic	0.385				**Lilliefors GOF Test**			
3705					1% Lilliefors Critical Value	0.429				Detected Data appear Normal at 1% Significance Level			
3706	**Detected Data appear Approximate Normal at 1% Significance Level**												
3707	**Note GOF tests may be unreliable for small sample sizes**												
3708													
3709	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
3710					KM Mean	3.1667E-4				KM Standard Error of Mean	1.9543E-5		
3711					90KM SD	5.5277E-5				95% KM (BCA) UCL	N/A		
3712					95% KM (t) UCL	3.5150E-4				95% KM (Percentile Bootstrap) UCL	N/A		
3713					95% KM (z) UCL	3.4881E-4				95% KM Bootstrap t UCL	N/A		
3714					90% KM Chebyshev UCL	3.7530E-4				95% KM Chebyshev UCL	4.0185E-4		
3715					97.5% KM Chebyshev UCL	4.3872E-4				99% KM Chebyshev UCL	5.1112E-4		
3716													
3717	**Gamma GOF Tests on Detected Observations Only**												
3718					A-D Test Statistic	0.62				**Anderson-Darling GOF Test**			
3719					5% A-D Critical Value	0.635				Detected data appear Gamma Distributed at 5% Significance Level			
3720					K-S Test Statistic	0.427				**Kolmogorov-Smirnov GOF**			
3721					5% K-S Critical Value	0.432				Detected data appear Gamma Distributed at 5% Significance Level			
3722	**Detected Data Not Gamma Distributed at 5% Significance Level**												
3723													
3724	**Gamma Statistics on Detected Data Only**												
3725					k hat (MLE)	16.61				k star (bias corrected MLE)	N/A		
3726					Theta hat (MLE)	2.2069E-5				Theta star (bias corrected MLE)	N/A		
3727					nu hat (MLE)	99.69				nu star (bias corrected)	N/A		
3728					Mean (detects)	3.6667E-4							
3729													
3730	**Gamma ROS Statistics using Imputed Non-Detects**												
3731	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
3732	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
3733	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
3734	This is especially true when the sample size is small.												
3735	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
3736					Minimum	3.0000E-4				Mean	0.00778		
3737					Maximum	0.01				Median	0.01		
3738					SD	0.00422				CV	0.543		
3739					k hat (MLE)	1.101				k star (bias corrected MLE)	0.898		
3740					Theta hat (MLE)	0.00706				Theta star (bias corrected MLE)	0.00866		
3741					nu hat (MLE)	28.63				nu star (bias corrected)	23.36		
3742					Adjusted Level of Significance (β)	0.0301							
3743					Approximate Chi Square Value (23.36, α)	13.36				Adjusted Chi Square Value (23.36, β)	12.29		
3744					95% Gamma Approximate UCL	0.0136				95% Gamma Adjusted UCL	N/A		
3745													
3746	**Estimates of Gamma Parameters using KM Estimates**												
3747					Mean (KM)	3.1667E-4				SD (KM)	5.5277E-5		
3748					Variance (KM)	3.0556E-9				SE of Mean (KM)	1.9543E-5		
3749					k hat (KM)	32.82				k star (KM)	25.3		
3750					nu hat (KM)	853.3				nu star (KM)	657.7		
3751					theta hat (KM)	9.6491E-6				theta star (KM)	1.2518E-5		
3752					80% gamma percentile (KM)	3.6808E-4				90% gamma percentile (KM)	3.9956E-4		

3753					95% gamma percentile (KM)	4.2684E-4				99% gamma percentile (KM)		4.8123E-4	
3754													
3755					**Gamma Kaplan-Meier (KM) Statistics**								
3756					Approximate Chi Square Value (657.70, α)	599.2				Adjusted Chi Square Value (657.70, β)		591.2	
3757					95% KM Approximate Gamma UCL	3.4758E-4				95% KM Adjusted Gamma UCL		3.5226E-4	
3758													
3759					**Lognormal GOF Test on Detected Observations Only**								
3760					Shapiro Wilk Test Statistic	0.75				**Shapiro Wilk GOF Test**			
3761					10% Shapiro Wilk Critical Value	0.789				Detected Data Not Lognormal at 10% Significance Level			
3762					Lilliefors Test Statistic	0.385				**Lilliefors GOF Test**			
3763					10% Lilliefors Critical Value	0.389				Detected Data appear Lognormal at 10% Significance Level			
3764					**Detected Data appear Approximate Lognormal at 10% Significance Level**								
3765					**Note GOF tests may be unreliable for small sample sizes**								
3766													
3767					**Lognormal ROS Statistics Using Imputed Non-Detects**								
3768					Mean in Original Scale	1.6947E-4				Mean in Log Scale		-8.919	
3769					SD in Original Scale	1.2895E-4				SD in Log Scale		0.713	
3770					95% t UCL (assumes normality of ROS data)	2.3321E-4				95% Percentile Bootstrap UCL		2.3035E-4	
3771					95% BCA Bootstrap UCL	2.4242E-4				95% Bootstrap t UCL		2.7441E-4	
3772					95% H-UCL (Log ROS)	2.8227E-4							
3773													
3774					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**								
3775					KM Mean (logged)	-8.069				KM Geo Mean		3.1305E-4	
3776					KM SD (logged)	0.141				95% Critical H Value (KM-Log)		1.789	
3777					KM Standard Error of Mean (logged)	0.0499				95% H-UCL (KM -Log)		3.4010E-4	
3778					KM SD (logged)	0.141				95% Critical H Value (KM-Log)		1.789	
3779					KM Standard Error of Mean (logged)	0.0499							
3780													
3781					**DL/2 Statistics**								
3782					**DL/2 Normal**					**DL/2 Log-Transformed**			
3783					Mean in Original Scale	2.2692E-4				Mean in Log Scale		-8.513	
3784					SD in Original Scale	1.3325E-4				SD in Log Scale		0.479	
3785					95% t UCL (Assumes normality)	2.9279E-4				95% H-Stat UCL		3.0062E-4	
3786					**DL/2 is not a recommended method, provided for comparisons and historical reasons**								
3787													
3788					**Nonparametric Distribution Free UCL Statistics**								
3789					**Detected Data appear Approximate Normal Distributed at 1% Significance Level**								
3790													
3791					**Suggested UCL to Use**								
3792					95% KM (t) UCL	3.5150E-4							
3793													
3794					When a data set follows an approximate distribution passing only one of the GOF tests,								
3795					it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL								
3796													
3797					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
3798					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
3799					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
3800													
3801	**PFOA_Skeleton Creek_Aquatic Vegetation**												
3802													
3803					**General Statistics**								
3804					Total Number of Observations	23				Number of Distinct Observations		2	
3805					Number of Detects	1				Number of Non-Detects		22	
3806					Number of Distinct Detects	1				Number of Distinct Non-Detects		1	
3807													
3808					**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**								
3809					**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**								
3810													
3811					**The data set for variable PFOA_Skeleton Creek_Aquatic Vegetation was not processed!**								
3812													
3813													
3814	**PFOA_Skeleton Creek_Benthic Invertebrate**												
3815													
3816					**General Statistics**								
3817					Total Number of Observations	2				Number of Distinct Observations		2	
3818					Number of Detects	1				Number of Non-Detects		1	
3819					Number of Distinct Detects	1				Number of Distinct Non-Detects		1	
3820													
3821					**Warning: This data set only has 2 observations!**								
3822					**Data set is too small to compute reliable and meaningful statistics and estimates!**								
3823					**The data set for variable PFOA_Skeleton Creek_Benthic Invertebrate was not processed!**								
3824													
3825					**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**								
3826					**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**								
3827													
3828													
3829	**PFOA_Skeleton Creek_Pelagic Invertebrate**												
3830													
3831					**General Statistics**								
3832					Total Number of Observations	10				Number of Distinct Observations		5	
3833					Number of Detects	7				Number of Non-Detects		3	

3834	Number of Distinct Detects				4					Number of Distinct Non-Detects		2	
3835	Minimum Detect				3.0000E-4					Minimum Non-Detect		3.0000E-4	
3836	Maximum Detect				6.0000E-4					Maximum Non-Detect		0.005	
3837	Variance Detects				1.9048E-8					Percent Non-Detects		30%	
3838	Mean Detects				4.7143E-4					SD Detects		1.3801E-4	
3839	Median Detects				5.0000E-4					CV Detects		0.293	
3840	Skewness Detects				-0.359					Kurtosis Detects		-2.09	
3841	Mean of Logged Detects				-7.701					SD of Logged Detects		0.317	
3842													
3843	**Normal GOF Test on Detects Only**												
3844	Shapiro Wilk Test Statistic				0.819		**Shapiro Wilk GOF Test**						
3845	1% Shapiro Wilk Critical Value				0.73		Detected Data appear Normal at 1% Significance Level						
3846	Lilliefors Test Statistic				0.253		**Lilliefors GOF Test**						
3847	1% Lilliefors Critical Value				0.35		Detected Data appear Normal at 1% Significance Level						
3848	**Detected Data appear Normal at 1% Significance Level**												
3849	**Note GOF tests may be unreliable for small sample sizes**												
3850													
3851	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
3852	KM Mean				4.3333E-4					KM Standard Error of Mean		4.8005E-5	
3853	90KM SD				1.3333E-4					95% KM (BCA) UCL		N/A	
3854	95% KM (t) UCL				5.2133E-4					95% KM (Percentile Bootstrap) UCL		N/A	
3855	95% KM (z) UCL				5.1230E-4					95% KM Bootstrap t UCL		N/A	
3856	90% KM Chebyshev UCL				5.7735E-4					95% KM Chebyshev UCL		6.4258E-4	
3857	97.5% KM Chebyshev UCL				7.3313E-4					99% KM Chebyshev UCL		9.1098E-4	
3858													
3859	**Gamma GOF Tests on Detected Observations Only**												
3860	A-D Test Statistic				0.641		**Anderson-Darling GOF Test**						
3861	5% A-D Critical Value				0.708		Detected data appear Gamma Distributed at 5% Significance Level						
3862	K-S Test Statistic				0.264		**Kolmogorov-Smirnov GOF**						
3863	5% K-S Critical Value				0.312		Detected data appear Gamma Distributed at 5% Significance Level						
3864	**Detected data appear Gamma Distributed at 5% Significance Level**												
3865	**Note GOF tests may be unreliable for small sample sizes**												
3866													
3867	**Gamma Statistics on Detected Data Only**												
3868	k hat (MLE)				12.4					k star (bias corrected MLE)		7.183	
3869	Theta hat (MLE)				3.8005E-5					Theta star (bias corrected MLE)		6.5627E-5	
3870	nu hat (MLE)				173.7					nu star (bias corrected)		100.6	
3871	Mean (detects)				4.7143E-4								
3872													
3873	**Gamma ROS Statistics using Imputed Non-Detects**												
3874	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
3875	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
3876	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
3877	This is especially true when the sample size is small.												
3878	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
3879	Minimum				3.0000E-4					Mean		0.00333	
3880	Maximum				0.01					Median		6.0000E-4	
3881	SD				0.0046					CV		1.383	
3882	k hat (MLE)				0.582					k star (bias corrected MLE)		0.474	
3883	Theta hat (MLE)				0.00573					Theta star (bias corrected MLE)		0.00703	
3884	nu hat (MLE)				11.63					nu star (bias corrected)		9.476	
3885	Adjusted Level of Significance (β)				0.0267								
3886	Approximate Chi Square Value (9.48, α)				3.617					Adjusted Chi Square Value (9.48, β)		3.016	
3887	95% Gamma Approximate UCL				0.00872					95% Gamma Adjusted UCL		0.0105	
3888													
3889	**Estimates of Gamma Parameters using KM Estimates**												
3890	Mean (KM)				4.3333E-4					SD (KM)		1.3333E-4	
3891	Variance (KM)				1.7778E-8					SE of Mean (KM)		4.8005E-5	
3892	k hat (KM)				10.56					k star (KM)		7.46	
3893	nu hat (KM)				211.3					nu star (KM)		149.2	
3894	theta hat (KM)				4.1026E-5					theta star (KM)		5.8084E-5	
3895	80% gamma percentile (KM)				5.5816E-4					90% gamma percentile (KM)		6.4500E-4	
3896	95% gamma percentile (KM)				7.2293E-4					99% gamma percentile (KM)		8.8476E-4	
3897													
3898	**Gamma Kaplan-Meier (KM) Statistics**												
3899	Approximate Chi Square Value (149.21, α)				122					Adjusted Chi Square Value (149.21, β)		117.7	
3900	95% KM Approximate Gamma UCL				5.3008E-4					95% KM Adjusted Gamma UCL		5.4934E-4	
3901													
3902	**Lognormal GOF Test on Detected Observations Only**												
3903	Shapiro Wilk Test Statistic				0.812		**Shapiro Wilk GOF Test**						
3904	10% Shapiro Wilk Critical Value				0.838		Detected Data Not Lognormal at 10% Significance Level						
3905	Lilliefors Test Statistic				0.242		**Lilliefors GOF Test**						
3906	10% Lilliefors Critical Value				0.28		Detected Data appear Lognormal at 10% Significance Level						
3907	**Detected Data appear Approximate Lognormal at 10% Significance Level**												
3908	**Note GOF tests may be unreliable for small sample sizes**												
3909													
3910	**Lognormal ROS Statistics Using Imputed Non-Detects**												
3911	Mean in Original Scale				4.1220E-4					Mean in Log Scale		-7.864	
3912	SD in Original Scale				1.5497E-4					SD in Log Scale		0.403	
3913	95% t UCL (assumes normality of ROS data)				5.0203E-4					95% Percentile Bootstrap UCL		4.9248E-4	
3914	95% BCA Bootstrap UCL				4.8871E-4					95% Bootstrap t UCL		5.0635E-4	

3915					95% H-UCL (Log ROS)	5.5266E-4							
3916													
3917	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
3918					KM Mean (logged)	-7.792				KM Geo Mean	4.1304E-4		
3919					KM SD (logged)	0.31				95% Critical H Value (KM-Log)	1.987		
3920					KM Standard Error of Mean (logged)	0.112				95% H-UCL (KM -Log)	5.3216E-4		
3921					KM SD (logged)	0.31				95% Critical H Value (KM-Log)	1.987		
3922					KM Standard Error of Mean (logged)	0.112							
3923	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**												
3924													
3925	**DL/2 Statistics**												
3926	**DL/2 Normal**						**DL/2 Log-Transformed**						
3927					Mean in Original Scale	6.1000E-4				Mean in Log Scale	-7.751		
3928					SD in Original Scale	6.8670E-4				SD in Log Scale	0.812		
3929					95% t UCL (Assumes normality)	0.00101				95% H-Stat UCL	0.00125		
3930	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
3931													
3932	**Nonparametric Distribution Free UCL Statistics**												
3933	**Detected Data appear Normal Distributed at 1% Significance Level**												
3934													
3935	**Suggested UCL to Use**												
3936					95% KM (t) UCL	5.2133E-4							
3937													
3938	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
3939	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
3940	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
3941													
3942	**PFOA_Skeleton Creek_Predator Fish**												
3943													
3944	**General Statistics**												
3945					Total Number of Observations	12				Number of Distinct Observations	6		
3946					Number of Detects	6				Number of Non-Detects	6		
3947					Number of Distinct Detects	5				Number of Distinct Non-Detects	1		
3948					Minimum Detect	4.0000E-4				Minimum Non-Detect	3.0000E-4		
3949					Maximum Detect	0.0013				Maximum Non-Detect	3.0000E-4		
3950					Variance Detects	1.6667E-7				Percent Non-Detects	50%		
3951					Mean Detects	8.3333E-4				SD Detects	4.0825E-4		
3952					Median Detects	8.0000E-4				CV Detects	0.49		
3953					Skewness Detects	0.0637				Kurtosis Detects	-2.961		
3954					Mean of Logged Detects	-7.202				SD of Logged Detects	0.528		
3955													
3956	**Normal GOF Test on Detects Only**												
3957					Shapiro Wilk Test Statistic	0.822				**Shapiro Wilk GOF Test**			
3958					1% Shapiro Wilk Critical Value	0.713				Detected Data appear Normal at 1% Significance Level			
3959					Lilliefors Test Statistic	0.293				**Lilliefors GOF Test**			
3960					1% Lilliefors Critical Value	0.373				Detected Data appear Normal at 1% Significance Level			
3961	**Detected Data appear Normal at 1% Significance Level**												
3962	**Note GOF tests may be unreliable for small sample sizes**												
3963													
3964	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
3965					KM Mean	5.6667E-4				KM Standard Error of Mean	1.1856E-4		
3966					90KM SD	3.7491E-4				95% KM (BCA) UCL	7.5833E-4		
3967					95% KM (t) UCL	7.7958E-4				95% KM (Percentile Bootstrap) UCL	7.5833E-4		
3968					95% KM (z) UCL	7.6167E-4				95% KM Bootstrap t UCL	7.8818E-4		
3969					90% KM Chebyshev UCL	9.2234E-4				95% KM Chebyshev UCL	0.00108		
3970					97.5% KM Chebyshev UCL	0.00131				99% KM Chebyshev UCL	0.00175		
3971													
3972	**Gamma GOF Tests on Detected Observations Only**												
3973					A-D Test Statistic	0.65				**Anderson-Darling GOF Test**			
3974					5% A-D Critical Value	0.699				Detected data appear Gamma Distributed at 5% Significance Level			
3975					K-S Test Statistic	0.303				**Kolmogorov-Smirnov GOF**			
3976					5% K-S Critical Value	0.333				Detected data appear Gamma Distributed at 5% Significance Level			
3977	**Detected data appear Gamma Distributed at 5% Significance Level**												
3978	**Note GOF tests may be unreliable for small sample sizes**												
3979													
3980	**Gamma Statistics on Detected Data Only**												
3981					k hat (MLE)	4.647				k star (bias corrected MLE)	2.435		
3982					Theta hat (MLE)	1.7934E-4				Theta star (bias corrected MLE)	3.4230E-4		
3983					nu hat (MLE)	55.76				nu star (bias corrected)	29.21		
3984					Mean (detects)	8.3333E-4							
3985													
3986	**Gamma ROS Statistics using Imputed Non-Detects**												
3987	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
3988	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
3989	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
3990	This is especially true when the sample size is small.												
3991	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
3992					Minimum	4.0000E-4				Mean	0.00542		
3993					Maximum	0.01				Median	0.00565		
3994					SD	0.0048				CV	0.885		
3995					k hat (MLE)	0.858				k star (bias corrected MLE)	0.699		

3996					Theta hat (MLE)	0.00631				Theta star (bias corrected MLE)		0.00774	
3997					nu hat (MLE)	20.6				nu star (bias corrected)		16.79	
3998				Adjusted Level of Significance (β)		0.029							
3999				Approximate Chi Square Value (16.79, α)		8.519				Adjusted Chi Square Value (16.79, β)		7.636	
4000				95% Gamma Approximate UCL		0.0107				95% Gamma Adjusted UCL		0.0119	
4001													
4002					**Estimates of Gamma Parameters using KM Estimates**								
4003					Mean (KM)	5.6667E-4				SD (KM)		3.7491E-4	
4004					Variance (KM)	1.4056E-7				SE of Mean (KM)		1.1856E-4	
4005					k hat (KM)	2.285				k star (KM)		1.769	
4006					nu hat (KM)	54.83				nu star (KM)		42.46	
4007					theta hat (KM)	2.4804E-4				theta star (KM)		3.2033E-4	
4008					80% gamma percentile (KM)	8.6062E-4				90% gamma percentile (KM)		0.00113	
4009					95% gamma percentile (KM)	0.0014				99% gamma percentile (KM)		0.00199	
4010													
4011					**Gamma Kaplan-Meier (KM) Statistics**								
4012				Approximate Chi Square Value (42.46, α)		28.52				Adjusted Chi Square Value (42.46, β)		26.78	
4013				95% KM Approximate Gamma UCL		8.4362E-4				95% KM Adjusted Gamma UCL		8.9823E-4	
4014													
4015					**Lognormal GOF Test on Detected Observations Only**								
4016				Shapiro Wilk Test Statistic		0.825				**Shapiro Wilk GOF Test**			
4017				10% Shapiro Wilk Critical Value		0.826				Detected Data Not Lognormal at 10% Significance Level			
4018				Lilliefors Test Statistic		0.275				**Lilliefors GOF Test**			
4019				10% Lilliefors Critical Value		0.298				Detected Data appear Lognormal at 10% Significance Level			
4020					**Detected Data appear Approximate Lognormal at 10% Significance Level**								
4021					**Note GOF tests may be unreliable for small sample sizes**								
4022													
4023					**Lognormal ROS Statistics Using Imputed Non-Detects**								
4024					Mean in Original Scale	5.0642E-4				Mean in Log Scale		-7.959	
4025					SD in Original Scale	4.4178E-4				SD in Log Scale		0.927	
4026				95% t UCL (assumes normality of ROS data)		7.3545E-4				95% Percentile Bootstrap UCL		7.2153E-4	
4027					95% BCA Bootstrap UCL	7.3582E-4				95% Bootstrap t UCL		7.8611E-4	
4028					95% H-UCL (Log ROS)	0.00117							
4029													
4030					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**								
4031					KM Mean (logged)	-7.657				KM Geo Mean		4.7290E-4	
4032					KM SD (logged)	0.569				95% Critical H Value (KM-Log)		2.229	
4033				KM Standard Error of Mean (logged)		0.18				95% H-UCL (KM -Log)		8.1449E-4	
4034					KM SD (logged)	0.569				95% Critical H Value (KM-Log)		2.229	
4035				KM Standard Error of Mean (logged)		0.18							
4036													
4037					**DL/2 Statistics**								
4038					**DL/2 Normal**					**DL/2 Log-Transformed**			
4039					Mean in Original Scale	4.9167E-4				Mean in Log Scale		-8.003	
4040					SD in Original Scale	4.5067E-4				SD in Log Scale		0.91	
4041				95% t UCL (Assumes normality)		7.2531E-4				95% H-Stat UCL		0.00108	
4042					**DL/2 is not a recommended method, provided for comparisons and historical reasons**								
4043													
4044					**Nonparametric Distribution Free UCL Statistics**								
4045					**Detected Data appear Normal Distributed at 1% Significance Level**								
4046													
4047					**Suggested UCL to Use**								
4048					95% KM (t) UCL	7.7958E-4							
4049													
4050					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
4051					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
4052					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
4053													
4054	**PFOA_Skeleton Creek_Prey Fish**												
4055													
4056					**General Statistics**								
4057					Total Number of Observations	23				Number of Distinct Observations		8	
4058					Number of Detects	12				Number of Non-Detects		11	
4059					Number of Distinct Detects	7				Number of Distinct Non-Detects		2	
4060					Minimum Detect	3.0000E-4				Minimum Non-Detect		3.0000E-4	
4061					Maximum Detect	0.0021				Maximum Non-Detect		0.001	
4062					Variance Detects	2.5152E-7				Percent Non-Detects		47.83%	
4063					Mean Detects	6.6667E-4				SD Detects		5.0151E-4	
4064					Median Detects	5.5000E-4				CV Detects		0.752	
4065					Skewness Detects	2.478				Kurtosis Detects		6.698	
4066					Mean of Logged Detects	-7.483				SD of Logged Detects		0.556	
4067													
4068					**Normal GOF Test on Detects Only**								
4069					Shapiro Wilk Test Statistic	0.683				**Shapiro Wilk GOF Test**			
4070					1% Shapiro Wilk Critical Value	0.805				Detected Data Not Normal at 1% Significance Level			
4071					Lilliefors Test Statistic	0.307				**Lilliefors GOF Test**			
4072					1% Lilliefors Critical Value	0.281				Detected Data Not Normal at 1% Significance Level			
4073					**Detected Data Not Normal at 1% Significance Level**								
4074													
4075					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**								
4076					KM Mean	5.0435E-4				KM Standard Error of Mean		8.5744E-5	

4077					90KM SD	3.9026E-4					95% KM (BCA) UCL	6.4757E-4		
4078					95% KM (t) UCL	6.5158E-4					95% KM (Percentile Bootstrap) UCL	6.5326E-4		
4079					95% KM (z) UCL	6.4538E-4					95% KM Bootstrap t UCL	8.2941E-4		
4080					90% KM Chebyshev UCL	7.6158E-4					95% KM Chebyshev UCL	8.7810E-4		
4081					97.5% KM Chebyshev UCL	0.00104					99% KM Chebyshev UCL	0.00136		
4082														
4083					**Gamma GOF Tests on Detected Observations Only**									
4084					A-D Test Statistic	0.809					**Anderson-Darling GOF Test**			
4085					5% A-D Critical Value	0.739					Detected Data Not Gamma Distributed at 5% Significance Level			
4086					K-S Test Statistic	0.246					**Kolmogorov-Smirnov GOF**			
4087					5% K-S Critical Value	0.247					Detected data appear Gamma Distributed at 5% Significance Level			
4088					**Detected data follow Appr. Gamma Distribution at 5% Significance Level**									
4089														
4090					**Gamma Statistics on Detected Data Only**									
4091					k hat (MLE)	3.103					k star (bias corrected MLE)	2.383		
4092					Theta hat (MLE)	2.1483E-4					Theta star (bias corrected MLE)	2.7976E-4		
4093					nu hat (MLE)	74.48					nu star (bias corrected)	57.19		
4094					Mean (detects)	6.6667E-4								
4095														
4096					**Gamma ROS Statistics using Imputed Non-Detects**									
4097					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs									
4098					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)									
4099					For such situations, GROS method may yield incorrect values of UCLs and BTVs									
4100					This is especially true when the sample size is small.									
4101					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates									
4102					Minimum	3.0000E-4					Mean	0.00513		
4103					Maximum	0.01					Median	0.0021		
4104					SD	0.00478					CV	0.932		
4105					k hat (MLE)	0.722					k star (bias corrected MLE)	0.656		
4106					Theta hat (MLE)	0.00711					Theta star (bias corrected MLE)	0.00782		
4107					nu hat (MLE)	33.19					nu star (bias corrected)	30.2		
4108					Adjusted Level of Significance (β)	0.0389								
4109					Approximate Chi Square Value (30.20, α)	18.65					Adjusted Chi Square Value (30.20, β)	17.99		
4110					95% Gamma Approximate UCL	0.00831					95% Gamma Adjusted UCL	0.00861		
4111														
4112					**Estimates of Gamma Parameters using KM Estimates**									
4113					Mean (KM)	5.0435E-4					SD (KM)	3.9026E-4		
4114					Variance (KM)	1.5230E-7					SE of Mean (KM)	8.5744E-5		
4115					k hat (KM)	1.67					k star (KM)	1.481		
4116					nu hat (KM)	76.83					nu star (KM)	68.14		
4117					theta hat (KM)	3.0197E-4					theta star (KM)	3.4047E-4		
4118					80% gamma percentile (KM)	7.8140E-4					90% gamma percentile (KM)	0.00105		
4119					95% gamma percentile (KM)	0.00132					99% gamma percentile (KM)	0.00192		
4120														
4121					**Gamma Kaplan-Meier (KM) Statistics**									
4122					Approximate Chi Square Value (68.14, α)	50.14					Adjusted Chi Square Value (68.14, β)	49.02		
4123					95% KM Approximate Gamma UCL	6.8540E-4					95% KM Adjusted Gamma UCL	7.0105E-4		
4124														
4125					**Lognormal GOF Test on Detected Observations Only**									
4126					Shapiro Wilk Test Statistic	0.887					**Shapiro Wilk GOF Test**			
4127					10% Shapiro Wilk Critical Value	0.883					Detected Data appear Lognormal at 10% Significance Level			
4128					Lilliefors Test Statistic	0.204					**Lilliefors GOF Test**			
4129					10% Lilliefors Critical Value	0.223					Detected Data appear Lognormal at 10% Significance Level			
4130					**Detected Data appear Lognormal at 10% Significance Level**									
4131														
4132					**Lognormal ROS Statistics Using Imputed Non-Detects**									
4133					Mean in Original Scale	4.4255E-4					Mean in Log Scale	-8.042		
4134					SD in Original Scale	4.3451E-4					SD in Log Scale	0.794		
4135					95% t UCL (assumes normality of ROS data)	5.9813E-4					95% Percentile Bootstrap UCL	6.0235E-4		
4136					95% BCA Bootstrap UCL	6.5316E-4					95% Bootstrap t UCL	7.3561E-4		
4137					95% H-UCL (Log ROS)	6.4786E-4								
4138														
4139					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**									
4140					KM Mean (logged)	-7.752					KM Geo Mean	4.2967E-4		
4141					KM SD (logged)	0.494					95% Critical H Value (KM-Log)	1.968		
4142					KM Standard Error of Mean (logged)	0.111					95% H-UCL (KM -Log)	5.9741E-4		
4143					KM SD (logged)	0.494					95% Critical H Value (KM-Log)	1.968		
4144					KM Standard Error of Mean (logged)	0.111								
4145														
4146					**DL/2 Statistics**									
4147					**DL/2 Normal**						**DL/2 Log-Transformed**			
4148					Mean in Original Scale	4.6522E-4					Mean in Log Scale	-7.958		
4149					SD in Original Scale	4.2917E-4					SD in Log Scale	0.745		
4150					95% t UCL (Assumes normality)	6.1888E-4					95% H-Stat UCL	6.5695E-4		
4151					**DL/2 is not a recommended method, provided for comparisons and historical reasons**									
4152														
4153					**Nonparametric Distribution Free UCL Statistics**									
4154					**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**									
4155														
4156					**Suggested UCL to Use**									
4157					95% KM Adjusted Gamma UCL	7.0105E-4					95% GROS Adjusted Gamma UCL	0.00861		

	A	B	C	D	E	F	G	H	I	J	K	L	M
4158	**Warning: Recommended UCL exceeds the maximum observation**												
4159													
4160	When a data set follows an approximate distribution passing only one of the GOF tests,												
4161	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
4162													
4163	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
4164	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
4165	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
4166													
4167	**PFOS + PFHxS_Laverton RAAF Swamp_Terrestrial Plant**												
4168													
4169	**General Statistics**												
4170	Total Number of Observations				10		Number of Distinct Observations				6		
4171	Number of Detects				7		Number of Non-Detects				3		
4172	Number of Distinct Detects				5		Number of Distinct Non-Detects				1		
4173	Minimum Detect				7.0000E-4		Minimum Non-Detect				5.0000E-4		
4174	Maximum Detect				0.0019		Maximum Non-Detect				5.0000E-4		
4175	Variance Detects				2.2143E-7		Percent Non-Detects				30%		
4176	Mean Detects				0.00131		SD Detects				4.7056E-4		
4177	Median Detects				0.0015		CV Detects				0.358		
4178	Skewness Detects				-0.434		Kurtosis Detects				-1.334		
4179	Mean of Logged Detects				-6.7		SD of Logged Detects				0.41		
4180													
4181	**Normal GOF Test on Detects Only**												
4182	Shapiro Wilk Test Statistic				0.899		**Shapiro Wilk GOF Test**						
4183	1% Shapiro Wilk Critical Value				0.73		Detected Data appear Normal at 1% Significance Level						
4184	Lilliefors Test Statistic				0.225		**Lilliefors GOF Test**						
4185	1% Lilliefors Critical Value				0.35		Detected Data appear Normal at 1% Significance Level						
4186	**Detected Data appear Normal at 1% Significance Level**												
4187	**Note GOF tests may be unreliable for small sample sizes**												
4188													
4189	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
4190	KM Mean				0.00107		KM Standard Error of Mean				1.7817E-4		
4191	90KM SD				5.2163E-4		95% KM (BCA) UCL				0.00133		
4192	95% KM (t) UCL				0.0014		95% KM (Percentile Bootstrap) UCL				0.00134		
4193	95% KM (z) UCL				0.00136		95% KM Bootstrap t UCL				0.0014		
4194	90% KM Chebyshev UCL				0.0016		95% KM Chebyshev UCL				0.00185		
4195	97.5% KM Chebyshev UCL				0.00218		99% KM Chebyshev UCL				0.00284		
4196													
4197	**Gamma GOF Tests on Detected Observations Only**												
4198	A-D Test Statistic				0.531		**Anderson-Darling GOF Test**						
4199	5% A-D Critical Value				0.709		Detected data appear Gamma Distributed at 5% Significance Level						
4200	K-S Test Statistic				0.261		**Kolmogorov-Smirnov GOF**						
4201	5% K-S Critical Value				0.312		Detected data appear Gamma Distributed at 5% Significance Level						
4202	**Detected data appear Gamma Distributed at 5% Significance Level**												
4203	**Note GOF tests may be unreliable for small sample sizes**												
4204													
4205	**Gamma Statistics on Detected Data Only**												
4206	k hat (MLE)				7.761		k star (bias corrected MLE)				4.53		
4207	Theta hat (MLE)				1.6935E-4		Theta star (bias corrected MLE)				2.9014E-4		
4208	nu hat (MLE)				108.6		nu star (bias corrected)				63.42		
4209	Mean (detects)				0.00131								
4210													
4211	**Gamma ROS Statistics using Imputed Non-Detects**												
4212	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
4213	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
4214	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
4215	This is especially true when the sample size is small.												
4216	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
4217	Minimum				7.0000E-4		Mean				0.00392		
4218	Maximum				0.01		Median				0.0016		
4219	SD				0.00421		CV				1.075		
4220	k hat (MLE)				1.079		k star (bias corrected MLE)				0.822		
4221	Theta hat (MLE)				0.00363		Theta star (bias corrected MLE)				0.00477		
4222	nu hat (MLE)				21.59		nu star (bias corrected)				16.45		
4223	Adjusted Level of Significance (β)				0.0267								
4224	Approximate Chi Square Value (16.45, α)				8.277		Adjusted Chi Square Value (16.45, β)				7.292		
4225	95% Gamma Approximate UCL				0.00779		95% Gamma Adjusted UCL				0.00884		
4226													
4227	**Estimates of Gamma Parameters using KM Estimates**												
4228	Mean (KM)				0.00107		SD (KM)				5.2163E-4		
4229	Variance (KM)				2.7210E-7		SE of Mean (KM)				1.7817E-4		
4230	k hat (KM)				4.208		k star (KM)				3.012		
4231	nu hat (KM)				84.15		nu star (KM)				60.24		
4232	theta hat (KM)				2.5430E-4		theta star (KM)				3.5524E-4		
4233	80% gamma percentile (KM)				0.00153		90% gamma percentile (KM)				0.0019		
4234	95% gamma percentile (KM)				0.00224		99% gamma percentile (KM)				0.00299		
4235													
4236	**Gamma Kaplan-Meier (KM) Statistics**												
4237	Approximate Chi Square Value (60.24, α)				43.39		Adjusted Chi Square Value (60.24, β)				40.92		
4238	95% KM Approximate Gamma UCL				0.00149		95% KM Adjusted Gamma UCL				0.00158		

4239												
4240	**Lognormal GOF Test on Detected Observations Only**											
4241				Shapiro Wilk Test Statistic	0.844	**Shapiro Wilk GOF Test**						
4242				10% Shapiro Wilk Critical Value	0.838	Detected Data appear Lognormal at 10% Significance Level						
4243				Lilliefors Test Statistic	0.257	**Lilliefors GOF Test**						
4244				10% Lilliefors Critical Value	0.28	Detected Data appear Lognormal at 10% Significance Level						
4245	**Detected Data appear Lognormal at 10% Significance Level**											
4246	**Note GOF tests may be unreliable for small sample sizes**											
4247												
4248	**Lognormal ROS Statistics Using Imputed Non-Detects**											
4249				Mean in Original Scale	0.00106	Mean in Log Scale	-6.996					
4250				SD in Original Scale	5.6364E-4	SD in Log Scale	0.592					
4251				95% t UCL (assumes normality of ROS data)	0.00139	95% Percentile Bootstrap UCL	0.00135					
4252				95% BCA Bootstrap UCL	0.00134	95% Bootstrap t UCL	0.00141					
4253				95% H-UCL (Log ROS)	0.00174							
4254												
4255	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
4256				KM Mean (logged)	-6.97	KM Geo Mean	9.3922E-4					
4257				KM SD (logged)	0.521	95% Critical H Value (KM-Log)	2.249					
4258				KM Standard Error of Mean (logged)	0.178	95% H-UCL (KM -Log)	0.00159					
4259				KM SD (logged)	0.521	95% Critical H Value (KM-Log)	2.249					
4260				KM Standard Error of Mean (logged)	0.178							
4261												
4262	**DL/2 Statistics**											
4263	**DL/2 Normal**					**DL/2 Log-Transformed**						
4264				Mean in Original Scale	9.9500E-4	Mean in Log Scale	-7.178					
4265				SD in Original Scale	6.4181E-4	SD in Log Scale	0.84					
4266				95% t UCL (Assumes normality)	0.00137	95% H-Stat UCL	0.00237					
4267	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
4268												
4269	**Nonparametric Distribution Free UCL Statistics**											
4270	**Detected Data appear Normal Distributed at 1% Significance Level**											
4271												
4272	**Suggested UCL to Use**											
4273				95% KM (t) UCL	0.0014							
4274												
4275	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
4276	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
4277	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
4278												
4279												
4280	**PFOS + PFHxS_Laverton RAAF Swamp_Terrestrial Invertebrate**											
4281												
4282	**General Statistics**											
4283				Total Number of Observations	7	Number of Distinct Observations	7					
4284						Number of Missing Observations	0					
4285				Minimum	0.007	Mean	0.0976					
4286				Maximum	0.305	Median	0.0531					
4287				SD	0.106	Std. Error of Mean	0.0399					
4288				Coefficient of Variation	1.081	Skewness	1.56					
4289												
4290	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**											
4291	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**											
4292	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**											
4293	**The Chebyshev UCL often results in gross overestimates of the mean.**											
4294	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**											
4295												
4296	**Normal GOF Test**											
4297				Shapiro Wilk Test Statistic	0.826	**Shapiro Wilk GOF Test**						
4298				1% Shapiro Wilk Critical Value	0.73	Data appear Normal at 1% Significance Level						
4299				Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**						
4300				1% Lilliefors Critical Value	0.35	Data appear Normal at 1% Significance Level						
4301	**Data appear Normal at 1% Significance Level**											
4302	**Note GOF tests may be unreliable for small sample sizes**											
4303												
4304	**Assuming Normal Distribution**											
4305	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**						
4306				95% Student's-t UCL	0.175	95% Adjusted-CLT UCL (Chen-1995)	0.188					
4307						95% Modified-t UCL (Johnson-1978)	0.179					
4308												
4309	**Gamma GOF Test**											
4310				A-D Test Statistic	0.194	**Anderson-Darling Gamma GOF Test**						
4311				5% A-D Critical Value	0.727	Detected data appear Gamma Distributed at 5% Significance Level						
4312				K-S Test Statistic	0.157	**Kolmogorov-Smirnov Gamma GOF Test**						
4313				5% K-S Critical Value	0.319	Detected data appear Gamma Distributed at 5% Significance Level						
4314	**Detected data appear Gamma Distributed at 5% Significance Level**											
4315	**Note GOF tests may be unreliable for small sample sizes**											
4316												
4317	**Gamma Statistics**											
4318				k hat (MLE)	1.028	k star (bias corrected MLE)	0.682					
4319				Theta hat (MLE)	0.095	Theta star (bias corrected MLE)	0.143					

	A	B	C	D	E	F	G	H	I	J	K	L	M
4320					nu hat (MLE)	14.39				nu star (bias corrected)		9.553	
4321					MLE Mean (bias corrected)	0.0976				MLE Sd (bias corrected)		0.118	
4322										Approximate Chi Square Value (0.05)		3.665	
4323					Adjusted Level of Significance	0.0158				Adjusted Chi Square Value		2.652	
4324													
4325					**Assuming Gamma Distribution**								
4326					95% Approximate Gamma UCL	0.255				95% Adjusted Gamma UCL		0.352	
4327													
4328					**Lognormal GOF Test**								
4329					Shapiro Wilk Test Statistic	0.981				**Shapiro Wilk Lognormal GOF Test**			
4330					10% Shapiro Wilk Critical Value	0.838				Data appear Lognormal at 10% Significance Level			
4331					Lilliefors Test Statistic	0.154				**Lilliefors Lognormal GOF Test**			
4332					10% Lilliefors Critical Value	0.28				Data appear Lognormal at 10% Significance Level			
4333					**Data appear Lognormal at 10% Significance Level**								
4334					**Note GOF tests may be unreliable for small sample sizes**								
4335													
4336					**Lognormal Statistics**								
4337					Minimum of Logged Data	-4.962				Mean of logged Data		-2.887	
4338					Maximum of Logged Data	-1.187				SD of logged Data		1.241	
4339													
4340					**Assuming Lognormal Distribution**								
4341					95% H-UCL	1.118				90% Chebyshev (MVUE) UCL		0.247	
4342					95% Chebyshev (MVUE) UCL	0.312				97.5% Chebyshev (MVUE) UCL		0.403	
4343					99% Chebyshev (MVUE) UCL	0.581							
4344													
4345					**Nonparametric Distribution Free UCL Statistics**								
4346					**Data appear to follow a Discernible Distribution**								
4347													
4348					**Nonparametric Distribution Free UCLs**								
4349					95% CLT UCL	0.163				95% BCA Bootstrap UCL		0.182	
4350					95% Standard Bootstrap UCL	0.159				95% Bootstrap-t UCL		0.299	
4351					95% Hall's Bootstrap UCL	0.514				95% Percentile Bootstrap UCL		0.164	
4352					90% Chebyshev(Mean, Sd) UCL	0.217				95% Chebyshev(Mean, Sd) UCL		0.272	
4353					97.5% Chebyshev(Mean, Sd) UCL	0.347				99% Chebyshev(Mean, Sd) UCL		0.495	
4354													
4355					**Suggested UCL to Use**								
4356					95% Student's-t UCL	0.175							
4357													
4358					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**								
4359					**Please verify the data were collected from random locations.**								
4360					**If the data were collected using judgmental or other non-random methods,**								
4361					**then contact a statistician to correctly calculate UCLs.**								
4362													
4363					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
4364					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
4365					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
4366													
4367	**PFOS_Laverton RAAF Swamp_Terrestrial Plant**												
4368													
4369					**General Statistics**								
4370					Total Number of Observations	10				Number of Distinct Observations		5	
4371					Number of Detects	4				Number of Non-Detects		6	
4372					Number of Distinct Detects	4				Number of Distinct Non-Detects		1	
4373					Minimum Detect	4.0000E-4				Minimum Non-Detect		3.0000E-4	
4374					Maximum Detect	0.0011				Maximum Non-Detect		3.0000E-4	
4375					Variance Detects	1.0000E-7				Percent Non-Detects		60%	
4376					Mean Detects	7.0000E-4				SD Detects		3.1623E-4	
4377					Median Detects	6.5000E-4				CV Detects		0.452	
4378					Skewness Detects	0.632				Kurtosis Detects		-1.7	
4379					Mean of Logged Detects	-7.342				SD of Logged Detects		0.456	
4380													
4381					**Normal GOF Test on Detects Only**								
4382					Shapiro Wilk Test Statistic	0.941				**Shapiro Wilk GOF Test**			
4383					1% Shapiro Wilk Critical Value	0.687				Detected Data appear Normal at 1% Significance Level			
4384					Lilliefors Test Statistic	0.236				**Lilliefors GOF Test**			
4385					1% Lilliefors Critical Value	0.413				Detected Data appear Normal at 1% Significance Level			
4386					**Detected Data appear Normal at 1% Significance Level**								
4387					**Note GOF tests may be unreliable for small sample sizes**								
4388													
4389					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**								
4390					KM Mean	4.6000E-4				KM Standard Error of Mean		9.5499E-5	
4391					90KM SD	2.6153E-4				95% KM (BCA) UCL		N/A	
4392					95% KM (t) UCL	6.3506E-4				95% KM (Percentile Bootstrap) UCL		N/A	
4393					95% KM (z) UCL	6.1708E-4				95% KM Bootstrap t UCL		N/A	
4394					90% KM Chebyshev UCL	7.4650E-4				95% KM Chebyshev UCL		8.7627E-4	
4395					97.5% KM Chebyshev UCL	0.00106				99% KM Chebyshev UCL		0.00141	
4396													
4397					**Gamma GOF Tests on Detected Observations Only**								
4398					A-D Test Statistic	0.27				**Anderson-Darling GOF Test**			
4399					5% A-D Critical Value	0.658				Detected data appear Gamma Distributed at 5% Significance Level			
4400					K-S Test Statistic	0.253				**Kolmogorov-Smirnov GOF**			

4401	5% K-S Critical Value				0.396	Detected data appear Gamma Distributed at 5% Significance Level							
4402	**Detected data appear Gamma Distributed at 5% Significance Level**												
4403	**Note GOF tests may be unreliable for small sample sizes**												
4404													
4405	**Gamma Statistics on Detected Data Only**												
4406	k hat (MLE)				6.602	k star (bias corrected MLE)						1.817	
4407	Theta hat (MLE)				1.0603E-4	Theta star (bias corrected MLE)						3.8522E-4	
4408	nu hat (MLE)				52.82	nu star (bias corrected)						14.54	
4409	Mean (detects)				7.0000E-4								
4410													
4411	**Gamma ROS Statistics using Imputed Non-Detects**												
4412	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
4413	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
4414	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
4415	This is especially true when the sample size is small.												
4416	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
4417	Minimum				4.0000E-4	Mean						0.00628	
4418	Maximum				0.01	Median						0.01	
4419	SD				0.00481	CV						0.765	
4420	k hat (MLE)				0.925	k star (bias corrected MLE)						0.714	
4421	Theta hat (MLE)				0.00679	Theta star (bias corrected MLE)						0.00879	
4422	nu hat (MLE)				18.51	nu star (bias corrected)						14.29	
4423	Adjusted Level of Significance (β)				0.0267								
4424	Approximate Chi Square Value (14.29, α)				6.77	Adjusted Chi Square Value (14.29, β)						5.894	
4425	95% Gamma Approximate UCL				0.0133	95% Gamma Adjusted UCL						N/A	
4426													
4427	**Estimates of Gamma Parameters using KM Estimates**												
4428	Mean (KM)				4.6000E-4	SD (KM)						2.6153E-4	
4429	Variance (KM)				6.8400E-8	SE of Mean (KM)						9.5499E-5	
4430	k hat (KM)				3.094	k star (KM)						2.232	
4431	nu hat (KM)				61.87	nu star (KM)						44.64	
4432	theta hat (KM)				1.4870E-4	theta star (KM)						2.0608E-4	
4433	80% gamma percentile (KM)				6.7977E-4	90% gamma percentile (KM)						8.7203E-4	
4434	95% gamma percentile (KM)				0.00105	99% gamma percentile (KM)						0.00146	
4435													
4436	**Gamma Kaplan-Meier (KM) Statistics**												
4437	Approximate Chi Square Value (44.64, α)				30.32	Adjusted Chi Square Value (44.64, β)						28.28	
4438	95% KM Approximate Gamma UCL				6.7735E-4	95% KM Adjusted Gamma UCL						7.2618E-4	
4439													
4440	**Lognormal GOF Test on Detected Observations Only**												
4441	Shapiro Wilk Test Statistic				0.959	**Shapiro Wilk GOF Test**							
4442	10% Shapiro Wilk Critical Value				0.792	Detected Data appear Lognormal at 10% Significance Level							
4443	Lilliefors Test Statistic				0.215	**Lilliefors GOF Test**							
4444	10% Lilliefors Critical Value				0.346	Detected Data appear Lognormal at 10% Significance Level							
4445	**Detected Data appear Lognormal at 10% Significance Level**												
4446	**Note GOF tests may be unreliable for small sample sizes**												
4447													
4448	**Lognormal ROS Statistics Using Imputed Non-Detects**												
4449	Mean in Original Scale				3.6443E-4	Mean in Log Scale						-8.335	
4450	SD in Original Scale				3.4598E-4	SD in Log Scale						0.992	
4451	95% t UCL (assumes normality of ROS data)				5.6499E-4	95% Percentile Bootstrap UCL						5.4459E-4	
4452	95% BCA Bootstrap UCL				5.8594E-4	95% Bootstrap t UCL						7.2194E-4	
4453	95% H-UCL (Log ROS)				0.00109								
4454													
4455	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
4456	KM Mean (logged)				-7.804	KM Geo Mean						4.0815E-4	
4457	KM SD (logged)				0.452	95% Critical H Value (KM-Log)						2.155	
4458	KM Standard Error of Mean (logged)				0.165	95% H-UCL (KM -Log)						6.2572E-4	
4459	KM SD (logged)				0.452	95% Critical H Value (KM-Log)						2.155	
4460	KM Standard Error of Mean (logged)				0.165								
4461													
4462	**DL/2 Statistics**												
4463	**DL/2 Normal**					**DL/2 Log-Transformed**							
4464	Mean in Original Scale				3.7000E-4	Mean in Log Scale						-8.22	
4465	SD in Original Scale				3.3764E-4	SD in Log Scale						0.8	
4466	95% t UCL (Assumes normality)				5.6572E-4	95% H-Stat UCL						7.6388E-4	
4467	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
4468													
4469	**Nonparametric Distribution Free UCL Statistics**												
4470	**Detected Data appear Normal Distributed at 1% Significance Level**												
4471													
4472	**Suggested UCL to Use**												
4473	95% KM (t) UCL				6.3506E-4								
4474													
4475	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
4476	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
4477	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
4478													
4479													
4480	**PFOS_Laverton RAAF Swamp_Terrestrial Invertebrate**												
4481													

4482	**General Statistics**												
4483					Total Number of Observations	7				Number of Distinct Observations	7		
4484										Number of Missing Observations	0		
4485					Minimum	0.006				Mean	0.0924		
4486					Maximum	0.29				Median	0.051		
4487					SD	0.101				Std. Error of Mean	0.038		
4488					Coefficient of Variation	1.089				Skewness	1.56		
4489													
4490	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
4491	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
4492	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
4493	**The Chebyshev UCL often results in gross overestimates of the mean.**												
4494	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
4495													
4496	**Normal GOF Test**												
4497					Shapiro Wilk Test Statistic	0.825				**Shapiro Wilk GOF Test**			
4498					1% Shapiro Wilk Critical Value	0.73				Data appear Normal at 1% Significance Level			
4499					Lilliefors Test Statistic	0.263				**Lilliefors GOF Test**			
4500					1% Lilliefors Critical Value	0.35				Data appear Normal at 1% Significance Level			
4501	**Data appear Normal at 1% Significance Level**												
4502	**Note GOF tests may be unreliable for small sample sizes**												
4503													
4504	**Assuming Normal Distribution**												
4505	**95% Normal UCL**									**95% UCLs (Adjusted for Skewness)**			
4506					95% Student's-t UCL	0.166				95% Adjusted-CLT UCL (Chen-1995)	0.179		
4507										95% Modified-t UCL (Johnson-1978)	0.17		
4508													
4509	**Gamma GOF Test**												
4510					A-D Test Statistic	0.191				**Anderson-Darling Gamma GOF Test**			
4511					5% A-D Critical Value	0.728				Detected data appear Gamma Distributed at 5% Significance Level			
4512					K-S Test Statistic	0.147				**Kolmogorov-Smirnov Gamma GOF Test**			
4513					5% K-S Critical Value	0.32				Detected data appear Gamma Distributed at 5% Significance Level			
4514	**Detected data appear Gamma Distributed at 5% Significance Level**												
4515	**Note GOF tests may be unreliable for small sample sizes**												
4516													
4517	**Gamma Statistics**												
4518					k hat (MLE)	1				k star (bias corrected MLE)	0.666		
4519					Theta hat (MLE)	0.0925				Theta star (bias corrected MLE)	0.139		
4520					nu hat (MLE)	14				nu star (bias corrected)	9.331		
4521					MLE Mean (bias corrected)	0.0924				MLE Sd (bias corrected)	0.113		
4522										Approximate Chi Square Value (0.05)	3.528		
4523					Adjusted Level of Significance	0.0158				Adjusted Chi Square Value	2.539		
4524													
4525	**Assuming Gamma Distribution**												
4526					95% Approximate Gamma UCL	0.244				95% Adjusted Gamma UCL	0.34		
4527													
4528	**Lognormal GOF Test**												
4529					Shapiro Wilk Test Statistic	0.978				**Shapiro Wilk Lognormal GOF Test**			
4530					10% Shapiro Wilk Critical Value	0.838				Data appear Lognormal at 10% Significance Level			
4531					Lilliefors Test Statistic	0.161				**Lilliefors Lognormal GOF Test**			
4532					10% Lilliefors Critical Value	0.28				Data appear Lognormal at 10% Significance Level			
4533	**Data appear Lognormal at 10% Significance Level**												
4534	**Note GOF tests may be unreliable for small sample sizes**												
4535													
4536	**Lognormal Statistics**												
4537					Minimum of Logged Data	-5.116				Mean of logged Data	-2.959		
4538					Maximum of Logged Data	-1.238				SD of logged Data	1.272		
4539													
4540	**Assuming Lognormal Distribution**												
4541					95% H-UCL	1.198				90% Chebyshev (MVUE) UCL	0.24		
4542					95% Chebyshev (MVUE) UCL	0.304				97.5% Chebyshev (MVUE) UCL	0.392		
4543					99% Chebyshev (MVUE) UCL	0.567							
4544													
4545	**Nonparametric Distribution Free UCL Statistics**												
4546	**Data appear to follow a Discernible Distribution**												
4547													
4548	**Nonparametric Distribution Free UCLs**												
4549					95% CLT UCL	0.155				95% BCA Bootstrap UCL	0.171		
4550					95% Standard Bootstrap UCL	0.151				95% Bootstrap-t UCL	0.29		
4551					95% Hall's Bootstrap UCL	0.496				95% Percentile Bootstrap UCL	0.156		
4552					90% Chebyshev(Mean, Sd) UCL	0.207				95% Chebyshev(Mean, Sd) UCL	0.258		
4553					97.5% Chebyshev(Mean, Sd) UCL	0.33				99% Chebyshev(Mean, Sd) UCL	0.471		
4554													
4555	**Suggested UCL to Use**												
4556					95% Student's-t UCL	0.166							
4557													
4558	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
4559	**Please verify the data were collected from random locations.**												
4560	**If the data were collected using judgmental or other non-random methods,**												
4561	**then contact a statistician to correctly calculate UCLs.**												
4562													

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOA_Laverton RAAF Swamp_Terrestrial Plant

General Statistics

Total Number of Observations	10	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	9
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable PFOA_Laverton RAAF Swamp_Terrestrial Plant was not processed!

PFOA_Laverton RAAF Swamp_Terrestrial Invertebrate

General Statistics

Total Number of Observations	7	Number of Distinct Observations	4
Number of Detects	4	Number of Non-Detects	3
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	4.0000E-4	Minimum Non-Detect	3.0000E-4
Maximum Detect	0.0011	Maximum Non-Detect	3.0000E-4
Variance Detects	1.1000E-7	Percent Non-Detects	42.86%
Mean Detects	6.5000E-4	SD Detects	3.3166E-4
Median Detects	5.5000E-4	CV Detects	0.51
Skewness Detects	1.096	Kurtosis Detects	-0.0496
Mean of Logged Detects	-7.431	SD of Logged Detects	0.49

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.687	Detected Data appear Normal at 1% Significance Level	
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**	
1% Lilliefors Critical Value	0.413	Detected Data appear Normal at 1% Significance Level	

Detected Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	5.0000E-4	KM Standard Error of Mean	1.2122E-4
90KM SD	2.7775E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	7.3555E-4	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	6.9939E-4	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	8.6365E-4	95% KM Chebyshev UCL	0.00103
97.5% KM Chebyshev UCL	0.00126	99% KM Chebyshev UCL	0.00171

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.428	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.659	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.319	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.396	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics on Detected Data Only

k hat (MLE)	5.555	k star (bias corrected MLE)	1.555
Theta hat (MLE)	1.1702E-4	Theta star (bias corrected MLE)	4.1791E-4
nu hat (MLE)	44.44	nu star (bias corrected)	12.44
Mean (detects)	6.5000E-4		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)
For such situations, GROS method may yield incorrect values of UCLs and BTVs
This is especially true when the sample size is small.
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.0000E-4	Mean	0.00466
Maximum	0.01	Median	0.0011
SD	0.005	CV	1.074
k hat (MLE)	0.709	k star (bias corrected MLE)	0.5
Theta hat (MLE)	0.00657	Theta star (bias corrected MLE)	0.00931
nu hat (MLE)	9.928	nu star (bias corrected)	7.006
Adjusted Level of Significance (β)	0.0158		
Approximate Chi Square Value (7.01, α)	2.174	Adjusted Chi Square Value (7.01, β)	1.454

4644	95% Gamma Approximate UCL					0.015	95% Gamma Adjusted UCL					N/A	
4645													
4646	**Estimates of Gamma Parameters using KM Estimates**												
4647	Mean (KM)					5.0000E-4	SD (KM)					2.7775E-4	
4648	Variance (KM)					7.7143E-8	SE of Mean (KM)					1.2122E-4	
4649	k hat (KM)					3.241	k star (KM)					1.947	
4650	nu hat (KM)					45.37	nu star (KM)					27.26	
4651	theta hat (KM)					1.5429E-4	theta star (KM)					2.5679E-4	
4652	80% gamma percentile (KM)					7.5094E-4	90% gamma percentile (KM)					9.7859E-4	
4653	95% gamma percentile (KM)					0.0012	99% gamma percentile (KM)					0.00168	
4654													
4655	**Gamma Kaplan-Meier (KM) Statistics**												
4656	Approximate Chi Square Value (27.26, α)					16.35	Adjusted Chi Square Value (27.26, β)					13.87	
4657	95% KM Approximate Gamma UCL					8.3349E-4	95% KM Adjusted Gamma UCL					9.8288E-4	
4658													
4659	**Lognormal GOF Test on Detected Observations Only**												
4660	Shapiro Wilk Test Statistic					0.865	**Shapiro Wilk GOF Test**						
4661	10% Shapiro Wilk Critical Value					0.792	Detected Data appear Lognormal at 10% Significance Level						
4662	Lilliefors Test Statistic					0.289	**Lilliefors GOF Test**						
4663	10% Lilliefors Critical Value					0.346	Detected Data appear Lognormal at 10% Significance Level						
4664	**Detected Data appear Lognormal at 10% Significance Level**												
4665	**Note GOF tests may be unreliable for small sample sizes**												
4666													
4667	**Lognormal ROS Statistics Using Imputed Non-Detects**												
4668	Mean in Original Scale					4.3382E-4	Mean in Log Scale					-8.054	
4669	SD in Original Scale					3.5873E-4	SD in Log Scale					0.88	
4670	95% t UCL (assumes normality of ROS data)					6.9728E-4	95% Percentile Bootstrap UCL					6.5481E-4	
4671	95% BCA Bootstrap UCL					6.8455E-4	95% Bootstrap t UCL					9.0567E-4	
4672	95% H-UCL (Log ROS)					0.00157							
4673													
4674	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
4675	KM Mean (logged)					-7.723	KM Geo Mean					4.4258E-4	
4676	KM SD (logged)					0.465	95% Critical H Value (KM-Log)					2.388	
4677	KM Standard Error of Mean (logged)					0.203	95% H-UCL (KM -Log)					7.7581E-4	
4678	KM SD (logged)					0.465	95% Critical H Value (KM-Log)					2.388	
4679	KM Standard Error of Mean (logged)					0.203							
4680													
4681	**DL/2 Statistics**												
4682	**DL/2 Normal**						**DL/2 Log-Transformed**						
4683	Mean in Original Scale					4.3571E-4	Mean in Log Scale					-8.02	
4684	SD in Original Scale					3.5557E-4	SD in Log Scale					0.812	
4685	95% t UCL (Assumes normality)					6.9686E-4	95% H-Stat UCL					0.00131	
4686	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
4687													
4688	**Nonparametric Distribution Free UCL Statistics**												
4689	**Detected Data appear Normal Distributed at 1% Significance Level**												
4690													
4691	**Suggested UCL to Use**												
4692	95% KM (t) UCL					7.3555E-4							
4693													
4694	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
4695	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
4696	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
4697													

	A	B	C	D	E	F	G	H	I	J	K	L	M
10			**PFOS + PFHxS**					**PFOS**			**PFOA**		
11	Location	*N*	*D*	Mean	*EPC*	*Basis*	MPE	*D*	*EPC*	*Basis*	*D*	*EPC*	*Basis*
12	Cheetham Wetlands	18	18	0.0264	0.048	95% Adjusted Gamma UCL	82%	18	0.048	95% Adjusted Gamma UCL	12	0.0021	95% KM Adjusted Gamma UCL
13	RAAF Laverton Swamp	15	14	0.0461	0.059	95% KM (t) UCL	28%	14	0.059	95% KM (t) UCL	9	0.0007	Maximum
14	Sanctuary Lakes	13	13	0.0032	0.004	95% Student's-t UCL	38%	13	0.0044	95% Student's-t UCL	5	0.0003	Maximum
15	Skeleton Creek	28	27	0.0725	0.12	95% KM Adjusted Gamma UCL	66%	27	0.12	95% KM Adjusted Gamma UCL	13	0.00047	95% KM Adjusted Gamma UCL

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 16/09/2025 8:47:20 AM
From File	WorkSheet_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Sum of PFHxS and PFOS_Addison Wetlands

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	0.0098	Mean	0.0169
Maximum	0.0239	Median	0.0169

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable Sum of PFHxS and PFOS_Addison Wetlands was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Sum of PFHxS and PFOS_Ashcroft Wetland

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	1
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable Sum of PFHxS and PFOS_Ashcroft Wetland was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Sum of PFHxS and PFOS_Bioretention Pond

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	0.019	Mean	0.0215
Maximum	0.024	Median	0.0215

Warning: This data set only has 2 observations!

Data set is too small to compute reliable and meaningful statistics and estimates!

The data set for variable Sum of PFHxS and PFOS_Bioretention Pond was not processed!

It is suggested to collect at least 8 to 10 observations before using these statistical methods!

If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.

Sum of PFHxS and PFOS_Cheetham Wetlands

General Statistics

Total Number of Observations	18	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	5.0000E-4	Mean	0.0264
Maximum	0.165	Median	0.0179
SD	0.0373	Std. Error of Mean	0.00879
Coefficient of Variation	1.413	Skewness	3.316

Normal GOF Test

Shapiro Wilk Test Statistic	0.598	**Shapiro Wilk GOF Test**	
1% Shapiro Wilk Critical Value	0.858	Data Not Normal at 1% Significance Level	
Lilliefors Test Statistic	0.27	**Lilliefors GOF Test**	

92	1% Lilliefors Critical Value				0.235	Data Not Normal at 1% Significance Level							
93	**Data Not Normal at 1% Significance Level**												
94													
95	**Assuming Normal Distribution**												
96	**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**							
97	95% Student's-t UCL				0.0417	95% Adjusted-CLT UCL (Chen-1995)					0.0482		
98						95% Modified-t UCL (Johnson-1978)					0.0428		
99													
100	**Gamma GOF Test**												
101	A-D Test Statistic				0.391	**Anderson-Darling Gamma GOF Test**							
102	5% A-D Critical Value				0.777	Detected data appear Gamma Distributed at 5% Significance Level							
103	K-S Test Statistic				0.129	**Kolmogorov-Smirnov Gamma GOF Test**							
104	5% K-S Critical Value				0.211	Detected data appear Gamma Distributed at 5% Significance Level							
105	**Detected data appear Gamma Distributed at 5% Significance Level**												
106													
107	**Gamma Statistics**												
108	k hat (MLE)				0.782	k star (bias corrected MLE)					0.689		
109	Theta hat (MLE)				0.0338	Theta star (bias corrected MLE)					0.0383		
110	nu hat (MLE)				28.14	nu star (bias corrected)					24.79		
111	MLE Mean (bias corrected)				0.0264	MLE Sd (bias corrected)					0.0318		
112						Approximate Chi Square Value (0.05)					14.45		
113	Adjusted Level of Significance				0.0357	Adjusted Chi Square Value					13.69		
114													
115	**Assuming Gamma Distribution**												
116	95% Approximate Gamma UCL				0.0453	95% Adjusted Gamma UCL					0.0478		
117													
118	**Lognormal GOF Test**												
119	Shapiro Wilk Test Statistic				0.929	**Shapiro Wilk Lognormal GOF Test**							
120	10% Shapiro Wilk Critical Value				0.914	Data appear Lognormal at 10% Significance Level							
121	Lilliefors Test Statistic				0.205	**Lilliefors Lognormal GOF Test**							
122	10% Lilliefors Critical Value				0.185	Data Not Lognormal at 10% Significance Level							
123	**Data appear Approximate Lognormal at 10% Significance Level**												
124													
125	**Lognormal Statistics**												
126	Minimum of Logged Data				-7.601	Mean of logged Data					-4.396		
127	Maximum of Logged Data				-1.802	SD of logged Data					1.466		
128													
129	**Assuming Lognormal Distribution**												
130	95% H-UCL				0.12	90% Chebyshev (MVUE) UCL					0.0718		
131	95% Chebyshev (MVUE) UCL				0.0897	97.5% Chebyshev (MVUE) UCL					0.114		
132	99% Chebyshev (MVUE) UCL				0.163								
133													
134	**Nonparametric Distribution Free UCL Statistics**												
135	**Data appear to follow a Discernible Distribution**												
136													
137	**Nonparametric Distribution Free UCLs**												
138	95% CLT UCL				0.0409	95% BCA Bootstrap UCL					0.0505		
139	95% Standard Bootstrap UCL				0.0404	95% Bootstrap-t UCL					0.0626		
140	95% Hall's Bootstrap UCL				0.102	95% Percentile Bootstrap UCL					0.0419		
141	90% Chebyshev(Mean, Sd) UCL				0.0528	95% Chebyshev(Mean, Sd) UCL					0.0647		
142	97.5% Chebyshev(Mean, Sd) UCL				0.0813	99% Chebyshev(Mean, Sd) UCL					0.114		
143													
144	**Suggested UCL to Use**												
145	95% Adjusted Gamma UCL				0.0478								
146													
147	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
148	**Please verify the data were collected from random locations.**												
149	**If the data were collected using judgmental or other non-random methods,**												
150	**then contact a statistician to correctly calculate UCLs.**												
151													
152	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
153	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
154	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
155													
156	**Sum of PFHxS and PFOS_Doherty's Drain**												
157													
158	**General Statistics**												
159	Total Number of Observations				1	Number of Distinct Observations					1		
160	Number of Detects				0	Number of Non-Detects					1		
161	Number of Distinct Detects				0	Number of Distinct Non-Detects					1		
162													
163	**Warning: This data set only has 1 observations!**												
164	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
165	**The data set for variable Sum of PFHxS and PFOS_Doherty's Drain was not processed!**												
166													
167	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
168	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
169													
170													
171													
172	**Sum of PFHxS and PFOS_Forsyth Road Drain**												
173													

General Statistics			
Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.0188	Mean	0.0207
Maximum	0.023	Median	0.0204
SD	0.00212	Std. Error of Mean	0.00122
Coefficient of Variation	0.102	Skewness	0.69

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test		
Shapiro Wilk Test Statistic	0.981	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.753	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.229	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.429	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0243	95% Adjusted-CLT UCL (Chen-1995)	0.0233
		95% Modified-t UCL (Johnson-1978)	0.0244

Gamma GOF Test		
A-D Test Statistic	0.265	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.635	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.236	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.431	Detected data appear Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics			
k hat (MLE)	145.2	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.4279E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	871.2	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A
		Approximate Chi Square Value (0.05)	N/A
Adjusted Level of Significance	N/A	Adjusted Chi Square Value	N/A

Assuming Gamma Distribution			
95% Approximate Gamma UCL	N/A	95% Adjusted Gamma UCL	N/A

Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.988	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.789	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.217	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.389	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics			
Minimum of Logged Data	-3.974	Mean of logged Data	-3.879
Maximum of Logged Data	-3.772	SD of logged Data	0.101

Assuming Lognormal Distribution			
95% H-UCL	0.0253	90% Chebyshev (MVUE) UCL	0.0244
95% Chebyshev (MVUE) UCL	0.026	97.5% Chebyshev (MVUE) UCL	0.0283
99% Chebyshev (MVUE) UCL	0.0328		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs			
95% CLT UCL	0.0227	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.0244	95% Chebyshev(Mean, Sd) UCL	0.0261
97.5% Chebyshev(Mean, Sd) UCL	0.0284	99% Chebyshev(Mean, Sd) UCL	0.0329

Suggested UCL to Use			
95% Student's-t UCL	0.0243		

Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Sum of PFHxS and PFOS_Kingwell Wetland

256	**General Statistics**												
257					Total Number of Observations	2				Number of Distinct Observations	2		
258					Number of Detects	1				Number of Non-Detects	1		
259					Number of Distinct Detects	1				Number of Distinct Non-Detects	1		
260													
261	**Warning: This data set only has 2 observations!**												
262	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
263	**The data set for variable Sum of PFHxS and PFOS_Kingwell Wetland was not processed!**												
264													
265	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
266	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
267													
268													
269	**Sum of PFHxS and PFOS_Laverton Creek**												
270													
271	**General Statistics**												
272					Total Number of Observations	4				Number of Distinct Observations	3		
273					Number of Detects	2				Number of Non-Detects	2		
274					Number of Distinct Detects	2				Number of Distinct Non-Detects	1		
275					Minimum Detect	0.0051				Minimum Non-Detect	0.005		
276					Maximum Detect	0.0052				Maximum Non-Detect	0.005		
277					Variance Detects	5.0000E-9				Percent Non-Detects	50%		
278					Mean Detects	0.00515				SD Detects	7.0711E-5		
279					Median Detects	0.00515				CV Detects	0.0137		
280					Skewness Detects	N/A				Kurtosis Detects	N/A		
281					Mean of Logged Detects	-5.269				SD of Logged Detects	0.0137		
282													
283	**Warning: Data set has only 2 Detected Values.**												
284	**This is not enough to compute meaningful or reliable statistics and estimates.**												
285													
286													
287	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
288	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
289	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
290	**The Chebyshev UCL often results in gross overestimates of the mean.**												
291	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
292													
293	**Normal GOF Test on Detects Only**												
294	**Not Enough Data to Perform GOF Test**												
295													
296	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
297					KM Mean	0.00508				KM Standard Error of Mean	5.8630E-5		
298					90KM SD	8.2916E-5				95% KM (BCA) UCL	N/A		
299					95% KM (t) UCL	0.00521				95% KM (Percentile Bootstrap) UCL	N/A		
300					95% KM (z) UCL	0.00517				95% KM Bootstrap t UCL	N/A		
301					90% KM Chebyshev UCL	0.00525				95% KM Chebyshev UCL	0.00533		
302					97.5% KM Chebyshev UCL	0.00544				99% KM Chebyshev UCL	0.00566		
303													
304	**Gamma GOF Tests on Detected Observations Only**												
305	**Not Enough Data to Perform GOF Test**												
306													
307	**Gamma Statistics on Detected Data Only**												
308					k hat (MLE)	10609				k star (bias corrected MLE)	N/A		
309					Theta hat (MLE)	4.8545E-7				Theta star (bias corrected MLE)	N/A		
310					nu hat (MLE)	42435				nu star (bias corrected)	N/A		
311					Mean (detects)	0.00515							
312													
313	**Estimates of Gamma Parameters using KM Estimates**												
314					Mean (KM)	0.00508				SD (KM)	8.2916E-5		
315					Variance (KM)	6.8750E-9				SE of Mean (KM)	5.8630E-5		
316					k hat (KM)	3746				k star (KM)	936.7		
317					nu hat (KM)	29970				nu star (KM)	7494		
318					theta hat (KM)	1.3547E-6				theta star (KM)	5.4178E-6		
319					80% gamma percentile (KM)	0.00521				90% gamma percentile (KM)	0.00529		
320					95% gamma percentile (KM)	0.00535				99% gamma percentile (KM)	0.00547		
321													
322	**Gamma Kaplan-Meier (KM) Statistics**												
323										Adjusted Level of Significance (β)	0.00498		
324					Approximate Chi Square Value (N/A, α)	7294				Adjusted Chi Square Value (N/A, β)	7182		
325					95% KM Approximate Gamma UCL	0.00521				95% KM Adjusted Gamma UCL	0.0053		
326													
327	**Lognormal GOF Test on Detected Observations Only**												
328	**Not Enough Data to Perform GOF Test**												
329													
330	**Lognormal ROS Statistics Using Imputed Non-Detects**												
331					Mean in Original Scale	0.00502				Mean in Log Scale	-5.294		
332					SD in Original Scale	1.5711E-4				SD in Log Scale	0.0313		
333					95% t UCL (assumes normality of ROS data)	0.00521				95% Percentile Bootstrap UCL	N/A		
334					95% BCA Bootstrap UCL	N/A				95% Bootstrap t UCL	N/A		
335					95% H-UCL (Log ROS)	N/A							
336													
337	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												

KM Mean (logged)	-5.284	KM Geo Mean	0.00507
KM SD (logged)	0.0163	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0115	95% H-UCL (KM -Log)	N/A
KM SD (logged)	0.0163	95% Critical H Value (KM-Log)	N/A
KM Standard Error of Mean (logged)	0.0115		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00383	Mean in Log Scale	-5.63
SD in Original Scale	0.00153	SD in Log Scale	0.417
95% t UCL (Assumes normality)	0.00563	95% H-Stat UCL	0.00857

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution

Suggested UCL to Use

Recommendation cannot be provided			

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Sum of PFHxS and PFOS_Laverton RAAF Swamp

General Statistics

Total Number of Observations	15	Number of Distinct Observations	15
Number of Detects	14	Number of Non-Detects	1
Number of Distinct Detects	14	Number of Distinct Non-Detects	1
Minimum Detect	0.0072	Minimum Non-Detect	0.005
Maximum Detect	0.1	Maximum Non-Detect	0.005
Variance Detects	7.8076E-4	Percent Non-Detects	6.667%
Mean Detects	0.049	SD Detects	0.0279
Median Detects	0.0521	CV Detects	0.57
Skewness Detects	-0.0174	Kurtosis Detects	-0.603
Mean of Logged Detects	-3.262	SD of Logged Detects	0.841

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.825	Detected Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.131	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.263	Detected Data appear Normal at 1% Significance Level

Detected Data appear Normal at 1% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.0461	KM Standard Error of Mean	0.00756
90KM SD	0.0282	95% KM (BCA) UCL	0.0581
95% KM (t) UCL	0.0594	95% KM (Percentile Bootstrap) UCL	0.0578
95% KM (z) UCL	0.0585	95% KM Bootstrap t UCL	0.0595
90% KM Chebyshev UCL	0.0687	95% KM Chebyshev UCL	0.079
97.5% KM Chebyshev UCL	0.0933	99% KM Chebyshev UCL	0.121

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.705	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.745	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.209	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.231	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.189	k star (bias corrected MLE)	1.768
Theta hat (MLE)	0.0224	Theta star (bias corrected MLE)	0.0277
nu hat (MLE)	61.29	nu star (bias corrected)	49.49
Mean (detects)	0.049		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	0.0464
Maximum	0.1	Median	0.051
SD	0.0287	CV	0.62
k hat (MLE)	1.932	k star (bias corrected MLE)	1.59
Theta hat (MLE)	0.024	Theta star (bias corrected MLE)	0.0292
nu hat (MLE)	57.97	nu star (bias corrected)	47.71
Adjusted Level of Significance (β)	0.0324		
Approximate Chi Square Value (47.71, α)	32.86	Adjusted Chi Square Value (47.71, β)	31.35
95% Gamma Approximate UCL	0.0674	95% Gamma Adjusted UCL	0.0706

Estimates of Gamma Parameters using KM Estimates

420				Mean (KM)	0.0461				SD (KM)	0.0282	
421				Variance (KM)	7.9704E-4				SE of Mean (KM)	0.00756	
422				k hat (KM)	2.661				k star (KM)	2.173	
423				nu hat (KM)	79.83				nu star (KM)	65.2	
424				theta hat (KM)	0.0173				theta star (KM)	0.0212	
425				80% gamma percentile (KM)	0.0683				90% gamma percentile (KM)	0.0878	
426				95% gamma percentile (KM)	0.106				99% gamma percentile (KM)	0.147	
427											
428				**Gamma Kaplan-Meier (KM) Statistics**							
429				Approximate Chi Square Value (65.20, α)	47.62				Adjusted Chi Square Value (65.20, β)	45.77	
430				95% KM Approximate Gamma UCL	0.0631				95% KM Adjusted Gamma UCL	0.0656	
431											
432				**Lognormal GOF Test on Detected Observations Only**							
433				Shapiro Wilk Test Statistic	0.841				**Shapiro Wilk GOF Test**		
434				10% Shapiro Wilk Critical Value	0.895				Detected Data Not Lognormal at 10% Significance Level		
435				Lilliefors Test Statistic	0.239				**Lilliefors GOF Test**		
436				10% Lilliefors Critical Value	0.208				Detected Data Not Lognormal at 10% Significance Level		
437				**Detected Data Not Lognormal at 10% Significance Level**							
438											
439				**Lognormal ROS Statistics Using Imputed Non-Detects**							
440				Mean in Original Scale	0.0461				Mean in Log Scale	-3.388	
441				SD in Original Scale	0.0291				SD in Log Scale	0.946	
442				95% t UCL (assumes normality of ROS data)	0.0594				95% Percentile Bootstrap UCL	0.058	
443				95% BCA Bootstrap UCL	0.0577				95% Bootstrap t UCL	0.0596	
444				95% H-UCL (Log ROS)	0.104						
445											
446				**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
447				KM Mean (logged)	-3.397				KM Geo Mean	0.0335	
448				KM SD (logged)	0.933				95% Critical H Value (KM-Log)	2.639	
449				KM Standard Error of Mean (logged)	0.25				95% H-UCL (KM -Log)	0.0998	
450				KM SD (logged)	0.933				95% Critical H Value (KM-Log)	2.639	
451				KM Standard Error of Mean (logged)	0.25						
452											
453				**DL/2 Statistics**							
454				**DL/2 Normal**					**DL/2 Log-Transformed**		
455				Mean in Original Scale	0.0459				Mean in Log Scale	-3.444	
456				SD in Original Scale	0.0295				SD in Log Scale	1.074	
457				95% t UCL (Assumes normality)	0.0593				95% H-Stat UCL	0.129	
458				**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
459											
460				**Nonparametric Distribution Free UCL Statistics**							
461				**Detected Data appear Normal Distributed at 1% Significance Level**							
462											
463				**Suggested UCL to Use**							
464				95% KM (t) UCL	0.0594						
465											
466				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
467				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
468				However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
469											
470											
471	**Sum of PFHxS and PFOS_Sanctuary Lakes**										
472											
473				**General Statistics**							
474				Total Number of Observations	13				Number of Distinct Observations	13	
475									Number of Missing Observations	0	
476				Minimum	7.0000E-4				Mean	0.0032	
477				Maximum	0.0072				Median	0.0025	
478				SD	0.00237				Std. Error of Mean	6.5779E-4	
479				Coefficient of Variation	0.741				Skewness	0.517	
480											
481				**Normal GOF Test**							
482				Shapiro Wilk Test Statistic	0.869				**Shapiro Wilk GOF Test**		
483				1% Shapiro Wilk Critical Value	0.814				Data appear Normal at 1% Significance Level		
484				Lilliefors Test Statistic	0.198				**Lilliefors GOF Test**		
485				1% Lilliefors Critical Value	0.271				Data appear Normal at 1% Significance Level		
486				**Data appear Normal at 1% Significance Level**							
487											
488				**Assuming Normal Distribution**							
489				**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
490				95% Student's-t UCL	0.00437				95% Adjusted-CLT UCL (Chen-1995)	0.00438	
491									95% Modified-t UCL (Johnson-1978)	0.00439	
492											
493				**Gamma GOF Test**							
494				A-D Test Statistic	0.569				**Anderson-Darling Gamma GOF Test**		
495				5% A-D Critical Value	0.746				Detected data appear Gamma Distributed at 5% Significance Level		
496				K-S Test Statistic	0.192				**Kolmogorov-Smirnov Gamma GOF Test**		
497				5% K-S Critical Value	0.24				Detected data appear Gamma Distributed at 5% Significance Level		
498				**Detected data appear Gamma Distributed at 5% Significance Level**							
499											
500				**Gamma Statistics**							
501				k hat (MLE)	1.805				k star (bias corrected MLE)	1.439	

502					Theta hat (MLE)	0.00177				Theta star (bias corrected MLE)		0.00222	
503					nu hat (MLE)	46.92				nu star (bias corrected)		37.42	
504					MLE Mean (bias corrected)	0.0032				MLE Sd (bias corrected)		0.00267	
505										Approximate Chi Square Value (0.05)		24.42	
506					Adjusted Level of Significance	0.0301				Adjusted Chi Square Value		22.93	
507													
508						**Assuming Gamma Distribution**								
509					95% Approximate Gamma UCL	0.0049				95% Adjusted Gamma UCL		0.00522	
510													
511						**Lognormal GOF Test**							
512					Shapiro Wilk Test Statistic	0.903				**Shapiro Wilk Lognormal GOF Test**			
513					10% Shapiro Wilk Critical Value	0.889				Data appear Lognormal at 10% Significance Level			
514					Lilliefors Test Statistic	0.174				**Lilliefors Lognormal GOF Test**			
515					10% Lilliefors Critical Value	0.215				Data appear Lognormal at 10% Significance Level			
516						**Data appear Lognormal at 10% Significance Level**								
517													
518						**Lognormal Statistics**							
519					Minimum of Logged Data	-7.264				Mean of logged Data		-6.047	
520					Maximum of Logged Data	-4.934				SD of logged Data		0.844	
521													
522						**Assuming Lognormal Distribution**								
523					95% H-UCL	0.00634				90% Chebyshev (MVUE) UCL		0.00569	
524					95% Chebyshev (MVUE) UCL	0.0068				97.5% Chebyshev (MVUE) UCL		0.00832	
525					99% Chebyshev (MVUE) UCL	0.0113							
526													
527						**Nonparametric Distribution Free UCL Statistics**								
528						**Data appear to follow a Discernible Distribution**								
529													
530						**Nonparametric Distribution Free UCLs**								
531					95% CLT UCL	0.00428				95% BCA Bootstrap UCL		0.00432	
532					95% Standard Bootstrap UCL	0.00425				95% Bootstrap-t UCL		0.00456	
533					95% Hall's Bootstrap UCL	0.00421				95% Percentile Bootstrap UCL		0.00428	
534					90% Chebyshev(Mean, Sd) UCL	0.00517				95% Chebyshev(Mean, Sd) UCL		0.00607	
535					97.5% Chebyshev(Mean, Sd) UCL	0.00731				99% Chebyshev(Mean, Sd) UCL		0.00974	
536													
537						**Suggested UCL to Use**								
538					95% Student's-t UCL	0.00437							
539													
540						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
541						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
542						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
543													
544	**Sum of PFHxS and PFOS_Skeleton Creek**												
545													
546						**General Statistics**								
547					Total Number of Observations	28				Number of Distinct Observations		28	
548					Number of Detects	27				Number of Non-Detects		1	
549					Number of Distinct Detects	27				Number of Distinct Non-Detects		1	
550					Minimum Detect	0.0033				Minimum Non-Detect		0.005	
551					Maximum Detect	0.436				Maximum Non-Detect		0.005	
552					Variance Detects	0.00958				Percent Non-Detects		3.571%	
553					Mean Detects	0.075				SD Detects		0.0979	
554					Median Detects	0.03				CV Detects		1.304	
555					Skewness Detects	2.319				Kurtosis Detects		6.281	
556					Mean of Logged Detects	-3.3				SD of Logged Detects		1.248	
557													
558						**Normal GOF Test on Detects Only**								
559					Shapiro Wilk Test Statistic	0.71				**Shapiro Wilk GOF Test**			
560					1% Shapiro Wilk Critical Value	0.894				Detected Data Not Normal at 1% Significance Level			
561					Lilliefors Test Statistic	0.254				**Lilliefors GOF Test**			
562					1% Lilliefors Critical Value	0.194				Detected Data Not Normal at 1% Significance Level			
563						**Detected Data Not Normal at 1% Significance Level**								
564													
565						**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**								
566					KM Mean	0.0725				KM Standard Error of Mean		0.0183	
567					90KM SD	0.0952				95% KM (BCA) UCL		0.109	
568					95% KM (t) UCL	0.104				95% KM (Percentile Bootstrap) UCL		0.105	
569					95% KM (z) UCL	0.103				95% KM Bootstrap t UCL		0.116	
570					90% KM Chebyshev UCL	0.127				95% KM Chebyshev UCL		0.152	
571					97.5% KM Chebyshev UCL	0.187				99% KM Chebyshev UCL		0.255	
572													
573						**Gamma GOF Tests on Detected Observations Only**								
574					A-D Test Statistic	0.655				**Anderson-Darling GOF Test**			
575					5% A-D Critical Value	0.78				Detected data appear Gamma Distributed at 5% Significance Level			
576					K-S Test Statistic	0.156				**Kolmogorov-Smirnov GOF**			
577					5% K-S Critical Value	0.174				Detected data appear Gamma Distributed at 5% Significance Level			
578						**Detected data appear Gamma Distributed at 5% Significance Level**								
579													
580						**Gamma Statistics on Detected Data Only**								
581					k hat (MLE)	0.832				k star (bias corrected MLE)		0.764	
582					Theta hat (MLE)	0.0902				Theta star (bias corrected MLE)		0.0982	
583					nu hat (MLE)	44.91				nu star (bias corrected)		41.25	

Mean (detects)	0.075		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0033	Mean	0.0727
Maximum	0.436	Median	0.029
SD	0.0968	CV	1.332
k hat (MLE)	0.816	k star (bias corrected MLE)	0.753
Theta hat (MLE)	0.0891	Theta star (bias corrected MLE)	0.0966
nu hat (MLE)	45.71	nu star (bias corrected)	42.14
Adjusted Level of Significance (β)	0.0404		
Approximate Chi Square Value (42.14, α)	28.26	Adjusted Chi Square Value (42.14, β)	27.56
95% Gamma Approximate UCL	0.108	95% Gamma Adjusted UCL	0.111

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.0725	SD (KM)	0.0952
Variance (KM)	0.00907	SE of Mean (KM)	0.0183
k hat (KM)	0.579	k star (KM)	0.541
nu hat (KM)	32.42	nu star (KM)	30.28
theta hat (KM)	0.125	theta star (KM)	0.134
80% gamma percentile (KM)	0.119	90% gamma percentile (KM)	0.193
95% gamma percentile (KM)	0.271	99% gamma percentile (KM)	0.461

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (30.28, α)	18.71	Adjusted Chi Square Value (30.28, β)	18.15
95% KM Approximate Gamma UCL	0.117	95% KM Adjusted Gamma UCL	0.121

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.98	**Shapiro Wilk GOF Test**	
10% Shapiro Wilk Critical Value	0.935	Detected Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.0843	**Lilliefors GOF Test**	
10% Lilliefors Critical Value	0.153	Detected Data appear Lognormal at 10% Significance Level	

Detected Data appear Lognormal at 10% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0724	Mean in Log Scale	-3.394
SD in Original Scale	0.097	SD in Log Scale	1.321
95% t UCL (assumes normality of ROS data)	0.104	95% Percentile Bootstrap UCL	0.103
95% BCA Bootstrap UCL	0.112	95% Bootstrap t UCL	0.12
95% H-UCL (Log ROS)	0.167		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-3.386	KM Geo Mean	0.0338
KM SD (logged)	1.283	95% Critical H Value (KM-Log)	2.824
KM Standard Error of Mean (logged)	0.247	95% H-UCL (KM -Log)	0.155
KM SD (logged)	1.283	95% Critical H Value (KM-Log)	2.824
KM Standard Error of Mean (logged)	0.247		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0724	Mean in Log Scale	-3.396
SD in Original Scale	0.097	SD in Log Scale	1.326
95% t UCL (Assumes normality)	0.104	95% H-Stat UCL	0.168

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	0.121		

The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.

Please verify the data were collected from random locations.

If the data were collected using judgmental or other non-random methods,

then contact a statistician to correctly calculate UCLs.

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Perfluorooctane sulfonic acid (PFOS)_Addison Wetlands

General Statistics

Total Number of Observations	2	Number of Distinct Observations	2
		Number of Missing Observations	0
Minimum	0.0093	Mean	0.0162
Maximum	0.023	Median	0.0162

	Warning: This data set only has 2 observations!											
	Data set is too small to compute reliable and meaningful statistics and estimates!											
	The data set for variable Perfluorooctane sulfonic acid (PFOS)_Addison Wetlands was not processed!											
	It is suggested to collect at least 8 to 10 observations before using these statistical methods!											
	If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.											
	Perfluorooctane sulfonic acid (PFOS)_Ashcroft Wetland											
	General Statistics											
	Total Number of Observations	2				Number of Distinct Observations	2					
	Number of Detects	1				Number of Non-Detects	1					
	Number of Distinct Detects	1				Number of Distinct Non-Detects	1					
	Warning: This data set only has 2 observations!											
	Data set is too small to compute reliable and meaningful statistics and estimates!											
	The data set for variable Perfluorooctane sulfonic acid (PFOS)_Ashcroft Wetland was not processed!											
	It is suggested to collect at least 8 to 10 observations before using these statistical methods!											
	If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.											
	Perfluorooctane sulfonic acid (PFOS)_Bioretention Pond											
	General Statistics											
	Total Number of Observations	2				Number of Distinct Observations	2					
						Number of Missing Observations	0					
	Minimum	0.019				Mean	0.0215					
	Maximum	0.024				Median	0.0215					
	Warning: This data set only has 2 observations!											
	Data set is too small to compute reliable and meaningful statistics and estimates!											
	The data set for variable Perfluorooctane sulfonic acid (PFOS)_Bioretention Pond was not processed!											
	It is suggested to collect at least 8 to 10 observations before using these statistical methods!											
	If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.											
	Perfluorooctane sulfonic acid (PFOS)_Cheetham Wetlands											
	General Statistics											
	Total Number of Observations	18				Number of Distinct Observations	18					
						Number of Missing Observations	0					
	Minimum	5.0000E-4				Mean	0.0232					
	Maximum	0.14				Median	0.0165					
	SD	0.0319				Std. Error of Mean	0.00751					
	Coefficient of Variation	1.372				Skewness	3.184					
	Normal GOF Test											
	Shapiro Wilk Test Statistic	0.62				**Shapiro Wilk GOF Test**						
	1% Shapiro Wilk Critical Value	0.858				Data Not Normal at 1% Significance Level						
	Lilliefors Test Statistic	0.28				**Lilliefors GOF Test**						
	1% Lilliefors Critical Value	0.235				Data Not Normal at 1% Significance Level						
	Data Not Normal at 1% Significance Level											
	Assuming Normal Distribution											
	95% Normal UCL					**95% UCLs (Adjusted for Skewness)**						
	95% Student's-t UCL	0.0363				95% Adjusted-CLT UCL (Chen-1995)	0.0416					
						95% Modified-t UCL (Johnson-1978)	0.0372					
	Gamma GOF Test											
	A-D Test Statistic	0.437				**Anderson-Darling Gamma GOF Test**						
	5% A-D Critical Value	0.777				Detected data appear Gamma Distributed at 5% Significance Level						
	K-S Test Statistic	0.142				**Kolmogorov-Smirnov Gamma GOF Test**						
	5% K-S Critical Value	0.211				Detected data appear Gamma Distributed at 5% Significance Level						
	Detected data appear Gamma Distributed at 5% Significance Level											
	Gamma Statistics											
	k hat (MLE)	0.763				k star (bias corrected MLE)	0.672					
	Theta hat (MLE)	0.0304				Theta star (bias corrected MLE)	0.0345					
	nu hat (MLE)	27.45				nu star (bias corrected)	24.21					
	MLE Mean (bias corrected)	0.0232				MLE Sd (bias corrected)	0.0283					
						Approximate Chi Square Value (0.05)	14.01					
	Adjusted Level of Significance	0.0357				Adjusted Chi Square Value	13.27					
	Assuming Gamma Distribution											
	95% Approximate Gamma UCL	0.0401				95% Adjusted Gamma UCL	0.0424					

748	**Lognormal GOF Test**												
749				Shapiro Wilk Test Statistic		0.915			**Shapiro Wilk Lognormal GOF Test**				
750				10% Shapiro Wilk Critical Value		0.914			Data appear Lognormal at 10% Significance Level				
751				Lilliefors Test Statistic		0.22			**Lilliefors Lognormal GOF Test**				
752				10% Lilliefors Critical Value		0.185			Data Not Lognormal at 10% Significance Level				
753	**Data appear Approximate Lognormal at 10% Significance Level**												
754													
755	**Lognormal Statistics**												
756				Minimum of Logged Data		-7.601			Mean of logged Data		-4.546		
757				Maximum of Logged Data		-1.966			SD of logged Data		1.508		
758													
759	**Assuming Lognormal Distribution**												
760				95% H-UCL		0.117			90% Chebyshev (MVUE) UCL		0.0664		
761				95% Chebyshev (MVUE) UCL		0.0831			97.5% Chebyshev (MVUE) UCL		0.106		
762				99% Chebyshev (MVUE) UCL		0.152							
763													
764	**Nonparametric Distribution Free UCL Statistics**												
765	**Data appear to follow a Discernible Distribution**												
766													
767	**Nonparametric Distribution Free UCLs**												
768				95% CLT UCL		0.0356			95% BCA Bootstrap UCL		0.0438		
769				95% Standard Bootstrap UCL		0.0352			95% Bootstrap-t UCL		0.0539		
770				95% Hall's Bootstrap UCL		0.0901			95% Percentile Bootstrap UCL		0.0363		
771				90% Chebyshev(Mean, Sd) UCL		0.0457			95% Chebyshev(Mean, Sd) UCL		0.0559		
772				97.5% Chebyshev(Mean, Sd) UCL		0.0701			99% Chebyshev(Mean, Sd) UCL		0.0979		
773													
774	**Suggested UCL to Use**												
775				95% Adjusted Gamma UCL		0.0424							
776													
777	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
778	**Please verify the data were collected from random locations.**												
779	**If the data were collected using judgmental or other non-random methods,**												
780	**then contact a statistician to correctly calculate UCLs.**												
781													
782	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
783	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
784	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
785													
786	**Perfluorooctane sulfonic acid (PFOS)_Doherty's Drain**												
787													
788	**General Statistics**												
789				Total Number of Observations		1			Number of Distinct Observations		1		
790				Number of Detects		0			Number of Non-Detects		1		
791				Number of Distinct Detects		0			Number of Distinct Non-Detects		1		
792													
793	**Warning: This data set only has 1 observations!**												
794	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
795	**The data set for variable Perfluorooctane sulfonic acid (PFOS)_Doherty's Drain was not processed!**												
796													
797	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
798	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
799													
800													
801													
802	**Perfluorooctane sulfonic acid (PFOS)_Forsyth Road Drain**												
803													
804	**General Statistics**												
805				Total Number of Observations		3			Number of Distinct Observations		3		
806									Number of Missing Observations		0		
807				Minimum		0.018			Mean		0.0203		
808				Maximum		0.023			Median		0.02		
809				SD		0.00252			Std. Error of Mean		0.00145		
810				Coefficient of Variation		0.124			Skewness		0.586		
811													
812	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
813	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
814	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
815	**The Chebyshev UCL often results in gross overestimates of the mean.**												
816	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
817													
818	**Normal GOF Test**												
819				Shapiro Wilk Test Statistic		0.987			**Shapiro Wilk GOF Test**				
820				1% Shapiro Wilk Critical Value		0.753			Data appear Normal at 1% Significance Level				
821				Lilliefors Test Statistic		0.219			**Lilliefors GOF Test**				
822				1% Lilliefors Critical Value		0.429			Data appear Normal at 1% Significance Level				
823	**Data appear Normal at 1% Significance Level**												
824	**Note GOF tests may be unreliable for small sample sizes**												
825													
826	**Assuming Normal Distribution**												
827	**95% Normal UCL**								**95% UCLs (Adjusted for Skewness)**				
828				95% Student's-t UCL		0.0246			95% Adjusted-CLT UCL (Chen-1995)		0.0232		
829									95% Modified-t UCL (Johnson-1978)		0.0247		

830													
831	**Gamma GOF Test**												
832	A-D Test Statistic				0.257	**Anderson-Darling Gamma GOF Test**							
833	5% A-D Critical Value				0.635	Detected data appear Gamma Distributed at 5% Significance Level							
834	K-S Test Statistic				0.234	**Kolmogorov-Smirnov Gamma GOF Test**							
835	5% K-S Critical Value				0.431	Detected data appear Gamma Distributed at 5% Significance Level							
836	**Data Not Gamma Distributed at 5% Significance Level**												
837													
838	**Gamma Statistics**												
839	k hat (MLE)				98.94	k star (bias corrected MLE)					N/A		
840	Theta hat (MLE)				2.0551E-4	Theta star (bias corrected MLE)					N/A		
841	nu hat (MLE)				593.6	nu star (bias corrected)					N/A		
842	MLE Mean (bias corrected)				N/A	MLE Sd (bias corrected)					N/A		
843						Approximate Chi Square Value (0.05)					N/A		
844	Adjusted Level of Significance				N/A	Adjusted Chi Square Value					N/A		
845													
846	**Assuming Gamma Distribution**												
847	95% Approximate Gamma UCL				N/A	95% Adjusted Gamma UCL					N/A		
848													
849	**Lognormal GOF Test**												
850	Shapiro Wilk Test Statistic				0.993	**Shapiro Wilk Lognormal GOF Test**							
851	10% Shapiro Wilk Critical Value				0.789	Data appear Lognormal at 10% Significance Level							
852	Lilliefors Test Statistic				0.204	**Lilliefors Lognormal GOF Test**							
853	10% Lilliefors Critical Value				0.389	Data appear Lognormal at 10% Significance Level							
854	**Data appear Lognormal at 10% Significance Level**												
855	**Note GOF tests may be unreliable for small sample sizes**												
856													
857	**Lognormal Statistics**												
858	Minimum of Logged Data				-4.017	Mean of logged Data					-3.901		
859	Maximum of Logged Data				-3.772	SD of logged Data					0.123		
860													
861	**Assuming Lognormal Distribution**												
862	95% H-UCL				0.0261	90% Chebyshev (MVUE) UCL					0.0247		
863	95% Chebyshev (MVUE) UCL				0.0266	97.5% Chebyshev (MVUE) UCL					0.0293		
864	99% Chebyshev (MVUE) UCL				0.0347								
865													
866	**Nonparametric Distribution Free UCL Statistics**												
867	**Data appear to follow a Discernible Distribution**												
868													
869	**Nonparametric Distribution Free UCLs**												
870	95% CLT UCL				0.0227	95% BCA Bootstrap UCL					N/A		
871	95% Standard Bootstrap UCL				N/A	95% Bootstrap-t UCL					N/A		
872	95% Hall's Bootstrap UCL				N/A	95% Percentile Bootstrap UCL					N/A		
873	90% Chebyshev(Mean, Sd) UCL				0.0247	95% Chebyshev(Mean, Sd) UCL					0.0267		
874	97.5% Chebyshev(Mean, Sd) UCL				0.0294	99% Chebyshev(Mean, Sd) UCL					0.0348		
875													
876	**Suggested UCL to Use**												
877	95% Student's-t UCL				0.0246								
878	**Recommended UCL exceeds the maximum observation**												
879													
880	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
881	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
882	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
883													
884	**Perfluorooctane sulfonic acid (PFOS)_Kingwell Wetland**												
885													
886	**General Statistics**												
887	Total Number of Observations				2	Number of Distinct Observations					2		
888	Number of Detects				1	Number of Non-Detects					1		
889	Number of Distinct Detects				1	Number of Distinct Non-Detects					1		
890													
891	**Warning: This data set only has 2 observations!**												
892	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
893	**The data set for variable Perfluorooctane sulfonic acid (PFOS)_Kingwell Wetland was not processed!**												
894													
895	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
896	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
897													
898													
899	**Perfluorooctane sulfonic acid (PFOS)_Laverton Creek**												
900													
901	**General Statistics**												
902	Total Number of Observations				4	Number of Distinct Observations					3		
903	Number of Detects				2	Number of Non-Detects					2		
904	Number of Distinct Detects				2	Number of Distinct Non-Detects					1		
905	Minimum Detect				0.0051	Minimum Non-Detect					0.005		
906	Maximum Detect				0.0052	Maximum Non-Detect					0.005		
907	Variance Detects				5.0000E-9	Percent Non-Detects					50%		
908	Mean Detects				0.00515	SD Detects					7.0711E-5		
909	Median Detects				0.00515	CV Detects					0.0137		
910	Skewness Detects				N/A	Kurtosis Detects					N/A		
911	Mean of Logged Detects				-5.269	SD of Logged Detects					0.0137		

912													
913	**Warning: Data set has only 2 Detected Values.**												
914	**This is not enough to compute meaningful or reliable statistics and estimates.**												
915													
916													
917	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**												
918	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**												
919	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**												
920	**The Chebyshev UCL often results in gross overestimates of the mean.**												
921	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**												
922													
923	**Normal GOF Test on Detects Only**												
924	**Not Enough Data to Perform GOF Test**												
925													
926	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
927	KM Mean					0.00508			KM Standard Error of Mean			5.8630E-5	
928	90KM SD					8.2916E-5			95% KM (BCA) UCL			N/A	
929	95% KM (t) UCL					0.00521			95% KM (Percentile Bootstrap) UCL			N/A	
930	95% KM (z) UCL					0.00517			95% KM Bootstrap t UCL			N/A	
931	90% KM Chebyshev UCL					0.00525			95% KM Chebyshev UCL			0.00533	
932	97.5% KM Chebyshev UCL					0.00544			99% KM Chebyshev UCL			0.00566	
933													
934	**Gamma GOF Tests on Detected Observations Only**												
935	**Not Enough Data to Perform GOF Test**												
936													
937	**Gamma Statistics on Detected Data Only**												
938	k hat (MLE)					10609			k star (bias corrected MLE)			N/A	
939	Theta hat (MLE)					4.8545E-7			Theta star (bias corrected MLE)			N/A	
940	nu hat (MLE)					42435			nu star (bias corrected)			N/A	
941	Mean (detects)					0.00515							
942													
943	**Estimates of Gamma Parameters using KM Estimates**												
944	Mean (KM)					0.00508			SD (KM)			8.2916E-5	
945	Variance (KM)					6.8750E-9			SE of Mean (KM)			5.8630E-5	
946	k hat (KM)					3746			k star (KM)			936.7	
947	nu hat (KM)					29970			nu star (KM)			7494	
948	theta hat (KM)					1.3547E-6			theta star (KM)			5.4178E-6	
949	80% gamma percentile (KM)					0.00521			90% gamma percentile (KM)			0.00529	
950	95% gamma percentile (KM)					0.00535			99% gamma percentile (KM)			0.00547	
951													
952	**Gamma Kaplan-Meier (KM) Statistics**												
953									Adjusted Level of Significance (β)			0.00498	
954	Approximate Chi Square Value (N/A, α)					7294			Adjusted Chi Square Value (N/A, β)			7182	
955	95% KM Approximate Gamma UCL					0.00521			95% KM Adjusted Gamma UCL			0.0053	
956													
957	**Lognormal GOF Test on Detected Observations Only**												
958	**Not Enough Data to Perform GOF Test**												
959													
960	**Lognormal ROS Statistics Using Imputed Non-Detects**												
961	Mean in Original Scale					0.00502			Mean in Log Scale			-5.294	
962	SD in Original Scale					1.5711E-4			SD in Log Scale			0.0313	
963	95% t UCL (assumes normality of ROS data)					0.00521			95% Percentile Bootstrap UCL			N/A	
964	95% BCA Bootstrap UCL					N/A			95% Bootstrap t UCL			N/A	
965	95% H-UCL (Log ROS)					N/A							
966													
967	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
968	KM Mean (logged)					-5.284			KM Geo Mean			0.00507	
969	KM SD (logged)					0.0163			95% Critical H Value (KM-Log)			N/A	
970	KM Standard Error of Mean (logged)					0.0115			95% H-UCL (KM -Log)			N/A	
971	KM SD (logged)					0.0163			95% Critical H Value (KM-Log)			N/A	
972	KM Standard Error of Mean (logged)					0.0115							
973													
974	**DL/2 Statistics**												
975	**DL/2 Normal**								**DL/2 Log-Transformed**				
976	Mean in Original Scale					0.00383			Mean in Log Scale			-5.63	
977	SD in Original Scale					0.00153			SD in Log Scale			0.417	
978	95% t UCL (Assumes normality)					0.00563			95% H-Stat UCL			0.00857	
979	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
980													
981	**Nonparametric Distribution Free UCL Statistics**												
982	**Data do not follow a Discernible Distribution**												
983													
984	**Suggested UCL to Use**												
985	Recommendation cannot be provided												
986													
987	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
988	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
989	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
990													
991	**Perfluorooctane sulfonic acid (PFOS)_Laverton RAAF Swamp**												
992													
993	**General Statistics**												

994	Total Number of Observations				15				Number of Distinct Observations		15		
995	Number of Detects				14				Number of Non-Detects		1		
996	Number of Distinct Detects				14				Number of Distinct Non-Detects		1		
997	Minimum Detect				0.0069				Minimum Non-Detect		0.005		
998	Maximum Detect				0.1				Maximum Non-Detect		0.005		
999	Variance Detects				7.7672E-4				Percent Non-Detects		6.667%		
1000	Mean Detects				0.0482				SD Detects		0.0279		
1001	Median Detects				0.0515				CV Detects		0.578		
1002	Skewness Detects				0.0216				Kurtosis Detects		-0.559		
1003	Mean of Logged Detects				-3.285				SD of Logged Detects		0.853		
1004													
1005	**Normal GOF Test on Detects Only**												
1006	Shapiro Wilk Test Statistic				0.956				**Shapiro Wilk GOF Test**				
1007	1% Shapiro Wilk Critical Value				0.825				Detected Data appear Normal at 1% Significance Level				
1008	Lilliefors Test Statistic				0.129				**Lilliefors GOF Test**				
1009	1% Lilliefors Critical Value				0.263				Detected Data appear Normal at 1% Significance Level				
1010	**Detected Data appear Normal at 1% Significance Level**												
1011													
1012	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
1013	KM Mean				0.0453				KM Standard Error of Mean		0.00753		
1014	90KM SD				0.0281				95% KM (BCA) UCL		0.0574		
1015	95% KM (t) UCL				0.0586				95% KM (Percentile Bootstrap) UCL		0.0571		
1016	95% KM (z) UCL				0.0577				95% KM Bootstrap t UCL		0.0588		
1017	90% KM Chebyshev UCL				0.0679				95% KM Chebyshev UCL		0.0781		
1018	97.5% KM Chebyshev UCL				0.0923				99% KM Chebyshev UCL		0.12		
1019													
1020	**Gamma GOF Tests on Detected Observations Only**												
1021	A-D Test Statistic				0.703				**Anderson-Darling GOF Test**				
1022	5% A-D Critical Value				0.745				Detected data appear Gamma Distributed at 5% Significance Level				
1023	K-S Test Statistic				0.22				**Kolmogorov-Smirnov GOF**				
1024	5% K-S Critical Value				0.231				Detected data appear Gamma Distributed at 5% Significance Level				
1025	**Detected data appear Gamma Distributed at 5% Significance Level**												
1026													
1027	**Gamma Statistics on Detected Data Only**												
1028	k hat (MLE)				2.134				k star (bias corrected MLE)		1.724		
1029	Theta hat (MLE)				0.0226				Theta star (bias corrected MLE)		0.0279		
1030	nu hat (MLE)				59.75				nu star (bias corrected)		48.28		
1031	Mean (detects)				0.0482								
1032													
1033	**Gamma ROS Statistics using Imputed Non-Detects**												
1034	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1035	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1036	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1037	This is especially true when the sample size is small.												
1038	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1039	Minimum				0.0069				Mean		0.0456		
1040	Maximum				0.1				Median		0.051		
1041	SD				0.0286				CV		0.627		
1042	k hat (MLE)				1.898				k star (bias corrected MLE)		1.563		
1043	Theta hat (MLE)				0.024				Theta star (bias corrected MLE)		0.0292		
1044	nu hat (MLE)				56.94				nu star (bias corrected)		46.89		
1045	Adjusted Level of Significance (β)				0.0324								
1046	Approximate Chi Square Value (46.89, α)				32.18				Adjusted Chi Square Value (46.89, β)		30.68		
1047	95% Gamma Approximate UCL				0.0665				95% Gamma Adjusted UCL		0.0697		
1048													
1049	**Estimates of Gamma Parameters using KM Estimates**												
1050	Mean (KM)				0.0453				SD (KM)		0.0281		
1051	Variance (KM)				7.8916E-4				SE of Mean (KM)		0.00753		
1052	k hat (KM)				2.6				k star (KM)		2.125		
1053	nu hat (KM)				78.01				nu star (KM)		63.74		
1054	theta hat (KM)				0.0174				theta star (KM)		0.0213		
1055	80% gamma percentile (KM)				0.0673				90% gamma percentile (KM)		0.0869		
1056	95% gamma percentile (KM)				0.105				99% gamma percentile (KM)		0.146		
1057													
1058	**Gamma Kaplan-Meier (KM) Statistics**												
1059	Approximate Chi Square Value (63.74, α)				46.37				Adjusted Chi Square Value (63.74, β)		44.55		
1060	95% KM Approximate Gamma UCL				0.0623				95% KM Adjusted Gamma UCL		0.0648		
1061													
1062	**Lognormal GOF Test on Detected Observations Only**												
1063	Shapiro Wilk Test Statistic				0.842				**Shapiro Wilk GOF Test**				
1064	10% Shapiro Wilk Critical Value				0.895				Detected Data Not Lognormal at 10% Significance Level				
1065	Lilliefors Test Statistic				0.248				**Lilliefors GOF Test**				
1066	10% Lilliefors Critical Value				0.208				Detected Data Not Lognormal at 10% Significance Level				
1067	**Detected Data Not Lognormal at 10% Significance Level**												
1068													
1069	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1070	Mean in Original Scale				0.0453				Mean in Log Scale		-3.413		
1071	SD in Original Scale				0.029				SD in Log Scale		0.96		
1072	95% t UCL (assumes normality of ROS data)				0.0585				95% Percentile Bootstrap UCL		0.0573		
1073	95% BCA Bootstrap UCL				0.057				95% Bootstrap t UCL		0.0588		
1074	95% H-UCL (Log ROS)				0.104								
1075													

1076	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1077					KM Mean (logged)	-3.419					KM Geo Mean	0.0327	
1078					KM SD (logged)	0.939					95% Critical H Value (KM-Log)	2.649	
1079					KM Standard Error of Mean (logged)	0.252					95% H-UCL (KM -Log)	0.099	
1080					KM SD (logged)	0.939					95% Critical H Value (KM-Log)	2.649	
1081					KM Standard Error of Mean (logged)	0.252							
1082													
1083	**DL/2 Statistics**												
1084	**DL/2 Normal**						**DL/2 Log-Transformed**						
1085					Mean in Original Scale	0.0451					Mean in Log Scale	-3.466	
1086					SD in Original Scale	0.0293					SD in Log Scale	1.079	
1087					95% t UCL (Assumes normality)	0.0585					95% H-Stat UCL	0.128	
1088	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1089													
1090	**Nonparametric Distribution Free UCL Statistics**												
1091	**Detected Data appear Normal Distributed at 1% Significance Level**												
1092													
1093	**Suggested UCL to Use**												
1094					95% KM (t) UCL	0.0586							
1095													
1096	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1097	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1098	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1099													
1100													
1101	**Perfluorooctane sulfonic acid (PFOS)_Sanctuary Lakes**												
1102													
1103	**General Statistics**												
1104					Total Number of Observations	13					Number of Distinct Observations	12	
1105											Number of Missing Observations	0	
1106					Minimum	5.0000E-4					Mean	0.00278	
1107					Maximum	0.0064					Median	0.0021	
1108					SD	0.00217					Std. Error of Mean	6.0183E-4	
1109					Coefficient of Variation	0.781					Skewness	0.461	
1110													
1111	**Normal GOF Test**												
1112					Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**						
1113					1% Shapiro Wilk Critical Value	0.814	Data appear Normal at 1% Significance Level						
1114					Lilliefors Test Statistic	0.191	**Lilliefors GOF Test**						
1115					1% Lilliefors Critical Value	0.271	Data appear Normal at 1% Significance Level						
1116	**Data appear Normal at 1% Significance Level**												
1117													
1118	**Assuming Normal Distribution**												
1119	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**						
1120					95% Student's-t UCL	0.00385					95% Adjusted-CLT UCL (Chen-1995)	0.00385	
1121											95% Modified-t UCL (Johnson-1978)	0.00386	
1122													
1123	**Gamma GOF Test**												
1124					A-D Test Statistic	0.586	**Anderson-Darling Gamma GOF Test**						
1125					5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level						
1126					K-S Test Statistic	0.193	**Kolmogorov-Smirnov Gamma GOF Test**						
1127					5% K-S Critical Value	0.241	Detected data appear Gamma Distributed at 5% Significance Level						
1128	**Detected data appear Gamma Distributed at 5% Significance Level**												
1129													
1130	**Gamma Statistics**												
1131					k hat (MLE)	1.504					k star (bias corrected MLE)	1.208	
1132					Theta hat (MLE)	0.00185					Theta star (bias corrected MLE)	0.0023	
1133					nu hat (MLE)	39.1					nu star (bias corrected)	31.41	
1134					MLE Mean (bias corrected)	0.00278					MLE Sd (bias corrected)	0.00253	
1135											Approximate Chi Square Value (0.05)	19.6	
1136					Adjusted Level of Significance	0.0301					Adjusted Chi Square Value	18.28	
1137													
1138	**Assuming Gamma Distribution**												
1139					95% Approximate Gamma UCL	0.00445					95% Adjusted Gamma UCL	0.00477	
1140													
1141	**Lognormal GOF Test**												
1142					Shapiro Wilk Test Statistic	0.887	**Shapiro Wilk Lognormal GOF Test**						
1143					10% Shapiro Wilk Critical Value	0.889	Data Not Lognormal at 10% Significance Level						
1144					Lilliefors Test Statistic	0.171	**Lilliefors Lognormal GOF Test**						
1145					10% Lilliefors Critical Value	0.215	Data appear Lognormal at 10% Significance Level						
1146	**Data appear Approximate Lognormal at 10% Significance Level**												
1147													
1148	**Lognormal Statistics**												
1149					Minimum of Logged Data	-7.601					Mean of logged Data	-6.254	
1150					Maximum of Logged Data	-5.051					SD of logged Data	0.954	
1151													
1152	**Assuming Lognormal Distribution**												
1153					95% H-UCL	0.0065					90% Chebyshev (MVUE) UCL	0.00536	
1154					95% Chebyshev (MVUE) UCL	0.00647					97.5% Chebyshev (MVUE) UCL	0.00802	
1155					99% Chebyshev (MVUE) UCL	0.0111							
1156													
1157	**Nonparametric Distribution Free UCL Statistics**												

1158	**Data appear to follow a Discernible Distribution**												
1159													
1160	**Nonparametric Distribution Free UCLs**												
1161	95% CLT UCL					0.00377				95% BCA Bootstrap UCL		0.00382	
1162	95% Standard Bootstrap UCL					0.00373				95% Bootstrap-t UCL		0.004	
1163	95% Hall's Bootstrap UCL					0.00371				95% Percentile Bootstrap UCL		0.00376	
1164	90% Chebyshev(Mean, Sd) UCL					0.00458				95% Chebyshev(Mean, Sd) UCL		0.0054	
1165	97.5% Chebyshev(Mean, Sd) UCL					0.00654				99% Chebyshev(Mean, Sd) UCL		0.00877	
1166													
1167	**Suggested UCL to Use**												
1168	95% Student's-t UCL					0.00385							
1169													
1170	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1171	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1172	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1173													
1174	**Perfluorooctane sulfonic acid (PFOS)_Skeleton Creek**												
1175													
1176	**General Statistics**												
1177	Total Number of Observations					28				Number of Distinct Observations		26	
1178	Number of Detects					27				Number of Non-Detects		1	
1179	Number of Distinct Detects					25				Number of Distinct Non-Detects		1	
1180	Minimum Detect					0.0029				Minimum Non-Detect		0.005	
1181	Maximum Detect					0.39				Maximum Non-Detect		0.005	
1182	Variance Detects					0.00765				Percent Non-Detects		3.571%	
1183	Mean Detects					0.0679				SD Detects		0.0875	
1184	Median Detects					0.029				CV Detects		1.289	
1185	Skewness Detects					2.306				Kurtosis Detects		6.246	
1186	Mean of Logged Detects					-3.385				SD of Logged Detects		1.233	
1187													
1188	**Normal GOF Test on Detects Only**												
1189	Shapiro Wilk Test Statistic					0.716				**Shapiro Wilk GOF Test**			
1190	1% Shapiro Wilk Critical Value					0.894				Detected Data Not Normal at 1% Significance Level			
1191	Lilliefors Test Statistic					0.237				**Lilliefors GOF Test**			
1192	1% Lilliefors Critical Value					0.194				Detected Data Not Normal at 1% Significance Level			
1193	**Detected Data Not Normal at 1% Significance Level**												
1194													
1195	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
1196	KM Mean					0.0655				KM Standard Error of Mean		0.0164	
1197	90KM SD					0.0851				95% KM (BCA) UCL		0.0986	
1198	95% KM (t) UCL					0.0935				95% KM (Percentile Bootstrap) UCL		0.0951	
1199	95% KM (z) UCL					0.0925				95% KM Bootstrap t UCL		0.106	
1200	90% KM Chebyshev UCL					0.115				95% KM Chebyshev UCL		0.137	
1201	97.5% KM Chebyshev UCL					0.168				99% KM Chebyshev UCL		0.229	
1202													
1203	**Gamma GOF Tests on Detected Observations Only**												
1204	A-D Test Statistic					0.655				**Anderson-Darling GOF Test**			
1205	5% A-D Critical Value					0.78				Detected data appear Gamma Distributed at 5% Significance Level			
1206	K-S Test Statistic					0.151				**Kolmogorov-Smirnov GOF**			
1207	5% K-S Critical Value					0.174				Detected data appear Gamma Distributed at 5% Significance Level			
1208	**Detected data appear Gamma Distributed at 5% Significance Level**												
1209													
1210	**Gamma Statistics on Detected Data Only**												
1211	k hat (MLE)					0.847				k star (bias corrected MLE)		0.778	
1212	Theta hat (MLE)					0.0801				Theta star (bias corrected MLE)		0.0872	
1213	nu hat (MLE)					45.76				nu star (bias corrected)		42	
1214	Mean (detects)					0.0679							
1215													
1216	**Gamma ROS Statistics using Imputed Non-Detects**												
1217	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1218	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1219	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1220	This is especially true when the sample size is small.												
1221	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1222	Minimum					0.0029				Mean		0.0658	
1223	Maximum					0.39				Median		0.028	
1224	SD					0.0865				CV		1.315	
1225	k hat (MLE)					0.834				k star (bias corrected MLE)		0.768	
1226	Theta hat (MLE)					0.0789				Theta star (bias corrected MLE)		0.0856	
1227	nu hat (MLE)					46.7				nu star (bias corrected)		43.03	
1228	Adjusted Level of Significance (β)					0.0404							
1229	Approximate Chi Square Value (43.03, α)					28.99				Adjusted Chi Square Value (43.03, β)		28.28	
1230	95% Gamma Approximate UCL					0.0977				95% Gamma Adjusted UCL		0.1	
1231													
1232	**Estimates of Gamma Parameters using KM Estimates**												
1233	Mean (KM)					0.0655				SD (KM)		0.0851	
1234	Variance (KM)					0.00725				SE of Mean (KM)		0.0164	
1235	k hat (KM)					0.593				k star (KM)		0.553	
1236	nu hat (KM)					33.18				nu star (KM)		30.96	
1237	theta hat (KM)					0.111				theta star (KM)		0.119	
1238	80% gamma percentile (KM)					0.108				90% gamma percentile (KM)		0.174	
1239	95% gamma percentile (KM)					0.243				99% gamma percentile (KM)		0.412	

1240													
1241	**Gamma Kaplan-Meier (KM) Statistics**												
1242	Approximate Chi Square Value (30.96, α)					19.25				Adjusted Chi Square Value (30.96, β)		18.68	
1243	95% KM Approximate Gamma UCL					0.105				95% KM Adjusted Gamma UCL		0.109	
1244													
1245	**Lognormal GOF Test on Detected Observations Only**												
1246	Shapiro Wilk Test Statistic					0.98				**Shapiro Wilk GOF Test**			
1247	10% Shapiro Wilk Critical Value					0.935				Detected Data appear Lognormal at 10% Significance Level			
1248	Lilliefors Test Statistic					0.0896				**Lilliefors GOF Test**			
1249	10% Lilliefors Critical Value					0.153				Detected Data appear Lognormal at 10% Significance Level			
1250	**Detected Data appear Lognormal at 10% Significance Level**												
1251													
1252	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1253	Mean in Original Scale					0.0655				Mean in Log Scale		-3.478	
1254	SD in Original Scale					0.0867				SD in Log Scale		1.306	
1255	95% t UCL (assumes normality of ROS data)					0.0934				95% Percentile Bootstrap UCL		0.093	
1256	95% BCA Bootstrap UCL					0.1				95% Bootstrap t UCL		0.108	
1257	95% H-UCL (Log ROS)					0.148							
1258													
1259	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1260	KM Mean (logged)					-3.473				KM Geo Mean		0.031	
1261	KM SD (logged)					1.273				95% Critical H Value (KM-Log)		2.81	
1262	KM Standard Error of Mean (logged)					0.245				95% H-UCL (KM -Log)		0.139	
1263	KM SD (logged)					1.273				95% Critical H Value (KM-Log)		2.81	
1264	KM Standard Error of Mean (logged)					0.245							
1265													
1266	**DL/2 Statistics**												
1267	**DL/2 Normal**									**DL/2 Log-Transformed**			
1268	Mean in Original Scale					0.0655				Mean in Log Scale		-3.479	
1269	SD in Original Scale					0.0867				SD in Log Scale		1.307	
1270	95% t UCL (Assumes normality)					0.0934				95% H-Stat UCL		0.149	
1271	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1272													
1273	**Nonparametric Distribution Free UCL Statistics**												
1274	**Detected Data appear Gamma Distributed at 5% Significance Level**												
1275													
1276	**Suggested UCL to Use**												
1277	95% KM Adjusted Gamma UCL					0.109							
1278													
1279	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1280	**Please verify the data were collected from random locations.**												
1281	**If the data were collected using judgmental or other non-random methods,**												
1282	**then contact a statistician to correctly calculate UCLs.**												
1283													
1284	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1285	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1286	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1287													
1288	**Perfluorooctanoic acid (PFOA)_Addison Wetlands**												
1289													
1290	**General Statistics**												
1291	Total Number of Observations					2				Number of Distinct Observations		1	
1292	Number of Detects					0				Number of Non-Detects		2	
1293	Number of Distinct Detects					0				Number of Distinct Non-Detects		1	
1294													
1295	**Warning: This data set only has 2 observations!**												
1296	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
1297	**The data set for variable Perfluorooctanoic acid (PFOA)_Addison Wetlands was not processed!**												
1298													
1299	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
1300	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
1301													
1302													
1303	**Perfluorooctanoic acid (PFOA)_Ashcroft Wetland**												
1304													
1305	**General Statistics**												
1306	Total Number of Observations					2				Number of Distinct Observations		1	
1307	Number of Detects					0				Number of Non-Detects		2	
1308	Number of Distinct Detects					0				Number of Distinct Non-Detects		1	
1309													
1310	**Warning: This data set only has 2 observations!**												
1311	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
1312	**The data set for variable Perfluorooctanoic acid (PFOA)_Ashcroft Wetland was not processed!**												
1313													
1314	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
1315	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
1316													
1317													
1318	**Perfluorooctanoic acid (PFOA)_Bioretention Pond**												
1319													
1320	**General Statistics**												
1321	Total Number of Observations					2				Number of Distinct Observations		1	

	Number of Detects				0				Number of Non-Detects		2		
	Number of Distinct Detects				0				Number of Distinct Non-Detects		1		
	Warning: This data set only has 2 observations!												
	Data set is too small to compute reliable and meaningful statistics and estimates!												
	The data set for variable Perfluorooctanoic acid (PFOA)_Bioretention Pond was not processed!												
	It is suggested to collect at least 8 to 10 observations before using these statistical methods!												
	If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.												
	Perfluorooctanoic acid (PFOA)_Cheetham Wetlands												
	General Statistics												
	Total Number of Observations				18				Number of Distinct Observations		9		
	Number of Detects				12				Number of Non-Detects		6		
	Number of Distinct Detects				9				Number of Distinct Non-Detects		1		
	Minimum Detect				1.0000E-4				Minimum Non-Detect		1.0000E-4		
	Maximum Detect				0.0062				Maximum Non-Detect		1.0000E-4		
	Variance Detects				2.8348E-6				Percent Non-Detects		33.33%		
	Mean Detects				0.00103				SD Detects		0.00168		
	Median Detects				5.0000E-4				CV Detects		1.643		
	Skewness Detects				3.101				Kurtosis Detects		10.08		
	Mean of Logged Detects				-7.564				SD of Logged Detects		1.111		
	Normal GOF Test on Detects Only												
	Shapiro Wilk Test Statistic				0.541				**Shapiro Wilk GOF Test**				
	1% Shapiro Wilk Critical Value				0.805				Detected Data Not Normal at 1% Significance Level				
	Lilliefors Test Statistic				0.339				**Lilliefors GOF Test**				
	1% Lilliefors Critical Value				0.281				Detected Data Not Normal at 1% Significance Level				
	Detected Data Not Normal at 1% Significance Level												
	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs												
	KM Mean				7.1667E-4				KM Standard Error of Mean		3.4134E-4		
	90KM SD				0.00139				95% KM (BCA) UCL		0.00137		
	95% KM (t) UCL				0.00131				95% KM (Percentile Bootstrap) UCL		0.00134		
	95% KM (z) UCL				0.00128				95% KM Bootstrap t UCL		0.00284		
	90% KM Chebyshev UCL				0.00174				95% KM Chebyshev UCL		0.0022		
	97.5% KM Chebyshev UCL				0.00285				99% KM Chebyshev UCL		0.00411		
	Gamma GOF Tests on Detected Observations Only												
	A-D Test Statistic				0.792				**Anderson-Darling GOF Test**				
	5% A-D Critical Value				0.762				Detected Data Not Gamma Distributed at 5% Significance Level				
	K-S Test Statistic				0.2				**Kolmogorov-Smirnov GOF**				
	5% K-S Critical Value				0.254				Detected data appear Gamma Distributed at 5% Significance Level				
	Detected data follow Appr. Gamma Distribution at 5% Significance Level												
	Gamma Statistics on Detected Data Only												
	k hat (MLE)				0.863				k star (bias corrected MLE)		0.703		
	Theta hat (MLE)				0.00119				Theta star (bias corrected MLE)		0.00146		
	nu hat (MLE)				20.72				nu star (bias corrected)		16.87		
	Mean (detects)				0.00103								
	Gamma ROS Statistics using Imputed Non-Detects												
	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
	This is especially true when the sample size is small.												
	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
	Minimum				1.0000E-4				Mean		0.00402		
	Maximum				0.01				Median		9.0000E-4		
	SD				0.00456				CV		1.135		
	k hat (MLE)				0.585				k star (bias corrected MLE)		0.524		
	Theta hat (MLE)				0.00687				Theta star (bias corrected MLE)		0.00766		
	nu hat (MLE)				21.06				nu star (bias corrected)		18.88		
	Adjusted Level of Significance (β)				0.0357								
	Approximate Chi Square Value (18.88, α)				10.03				Adjusted Chi Square Value (18.88, β)		9.415		
	95% Gamma Approximate UCL				0.00756				95% Gamma Adjusted UCL		0.00806		
	Estimates of Gamma Parameters using KM Estimates												
	Mean (KM)				7.1667E-4				SD (KM)		0.00139		
	Variance (KM)				1.9225E-6				SE of Mean (KM)		3.4134E-4		
	k hat (KM)				0.267				k star (KM)		0.26		
	nu hat (KM)				9.618				nu star (KM)		9.348		
	theta hat (KM)				0.00268				theta star (KM)		0.00276		
	80% gamma percentile (KM)				0.00105				90% gamma percentile (KM)		0.00214		
	95% gamma percentile (KM)				0.00343				99% gamma percentile (KM)		0.00683		
	Gamma Kaplan-Meier (KM) Statistics												
	Approximate Chi Square Value (9.35, α)				3.539				Adjusted Chi Square Value (9.35, β)		3.203		
	95% KM Approximate Gamma UCL				0.00189				95% KM Adjusted Gamma UCL		0.00209		

1404	**Lognormal GOF Test on Detected Observations Only**												
1405					Shapiro Wilk Test Statistic	0.948			**Shapiro Wilk GOF Test**				
1406					10% Shapiro Wilk Critical Value	0.883			Detected Data appear Lognormal at 10% Significance Level				
1407					Lilliefors Test Statistic	0.138			**Lilliefors GOF Test**				
1408					10% Lilliefors Critical Value	0.223			Detected Data appear Lognormal at 10% Significance Level				
1409	**Detected Data appear Lognormal at 10% Significance Level**												
1410													
1411	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1412					Mean in Original Scale	6.9598E-4			Mean in Log Scale	-8.503			
1413					SD in Original Scale	0.00144			SD in Log Scale	1.681			
1414					95% t UCL (assumes normality of ROS data)	0.00129			95% Percentile Bootstrap UCL	0.0013			
1415					95% BCA Bootstrap UCL	0.00169			95% Bootstrap t UCL	0.00274			
1416					95% H-UCL (Log ROS)	0.00384							
1417													
1418	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1419					KM Mean (logged)	-8.113			KM Geo Mean	2.9972E-4			
1420					KM SD (logged)	1.165			95% Critical H Value (KM-Log)	2.886			
1421					KM Standard Error of Mean (logged)	0.287			95% H-UCL (KM -Log)	0.00133			
1422					KM SD (logged)	1.165			95% Critical H Value (KM-Log)	2.886			
1423					KM Standard Error of Mean (logged)	0.287							
1424													
1425	**DL/2 Statistics**												
1426	**DL/2 Normal**								**DL/2 Log-Transformed**				
1427					Mean in Original Scale	7.0000E-4			Mean in Log Scale	-8.344			
1428					SD in Original Scale	0.00143			SD in Log Scale	1.444			
1429					95% t UCL (Assumes normality)	0.00129			95% H-Stat UCL	0.00217			
1430	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1431													
1432	**Nonparametric Distribution Free UCL Statistics**												
1433	**Detected Data appear Approximate Gamma Distributed at 5% Significance Level**												
1434													
1435	**Suggested UCL to Use**												
1436					95% KM Adjusted Gamma UCL	0.00209							
1437													
1438	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**												
1439	**Please verify the data were collected from random locations.**												
1440	**If the data were collected using judgmental or other non-random methods,**												
1441	**then contact a statistician to correctly calculate UCLs.**												
1442													
1443	When a data set follows an approximate distribution passing only one of the GOF tests,												
1444	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
1445													
1446	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1447	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1448	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1449													
1450	**Perfluorooctanoic acid (PFOA)_Doherty's Drain**												
1451													
1452	**General Statistics**												
1453					Total Number of Observations	1			Number of Distinct Observations	1			
1454					Number of Detects	0			Number of Non-Detects	1			
1455					Number of Distinct Detects	0			Number of Distinct Non-Detects	1			
1456													
1457	**Warning: This data set only has 1 observations!**												
1458	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
1459	**The data set for variable Perfluorooctanoic acid (PFOA)_Doherty's Drain was not processed!**												
1460													
1461	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
1462	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
1463													
1464													
1465	**Perfluorooctanoic acid (PFOA)_Forsyth Road Drain**												
1466													
1467	**General Statistics**												
1468					Total Number of Observations	3			Number of Distinct Observations	3			
1469					Number of Detects	1			Number of Non-Detects	2			
1470					Number of Distinct Detects	1			Number of Distinct Non-Detects	2			
1471													
1472	**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**												
1473	**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**												
1474													
1475	**The data set for variable Perfluorooctanoic acid (PFOA)_Forsyth Road Drain was not processed!**												
1476													
1477													
1478	**Perfluorooctanoic acid (PFOA)_Kingwell Wetland**												
1479													
1480	**General Statistics**												
1481					Total Number of Observations	2			Number of Distinct Observations	1			
1482					Number of Detects	0			Number of Non-Detects	2			
1483					Number of Distinct Detects	0			Number of Distinct Non-Detects	1			
1484													
1485	**Warning: This data set only has 2 observations!**												

1486	**Data set is too small to compute reliable and meaningful statistics and estimates!**												
1487	**The data set for variable Perfluorooctanoic acid (PFOA)_Kingwell Wetland was not processed!**												
1488													
1489	**It is suggested to collect at least 8 to 10 observations before using these statistical methods!**												
1490	**If possible, compute and collect Data Quality Objectives (DQO) based sample size and analytical results.**												
1491													
1492													
1493	**Perfluorooctanoic acid (PFOA)_Laverton Creek**												
1494													
1495	**General Statistics**												
1496	Total Number of Observations	4				Number of Distinct Observations	1						
1497	Number of Detects	0				Number of Non-Detects	4						
1498	Number of Distinct Detects	0				Number of Distinct Non-Detects	1						
1499													
1500	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**												
1501	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**												
1502	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**												
1503													
1504	**The data set for variable Perfluorooctanoic acid (PFOA)_Laverton Creek was not processed!**												
1505													
1506													
1507	**Perfluorooctanoic acid (PFOA)_Laverton RAAF Swamp**												
1508													
1509	**General Statistics**												
1510	Total Number of Observations	15				Number of Distinct Observations	5						
1511	Number of Detects	9				Number of Non-Detects	6						
1512	Number of Distinct Detects	4				Number of Distinct Non-Detects	1						
1513	Minimum Detect	2.0000E-4				Minimum Non-Detect	0.005						
1514	Maximum Detect	7.0000E-4				Maximum Non-Detect	0.005						
1515	Variance Detects	2.5278E-8				Percent Non-Detects	40%						
1516	Mean Detects	3.4444E-4				SD Detects	1.5899E-4						
1517	Median Detects	3.0000E-4				CV Detects	0.462						
1518	Skewness Detects	1.689				Kurtosis Detects	2.747						
1519	Mean of Logged Detects	-8.051				SD of Logged Detects	0.399						
1520													
1521	**Normal GOF Test on Detects Only**												
1522	Shapiro Wilk Test Statistic	0.759				**Shapiro Wilk GOF Test**							
1523	1% Shapiro Wilk Critical Value	0.764				Detected Data Not Normal at 1% Significance Level							
1524	Lilliefors Test Statistic	0.388				**Lilliefors GOF Test**							
1525	1% Lilliefors Critical Value	0.316				Detected Data Not Normal at 1% Significance Level							
1526	**Detected Data Not Normal at 1% Significance Level**												
1527													
1528	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**												
1529	KM Mean	3.4444E-4				KM Standard Error of Mean	5.2997E-5						
1530	90KM SD	1.4990E-4				95% KM (BCA) UCL	N/A						
1531	95% KM (t) UCL	4.3779E-4				95% KM (Percentile Bootstrap) UCL	N/A						
1532	95% KM (z) UCL	4.3162E-4				95% KM Bootstrap t UCL	N/A						
1533	90% KM Chebyshev UCL	5.0343E-4				95% KM Chebyshev UCL	5.7545E-4						
1534	97.5% KM Chebyshev UCL	6.7541E-4				99% KM Chebyshev UCL	8.7175E-4						
1535													
1536	**Gamma GOF Tests on Detected Observations Only**												
1537	A-D Test Statistic	0.894				**Anderson-Darling GOF Test**							
1538	5% A-D Critical Value	0.722				Detected Data Not Gamma Distributed at 5% Significance Level							
1539	K-S Test Statistic	0.363				**Kolmogorov-Smirnov GOF**							
1540	5% K-S Critical Value	0.28				Detected Data Not Gamma Distributed at 5% Significance Level							
1541	**Detected Data Not Gamma Distributed at 5% Significance Level**												
1542													
1543	**Gamma Statistics on Detected Data Only**												
1544	k hat (MLE)	6.626				k star (bias corrected MLE)	4.492						
1545	Theta hat (MLE)	5.1982E-5				Theta star (bias corrected MLE)	7.6687E-5						
1546	nu hat (MLE)	119.3				nu star (bias corrected)	80.85						
1547	Mean (detects)	3.4444E-4											
1548													
1549	**Gamma ROS Statistics using Imputed Non-Detects**												
1550	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1551	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1552	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1553	This is especially true when the sample size is small.												
1554	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1555	Minimum	2.0000E-4				Mean	0.00421						
1556	Maximum	0.01				Median	5.0000E-4						
1557	SD	0.0049				CV	1.164						
1558	k hat (MLE)	0.525				k star (bias corrected MLE)	0.464						
1559	Theta hat (MLE)	0.00802				Theta star (bias corrected MLE)	0.00906						
1560	nu hat (MLE)	15.74				nu star (bias corrected)	13.93						
1561	Adjusted Level of Significance (β)	0.0324											
1562	Approximate Chi Square Value (13.93, α)	6.521				Adjusted Chi Square Value (13.93, β)	5.907						
1563	95% Gamma Approximate UCL	0.00898				95% Gamma Adjusted UCL	0.00992						
1564													
1565	**Estimates of Gamma Parameters using KM Estimates**												
1566	Mean (KM)	3.4444E-4				SD (KM)	1.4990E-4						
1567	Variance (KM)	2.2469E-8				SE of Mean (KM)	5.2997E-5						

	k hat (KM)	5.28	k star (KM) 4.269
	nu hat (KM)	158.4	nu star (KM) 128.1
	theta hat (KM)	6.5233E-5	theta star (KM) 8.0692E-5
	80% gamma percentile (KM)	4.7136E-4	90% gamma percentile (KM) 5.6785E-4
	95% gamma percentile (KM)	6.5639E-4	99% gamma percentile (KM) 8.4490E-4
	Gamma Kaplan-Meier (KM) Statistics		
	Approximate Chi Square Value (128.06, α)	102.9	Adjusted Chi Square Value (128.06, β) 100.1
	95% KM Approximate Gamma UCL	4.2858E-4	95% KM Adjusted Gamma UCL 4.4044E-4
	Lognormal GOF Test on Detected Observations Only		
	Shapiro Wilk Test Statistic	0.84	**Shapiro Wilk GOF Test**
	10% Shapiro Wilk Critical Value	0.859	Detected Data Not Lognormal at 10% Significance Level
	Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**
	10% Lilliefors Critical Value	0.252	Detected Data Not Lognormal at 10% Significance Level
	Detected Data Not Lognormal at 10% Significance Level		
	Lognormal ROS Statistics Using Imputed Non-Detects		
	Mean in Original Scale	3.4047E-4	Mean in Log Scale -8.051
	SD in Original Scale	1.3806E-4	SD in Log Scale 0.364
	95% t UCL (assumes normality of ROS data)	4.0326E-4	95% Percentile Bootstrap UCL 3.9882E-4
	95% BCA Bootstrap UCL	4.1044E-4	95% Bootstrap t UCL 4.3534E-4
	95% H-UCL (Log ROS)	4.1130E-4	
	Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution		
	KM Mean (logged)	-8.051	KM Geo Mean 3.1881E-4
	KM SD (logged)	0.376	95% Critical H Value (KM-Log) 1.946
	KM Standard Error of Mean (logged)	0.133	95% H-UCL (KM -Log) 4.1619E-4
	KM SD (logged)	0.376	95% Critical H Value (KM-Log) 1.946
	KM Standard Error of Mean (logged)	0.133	
	Note: KM UCLs may be biased low with this dataset. Other substitution method recommended		
	DL/2 Statistics		
	DL/2 Normal		**DL/2 Log-Transformed**
	Mean in Original Scale	0.00121	Mean in Log Scale -7.227
	SD in Original Scale	0.0011	SD in Log Scale 1.087
	95% t UCL (Assumes normality)	0.00171	95% H-Stat UCL 0.00303
	DL/2 is not a recommended method, provided for comparisons and historical reasons		
	Nonparametric Distribution Free UCL Statistics		
	Data do not follow a Discernible Distribution		
	Suggested UCL to Use		
	95% KM (t) UCL	4.3779E-4	
	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.		
	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.		
	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.		
Perfluorooctanoic acid (PFOA)_Sanctuary Lakes			
	General Statistics		
	Total Number of Observations	13	Number of Distinct Observations 2
	Number of Detects	5	Number of Non-Detects 8
	Number of Distinct Detects	2	Number of Distinct Non-Detects 1
	Minimum Detect	1.0000E-4	Minimum Non-Detect 1.0000E-4
	Maximum Detect	3.0000E-4	Maximum Non-Detect 1.0000E-4
	Variance Detects	8.0000E-9	Percent Non-Detects 61.54%
	Mean Detects	1.4000E-4	SD Detects 8.9443E-5
	Median Detects	1.0000E-4	CV Detects 0.639
	Skewness Detects	2.236	Kurtosis Detects 5
	Mean of Logged Detects	-8.991	SD of Logged Detects 0.491
	Normal GOF Test on Detects Only		
	Shapiro Wilk Test Statistic	0.552	**Shapiro Wilk GOF Test**
	1% Shapiro Wilk Critical Value	0.686	Detected Data Not Normal at 1% Significance Level
	Lilliefors Test Statistic	0.473	**Lilliefors GOF Test**
	1% Lilliefors Critical Value	0.396	Detected Data Not Normal at 1% Significance Level
	Detected Data Not Normal at 1% Significance Level		
	Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs		
	KM Mean	1.1538E-4	KM Standard Error of Mean 1.6526E-5
	90KM SD	5.3294E-5	95% KM (BCA) UCL N/A
	95% KM (t) UCL	1.4484E-4	95% KM (Percentile Bootstrap) UCL N/A
	95% KM (z) UCL	1.4257E-4	95% KM Bootstrap t UCL N/A
	90% KM Chebyshev UCL	1.6496E-4	95% KM Chebyshev UCL 1.8742E-4
	97.5% KM Chebyshev UCL	2.1859E-4	99% KM Chebyshev UCL 2.7981E-4
	Gamma GOF Tests on Detected Observations Only		
	A-D Test Statistic	1.338	**Anderson-Darling GOF Test**
	5% A-D Critical Value	0.681	Detected Data Not Gamma Distributed at 5% Significance Level
	K-S Test Statistic	0.494	**Kolmogorov-Smirnov GOF**

1650	5% K-S Critical Value					0.358	Detected Data Not Gamma Distributed at 5% Significance Level						
1651	**Detected Data Not Gamma Distributed at 5% Significance Level**												
1652													
1653	**Gamma Statistics on Detected Data Only**												
1654	k hat (MLE)					4.443	k star (bias corrected MLE)					1.91	
1655	Theta hat (MLE)					3.1514E-5	Theta star (bias corrected MLE)					7.3285E-5	
1656	nu hat (MLE)					44.43	nu star (bias corrected)					19.1	
1657	Mean (detects)					1.4000E-4							
1658													
1659	**Gamma ROS Statistics using Imputed Non-Detects**												
1660	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs												
1661	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)												
1662	For such situations, GROS method may yield incorrect values of UCLs and BTVs												
1663	This is especially true when the sample size is small.												
1664	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates												
1665	Minimum					1.0000E-4	Mean					0.00621	
1666	Maximum					0.01	Median					0.01	
1667	SD					0.00499	CV					0.804	
1668	k hat (MLE)					0.522	k star (bias corrected MLE)					0.452	
1669	Theta hat (MLE)					0.0119	Theta star (bias corrected MLE)					0.0137	
1670	nu hat (MLE)					13.56	nu star (bias corrected)					11.76	
1671	Adjusted Level of Significance (β)					0.0301							
1672	Approximate Chi Square Value (11.76, α)					5.072	Adjusted Chi Square Value (11.76, β)					4.462	
1673	95% Gamma Approximate UCL					0.0144	95% Gamma Adjusted UCL					0.0164	
1674													
1675	**Estimates of Gamma Parameters using KM Estimates**												
1676	Mean (KM)					1.1538E-4	SD (KM)					5.3294E-5	
1677	Variance (KM)					2.8402E-9	SE of Mean (KM)					1.6526E-5	
1678	k hat (KM)					4.688	k star (KM)					3.657	
1679	nu hat (KM)					121.9	nu star (KM)					95.08	
1680	theta hat (KM)					2.4615E-5	theta star (KM)					3.1551E-5	
1681	80% gamma percentile (KM)					1.6076E-4	90% gamma percentile (KM)					1.9628E-4	
1682	95% gamma percentile (KM)					2.2911E-4	99% gamma percentile (KM)					2.9954E-4	
1683													
1684	**Gamma Kaplan-Meier (KM) Statistics**												
1685	Approximate Chi Square Value (95.08, α)					73.59	Adjusted Chi Square Value (95.08, β)					70.9	
1686	95% KM Approximate Gamma UCL					1.4908E-4	95% KM Adjusted Gamma UCL					1.5473E-4	
1687													
1688	**Lognormal GOF Test on Detected Observations Only**												
1689	Shapiro Wilk Test Statistic					0.552	**Shapiro Wilk GOF Test**						
1690	10% Shapiro Wilk Critical Value					0.806	Detected Data Not Lognormal at 10% Significance Level						
1691	Lilliefors Test Statistic					0.473	**Lilliefors GOF Test**						
1692	10% Lilliefors Critical Value					0.319	Detected Data Not Lognormal at 10% Significance Level						
1693	**Detected Data Not Lognormal at 10% Significance Level**												
1694													
1695	**Lognormal ROS Statistics Using Imputed Non-Detects**												
1696	Mean in Original Scale					7.4407E-5	Mean in Log Scale					-9.866	
1697	SD in Original Scale					7.5631E-5	SD in Log Scale					0.869	
1698	95% t UCL (assumes normality of ROS data)					1.1179E-4	95% Percentile Bootstrap UCL					1.0931E-4	
1699	95% BCA Bootstrap UCL					1.2541E-4	95% Bootstrap t UCL					1.4258E-4	
1700	95% H-UCL (Log ROS)					1.4627E-4							
1701													
1702	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**												
1703	KM Mean (logged)					-9.126	KM Geo Mean					1.0882E-4	
1704	KM SD (logged)					0.293	95% Critical H Value (KM-Log)					1.903	
1705	KM Standard Error of Mean (logged)					0.0908	95% H-UCL (KM -Log)					1.3340E-4	
1706	KM SD (logged)					0.293	95% Critical H Value (KM-Log)					1.903	
1707	KM Standard Error of Mean (logged)					0.0908							
1708													
1709	**DL/2 Statistics**												
1710	**DL/2 Normal**						**DL/2 Log-Transformed**						
1711	Mean in Original Scale					8.4615E-5	Mean in Log Scale					-9.552	
1712	SD in Original Scale					6.8874E-5	SD in Log Scale					0.542	
1713	95% t UCL (Assumes normality)					1.1866E-4	95% H-Stat UCL					1.1544E-4	
1714	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1715													
1716	**Nonparametric Distribution Free UCL Statistics**												
1717	**Data do not follow a Discernible Distribution**												
1718													
1719	**Suggested UCL to Use**												
1720	95% KM (t) UCL					1.4484E-4							
1721													
1722	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1723	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1724	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1725													
1726	**Perfluorooctanoic acid (PFOA)_Skeleton Creek**												
1727													
1728	**General Statistics**												
1729	Total Number of Observations					28	Number of Distinct Observations					7	
1730	Number of Detects					13	Number of Non-Detects					15	
1731	Number of Distinct Detects					6	Number of Distinct Non-Detects					2	

	A	B	C	D	E	F	G	H	I	J	K	L	M	
1732					Minimum Detect	1.0000E-4					Minimum Non-Detect	1.0000E-4		
1733					Maximum Detect	0.0013					Maximum Non-Detect	0.005		
1734					Variance Detects	1.2974E-7					Percent Non-Detects	53.57%		
1735					Mean Detects	3.8462E-4					SD Detects	3.6020E-4		
1736					Median Detects	3.0000E-4					CV Detects	0.937		
1737					Skewness Detects	1.93					Kurtosis Detects	3.18		
1738					Mean of Logged Detects	-8.178					SD of Logged Detects	0.799		
1739														
1740	**Normal GOF Test on Detects Only**													
1741					Shapiro Wilk Test Statistic	0.721	**Shapiro Wilk GOF Test**							
1742					1% Shapiro Wilk Critical Value	0.814	Detected Data Not Normal at 1% Significance Level							
1743					Lilliefors Test Statistic	0.329	**Lilliefors GOF Test**							
1744					1% Lilliefors Critical Value	0.271	Detected Data Not Normal at 1% Significance Level							
1745	**Detected Data Not Normal at 1% Significance Level**													
1746														
1747	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
1748					KM Mean	3.1765E-4					KM Standard Error of Mean	8.2250E-5		
1749					90KM SD	3.2582E-4					95% KM (BCA) UCL	4.5714E-4		
1750					95% KM (t) UCL	4.5774E-4					95% KM (Percentile Bootstrap) UCL	4.5625E-4		
1751					95% KM (z) UCL	4.5294E-4					95% KM Bootstrap t UCL	6.6638E-4		
1752					90% KM Chebyshev UCL	5.6440E-4					95% KM Chebyshev UCL	6.7617E-4		
1753					97.5% KM Chebyshev UCL	8.3130E-4					99% KM Chebyshev UCL	0.00114		
1754	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**													
1755														
1756	**Gamma GOF Tests on Detected Observations Only**													
1757					A-D Test Statistic	0.726	**Anderson-Darling GOF Test**							
1758					5% A-D Critical Value	0.747	Detected data appear Gamma Distributed at 5% Significance Level							
1759					K-S Test Statistic	0.226	**Kolmogorov-Smirnov GOF**							
1760					5% K-S Critical Value	0.24	Detected data appear Gamma Distributed at 5% Significance Level							
1761	**Detected data appear Gamma Distributed at 5% Significance Level**													
1762														
1763	**Gamma Statistics on Detected Data Only**													
1764					k hat (MLE)	1.737					k star (bias corrected MLE)	1.387		
1765					Theta hat (MLE)	2.2145E-4					Theta star (bias corrected MLE)	2.7724E-4		
1766					nu hat (MLE)	45.16					nu star (bias corrected)	36.07		
1767					Mean (detects)	3.8462E-4								
1768														
1769	**Gamma ROS Statistics using Imputed Non-Detects**													
1770	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
1771	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
1772	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
1773	This is especially true when the sample size is small.													
1774	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
1775					Minimum	1.0000E-4					Mean	0.00554		
1776					Maximum	0.01					Median	0.01		
1777					SD	0.00489					CV	0.883		
1778					k hat (MLE)	0.582					k star (bias corrected MLE)	0.543		
1779					Theta hat (MLE)	0.00952					Theta star (bias corrected MLE)	0.0102		
1780					nu hat (MLE)	32.57					nu star (bias corrected)	30.41		
1781					Adjusted Level of Significance (β)	0.0404								
1782					Approximate Chi Square Value (30.41, α)	18.82					Adjusted Chi Square Value (30.41, β)	18.25		
1783					95% Gamma Approximate UCL	0.00895					95% Gamma Adjusted UCL	0.00922		
1784														
1785	**Estimates of Gamma Parameters using KM Estimates**													
1786					Mean (KM)	3.1765E-4					SD (KM)	3.2582E-4		
1787					Variance (KM)	1.0616E-7					SE of Mean (KM)	8.2250E-5		
1788					k hat (KM)	0.95					k star (KM)	0.872		
1789					nu hat (KM)	53.23					nu star (KM)	48.86		
1790					theta hat (KM)	3.3420E-4					theta star (KM)	3.6409E-4		
1791					80% gamma percentile (KM)	5.1641E-4					90% gamma percentile (KM)	7.5631E-4		
1792					95% gamma percentile (KM)	9.9890E-4					99% gamma percentile (KM)	0.00157		
1793														
1794	**Gamma Kaplan-Meier (KM) Statistics**													
1795					Approximate Chi Square Value (48.86, α)	33.81					Adjusted Chi Square Value (48.86, β)	33.04		
1796					95% KM Approximate Gamma UCL	4.5900E-4					95% KM Adjusted Gamma UCL	4.6976E-4		
1797	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**													
1798														
1799	**Lognormal GOF Test on Detected Observations Only**													
1800					Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**							
1801					10% Shapiro Wilk Critical Value	0.889	Detected Data appear Lognormal at 10% Significance Level							
1802					Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**							
1803					10% Lilliefors Critical Value	0.215	Detected Data appear Lognormal at 10% Significance Level							
1804	**Detected Data appear Lognormal at 10% Significance Level**													
1805														
1806	**Lognormal ROS Statistics Using Imputed Non-Detects**													
1807					Mean in Original Scale	2.9372E-4					Mean in Log Scale	-8.62		
1808					SD in Original Scale	3.1307E-4					SD in Log Scale	1.036		
1809					95% t UCL (assumes normality of ROS data)	3.9449E-4					95% Percentile Bootstrap UCL	3.9205E-4		
1810					95% BCA Bootstrap UCL	4.1919E-4					95% Bootstrap t UCL	4.4411E-4		
1811					95% H-UCL (Log ROS)	5.0832E-4								
1812														
1813	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**													

1814	KM Mean (logged)				-8.421				KM Geo Mean		2.2022E-4		
1815	KM SD (logged)				0.801				95% Critical H Value (KM-Log)		2.226		
1816	KM Standard Error of Mean (logged)				0.202				95% H-UCL (KM -Log)		4.2801E-4		
1817	KM SD (logged)				0.801				95% Critical H Value (KM-Log)		2.226		
1818	KM Standard Error of Mean (logged)				0.202								
1819	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**												
1820													
1821	**DL/2 Statistics**												
1822	**DL/2 Normal**								**DL/2 Log-Transformed**				
1823	Mean in Original Scale				0.00117				Mean in Log Scale		-7.565		
1824	SD in Original Scale				0.00112				SD in Log Scale		1.511		
1825	95% t UCL (Assumes normality)				0.00153				95% H-Stat UCL		0.00405		
1826	**DL/2 is not a recommended method, provided for comparisons and historical reasons**												
1827													
1828	**Nonparametric Distribution Free UCL Statistics**												
1829	**Detected Data appear Gamma Distributed at 5% Significance Level**												
1830													
1831	**Suggested UCL to Use**												
1832	95% KM Adjusted Gamma UCL				4.6976E-4				95% GROS Adjusted Gamma UCL		0.00922		
1833	**Warning: Recommended UCL exceeds the maximum observation**												
1834													
1835	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
1836	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
1837	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
1838													

Location	N	Sum of PFHxS			PFOS			PFOA		
		D	*EPC*	*Basis*	*D*	*EPC*	*Basis*	*D*	*EPC*	*Basis*
On-base										
SA01	77	50	0.27	KM H-UCL	47	0.199	KM H-UCL	5	0.23	Maximum
SA02	160	56	0.083	95% KM (t) UCL	39	0.0533	95% KM (t) UCL	4	0.08	Maximum
SA03	35	17	0.027	95% KM (t) UCL	14	0.0239	95% KM (t) UCL	0	#N/A	Maximum
SA04	76	42	0.48	95% KM (t) UCL	40	0.425	95% KM (t) UCL	3	0.051	Maximum
Other	62	15	0.0065	KM H-UCL	15	0.00621	KM H-UCL	2	0.0004	Maximum
Off-base										
Skeleton Cr	14	3	0.012	Maximum	3	0.012	Maximum	0	#N/A	Maximum
Princes Fre	25	2	0.0054	Maximum	2	0.0054	Maximum	0	#N/A	Maximum
Williams La	46	20	0.073	95% KM Adjusted Gamma UCL	20	0.0628	95% KM Adjusted Gamma UCL	5	0.0006	Maximum
Laverton RA	10	10	0.016	95% Student's-t UCL	10	0.015	95% Student's-t UCL	7	0.0002	Maximum

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 16/09/2025 8:31:28 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Sum of PFHxS and PFOS_Off-base Laverton RAAF Swamp

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	0.0022	Mean	0.0113
Maximum	0.0255	Median	0.0089
SD	0.00716	Std. Error of Mean	0.00227
Coefficient of Variation	0.633	Skewness	0.866

Normal GOF Test

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.781	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.304	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0155	95% Adjusted-CLT UCL (Chen-1995)	0.0157
		95% Modified-t UCL (Johnson-1978)	0.0156

Gamma GOF Test

A-D Test Statistic	0.171	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.157	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.269	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.593	k star (bias corrected MLE)	1.881
Theta hat (MLE)	0.00436	Theta star (bias corrected MLE)	0.00601
nu hat (MLE)	51.85	nu star (bias corrected)	37.63
MLE Mean (bias corrected)	0.0113	MLE Sd (bias corrected)	0.00825
		Approximate Chi Square Value (0.05)	24.58
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	22.77

Assuming Gamma Distribution

95% Approximate Gamma UCL	0.0173	95% Adjusted Gamma UCL	0.0187

79												
80	**Lognormal GOF Test**											
81					Shapiro Wilk Test Statistic	0.965	**Shapiro Wilk Lognormal GOF Test**					
82					10% Shapiro Wilk Critical Value	0.869	Data appear Lognormal at 10% Significance Level					
83					Lilliefors Test Statistic	0.155	**Lilliefors Lognormal GOF Test**					
84					10% Lilliefors Critical Value	0.241	Data appear Lognormal at 10% Significance Level					
85	**Data appear Lognormal at 10% Significance Level**											
86												
87	**Lognormal Statistics**											
88					Minimum of Logged Data	-6.119	Mean of logged Data	-4.687				
89					Maximum of Logged Data	-3.669	SD of logged Data	0.72				
90												
91	**Assuming Lognormal Distribution**											
92					95% H-UCL	0.0221	90% Chebyshev (MVUE) UCL	0.0197				
93					95% Chebyshev (MVUE) UCL	0.0234	97.5% Chebyshev (MVUE) UCL	0.0286				
94					99% Chebyshev (MVUE) UCL	0.0387						
95												
96	**Nonparametric Distribution Free UCL Statistics**											
97	**Data appear to follow a Discernible Distribution**											
98												
99	**Nonparametric Distribution Free UCLs**											
100					95% CLT UCL	0.015	95% BCA Bootstrap UCL	0.0154				
101					95% Standard Bootstrap UCL	0.0148	95% Bootstrap-t UCL	0.0168				
102					95% Hall's Bootstrap UCL	0.0171	95% Percentile Bootstrap UCL	0.0149				
103					90% Chebyshev(Mean, Sd) UCL	0.0181	95% Chebyshev(Mean, Sd) UCL	0.0212				
104					97.5% Chebyshev(Mean, Sd) UCL	0.0255	99% Chebyshev(Mean, Sd) UCL	0.0338				
105												
106	**Suggested UCL to Use**											
107					95% Student's-t UCL	0.0155						
108												
109	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
110	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
111	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
112												
113	**Sum of PFHxS and PFOS_Off-base Princes Freeway**											
114												
115	**General Statistics**											
116					Total Number of Observations	25	Number of Distinct Observations	4				
117					Number of Detects	2	Number of Non-Detects	23				
118					Number of Distinct Detects	2	Number of Distinct Non-Detects	2				
119					Minimum Detect	0.0025	Minimum Non-Detect	2.0000E-4				
120					Maximum Detect	0.0054	Maximum Non-Detect	0.005				
121					Variance Detects	4.2050E-6	Percent Non-Detects	92%				
122					Mean Detects	0.00395	SD Detects	0.00205				
123					Median Detects	0.00395	CV Detects	0.519				
124					Skewness Detects	N/A	Kurtosis Detects	N/A				
125					Mean of Logged Detects	-5.606	SD of Logged Detects	0.545				
126												
127	**Warning: Data set has only 2 Detected Values.**											
128	**This is not enough to compute meaningful or reliable statistics and estimates.**											
129												
130												
131	**Normal GOF Test on Detects Only**											
132	**Not Enough Data to Perform GOF Test**											
133												
134	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
135					KM Mean	0.00151	KM Standard Error of Mean	0.00113				
136					90KM SD	0.00138	95% KM (BCA) UCL	N/A				
137					95% KM (t) UCL	0.00344	95% KM (Percentile Bootstrap) UCL	N/A				
138					95% KM (z) UCL	0.00337	95% KM Bootstrap t UCL	N/A				
139					90% KM Chebyshev UCL	0.00489	95% KM Chebyshev UCL	0.00642				
140					97.5% KM Chebyshev UCL	0.00855	99% KM Chebyshev UCL	0.0127				
141												
142	**Gamma GOF Tests on Detected Observations Only**											

143	**Not Enough Data to Perform GOF Test**											
144												
145	**Gamma Statistics on Detected Data Only**											
146					k hat (MLE)	7.071			k star (bias corrected MLE)	N/A		
147					Theta hat (MLE)	5.5859E-4			Theta star (bias corrected MLE)	N/A		
148					nu hat (MLE)	28.29			nu star (bias corrected)	N/A		
149					Mean (detects)	0.00395						
150												
151	**Estimates of Gamma Parameters using KM Estimates**											
152					Mean (KM)	0.00151			SD (KM)	0.00138		
153					Variance (KM)	1.8995E-6			SE of Mean (KM)	0.00113		
154					k hat (KM)	1.204			k star (KM)	1.086		
155					nu hat (KM)	60.18			nu star (KM)	54.29		
156					theta hat (KM)	0.00126			theta star (KM)	0.00139		
157					80% gamma percentile (KM)	0.00242			90% gamma percentile (KM)	0.00341		
158					95% gamma percentile (KM)	0.0044			99% gamma percentile (KM)	0.00668		
159												
160	**Gamma Kaplan-Meier (KM) Statistics**											
161									Adjusted Level of Significance (β)	0.0395		
162					Approximate Chi Square Value (54.29, α)	38.36			Adjusted Chi Square Value (54.29, β)	37.45		
163					95% KM Approximate Gamma UCL	0.00214			95% KM Adjusted Gamma UCL	0.00219		
164												
165	**Lognormal GOF Test on Detected Observations Only**											
166	**Not Enough Data to Perform GOF Test**											
167												
168	**Lognormal ROS Statistics Using Imputed Non-Detects**											
169					Mean in Original Scale	0.00207			Mean in Log Scale	-6.291		
170					SD in Original Scale	0.00106			SD in Log Scale	0.478		
171					95% t UCL (assumes normality of ROS data)	0.00243			95% Percentile Bootstrap UCL	0.00242		
172					95% BCA Bootstrap UCL	0.00244			95% Bootstrap t UCL	0.00252		
173					95% H-UCL (Log ROS)	0.00251						
174												
175	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
176					KM Mean (logged)	-7.173			KM Geo Mean	7.6701E-4		
177					KM SD (logged)	1.3			95% Critical H Value (KM-Log)	2.9		
178					KM Standard Error of Mean (logged)	1.218			95% H-UCL (KM -Log)	0.00385		
179					KM SD (logged)	1.3			95% Critical H Value (KM-Log)	2.9		
180					KM Standard Error of Mean (logged)	1.218						
181												
182	**DL/2 Statistics**											
183	**DL/2 Normal**								**DL/2 Log-Transformed**			
184					Mean in Original Scale	0.00252			Mean in Log Scale	-6.089		
185					SD in Original Scale	7.6811E-4			SD in Log Scale	0.668		
186					95% t UCL (Assumes normality)	0.00278			95% H-Stat UCL	0.00378		
187	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
188												
189	**Nonparametric Distribution Free UCL Statistics**											
190	**Data do not follow a Discernible Distribution**											
191												
192	**Suggested UCL to Use**											
193					95% KM (t) UCL	0.00344						
194												
195	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
196	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
197	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
198												
199	**Sum of PFHxS and PFOS_Off-Base Skeleton Creek**											
200												
201	**General Statistics**											
202					Total Number of Observations	14			Number of Distinct Observations	4		
203					Number of Detects	3			Number of Non-Detects	11		
204					Number of Distinct Detects	3			Number of Distinct Non-Detects	1		
205					Minimum Detect	0.0096			Minimum Non-Detect	0.005		
206					Maximum Detect	0.012			Maximum Non-Detect	0.005		

207					Variance Detects	1.6533E-6					Percent Non-Detects	78.57%
208					Mean Detects	0.0105					SD Detects	0.00129
209					Median Detects	0.01					CV Detects	0.122
210					Skewness Detects	1.545					Kurtosis Detects	N/A
211					Mean of Logged Detects	-4.558					SD of Logged Detects	0.119
212												
213					**Warning: Data set has only 3 Detected Values.**							
214					**This is not enough to compute meaningful or reliable statistics and estimates.**							
215												
216												
217					**Normal GOF Test on Detects Only**							
218					Shapiro Wilk Test Statistic	0.871			**Shapiro Wilk GOF Test**			
219					1% Shapiro Wilk Critical Value	0.753			Detected Data appear Normal at 1% Significance Level			
220					Lilliefors Test Statistic	0.328			**Lilliefors GOF Test**			
221					1% Lilliefors Critical Value	0.429			Detected Data appear Normal at 1% Significance Level			
222					**Detected Data appear Normal at 1% Significance Level**							
223					**Note GOF tests may be unreliable for small sample sizes**							
224												
225					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
226					KM Mean	0.00619			KM Standard Error of Mean	7.6002E-4		
227					90KM SD	0.00232			95% KM (BCA) UCL	N/A		
228					95% KM (t) UCL	0.00753			95% KM (Percentile Bootstrap) UCL	N/A		
229					95% KM (z) UCL	0.00744			95% KM Bootstrap t UCL	N/A		
230					90% KM Chebyshev UCL	0.00847			95% KM Chebyshev UCL	0.0095		
231					97.5% KM Chebyshev UCL	0.0109			99% KM Chebyshev UCL	0.0137		
232												
233					**Gamma GOF Tests on Detected Observations Only**							
234					A-D Test Statistic	0.421			**Anderson-Darling GOF Test**			
235					5% A-D Critical Value	0.635			Detected data appear Gamma Distributed at 5% Significance Level			
236					K-S Test Statistic	0.356			**Kolmogorov-Smirnov GOF**			
237					5% K-S Critical Value	0.431			Detected data appear Gamma Distributed at 5% Significance Level			
238					**Detected Data Not Gamma Distributed at 5% Significance Level**							
239												
240					**Gamma Statistics on Detected Data Only**							
241					k hat (MLE)	104.5			k star (bias corrected MLE)	N/A		
242					Theta hat (MLE)	1.0082E-4			Theta star (bias corrected MLE)	N/A		
243					nu hat (MLE)	626.9			nu star (bias corrected)	N/A		
244					Mean (detects)	0.0105						
245												
246					**Gamma ROS Statistics using Imputed Non-Detects**							
247					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
248					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
249					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
250					This is especially true when the sample size is small.							
251					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
252					Minimum	0.0096			Mean	0.0101		
253					Maximum	0.012			Median	0.01		
254					SD	5.5311E-4			CV	0.0547		
255					k hat (MLE)	398.1			k star (bias corrected MLE)	312.8		
256					Theta hat (MLE)	2.5410E-5			Theta star (bias corrected MLE)	3.2334E-5		
257					nu hat (MLE)	11145			nu star (bias corrected)	8758		
258					Adjusted Level of Significance (β)	0.0312						
259					Approximate Chi Square Value (N/A, α)	8542			Adjusted Chi Square Value (N/A, β)	8514		
260					95% Gamma Approximate UCL	0.0104			95% Gamma Adjusted UCL	N/A		
261												
262					**Estimates of Gamma Parameters using KM Estimates**							
263					Mean (KM)	0.00619			SD (KM)	0.00232		
264					Variance (KM)	5.3912E-6			SE of Mean (KM)	7.6002E-4		
265					k hat (KM)	7.097			k star (KM)	5.624		
266					nu hat (KM)	198.7			nu star (KM)	157.5		
267					theta hat (KM)	8.7156E-4			theta star (KM)	0.0011		
268					80% gamma percentile (KM)	0.00821			90% gamma percentile (KM)	0.00967		
269					95% gamma percentile (KM)	0.011			99% gamma percentile (KM)	0.0138		
270												

271	**Gamma Kaplan-Meier (KM) Statistics**											
272					Approximate Chi Square Value (157.47, α)	129.5			Adjusted Chi Square Value (157.47, β)			126.1
273					95% KM Approximate Gamma UCL	0.00752			95% KM Adjusted Gamma UCL			0.00772
274												
275	**Lognormal GOF Test on Detected Observations Only**											
276					Shapiro Wilk Test Statistic	0.882			**Shapiro Wilk GOF Test**			
277					10% Shapiro Wilk Critical Value	0.789			Detected Data appear Lognormal at 10% Significance Level			
278					Lilliefors Test Statistic	0.321			**Lilliefors GOF Test**			
279					10% Lilliefors Critical Value	0.389			Detected Data appear Lognormal at 10% Significance Level			
280	**Detected Data appear Lognormal at 10% Significance Level**											
281	**Note GOF tests may be unreliable for small sample sizes**											
282												
283	**Lognormal ROS Statistics Using Imputed Non-Detects**											
284					Mean in Original Scale	0.0069			Mean in Log Scale			-5.028
285					SD in Original Scale	0.00236			SD in Log Scale			0.335
286					95% t UCL (assumes normality of ROS data)	0.00802			95% Percentile Bootstrap UCL			0.00791
287					95% BCA Bootstrap UCL	0.00794			95% Bootstrap t UCL			0.00834
288					95% H-UCL (Log ROS)	0.00829						
289												
290	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
291					KM Mean (logged)	-5.14			KM Geo Mean			0.00586
292					KM SD (logged)	0.307			95% Critical H Value (KM-Log)			1.9
293					KM Standard Error of Mean (logged)	0.101			95% H-UCL (KM -Log)			0.00722
294					KM SD (logged)	0.307			95% Critical H Value (KM-Log)			1.9
295					KM Standard Error of Mean (logged)	0.101						
296												
297	**DL/2 Statistics**											
298					**DL/2 Normal**				**DL/2 Log-Transformed**			
299					Mean in Original Scale	0.00422			Mean in Log Scale			-5.684
300					SD in Original Scale	0.00346			SD in Log Scale			0.612
301					95% t UCL (Assumes normality)	0.00586			95% H-Stat UCL			0.00598
302	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
303												
304	**Nonparametric Distribution Free UCL Statistics**											
305	**Detected Data appear Normal Distributed at 1% Significance Level**											
306												
307	**Suggested UCL to Use**											
308					95% KM (t) UCL	0.00753						
309												
310	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
311	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
312	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
313												
314	**Sum of PFHxS and PFOS_Off-Base Williams Landing**											
315												
316	**General Statistics**											
317					Total Number of Observations	46			Number of Distinct Observations			21
318					Number of Detects	20			Number of Non-Detects			26
319					Number of Distinct Detects	20			Number of Distinct Non-Detects			1
320					Minimum Detect	6.0000E-4			Minimum Non-Detect			0.005
321					Maximum Detect	0.453			Maximum Non-Detect			0.005
322					Variance Detects	0.0128			Percent Non-Detects			56.52%
323					Mean Detects	0.0853			SD Detects			0.113
324					Median Detects	0.0319			CV Detects			1.327
325					Skewness Detects	2.117			Kurtosis Detects			4.952
326					Mean of Logged Detects	-3.347			SD of Logged Detects			1.593
327												
328	**Normal GOF Test on Detects Only**											
329					Shapiro Wilk Test Statistic	0.705			**Shapiro Wilk GOF Test**			
330					1% Shapiro Wilk Critical Value	0.868			Detected Data Not Normal at 1% Significance Level			
331					Lilliefors Test Statistic	0.289			**Lilliefors GOF Test**			
332					1% Lilliefors Critical Value	0.223			Detected Data Not Normal at 1% Significance Level			
333	**Detected Data Not Normal at 1% Significance Level**											
334												

335	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
336					KM Mean	0.038		KM Standard Error of Mean				0.0127
337					90KM SD	0.0838		95% KM (BCA) UCL				0.0623
338					95% KM (t) UCL	0.0593		95% KM (Percentile Bootstrap) UCL				0.0598
339					95% KM (z) UCL	0.0588		95% KM Bootstrap t UCL				0.0712
340					90% KM Chebyshev UCL	0.076		95% KM Chebyshev UCL				0.0932
341					97.5% KM Chebyshev UCL	0.117		99% KM Chebyshev UCL				0.164
342												
343	**Gamma GOF Tests on Detected Observations Only**											
344					A-D Test Statistic	0.583		**Anderson-Darling GOF Test**				
345					5% A-D Critical Value	0.786		Detected data appear Gamma Distributed at 5% Significance Level				
346					K-S Test Statistic	0.193		**Kolmogorov-Smirnov GOF**				
347					5% K-S Critical Value	0.202		Detected data appear Gamma Distributed at 5% Significance Level				
348	**Detected data appear Gamma Distributed at 5% Significance Level**											
349												
350	**Gamma Statistics on Detected Data Only**											
351					k hat (MLE)	0.685		k star (bias corrected MLE)				0.615
352					Theta hat (MLE)	0.125		Theta star (bias corrected MLE)				0.139
353					nu hat (MLE)	27.39		nu star (bias corrected)				24.61
354					Mean (detects)	0.0853						
355												
356	**Gamma ROS Statistics using Imputed Non-Detects**											
357	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
358	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
359	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
360	This is especially true when the sample size is small.											
361	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
362					Minimum	6.0000E-4		Mean				0.0428
363					Maximum	0.453		Median				0.01
364					SD	0.0827		CV				1.934
365					k hat (MLE)	0.671		k star (bias corrected MLE)				0.642
366					Theta hat (MLE)	0.0637		Theta star (bias corrected MLE)				0.0666
367					nu hat (MLE)	61.76		nu star (bias corrected)				59.06
368					Adjusted Level of Significance (β)	0.0448						
369					Approximate Chi Square Value (59.06, α)	42.39		Adjusted Chi Square Value (59.06, β)				41.93
370					95% Gamma Approximate UCL	0.0596		95% Gamma Adjusted UCL				0.0602
371												
372	**Estimates of Gamma Parameters using KM Estimates**											
373					Mean (KM)	0.038		SD (KM)				0.0838
374					Variance (KM)	0.00702		SE of Mean (KM)				0.0127
375					k hat (KM)	0.205		k star (KM)				0.207
376					nu hat (KM)	18.9		nu star (KM)				19
377					theta hat (KM)	0.185		theta star (KM)				0.184
378					80% gamma percentile (KM)	0.0509		90% gamma percentile (KM)				0.115
379					95% gamma percentile (KM)	0.194		99% gamma percentile (KM)				0.411
380												
381	**Gamma Kaplan-Meier (KM) Statistics**											
382					Approximate Chi Square Value (19.00, α)	10.12		Adjusted Chi Square Value (19.00, β)				9.91
383					95% KM Approximate Gamma UCL	0.0713		95% KM Adjusted Gamma UCL				0.0728
384												
385	**Lognormal GOF Test on Detected Observations Only**											
386					Shapiro Wilk Test Statistic	0.935		**Shapiro Wilk GOF Test**				
387					10% Shapiro Wilk Critical Value	0.92		Detected Data appear Lognormal at 10% Significance Level				
388					Lilliefors Test Statistic	0.168		**Lilliefors GOF Test**				
389					10% Lilliefors Critical Value	0.176		Detected Data appear Lognormal at 10% Significance Level				
390	**Detected Data appear Lognormal at 10% Significance Level**											
391												
392	**Lognormal ROS Statistics Using Imputed Non-Detects**											
393					Mean in Original Scale	0.0385		Mean in Log Scale				-5.247
394					SD in Original Scale	0.0845		SD in Log Scale				2.246
395					95% t UCL (assumes normality of ROS data)	0.0594		95% Percentile Bootstrap UCL				0.0595
396					95% BCA Bootstrap UCL	0.0643		95% Bootstrap t UCL				0.0737
397					95% H-UCL (Log ROS)	0.244						
398												

399	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
400					KM Mean (logged)	-5.245			KM Geo Mean	0.00527		
401					KM SD (logged)	2.027			95% Critical H Value (KM-Log)	3.619		
402					KM Standard Error of Mean (logged)	0.432			95% H-UCL (KM -Log)	0.123		
403					KM SD (logged)	2.027			95% Critical H Value (KM-Log)	3.619		
404					KM Standard Error of Mean (logged)	0.432						
405												
406	**DL/2 Statistics**											
407	**DL/2 Normal**							**DL/2 Log-Transformed**				
408					Mean in Original Scale	0.0385			Mean in Log Scale	-4.842		
409					SD in Original Scale	0.0845			SD in Log Scale	1.682		
410					95% t UCL (Assumes normality)	0.0594			95% H-Stat UCL	0.0716		
411	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
412												
413	**Nonparametric Distribution Free UCL Statistics**											
414	**Detected Data appear Gamma Distributed at 5% Significance Level**											
415												
416	**Suggested UCL to Use**											
417					95% KM Adjusted Gamma UCL	0.0728						
418												
419	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
420	**Please verify the data were collected from random locations.**											
421	**If the data were collected using judgmental or other non-random methods,**											
422	**then contact a statistician to correctly calculate UCLs.**											
423												
424	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
425	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
426	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
427												
428	**Sum of PFHxS and PFOS_On-base (other)**											
429												
430	**General Statistics**											
431					Total Number of Observations	62			Number of Distinct Observations	16		
432					Number of Detects	15			Number of Non-Detects	47		
433					Number of Distinct Detects	15			Number of Distinct Non-Detects	2		
434					Minimum Detect	0.001			Minimum Non-Detect	0.001		
435					Maximum Detect	0.247			Maximum Non-Detect	0.005		
436					Variance Detects	0.0042			Percent Non-Detects	75.81%		
437					Mean Detects	0.0316			SD Detects	0.0648		
438					Median Detects	0.006			CV Detects	2.054		
439					Skewness Detects	3.029			Kurtosis Detects	9.803		
440					Mean of Logged Detects	-4.784			SD of Logged Detects	1.574		
441												
442	**Normal GOF Test on Detects Only**											
443					Shapiro Wilk Test Statistic	0.522		**Shapiro Wilk GOF Test**				
444					1% Shapiro Wilk Critical Value	0.835		Detected Data Not Normal at 1% Significance Level				
445					Lilliefors Test Statistic	0.371		**Lilliefors GOF Test**				
446					1% Lilliefors Critical Value	0.255		Detected Data Not Normal at 1% Significance Level				
447	**Detected Data Not Normal at 1% Significance Level**											
448												
449	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
450					KM Mean	0.00918			KM Standard Error of Mean	0.0044		
451					90KM SD	0.0333			95% KM (BCA) UCL	0.0175		
452					95% KM (t) UCL	0.0165			95% KM (Percentile Bootstrap) UCL	0.017		
453					95% KM (z) UCL	0.0164			95% KM Bootstrap t UCL	0.0293		
454					90% KM Chebyshev UCL	0.0224			95% KM Chebyshev UCL	0.0284		
455					97.5% KM Chebyshev UCL	0.0367			99% KM Chebyshev UCL	0.053		
456												
457	**Gamma GOF Tests on Detected Observations Only**											
458					A-D Test Statistic	1.37		**Anderson-Darling GOF Test**				
459					5% A-D Critical Value	0.797		Detected Data Not Gamma Distributed at 5% Significance Level				
460					K-S Test Statistic	0.305		**Kolmogorov-Smirnov GOF**				
461					5% K-S Critical Value	0.234		Detected Data Not Gamma Distributed at 5% Significance Level				
462	**Detected Data Not Gamma Distributed at 5% Significance Level**											

463												
464	**Gamma Statistics on Detected Data Only**											
465						k hat (MLE)	0.481			k star (bias corrected MLE)	0.429	
466						Theta hat (MLE)	0.0656			Theta star (bias corrected MLE)	0.0735	
467						nu hat (MLE)	14.43			nu star (bias corrected)	12.88	
468						Mean (detects)	0.0316					
469												
470	**Gamma ROS Statistics using Imputed Non-Detects**											
471	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
472	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
473	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
474	This is especially true when the sample size is small.											
475	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
476						Minimum	0.001			Mean	0.0153	
477						Maximum	0.247			Median	0.01	
478						SD	0.0324			CV	2.123	
479						k hat (MLE)	1.222			k star (bias corrected MLE)	1.174	
480						Theta hat (MLE)	0.0125			Theta star (bias corrected MLE)	0.013	
481						nu hat (MLE)	151.6			nu star (bias corrected)	145.6	
482						Adjusted Level of Significance (β)	0.0461					
483						Approximate Chi Square Value (145.55, α)	118.7			Adjusted Chi Square Value (145.55, β)	118.1	
484						95% Gamma Approximate UCL	0.0187			95% Gamma Adjusted UCL	0.0188	
485												
486	**Estimates of Gamma Parameters using KM Estimates**											
487						Mean (KM)	0.00918			SD (KM)	0.0333	
488						Variance (KM)	0.00111			SE of Mean (KM)	0.0044	
489						k hat (KM)	0.076			k star (KM)	0.0831	
490						nu hat (KM)	9.429			nu star (KM)	10.31	
491						theta hat (KM)	0.121			theta star (KM)	0.11	
492						80% gamma percentile (KM)	0.0047			90% gamma percentile (KM)	0.0223	
493						95% gamma percentile (KM)	0.0535			99% gamma percentile (KM)	0.16	
494												
495	**Gamma Kaplan-Meier (KM) Statistics**											
496						Approximate Chi Square Value (10.31, α)	4.134			Adjusted Chi Square Value (10.31, β)	4.041	
497						95% KM Approximate Gamma UCL	0.0229			95% KM Adjusted Gamma UCL	0.0234	
498												
499	**Lognormal GOF Test on Detected Observations Only**											
500						Shapiro Wilk Test Statistic	0.916			**Shapiro Wilk GOF Test**		
501						10% Shapiro Wilk Critical Value	0.901			Detected Data appear Lognormal at 10% Significance Level		
502						Lilliefors Test Statistic	0.226			**Lilliefors GOF Test**		
503						10% Lilliefors Critical Value	0.202			Detected Data Not Lognormal at 10% Significance Level		
504	**Detected Data appear Approximate Lognormal at 10% Significance Level**											
505												
506	**Lognormal ROS Statistics Using Imputed Non-Detects**											
507						Mean in Original Scale	0.00903			Mean in Log Scale	-6.429	
508						SD in Original Scale	0.0336			SD in Log Scale	1.649	
509						95% t UCL (assumes normality of ROS data)	0.0162			95% Percentile Bootstrap UCL	0.0169	
510						95% BCA Bootstrap UCL	0.021			95% Bootstrap t UCL	0.029	
511						95% H-UCL (Log ROS)	0.0111					
512												
513	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
514						KM Mean (logged)	-5.976			KM Geo Mean	0.00254	
515						KM SD (logged)	1.112			95% Critical H Value (KM-Log)	2.284	
516						KM Standard Error of Mean (logged)	0.233			95% H-UCL (KM -Log)	0.00653	
517						KM SD (logged)	1.112			95% Critical H Value (KM-Log)	2.284	
518						KM Standard Error of Mean (logged)	0.233					
519	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**											
520												
521	**DL/2 Statistics**											
522	**DL/2 Normal**									**DL/2 Log-Transformed**		
523						Mean in Original Scale	0.0095			Mean in Log Scale	-5.725	
524						SD in Original Scale	0.0335			SD in Log Scale	0.947	
525						95% t UCL (Assumes normality)	0.0166			95% H-Stat UCL	0.00669	
526	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											

527												
528						**Nonparametric Distribution Free UCL Statistics**							
529						**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**							
530												
531						**Suggested UCL to Use**							
532						KM H-UCL	0.00653						
533												
534						**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
535						**Please verify the data were collected from random locations.**							
536						**If the data were collected using judgmental or other non-random methods,**							
537						**then contact a statistician to correctly calculate UCLs.**							
538												
539						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
540						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
541						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
542												
543	**Sum of PFHxS and PFOS_On-Base SA01**											
544												
545						**General Statistics**							
546						Total Number of Observations	77				Number of Distinct Observations	48	
547						Number of Detects	50				Number of Non-Detects	27	
548						Number of Distinct Detects	48				Number of Distinct Non-Detects	1	
549						Minimum Detect	0.005				Minimum Non-Detect	0.005	
550						Maximum Detect	3.09				Maximum Non-Detect	0.005	
551						Variance Detects	0.499				Percent Non-Detects	35.06%	
552						Mean Detects	0.299				SD Detects	0.706	
553						Median Detects	0.0611				CV Detects	2.358	
554						Skewness Detects	3.292				Kurtosis Detects	10.03	
555						Mean of Logged Detects	-2.832				SD of Logged Detects	1.775	
556												
557						**Normal GOF Test on Detects Only**							
558						Shapiro Wilk Test Statistic	0.446				**Shapiro Wilk GOF Test**		
559						1% Shapiro Wilk Critical Value	0.93				Detected Data Not Normal at 1% Significance Level		
560						Lilliefors Test Statistic	0.339				**Lilliefors GOF Test**		
561						1% Lilliefors Critical Value	0.146				Detected Data Not Normal at 1% Significance Level		
562						**Detected Data Not Normal at 1% Significance Level**							
563												
564						**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
565						KM Mean	0.196				KM Standard Error of Mean	0.0668	
566						90KM SD	0.581				95% KM (BCA) UCL	0.328	
567						95% KM (t) UCL	0.308				95% KM (Percentile Bootstrap) UCL	0.32	
568						95% KM (z) UCL	0.306				95% KM Bootstrap t UCL	0.374	
569						90% KM Chebyshev UCL	0.397				95% KM Chebyshev UCL	0.488	
570						97.5% KM Chebyshev UCL	0.614				99% KM Chebyshev UCL	0.861	
571												
572						**Gamma GOF Tests on Detected Observations Only**							
573						A-D Test Statistic	3.002				**Anderson-Darling GOF Test**		
574						5% A-D Critical Value	0.837				Detected Data Not Gamma Distributed at 5% Significance Level		
575						K-S Test Statistic	0.184				**Kolmogorov-Smirnov GOF**		
576						5% K-S Critical Value	0.134				Detected Data Not Gamma Distributed at 5% Significance Level		
577						**Detected Data Not Gamma Distributed at 5% Significance Level**							
578												
579						**Gamma Statistics on Detected Data Only**							
580						k hat (MLE)	0.404				k star (bias corrected MLE)	0.393	
581						Theta hat (MLE)	0.741				Theta star (bias corrected MLE)	0.762	
582						nu hat (MLE)	40.4				nu star (bias corrected)	39.31	
583						Mean (detects)	0.299						
584												
585						**Gamma ROS Statistics using Imputed Non-Detects**							
586						GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
587						GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
588						For such situations, GROS method may yield incorrect values of UCLs and BTVs							
589						This is especially true when the sample size is small.							
590						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							

591					Minimum	0.005					Mean	0.198
592					Maximum	3.09					Median	0.0121
593					SD	0.584					CV	2.949
594					k hat (MLE)	0.364					k star (bias corrected MLE)	0.359
595					Theta hat (MLE)	0.544					Theta star (bias corrected MLE)	0.552
596					nu hat (MLE)	56.09					nu star (bias corrected)	55.24
597					Adjusted Level of Significance (β)	0.0469						
598					Approximate Chi Square Value (55.24, α)	39.16					Adjusted Chi Square Value (55.24, β)	38.9
599					95% Gamma Approximate UCL	0.279					95% Gamma Adjusted UCL	0.281
600												
601					**Estimates of Gamma Parameters using KM Estimates**							
602					Mean (KM)	0.196					SD (KM)	0.581
603					Variance (KM)	0.337					SE of Mean (KM)	0.0668
604					k hat (KM)	0.114					k star (KM)	0.118
605					nu hat (KM)	17.59					nu star (KM)	18.24
606					theta hat (KM)	1.718					theta star (KM)	1.657
607					80% gamma percentile (KM)	0.17					90% gamma percentile (KM)	0.554
608					95% gamma percentile (KM)	1.122					99% gamma percentile (KM)	2.86
609												
610					**Gamma Kaplan-Meier (KM) Statistics**							
611					Approximate Chi Square Value (18.24, α)	9.564					Adjusted Chi Square Value (18.24, β)	9.444
612					95% KM Approximate Gamma UCL	0.374					95% KM Adjusted Gamma UCL	0.379
613												
614					**Lognormal GOF Test on Detected Observations Only**							
615					Shapiro Wilk Test Statistic	0.935					**Shapiro Wilk GOF Test**	
616					10% Shapiro Wilk Critical Value	0.955					Detected Data Not Lognormal at 10% Significance Level	
617					Lilliefors Test Statistic	0.0995					**Lilliefors GOF Test**	
618					10% Lilliefors Critical Value	0.114					Detected Data appear Lognormal at 10% Significance Level	
619					**Detected Data appear Approximate Lognormal at 10% Significance Level**							
620												
621					**Lognormal ROS Statistics Using Imputed Non-Detects**							
622					Mean in Original Scale	0.195					Mean in Log Scale	-4.369
623					SD in Original Scale	0.585					SD in Log Scale	2.66
624					95% t UCL (assumes normality of ROS data)	0.306					95% Percentile Bootstrap UCL	0.312
625					95% BCA Bootstrap UCL	0.335					95% Bootstrap t UCL	0.365
626					95% H-UCL (Log ROS)	1.624						
627												
628					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
629					KM Mean (logged)	-3.697					KM Geo Mean	0.0248
630					KM SD (logged)	1.841					95% Critical H Value (KM-Log)	3.226
631					KM Standard Error of Mean (logged)	0.212					95% H-UCL (KM -Log)	0.267
632					KM SD (logged)	1.841					95% Critical H Value (KM-Log)	3.226
633					KM Standard Error of Mean (logged)	0.212						
634												
635					**DL/2 Statistics**							
636					**DL/2 Normal**						**DL/2 Log-Transformed**	
637					Mean in Original Scale	0.195					Mean in Log Scale	-3.94
638					SD in Original Scale	0.585					SD in Log Scale	2.082
639					95% t UCL (Assumes normality)	0.306					95% H-Stat UCL	0.395
640					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
641												
642					**Nonparametric Distribution Free UCL Statistics**							
643					**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**							
644												
645					**Suggested UCL to Use**							
646					KM H-UCL	0.267						
647												
648					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
649					**Please verify the data were collected from random locations.**							
650					**If the data were collected using judgmental or other non-random methods,**							
651					**then contact a statistician to correctly calculate UCLs.**							
652												
653					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
654					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							

655	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
656												
657	**Sum of PFHxS and PFOS_On-Base SA02**											
658												
659	**General Statistics**											
660						Total Number of Observations	160				Number of Distinct Observations	43	
661						Number of Detects	56				Number of Non-Detects	104
662						Number of Distinct Detects	42				Number of Distinct Non-Detects	1
663						Minimum Detect	0.0052				Minimum Non-Detect	0.005
664						Maximum Detect	2.38				Maximum Non-Detect	0.005
665						Variance Detects	0.161				Percent Non-Detects	65%
666						Mean Detects	0.136				SD Detects	0.401
667						Median Detects	0.026				CV Detects	2.95
668						Skewness Detects	4.523				Kurtosis Detects	21.42
669						Mean of Logged Detects	-3.498				SD of Logged Detects	1.43
670												
671	**Normal GOF Test on Detects Only**											
672						Shapiro Wilk Test Statistic	0.359			**Normal GOF Test on Detected Observations Only**		
673						1% Shapiro Wilk P Value	0			Detected Data Not Normal at 1% Significance Level		
674						Lilliefors Test Statistic	0.417			**Lilliefors GOF Test**		
675						1% Lilliefors Critical Value	0.136			Detected Data Not Normal at 1% Significance Level		
676	**Detected Data Not Normal at 1% Significance Level**											
677												
678	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
679						KM Mean	0.0508				KM Standard Error of Mean	0.0194
680						90KM SD	0.243				95% KM (BCA) UCL	0.0912
681						95% KM (t) UCL	0.0829				95% KM (Percentile Bootstrap) UCL	0.0875
682						95% KM (z) UCL	0.0827				95% KM Bootstrap t UCL	0.132
683						90% KM Chebyshev UCL	0.109				95% KM Chebyshev UCL	0.135
684						97.5% KM Chebyshev UCL	0.172				99% KM Chebyshev UCL	0.244
685												
686	**Gamma GOF Tests on Detected Observations Only**											
687						A-D Test Statistic	6.388			**Anderson-Darling GOF Test**		
688						5% A-D Critical Value	0.831			Detected Data Not Gamma Distributed at 5% Significance Level		
689						K-S Test Statistic	0.276			**Kolmogorov-Smirnov GOF**		
690						5% K-S Critical Value	0.127			Detected Data Not Gamma Distributed at 5% Significance Level		
691	**Detected Data Not Gamma Distributed at 5% Significance Level**											
692												
693	**Gamma Statistics on Detected Data Only**											
694						k hat (MLE)	0.432				k star (bias corrected MLE)	0.421
695						Theta hat (MLE)	0.314				Theta star (bias corrected MLE)	0.323
696						nu hat (MLE)	48.44				nu star (bias corrected)	47.18
697						Mean (detects)	0.136					
698												
699	**Gamma ROS Statistics using Imputed Non-Detects**											
700	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
701	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
702	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
703	This is especially true when the sample size is small.											
704	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
705						Minimum	0.0052				Mean	0.0541
706						Maximum	2.38				Median	0.01
707						SD	0.243				CV	4.501
708						k hat (MLE)	0.49				k star (bias corrected MLE)	0.485
709						Theta hat (MLE)	0.11				Theta star (bias corrected MLE)	0.111
710						nu hat (MLE)	156.8				nu star (bias corrected)	155.2
711						Adjusted Level of Significance (β)	0.0485					
712						Approximate Chi Square Value (155.20, α)	127.4				Adjusted Chi Square Value (155.20, β)	127.2
713						95% Gamma Approximate UCL	0.0659				95% Gamma Adjusted UCL	0.066
714												
715	**Estimates of Gamma Parameters using KM Estimates**											
716						Mean (KM)	0.0508				SD (KM)	0.243
717						Variance (KM)	0.0592				SE of Mean (KM)	0.0194
718						k hat (KM)	0.0437				k star (KM)	0.047

719					nu hat (KM)	13.97					nu star (KM)	15.04
720					theta hat (KM)	1.164					theta star (KM)	1.081
721					80% gamma percentile (KM)	0.0055					90% gamma percentile (KM)	0.0713
722					95% gamma percentile (KM)	0.264					99% gamma percentile (KM)	1.132
723												
724					**Gamma Kaplan-Meier (KM) Statistics**							
725					Approximate Chi Square Value (15.04, α)	7.29					Adjusted Chi Square Value (15.04, β)	7.241
726					95% KM Approximate Gamma UCL	0.105					95% KM Adjusted Gamma UCL	0.106
727												
728					**Lognormal GOF Test on Detected Observations Only**							
729					Shapiro Wilk Approximate Test Statistic	0.886					**Shapiro Wilk GOF Test**	
730					10% Shapiro Wilk P Value	1.6286E-5					Detected Data Not Lognormal at 10% Significance Level	
731					Lilliefors Test Statistic	0.13					**Lilliefors GOF Test**	
732					10% Lilliefors Critical Value	0.108					Detected Data Not Lognormal at 10% Significance Level	
733					**Detected Data Not Lognormal at 10% Significance Level**							
734												
735					**Lognormal ROS Statistics Using Imputed Non-Detects**							
736					Mean in Original Scale	0.0482					Mean in Log Scale	-6.422
737					SD in Original Scale	0.244					SD in Log Scale	2.741
738					95% t UCL (assumes normality of ROS data)	0.0802					95% Percentile Bootstrap UCL	0.0824
739					95% BCA Bootstrap UCL	0.094					95% Bootstrap t UCL	0.121
740					95% H-UCL (Log ROS)	0.175						
741												
742					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
743					KM Mean (logged)	-4.668					KM Geo Mean	0.00939
744					KM SD (logged)	1.2					95% Critical H Value (KM-Log)	2.403
745					KM Standard Error of Mean (logged)	0.0957					95% H-UCL (KM -Log)	0.0242
746					KM SD (logged)	1.2					95% Critical H Value (KM-Log)	2.403
747					KM Standard Error of Mean (logged)	0.0957						
748					**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**							
749												
750					**DL/2 Statistics**							
751					**DL/2 Normal**						**DL/2 Log-Transformed**	
752					Mean in Original Scale	0.0492					Mean in Log Scale	-5.119
753					SD in Original Scale	0.244					SD in Log Scale	1.46
754					95% t UCL (Assumes normality)	0.0811					95% H-Stat UCL	0.0237
755					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
756												
757					**Nonparametric Distribution Free UCL Statistics**							
758					**Data do not follow a Discernible Distribution**							
759												
760					**Suggested UCL to Use**							
761					95% KM (t) UCL	0.0829						
762												
763					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
764					**Please verify the data were collected from random locations.**							
765					**If the data were collected using judgmental or other non-random methods,**							
766					**then contact a statistician to correctly calculate UCLs.**							
767												
768					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
769					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
770					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
771												
772	**Sum of PFHxS and PFOS_On-Base SA03**											
773												
774					**General Statistics**							
775					Total Number of Observations	35					Number of Distinct Observations	18
776					Number of Detects	17					Number of Non-Detects	18
777					Number of Distinct Detects	17					Number of Distinct Non-Detects	1
778					Minimum Detect	0.0062					Minimum Non-Detect	0.005
779					Maximum Detect	0.14					Maximum Non-Detect	0.005
780					Variance Detects	0.00124					Percent Non-Detects	51.43%
781					Mean Detects	0.0336					SD Detects	0.0352
782					Median Detects	0.017					CV Detects	1.05

783					Skewness Detects	1.996					Kurtosis Detects	4.4
784					Mean of Logged Detects	-3.822					SD of Logged Detects	0.932
785												
786					**Normal GOF Test on Detects Only**							
787					Shapiro Wilk Test Statistic	0.76		**Shapiro Wilk GOF Test**				
788					1% Shapiro Wilk Critical Value	0.851		Detected Data Not Normal at 1% Significance Level				
789					Lilliefors Test Statistic	0.219		**Lilliefors GOF Test**				
790					1% Lilliefors Critical Value	0.241		Detected Data appear Normal at 1% Significance Level				
791					**Detected Data appear Approximate Normal at 1% Significance Level**							
792												
793					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
794					KM Mean	0.0189		KM Standard Error of Mean	0.00484			
795					90KM SD	0.0278		95% KM (BCA) UCL	0.0279			
796					95% KM (t) UCL	0.0271		95% KM (Percentile Bootstrap) UCL	0.0276			
797					95% KM (z) UCL	0.0268		95% KM Bootstrap t UCL	0.0321			
798					90% KM Chebyshev UCL	0.0334		95% KM Chebyshev UCL	0.04			
799					97.5% KM Chebyshev UCL	0.0491		99% KM Chebyshev UCL	0.067			
800												
801					**Gamma GOF Tests on Detected Observations Only**							
802					A-D Test Statistic	0.557		**Anderson-Darling GOF Test**				
803					5% A-D Critical Value	0.76		Detected data appear Gamma Distributed at 5% Significance Level				
804					K-S Test Statistic	0.182		**Kolmogorov-Smirnov GOF**				
805					5% K-S Critical Value	0.214		Detected data appear Gamma Distributed at 5% Significance Level				
806					**Detected data appear Gamma Distributed at 5% Significance Level**							
807												
808					**Gamma Statistics on Detected Data Only**							
809					k hat (MLE)	1.311		k star (bias corrected MLE)	1.119			
810					Theta hat (MLE)	0.0256		Theta star (bias corrected MLE)	0.03			
811					nu hat (MLE)	44.59		nu star (bias corrected)	38.05			
812					Mean (detects)	0.0336						
813												
814					**Gamma ROS Statistics using Imputed Non-Detects**							
815					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
816					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
817					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
818					This is especially true when the sample size is small.							
819					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
820					Minimum	0.0062		Mean	0.0214			
821					Maximum	0.14		Median	0.01			
822					SD	0.027		CV	1.258			
823					k hat (MLE)	1.452		k star (bias corrected MLE)	1.346			
824					Theta hat (MLE)	0.0148		Theta star (bias corrected MLE)	0.0159			
825					nu hat (MLE)	101.6		nu star (bias corrected)	94.24			
826					Adjusted Level of Significance (β)	0.0425						
827					Approximate Chi Square Value (94.24, α)	72.85		Adjusted Chi Square Value (94.24, β)	71.96			
828					95% Gamma Approximate UCL	0.0277		95% Gamma Adjusted UCL	0.0281			
829												
830					**Estimates of Gamma Parameters using KM Estimates**							
831					Mean (KM)	0.0189		SD (KM)	0.0278			
832					Variance (KM)	7.7181E-4		SE of Mean (KM)	0.00484			
833					k hat (KM)	0.462		k star (KM)	0.441			
834					nu hat (KM)	32.31		nu star (KM)	30.87			
835					theta hat (KM)	0.0409		theta star (KM)	0.0428			
836					80% gamma percentile (KM)	0.0308		90% gamma percentile (KM)	0.0524			
837					95% gamma percentile (KM)	0.0758		99% gamma percentile (KM)	0.134			
838												
839					**Gamma Kaplan-Meier (KM) Statistics**							
840					Approximate Chi Square Value (30.87, α)	19.18		Adjusted Chi Square Value (30.87, β)	18.74			
841					95% KM Approximate Gamma UCL	0.0304		95% KM Adjusted Gamma UCL	0.0311			
842												
843					**Lognormal GOF Test on Detected Observations Only**							
844					Shapiro Wilk Test Statistic	0.95		**Shapiro Wilk GOF Test**				
845					10% Shapiro Wilk Critical Value	0.91		Detected Data appear Lognormal at 10% Significance Level				
846					Lilliefors Test Statistic	0.136		**Lilliefors GOF Test**				

847					10% Lilliefors Critical Value	0.19		Detected Data appear Lognormal at 10% Significance Level				
848					**Detected Data appear Lognormal at 10% Significance Level**							
849												
850					**Lognormal ROS Statistics Using Imputed Non-Detects**							
851					Mean in Original Scale	0.0174				Mean in Log Scale	-5.212	
852					SD in Original Scale	0.029				SD in Log Scale	1.656	
853					95% t UCL (assumes normality of ROS data)	0.0257				95% Percentile Bootstrap UCL	0.0259	
854					95% BCA Bootstrap UCL	0.0276				95% Bootstrap t UCL	0.0301	
855					95% H-UCL (Log ROS)	0.0558						
856												
857					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
858					KM Mean (logged)	-4.581				KM Geo Mean	0.0102	
859					KM SD (logged)	0.97				95% Critical H Value (KM-Log)	2.421	
860					KM Standard Error of Mean (logged)	0.169				95% H-UCL (KM -Log)	0.0245	
861					KM SD (logged)	0.97				95% Critical H Value (KM-Log)	2.421	
862					KM Standard Error of Mean (logged)	0.169						
863												
864					**DL/2 Statistics**							
865					**DL/2 Normal**					**DL/2 Log-Transformed**		
866					Mean in Original Scale	0.0176				Mean in Log Scale	-4.938	
867					SD in Original Scale	0.0289				SD in Log Scale	1.273	
868					95% t UCL (Assumes normality)	0.0258				95% H-Stat UCL	0.0298	
869					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
870												
871					**Nonparametric Distribution Free UCL Statistics**							
872					**Detected Data appear Approximate Normal Distributed at 1% Significance Level**							
873												
874					**Suggested UCL to Use**							
875					95% KM (t) UCL	0.0271						
876												
877					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
878					**Please verify the data were collected from random locations.**							
879					**If the data were collected using judgmental or other non-random methods,**							
880					**then contact a statistician to correctly calculate UCLs.**							
881												
882					When a data set follows an approximate distribution passing only one of the GOF tests,							
883					it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL							
884												
885					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
886					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
887					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
888												
889	**Sum of PFHxS and PFOS_On-Base SA04**											
890												
891					**General Statistics**							
892					Total Number of Observations	76				Number of Distinct Observations	39	
893					Number of Detects	42				Number of Non-Detects	34	
894					Number of Distinct Detects	38				Number of Distinct Non-Detects	1	
895					Minimum Detect	0.0063				Minimum Non-Detect	0.005	
896					Maximum Detect	8.26				Maximum Non-Detect	0.005	
897					Variance Detects	1.85				Percent Non-Detects	44.74%	
898					Mean Detects	0.506				SD Detects	1.36	
899					Median Detects	0.0558				CV Detects	2.687	
900					Skewness Detects	4.848				Kurtosis Detects	26.77	
901					Mean of Logged Detects	-2.634				SD of Logged Detects	1.977	
902												
903					**Normal GOF Test on Detects Only**							
904					Shapiro Wilk Test Statistic	0.406				**Shapiro Wilk GOF Test**		
905					1% Shapiro Wilk Critical Value	0.922				Detected Data Not Normal at 1% Significance Level		
906					Lilliefors Test Statistic	0.357				**Lilliefors GOF Test**		
907					1% Lilliefors Critical Value	0.157				Detected Data Not Normal at 1% Significance Level		
908					**Detected Data Not Normal at 1% Significance Level**							
909												
910					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							

911	KM Mean	0.282	KM Standard Error of Mean	0.12
912	90KM SD	1.03	95% KM (BCA) UCL	0.508
913	95% KM (t) UCL	0.481	95% KM (Percentile Bootstrap) UCL	0.498
914	95% KM (z) UCL	0.479	95% KM Bootstrap t UCL	0.78
915	90% KM Chebyshev UCL	0.641	95% KM Chebyshev UCL	0.803
916	97.5% KM Chebyshev UCL	1.028	99% KM Chebyshev UCL	1.471
917				
918	**Gamma GOF Tests on Detected Observations Only**			
919	A-D Test Statistic	2.848	**Anderson-Darling GOF Test**	
920	5% A-D Critical Value	0.849	Detected Data Not Gamma Distributed at 5% Significance Level	
921	K-S Test Statistic	0.195	**Kolmogorov-Smirnov GOF**	
922	5% K-S Critical Value	0.147	Detected Data Not Gamma Distributed at 5% Significance Level	
923	**Detected Data Not Gamma Distributed at 5% Significance Level**			
924				
925	**Gamma Statistics on Detected Data Only**			
926	k hat (MLE)	0.345	k star (bias corrected MLE)	0.336
927	Theta hat (MLE)	1.466	Theta star (bias corrected MLE)	1.505
928	nu hat (MLE)	28.99	nu star (bias corrected)	28.26
929	Mean (detects)	0.506		
930				
931	**Gamma ROS Statistics using Imputed Non-Detects**			
932	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
933	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
934	For such situations, GROS method may yield incorrect values of UCLs and BTVs			
935	This is especially true when the sample size is small.			
936	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
937	Minimum	0.0063	Mean	0.284
938	Maximum	8.26	Median	0.01
939	SD	1.036	CV	3.645
940	k hat (MLE)	0.305	k star (bias corrected MLE)	0.301
941	Theta hat (MLE)	0.933	Theta star (bias corrected MLE)	0.943
942	nu hat (MLE)	46.31	nu star (bias corrected)	45.82
943	Adjusted Level of Significance (β)	0.0468		
944	Approximate Chi Square Value (45.82, α)	31.29	Adjusted Chi Square Value (45.82, β)	31.06
945	95% Gamma Approximate UCL	0.416	95% Gamma Adjusted UCL	0.419
946				
947	**Estimates of Gamma Parameters using KM Estimates**			
948	Mean (KM)	0.282	SD (KM)	1.03
949	Variance (KM)	1.06	SE of Mean (KM)	0.12
950	k hat (KM)	0.075	k star (KM)	0.0808
951	nu hat (KM)	11.4	nu star (KM)	12.28
952	theta hat (KM)	3.76	theta star (KM)	3.489
953	80% gamma percentile (KM)	0.137	90% gamma percentile (KM)	0.673
954	95% gamma percentile (KM)	1.64	99% gamma percentile (KM)	4.97
955				
956	**Gamma Kaplan-Meier (KM) Statistics**			
957	Approximate Chi Square Value (12.28, α)	5.412	Adjusted Chi Square Value (12.28, β)	5.324
958	95% KM Approximate Gamma UCL	0.64	95% KM Adjusted Gamma UCL	0.65
959				
960	**Lognormal GOF Test on Detected Observations Only**			
961	Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk GOF Test**	
962	10% Shapiro Wilk Critical Value	0.951	Detected Data Not Lognormal at 10% Significance Level	
963	Lilliefors Test Statistic	0.148	**Lilliefors GOF Test**	
964	10% Lilliefors Critical Value	0.124	Detected Data Not Lognormal at 10% Significance Level	
965	**Detected Data Not Lognormal at 10% Significance Level**			
966				
967	**Lognormal ROS Statistics Using Imputed Non-Detects**			
968	Mean in Original Scale	0.28	Mean in Log Scale	-4.966
969	SD in Original Scale	1.037	SD in Log Scale	3.217
970	95% t UCL (assumes normality of ROS data)	0.478	95% Percentile Bootstrap UCL	0.491
971	95% BCA Bootstrap UCL	0.588	95% Bootstrap t UCL	0.759
972	95% H-UCL (Log ROS)	8.103		
973				
974	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**			

975					KM Mean (logged)	-3.826				KM Geo Mean		0.0218
976					KM SD (logged)	1.966				95% Critical H Value (KM-Log)		3.38
977					KM Standard Error of Mean (logged)	0.228				95% H-UCL (KM -Log)		0.324
978					KM SD (logged)	1.966				95% Critical H Value (KM-Log)		3.38
979					KM Standard Error of Mean (logged)	0.228						
980												
981					**DL/2 Statistics**							
982					**DL/2 Normal**					**DL/2 Log-Transformed**		
983					Mean in Original Scale	0.281				Mean in Log Scale		-4.136
984					SD in Original Scale	1.037				SD in Log Scale		2.227
985					95% t UCL (Assumes normality)	0.479				95% H-Stat UCL		0.497
986					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
987												
988					**Nonparametric Distribution Free UCL Statistics**							
989					**Data do not follow a Discernible Distribution**							
990												
991					**Suggested UCL to Use**							
992					95% KM (t) UCL	0.481						
993												
994					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
995					**Please verify the data were collected from random locations.**							
996					**If the data were collected using judgmental or other non-random methods,**							
997					**then contact a statistician to correctly calculate UCLs.**							
998												
999					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1000					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
1001					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
1002												
1003												
1004	**Perfluorooctane sulfonic acid (PFOS)_Off-base Laverton RAAF Swamp**											
1005												
1006					**General Statistics**							
1007					Total Number of Observations	10				Number of Distinct Observations		10
1008										Number of Missing Observations		0
1009					Minimum	0.002				Mean		0.0109
1010					Maximum	0.025				Median		0.00865
1011					SD	0.00709				Std. Error of Mean		0.00224
1012					Coefficient of Variation	0.653				Skewness		0.866
1013												
1014					**Normal GOF Test**							
1015					Shapiro Wilk Test Statistic	0.935				**Shapiro Wilk GOF Test**		
1016					1% Shapiro Wilk Critical Value	0.781				Data appear Normal at 1% Significance Level		
1017					Lilliefors Test Statistic	0.22				**Lilliefors GOF Test**		
1018					1% Lilliefors Critical Value	0.304				Data appear Normal at 1% Significance Level		
1019					**Data appear Normal at 1% Significance Level**							
1020												
1021					**Assuming Normal Distribution**							
1022					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
1023					95% Student's-t UCL	0.015				95% Adjusted-CLT UCL (Chen-1995)		0.0152
1024										95% Modified-t UCL (Johnson-1978)		0.0151
1025												
1026					**Gamma GOF Test**							
1027					A-D Test Statistic	0.186				**Anderson-Darling Gamma GOF Test**		
1028					5% A-D Critical Value	0.734				Detected data appear Gamma Distributed at 5% Significance Level		
1029					K-S Test Statistic	0.143				**Kolmogorov-Smirnov Gamma GOF Test**		
1030					5% K-S Critical Value	0.269				Detected data appear Gamma Distributed at 5% Significance Level		
1031					**Detected data appear Gamma Distributed at 5% Significance Level**							
1032												
1033					**Gamma Statistics**							
1034					k hat (MLE)	2.38				k star (bias corrected MLE)		1.733
1035					Theta hat (MLE)	0.00456				Theta star (bias corrected MLE)		0.00627
1036					nu hat (MLE)	47.6				nu star (bias corrected)		34.65
1037					MLE Mean (bias corrected)	0.0109				MLE Sd (bias corrected)		0.00825
1038										Approximate Chi Square Value (0.05)		22.19

1039					Adjusted Level of Significance	0.0267					Adjusted Chi Square Value	20.47
1040												
1041					**Assuming Gamma Distribution**							
1042					95% Approximate Gamma UCL	0.017					95% Adjusted Gamma UCL	0.0184
1043												
1044					**Lognormal GOF Test**							
1045					Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk Lognormal GOF Test**					
1046					10% Shapiro Wilk Critical Value	0.869	Data appear Lognormal at 10% Significance Level					
1047					Lilliefors Test Statistic	0.177	**Lilliefors Lognormal GOF Test**					
1048					10% Lilliefors Critical Value	0.241	Data appear Lognormal at 10% Significance Level					
1049					**Data appear Lognormal at 10% Significance Level**							
1050												
1051					**Lognormal Statistics**							
1052					Minimum of Logged Data	-6.215					Mean of logged Data	-4.747
1053					Maximum of Logged Data	-3.689					SD of logged Data	0.76
1054												
1055					**Assuming Lognormal Distribution**							
1056					95% H-UCL	0.0226					90% Chebyshev (MVUE) UCL	0.0195
1057					95% Chebyshev (MVUE) UCL	0.0233					97.5% Chebyshev (MVUE) UCL	0.0286
1058					99% Chebyshev (MVUE) UCL	0.0389						
1059												
1060					**Nonparametric Distribution Free UCL Statistics**							
1061					**Data appear to follow a Discernible Distribution**							
1062												
1063					**Nonparametric Distribution Free UCLs**							
1064					95% CLT UCL	0.0145					95% BCA Bootstrap UCL	0.0148
1065					95% Standard Bootstrap UCL	0.0143					95% Bootstrap-t UCL	0.0163
1066					95% Hall's Bootstrap UCL	0.0172					95% Percentile Bootstrap UCL	0.0144
1067					90% Chebyshev(Mean, Sd) UCL	0.0176					95% Chebyshev(Mean, Sd) UCL	0.0206
1068					97.5% Chebyshev(Mean, Sd) UCL	0.0249					99% Chebyshev(Mean, Sd) UCL	0.0332
1069												
1070					**Suggested UCL to Use**							
1071					95% Student's-t UCL	0.015						
1072												
1073					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1074					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
1075					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
1076												
1077	**Perfluorooctane sulfonic acid (PFOS)_Off-base Princes Freeway**											
1078												
1079					**General Statistics**							
1080					Total Number of Observations	25					Number of Distinct Observations	4
1081					Number of Detects	2					Number of Non-Detects	23
1082					Number of Distinct Detects	2					Number of Distinct Non-Detects	2
1083					Minimum Detect	0.0025					Minimum Non-Detect	2.0000E-4
1084					Maximum Detect	0.0054					Maximum Non-Detect	0.005
1085					Variance Detects	4.2050E-6					Percent Non-Detects	92%
1086					Mean Detects	0.00395					SD Detects	0.00205
1087					Median Detects	0.00395					CV Detects	0.519
1088					Skewness Detects	N/A					Kurtosis Detects	N/A
1089					Mean of Logged Detects	-5.606					SD of Logged Detects	0.545
1090												
1091					**Warning: Data set has only 2 Detected Values.**							
1092					**This is not enough to compute meaningful or reliable statistics and estimates.**							
1093												
1094												
1095					**Normal GOF Test on Detects Only**							
1096					**Not Enough Data to Perform GOF Test**							
1097												
1098					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
1099					KM Mean	0.00151					KM Standard Error of Mean	0.00113
1100					90KM SD	0.00138					95% KM (BCA) UCL	N/A
1101					95% KM (t) UCL	0.00344					95% KM (Percentile Bootstrap) UCL	N/A
1102					95% KM (z) UCL	0.00337					95% KM Bootstrap t UCL	N/A

1103					90% KM Chebyshev UCL	0.00489				95% KM Chebyshev UCL		0.00642
1104					97.5% KM Chebyshev UCL	0.00855				99% KM Chebyshev UCL		0.0127
1105												
1106					**Gamma GOF Tests on Detected Observations Only**							
1107					**Not Enough Data to Perform GOF Test**							
1108												
1109					**Gamma Statistics on Detected Data Only**							
1110					k hat (MLE)	7.071				k star (bias corrected MLE)		N/A
1111					Theta hat (MLE)	5.5859E-4				Theta star (bias corrected MLE)		N/A
1112					nu hat (MLE)	28.29				nu star (bias corrected)		N/A
1113					Mean (detects)	0.00395						
1114												
1115					**Estimates of Gamma Parameters using KM Estimates**							
1116					Mean (KM)	0.00151				SD (KM)		0.00138
1117					Variance (KM)	1.8995E-6				SE of Mean (KM)		0.00113
1118					k hat (KM)	1.204				k star (KM)		1.086
1119					nu hat (KM)	60.18				nu star (KM)		54.29
1120					theta hat (KM)	0.00126				theta star (KM)		0.00139
1121					80% gamma percentile (KM)	0.00242				90% gamma percentile (KM)		0.00341
1122					95% gamma percentile (KM)	0.0044				99% gamma percentile (KM)		0.00668
1123												
1124					**Gamma Kaplan-Meier (KM) Statistics**							
1125										Adjusted Level of Significance (β)		0.0395
1126					Approximate Chi Square Value (54.29, α)	38.36				Adjusted Chi Square Value (54.29, β)		37.45
1127					95% KM Approximate Gamma UCL	0.00214				95% KM Adjusted Gamma UCL		0.00219
1128												
1129					**Lognormal GOF Test on Detected Observations Only**							
1130					**Not Enough Data to Perform GOF Test**							
1131												
1132					**Lognormal ROS Statistics Using Imputed Non-Detects**							
1133					Mean in Original Scale	0.00207				Mean in Log Scale		-6.291
1134					SD in Original Scale	0.00106				SD in Log Scale		0.478
1135					95% t UCL (assumes normality of ROS data)	0.00243				95% Percentile Bootstrap UCL		0.00242
1136					95% BCA Bootstrap UCL	0.00244				95% Bootstrap t UCL		0.00252
1137					95% H-UCL (Log ROS)	0.00251						
1138												
1139					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
1140					KM Mean (logged)	-7.173				KM Geo Mean		7.6701E-4
1141					KM SD (logged)	1.3				95% Critical H Value (KM-Log)		2.9
1142					KM Standard Error of Mean (logged)	1.218				95% H-UCL (KM -Log)		0.00385
1143					KM SD (logged)	1.3				95% Critical H Value (KM-Log)		2.9
1144					KM Standard Error of Mean (logged)	1.218						
1145												
1146					**DL/2 Statistics**							
1147					**DL/2 Normal**					**DL/2 Log-Transformed**		
1148					Mean in Original Scale	0.00252				Mean in Log Scale		-6.089
1149					SD in Original Scale	7.6811E-4				SD in Log Scale		0.668
1150					95% t UCL (Assumes normality)	0.00278				95% H-Stat UCL		0.00378
1151					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
1152												
1153					**Nonparametric Distribution Free UCL Statistics**							
1154					**Data do not follow a Discernible Distribution**							
1155												
1156					**Suggested UCL to Use**							
1157					95% KM (t) UCL	0.00344						
1158												
1159					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1160					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
1161					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
1162												
1163	**Perfluorooctane sulfonic acid (PFOS)_Off-Base Skeleton Creek**											
1164												
1165					**General Statistics**							
1166					Total Number of Observations	14				Number of Distinct Observations		4

1167					Number of Detects	3				Number of Non-Detects		11
1168					Number of Distinct Detects	3				Number of Distinct Non-Detects		1
1169					Minimum Detect	0.0096				Minimum Non-Detect		0.005
1170					Maximum Detect	0.012				Maximum Non-Detect		0.005
1171					Variance Detects	1.6533E-6				Percent Non-Detects		78.57%
1172					Mean Detects	0.0105				SD Detects		0.00129
1173					Median Detects	0.01				CV Detects		0.122
1174					Skewness Detects	1.545				Kurtosis Detects		N/A
1175					Mean of Logged Detects	-4.558				SD of Logged Detects		0.119
1176												
1177					**Warning: Data set has only 3 Detected Values.**							
1178					**This is not enough to compute meaningful or reliable statistics and estimates.**							
1179												
1180												
1181					**Normal GOF Test on Detects Only**							
1182					Shapiro Wilk Test Statistic	0.871				**Shapiro Wilk GOF Test**		
1183					1% Shapiro Wilk Critical Value	0.753				Detected Data appear Normal at 1% Significance Level		
1184					Lilliefors Test Statistic	0.328				**Lilliefors GOF Test**		
1185					1% Lilliefors Critical Value	0.429				Detected Data appear Normal at 1% Significance Level		
1186					**Detected Data appear Normal at 1% Significance Level**							
1187					**Note GOF tests may be unreliable for small sample sizes**							
1188												
1189					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
1190					KM Mean	0.00619				KM Standard Error of Mean		7.6002E-4
1191					90KM SD	0.00232				95% KM (BCA) UCL		N/A
1192					95% KM (t) UCL	0.00753				95% KM (Percentile Bootstrap) UCL		N/A
1193					95% KM (z) UCL	0.00744				95% KM Bootstrap t UCL		N/A
1194					90% KM Chebyshev UCL	0.00847				95% KM Chebyshev UCL		0.0095
1195					97.5% KM Chebyshev UCL	0.0109				99% KM Chebyshev UCL		0.0137
1196												
1197					**Gamma GOF Tests on Detected Observations Only**							
1198					A-D Test Statistic	0.421				**Anderson-Darling GOF Test**		
1199					5% A-D Critical Value	0.635				Detected data appear Gamma Distributed at 5% Significance Level		
1200					K-S Test Statistic	0.356				**Kolmogorov-Smirnov GOF**		
1201					5% K-S Critical Value	0.431				Detected data appear Gamma Distributed at 5% Significance Level		
1202					**Detected Data Not Gamma Distributed at 5% Significance Level**							
1203												
1204					**Gamma Statistics on Detected Data Only**							
1205					k hat (MLE)	104.5				k star (bias corrected MLE)		N/A
1206					Theta hat (MLE)	1.0082E-4				Theta star (bias corrected MLE)		N/A
1207					nu hat (MLE)	626.9				nu star (bias corrected)		N/A
1208					Mean (detects)	0.0105						
1209												
1210					**Gamma ROS Statistics using Imputed Non-Detects**							
1211					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
1212					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
1213					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
1214					This is especially true when the sample size is small.							
1215					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
1216					Minimum	0.0096				Mean		0.0101
1217					Maximum	0.012				Median		0.01
1218					SD	5.5311E-4				CV		0.0547
1219					k hat (MLE)	398.1				k star (bias corrected MLE)		312.8
1220					Theta hat (MLE)	2.5410E-5				Theta star (bias corrected MLE)		3.2334E-5
1221					nu hat (MLE)	11145				nu star (bias corrected)		8758
1222					Adjusted Level of Significance (β)	0.0312						
1223					Approximate Chi Square Value (N/A, α)	8542				Adjusted Chi Square Value (N/A, β)		8514
1224					95% Gamma Approximate UCL	0.0104				95% Gamma Adjusted UCL		N/A
1225												
1226					**Estimates of Gamma Parameters using KM Estimates**							
1227					Mean (KM)	0.00619				SD (KM)		0.00232
1228					Variance (KM)	5.3912E-6				SE of Mean (KM)		7.6002E-4
1229					k hat (KM)	7.097				k star (KM)		5.624
1230					nu hat (KM)	198.7				nu star (KM)		157.5

1231					theta hat (KM)	8.7156E-4				theta star (KM)		0.0011
1232					80% gamma percentile (KM)	0.00821				90% gamma percentile (KM)		0.00967
1233					95% gamma percentile (KM)	0.011				99% gamma percentile (KM)		0.0138
1234												
1235					**Gamma Kaplan-Meier (KM) Statistics**							
1236					Approximate Chi Square Value (157.47, α)	129.5				Adjusted Chi Square Value (157.47, β)		126.1
1237					95% KM Approximate Gamma UCL	0.00752				95% KM Adjusted Gamma UCL		0.00772
1238												
1239					**Lognormal GOF Test on Detected Observations Only**							
1240					Shapiro Wilk Test Statistic	0.882				**Shapiro Wilk GOF Test**		
1241					10% Shapiro Wilk Critical Value	0.789				Detected Data appear Lognormal at 10% Significance Level		
1242					Lilliefors Test Statistic	0.321				**Lilliefors GOF Test**		
1243					10% Lilliefors Critical Value	0.389				Detected Data appear Lognormal at 10% Significance Level		
1244					**Detected Data appear Lognormal at 10% Significance Level**							
1245					**Note GOF tests may be unreliable for small sample sizes**							
1246												
1247					**Lognormal ROS Statistics Using Imputed Non-Detects**							
1248					Mean in Original Scale	0.0069				Mean in Log Scale		-5.028
1249					SD in Original Scale	0.00236				SD in Log Scale		0.335
1250					95% t UCL (assumes normality of ROS data)	0.00802				95% Percentile Bootstrap UCL		0.00791
1251					95% BCA Bootstrap UCL	0.00794				95% Bootstrap t UCL		0.00834
1252					95% H-UCL (Log ROS)	0.00829						
1253												
1254					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
1255					KM Mean (logged)	-5.14				KM Geo Mean		0.00586
1256					KM SD (logged)	0.307				95% Critical H Value (KM-Log)		1.9
1257					KM Standard Error of Mean (logged)	0.101				95% H-UCL (KM -Log)		0.00722
1258					KM SD (logged)	0.307				95% Critical H Value (KM-Log)		1.9
1259					KM Standard Error of Mean (logged)	0.101						
1260												
1261					**DL/2 Statistics**							
1262					**DL/2 Normal**					**DL/2 Log-Transformed**		
1263					Mean in Original Scale	0.00422				Mean in Log Scale		-5.684
1264					SD in Original Scale	0.00346				SD in Log Scale		0.612
1265					95% t UCL (Assumes normality)	0.00586				95% H-Stat UCL		0.00598
1266					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
1267												
1268					**Nonparametric Distribution Free UCL Statistics**							
1269					**Detected Data appear Normal Distributed at 1% Significance Level**							
1270												
1271					**Suggested UCL to Use**							
1272					95% KM (t) UCL	0.00753						
1273												
1274					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1275					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
1276					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
1277												
1278	**Perfluorooctane sulfonic acid (PFOS)_Off-Base Williams Landing**											
1279												
1280					**General Statistics**							
1281					Total Number of Observations	46				Number of Distinct Observations		19
1282					Number of Detects	18				Number of Non-Detects		28
1283					Number of Distinct Detects	17				Number of Distinct Non-Detects		2
1284					Minimum Detect	6.0000E-4				Minimum Non-Detect		2.0000E-4
1285					Maximum Detect	0.38				Maximum Non-Detect		0.005
1286					Variance Detects	0.0106				Percent Non-Detects		60.87%
1287					Mean Detects	0.079				SD Detects		0.103
1288					Median Detects	0.031				CV Detects		1.303
1289					Skewness Detects	1.793				Kurtosis Detects		3.121
1290					Mean of Logged Detects	-3.554				SD of Logged Detects		1.765
1291												
1292					**Normal GOF Test on Detects Only**							
1293					Shapiro Wilk Test Statistic	0.744				**Shapiro Wilk GOF Test**		
1294					1% Shapiro Wilk Critical Value	0.858				Detected Data Not Normal at 1% Significance Level		

1295					Lilliefors Test Statistic	0.28	**Lilliefors GOF Test**					
1296					1% Lilliefors Critical Value	0.235	Detected Data Not Normal at 1% Significance Level					
1297	**Detected Data Not Normal at 1% Significance Level**											
1298												
1299	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1300					KM Mean	0.0313	KM Standard Error of Mean	0.0111				
1301					90KM SD	0.0733	95% KM (BCA) UCL	0.0519				
1302					95% KM (t) UCL	0.05	95% KM (Percentile Bootstrap) UCL	0.0502				
1303					95% KM (z) UCL	0.0496	95% KM Bootstrap t UCL	0.0592				
1304					90% KM Chebyshev UCL	0.0647	95% KM Chebyshev UCL	0.0798				
1305					97.5% KM Chebyshev UCL	0.101	99% KM Chebyshev UCL	0.142				
1306												
1307	**Gamma GOF Tests on Detected Observations Only**											
1308					A-D Test Statistic	0.336	**Anderson-Darling GOF Test**					
1309					5% A-D Critical Value	0.791	Detected data appear Gamma Distributed at 5% Significance Level					
1310					K-S Test Statistic	0.161	**Kolmogorov-Smirnov GOF**					
1311					5% K-S Critical Value	0.214	Detected data appear Gamma Distributed at 5% Significance Level					
1312	**Detected data appear Gamma Distributed at 5% Significance Level**											
1313												
1314	**Gamma Statistics on Detected Data Only**											
1315					k hat (MLE)	0.607	k star (bias corrected MLE)	0.543				
1316					Theta hat (MLE)	0.13	Theta star (bias corrected MLE)	0.145				
1317					nu hat (MLE)	21.86	nu star (bias corrected)	19.55				
1318					Mean (detects)	0.079						
1319												
1320	**Gamma ROS Statistics using Imputed Non-Detects**											
1321	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1322	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1323	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1324	This is especially true when the sample size is small.											
1325	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1326					Minimum	6.0000E-4	Mean	0.037				
1327					Maximum	0.38	Median	0.01				
1328					SD	0.0718	CV	1.942				
1329					k hat (MLE)	0.677	k star (bias corrected MLE)	0.647				
1330					Theta hat (MLE)	0.0547	Theta star (bias corrected MLE)	0.0572				
1331					nu hat (MLE)	62.28	nu star (bias corrected)	59.55				
1332					Adjusted Level of Significance (β)	0.0448						
1333					Approximate Chi Square Value (59.55, α)	42.8	Adjusted Chi Square Value (59.55, β)	42.34				
1334					95% Gamma Approximate UCL	0.0515	95% Gamma Adjusted UCL	0.052				
1335												
1336	**Estimates of Gamma Parameters using KM Estimates**											
1337					Mean (KM)	0.0313	SD (KM)	0.0733				
1338					Variance (KM)	0.00538	SE of Mean (KM)	0.0111				
1339					k hat (KM)	0.182	k star (KM)	0.184				
1340					nu hat (KM)	16.72	nu star (KM)	16.97				
1341					theta hat (KM)	0.172	theta star (KM)	0.17				
1342					80% gamma percentile (KM)	0.0394	90% gamma percentile (KM)	0.0944				
1343					95% gamma percentile (KM)	0.164	99% gamma percentile (KM)	0.36				
1344												
1345	**Gamma Kaplan-Meier (KM) Statistics**											
1346					Approximate Chi Square Value (16.97, α)	8.648	Adjusted Chi Square Value (16.97, β)	8.455				
1347					95% KM Approximate Gamma UCL	0.0614	95% KM Adjusted Gamma UCL	0.0628				
1348												
1349	**Lognormal GOF Test on Detected Observations Only**											
1350					Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk GOF Test**					
1351					10% Shapiro Wilk Critical Value	0.914	Detected Data appear Lognormal at 10% Significance Level					
1352					Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**					
1353					10% Lilliefors Critical Value	0.185	Detected Data appear Lognormal at 10% Significance Level					
1354	**Detected Data appear Lognormal at 10% Significance Level**											
1355												
1356	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1357					Mean in Original Scale	0.0316	Mean in Log Scale	-6.173				
1358					SD in Original Scale	0.074	SD in Log Scale	2.775				

1359					95% t UCL (assumes normality of ROS data)	0.05					95% Percentile Bootstrap UCL	0.0504
1360					95% BCA Bootstrap UCL	0.0537					95% Bootstrap t UCL	0.0613
1361					95% H-UCL (Log ROS)	0.683						
1362												
1363	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1364					KM Mean (logged)	-6.045					KM Geo Mean	0.00237
1365					KM SD (logged)	2.329					95% Critical H Value (KM-Log)	4.044
1366					KM Standard Error of Mean (logged)	0.431					95% H-UCL (KM -Log)	0.145
1367					KM SD (logged)	2.329					95% Critical H Value (KM-Log)	4.044
1368					KM Standard Error of Mean (logged)	0.431						
1369												
1370	**DL/2 Statistics**											
1371	**DL/2 Normal**							**DL/2 Log-Transformed**				
1372					Mean in Original Scale	0.0324					Mean in Log Scale	-5.108
1373					SD in Original Scale	0.0737					SD in Log Scale	1.728
1374					95% t UCL (Assumes normality)	0.0506					95% H-Stat UCL	0.0616
1375	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1376												
1377	**Nonparametric Distribution Free UCL Statistics**											
1378	**Detected Data appear Gamma Distributed at 5% Significance Level**											
1379												
1380	**Suggested UCL to Use**											
1381					95% KM Adjusted Gamma UCL	0.0628						
1382												
1383	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1384	**Please verify the data were collected from random locations.**											
1385	**If the data were collected using judgmental or other non-random methods,**											
1386	**then contact a statistician to correctly calculate UCLs.**											
1387												
1388	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1389	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1390	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1391												
1392	**Perfluorooctane sulfonic acid (PFOS)_On-base (other)**											
1393												
1394	**General Statistics**											
1395					Total Number of Observations	62					Number of Distinct Observations	17
1396					Number of Detects	16					Number of Non-Detects	46
1397					Number of Distinct Detects	16					Number of Distinct Non-Detects	1
1398					Minimum Detect	9.0000E-4					Minimum Non-Detect	0.005
1399					Maximum Detect	0.24					Maximum Non-Detect	0.005
1400					Variance Detects	0.00377					Percent Non-Detects	74.19%
1401					Mean Detects	0.0291					SD Detects	0.0614
1402					Median Detects	0.00575					CV Detects	2.109
1403					Skewness Detects	3.09					Kurtosis Detects	10.22
1404					Mean of Logged Detects	-4.938					SD of Logged Detects	1.62
1405												
1406	**Normal GOF Test on Detects Only**											
1407					Shapiro Wilk Test Statistic	0.512		**Shapiro Wilk GOF Test**				
1408					1% Shapiro Wilk Critical Value	0.844		Detected Data Not Normal at 1% Significance Level				
1409					Lilliefors Test Statistic	0.372		**Lilliefors GOF Test**				
1410					1% Lilliefors Critical Value	0.248		Detected Data Not Normal at 1% Significance Level				
1411	**Detected Data Not Normal at 1% Significance Level**											
1412												
1413	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1414					KM Mean	0.00893					KM Standard Error of Mean	0.00428
1415					90KM SD	0.0325					95% KM (BCA) UCL	0.0171
1416					95% KM (t) UCL	0.0161					95% KM (Percentile Bootstrap) UCL	0.0165
1417					95% KM (z) UCL	0.016					95% KM Bootstrap t UCL	0.0281
1418					90% KM Chebyshev UCL	0.0218					95% KM Chebyshev UCL	0.0276
1419					97.5% KM Chebyshev UCL	0.0356					99% KM Chebyshev UCL	0.0515
1420												
1421	**Gamma GOF Tests on Detected Observations Only**											
1422					A-D Test Statistic	1.398		**Anderson-Darling GOF Test**				

1423					5% A-D Critical Value	0.805	Detected Data Not Gamma Distributed at 5% Significance Level					
1424					K-S Test Statistic	0.301	**Kolmogorov-Smirnov GOF**					
1425					5% K-S Critical Value	0.228	Detected Data Not Gamma Distributed at 5% Significance Level					
1426	**Detected Data Not Gamma Distributed at 5% Significance Level**											
1427												
1428	**Gamma Statistics on Detected Data Only**											
1429					k hat (MLE)	0.459			k star (bias corrected MLE)	0.415		
1430					Theta hat (MLE)	0.0635			Theta star (bias corrected MLE)	0.0703		
1431					nu hat (MLE)	14.69			nu star (bias corrected)	13.27		
1432					Mean (detects)	0.0291						
1433												
1434	**Gamma ROS Statistics using Imputed Non-Detects**											
1435	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1436	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1437	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1438	This is especially true when the sample size is small.											
1439	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1440					Minimum	9.0000E-4			Mean	0.0151		
1441					Maximum	0.24			Median	0.01		
1442					SD	0.0316			CV	2.098		
1443					k hat (MLE)	1.169			k star (bias corrected MLE)	1.123		
1444					Theta hat (MLE)	0.0129			Theta star (bias corrected MLE)	0.0134		
1445					nu hat (MLE)	144.9			nu star (bias corrected)	139.3		
1446					Adjusted Level of Significance (β)	0.0461						
1447					Approximate Chi Square Value (139.26, α)	113			Adjusted Chi Square Value (139.26, β)	112.4		
1448					95% Gamma Approximate UCL	0.0186			95% Gamma Adjusted UCL	0.0187		
1449												
1450	**Estimates of Gamma Parameters using KM Estimates**											
1451					Mean (KM)	0.00893			SD (KM)	0.0325		
1452					Variance (KM)	0.00106			SE of Mean (KM)	0.00428		
1453					k hat (KM)	0.0755			k star (KM)	0.0826		
1454					nu hat (KM)	9.358			nu star (KM)	10.24		
1455					theta hat (KM)	0.118			theta star (KM)	0.108		
1456					80% gamma percentile (KM)	0.00451			90% gamma percentile (KM)	0.0216		
1457					95% gamma percentile (KM)	0.052			99% gamma percentile (KM)	0.156		
1458												
1459	**Gamma Kaplan-Meier (KM) Statistics**											
1460					Approximate Chi Square Value (10.24, α)	4.091			Adjusted Chi Square Value (10.24, β)	3.999		
1461					95% KM Approximate Gamma UCL	0.0223			95% KM Adjusted Gamma UCL	0.0229		
1462												
1463	**Lognormal GOF Test on Detected Observations Only**											
1464					Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk GOF Test**					
1465					10% Shapiro Wilk Critical Value	0.906	Detected Data appear Lognormal at 10% Significance Level					
1466					Lilliefors Test Statistic	0.208	**Lilliefors GOF Test**					
1467					10% Lilliefors Critical Value	0.196	Detected Data Not Lognormal at 10% Significance Level					
1468	**Detected Data appear Approximate Lognormal at 10% Significance Level**											
1469												
1470	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1471					Mean in Original Scale	0.00921			Mean in Log Scale	-6.154		
1472					SD in Original Scale	0.0327			SD in Log Scale	1.443		
1473					95% t UCL (assumes normality of ROS data)	0.0162			95% Percentile Bootstrap UCL	0.0168		
1474					95% BCA Bootstrap UCL	0.0208			95% Bootstrap t UCL	0.0283		
1475					95% H-UCL (Log ROS)	0.00942						
1476												
1477	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1478					KM Mean (logged)	-6.02			KM Geo Mean	0.00243		
1479					KM SD (logged)	1.109			95% Critical H Value (KM-Log)	2.284		
1480					KM Standard Error of Mean (logged)	0.222			95% H-UCL (KM -Log)	0.00621		
1481					KM SD (logged)	1.109			95% Critical H Value (KM-Log)	2.284		
1482					KM Standard Error of Mean (logged)	0.222						
1483	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**											
1484												
1485	**DL/2 Statistics**											
1486	**DL/2 Normal**						**DL/2 Log-Transformed**					

1487					Mean in Original Scale	0.00937					Mean in Log Scale	-5.72
1488					SD in Original Scale	0.0327					SD in Log Scale	0.928
1489					95% t UCL (Assumes normality)	0.0163					95% H-Stat UCL	0.00655
1490	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1491												
1492	**Nonparametric Distribution Free UCL Statistics**											
1493	**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**											
1494												
1495	**Suggested UCL to Use**											
1496					KM H-UCL	0.00621						
1497												
1498	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1499	**Please verify the data were collected from random locations.**											
1500	**If the data were collected using judgmental or other non-random methods,**											
1501	**then contact a statistician to correctly calculate UCLs.**											
1502												
1503	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1504	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1505	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1506												
1507	**Perfluorooctane sulfonic acid (PFOS)_On-Base SA01**											
1508												
1509	**General Statistics**											
1510					Total Number of Observations	77					Number of Distinct Observations	44
1511					Number of Detects	47					Number of Non-Detects	30
1512					Number of Distinct Detects	44					Number of Distinct Non-Detects	1
1513					Minimum Detect	0.005					Minimum Non-Detect	0.005
1514					Maximum Detect	2.9					Maximum Non-Detect	0.005
1515					Variance Detects	0.337					Percent Non-Detects	38.96%
1516					Mean Detects	0.246					SD Detects	0.581
1517					Median Detects	0.061					CV Detects	2.364
1518					Skewness Detects	3.827					Kurtosis Detects	14.71
1519					Mean of Logged Detects	-2.836					SD of Logged Detects	1.665
1520												
1521	**Normal GOF Test on Detects Only**											
1522					Shapiro Wilk Test Statistic	0.437					**Shapiro Wilk GOF Test**	
1523					1% Shapiro Wilk Critical Value	0.928					Detected Data Not Normal at 1% Significance Level	
1524					Lilliefors Test Statistic	0.339					**Lilliefors GOF Test**	
1525					1% Lilliefors Critical Value	0.15					Detected Data Not Normal at 1% Significance Level	
1526	**Detected Data Not Normal at 1% Significance Level**											
1527												
1528	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1529					KM Mean	0.152					KM Standard Error of Mean	0.0534
1530					90KM SD	0.464					95% KM (BCA) UCL	0.26
1531					95% KM (t) UCL	0.241					95% KM (Percentile Bootstrap) UCL	0.252
1532					95% KM (z) UCL	0.24					95% KM Bootstrap t UCL	0.342
1533					90% KM Chebyshev UCL	0.312					95% KM Chebyshev UCL	0.385
1534					97.5% KM Chebyshev UCL	0.486					99% KM Chebyshev UCL	0.684
1535												
1536	**Gamma GOF Tests on Detected Observations Only**											
1537					A-D Test Statistic	2.32					**Anderson-Darling GOF Test**	
1538					5% A-D Critical Value	0.826					Detected Data Not Gamma Distributed at 5% Significance Level	
1539					K-S Test Statistic	0.164					**Kolmogorov-Smirnov GOF**	
1540					5% K-S Critical Value	0.137					Detected Data Not Gamma Distributed at 5% Significance Level	
1541	**Detected Data Not Gamma Distributed at 5% Significance Level**											
1542												
1543	**Gamma Statistics on Detected Data Only**											
1544					k hat (MLE)	0.451					k star (bias corrected MLE)	0.436
1545					Theta hat (MLE)	0.545					Theta star (bias corrected MLE)	0.563
1546					nu hat (MLE)	42.37					nu star (bias corrected)	41
1547					Mean (detects)	0.246						
1548												
1549	**Gamma ROS Statistics using Imputed Non-Detects**											
1550	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											

1551	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1552	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1553	This is especially true when the sample size is small.											
1554	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1555					Minimum	0.005			Mean	0.154		
1556					Maximum	2.9			Median	0.011		
1557					SD	0.466			CV	3.031		
1558					k hat (MLE)	0.398			k star (bias corrected MLE)	0.391		
1559					Theta hat (MLE)	0.386			Theta star (bias corrected MLE)	0.393		
1560					nu hat (MLE)	61.33			nu star (bias corrected)	60.27		
1561					Adjusted Level of Significance (β)	0.0469						
1562					Approximate Chi Square Value (60.27, α)	43.42			Adjusted Chi Square Value (60.27, β)	43.15		
1563					95% Gamma Approximate UCL	0.214			95% Gamma Adjusted UCL	0.215		
1564												
1565	**Estimates of Gamma Parameters using KM Estimates**											
1566					Mean (KM)	0.152			SD (KM)	0.464		
1567					Variance (KM)	0.215			SE of Mean (KM)	0.0534		
1568					k hat (KM)	0.107			k star (KM)	0.112		
1569					nu hat (KM)	16.51			nu star (KM)	17.2		
1570					theta hat (KM)	1.417			theta star (KM)	1.36		
1571					80% gamma percentile (KM)	0.122			90% gamma percentile (KM)	0.421		
1572					95% gamma percentile (KM)	0.874			99% gamma percentile (KM)	2.282		
1573												
1574	**Gamma Kaplan-Meier (KM) Statistics**											
1575					Approximate Chi Square Value (17.20, α)	8.817			Adjusted Chi Square Value (17.20, β)	8.702		
1576					95% KM Approximate Gamma UCL	0.296			95% KM Adjusted Gamma UCL	0.3		
1577												
1578	**Lognormal GOF Test on Detected Observations Only**											
1579					Shapiro Wilk Test Statistic	0.951			**Shapiro Wilk GOF Test**			
1580					10% Shapiro Wilk Critical Value	0.954			Detected Data Not Lognormal at 10% Significance Level			
1581					Lilliefors Test Statistic	0.0915			**Lilliefors GOF Test**			
1582					10% Lilliefors Critical Value	0.118			Detected Data appear Lognormal at 10% Significance Level			
1583	**Detected Data appear Approximate Lognormal at 10% Significance Level**											
1584												
1585	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1586					Mean in Original Scale	0.151			Mean in Log Scale	-4.475		
1587					SD in Original Scale	0.467			SD in Log Scale	2.577		
1588					95% t UCL (assumes normality of ROS data)	0.239			95% Percentile Bootstrap UCL	0.244		
1589					95% BCA Bootstrap UCL	0.27			95% Bootstrap t UCL	0.347		
1590					95% H-UCL (Log ROS)	1.09						
1591												
1592	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1593					KM Mean (logged)	-3.795			KM Geo Mean	0.0225		
1594					KM SD (logged)	1.76			95% Critical H Value (KM-Log)	3.124		
1595					KM Standard Error of Mean (logged)	0.203			95% H-UCL (KM -Log)	0.199		
1596					KM SD (logged)	1.76			95% Critical H Value (KM-Log)	3.124		
1597					KM Standard Error of Mean (logged)	0.203						
1598												
1599	**DL/2 Statistics**											
1600	**DL/2 Normal**								**DL/2 Log-Transformed**			
1601					Mean in Original Scale	0.151			Mean in Log Scale	-4.065		
1602					SD in Original Scale	0.467			SD in Log Scale	2.019		
1603					95% t UCL (Assumes normality)	0.24			95% H-Stat UCL	0.293		
1604	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1605												
1606	**Nonparametric Distribution Free UCL Statistics**											
1607	**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**											
1608												
1609	**Suggested UCL to Use**											
1610					KM H-UCL	0.199						
1611												
1612	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1613	**Please verify the data were collected from random locations.**											
1614	**If the data were collected using judgmental or other non-random methods,**											

1615	**then contact a statistician to correctly calculate UCLs.**											
1616												
1617	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1618	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1619	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1620												
1621	**Perfluorooctane sulfonic acid (PFOS)_On-Base SA02**											
1622												
1623	**General Statistics**											
1624						Total Number of Observations	160			Number of Distinct Observations	40	
1625						Number of Detects	53			Number of Non-Detects	107	
1626						Number of Distinct Detects	39			Number of Distinct Non-Detects	1	
1627						Minimum Detect	0.0052			Minimum Non-Detect	0.005	
1628						Maximum Detect	1.6			Maximum Non-Detect	0.005	
1629						Variance Detects	0.0633			Percent Non-Detects	66.88%	
1630						Mean Detects	0.0914			SD Detects	0.252	
1631						Median Detects	0.018			CV Detects	2.753	
1632						Skewness Detects	4.95			Kurtosis Detects	26.83	
1633						Mean of Logged Detects	-3.63			SD of Logged Detects	1.311	
1634												
1635	**Normal GOF Test on Detects Only**											
1636						Shapiro Wilk Test Statistic	0.371		**Normal GOF Test on Detected Observations Only**			
1637						1% Shapiro Wilk P Value	0		Detected Data Not Normal at 1% Significance Level			
1638						Lilliefors Test Statistic	0.383		**Lilliefors GOF Test**			
1639						1% Lilliefors Critical Value	0.14		Detected Data Not Normal at 1% Significance Level			
1640	**Detected Data Not Normal at 1% Significance Level**											
1641												
1642	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1643						KM Mean	0.0336			KM Standard Error of Mean	0.0119	
1644						90KM SD	0.149			95% KM (BCA) UCL	0.0563	
1645						95% KM (t) UCL	0.0533			95% KM (Percentile Bootstrap) UCL	0.0553	
1646						95% KM (z) UCL	0.0532			95% KM Bootstrap t UCL	0.0917	
1647						90% KM Chebyshev UCL	0.0693			95% KM Chebyshev UCL	0.0855	
1648						97.5% KM Chebyshev UCL	0.108			99% KM Chebyshev UCL	0.152	
1649												
1650	**Gamma GOF Tests on Detected Observations Only**											
1651						A-D Test Statistic	5.303		**Anderson-Darling GOF Test**			
1652						5% A-D Critical Value	0.814		Detected Data Not Gamma Distributed at 5% Significance Level			
1653						K-S Test Statistic	0.247		**Kolmogorov-Smirnov GOF**			
1654						5% K-S Critical Value	0.129		Detected Data Not Gamma Distributed at 5% Significance Level			
1655	**Detected Data Not Gamma Distributed at 5% Significance Level**											
1656												
1657	**Gamma Statistics on Detected Data Only**											
1658						k hat (MLE)	0.511			k star (bias corrected MLE)	0.495	
1659						Theta hat (MLE)	0.179			Theta star (bias corrected MLE)	0.185	
1660						nu hat (MLE)	54.19			nu star (bias corrected)	52.45	
1661						Mean (detects)	0.0914					
1662												
1663	**Gamma ROS Statistics using Imputed Non-Detects**											
1664	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1665	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1666	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1667	This is especially true when the sample size is small.											
1668	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1669						Minimum	0.0052			Mean	0.037	
1670						Maximum	1.6			Median	0.01	
1671						SD	0.149			CV	4.029	
1672						k hat (MLE)	0.624			k star (bias corrected MLE)	0.616	
1673						Theta hat (MLE)	0.0593			Theta star (bias corrected MLE)	0.06	
1674						nu hat (MLE)	199.6			nu star (bias corrected)	197.2	
1675						Adjusted Level of Significance (β)	0.0485					
1676						Approximate Chi Square Value (197.23, α)	165.7			Adjusted Chi Square Value (197.23, β)	165.5	
1677						95% Gamma Approximate UCL	0.044			95% Gamma Adjusted UCL	0.0441	
1678												

1679	**Estimates of Gamma Parameters using KM Estimates**											
1680					Mean (KM)	0.0336				SD (KM)	0.149	
1681					Variance (KM)	0.0222				SE of Mean (KM)	0.0119	
1682					k hat (KM)	0.0509				k star (KM)	0.0541	
1683					nu hat (KM)	16.27				nu star (KM)	17.3	
1684					theta hat (KM)	0.661				theta star (KM)	0.622	
1685					80% gamma percentile (KM)	0.00594				90% gamma percentile (KM)	0.0565	
1686					95% gamma percentile (KM)	0.184				99% gamma percentile (KM)	0.709	
1687												
1688	**Gamma Kaplan-Meier (KM) Statistics**											
1689					Approximate Chi Square Value (17.30, α)	8.889				Adjusted Chi Square Value (17.30, β)	8.834	
1690					95% KM Approximate Gamma UCL	0.0655				95% KM Adjusted Gamma UCL	0.0659	
1691												
1692	**Lognormal GOF Test on Detected Observations Only**											
1693					Shapiro Wilk Approximate Test Statistic	0.896				**Shapiro Wilk GOF Test**		
1694					10% Shapiro Wilk P Value	9.3003E-5				Detected Data Not Lognormal at 10% Significance Level		
1695					Lilliefors Test Statistic	0.125				**Lilliefors GOF Test**		
1696					10% Lilliefors Critical Value	0.111				Detected Data Not Lognormal at 10% Significance Level		
1697	**Detected Data Not Lognormal at 10% Significance Level**											
1698												
1699	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1700					Mean in Original Scale	0.031				Mean in Log Scale	-6.465	
1701					SD in Original Scale	0.15				SD in Log Scale	2.568	
1702					95% t UCL (assumes normality of ROS data)	0.0506				95% Percentile Bootstrap UCL	0.0522	
1703					95% BCA Bootstrap UCL	0.06				95% Bootstrap t UCL	0.0836	
1704					95% H-UCL (Log ROS)	0.0955						
1705												
1706	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1707					KM Mean (logged)	-4.746				KM Geo Mean	0.00869	
1708					KM SD (logged)	1.084				95% Critical H Value (KM-Log)	2.289	
1709					KM Standard Error of Mean (logged)	0.0865				95% H-UCL (KM -Log)	0.019	
1710					KM SD (logged)	1.084				95% Critical H Value (KM-Log)	2.289	
1711					KM Standard Error of Mean (logged)	0.0865						
1712	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**											
1713												
1714	**DL/2 Statistics**											
1715	**DL/2 Normal**									**DL/2 Log-Transformed**		
1716					Mean in Original Scale	0.032				Mean in Log Scale	-5.209	
1717					SD in Original Scale	0.15				SD in Log Scale	1.343	
1718					95% t UCL (Assumes normality)	0.0516				95% H-Stat UCL	0.0177	
1719	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1720												
1721	**Nonparametric Distribution Free UCL Statistics**											
1722	**Data do not follow a Discernible Distribution**											
1723												
1724	**Suggested UCL to Use**											
1725					95% KM (t) UCL	0.0533						
1726												
1727	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1728	**Please verify the data were collected from random locations.**											
1729	**If the data were collected using judgmental or other non-random methods,**											
1730	**then contact a statistician to correctly calculate UCLs.**											
1731												
1732	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1733	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1734	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1735												
1736	**Perfluorooctane sulfonic acid (PFOS)_On-Base SA03**											
1737												
1738	**General Statistics**											
1739					Total Number of Observations	35				Number of Distinct Observations	15	
1740					Number of Detects	14				Number of Non-Detects	21	
1741					Number of Distinct Detects	14				Number of Distinct Non-Detects	1	
1742					Minimum Detect	0.0062				Minimum Non-Detect	0.005	

1743					Maximum Detect	0.14				Maximum Non-Detect		0.005
1744					Variance Detects	0.00124				Percent Non-Detects		60%
1745					Mean Detects	0.0332				SD Detects		0.0352
1746					Median Detects	0.0195				CV Detects		1.062
1747					Skewness Detects	2.394				Kurtosis Detects		6.687
1748					Mean of Logged Detects	-3.799				SD of Logged Detects		0.895
1749												
1750					**Normal GOF Test on Detects Only**							
1751					Shapiro Wilk Test Statistic	0.722			**Shapiro Wilk GOF Test**			
1752					1% Shapiro Wilk Critical Value	0.825			Detected Data Not Normal at 1% Significance Level			
1753					Lilliefors Test Statistic	0.222			**Lilliefors GOF Test**			
1754					1% Lilliefors Critical Value	0.263			Detected Data appear Normal at 1% Significance Level			
1755					**Detected Data appear Approximate Normal at 1% Significance Level**							
1756												
1757					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
1758					KM Mean	0.0163				KM Standard Error of Mean		0.00448
1759					90KM SD	0.0255				95% KM (BCA) UCL		0.0244
1760					95% KM (t) UCL	0.0239				95% KM (Percentile Bootstrap) UCL		0.0243
1761					95% KM (z) UCL	0.0236				95% KM Bootstrap t UCL		0.0305
1762					90% KM Chebyshev UCL	0.0297				95% KM Chebyshev UCL		0.0358
1763					97.5% KM Chebyshev UCL	0.0442				99% KM Chebyshev UCL		0.0608
1764												
1765					**Gamma GOF Tests on Detected Observations Only**							
1766					A-D Test Statistic	0.392			**Anderson-Darling GOF Test**			
1767					5% A-D Critical Value	0.752			Detected data appear Gamma Distributed at 5% Significance Level			
1768					K-S Test Statistic	0.163			**Kolmogorov-Smirnov GOF**			
1769					5% K-S Critical Value	0.233			Detected data appear Gamma Distributed at 5% Significance Level			
1770					**Detected data appear Gamma Distributed at 5% Significance Level**							
1771												
1772					**Gamma Statistics on Detected Data Only**							
1773					k hat (MLE)	1.415				k star (bias corrected MLE)		1.159
1774					Theta hat (MLE)	0.0235				Theta star (bias corrected MLE)		0.0286
1775					nu hat (MLE)	39.61				nu star (bias corrected)		32.45
1776					Mean (detects)	0.0332						
1777												
1778					**Gamma ROS Statistics using Imputed Non-Detects**							
1779					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
1780					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
1781					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
1782					This is especially true when the sample size is small.							
1783					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
1784					Minimum	0.0062				Mean		0.0193
1785					Maximum	0.14				Median		0.01
1786					SD	0.0247				CV		1.279
1787					k hat (MLE)	1.645				k star (bias corrected MLE)		1.523
1788					Theta hat (MLE)	0.0117				Theta star (bias corrected MLE)		0.0127
1789					nu hat (MLE)	115.1				nu star (bias corrected)		106.6
1790					Adjusted Level of Significance (β)	0.0425						
1791					Approximate Chi Square Value (106.61, α)	83.78				Adjusted Chi Square Value (106.61, β)		82.82
1792					95% Gamma Approximate UCL	0.0245				95% Gamma Adjusted UCL		0.0248
1793												
1794					**Estimates of Gamma Parameters using KM Estimates**							
1795					Mean (KM)	0.0163				SD (KM)		0.0255
1796					Variance (KM)	6.5194E-4				SE of Mean (KM)		0.00448
1797					k hat (KM)	0.406				k star (KM)		0.391
1798					nu hat (KM)	28.45				nu star (KM)		27.34
1799					theta hat (KM)	0.0401				theta star (KM)		0.0417
1800					80% gamma percentile (KM)	0.0262				90% gamma percentile (KM)		0.0462
1801					95% gamma percentile (KM)	0.0682				99% gamma percentile (KM)		0.124
1802												
1803					**Gamma Kaplan-Meier (KM) Statistics**							
1804					Approximate Chi Square Value (27.34, α)	16.42				Adjusted Chi Square Value (27.34, β)		16.01
1805					95% KM Approximate Gamma UCL	0.0271				95% KM Adjusted Gamma UCL		0.0278
1806												

1807	**Lognormal GOF Test on Detected Observations Only**											
1808					Shapiro Wilk Test Statistic	0.969	**Shapiro Wilk GOF Test**					
1809					10% Shapiro Wilk Critical Value	0.895	Detected Data appear Lognormal at 10% Significance Level					
1810					Lilliefors Test Statistic	0.121	**Lilliefors GOF Test**					
1811					10% Lilliefors Critical Value	0.208	Detected Data appear Lognormal at 10% Significance Level					
1812	**Detected Data appear Lognormal at 10% Significance Level**											
1813												
1814	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1815					Mean in Original Scale	0.0145			Mean in Log Scale	-5.508		
1816					SD in Original Scale	0.0268			SD in Log Scale	1.731		
1817					95% t UCL (assumes normality of ROS data)	0.0221			95% Percentile Bootstrap UCL	0.0223		
1818					95% BCA Bootstrap UCL	0.0249			95% Bootstrap t UCL	0.0278		
1819					95% H-UCL (Log ROS)	0.0509						
1820												
1821	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1822					KM Mean (logged)	-4.699			KM Geo Mean	0.00911		
1823					KM SD (logged)	0.915			95% Critical H Value (KM-Log)	2.357		
1824					KM Standard Error of Mean (logged)	0.161			95% H-UCL (KM -Log)	0.02		
1825					KM SD (logged)	0.915			95% Critical H Value (KM-Log)	2.357		
1826					KM Standard Error of Mean (logged)	0.161						
1827												
1828	**DL/2 Statistics**											
1829	**DL/2 Normal**						**DL/2 Log-Transformed**					
1830					Mean in Original Scale	0.0148			Mean in Log Scale	-5.114		
1831					SD in Original Scale	0.0266			SD in Log Scale	1.222		
1832					95% t UCL (Assumes normality)	0.0224			95% H-Stat UCL	0.0225		
1833	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1834												
1835	**Nonparametric Distribution Free UCL Statistics**											
1836	**Detected Data appear Approximate Normal Distributed at 1% Significance Level**											
1837												
1838	**Suggested UCL to Use**											
1839					95% KM (t) UCL	0.0239						
1840												
1841	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1842	**Please verify the data were collected from random locations.**											
1843	**If the data were collected using judgmental or other non-random methods,**											
1844	**then contact a statistician to correctly calculate UCLs.**											
1845												
1846	When a data set follows an approximate distribution passing only one of the GOF tests,											
1847	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL											
1848												
1849	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1850	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1851	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1852												
1853	**Perfluorooctane sulfonic acid (PFOS)_On-Base SA04**											
1854												
1855	**General Statistics**											
1856					Total Number of Observations	76			Number of Distinct Observations	37		
1857					Number of Detects	40			Number of Non-Detects	36		
1858					Number of Distinct Detects	36			Number of Distinct Non-Detects	1		
1859					Minimum Detect	0.0063			Minimum Non-Detect	0.005		
1860					Maximum Detect	8.1			Maximum Non-Detect	0.005		
1861					Variance Detects	1.75			Percent Non-Detects	47.37%		
1862					Mean Detects	0.446			SD Detects	1.323		
1863					Median Detects	0.0315			CV Detects	2.966		
1864					Skewness Detects	5.268			Kurtosis Detects	30.34		
1865					Mean of Logged Detects	-2.77			SD of Logged Detects	1.922		
1866												
1867	**Normal GOF Test on Detects Only**											
1868					Shapiro Wilk Test Statistic	0.364	**Shapiro Wilk GOF Test**					
1869					1% Shapiro Wilk Critical Value	0.919	Detected Data Not Normal at 1% Significance Level					
1870					Lilliefors Test Statistic	0.37	**Lilliefors GOF Test**					

1871					1% Lilliefors Critical Value	0.162	Detected Data Not Normal at 1% Significance Level					
1872	**Detected Data Not Normal at 1% Significance Level**											
1873												
1874	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1875					KM Mean	0.237	KM Standard Error of Mean					0.113
1876					90KM SD	0.973	95% KM (BCA) UCL					0.449
1877					95% KM (t) UCL	0.425	95% KM (Percentile Bootstrap) UCL					0.442
1878					95% KM (z) UCL	0.423	95% KM Bootstrap t UCL					0.811
1879					90% KM Chebyshev UCL	0.576	95% KM Chebyshev UCL					0.73
1880					97.5% KM Chebyshev UCL	0.943	99% KM Chebyshev UCL					1.362
1881												
1882	**Gamma GOF Tests on Detected Observations Only**											
1883					A-D Test Statistic	3.043	**Anderson-Darling GOF Test**					
1884					5% A-D Critical Value	0.848	Detected Data Not Gamma Distributed at 5% Significance Level					
1885					K-S Test Statistic	0.225	**Kolmogorov-Smirnov GOF**					
1886					5% K-S Critical Value	0.151	Detected Data Not Gamma Distributed at 5% Significance Level					
1887	**Detected Data Not Gamma Distributed at 5% Significance Level**											
1888												
1889	**Gamma Statistics on Detected Data Only**											
1890					k hat (MLE)	0.344	k star (bias corrected MLE)					0.335
1891					Theta hat (MLE)	1.298	Theta star (bias corrected MLE)					1.333
1892					nu hat (MLE)	27.49	nu star (bias corrected)					26.76
1893					Mean (detects)	0.446						
1894												
1895	**Gamma ROS Statistics using Imputed Non-Detects**											
1896	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
1897	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
1898	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
1899	This is especially true when the sample size is small.											
1900	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
1901					Minimum	0.0063	Mean					0.239
1902					Maximum	8.1	Median					0.01
1903					SD	0.979	CV					4.087
1904					k hat (MLE)	0.31	k star (bias corrected MLE)					0.307
1905					Theta hat (MLE)	0.772	Theta star (bias corrected MLE)					0.78
1906					nu hat (MLE)	47.17	nu star (bias corrected)					46.64
1907					Adjusted Level of Significance (β)	0.0468						
1908					Approximate Chi Square Value (46.64, α)	31.97	Adjusted Chi Square Value (46.64, β)					31.73
1909					95% Gamma Approximate UCL	0.349	95% Gamma Adjusted UCL					0.352
1910												
1911	**Estimates of Gamma Parameters using KM Estimates**											
1912					Mean (KM)	0.237	SD (KM)					0.973
1913					Variance (KM)	0.947	SE of Mean (KM)					0.113
1914					k hat (KM)	0.0594	k star (KM)					0.0658
1915					nu hat (KM)	9.027	nu star (KM)					10
1916					theta hat (KM)	3.992	theta star (KM)					3.603
1917					80% gamma percentile (KM)	0.0732	90% gamma percentile (KM)					0.486
1918					95% gamma percentile (KM)	1.352	99% gamma percentile (KM)					4.594
1919												
1920	**Gamma Kaplan-Meier (KM) Statistics**											
1921					Approximate Chi Square Value (10.00, α)	3.944	Adjusted Chi Square Value (10.00, β)					3.871
1922					95% KM Approximate Gamma UCL	0.601	95% KM Adjusted Gamma UCL					0.613
1923												
1924	**Lognormal GOF Test on Detected Observations Only**											
1925					Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**					
1926					10% Shapiro Wilk Critical Value	0.949	Detected Data Not Lognormal at 10% Significance Level					
1927					Lilliefors Test Statistic	0.163	**Lilliefors GOF Test**					
1928					10% Lilliefors Critical Value	0.128	Detected Data Not Lognormal at 10% Significance Level					
1929	**Detected Data Not Lognormal at 10% Significance Level**											
1930												
1931	**Lognormal ROS Statistics Using Imputed Non-Detects**											
1932					Mean in Original Scale	0.235	Mean in Log Scale					-5.221
1933					SD in Original Scale	0.98	SD in Log Scale					3.198
1934					95% t UCL (assumes normality of ROS data)	0.422	95% Percentile Bootstrap UCL					0.435

1935					95% BCA Bootstrap UCL	0.561				95% Bootstrap t UCL		0.78
1936					95% H-UCL (Log ROS)	5.788						
1937												
1938					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
1939					KM Mean (logged)	-3.968				KM Geo Mean		0.0189
1940					KM SD (logged)	1.868				95% Critical H Value (KM-Log)		3.255
1941					KM Standard Error of Mean (logged)	0.217				95% H-UCL (KM -Log)		0.218
1942					KM SD (logged)	1.868				95% Critical H Value (KM-Log)		3.255
1943					KM Standard Error of Mean (logged)	0.217						
1944					**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**							
1945												
1946					**DL/2 Statistics**							
1947					**DL/2 Normal**					**DL/2 Log-Transformed**		
1948					Mean in Original Scale	0.236				Mean in Log Scale		-4.296
1949					SD in Original Scale	0.98				SD in Log Scale		2.131
1950					95% t UCL (Assumes normality)	0.423				95% H-Stat UCL		0.32
1951					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
1952												
1953					**Nonparametric Distribution Free UCL Statistics**							
1954					**Data do not follow a Discernible Distribution**							
1955												
1956					**Suggested UCL to Use**							
1957					95% KM (t) UCL	0.425						
1958												
1959					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
1960					**Please verify the data were collected from random locations.**							
1961					**If the data were collected using judgmental or other non-random methods,**							
1962					**then contact a statistician to correctly calculate UCLs.**							
1963												
1964					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
1965					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
1966					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
1967												
1968	**Perfluorooctanoic acid (PFOA)_Off-base Laverton RAAF Swamp**											
1969												
1970					**General Statistics**							
1971					Total Number of Observations	10				Number of Distinct Observations		2
1972					Number of Detects	7				Number of Non-Detects		3
1973					Number of Distinct Detects	2				Number of Distinct Non-Detects		1
1974					Minimum Detect	1.0000E-4				Minimum Non-Detect		1.0000E-4
1975					Maximum Detect	2.0000E-4				Maximum Non-Detect		1.0000E-4
1976					Variance Detects	2.8571E-9				Percent Non-Detects		30%
1977					Mean Detects	1.5714E-4				SD Detects		5.3452E-5
1978					Median Detects	2.0000E-4				CV Detects		0.34
1979					Skewness Detects	-0.374				Kurtosis Detects		-2.8
1980					Mean of Logged Detects	-8.814				SD of Logged Detects		0.371
1981												
1982					**Normal GOF Test on Detects Only**							
1983					Shapiro Wilk Test Statistic	0.663				**Shapiro Wilk GOF Test**		
1984					1% Shapiro Wilk Critical Value	0.73				Detected Data Not Normal at 1% Significance Level		
1985					Lilliefors Test Statistic	0.36				**Lilliefors GOF Test**		
1986					1% Lilliefors Critical Value	0.35				Detected Data Not Normal at 1% Significance Level		
1987					**Detected Data Not Normal at 1% Significance Level**							
1988												
1989					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
1990					KM Mean	1.4000E-4				KM Standard Error of Mean		1.6733E-5
1991					90KM SD	4.8990E-5				95% KM (BCA) UCL		N/A
1992					95% KM (t) UCL	1.7067E-4				95% KM (Percentile Bootstrap) UCL		N/A
1993					95% KM (z) UCL	1.6752E-4				95% KM Bootstrap t UCL		N/A
1994					90% KM Chebyshev UCL	1.9020E-4				95% KM Chebyshev UCL		2.1294E-4
1995					97.5% KM Chebyshev UCL	2.4450E-4				99% KM Chebyshev UCL		3.0649E-4
1996												
1997					**Gamma GOF Tests on Detected Observations Only**							
1998					A-D Test Statistic	1.292				**Anderson-Darling GOF Test**		

1999					5% A-D Critical Value	0.709	Detected Data Not Gamma Distributed at 5% Significance Level					
2000					K-S Test Statistic	0.378	**Kolmogorov-Smirnov GOF**					
2001					5% K-S Critical Value	0.312	Detected Data Not Gamma Distributed at 5% Significance Level					
2002	**Detected Data Not Gamma Distributed at 5% Significance Level**											
2003												
2004	**Gamma Statistics on Detected Data Only**											
2005					k hat (MLE)	9.108				k star (bias corrected MLE)	5.3	
2006					Theta hat (MLE)	1.7254E-5				Theta star (bias corrected MLE)	2.9651E-5	
2007					nu hat (MLE)	127.5				nu star (bias corrected)	74.2	
2008					Mean (detects)	1.5714E-4						
2009												
2010	**Gamma ROS Statistics using Imputed Non-Detects**											
2011	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
2012	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
2013	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
2014	This is especially true when the sample size is small.											
2015	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
2016					Minimum	1.0000E-4				Mean	0.00311	
2017					Maximum	0.01				Median	2.0000E-4	
2018					SD	0.00475				CV	1.529	
2019					k hat (MLE)	0.374				k star (bias corrected MLE)	0.329	
2020					Theta hat (MLE)	0.00831				Theta star (bias corrected MLE)	0.00947	
2021					nu hat (MLE)	7.481				nu star (bias corrected)	6.57	
2022					Adjusted Level of Significance (β)	0.0267						
2023					Approximate Chi Square Value (6.57, α)	1.938				Adjusted Chi Square Value (6.57, β)	1.533	
2024					95% Gamma Approximate UCL	0.0105				95% Gamma Adjusted UCL	0.0133	
2025												
2026	**Estimates of Gamma Parameters using KM Estimates**											
2027					Mean (KM)	1.4000E-4				SD (KM)	4.8990E-5	
2028					Variance (KM)	2.4000E-9				SE of Mean (KM)	1.6733E-5	
2029					k hat (KM)	8.167				k star (KM)	5.783	
2030					nu hat (KM)	163.3				nu star (KM)	115.7	
2031					theta hat (KM)	1.7143E-5				theta star (KM)	2.4207E-5	
2032					80% gamma percentile (KM)	1.8520E-4				90% gamma percentile (KM)	2.1785E-4	
2033					95% gamma percentile (KM)	2.4743E-4				99% gamma percentile (KM)	3.0953E-4	
2034												
2035	**Gamma Kaplan-Meier (KM) Statistics**											
2036					Approximate Chi Square Value (115.67, α)	91.84				Adjusted Chi Square Value (115.67, β)	88.15	
2037					95% KM Approximate Gamma UCL	1.7633E-4				95% KM Adjusted Gamma UCL	1.8370E-4	
2038												
2039	**Lognormal GOF Test on Detected Observations Only**											
2040					Shapiro Wilk Test Statistic	0.663	**Shapiro Wilk GOF Test**					
2041					10% Shapiro Wilk Critical Value	0.838	Detected Data Not Lognormal at 10% Significance Level					
2042					Lilliefors Test Statistic	0.36	**Lilliefors GOF Test**					
2043					10% Lilliefors Critical Value	0.28	Detected Data Not Lognormal at 10% Significance Level					
2044	**Detected Data Not Lognormal at 10% Significance Level**											
2045												
2046	**Lognormal ROS Statistics Using Imputed Non-Detects**											
2047					Mean in Original Scale	1.2999E-4				Mean in Log Scale	-9.058	
2048					SD in Original Scale	6.2031E-5				SD in Log Scale	0.503	
2049					95% t UCL (assumes normality of ROS data)	1.6595E-4				95% Percentile Bootstrap UCL	1.6326E-4	
2050					95% BCA Bootstrap UCL	1.6326E-4				95% Bootstrap t UCL	1.6856E-4	
2051					95% H-UCL (Log ROS)	1.9193E-4						
2052												
2053	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2054					KM Mean (logged)	-8.933				KM Geo Mean	1.3195E-4	
2055					KM SD (logged)	0.34				95% Critical H Value (KM-Log)	2.019	
2056					KM Standard Error of Mean (logged)	0.116				95% H-UCL (KM -Log)	1.7568E-4	
2057					KM SD (logged)	0.34				95% Critical H Value (KM-Log)	2.019	
2058					KM Standard Error of Mean (logged)	0.116						
2059												
2060	**DL/2 Statistics**											
2061	**DL/2 Normal**						**DL/2 Log-Transformed**					
2062					Mean in Original Scale	1.2500E-4				Mean in Log Scale	-9.141	

2063					SD in Original Scale	6.7700E-5					SD in Log Scale	0.607
2064					95% t UCL (Assumes normality)	1.6424E-4					95% H-Stat UCL	2.0849E-4
2065	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
2066												
2067	**Nonparametric Distribution Free UCL Statistics**											
2068	**Data do not follow a Discernible Distribution**											
2069												
2070	**Suggested UCL to Use**											
2071					95% KM (t) UCL	1.7067E-4						
2072												
2073	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
2074	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
2075	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
2076												
2077	**Perfluorooctanoic acid (PFOA)_Off-base Princes Freeway**											
2078												
2079	**General Statistics**											
2080					Total Number of Observations	25					Number of Distinct Observations	2
2081					Number of Detects	0					Number of Non-Detects	25
2082					Number of Distinct Detects	0					Number of Distinct Non-Detects	2
2083												
2084	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
2085	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
2086	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
2087												
2088	**The data set for variable Perfluorooctanoic acid (PFOA)_Off-base Princes Freeway was not processed!**											
2089												
2090												
2091	**Perfluorooctanoic acid (PFOA)_Off-Base Skeleton Creek**											
2092												
2093	**General Statistics**											
2094					Total Number of Observations	14					Number of Distinct Observations	1
2095					Number of Detects	0					Number of Non-Detects	14
2096					Number of Distinct Detects	0					Number of Distinct Non-Detects	1
2097												
2098	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
2099	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
2100	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
2101												
2102	**The data set for variable Perfluorooctanoic acid (PFOA)_Off-Base Skeleton Creek was not processed!**											
2103												
2104												
2105	**Perfluorooctanoic acid (PFOA)_Off-Base Williams Landing**											
2106												
2107	**General Statistics**											
2108					Total Number of Observations	46					Number of Distinct Observations	4
2109					Number of Detects	5					Number of Non-Detects	41
2110					Number of Distinct Detects	2					Number of Distinct Non-Detects	2
2111					Minimum Detect	3.0000E-4					Minimum Non-Detect	2.0000E-4
2112					Maximum Detect	6.0000E-4					Maximum Non-Detect	0.005
2113					Variance Detects	2.7000E-8					Percent Non-Detects	89.13%
2114					Mean Detects	4.2000E-4					SD Detects	1.6432E-4
2115					Median Detects	3.0000E-4					CV Detects	0.391
2116					Skewness Detects	0.609					Kurtosis Detects	-3.333
2117					Mean of Logged Detects	-7.834					SD of Logged Detects	0.38
2118												
2119	**Normal GOF Test on Detects Only**											
2120					Shapiro Wilk Test Statistic	0.684					**Shapiro Wilk GOF Test**	
2121					1% Shapiro Wilk Critical Value	0.686					Detected Data Not Normal at 1% Significance Level	
2122					Lilliefors Test Statistic	0.367					**Lilliefors GOF Test**	
2123					1% Lilliefors Critical Value	0.396					Detected Data appear Normal at 1% Significance Level	
2124	**Detected Data appear Approximate Normal at 1% Significance Level**											
2125	**Note GOF tests may be unreliable for small sample sizes**											
2126												

2127	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
2128					KM Mean	3.3750E-4			KM Standard Error of Mean	6.2304E-5		
2129					90KM SD	1.5762E-4			95% KM (BCA) UCL	N/A		
2130					95% KM (t) UCL	4.4214E-4			95% KM (Percentile Bootstrap) UCL	N/A		
2131					95% KM (z) UCL	4.3998E-4			95% KM Bootstrap t UCL	N/A		
2132					90% KM Chebyshev UCL	5.2441E-4			95% KM Chebyshev UCL	6.0908E-4		
2133					97.5% KM Chebyshev UCL	7.2659E-4			99% KM Chebyshev UCL	9.5742E-4		
2134												
2135	**Gamma GOF Tests on Detected Observations Only**											
2136					A-D Test Statistic	0.946	**Anderson-Darling GOF Test**					
2137					5% A-D Critical Value	0.679	Detected Data Not Gamma Distributed at 5% Significance Level					
2138					K-S Test Statistic	0.393	**Kolmogorov-Smirnov GOF**					
2139					5% K-S Critical Value	0.358	Detected Data Not Gamma Distributed at 5% Significance Level					
2140	**Detected Data Not Gamma Distributed at 5% Significance Level**											
2141												
2142	**Gamma Statistics on Detected Data Only**											
2143					k hat (MLE)	8.607			k star (bias corrected MLE)	3.576		
2144					Theta hat (MLE)	4.8796E-5			Theta star (bias corrected MLE)	1.1744E-4		
2145					nu hat (MLE)	86.07			nu star (bias corrected)	35.76		
2146					Mean (detects)	4.2000E-4						
2147												
2148	**Gamma ROS Statistics using Imputed Non-Detects**											
2149	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
2150	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
2151	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
2152	This is especially true when the sample size is small.											
2153	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
2154					Minimum	3.0000E-4			Mean	0.00896		
2155					Maximum	0.01			Median	0.01		
2156					SD	0.00302			CV	0.337		
2157					k hat (MLE)	2.227			k star (bias corrected MLE)	2.096		
2158					Theta hat (MLE)	0.00402			Theta star (bias corrected MLE)	0.00427		
2159					nu hat (MLE)	204.9			nu star (bias corrected)	192.8		
2160					Adjusted Level of Significance (β)	0.0448						
2161					Approximate Chi Square Value (192.82, α)	161.7			Adjusted Chi Square Value (192.82, β)	160.8		
2162					95% Gamma Approximate UCL	0.0107			95% Gamma Adjusted UCL	0.0107		
2163												
2164	**Estimates of Gamma Parameters using KM Estimates**											
2165					Mean (KM)	3.3750E-4			SD (KM)	1.5762E-4		
2166					Variance (KM)	2.4844E-8			SE of Mean (KM)	6.2304E-5		
2167					k hat (KM)	4.585			k star (KM)	4.3		
2168					nu hat (KM)	421.8			nu star (KM)	395.6		
2169					theta hat (KM)	7.3611E-5			theta star (KM)	7.8481E-5		
2170					80% gamma percentile (KM)	4.6146E-4			90% gamma percentile (KM)	5.5558E-4		
2171					95% gamma percentile (KM)	6.4192E-4			99% gamma percentile (KM)	8.2567E-4		
2172												
2173	**Gamma Kaplan-Meier (KM) Statistics**											
2174					Approximate Chi Square Value (395.64, α)	350.5			Adjusted Chi Square Value (395.64, β)	349.2		
2175					95% KM Approximate Gamma UCL	3.8093E-4			95% KM Adjusted Gamma UCL	3.8242E-4		
2176												
2177	**Lognormal GOF Test on Detected Observations Only**											
2178					Shapiro Wilk Test Statistic	0.684	**Shapiro Wilk GOF Test**					
2179					10% Shapiro Wilk Critical Value	0.806	Detected Data Not Lognormal at 10% Significance Level					
2180					Lilliefors Test Statistic	0.367	**Lilliefors GOF Test**					
2181					10% Lilliefors Critical Value	0.319	Detected Data Not Lognormal at 10% Significance Level					
2182	**Detected Data Not Lognormal at 10% Significance Level**											
2183												
2184	**Lognormal ROS Statistics Using Imputed Non-Detects**											
2185					Mean in Original Scale	3.2941E-4			Mean in Log Scale	-8.188		
2186					SD in Original Scale	2.0004E-4			SD in Log Scale	0.593		
2187					95% t UCL (assumes normality of ROS data)	3.7895E-4			95% Percentile Bootstrap UCL	3.7821E-4		
2188					95% BCA Bootstrap UCL	3.8249E-4			95% Bootstrap t UCL	3.8623E-4		
2189					95% H-UCL (Log ROS)	3.9403E-4						
2190												

2191	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2192					KM Mean (logged)	-8.09				KM Geo Mean	3.0644E-4	
2193					KM SD (logged)	0.426				95% Critical H Value (KM-Log)	1.836	
2194					KM Standard Error of Mean (logged)	0.168				95% H-UCL (KM -Log)	3.7700E-4	
2195					KM SD (logged)	0.426				95% Critical H Value (KM-Log)	1.836	
2196					KM Standard Error of Mean (logged)	0.168						
2197	**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**											
2198												
2199	**DL/2 Statistics**											
2200	**DL/2 Normal**						**DL/2 Log-Transformed**					
2201					Mean in Original Scale	0.00212				Mean in Log Scale	-6.402	
2202					SD in Original Scale	8.4704E-4				SD in Log Scale	0.953	
2203					95% t UCL (Assumes normality)	0.00233				95% H-Stat UCL	0.00361	
2204	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
2205												
2206	**Nonparametric Distribution Free UCL Statistics**											
2207	**Detected Data appear Approximate Normal Distributed at 1% Significance Level**											
2208												
2209	**Suggested UCL to Use**											
2210					95% KM (t) UCL	4.4214E-4						
2211												
2212	When a data set follows an approximate distribution passing only one of the GOF tests,											
2213	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL											
2214												
2215	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
2216	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
2217	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
2218												
2219	**Perfluorooctanoic acid (PFOA)_On-base (other)**											
2220												
2221	**General Statistics**											
2222					Total Number of Observations	62				Number of Distinct Observations	5	
2223					Number of Detects	2				Number of Non-Detects	60	
2224					Number of Distinct Detects	2				Number of Distinct Non-Detects	3	
2225					Minimum Detect	2.0000E-4				Minimum Non-Detect	1.0000E-4	
2226					Maximum Detect	4.0000E-4				Maximum Non-Detect	0.005	
2227					Variance Detects	2.0000E-8				Percent Non-Detects	96.77%	
2228					Mean Detects	3.0000E-4				SD Detects	1.4142E-4	
2229					Median Detects	3.0000E-4				CV Detects	0.471	
2230					Skewness Detects	N/A				Kurtosis Detects	N/A	
2231					Mean of Logged Detects	-8.171				SD of Logged Detects	0.49	
2232												
2233	**Warning: Data set has only 2 Detected Values.**											
2234	**This is not enough to compute meaningful or reliable statistics and estimates.**											
2235												
2236												
2237	**Normal GOF Test on Detects Only**											
2238	**Not Enough Data to Perform GOF Test**											
2239												
2240	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
2241					KM Mean	1.6000E-4				KM Standard Error of Mean	5.6684E-5	
2242					90KM SD	1.0474E-4				95% KM (BCA) UCL	N/A	
2243					95% KM (t) UCL	2.5467E-4				95% KM (Percentile Bootstrap) UCL	N/A	
2244					95% KM (z) UCL	2.5324E-4				95% KM Bootstrap t UCL	N/A	
2245					90% KM Chebyshev UCL	3.3005E-4				95% KM Chebyshev UCL	4.0708E-4	
2246					97.5% KM Chebyshev UCL	5.1399E-4				99% KM Chebyshev UCL	7.2400E-4	
2247												
2248	**Gamma GOF Tests on Detected Observations Only**											
2249	**Not Enough Data to Perform GOF Test**											
2250												
2251	**Gamma Statistics on Detected Data Only**											
2252					k hat (MLE)	8.653				k star (bias corrected MLE)	N/A	
2253					Theta hat (MLE)	3.4668E-5				Theta star (bias corrected MLE)	N/A	
2254					nu hat (MLE)	34.61				nu star (bias corrected)	N/A	

2255					Mean (detects)	3.0000E-4						
2256												
2257					**Estimates of Gamma Parameters using KM Estimates**							
2258					Mean (KM)	1.6000E-4				SD (KM)	1.0474E-4	
2259					Variance (KM)	1.0971E-8				SE of Mean (KM)	5.6684E-5	
2260					k hat (KM)	2.333				k star (KM)	2.231	
2261					nu hat (KM)	289.3				nu star (KM)	276.7	
2262					theta hat (KM)	6.8571E-5				theta star (KM)	7.1711E-5	
2263					80% gamma percentile (KM)	2.3645E-4				90% gamma percentile (KM)	3.0334E-4	
2264					95% gamma percentile (KM)	3.6675E-4				99% gamma percentile (KM)	5.0648E-4	
2265												
2266					**Gamma Kaplan-Meier (KM) Statistics**							
2267										Adjusted Level of Significance (β)	0.0461	
2268					Approximate Chi Square Value (276.67, α)	239.1				Adjusted Chi Square Value (276.67, β)	238.3	
2269					95% KM Approximate Gamma UCL	1.8510E-4				95% KM Adjusted Gamma UCL	1.8575E-4	
2270												
2271					**Lognormal GOF Test on Detected Observations Only**							
2272					**Not Enough Data to Perform GOF Test**							
2273												
2274					**Lognormal ROS Statistics Using Imputed Non-Detects**							
2275					Mean in Original Scale	1.4418E-4				Mean in Log Scale	-9.228	
2276					SD in Original Scale	1.3939E-4				SD in Log Scale	0.893	
2277					95% t UCL (assumes normality of ROS data)	1.7375E-4				95% Percentile Bootstrap UCL	1.7242E-4	
2278					95% BCA Bootstrap UCL	1.7572E-4				95% Bootstrap t UCL	1.8067E-4	
2279					95% H-UCL (Log ROS)	1.8766E-4						
2280												
2281					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
2282					KM Mean (logged)	-8.893				KM Geo Mean	1.3728E-4	
2283					KM SD (logged)	0.506				95% Critical H Value (KM-Log)	1.866	
2284					KM Standard Error of Mean (logged)	0.278				95% H-UCL (KM -Log)	1.7614E-4	
2285					KM SD (logged)	0.506				95% Critical H Value (KM-Log)	1.866	
2286					KM Standard Error of Mean (logged)	0.278						
2287					**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**							
2288												
2289					**DL/2 Statistics**							
2290					**DL/2 Normal**					**DL/2 Log-Transformed**		
2291					Mean in Original Scale	0.00223				Mean in Log Scale	-6.36	
2292					SD in Original Scale	7.5547E-4				SD in Log Scale	1.075	
2293					95% t UCL (Assumes normality)	0.00239				95% H-Stat UCL	0.00422	
2294					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
2295												
2296					**Nonparametric Distribution Free UCL Statistics**							
2297					**Data do not follow a Discernible Distribution**							
2298												
2299					**Suggested UCL to Use**							
2300					95% KM (t) UCL	2.5467E-4						
2301												
2302					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
2303					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
2304					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
2305												
2306	**Perfluorooctanoic acid (PFOA)_On-Base SA01**											
2307												
2308					**General Statistics**							
2309					Total Number of Observations	77				Number of Distinct Observations	6	
2310					Number of Detects	5				Number of Non-Detects	72	
2311					Number of Distinct Detects	5				Number of Distinct Non-Detects	1	
2312					Minimum Detect	2.0000E-4				Minimum Non-Detect	0.005	
2313					Maximum Detect	0.23				Maximum Non-Detect	0.005	
2314					Variance Detects	0.00977				Percent Non-Detects	93.51%	
2315					Mean Detects	0.0536				SD Detects	0.0988	
2316					Median Detects	0.011				CV Detects	1.843	
2317					Skewness Detects	2.21				Kurtosis Detects	4.907	
2318					Mean of Logged Detects	-4.66				SD of Logged Detects	2.53	

2319												
2320						**Normal GOF Test on Detects Only**							
2321						Shapiro Wilk Test Statistic	0.618		**Shapiro Wilk GOF Test**			
2322						1% Shapiro Wilk Critical Value	0.686		Detected Data Not Normal at 1% Significance Level			
2323						Lilliefors Test Statistic	0.437		**Lilliefors GOF Test**			
2324						1% Lilliefors Critical Value	0.396		Detected Data Not Normal at 1% Significance Level			
2325						**Detected Data Not Normal at 1% Significance Level**							
2326												
2327						**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
2328						KM Mean	0.00367		KM Standard Error of Mean	0.00332		
2329						90KM SD	0.0261		95% KM (BCA) UCL	0.0142		
2330						95% KM (t) UCL	0.0092		95% KM (Percentile Bootstrap) UCL	0.0115		
2331						95% KM (z) UCL	0.00914		95% KM Bootstrap t UCL	0.0419		
2332						90% KM Chebyshev UCL	0.0136		95% KM Chebyshev UCL	0.0182		
2333						97.5% KM Chebyshev UCL	0.0244		99% KM Chebyshev UCL	0.0367		
2334												
2335						**Gamma GOF Tests on Detected Observations Only**							
2336						A-D Test Statistic	0.381		**Anderson-Darling GOF Test**			
2337						5% A-D Critical Value	0.728		Detected data appear Gamma Distributed at 5% Significance Level			
2338						K-S Test Statistic	0.295		**Kolmogorov-Smirnov GOF**			
2339						5% K-S Critical Value	0.377		Detected data appear Gamma Distributed at 5% Significance Level			
2340						**Detected data appear Gamma Distributed at 5% Significance Level**						
2341						**Note GOF tests may be unreliable for small sample sizes**						
2342												
2343						**Gamma Statistics on Detected Data Only**						
2344						k hat (MLE)	0.382		k star (bias corrected MLE)	0.286		
2345						Theta hat (MLE)	0.14		Theta star (bias corrected MLE)	0.187		
2346						nu hat (MLE)	3.822		nu star (bias corrected)	2.862		
2347						Mean (detects)	0.0536					
2348												
2349						**Gamma ROS Statistics using Imputed Non-Detects**						
2350						GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs						
2351						GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)						
2352						For such situations, GROS method may yield incorrect values of UCLs and BTVs						
2353						This is especially true when the sample size is small.						
2354						For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates						
2355						Minimum	2.0000E-4		Mean	0.0133		
2356						Maximum	0.23		Median	0.01		
2357						SD	0.0252		CV	1.897		
2358						k hat (MLE)	2.08		k star (bias corrected MLE)	2.008		
2359						Theta hat (MLE)	0.00638		Theta star (bias corrected MLE)	0.00662		
2360						nu hat (MLE)	320.4		nu star (bias corrected)	309.2		
2361						Adjusted Level of Significance (β)	0.0469					
2362						Approximate Chi Square Value (309.23, α)	269.5		Adjusted Chi Square Value (309.23, β)	268.8		
2363						95% Gamma Approximate UCL	0.0152		95% Gamma Adjusted UCL	0.0153		
2364												
2365						**Estimates of Gamma Parameters using KM Estimates**						
2366						Mean (KM)	0.00367		SD (KM)	0.0261		
2367						Variance (KM)	6.8066E-4		SE of Mean (KM)	0.00332		
2368						k hat (KM)	0.0198		k star (KM)	0.0277		
2369						nu hat (KM)	3.045		nu star (KM)	4.26		
2370						theta hat (KM)	0.186		theta star (KM)	0.133		
2371						80% gamma percentile (KM)	2.3907E-5		90% gamma percentile (KM)	0.00171		
2372						95% gamma percentile (KM)	0.0131		99% gamma percentile (KM)	0.0967		
2373												
2374						**Gamma Kaplan-Meier (KM) Statistics**						
2375						Approximate Chi Square Value (4.26, α)	0.827		Adjusted Chi Square Value (4.26, β)	0.8		
2376						95% KM Approximate Gamma UCL	0.0189		95% KM Adjusted Gamma UCL	0.0195		
2377												
2378						**Lognormal GOF Test on Detected Observations Only**						
2379						Shapiro Wilk Test Statistic	0.936		**Shapiro Wilk GOF Test**			
2380						10% Shapiro Wilk Critical Value	0.806		Detected Data appear Lognormal at 10% Significance Level			
2381						Lilliefors Test Statistic	0.272		**Lilliefors GOF Test**			
2382						10% Lilliefors Critical Value	0.319		Detected Data appear Lognormal at 10% Significance Level			

2383					**Detected Data appear Lognormal at 10% Significance Level**							
2384					**Note GOF tests may be unreliable for small sample sizes**							
2385												
2386					**Lognormal ROS Statistics Using Imputed Non-Detects**							
2387					Mean in Original Scale	0.0042			Mean in Log Scale	-8.646		
2388					SD in Original Scale	0.0262			SD in Log Scale	2.445		
2389					95% t UCL (assumes normality of ROS data)	0.00918			95% Percentile Bootstrap UCL	0.01		
2390					95% BCA Bootstrap UCL	0.0132			95% Bootstrap t UCL	0.048		
2391					95% H-UCL (Log ROS)	0.0108						
2392												
2393					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**							
2394					KM Mean (logged)	-8.267			KM Geo Mean	2.5692E-4		
2395					KM SD (logged)	1.112			95% Critical H Value (KM-Log)	2.375		
2396					KM Standard Error of Mean (logged)	0.142			95% H-UCL (KM -Log)	6.4511E-4		
2397					KM SD (logged)	1.112			95% Critical H Value (KM-Log)	2.375		
2398					KM Standard Error of Mean (logged)	0.142						
2399					**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**							
2400												
2401					**DL/2 Statistics**							
2402					**DL/2 Normal**				**DL/2 Log-Transformed**			
2403					Mean in Original Scale	0.00582			Mean in Log Scale	-5.905		
2404					SD in Original Scale	0.026			SD in Log Scale	0.668		
2405					95% t UCL (Assumes normality)	0.0107			95% H-Stat UCL	0.00396		
2406					**DL/2 is not a recommended method, provided for comparisons and historical reasons**							
2407												
2408					**Nonparametric Distribution Free UCL Statistics**							
2409					**Detected Data appear Gamma Distributed at 5% Significance Level**							
2410												
2411					**Suggested UCL to Use**							
2412					95% KM Approximate Gamma UCL	0.0189						
2413												
2414					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**							
2415					**Please verify the data were collected from random locations.**							
2416					**If the data were collected using judgmental or other non-random methods,**							
2417					**then contact a statistician to correctly calculate UCLs.**							
2418												
2419					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
2420					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.							
2421					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
2422												
2423	**Perfluorooctanoic acid (PFOA)_On-Base SA02**											
2424												
2425					**General Statistics**							
2426					Total Number of Observations	160			Number of Distinct Observations	5		
2427					Number of Detects	4			Number of Non-Detects	156		
2428					Number of Distinct Detects	4			Number of Distinct Non-Detects	1		
2429					Minimum Detect	0.0081			Minimum Non-Detect	0.005		
2430					Maximum Detect	0.08			Maximum Non-Detect	0.005		
2431					Variance Detects	0.0015			Percent Non-Detects	97.5%		
2432					Mean Detects	0.0416			SD Detects	0.0388		
2433					Median Detects	0.0392			CV Detects	0.932		
2434					Skewness Detects	0.0572			Kurtosis Detects	-5.67		
2435					Mean of Logged Detects	-3.698			SD of Logged Detects	1.278		
2436												
2437					**Normal GOF Test on Detects Only**							
2438					Shapiro Wilk Test Statistic	0.791			**Shapiro Wilk GOF Test**			
2439					1% Shapiro Wilk Critical Value	0.687			Detected Data appear Normal at 1% Significance Level			
2440					Lilliefors Test Statistic	0.305			**Lilliefors GOF Test**			
2441					1% Lilliefors Critical Value	0.413			Detected Data appear Normal at 1% Significance Level			
2442					**Detected Data appear Normal at 1% Significance Level**							
2443					**Note GOF tests may be unreliable for small sample sizes**							
2444												
2445					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**							
2446					KM Mean	0.00592			KM Standard Error of Mean	7.1212E-4		

2447					90KM SD	0.0078			95% KM (BCA) UCL			N/A
2448					95% KM (t) UCL	0.00709			95% KM (Percentile Bootstrap) UCL			N/A
2449					95% KM (z) UCL	0.00709			95% KM Bootstrap t UCL			N/A
2450					90% KM Chebyshev UCL	0.00805			95% KM Chebyshev UCL			0.00902
2451					97.5% KM Chebyshev UCL	0.0104			99% KM Chebyshev UCL			0.013
2452												
2453					**Gamma GOF Tests on Detected Observations Only**							
2454					A-D Test Statistic	0.635			**Anderson-Darling GOF Test**			
2455					5% A-D Critical Value	0.666			Detected data appear Gamma Distributed at 5% Significance Level			
2456					K-S Test Statistic	0.339			**Kolmogorov-Smirnov GOF**			
2457					5% K-S Critical Value	0.402			Detected data appear Gamma Distributed at 5% Significance Level			
2458					**Detected data appear Gamma Distributed at 5% Significance Level**							
2459					**Note GOF tests may be unreliable for small sample sizes**							
2460												
2461					**Gamma Statistics on Detected Data Only**							
2462					k hat (MLE)	1.101			k star (bias corrected MLE)			0.442
2463					Theta hat (MLE)	0.0378			Theta star (bias corrected MLE)			0.0941
2464					nu hat (MLE)	8.81			nu star (bias corrected)			3.536
2465					Mean (detects)	0.0416						
2466												
2467					**Gamma ROS Statistics using Imputed Non-Detects**							
2468					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs							
2469					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)							
2470					For such situations, GROS method may yield incorrect values of UCLs and BTVs							
2471					This is especially true when the sample size is small.							
2472					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates							
2473					Minimum	0.0081			Mean			0.0108
2474					Maximum	0.08			Median			0.01
2475					SD	0.00727			CV			0.674
2476					k hat (MLE)	9.534			k star (bias corrected MLE)			9.36
2477					Theta hat (MLE)	0.00113			Theta star (bias corrected MLE)			0.00115
2478					nu hat (MLE)	3051			nu star (bias corrected)			2995
2479					Adjusted Level of Significance (β)	0.0485						
2480					Approximate Chi Square Value (N/A, α)	2869			Adjusted Chi Square Value (N/A, β)			2868
2481					95% Gamma Approximate UCL	0.0113			95% Gamma Adjusted UCL			N/A
2482												
2483					**Estimates of Gamma Parameters using KM Estimates**							
2484					Mean (KM)	0.00592			SD (KM)			0.0078
2485					Variance (KM)	6.0853E-5			SE of Mean (KM)			7.1212E-4
2486					k hat (KM)	0.575			k star (KM)			0.568
2487					nu hat (KM)	184			nu star (KM)			181.9
2488					theta hat (KM)	0.0103			theta star (KM)			0.0104
2489					80% gamma percentile (KM)	0.00975			90% gamma percentile (KM)			0.0156
2490					95% gamma percentile (KM)	0.0217			99% gamma percentile (KM)			0.0366
2491												
2492					**Gamma Kaplan-Meier (KM) Statistics**							
2493					Approximate Chi Square Value (181.87, α)	151.7			Adjusted Chi Square Value (181.87, β)			151.4
2494					95% KM Approximate Gamma UCL	0.00709			95% KM Adjusted Gamma UCL			0.0071
2495												
2496					**Lognormal GOF Test on Detected Observations Only**							
2497					Shapiro Wilk Test Statistic	0.761			**Shapiro Wilk GOF Test**			
2498					10% Shapiro Wilk Critical Value	0.792			Detected Data Not Lognormal at 10% Significance Level			
2499					Lilliefors Test Statistic	0.304			**Lilliefors GOF Test**			
2500					10% Lilliefors Critical Value	0.346			Detected Data appear Lognormal at 10% Significance Level			
2501					**Detected Data appear Approximate Lognormal at 10% Significance Level**							
2502					**Note GOF tests may be unreliable for small sample sizes**							
2503												
2504					**Lognormal ROS Statistics Using Imputed Non-Detects**							
2505					Mean in Original Scale	0.00111			Mean in Log Scale			-15.15
2506					SD in Original Scale	0.00841			SD in Log Scale			4.925
2507					95% t UCL (assumes normality of ROS data)	0.00221			95% Percentile Bootstrap UCL			0.00226
2508					95% BCA Bootstrap UCL	0.00271			95% Bootstrap t UCL			0.0098
2509					95% H-UCL (Log ROS)	0.817						
2510												

2511	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2512					KM Mean (logged)	-5.258			KM Geo Mean	0.0052		
2513					KM SD (logged)	0.305			95% Critical H Value (KM-Log)	1.736		
2514					KM Standard Error of Mean (logged)	0.0278			95% H-UCL (KM -Log)	0.00569		
2515					KM SD (logged)	0.305			95% Critical H Value (KM-Log)	1.736		
2516					KM Standard Error of Mean (logged)	0.0278						
2517												
2518	**DL/2 Statistics**											
2519	**DL/2 Normal**							**DL/2 Log-Transformed**				
2520					Mean in Original Scale	0.00348			Mean in Log Scale	-5.934		
2521					SD in Original Scale	0.00812			SD in Log Scale	0.4		
2522					95% t UCL (Assumes normality)	0.00454			95% H-Stat UCL	0.00303		
2523	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
2524												
2525	**Nonparametric Distribution Free UCL Statistics**											
2526	**Detected Data appear Normal Distributed at 1% Significance Level**											
2527												
2528	**Suggested UCL to Use**											
2529					95% KM (t) UCL	0.00709						
2530												
2531	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
2532	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
2533	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
2534												
2535	**Perfluorooctanoic acid (PFOA)_On-Base SA03**											
2536												
2537	**General Statistics**											
2538					Total Number of Observations	35			Number of Distinct Observations	1		
2539					Number of Detects	0			Number of Non-Detects	35		
2540					Number of Distinct Detects	0			Number of Distinct Non-Detects	1		
2541												
2542	**Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!**											
2543	**Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!**											
2544	**The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).**											
2545												
2546	**The data set for variable Perfluorooctanoic acid (PFOA)_On-Base SA03 was not processed!**											
2547												
2548												
2549	**Perfluorooctanoic acid (PFOA)_On-Base SA04**											
2550												
2551	**General Statistics**											
2552					Total Number of Observations	76			Number of Distinct Observations	4		
2553					Number of Detects	3			Number of Non-Detects	73		
2554					Number of Distinct Detects	3			Number of Distinct Non-Detects	1		
2555					Minimum Detect	0.012			Minimum Non-Detect	0.005		
2556					Maximum Detect	0.051			Maximum Non-Detect	0.005		
2557					Variance Detects	3.8100E-4			Percent Non-Detects	96.05%		
2558					Mean Detects	0.031			SD Detects	0.0195		
2559					Median Detects	0.03			CV Detects	0.63		
2560					Skewness Detects	0.23			Kurtosis Detects	N/A		
2561					Mean of Logged Detects	-3.635			SD of Logged Detects	0.732		
2562												
2563	**Warning: Data set has only 3 Detected Values.**											
2564	**This is not enough to compute meaningful or reliable statistics and estimates.**											
2565												
2566												
2567	**Normal GOF Test on Detects Only**											
2568					Shapiro Wilk Test Statistic	0.998			**Shapiro Wilk GOF Test**			
2569					1% Shapiro Wilk Critical Value	0.753			Detected Data appear Normal at 1% Significance Level			
2570					Lilliefors Test Statistic	0.187			**Lilliefors GOF Test**			
2571					1% Lilliefors Critical Value	0.429			Detected Data appear Normal at 1% Significance Level			
2572	**Detected Data appear Normal at 1% Significance Level**											
2573	**Note GOF tests may be unreliable for small sample sizes**											
2574												

2575	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
2576					KM Mean	0.00603			KM Standard Error of Mean	8.3890E-4		
2577					90KM SD	0.00597			95% KM (BCA) UCL	N/A		
2578					95% KM (t) UCL	0.00742			95% KM (Percentile Bootstrap) UCL	N/A		
2579					95% KM (z) UCL	0.00741			95% KM Bootstrap t UCL	N/A		
2580					90% KM Chebyshev UCL	0.00854			95% KM Chebyshev UCL	0.00968		
2581					97.5% KM Chebyshev UCL	0.0113			99% KM Chebyshev UCL	0.0144		
2582												
2583	**Gamma GOF Tests on Detected Observations Only**											
2584					A-D Test Statistic	0.257	**Anderson-Darling GOF Test**					
2585					5% A-D Critical Value	0.636	Detected data appear Gamma Distributed at 5% Significance Level					
2586					K-S Test Statistic	0.233	**Kolmogorov-Smirnov GOF**					
2587					5% K-S Critical Value	0.434	Detected data appear Gamma Distributed at 5% Significance Level					
2588	**Detected Data Not Gamma Distributed at 5% Significance Level**											
2589												
2590	**Gamma Statistics on Detected Data Only**											
2591					k hat (MLE)	3.256			k star (bias corrected MLE)	N/A		
2592					Theta hat (MLE)	0.00952			Theta star (bias corrected MLE)	N/A		
2593					nu hat (MLE)	19.54			nu star (bias corrected)	N/A		
2594					Mean (detects)	0.031						
2595												
2596	**Gamma ROS Statistics using Imputed Non-Detects**											
2597	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs											
2598	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)											
2599	For such situations, GROS method may yield incorrect values of UCLs and BTVs											
2600	This is especially true when the sample size is small.											
2601	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates											
2602					Minimum	0.01			Mean	0.0108		
2603					Maximum	0.051			Median	0.01		
2604					SD	0.00521			CV	0.481		
2605					k hat (MLE)	12.26			k star (bias corrected MLE)	11.78		
2606					Theta hat (MLE)	8.8346E-4			Theta star (bias corrected MLE)	9.1908E-4		
2607					nu hat (MLE)	1863			nu star (bias corrected)	1791		
2608					Adjusted Level of Significance (β)	0.0468						
2609					Approximate Chi Square Value (N/A, α)	1694			Adjusted Chi Square Value (N/A, β)	1692		
2610					95% Gamma Approximate UCL	0.0115			95% Gamma Adjusted UCL	N/A		
2611												
2612	**Estimates of Gamma Parameters using KM Estimates**											
2613					Mean (KM)	0.00603			SD (KM)	0.00597		
2614					Variance (KM)	3.5657E-5			SE of Mean (KM)	8.3890E-4		
2615					k hat (KM)	1.018			k star (KM)	0.987		
2616					nu hat (KM)	154.8			nu star (KM)	150		
2617					theta hat (KM)	0.00592			theta star (KM)	0.00611		
2618					80% gamma percentile (KM)	0.00971			90% gamma percentile (KM)	0.0139		
2619					95% gamma percentile (KM)	0.0181			99% gamma percentile (KM)	0.0279		
2620												
2621	**Gamma Kaplan-Meier (KM) Statistics**											
2622					Approximate Chi Square Value (150.03, α)	122.7			Adjusted Chi Square Value (150.03, β)	122.2		
2623					95% KM Approximate Gamma UCL	0.00737			95% KM Adjusted Gamma UCL	0.0074		
2624												
2625	**Lognormal GOF Test on Detected Observations Only**											
2626					Shapiro Wilk Test Statistic	0.977	**Shapiro Wilk GOF Test**					
2627					10% Shapiro Wilk Critical Value	0.789	Detected Data appear Lognormal at 10% Significance Level					
2628					Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**					
2629					10% Lilliefors Critical Value	0.389	Detected Data appear Lognormal at 10% Significance Level					
2630	**Detected Data appear Lognormal at 10% Significance Level**											
2631	**Note GOF tests may be unreliable for small sample sizes**											
2632												
2633	**Lognormal ROS Statistics Using Imputed Non-Detects**											
2634					Mean in Original Scale	0.0016			Mean in Log Scale	-10.19		
2635					SD in Original Scale	0.00686			SD in Log Scale	3.032		
2636					95% t UCL (assumes normality of ROS data)	0.00291			95% Percentile Bootstrap UCL	0.00303		
2637					95% BCA Bootstrap UCL	0.0036			95% Bootstrap t UCL	0.00654		
2638					95% H-UCL (Log ROS)	0.0202						

2639												
2640	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
2641					KM Mean (logged)	-5.233		KM Geo Mean				0.00534
2642					KM SD (logged)	0.345		95% Critical H Value (KM-Log)				1.769
2643					KM Standard Error of Mean (logged)	0.0485		95% H-UCL (KM -Log)				0.00608
2644					KM SD (logged)	0.345		95% Critical H Value (KM-Log)				1.769
2645					KM Standard Error of Mean (logged)	0.0485						
2646												
2647	**DL/2 Statistics**											
2648				**DL/2 Normal**				**DL/2 Log-Transformed**				
2649					Mean in Original Scale	0.00363		Mean in Log Scale				-5.898
2650					SD in Original Scale	0.00643		SD in Log Scale				0.477
2651					95% t UCL (Assumes normality)	0.00485		95% H-Stat UCL				0.0034
2652	**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
2653												
2654	**Nonparametric Distribution Free UCL Statistics**											
2655	**Detected Data appear Normal Distributed at 1% Significance Level**											
2656												
2657	**Suggested UCL to Use**											
2658					95% KM (t) UCL	0.00742						
2659												
2660	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
2661	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
2662	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
2663												

Location	N	PFOS + PFHxS D	PFOS + PFHxS Mean	PFOS + PFHxS EPC	PFOS + PFHxS Basis	PFOS + PFHxS MPE	PFOS D	PFOS EPC	PFOS Basis	PFOA D	PFOA EPC	PFOA Basis
Addison Wetland	3	3	0.749	1.3	Maximum	74%	3	0.97	Maximu	3	0.02	Maximum
Cheetham Wetlands	33	33	0.0897	0.12	95% Adju	34%	33	0.069	95% Ad	32	0.0063	95% KM (t) UCL
RAAF Laverton Swamp	15	15	0.942	1.3	95% Stud	38%	15	1	95% Stu	15	0.058	95% Student's-t UCL
Sanctuary Lakes	44	44	0.0617	0.068	95% H-U	10%	44	0.041	95% Stu	19	0.0069	95% KM (t) UCL
Skeleton Creek	84	83	0.247	0.29	95% KM	17%	83	0.14	95% KM	60	0.011	95% KM (t) UCL

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.2 16/09/2025 8:40:47 AM
From File	WorkSheet_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PFOS + PFHxS_Addison Wetland

General Statistics

Total Number of Observations	3	Number of Distinct Observations	3
		Number of Missing Observations	0
Minimum	0.236	Mean	0.749
Maximum	1.28	Median	0.73
SD	0.522	Std. Error of Mean	0.302
Coefficient of Variation	0.698	Skewness	0.161

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.999	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.753	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.181	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.429	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	1.629	95% Adjusted-CLT UCL (Chen-1995)	1.275
		95% Modified-t UCL (Johnson-1978)	1.634

Gamma GOF Test

A-D Test Statistic	0.267	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.636	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.435	Detected data appear Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.485	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.301	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	14.91	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A
		Approximate Chi Square Value (0.05)	N/A
Adjusted Level of Significance	N/A	Adjusted Chi Square Value	N/A

Assuming Gamma Distribution

95% Approximate Gamma UCL	N/A	95% Adjusted Gamma UCL	N/A

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.964	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.789	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.254	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.389	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-1.444	Mean of logged Data	-0.504
Maximum of Logged Data	0.247	SD of logged Data	0.861

87														
88						**Assuming Lognormal Distribution**									
89						95% H-UCL	816.8					90% Chebyshev (MVUE) UCL	1.807		
90						95% Chebyshev (MVUE) UCL	2.28					97.5% Chebyshev (MVUE) UCL	2.937		
91						99% Chebyshev (MVUE) UCL	4.227								
92															
93						**Nonparametric Distribution Free UCL Statistics**									
94						**Data appear to follow a Discernible Distribution**									
95															
96						**Nonparametric Distribution Free UCLs**									
97						95% CLT UCL	1.245					95% BCA Bootstrap UCL	N/A		
98						95% Standard Bootstrap UCL	N/A					95% Bootstrap-t UCL	N/A		
99						95% Hall's Bootstrap UCL	N/A					95% Percentile Bootstrap UCL	N/A		
100						90% Chebyshev(Mean, Sd) UCL	1.653					95% Chebyshev(Mean, Sd) UCL	2.063		
101						97.5% Chebyshev(Mean, Sd) UCL	2.632					99% Chebyshev(Mean, Sd) UCL	3.749		
102															
103						**Suggested UCL to Use**									
104						95% Student's-t UCL	1.629								
105						**Recommended UCL exceeds the maximum observation**									
106															
107						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
108						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
109						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
110															
111															
112	**PFOS + PFHxS_Cheetham Wetlands**														
113															
114						**General Statistics**									
115						Total Number of Observations	33					Number of Distinct Observations	32		
116												Number of Missing Observations	0		
117						Minimum	0.0074					Mean	0.0897		
118						Maximum	0.33					Median	0.061		
119						SD	0.074					Std. Error of Mean	0.0129		
120						Coefficient of Variation	0.825					Skewness	1.427		
121															
122						**Normal GOF Test**									
123						Shapiro Wilk Test Statistic	0.843					**Shapiro Wilk GOF Test**			
124						1% Shapiro Wilk Critical Value	0.906					Data Not Normal at 1% Significance Level			
125						Lilliefors Test Statistic	0.184					**Lilliefors GOF Test**			
126						1% Lilliefors Critical Value	0.177					Data Not Normal at 1% Significance Level			
127						**Data Not Normal at 1% Significance Level**									
128															
129						**Assuming Normal Distribution**									
130						**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**			
131						95% Student's-t UCL	0.111					95% Adjusted-CLT UCL (Chen-1995)	0.114		
132												95% Modified-t UCL (Johnson-1978)	0.112		
133															
134						**Gamma GOF Test**									
135						A-D Test Statistic	0.677					**Anderson-Darling Gamma GOF Test**			
136						5% A-D Critical Value	0.763					Detected data appear Gamma Distributed at 5% Significance Level			
137						K-S Test Statistic	0.143					**Kolmogorov-Smirnov Gamma GOF Test**			
138						5% K-S Critical Value	0.156					Detected data appear Gamma Distributed at 5% Significance Level			
139						**Detected data appear Gamma Distributed at 5% Significance Level**									
140															
141						**Gamma Statistics**									
142						k hat (MLE)	1.714					k star (bias corrected MLE)	1.578		
143						Theta hat (MLE)	0.0523					Theta star (bias corrected MLE)	0.0568		
144						nu hat (MLE)	113.1					nu star (bias corrected)	104.2		
145						MLE Mean (bias corrected)	0.0897					MLE Sd (bias corrected)	0.0714		
146												Approximate Chi Square Value (0.05)	81.61		
147						Adjusted Level of Significance	0.0419					Adjusted Chi Square Value	80.58		
148															
149						**Assuming Gamma Distribution**									
150						95% Approximate Gamma UCL	0.114					95% Adjusted Gamma UCL	0.116		
151															
152						**Lognormal GOF Test**									
153						Shapiro Wilk Test Statistic	0.965					**Shapiro Wilk Lognormal GOF Test**			
154						10% Shapiro Wilk Critical Value	0.942					Data appear Lognormal at 10% Significance Level			
155						Lilliefors Test Statistic	0.1					**Lilliefors Lognormal GOF Test**			
156						10% Lilliefors Critical Value	0.139					Data appear Lognormal at 10% Significance Level			
157						**Data appear Lognormal at 10% Significance Level**									
158															
159						**Lognormal Statistics**									
160						Minimum of Logged Data	-4.906					Mean of logged Data	-2.731		
161						Maximum of Logged Data	-1.109					SD of logged Data	0.837		
162															
163						**Assuming Lognormal Distribution**									

| | | |

241													
242	**Nonparametric Distribution Free UCL Statistics**												
243	**Data appear to follow a Discernible Distribution**												
244													
245	**Nonparametric Distribution Free UCLs**												
246	95% CLT UCL	1.233					95% BCA Bootstrap UCL	1.264					
247	95% Standard Bootstrap UCL	1.225					95% Bootstrap-t UCL	1.308					
248	95% Hall's Bootstrap UCL	1.292					95% Percentile Bootstrap UCL	1.227					
249	90% Chebyshev(Mean, Sd) UCL	1.472					95% Chebyshev(Mean, Sd) UCL	1.712					
250	97.5% Chebyshev(Mean, Sd) UCL	2.045					99% Chebyshev(Mean, Sd) UCL	2.7					
251													
252	**Suggested UCL to Use**												
253	95% Student's-t UCL	1.253											
254													
255	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
256	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
257	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
258													
259													
260	**PFOS + PFHxS_Sanctuary Lakes**												
261													
262	**General Statistics**												
263	Total Number of Observations	44					Number of Distinct Observations	21					
264							Number of Missing Observations	0					
265	Minimum	0.028					Mean	0.0617					
266	Maximum	0.202					Median	0.054					
267	SD	0.029					Std. Error of Mean	0.00443					
268	Coefficient of Variation	0.476					Skewness	2.773					
269													
270	**Normal GOF Test**												
271	Shapiro Wilk Test Statistic	0.766					**Shapiro Wilk GOF Test**						
272	1% Shapiro Wilk Critical Value	0.924					Data Not Normal at 1% Significance Level						
273	Lilliefors Test Statistic	0.155					**Lilliefors GOF Test**						
274	1% Lilliefors Critical Value	0.154					Data Not Normal at 1% Significance Level						
275	**Data Not Normal at 1% Significance Level**												
276													
277	**Assuming Normal Distribution**												
278	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**						
279	95% Student's-t UCL	0.069					95% Adjusted-CLT UCL (Chen-1995)	0.071					
280							95% Modified-t UCL (Johnson-1978)	0.0695					
281													
282	**Gamma GOF Test**												
283	A-D Test Statistic	0.893					**Anderson-Darling Gamma GOF Test**						
284	5% A-D Critical Value	0.752					Data Not Gamma Distributed at 5% Significance Level						
285	K-S Test Statistic	0.148					**Kolmogorov-Smirnov Gamma GOF Test**						
286	5% K-S Critical Value	0.134					Data Not Gamma Distributed at 5% Significance Level						
287	**Data Not Gamma Distributed at 5% Significance Level**												
288													
289	**Gamma Statistics**												
290	k hat (MLE)	6.426					k star (bias corrected MLE)	6.003					
291	Theta hat (MLE)	0.0096					Theta star (bias corrected MLE)	0.0103					
292	nu hat (MLE)	565.5					nu star (bias corrected)	528.3					
293	MLE Mean (bias corrected)	0.061					MLE Sd (bias corrected)	0.0252					
294							Approximate Chi Square Value (0.05)	476					
295	Adjusted Level of Significance	0.044					Adjusted Chi Square Value	474.3					
296													
297	**Assuming Gamma Distribution**												
298	95% Approximate Gamma UCL	0.068					95% Adjusted Gamma UCL	0.0687					
299													
300	**Lognormal GOF Test**												
301	Shapiro Wilk Test Statistic	0.954					**Shapiro Wilk Lognormal GOF Test**						
302	10% Shapiro Wilk Critical Value	0.952					Data appear Lognormal at 10% Significance Level						
303	Lilliefors Test Statistic	0.133					**Lilliefors Lognormal GOF Test**						
304	10% Lilliefors Critical Value	0.122					Data Not Lognormal at 10% Significance Level						
305	**Data appear Approximate Lognormal at 10% Significance Level**												
306													
307	**Lognormal Statistics**												
308	Minimum of Logged Data	-3.576					Mean of logged Data	-2.865					
309	Maximum of Logged Data	-1.599					SD of logged Data	0.383					
310													
311	**Assuming Lognormal Distribution**												
312	95% H-UCL	0.068					90% Chebyshev (MVUE) UCL	0.0721					
313	95% Chebyshev (MVUE) UCL	0.077					97.5% Chebyshev (MVUE) UCL	0.0839					
314	99% Chebyshev (MVUE) UCL	0.097											
315													
316	**Nonparametric Distribution Free UCL Statistics**												
317	**Data appear to follow a Discernible Distribution**												

318														
319					**Nonparametric Distribution Free UCLs**									
320					95% CLT UCL	0.069				95% BCA Bootstrap UCL	0.0709			
321					95% Standard Bootstrap UCL	0.0688				95% Bootstrap-t UCL	0.0727			
322					95% Hall's Bootstrap UCL	0.0812				95% Percentile Bootstrap UCL	0.0687			
323					90% Chebyshev(Mean, Sd) UCL	0.075				95% Chebyshev(Mean, Sd) UCL	0.081			
324					97.5% Chebyshev(Mean, Sd) UCL	0.0894				99% Chebyshev(Mean, Sd) UCL	0.106			
325														
326					**Suggested UCL to Use**									
327					95% H-UCL	0.0682								
328														
329	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
330	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
331	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
332														
333	**PFOS + PFHxS_Skeleton Creek**													
334														
335					**General Statistics**									
336					Total Number of Observations	84				Number of Distinct Observations	54			
337					Number of Detects	83				Number of Non-Detects	1			
338					Number of Distinct Detects	54				Number of Distinct Non-Detects	1			
339					Minimum Detect	0.004				Minimum Non-Detect	0.01			
340					Maximum Detect	1.3				Maximum Non-Detect	0.01			
341					Variance Detects	0.0473				Percent Non-Detects	1.19%			
342					Mean Detects	0.25				SD Detects	0.218			
343					Median Detects	0.22				CV Detects	0.87			
344					Skewness Detects	2.802				Kurtosis Detects	11.72			
345					Mean of Logged Detects	-1.853				SD of Logged Detects	1.229			
346														
347					**Normal GOF Test on Detects Only**									
348					Shapiro Wilk Test Statistic	0.747				**Normal GOF Test on Detected Observations Only**				
349					1% Shapiro Wilk P Value	0				Detected Data Not Normal at 1% Significance Level				
350					Lilliefors Test Statistic	0.204				**Lilliefors GOF Test**				
351					1% Lilliefors Critical Value	0.113				Detected Data Not Normal at 1% Significance Level				
352					**Detected Data Not Normal at 1% Significance Level**									
353														
354					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**									
355					KM Mean	0.247				KM Standard Error of Mean	0.0238			
356					90KM SD	0.217				95% KM (BCA) UCL	0.291			
357					95% KM (t) UCL	0.287				95% KM (Percentile Bootstrap) UCL	0.289			
358					95% KM (z) UCL	0.286				95% KM Bootstrap t UCL	0.297			
359					90% KM Chebyshev UCL	0.318				95% KM Chebyshev UCL	0.351			
360					97.5% KM Chebyshev UCL	0.395				99% KM Chebyshev UCL	0.484			
361														
362					**Gamma GOF Tests on Detected Observations Only**									
363					A-D Test Statistic	3.996				**Anderson-Darling GOF Test**				
364					5% A-D Critical Value	0.777				Detected Data Not Gamma Distributed at 5% Significance Level				
365					K-S Test Statistic	0.206				**Kolmogorov-Smirnov GOF**				
366					5% K-S Critical Value	0.101				Detected Data Not Gamma Distributed at 5% Significance Level				
367					**Detected Data Not Gamma Distributed at 5% Significance Level**									
368														
369					**Gamma Statistics on Detected Data Only**									
370					k hat (MLE)	1.211				k star (bias corrected MLE)	1.175			
371					Theta hat (MLE)	0.206				Theta star (bias corrected MLE)	0.213			
372					nu hat (MLE)	201				nu star (bias corrected)	195.1			
373					Mean (detects)	0.25								
374														
375					**Gamma ROS Statistics using Imputed Non-Detects**									
376	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
377	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
378	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
379	This is especially true when the sample size is small.													
380	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
381					Minimum	0.004				Mean	0.247			
382					Maximum	1.3				Median	0.22			
383					SD	0.218				CV	0.881			
384					k hat (MLE)	1.18				k star (bias corrected MLE)	1.146			
385					Theta hat (MLE)	0.209				Theta star (bias corrected MLE)	0.216			
386					nu hat (MLE)	198.2				nu star (bias corrected)	192.5			
387					Adjusted Level of Significance (β)	0.047								
388					Approximate Chi Square Value (192.48, α)	161.4				Adjusted Chi Square Value (192.48, β)	160.9			
389					95% Gamma Approximate UCL	0.295				95% Gamma Adjusted UCL	0.296			
390														
391					**Estimates of Gamma Parameters using KM Estimates**									
392					Mean (KM)	0.247				SD (KM)	0.217			
393					Variance (KM)	0.0469				SE of Mean (KM)	0.0238			
394					k hat (KM)	1.301				k star (KM)	1.262			

395					nu hat (KM)	218.5					nu star (KM)	212.1			
396					theta hat (KM)	0.19					theta star (KM)	0.196			
397					80% gamma percentile (KM)	0.389					90% gamma percentile (KM)	0.537			
398					95% gamma percentile (KM)	0.682					99% gamma percentile (KM)	1.014			
399															
400					**Gamma Kaplan-Meier (KM) Statistics**										
401					Approximate Chi Square Value (212.07, α)	179.4					Adjusted Chi Square Value (212.07, β)	178.9			
402					95% KM Approximate Gamma UCL	0.292					95% KM Adjusted Gamma UCL	0.293			
403															
404					**Lognormal GOF Test on Detected Observations Only**										
405					Shapiro Wilk Approximate Test Statistic	0.801					**Shapiro Wilk GOF Test**				
406					10% Shapiro Wilk P Value	4.441E-1					Detected Data Not Lognormal at 10% Significance Level				
407					Lilliefors Test Statistic	0.259					**Lilliefors GOF Test**				
408					10% Lilliefors Critical Value	0.089					Detected Data Not Lognormal at 10% Significance Level				
409					**Detected Data Not Lognormal at 10% Significance Level**										
410															
411					**Lognormal ROS Statistics Using Imputed Non-Detects**										
412					Mean in Original Scale	0.247					Mean in Log Scale	-1.883			
413					SD in Original Scale	0.218					SD in Log Scale	1.251			
414					95% t UCL (assumes normality of ROS data)	0.287					95% Percentile Bootstrap UCL	0.288			
415					95% BCA Bootstrap UCL	0.293					95% Bootstrap t UCL	0.295			
416					95% H-UCL (Log ROS)	0.468									
417															
418					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
419					KM Mean (logged)	-1.894					KM Geo Mean	0.151			
420					KM SD (logged)	1.269					95% Critical H Value (KM-Log)	2.508			
421					KM Standard Error of Mean (logged)	0.139					95% H-UCL (KM -Log)	0.477			
422					KM SD (logged)	1.269					95% Critical H Value (KM-Log)	2.508			
423					KM Standard Error of Mean (logged)	0.139									
424															
425					**DL/2 Statistics**										
426					**DL/2 Normal**						**DL/2 Log-Transformed**				
427					Mean in Original Scale	0.247					Mean in Log Scale	-1.894			
428					SD in Original Scale	0.218					SD in Log Scale	1.278			
429					95% t UCL (Assumes normality)	0.287					95% H-Stat UCL	0.485			
430					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
431															
432					**Nonparametric Distribution Free UCL Statistics**										
433					**Data do not follow a Discernible Distribution**										
434															
435					**Suggested UCL to Use**										
436					95% KM (t) UCL	0.287									
437															
438					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
439					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
440					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
441															
442	**PFOS + PFHxS_Laverton Creek**														
443															
444					**General Statistics**										
445					Total Number of Observations	31					Number of Distinct Observations	14			
446					Number of Detects	23					Number of Non-Detects	8			
447					Number of Distinct Detects	14					Number of Distinct Non-Detects	1			
448					Minimum Detect	0.006					Minimum Non-Detect	0.01			
449					Maximum Detect	0.286					Maximum Non-Detect	0.01			
450					Variance Detects	0.0061					Percent Non-Detects	25.81%			
451					Mean Detects	0.057					SD Detects	0.0783			
452					Median Detects	0.02					CV Detects	1.353			
453					Skewness Detects	1.931					Kurtosis Detects	3.045			
454					Mean of Logged Detects	-3.586					SD of Logged Detects	1.202			
455															
456					**Normal GOF Test on Detects Only**										
457					Shapiro Wilk Test Statistic	0.687					**Shapiro Wilk GOF Test**				
458					1% Shapiro Wilk Critical Value	0.881					Detected Data Not Normal at 1% Significance Level				
459					Lilliefors Test Statistic	0.282					**Lilliefors GOF Test**				
460					1% Lilliefors Critical Value	0.209					Detected Data Not Normal at 1% Significance Level				
461					**Detected Data Not Normal at 1% Significance Level**										
462															
463					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**										
464					KM Mean	0.044					KM Standard Error of Mean	0.0128			
465					90KM SD	0.069					95% KM (BCA) UCL	0.068			
466					95% KM (t) UCL	0.066					95% KM (Percentile Bootstrap) UCL	0.0671			
467					95% KM (z) UCL	0.065					95% KM Bootstrap t UCL	0.0773			
468					90% KM Chebyshev UCL	0.083					95% KM Chebyshev UCL	0.1			
469					97.5% KM Chebyshev UCL	0.125					99% KM Chebyshev UCL	0.172			
470															
471					**Gamma GOF Tests on Detected Observations Only**										

| | | |

549	**If the data were collected using judgmental or other non-random methods,**													
550	**then contact a statistician to correctly calculate UCLs.**													
551														
552	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
553	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
554	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
555														
556	**PFOS + PFHxS_Ashcroft Avenue Ponds**													
557														
558	**General Statistics**													
559							Total Number of Observations	18				Number of Distinct Observations	13	
560							Number of Detects	17				Number of Non-Detects	1	
561							Number of Distinct Detects	13				Number of Distinct Non-Detects	1	
562							Minimum Detect	0.01				Minimum Non-Detect	0.01	
563							Maximum Detect	17.1				Maximum Non-Detect	0.01	
564							Variance Detects	16.95				Percent Non-Detects	5.556%	
565							Mean Detects	1.14				SD Detects	4.117	
566							Median Detects	0.09				CV Detects	3.611	
567							Skewness Detects	4.11				Kurtosis Detects	16.92	
568							Mean of Logged Detects	-2.367				SD of Logged Detects	1.822	
569														
570	**Normal GOF Test on Detects Only**													
571							Shapiro Wilk Test Statistic	0.293				**Shapiro Wilk GOF Test**		
572							1% Shapiro Wilk Critical Value	0.851				Detected Data Not Normal at 1% Significance Level		
573							Lilliefors Test Statistic	0.496				**Lilliefors GOF Test**		
574							1% Lilliefors Critical Value	0.241				Detected Data Not Normal at 1% Significance Level		
575	**Detected Data Not Normal at 1% Significance Level**													
576														
577	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
578							KM Mean	1.077				KM Standard Error of Mean	0.945	
579							90KM SD	3.89				95% KM (BCA) UCL	2.947	
580							95% KM (t) UCL	2.721				95% KM (Percentile Bootstrap) UCL	2.943	
581							95% KM (z) UCL	2.632				95% KM Bootstrap t UCL	32.19	
582							90% KM Chebyshev UCL	3.913				95% KM Chebyshev UCL	5.197	
583							97.5% KM Chebyshev UCL	6.979				99% KM Chebyshev UCL	10.48	
584														
585	**Gamma GOF Tests on Detected Observations Only**													
586							A-D Test Statistic	2.716				**Anderson-Darling GOF Test**		
587							5% A-D Critical Value	0.851				Detected Data Not Gamma Distributed at 5% Significance Level		
588							K-S Test Statistic	0.319				**Kolmogorov-Smirnov GOF**		
589							5% K-S Critical Value	0.228				Detected Data Not Gamma Distributed at 5% Significance Level		
590	**Detected Data Not Gamma Distributed at 5% Significance Level**													
591														
592	**Gamma Statistics on Detected Data Only**													
593							k hat (MLE)	0.279				k star (bias corrected MLE)	0.269	
594							Theta hat (MLE)	4.082				Theta star (bias corrected MLE)	4.235	
595							nu hat (MLE)	9.495				nu star (bias corrected)	9.153	
596							Mean (detects)	1.14						
597														
598	**Gamma ROS Statistics using Imputed Non-Detects**													
599	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
600	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
601	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
602	This is especially true when the sample size is small.													
603	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
604							Minimum	0.01				Mean	1.077	
605							Maximum	17.1				Median	0.07	
606							SD	4.003				CV	3.715	
607							k hat (MLE)	0.273				k star (bias corrected MLE)	0.264	
608							Theta hat (MLE)	3.947				Theta star (bias corrected MLE)	4.074	
609							nu hat (MLE)	9.825				nu star (bias corrected)	9.521	
610							Adjusted Level of Significance (β)	0.0357						
611							Approximate Chi Square Value (9.52, α)	3.645				Adjusted Chi Square Value (9.52, β)	3.303	
612							95% Gamma Approximate UCL	2.814				95% Gamma Adjusted UCL	3.106	
613														
614	**Estimates of Gamma Parameters using KM Estimates**													
615							Mean (KM)	1.077				SD (KM)	3.89	
616							Variance (KM)	15.13				SE of Mean (KM)	0.945	
617							k hat (KM)	0.0767				k star (KM)	0.101	
618							nu hat (KM)	2.761				nu star (KM)	3.635	
619							theta hat (KM)	14.05				theta star (KM)	10.67	
620							80% gamma percentile (KM)	0.758				90% gamma percentile (KM)	2.879	
621							95% gamma percentile (KM)	6.25				99% gamma percentile (KM)	17.03	
622														
623	**Gamma Kaplan-Meier (KM) Statistics**													
624							Approximate Chi Square Value (3.63, α)	0.583				Adjusted Chi Square Value (3.63, β)	0.482	
625							95% KM Approximate Gamma UCL	6.718				95% KM Adjusted Gamma UCL	8.125	

626	95% KM Adjusted Gamma UCL (use when k<=1 and 15 < n < 50)													
627														
628	**Lognormal GOF Test on Detected Observations Only**													
629	Shapiro Wilk Test Statistic					0.878	**Shapiro Wilk GOF Test**							
630	10% Shapiro Wilk Critical Value					0.91	Detected Data Not Lognormal at 10% Significance Level							
631	Lilliefors Test Statistic					0.133	**Lilliefors GOF Test**							
632	10% Lilliefors Critical Value					0.19	Detected Data appear Lognormal at 10% Significance Level							
633	**Detected Data appear Approximate Lognormal at 10% Significance Level**													
634														
635	**Lognormal ROS Statistics Using Imputed Non-Detects**													
636	Mean in Original Scale					1.077	Mean in Log Scale					-2.604		
637	SD in Original Scale					4.003	SD in Log Scale					2.035		
638	95% t UCL (assumes normality of ROS data)					2.718	95% Percentile Bootstrap UCL					2.945		
639	95% BCA Bootstrap UCL					3.926	95% Bootstrap t UCL					31.33		
640	95% H-UCL (Log ROS)					5.083								
641														
642	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**													
643	KM Mean (logged)					-2.491	KM Geo Mean					0.0828		
644	KM SD (logged)					1.793	95% Critical H Value (KM-Log)					3.943		
645	KM Standard Error of Mean (logged)					0.436	95% H-UCL (KM -Log)					2.295		
646	KM SD (logged)					1.793	95% Critical H Value (KM-Log)					3.943		
647	KM Standard Error of Mean (logged)					0.436								
648														
649	**DL/2 Statistics**													
650	**DL/2 Normal**						**DL/2 Log-Transformed**							
651	Mean in Original Scale					1.077	Mean in Log Scale					-2.53		
652	SD in Original Scale					4.003	SD in Log Scale					1.898		
653	95% t UCL (Assumes normality)					2.718	95% H-Stat UCL					3.231		
654	**DL/2 is not a recommended method, provided for comparisons and historical reasons**													
655														
656	**Nonparametric Distribution Free UCL Statistics**													
657	**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**													
658														
659	**Suggested UCL to Use**													
660	KM (t) UCL					2.721								
661														
662	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**													
663	**Please verify the data were collected from random locations.**													
664	**If the data were collected using judgmental or other non-random methods,**													
665	**then contact a statistician to correctly calculate UCLs.**													
666														
667	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
668	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
669	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
670														
671	**PFOS + PFHxS_Forsyth Road Drain**													
672														
673	**General Statistics**													
674	Total Number of Observations					16	Number of Distinct Observations					13		
675	Number of Detects					15	Number of Non-Detects					1		
676	Number of Distinct Detects					12	Number of Distinct Non-Detects					1		
677	Minimum Detect					0.005	Minimum Non-Detect					0.002		
678	Maximum Detect					0.394	Maximum Non-Detect					0.002		
679	Variance Detects					0.0136	Percent Non-Detects					6.25%		
680	Mean Detects					0.109	SD Detects					0.117		
681	Median Detects					0.09	CV Detects					1.068		
682	Skewness Detects					1.157	Kurtosis Detects					0.883		
683	Mean of Logged Detects					-3.016	SD of Logged Detects					1.494		
684														
685	**Normal GOF Test on Detects Only**													
686	Shapiro Wilk Test Statistic					0.847	**Shapiro Wilk GOF Test**							
687	1% Shapiro Wilk Critical Value					0.835	Detected Data appear Normal at 1% Significance Level							
688	Lilliefors Test Statistic					0.19	**Lilliefors GOF Test**							
689	1% Lilliefors Critical Value					0.255	Detected Data appear Normal at 1% Significance Level							
690	**Detected Data appear Normal at 1% Significance Level**													
691														
692	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
693	KM Mean					0.102	KM Standard Error of Mean					0.029		
694	90KM SD					0.112	95% KM (BCA) UCL					0.155		
695	95% KM (t) UCL					0.153	95% KM (Percentile Bootstrap) UCL					0.152		
696	95% KM (z) UCL					0.15	95% KM Bootstrap t UCL					0.167		
697	90% KM Chebyshev UCL					0.189	95% KM Chebyshev UCL					0.229		
698	97.5% KM Chebyshev UCL					0.284	99% KM Chebyshev UCL					0.391		
699														
700	**Gamma GOF Tests on Detected Observations Only**													
701	A-D Test Statistic					0.563	**Anderson-Darling GOF Test**							
702	5% A-D Critical Value					0.775	Detected data appear Gamma Distributed at 5% Significance Level							

703					K-S Test Statistic	0.191		Kolmogorov-Smirnov GOF							
704					5% K-S Critical Value	0.23		Detected data appear Gamma Distributed at 5% Significance Level							
705					Detected data appear Gamma Distributed at 5% Significance Level										
706															
707					Gamma Statistics on Detected Data Only										
708					k hat (MLE)	0.748		k star (bias corrected MLE)				0.643			
709					Theta hat (MLE)	0.146		Theta star (bias corrected MLE)				0.17			
710					nu hat (MLE)	22.43		nu star (bias corrected)				19.28			
711					Mean (detects)	0.109									
712															
713					Gamma ROS Statistics using Imputed Non-Detects										
714					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
715					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
716					For such situations, GROS method may yield incorrect values of UCLs and BTVs										
717					This is especially true when the sample size is small.										
718					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
719					Minimum	0.005		Mean				0.103			
720					Maximum	0.394		Median				0.065			
721					SD	0.115		CV				1.121			
722					k hat (MLE)	0.716		k star (bias corrected MLE)				0.623			
723					Theta hat (MLE)	0.144		Theta star (bias corrected MLE)				0.165			
724					nu hat (MLE)	22.9		nu star (bias corrected)				19.94			
725					Adjusted Level of Significance (β)	0.0335									
726					Approximate Chi Square Value (19.94, α)	10.81		Adjusted Chi Square Value (19.94, β)				10.05			
727					95% Gamma Approximate UCL	0.19		95% Gamma Adjusted UCL				0.204			
728															
729					Estimates of Gamma Parameters using KM Estimates										
730					Mean (KM)	0.102		SD (KM)				0.112			
731					Variance (KM)	0.0126		SE of Mean (KM)				0.029			
732					k hat (KM)	0.835		k star (KM)				0.72			
733					nu hat (KM)	26.71		nu star (KM)				23.04			
734					theta hat (KM)	0.123		theta star (KM)				0.142			
735					80% gamma percentile (KM)	0.168		90% gamma percentile (KM)				0.255			
736					95% gamma percentile (KM)	0.345		99% gamma percentile (KM)				0.559			
737															
738					Gamma Kaplan-Meier (KM) Statistics										
739					Approximate Chi Square Value (23.04, α)	13.12		Adjusted Chi Square Value (23.04, β)				12.27			
740					95% KM Approximate Gamma UCL	0.18		95% KM Adjusted Gamma UCL				0.192			
741															
742					Lognormal GOF Test on Detected Observations Only										
743					Shapiro Wilk Test Statistic	0.899		Shapiro Wilk GOF Test							
744					10% Shapiro Wilk Critical Value	0.901		Detected Data Not Lognormal at 10% Significance Level							
745					Lilliefors Test Statistic	0.191		Lilliefors GOF Test							
746					10% Lilliefors Critical Value	0.202		Detected Data appear Lognormal at 10% Significance Level							
747					Detected Data appear Approximate Lognormal at 10% Significance Level										
748															
749					Lognormal ROS Statistics Using Imputed Non-Detects										
750					Mean in Original Scale	0.102		Mean in Log Scale				-3.24			
751					SD in Original Scale	0.116		SD in Log Scale				1.699			
752					95% t UCL (assumes normality of ROS data)	0.153		95% Percentile Bootstrap UCL				0.15			
753					95% BCA Bootstrap UCL	0.158		95% Bootstrap t UCL				0.168			
754					95% H-UCL (Log ROS)	0.919									
755															
756					Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution										
757					KM Mean (logged)	-3.216		KM Geo Mean				0.0401			
758					KM SD (logged)	1.597		95% Critical H Value (KM-Log)				3.719			
759					KM Standard Error of Mean (logged)	0.413		95% H-UCL (KM -Log)				0.666			
760					KM SD (logged)	1.597		95% Critical H Value (KM-Log)				3.719			
761					KM Standard Error of Mean (logged)	0.413									
762															
763					DL/2 Statistics										
764					DL/2 Normal			DL/2 Log-Transformed							
765					Mean in Original Scale	0.102		Mean in Log Scale				-3.26			
766					SD in Original Scale	0.116		SD in Log Scale				1.74			
767					95% t UCL (Assumes normality)	0.153		95% H-Stat UCL				1.045			
768					DL/2 is not a recommended method, provided for comparisons and historical reasons										
769															
770					Nonparametric Distribution Free UCL Statistics										
771					Detected Data appear Normal Distributed at 1% Significance Level										
772															
773					Suggested UCL to Use										
774					95% KM (t) UCL	0.153									
775															
776					The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.										
777					Please verify the data were collected from random locations.										
778					If the data were collected using judgmental or other non-random methods,										
779					then contact a statistician to correctly calculate UCLs.										

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PFOS + PFHxS_Kidbroke Road Drain

General Statistics

Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.095	Mean	0.411
Maximum	1.16	Median	0.29
SD	0.432	Std. Error of Mean	0.193
Coefficient of Variation	1.051	Skewness	1.908

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.771	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.686	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.347	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.396	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.823	95% Adjusted-CLT UCL (Chen-1995)	0.905
		95% Modified-t UCL (Johnson-1978)	0.85

Gamma GOF Test

A-D Test Statistic	0.338	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.687	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.25	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.362	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	1.449	k star (bias corrected MLE)	0.713
Theta hat (MLE)	0.284	Theta star (bias corrected MLE)	0.577
nu hat (MLE)	14.49	nu star (bias corrected)	7.128
MLE Mean (bias corrected)	0.411	MLE Sd (bias corrected)	0.487
		Approximate Chi Square Value (0.05)	2.241
Adjusted Level of Significance	0.0086	Adjusted Chi Square Value	1.236

Assuming Gamma Distribution

95% Approximate Gamma UCL	1.307	95% Adjusted Gamma UCL	2.371

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.964	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.806	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.196	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.319	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-2.354	Mean of logged Data	-1.272
Maximum of Logged Data	0.148	SD of logged Data	0.954

Assuming Lognormal Distribution

95% H-UCL	4.177	90% Chebyshev (MVUE) UCL	0.883
95% Chebyshev (MVUE) UCL	1.103	97.5% Chebyshev (MVUE) UCL	1.41
99% Chebyshev (MVUE) UCL	2.012		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.729	95% BCA Bootstrap UCL	0.826
95% Standard Bootstrap UCL	0.688	95% Bootstrap-t UCL	1.452

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934					k hat (KM)	0.242					k star (KM)	0.237			
935					nu hat (KM)	5.797					nu star (KM)	5.681			
936					theta hat (KM)	0.28					theta star (KM)	0.286			
937					80% gamma percentile (KM)	0.0963					90% gamma percentile (KM)	0.204			
938					95% gamma percentile (KM)	0.333					99% gamma percentile (KM)	0.679			
939															
940					**Gamma Kaplan-Meier (KM) Statistics**										
941					Approximate Chi Square Value (5.68, α)	1.479					Adjusted Chi Square Value (5.68, β)	1.178			
942					95% KM Approximate Gamma UCL	0.26					95% KM Adjusted Gamma UCL	0.326			
943															
944					**Lognormal GOF Test on Detected Observations Only**										
945					Shapiro Wilk Test Statistic	0.93					**Shapiro Wilk GOF Test**				
946					10% Shapiro Wilk Critical Value	0.869					Detected Data appear Lognormal at 10% Significance Level				
947					Lilliefors Test Statistic	0.215					**Lilliefors GOF Test**				
948					10% Lilliefors Critical Value	0.241					Detected Data appear Lognormal at 10% Significance Level				
949					**Detected Data appear Lognormal at 10% Significance Level**										
950															
951					**Lognormal ROS Statistics Using Imputed Non-Detects**										
952					Mean in Original Scale	0.0676					Mean in Log Scale	-3.757			
953					SD in Original Scale	0.144					SD in Log Scale	1.403			
954					95% t UCL (assumes normality of ROS data)	0.142					95% Percentile Bootstrap UCL	0.147			
955					95% BCA Bootstrap UCL	0.19					95% Bootstrap t UCL	0.446			
956					95% H-UCL (Log ROS)	0.298									
957															
958					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
959					KM Mean (logged)	-3.748					KM Geo Mean	0.0236			
960					KM SD (logged)	1.329					95% Critical H Value (KM-Log)	3.546			
961					KM Standard Error of Mean (logged)	0.408					95% H-UCL (KM -Log)	0.236			
962					KM SD (logged)	1.329					95% Critical H Value (KM-Log)	3.546			
963					KM Standard Error of Mean (logged)	0.408									
964															
965					**DL/2 Statistics**										
966					**DL/2 Normal**						**DL/2 Log-Transformed**				
967					Mean in Original Scale	0.0676					Mean in Log Scale	-3.757			
968					SD in Original Scale	0.144					SD in Log Scale	1.395			
969					95% t UCL (Assumes normality)	0.142					95% H-Stat UCL	0.29			
970					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
971															
972					**Nonparametric Distribution Free UCL Statistics**										
973					**Detected Data appear Lognormal Distributed at 10% Significance Level**										
974															
975					**Suggested UCL to Use**										
976					KM H-UCL	0.236									
977															
978					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**										
979					**Please verify the data were collected from random locations.**										
980					**If the data were collected using judgmental or other non-random methods,**										
981					**then contact a statistician to correctly calculate UCLs.**										
982															
983					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
984					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
985					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
986															
987	**PFOS + PFHxSPFOS + PFHxS_Laverton Creek**														
988															
989					**General Statistics**										
990					Total Number of Observations	16					Number of Distinct Observations	10			
991					Number of Detects	12					Number of Non-Detects	4			
992					Number of Distinct Detects	9					Number of Distinct Non-Detects	1			
993					Minimum Detect	0.02					Minimum Non-Detect	0.01			
994					Maximum Detect	1.33					Maximum Non-Detect	0.01			
995					Variance Detects	0.189					Percent Non-Detects	25%			
996					Mean Detects	0.322					SD Detects	0.435			
997					Median Detects	0.11					CV Detects	1.351			
998					Skewness Detects	1.607					Kurtosis Detects	1.71			
999					Mean of Logged Detects	-2.126					SD of Logged Detects	1.565			
1000															
1001					**Normal GOF Test on Detects Only**										
1002					Shapiro Wilk Test Statistic	0.741					**Shapiro Wilk GOF Test**				
1003					1% Shapiro Wilk Critical Value	0.805					Detected Data Not Normal at 1% Significance Level				
1004					Lilliefors Test Statistic	0.277					**Lilliefors GOF Test**				
1005					1% Lilliefors Critical Value	0.281					Detected Data appear Normal at 1% Significance Level				
1006					**Detected Data appear Approximate Normal at 1% Significance Level**										
1007															
1008					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**										
1009					KM Mean	0.244					KM Standard Error of Mean	0.1			
1010					90KM SD	0.385					95% KM (BCA) UCL	0.436			

1011					95% KM (t) UCL	0.42					95% KM (Percentile Bootstrap) UCL	0.424			
1012					95% KM (z) UCL	0.409					95% KM Bootstrap t UCL	0.586			
1013					90% KM Chebyshev UCL	0.545					95% KM Chebyshev UCL	0.682			
1014					97.5% KM Chebyshev UCL	0.871					99% KM Chebyshev UCL	1.244			
1015															
1016					**Gamma GOF Tests on Detected Observations Only**										
1017					A-D Test Statistic	0.56					**Anderson-Darling GOF Test**				
1018					5% A-D Critical Value	0.776					Detected data appear Gamma Distributed at 5% Significance Level				
1019					K-S Test Statistic	0.17					**Kolmogorov-Smirnov GOF**				
1020					5% K-S Critical Value	0.257					Detected data appear Gamma Distributed at 5% Significance Level				
1021					**Detected data appear Gamma Distributed at 5% Significance Level**										
1022															
1023					**Gamma Statistics on Detected Data Only**										
1024					k hat (MLE)	0.62					k star (bias corrected MLE)	0.521			
1025					Theta hat (MLE)	0.519					Theta star (bias corrected MLE)	0.618			
1026					nu hat (MLE)	14.88					nu star (bias corrected)	12.49			
1027					Mean (detects)	0.322									
1028															
1029					**Gamma ROS Statistics using Imputed Non-Detects**										
1030					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
1031					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
1032					For such situations, GROS method may yield incorrect values of UCLs and BTVs										
1033					This is especially true when the sample size is small.										
1034					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
1035					Minimum	0.01					Mean	0.244			
1036					Maximum	1.33					Median	0.04			
1037					SD	0.398					CV	1.631			
1038					k hat (MLE)	0.479					k star (bias corrected MLE)	0.431			
1039					Theta hat (MLE)	0.509					Theta star (bias corrected MLE)	0.565			
1040					nu hat (MLE)	15.34					nu star (bias corrected)	13.79			
1041					Adjusted Level of Significance (β)	0.0335									
1042					Approximate Chi Square Value (13.79, α)	6.43					Adjusted Chi Square Value (13.79, β)	5.866			
1043					95% Gamma Approximate UCL	0.523					95% Gamma Adjusted UCL	0.573			
1044															
1045					**Estimates of Gamma Parameters using KM Estimates**										
1046					Mean (KM)	0.244					SD (KM)	0.385			
1047					Variance (KM)	0.148					SE of Mean (KM)	0.1			
1048					k hat (KM)	0.401					k star (KM)	0.368			
1049					nu hat (KM)	12.83					nu star (KM)	11.76			
1050					theta hat (KM)	0.608					theta star (KM)	0.663			
1051					80% gamma percentile (KM)	0.389					90% gamma percentile (KM)	0.698			
1052					95% gamma percentile (KM)	1.043					99% gamma percentile (KM)	1.916			
1053															
1054					**Gamma Kaplan-Meier (KM) Statistics**										
1055					Approximate Chi Square Value (11.76, α)	5.07					Adjusted Chi Square Value (11.76, β)	4.579			
1056					95% KM Approximate Gamma UCL	0.565					95% KM Adjusted Gamma UCL	0.626			
1057															
1058					**Lognormal GOF Test on Detected Observations Only**										
1059					Shapiro Wilk Test Statistic	0.903					**Shapiro Wilk GOF Test**				
1060					10% Shapiro Wilk Critical Value	0.883					Detected Data appear Lognormal at 10% Significance Level				
1061					Lilliefors Test Statistic	0.146					**Lilliefors GOF Test**				
1062					10% Lilliefors Critical Value	0.223					Detected Data appear Lognormal at 10% Significance Level				
1063					**Detected Data appear Lognormal at 10% Significance Level**										
1064															
1065					**Lognormal ROS Statistics Using Imputed Non-Detects**										
1066					Mean in Original Scale	0.242					Mean in Log Scale	-3.082			
1067					SD in Original Scale	0.399					SD in Log Scale	2.204			
1068					95% t UCL (assumes normality of ROS data)	0.417					95% Percentile Bootstrap UCL	0.403			
1069					95% BCA Bootstrap UCL	0.457					95% Bootstrap t UCL	0.603			
1070					95% H-UCL (Log ROS)	8.257									
1071															
1072					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
1073					KM Mean (logged)	-2.746					KM Geo Mean	0.0642			
1074					KM SD (logged)	1.684					95% Critical H Value (KM-Log)	3.878			
1075					KM Standard Error of Mean (logged)	0.44					95% H-UCL (KM -Log)	1.431			
1076					KM SD (logged)	1.684					95% Critical H Value (KM-Log)	3.878			
1077					KM Standard Error of Mean (logged)	0.44									
1078															
1079					**DL/2 Statistics**										
1080					**DL/2 Normal**						**DL/2 Log-Transformed**				
1081					Mean in Original Scale	0.243					Mean in Log Scale	-2.919			
1082					SD in Original Scale	0.398					SD in Log Scale	1.952			
1083					95% t UCL (Assumes normality)	0.417					95% H-Stat UCL	3.29			
1084					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
1085															
1086					**Nonparametric Distribution Free UCL Statistics**										
1087					**Detected Data appear Approximate Normal Distributed at 1% Significance Level**										

1088														
1089						**Suggested UCL to Use**								
1090						95% KM (t) UCL	0.42							
1091														
1092						**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**								
1093						**Please verify the data were collected from random locations.**								
1094						**If the data were collected using judgmental or other non-random methods,**								
1095						**then contact a statistician to correctly calculate UCLs.**								
1096														
1097						When a data set follows an approximate distribution passing only one of the GOF tests,								
1098						it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL								
1099														
1100						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.								
1101						Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.								
1102						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.								
1103														
1104														
1105	**Perfluorooctane sulfonic acid (PFOS)_Addison Wetland**													
1106														
1107						**General Statistics**								
1108						Total Number of Observations	3				Number of Distinct Observations	3		
1109											Number of Missing Observations	0		
1110						Minimum	0.18				Mean	0.583		
1111						Maximum	0.97				Median	0.6		
1112						SD	0.395				Std. Error of Mean	0.228		
1113						Coefficient of Variation	0.678				Skewness	-0.189		
1114														
1115						**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**								
1116						**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**								
1117						**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**								
1118						**The Chebyshev UCL often results in gross overestimates of the mean.**								
1119						**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**								
1120														
1121						**Normal GOF Test**								
1122						Shapiro Wilk Test Statistic	0.999				**Shapiro Wilk GOF Test**			
1123						1% Shapiro Wilk Critical Value	0.753				Data appear Normal at 1% Significance Level			
1124						Lilliefors Test Statistic	0.183				**Lilliefors GOF Test**			
1125						1% Lilliefors Critical Value	0.429				Data appear Normal at 1% Significance Level			
1126						**Data appear Normal at 1% Significance Level**								
1127						**Note GOF tests may be unreliable for small sample sizes**								
1128														
1129						**Assuming Normal Distribution**								
1130						**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**			
1131						95% Student's-t UCL	1.25				95% Adjusted-CLT UCL (Chen-1995)	0.932		
1132											95% Modified-t UCL (Johnson-1978)	1.246		
1133														
1134						**Gamma GOF Test**								
1135						A-D Test Statistic	0.291				**Anderson-Darling Gamma GOF Test**			
1136						5% A-D Critical Value	0.636				Detected data appear Gamma Distributed at 5% Significance Level			
1137						K-S Test Statistic	0.268				**Kolmogorov-Smirnov Gamma GOF Test**			
1138						5% K-S Critical Value	0.435				Detected data appear Gamma Distributed at 5% Significance Level			
1139						**Data Not Gamma Distributed at 5% Significance Level**								
1140														
1141						**Gamma Statistics**								
1142						k hat (MLE)	2.501				k star (bias corrected MLE)	N/A		
1143						Theta hat (MLE)	0.233				Theta star (bias corrected MLE)	N/A		
1144						nu hat (MLE)	15.01				nu star (bias corrected)	N/A		
1145						MLE Mean (bias corrected)	N/A				MLE Sd (bias corrected)	N/A		
1146											Approximate Chi Square Value (0.05)	N/A		
1147						Adjusted Level of Significance	N/A				Adjusted Chi Square Value	N/A		
1148														
1149						**Assuming Gamma Distribution**								
1150						95% Approximate Gamma UCL	N/A				95% Adjusted Gamma UCL	N/A		
1151														
1152						**Lognormal GOF Test**								
1153						Shapiro Wilk Test Statistic	0.942				**Shapiro Wilk Lognormal GOF Test**			
1154						10% Shapiro Wilk Critical Value	0.789				Data appear Lognormal at 10% Significance Level			
1155						Lilliefors Test Statistic	0.276				**Lilliefors Lognormal GOF Test**			
1156						10% Lilliefors Critical Value	0.389				Data appear Lognormal at 10% Significance Level			
1157						**Data appear Lognormal at 10% Significance Level**								
1158						**Note GOF tests may be unreliable for small sample sizes**								
1159														
1160						**Lognormal Statistics**								
1161						Minimum of Logged Data	-1.715				Mean of logged Data	-0.752		
1162						Maximum of Logged Data	-0.0305				SD of logged Data	0.868		
1163														
1164						**Assuming Lognormal Distribution**								

| | | |

1242	**Assuming Lognormal Distribution**													
1243					95% H-UCL	0.107					90% Chebyshev (MVUE) UCL	0.0998		
1244					95% Chebyshev (MVUE) UCL	0.12					97.5% Chebyshev (MVUE) UCL	0.148		
1245					99% Chebyshev (MVUE) UCL	0.202								
1246														
1247	**Nonparametric Distribution Free UCL Statistics**													
1248	**Data appear to follow a Discernible Distribution**													
1249														
1250	**Nonparametric Distribution Free UCLs**													
1251					95% CLT UCL	0.0625					95% BCA Bootstrap UCL	0.0637		
1252					95% Standard Bootstrap UCL	0.0622					95% Bootstrap-t UCL	0.0651		
1253					95% Hall's Bootstrap UCL	0.0638					95% Percentile Bootstrap UCL	0.0626		
1254					90% Chebyshev(Mean, Sd) UCL	0.0738					95% Chebyshev(Mean, Sd) UCL	0.0852		
1255					97.5% Chebyshev(Mean, Sd) UCL	0.101					99% Chebyshev(Mean, Sd) UCL	0.132		
1256														
1257	**Suggested UCL to Use**													
1258					95% Adjusted Gamma UCL	0.0693								
1259														
1260	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1261	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
1262	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1263														
1264														
1265	**Perfluorooctane sulfonic acid (PFOS)_RAAF Laverton Swamp**													
1266														
1267	**General Statistics**													
1268					Total Number of Observations	15					Number of Distinct Observations	13		
1269											Number of Missing Observations	0		
1270					Minimum	0.03					Mean	0.735		
1271					Maximum	2					Median	0.61		
1272					SD	0.587					Std. Error of Mean	0.151		
1273					Coefficient of Variation	0.798					Skewness	0.985		
1274														
1275	**Normal GOF Test**													
1276					Shapiro Wilk Test Statistic	0.892					**Shapiro Wilk GOF Test**			
1277					1% Shapiro Wilk Critical Value	0.835					Data appear Normal at 1% Significance Level			
1278					Lilliefors Test Statistic	0.197					**Lilliefors GOF Test**			
1279					1% Lilliefors Critical Value	0.255					Data appear Normal at 1% Significance Level			
1280	**Data appear Normal at 1% Significance Level**													
1281														
1282	**Assuming Normal Distribution**													
1283					**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**			
1284					95% Student's-t UCL	1.002					95% Adjusted-CLT UCL (Chen-1995)	1.026		
1285											95% Modified-t UCL (Johnson-1978)	1.009		
1286														
1287	**Gamma GOF Test**													
1288					A-D Test Statistic	0.247					**Anderson-Darling Gamma GOF Test**			
1289					5% A-D Critical Value	0.756					Detected data appear Gamma Distributed at 5% Significance Level			
1290					K-S Test Statistic	0.13					**Kolmogorov-Smirnov Gamma GOF Test**			
1291					5% K-S Critical Value	0.226					Detected data appear Gamma Distributed at 5% Significance Level			
1292	**Detected data appear Gamma Distributed at 5% Significance Level**													
1293														
1294	**Gamma Statistics**													
1295					k hat (MLE)	1.39					k star (bias corrected MLE)	1.157		
1296					Theta hat (MLE)	0.529					Theta star (bias corrected MLE)	0.636		
1297					nu hat (MLE)	41.71					nu star (bias corrected)	34.7		
1298					MLE Mean (bias corrected)	0.735					MLE Sd (bias corrected)	0.684		
1299											Approximate Chi Square Value (0.05)	22.23		
1300					Adjusted Level of Significance	0.0324					Adjusted Chi Square Value	21		
1301														
1302	**Assuming Gamma Distribution**													
1303					95% Approximate Gamma UCL	1.148					95% Adjusted Gamma UCL	1.215		
1304														
1305	**Lognormal GOF Test**													
1306					Shapiro Wilk Test Statistic	0.913					**Shapiro Wilk Lognormal GOF Test**			
1307					10% Shapiro Wilk Critical Value	0.901					Data appear Lognormal at 10% Significance Level			
1308					Lilliefors Test Statistic	0.179					**Lilliefors Lognormal GOF Test**			
1309					10% Lilliefors Critical Value	0.202					Data appear Lognormal at 10% Significance Level			
1310	**Data appear Lognormal at 10% Significance Level**													
1311														
1312	**Lognormal Statistics**													
1313					Minimum of Logged Data	-3.507					Mean of logged Data	-0.708		
1314					Maximum of Logged Data	0.693					SD of logged Data	1.087		
1315														
1316	**Assuming Lognormal Distribution**													
1317					95% H-UCL	2.058					90% Chebyshev (MVUE) UCL	1.621		
1318					95% Chebyshev (MVUE) UCL	1.975					97.5% Chebyshev (MVUE) UCL	2.466		

1319					99% Chebyshev (MVUE) UCL	3.43									
1320															
1321					**Nonparametric Distribution Free UCL Statistics**										
1322					**Data appear to follow a Discernible Distribution**										
1323															
1324					**Nonparametric Distribution Free UCLs**										
1325					95% CLT UCL	0.985						95% BCA Bootstrap UCL	1.023		
1326					95% Standard Bootstrap UCL	0.977						95% Bootstrap-t UCL	1.076		
1327					95% Hall's Bootstrap UCL	1.03						95% Percentile Bootstrap UCL	0.983		
1328					90% Chebyshev(Mean, Sd) UCL	1.19						95% Chebyshev(Mean, Sd) UCL	1.396		
1329					97.5% Chebyshev(Mean, Sd) UCL	1.681						99% Chebyshev(Mean, Sd) UCL	2.243		
1330															
1331					**Suggested UCL to Use**										
1332					95% Student's-t UCL	1.002									
1333															
1334					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
1335					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
1336					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
1337															
1338															
1339	**Perfluorooctane sulfonic acid (PFOS)_Sanctuary Lakes**														
1340															
1341					**General Statistics**										
1342					Total Number of Observations	44						Number of Distinct Observations	22		
1343												Number of Missing Observations	0		
1344					Minimum	0.01						Mean	0.0343		
1345					Maximum	0.16						Median	0.026		
1346					SD	0.0245						Std. Error of Mean	0.0037		
1347					Coefficient of Variation	0.714						Skewness	3.525		
1348															
1349					**Normal GOF Test**										
1350					Shapiro Wilk Test Statistic	0.65						**Shapiro Wilk GOF Test**			
1351					1% Shapiro Wilk Critical Value	0.924						Data Not Normal at 1% Significance Level			
1352					Lilliefors Test Statistic	0.207						**Lilliefors GOF Test**			
1353					1% Lilliefors Critical Value	0.154						Data Not Normal at 1% Significance Level			
1354					**Data Not Normal at 1% Significance Level**										
1355															
1356					**Assuming Normal Distribution**										
1357					**95% Normal UCL**							**95% UCLs (Adjusted for Skewness)**			
1358					95% Student's-t UCL	0.0405						95% Adjusted-CLT UCL (Chen-1995)	0.0425		
1359												95% Modified-t UCL (Johnson-1978)	0.0409		
1360															
1361					**Gamma GOF Test**										
1362					A-D Test Statistic	1.921						**Anderson-Darling Gamma GOF Test**			
1363					5% A-D Critical Value	0.754						Data Not Gamma Distributed at 5% Significance Level			
1364					K-S Test Statistic	0.159						**Kolmogorov-Smirnov Gamma GOF Test**			
1365					5% K-S Critical Value	0.134						Data Not Gamma Distributed at 5% Significance Level			
1366					**Data Not Gamma Distributed at 5% Significance Level**										
1367															
1368					**Gamma Statistics**										
1369					k hat (MLE)	3.553						k star (bias corrected MLE)	3.326		
1370					Theta hat (MLE)	0.0096						Theta star (bias corrected MLE)	0.0103		
1371					nu hat (MLE)	312.6						nu star (bias corrected)	292.6		
1372					MLE Mean (bias corrected)	0.0343						MLE Sd (bias corrected)	0.0188		
1373												Approximate Chi Square Value (0.05)	254		
1374					Adjusted Level of Significance	0.0445						Adjusted Chi Square Value	252.8		
1375															
1376					**Assuming Gamma Distribution**										
1377					95% Approximate Gamma UCL	0.0395						95% Adjusted Gamma UCL	0.0397		
1378															
1379					**Lognormal GOF Test**										
1380					Shapiro Wilk Test Statistic	0.915						**Shapiro Wilk Lognormal GOF Test**			
1381					10% Shapiro Wilk Critical Value	0.952						Data Not Lognormal at 10% Significance Level			
1382					Lilliefors Test Statistic	0.168						**Lilliefors Lognormal GOF Test**			
1383					10% Lilliefors Critical Value	0.122						Data Not Lognormal at 10% Significance Level			
1384					**Data Not Lognormal at 10% Significance Level**										
1385															
1386					**Lognormal Statistics**										
1387					Minimum of Logged Data	-4.605						Mean of logged Data	-3.519		
1388					Maximum of Logged Data	-1.833						SD of logged Data	0.505		
1389															
1390					**Assuming Lognormal Distribution**										
1391					95% H-UCL	0.039						90% Chebyshev (MVUE) UCL	0.0416		
1392					95% Chebyshev (MVUE) UCL	0.0452						97.5% Chebyshev (MVUE) UCL	0.0503		
1393					99% Chebyshev (MVUE) UCL	0.0602									
1394															
1395					**Nonparametric Distribution Free UCL Statistics**										

1396	**Data do not follow a Discernible Distribution**													
1397														
1398	**Nonparametric Distribution Free UCLs**													
1399	95% CLT UCL	0.0404	95% BCA Bootstrap UCL	0.0431										
1400	95% Standard Bootstrap UCL	0.0401	95% Bootstrap-t UCL	0.0449										
1401	95% Hall's Bootstrap UCL	0.07	95% Percentile Bootstrap UCL	0.0404										
1402	90% Chebyshev(Mean, Sd) UCL	0.0454	95% Chebyshev(Mean, Sd) UCL	0.0504										
1403	97.5% Chebyshev(Mean, Sd) UCL	0.0574	99% Chebyshev(Mean, Sd) UCL	0.0711										
1404														
1405	**Suggested UCL to Use**													
1406	95% Student's-t UCL	0.0405												
1407														
1408	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1409	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
1410	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1411														
1412	**Perfluorooctane sulfonic acid (PFOS)_Skeleton Creek**													
1413														
1414	**General Statistics**													
1415	Total Number of Observations	84	Number of Distinct Observations	36										
1416	Number of Detects	80	Number of Non-Detects	4										
1417	Number of Distinct Detects	36	Number of Distinct Non-Detects	1										
1418	Minimum Detect	0.004	Minimum Non-Detect	0.01										
1419	Maximum Detect	0.45	Maximum Non-Detect	0.01										
1420	Variance Detects	0.0094	Percent Non-Detects	4.762%										
1421	Mean Detects	0.13	SD Detects	0.0974										
1422	Median Detects	0.11	CV Detects	0.747										
1423	Skewness Detects	1.453	Kurtosis Detects	2.462										
1424	Mean of Logged Detects	-2.404	SD of Logged Detects	1.045										
1425														
1426	**Normal GOF Test on Detects Only**													
1427	Shapiro Wilk Test Statistic	0.857	**Normal GOF Test on Detected Observations Only**											
1428	1% Shapiro Wilk P Value	1.398E-1	Detected Data Not Normal at 1% Significance Level											
1429	Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**											
1430	1% Lilliefors Critical Value	0.115	Detected Data Not Normal at 1% Significance Level											
1431	**Detected Data Not Normal at 1% Significance Level**													
1432														
1433	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
1434	KM Mean	0.125	KM Standard Error of Mean	0.0108										
1435	90KM SD	0.098	95% KM (BCA) UCL	0.143										
1436	95% KM (t) UCL	0.142	95% KM (Percentile Bootstrap) UCL	0.142										
1437	95% KM (z) UCL	0.142	95% KM Bootstrap t UCL	0.144										
1438	90% KM Chebyshev UCL	0.157	95% KM Chebyshev UCL	0.171										
1439	97.5% KM Chebyshev UCL	0.192	99% KM Chebyshev UCL	0.232										
1440														
1441	**Gamma GOF Tests on Detected Observations Only**													
1442	A-D Test Statistic	2.283	**Anderson-Darling GOF Test**											
1443	5% A-D Critical Value	0.77	Detected Data Not Gamma Distributed at 5% Significance Level											
1444	K-S Test Statistic	0.176	**Kolmogorov-Smirnov GOF**											
1445	5% K-S Critical Value	0.102	Detected Data Not Gamma Distributed at 5% Significance Level											
1446	**Detected Data Not Gamma Distributed at 5% Significance Level**													
1447														
1448	**Gamma Statistics on Detected Data Only**													
1449	k hat (MLE)	1.507	k star (bias corrected MLE)	1.458										
1450	Theta hat (MLE)	0.0866	Theta star (bias corrected MLE)	0.0894										
1451	nu hat (MLE)	241	nu star (bias corrected)	233.3										
1452	Mean (detects)	0.13												
1453														
1454	**Gamma ROS Statistics using Imputed Non-Detects**													
1455	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
1456	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
1457	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
1458	This is especially true when the sample size is small.													
1459	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
1460	Minimum	0.004	Mean	0.125										
1461	Maximum	0.45	Median	0.105										
1462	SD	0.098	CV	0.785										
1463	k hat (MLE)	1.373	k star (bias corrected MLE)	1.332										
1464	Theta hat (MLE)	0.091	Theta star (bias corrected MLE)	0.0939										
1465	nu hat (MLE)	230.6	nu star (bias corrected)	223.7										
1466	Adjusted Level of Significance (β)	0.047												
1467	Approximate Chi Square Value (223.74, α)	190.1	Adjusted Chi Square Value (223.74, β)	189.6										
1468	95% Gamma Approximate UCL	0.147	95% Gamma Adjusted UCL	0.148										
1469														
1470	**Estimates of Gamma Parameters using KM Estimates**													
1471	Mean (KM)	0.125	SD (KM)	0.0981										
1472	Variance (KM)	0.0096	SE of Mean (KM)	0.0108										

1473					k hat (KM)	1.612					k star (KM)	1.562		
1474					nu hat (KM)	270.8					nu star (KM)	262.4		
1475					theta hat (KM)	0.077					theta star (KM)	0.0797		
1476					80% gamma percentile (KM)	0.192					90% gamma percentile (KM)	0.257		
1477					95% gamma percentile (KM)	0.32					99% gamma percentile (KM)	0.462		
1478														
1479					**Gamma Kaplan-Meier (KM) Statistics**									
1480					Approximate Chi Square Value (262.42, α)	225.9					Adjusted Chi Square Value (262.42, β)	225.3		
1481					95% KM Approximate Gamma UCL	0.145					95% KM Adjusted Gamma UCL	0.145		
1482														
1483					**Lognormal GOF Test on Detected Observations Only**									
1484					Shapiro Wilk Approximate Test Statistic	0.841					**Shapiro Wilk GOF Test**			
1485					10% Shapiro Wilk P Value	5.623E-1					Detected Data Not Lognormal at 10% Significance Level			
1486					Lilliefors Test Statistic	0.237					**Lilliefors GOF Test**			
1487					10% Lilliefors Critical Value	0.090					Detected Data Not Lognormal at 10% Significance Level			
1488					**Detected Data Not Lognormal at 10% Significance Level**									
1489														
1490					**Lognormal ROS Statistics Using Imputed Non-Detects**									
1491					Mean in Original Scale	0.125					Mean in Log Scale	-2.488		
1492					SD in Original Scale	0.098					SD in Log Scale	1.089		
1493					95% t UCL (assumes normality of ROS data)	0.143					95% Percentile Bootstrap UCL	0.143		
1494					95% BCA Bootstrap UCL	0.143					95% Bootstrap t UCL	0.145		
1495					95% H-UCL (Log ROS)	0.198								
1496														
1497					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**									
1498					KM Mean (logged)	-2.529					KM Geo Mean	0.0797		
1499					KM SD (logged)	1.158					95% Critical H Value (KM-Log)	2.392		
1500					KM Standard Error of Mean (logged)	0.127					95% H-UCL (KM -Log)	0.211		
1501					KM SD (logged)	1.158					95% Critical H Value (KM-Log)	2.392		
1502					KM Standard Error of Mean (logged)	0.127								
1503														
1504					**DL/2 Statistics**									
1505					**DL/2 Normal**						**DL/2 Log-Transformed**			
1506					Mean in Original Scale	0.124					Mean in Log Scale	-2.542		
1507					SD in Original Scale	0.098					SD in Log Scale	1.193		
1508					95% t UCL (Assumes normality)	0.142					95% H-Stat UCL	0.22		
1509					**DL/2 is not a recommended method, provided for comparisons and historical reasons**									
1510														
1511					**Nonparametric Distribution Free UCL Statistics**									
1512					**Data do not follow a Discernible Distribution**									
1513														
1514					**Suggested UCL to Use**									
1515					95% KM (t) UCL	0.142								
1516														
1517					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
1518					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
1519					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
1520														
1521	**Perfluorooctane sulfonic acid (PFOS)_Laverton Creek**													
1522														
1523					**General Statistics**									
1524					Total Number of Observations	31					Number of Distinct Observations	14		
1525					Number of Detects	23					Number of Non-Detects	8		
1526					Number of Distinct Detects	14					Number of Distinct Non-Detects	1		
1527					Minimum Detect	0.004					Minimum Non-Detect	0.01		
1528					Maximum Detect	0.24					Maximum Non-Detect	0.01		
1529					Variance Detects	0.0034					Percent Non-Detects	25.81%		
1530					Mean Detects	0.037					SD Detects	0.0588		
1531					Median Detects	0.011					CV Detects	1.55		
1532					Skewness Detects	2.588					Kurtosis Detects	6.55		
1533					Mean of Logged Detects	-3.971					SD of Logged Detects	1.08		
1534														
1535					**Normal GOF Test on Detects Only**									
1536					Shapiro Wilk Test Statistic	0.582					**Shapiro Wilk GOF Test**			
1537					1% Shapiro Wilk Critical Value	0.881					Detected Data Not Normal at 1% Significance Level			
1538					Lilliefors Test Statistic	0.336					**Lilliefors GOF Test**			
1539					1% Lilliefors Critical Value	0.209					Detected Data Not Normal at 1% Significance Level			
1540					**Detected Data Not Normal at 1% Significance Level**									
1541														
1542					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**									
1543					KM Mean	0.029					KM Standard Error of Mean	0.00946		
1544					90KM SD	0.051					95% KM (BCA) UCL	0.0468		
1545					95% KM (t) UCL	0.045					95% KM (Percentile Bootstrap) UCL	0.0463		
1546					95% KM (z) UCL	0.045					95% KM Bootstrap t UCL	0.0609		
1547					90% KM Chebyshev UCL	0.058					95% KM Chebyshev UCL	0.0708		
1548					97.5% KM Chebyshev UCL	0.088					99% KM Chebyshev UCL	0.124		
1549														

1550	**Gamma GOF Tests on Detected Observations Only**													
1551	A-D Test Statistic				2.19		**Anderson-Darling GOF Test**							
1552	5% A-D Critical Value				0.777		Detected Data Not Gamma Distributed at 5% Significance Level							
1553	K-S Test Statistic				0.255		**Kolmogorov-Smirnov GOF**							
1554	5% K-S Critical Value				0.188		Detected Data Not Gamma Distributed at 5% Significance Level							
1555	**Detected Data Not Gamma Distributed at 5% Significance Level**													
1556														
1557	**Gamma Statistics on Detected Data Only**													
1558	k hat (MLE)				0.844						k star (bias corrected MLE)	0.763		
1559	Theta hat (MLE)				0.044						Theta star (bias corrected MLE)	0.0497		
1560	nu hat (MLE)				38.83						nu star (bias corrected)	35.1		
1561	Mean (detects)				0.037									
1562														
1563	**Gamma ROS Statistics using Imputed Non-Detects**													
1564	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
1565	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
1566	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
1567	This is especially true when the sample size is small.													
1568	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
1569	Minimum				0.004						Mean	0.0307		
1570	Maximum				0.24						Median	0.01		
1571	SD				0.051						CV	1.688		
1572	k hat (MLE)				0.898						k star (bias corrected MLE)	0.833		
1573	Theta hat (MLE)				0.034						Theta star (bias corrected MLE)	0.0369		
1574	nu hat (MLE)				55.67						nu star (bias corrected)	51.62		
1575	Adjusted Level of Significance (β)				0.041									
1576	Approximate Chi Square Value (51.62, α)				36.12						Adjusted Chi Square Value (51.62, β)	35.4		
1577	95% Gamma Approximate UCL				0.043						95% Gamma Adjusted UCL	0.0448		
1578														
1579	**Estimates of Gamma Parameters using KM Estimates**													
1580	Mean (KM)				0.029						SD (KM)	0.0515		
1581	Variance (KM)				0.0026						SE of Mean (KM)	0.00946		
1582	k hat (KM)				0.33						k star (KM)	0.32		
1583	nu hat (KM)				20.47						nu star (KM)	19.82		
1584	theta hat (KM)				0.089						theta star (KM)	0.0925		
1585	80% gamma percentile (KM)				0.046						90% gamma percentile (KM)	0.0866		
1586	95% gamma percentile (KM)				0.133						99% gamma percentile (KM)	0.251		
1587														
1588	**Gamma Kaplan-Meier (KM) Statistics**													
1589	Approximate Chi Square Value (19.82, α)				10.72						Adjusted Chi Square Value (19.82, β)	10.35		
1590	95% KM Approximate Gamma UCL				0.054						95% KM Adjusted Gamma UCL	0.0567		
1591														
1592	**Lognormal GOF Test on Detected Observations Only**													
1593	Shapiro Wilk Test Statistic				0.875		**Shapiro Wilk GOF Test**							
1594	10% Shapiro Wilk Critical Value				0.928		Detected Data Not Lognormal at 10% Significance Level							
1595	Lilliefors Test Statistic				0.213		**Lilliefors GOF Test**							
1596	10% Lilliefors Critical Value				0.165		Detected Data Not Lognormal at 10% Significance Level							
1597	**Detected Data Not Lognormal at 10% Significance Level**													
1598														
1599	**Lognormal ROS Statistics Using Imputed Non-Detects**													
1600	Mean in Original Scale				0.029						Mean in Log Scale	-4.425		
1601	SD in Original Scale				0.052						SD in Log Scale	1.242		
1602	95% t UCL (assumes normality of ROS data)				0.045						95% Percentile Bootstrap UCL	0.0458		
1603	95% BCA Bootstrap UCL				0.049						95% Bootstrap t UCL	0.0636		
1604	95% H-UCL (Log ROS)				0.048									
1605														
1606	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**													
1607	KM Mean (logged)				-4.292						KM Geo Mean	0.0137		
1608	KM SD (logged)				1.071						95% Critical H Value (KM-Log)	2.507		
1609	KM Standard Error of Mean (logged)				0.203						95% H-UCL (KM -Log)	0.0396		
1610	KM SD (logged)				1.071						95% Critical H Value (KM-Log)	2.507		
1611	KM Standard Error of Mean (logged)				0.203									
1612														
1613	**DL/2 Statistics**													
1614	**DL/2 Normal**										**DL/2 Log-Transformed**			
1615	Mean in Original Scale				0.029						Mean in Log Scale	-4.313		
1616	SD in Original Scale				0.052						SD in Log Scale	1.097		
1617	95% t UCL (Assumes normality)				0.045						95% H-Stat UCL	0.0407		
1618	**DL/2 is not a recommended method, provided for comparisons and historical reasons**													
1619														
1620	**Nonparametric Distribution Free UCL Statistics**													
1621	**Data do not follow a Discernible Distribution**													
1622														
1623	**Suggested UCL to Use**													
1624	95% KM (t) UCL				0.045									
1625														
1626	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**													

1627	**Please verify the data were collected from random locations.**													
1628	**If the data were collected using judgmental or other non-random methods,**													
1629	**then contact a statistician to correctly calculate UCLs.**													
1630														
1631	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1632	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
1633	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1634														
1635	**Perfluorooctane sulfonic acid (PFOS)_Ashcroft Avenue Ponds**													
1636														
1637	**General Statistics**													
1638	Total Number of Observations				18			Number of Distinct Observations				11		
1639	Number of Detects				17			Number of Non-Detects				1		
1640	Number of Distinct Detects				11			Number of Distinct Non-Detects				1		
1641	Minimum Detect				0.01			Minimum Non-Detect				0.01		
1642	Maximum Detect				14			Maximum Non-Detect				0.01		
1643	Variance Detects				11.37			Percent Non-Detects				5.556%		
1644	Mean Detects				0.928			SD Detects				3.372		
1645	Median Detects				0.04			CV Detects				3.633		
1646	Skewness Detects				4.11			Kurtosis Detects				16.92		
1647	Mean of Logged Detects				-2.638			SD of Logged Detects				1.82		
1648														
1649	**Normal GOF Test on Detects Only**													
1650	Shapiro Wilk Test Statistic				0.292			**Shapiro Wilk GOF Test**						
1651	1% Shapiro Wilk Critical Value				0.851			Detected Data Not Normal at 1% Significance Level						
1652	Lilliefors Test Statistic				0.495			**Lilliefors GOF Test**						
1653	1% Lilliefors Critical Value				0.241			Detected Data Not Normal at 1% Significance Level						
1654	**Detected Data Not Normal at 1% Significance Level**													
1655														
1656	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
1657	KM Mean				0.877			KM Standard Error of Mean				0.774		
1658	90KM SD				3.186			95% KM (BCA) UCL				2.412		
1659	95% KM (t) UCL				2.224			95% KM (Percentile Bootstrap) UCL				2.404		
1660	95% KM (z) UCL				2.15			95% KM Bootstrap t UCL				26.26		
1661	90% KM Chebyshev UCL				3.199			95% KM Chebyshev UCL				4.251		
1662	97.5% KM Chebyshev UCL				5.711			99% KM Chebyshev UCL				8.579		
1663														
1664	**Gamma GOF Tests on Detected Observations Only**													
1665	A-D Test Statistic				2.877			**Anderson-Darling GOF Test**						
1666	5% A-D Critical Value				0.854			Detected Data Not Gamma Distributed at 5% Significance Level						
1667	K-S Test Statistic				0.314			**Kolmogorov-Smirnov GOF**						
1668	5% K-S Critical Value				0.228			Detected Data Not Gamma Distributed at 5% Significance Level						
1669	**Detected Data Not Gamma Distributed at 5% Significance Level**													
1670														
1671	**Gamma Statistics on Detected Data Only**													
1672	k hat (MLE)				0.273			k star (bias corrected MLE)				0.264		
1673	Theta hat (MLE)				3.398			Theta star (bias corrected MLE)				3.514		
1674	nu hat (MLE)				9.286			nu star (bias corrected)				8.98		
1675	Mean (detects)				0.928									
1676														
1677	**Gamma ROS Statistics using Imputed Non-Detects**													
1678	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
1679	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
1680	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
1681	This is especially true when the sample size is small.													
1682	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
1683	Minimum				0.01			Mean				0.877		
1684	Maximum				14			Median				0.04		
1685	SD				3.278			CV				3.738		
1686	k hat (MLE)				0.268			k star (bias corrected MLE)				0.261		
1687	Theta hat (MLE)				3.268			Theta star (bias corrected MLE)				3.365		
1688	nu hat (MLE)				9.661			nu star (bias corrected)				9.384		
1689	Adjusted Level of Significance (β)				0.0357									
1690	Approximate Chi Square Value (9.38, α)				3.561			Adjusted Chi Square Value (9.38, β)				3.224		
1691	95% Gamma Approximate UCL				2.312			95% Gamma Adjusted UCL				2.553		
1692														
1693	**Estimates of Gamma Parameters using KM Estimates**													
1694	Mean (KM)				0.877			SD (KM)				3.186		
1695	Variance (KM)				10.15			SE of Mean (KM)				0.774		
1696	k hat (KM)				0.0758			k star (KM)				0.1		
1697	nu hat (KM)				2.729			nu star (KM)				3.607		
1698	theta hat (KM)				11.57			theta star (KM)				8.754		
1699	80% gamma percentile (KM)				0.61			90% gamma percentile (KM)				2.336		
1700	95% gamma percentile (KM)				5.09			99% gamma percentile (KM)				13.92		
1701														
1702	**Gamma Kaplan-Meier (KM) Statistics**													
1703	Approximate Chi Square Value (3.61, α)				0.573			Adjusted Chi Square Value (3.61, β)				0.473		

1704				95% KM Approximate Gamma UCL	5.522					95% KM Adjusted Gamma UCL	6.684				
1705				95% KM Adjusted Gamma UCL (use when k<=1 and 15 < n < 50)											
1706															
1707				**Lognormal GOF Test on Detected Observations Only**											
1708				Shapiro Wilk Test Statistic	0.85				**Shapiro Wilk GOF Test**						
1709				10% Shapiro Wilk Critical Value	0.91				Detected Data Not Lognormal at 10% Significance Level						
1710				Lilliefors Test Statistic	0.213				**Lilliefors GOF Test**						
1711				10% Lilliefors Critical Value	0.19				Detected Data Not Lognormal at 10% Significance Level						
1712				**Detected Data Not Lognormal at 10% Significance Level**											
1713															
1714				**Lognormal ROS Statistics Using Imputed Non-Detects**											
1715				Mean in Original Scale	0.877					Mean in Log Scale	-2.872				
1716				SD in Original Scale	3.278					SD in Log Scale	2.026				
1717				95% t UCL (assumes normality of ROS data)	2.221					95% Percentile Bootstrap UCL	2.408				
1718				95% BCA Bootstrap UCL	3.212					95% Bootstrap t UCL	25.56				
1719				95% H-UCL (Log ROS)	3.755										
1720															
1721				**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**											
1722				KM Mean (logged)	-2.748					KM Geo Mean	0.0641				
1723				KM SD (logged)	1.774					95% Critical H Value (KM-Log)	3.91				
1724				KM Standard Error of Mean (logged)	0.431					95% H-UCL (KM -Log)	1.664				
1725				KM SD (logged)	1.774					95% Critical H Value (KM-Log)	3.91				
1726				KM Standard Error of Mean (logged)	0.431										
1727															
1728				**DL/2 Statistics**											
1729				**DL/2 Normal**					**DL/2 Log-Transformed**						
1730				Mean in Original Scale	0.877					Mean in Log Scale	-2.786				
1731				SD in Original Scale	3.278					SD in Log Scale	1.874				
1732				95% t UCL (Assumes normality)	2.221					95% H-Stat UCL	2.287				
1733				**DL/2 is not a recommended method, provided for comparisons and historical reasons**											
1734															
1735				**Nonparametric Distribution Free UCL Statistics**											
1736				**Data do not follow a Discernible Distribution**											
1737															
1738				**Suggested UCL to Use**											
1739				95% KM (t) UCL	2.224										
1740															
1741				**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**											
1742				**Please verify the data were collected from random locations.**											
1743				**If the data were collected using judgmental or other non-random methods,**											
1744				**then contact a statistician to correctly calculate UCLs.**											
1745															
1746				Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
1747				Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
1748				However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
1749															
1750	**Perfluorooctane sulfonic acid (PFOS)_Forsyth Road Drain**														
1751															
1752				**General Statistics**											
1753				Total Number of Observations	16					Number of Distinct Observations	14				
1754				Number of Detects	13					Number of Non-Detects	3				
1755				Number of Distinct Detects	12					Number of Distinct Non-Detects	2				
1756				Minimum Detect	0.005					Minimum Non-Detect	0.002				
1757				Maximum Detect	0.33					Maximum Non-Detect	0.01				
1758				Variance Detects	0.0092					Percent Non-Detects	18.75%				
1759				Mean Detects	0.0972					SD Detects	0.0962				
1760				Median Detects	0.06					CV Detects	0.991				
1761				Skewness Detects	1.203					Kurtosis Detects	1.377				
1762				Mean of Logged Detects	-2.999					SD of Logged Detects	1.397				
1763															
1764				**Normal GOF Test on Detects Only**											
1765				Shapiro Wilk Test Statistic	0.86				**Shapiro Wilk GOF Test**						
1766				1% Shapiro Wilk Critical Value	0.814				Detected Data appear Normal at 1% Significance Level						
1767				Lilliefors Test Statistic	0.189				**Lilliefors GOF Test**						
1768				1% Lilliefors Critical Value	0.271				Detected Data appear Normal at 1% Significance Level						
1769				**Detected Data appear Normal at 1% Significance Level**											
1770															
1771				**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**											
1772				KM Mean	0.0798					KM Standard Error of Mean	0.0236				
1773				90KM SD	0.0909					95% KM (BCA) UCL	0.121				
1774				95% KM (t) UCL	0.121					95% KM (Percentile Bootstrap) UCL	0.12				
1775				95% KM (z) UCL	0.119					95% KM Bootstrap t UCL	0.134				
1776				90% KM Chebyshev UCL	0.151					95% KM Chebyshev UCL	0.183				
1777				97.5% KM Chebyshev UCL	0.227					99% KM Chebyshev UCL	0.315				
1778															
1779				**Gamma GOF Tests on Detected Observations Only**											
1780				A-D Test Statistic	0.335				**Anderson-Darling GOF Test**						

| | | |

Perfluorooctane sulfonic acid (PFOS)_Kidbroke Road Drain

General Statistics

Total Number of Observations	5	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.073	Mean	0.317
Maximum	1.1	Median	0.11
SD	0.44	Std. Error of Mean	0.197
Coefficient of Variation	1.39	Skewness	2.185

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.636	**Shapiro Wilk GOF Test**
1% Shapiro Wilk Critical Value	0.686	Data Not Normal at 1% Significance Level
Lilliefors Test Statistic	0.413	**Lilliefors GOF Test**
1% Lilliefors Critical Value	0.396	Data Not Normal at 1% Significance Level

Data Not Normal at 1% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.736	95% Adjusted-CLT UCL (Chen-1995)	0.846
		95% Modified-t UCL (Johnson-1978)	0.768

Gamma GOF Test

A-D Test Statistic	0.761	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.691	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.351	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.364	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	1.012	k star (bias corrected MLE)	0.538
Theta hat (MLE)	0.313	Theta star (bias corrected MLE)	0.588
nu hat (MLE)	10.12	nu star (bias corrected)	5.383
MLE Mean (bias corrected)	0.317	MLE Sd (bias corrected)	0.432
		Approximate Chi Square Value (0.05)	1.333
Adjusted Level of Significance	0.0086	Adjusted Chi Square Value	0.643

Assuming Gamma Distribution

95% Approximate Gamma UCL	1.278	95% Adjusted Gamma UCL	2.65

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk Lognormal GOF Test**
10% Shapiro Wilk Critical Value	0.806	Data appear Lognormal at 10% Significance Level
Lilliefors Test Statistic	0.278	**Lilliefors Lognormal GOF Test**
10% Lilliefors Critical Value	0.319	Data appear Lognormal at 10% Significance Level

Data appear Lognormal at 10% Significance Level
Note GOF tests may be unreliable for small sample sizes

Lognormal Statistics

Minimum of Logged Data	-2.617	Mean of logged Data	-1.719
Maximum of Logged Data	0.0953	SD of logged Data	1.07

Assuming Lognormal Distribution

95% H-UCL	5.148	90% Chebyshev (MVUE) UCL	0.65
95% Chebyshev (MVUE) UCL	0.82	97.5% Chebyshev (MVUE) UCL	1.056
99% Chebyshev (MVUE) UCL	1.52		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution

Nonparametric Distribution Free UCLs

95% CLT UCL	0.64	95% BCA Bootstrap UCL	N/A
95% Standard Bootstrap UCL	N/A	95% Bootstrap-t UCL	N/A
95% Hall's Bootstrap UCL	N/A	95% Percentile Bootstrap UCL	N/A
90% Chebyshev(Mean, Sd) UCL	0.907	95% Chebyshev(Mean, Sd) UCL	1.174
97.5% Chebyshev(Mean, Sd) UCL	1.545	99% Chebyshev(Mean, Sd) UCL	2.275

Suggested UCL to Use

1935	Recommendation cannot be provided													
1936														
1937	**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**													
1938	**Please verify the data were collected from random locations.**													
1939	**If the data were collected using judgmental or other non-random methods,**													
1940	**then contact a statistician to correctly calculate UCLs.**													
1941														
1942	When a data set follows an approximate distribution passing only one of the GOF tests,													
1943	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL													
1944														
1945	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.													
1946	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.													
1947	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.													
1948														
1949	**Perfluorooctane sulfonic acid (PFOS)_Doherty's Drain**													
1950														
1951	**General Statistics**													
1952	Total Number of Observations	12					Number of Distinct Observations	8						
1953	Number of Detects	10					Number of Non-Detects	2						
1954	Number of Distinct Detects	7					Number of Distinct Non-Detects	1						
1955	Minimum Detect	0.003					Minimum Non-Detect	0.01						
1956	Maximum Detect	0.5					Maximum Non-Detect	0.01						
1957	Variance Detects	0.0225					Percent Non-Detects	16.67%						
1958	Mean Detects	0.075					SD Detects	0.15						
1959	Median Detects	0.035					CV Detects	2.002						
1960	Skewness Detects	3.1					Kurtosis Detects	9.716						
1961	Mean of Logged Detects	-3.545					SD of Logged Detects	1.34						
1962														
1963	**Normal GOF Test on Detects Only**													
1964	Shapiro Wilk Test Statistic	0.463					**Shapiro Wilk GOF Test**							
1965	1% Shapiro Wilk Critical Value	0.781					Detected Data Not Normal at 1% Significance Level							
1966	Lilliefors Test Statistic	0.466					**Lilliefors GOF Test**							
1967	1% Lilliefors Critical Value	0.304					Detected Data Not Normal at 1% Significance Level							
1968	**Detected Data Not Normal at 1% Significance Level**													
1969														
1970	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
1971	KM Mean	0.0633					KM Standard Error of Mean	0.0403						
1972	90KM SD	0.133					95% KM (BCA) UCL	0.142						
1973	95% KM (t) UCL	0.136					95% KM (Percentile Bootstrap) UCL	0.139						
1974	95% KM (z) UCL	0.13					95% KM Bootstrap t UCL	0.474						
1975	90% KM Chebyshev UCL	0.184					95% KM Chebyshev UCL	0.239						
1976	97.5% KM Chebyshev UCL	0.315					99% KM Chebyshev UCL	0.465						
1977														
1978	**Gamma GOF Tests on Detected Observations Only**													
1979	A-D Test Statistic	1.097					**Anderson-Darling GOF Test**							
1980	5% A-D Critical Value	0.766					Detected Data Not Gamma Distributed at 5% Significance Level							
1981	K-S Test Statistic	0.35					**Kolmogorov-Smirnov GOF**							
1982	5% K-S Critical Value	0.278					Detected Data Not Gamma Distributed at 5% Significance Level							
1983	**Detected Data Not Gamma Distributed at 5% Significance Level**													
1984														
1985	**Gamma Statistics on Detected Data Only**													
1986	k hat (MLE)	0.641					k star (bias corrected MLE)	0.515						
1987	Theta hat (MLE)	0.117					Theta star (bias corrected MLE)	0.146						
1988	nu hat (MLE)	12.82					nu star (bias corrected)	10.31						
1989	Mean (detects)	0.075												
1990														
1991	**Gamma ROS Statistics using Imputed Non-Detects**													
1992	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
1993	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
1994	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
1995	This is especially true when the sample size is small.													
1996	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
1997	Minimum	0.003					Mean	0.0642						
1998	Maximum	0.5					Median	0.025						
1999	SD	0.138					CV	2.153						
2000	k hat (MLE)	0.629					k star (bias corrected MLE)	0.527						
2001	Theta hat (MLE)	0.102					Theta star (bias corrected MLE)	0.122						
2002	nu hat (MLE)	15.1					nu star (bias corrected)	12.66						
2003	Adjusted Level of Significance (β)	0.029												
2004	Approximate Chi Square Value (12.66, α)	5.664					Adjusted Chi Square Value (12.66, β)	4.968						
2005	95% Gamma Approximate UCL	0.143					95% Gamma Adjusted UCL	0.163						
2006														
2007	**Estimates of Gamma Parameters using KM Estimates**													
2008	Mean (KM)	0.0633					SD (KM)	0.133						
2009	Variance (KM)	0.0176					SE of Mean (KM)	0.0403						
2010	k hat (KM)	0.228					k star (KM)	0.227						
2011	nu hat (KM)	5.475					nu star (KM)	5.44						

2012					theta hat (KM)	0.278					theta star (KM)	0.279			
2013					80% gamma percentile (KM)	0.0885					90% gamma percentile (KM)	0.191			
2014					95% gamma percentile (KM)	0.315					99% gamma percentile (KM)	0.651			
2015															
2016					**Gamma Kaplan-Meier (KM) Statistics**										
2017					Approximate Chi Square Value (5.44, α)	1.361					Adjusted Chi Square Value (5.44, β)	1.076			
2018					95% KM Approximate Gamma UCL	0.253					95% KM Adjusted Gamma UCL	0.32			
2019															
2020					**Lognormal GOF Test on Detected Observations Only**										
2021					Shapiro Wilk Test Statistic	0.907					**Shapiro Wilk GOF Test**				
2022					10% Shapiro Wilk Critical Value	0.869					Detected Data appear Lognormal at 10% Significance Level				
2023					Lilliefors Test Statistic	0.241					**Lilliefors GOF Test**				
2024					10% Lilliefors Critical Value	0.241					Detected Data Not Lognormal at 10% Significance Level				
2025					**Detected Data appear Approximate Lognormal at 10% Significance Level**										
2026															
2027					**Lognormal ROS Statistics Using Imputed Non-Detects**										
2028					Mean in Original Scale	0.0633					Mean in Log Scale	-3.853			
2029					SD in Original Scale	0.139					SD in Log Scale	1.418			
2030					95% t UCL (assumes normality of ROS data)	0.135					95% Percentile Bootstrap UCL	0.14			
2031					95% BCA Bootstrap UCL	0.181					95% Bootstrap t UCL	0.465			
2032					95% H-UCL (Log ROS)	0.285									
2033															
2034					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
2035					KM Mean (logged)	-3.852					KM Geo Mean	0.0212			
2036					KM SD (logged)	1.359					95% Critical H Value (KM-Log)	3.606			
2037					KM Standard Error of Mean (logged)	0.42					95% H-UCL (KM -Log)	0.235			
2038					KM SD (logged)	1.359					95% Critical H Value (KM-Log)	3.606			
2039					KM Standard Error of Mean (logged)	0.42									
2040															
2041					**DL/2 Statistics**										
2042					**DL/2 Normal**						**DL/2 Log-Transformed**				
2043					Mean in Original Scale	0.0633					Mean in Log Scale	-3.837			
2044					SD in Original Scale	0.138					SD in Log Scale	1.391			
2045					95% t UCL (Assumes normality)	0.135					95% H-Stat UCL	0.264			
2046					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
2047															
2048					**Nonparametric Distribution Free UCL Statistics**										
2049					**Detected Data appear Approximate Lognormal Distributed at 10% Significance Level**										
2050															
2051					**Suggested UCL to Use**										
2052					KM H-UCL	0.235									
2053															
2054					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**										
2055					**Please verify the data were collected from random locations.**										
2056					**If the data were collected using judgmental or other non-random methods,**										
2057					**then contact a statistician to correctly calculate UCLs.**										
2058															
2059					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
2060					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
2061					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
2062															
2063	**Perfluorooctane sulfonic acid (PFOS)_Addison Wetland Drain**														
2064															
2065					**General Statistics**										
2066					Total Number of Observations	16					Number of Distinct Observations	11			
2067					Number of Detects	12					Number of Non-Detects	4			
2068					Number of Distinct Detects	10					Number of Distinct Non-Detects	1			
2069					Minimum Detect	0.02					Minimum Non-Detect	0.01			
2070					Maximum Detect	1.1					Maximum Non-Detect	0.01			
2071					Variance Detects	0.124					Percent Non-Detects	25%			
2072					Mean Detects	0.276					SD Detects	0.351			
2073					Median Detects	0.11					CV Detects	1.274			
2074					Skewness Detects	1.518					Kurtosis Detects	1.585			
2075					Mean of Logged Detects	-2.184					SD of Logged Detects	1.492			
2076															
2077					**Normal GOF Test on Detects Only**										
2078					Shapiro Wilk Test Statistic	0.771					**Shapiro Wilk GOF Test**				
2079					1% Shapiro Wilk Critical Value	0.805					Detected Data Not Normal at 1% Significance Level				
2080					Lilliefors Test Statistic	0.274					**Lilliefors GOF Test**				
2081					1% Lilliefors Critical Value	0.281					Detected Data appear Normal at 1% Significance Level				
2082					**Detected Data appear Approximate Normal at 1% Significance Level**										
2083															
2084					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**										
2085					KM Mean	0.209					KM Standard Error of Mean	0.0818			
2086					90KM SD	0.313					95% KM (BCA) UCL	0.366			
2087					95% KM (t) UCL	0.353					95% KM (Percentile Bootstrap) UCL	0.353			
2088					95% KM (z) UCL	0.344					95% KM Bootstrap t UCL	0.443			

2089					90% KM Chebyshev UCL	0.455					95% KM Chebyshev UCL	0.566			
2090					97.5% KM Chebyshev UCL	0.72					99% KM Chebyshev UCL	1.023			
2091															
2092					**Gamma GOF Tests on Detected Observations Only**										
2093					A-D Test Statistic	0.521					**Anderson-Darling GOF Test**				
2094					5% A-D Critical Value	0.771					Detected data appear Gamma Distributed at 5% Significance Level				
2095					K-S Test Statistic	0.162					**Kolmogorov-Smirnov GOF**				
2096					5% K-S Critical Value	0.256					Detected data appear Gamma Distributed at 5% Significance Level				
2097					**Detected data appear Gamma Distributed at 5% Significance Level**										
2098															
2099					**Gamma Statistics on Detected Data Only**										
2100					k hat (MLE)	0.677					k star (bias corrected MLE)	0.564			
2101					Theta hat (MLE)	0.407					Theta star (bias corrected MLE)	0.489			
2102					nu hat (MLE)	16.26					nu star (bias corrected)	13.53			
2103					Mean (detects)	0.276									
2104															
2105					**Gamma ROS Statistics using Imputed Non-Detects**										
2106					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
2107					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
2108					For such situations, GROS method may yield incorrect values of UCLs and BTVs										
2109					This is especially true when the sample size is small.										
2110					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
2111					Minimum	0.01					Mean	0.209			
2112					Maximum	1.1					Median	0.04			
2113					SD	0.324					CV	1.546			
2114					k hat (MLE)	0.516					k star (bias corrected MLE)	0.461			
2115					Theta hat (MLE)	0.406					Theta star (bias corrected MLE)	0.454			
2116					nu hat (MLE)	16.5					nu star (bias corrected)	14.74			
2117					Adjusted Level of Significance (β)	0.0335									
2118					Approximate Chi Square Value (14.74, α)	7.082					Adjusted Chi Square Value (14.74, β)	6.486			
2119					95% Gamma Approximate UCL	0.436					95% Gamma Adjusted UCL	0.476			
2120															
2121					**Estimates of Gamma Parameters using KM Estimates**										
2122					Mean (KM)	0.209					SD (KM)	0.313			
2123					Variance (KM)	0.0982					SE of Mean (KM)	0.0818			
2124					k hat (KM)	0.447					k star (KM)	0.404			
2125					nu hat (KM)	14.29					nu star (KM)	12.94			
2126					theta hat (KM)	0.469					theta star (KM)	0.518			
2127					80% gamma percentile (KM)	0.338					90% gamma percentile (KM)	0.59			
2128					95% gamma percentile (KM)	0.867					99% gamma percentile (KM)	1.561			
2129															
2130					**Gamma Kaplan-Meier (KM) Statistics**										
2131					Approximate Chi Square Value (12.94, α)	5.855					Adjusted Chi Square Value (12.94, β)	5.321			
2132					95% KM Approximate Gamma UCL	0.463					95% KM Adjusted Gamma UCL	0.509			
2133															
2134					**Lognormal GOF Test on Detected Observations Only**										
2135					Shapiro Wilk Test Statistic	0.905					**Shapiro Wilk GOF Test**				
2136					10% Shapiro Wilk Critical Value	0.883					Detected Data appear Lognormal at 10% Significance Level				
2137					Lilliefors Test Statistic	0.149					**Lilliefors GOF Test**				
2138					10% Lilliefors Critical Value	0.223					Detected Data appear Lognormal at 10% Significance Level				
2139					**Detected Data appear Lognormal at 10% Significance Level**										
2140															
2141					**Lognormal ROS Statistics Using Imputed Non-Detects**										
2142					Mean in Original Scale	0.208					Mean in Log Scale	-3.094			
2143					SD in Original Scale	0.325					SD in Log Scale	2.1			
2144					95% t UCL (assumes normality of ROS data)	0.35					95% Percentile Bootstrap UCL	0.34			
2145					95% BCA Bootstrap UCL	0.38					95% Bootstrap t UCL	0.46			
2146					95% H-UCL (Log ROS)	5.133									
2147															
2148					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
2149					KM Mean (logged)	-2.789					KM Geo Mean	0.0615			
2150					KM SD (logged)	1.621					95% Critical H Value (KM-Log)	3.763			
2151					KM Standard Error of Mean (logged)	0.423					95% H-UCL (KM -Log)	1.106			
2152					KM SD (logged)	1.621					95% Critical H Value (KM-Log)	3.763			
2153					KM Standard Error of Mean (logged)	0.423									
2154															
2155					**DL/2 Statistics**										
2156					**DL/2 Normal**						**DL/2 Log-Transformed**				
2157					Mean in Original Scale	0.208					Mean in Log Scale	-2.963			
2158					SD in Original Scale	0.324					SD in Log Scale	1.89			
2159					95% t UCL (Assumes normality)	0.35					95% H-Stat UCL	2.466			
2160					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
2161															
2162					**Nonparametric Distribution Free UCL Statistics**										
2163					**Detected Data appear Approximate Normal Distributed at 1% Significance Level**										
2164															
2165					**Suggested UCL to Use**										

2166					95% KM (t) UCL	0.353								
2167														
2168					**The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.**									
2169					**Please verify the data were collected from random locations.**									
2170					**If the data were collected using judgmental or other non-random methods,**									
2171					**then contact a statistician to correctly calculate UCLs.**									
2172														
2173					When a data set follows an approximate distribution passing only one of the GOF tests,									
2174					it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL									
2175														
2176					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.									
2177					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.									
2178					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.									
2179														
2180														
2181	**Perfluorooctanoic acid (PFOA)_Addison Wetland**													
2182														
2183					**General Statistics**									
2184					Total Number of Observations	3					Number of Distinct Observations	3		
2185											Number of Missing Observations	0		
2186					Minimum	0.008					Mean	0.0147		
2187					Maximum	0.02					Median	0.016		
2188					SD	0.0061					Std. Error of Mean	0.00353		
2189					Coefficient of Variation	0.417					Skewness	-0.935		
2190														
2191					**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**									
2192					**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**									
2193					**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**									
2194					**The Chebyshev UCL often results in gross overestimates of the mean.**									
2195					**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**									
2196														
2197					**Normal GOF Test**									
2198					Shapiro Wilk Test Statistic	0.964					**Shapiro Wilk GOF Test**			
2199					1% Shapiro Wilk Critical Value	0.753					Data appear Normal at 1% Significance Level			
2200					Lilliefors Test Statistic	0.253					**Lilliefors GOF Test**			
2201					1% Lilliefors Critical Value	0.429					Data appear Normal at 1% Significance Level			
2202					**Data appear Normal at 1% Significance Level**									
2203					**Note GOF tests may be unreliable for small sample sizes**									
2204														
2205					**Assuming Normal Distribution**									
2206					**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**			
2207					95% Student's-t UCL	0.025					95% Adjusted-CLT UCL (Chen-1995)	0.0184		
2208											95% Modified-t UCL (Johnson-1978)	0.0246		
2209														
2210					**Gamma GOF Test**									
2211					A-D Test Statistic	0.338					**Anderson-Darling Gamma GOF Test**			
2212					5% A-D Critical Value	0.636					Detected data appear Gamma Distributed at 5% Significance Level			
2213					K-S Test Statistic	0.308					**Kolmogorov-Smirnov Gamma GOF Test**			
2214					5% K-S Critical Value	0.433					Detected data appear Gamma Distributed at 5% Significance Level			
2215					**Data Not Gamma Distributed at 5% Significance Level**									
2216														
2217					**Gamma Statistics**									
2218					k hat (MLE)	7.341					k star (bias corrected MLE)	N/A		
2219					Theta hat (MLE)	0.002					Theta star (bias corrected MLE)	N/A		
2220					nu hat (MLE)	44.04					nu star (bias corrected)	N/A		
2221					MLE Mean (bias corrected)	N/A					MLE Sd (bias corrected)	N/A		
2222											Approximate Chi Square Value (0.05)	N/A		
2223					Adjusted Level of Significance	N/A					Adjusted Chi Square Value	N/A		
2224														
2225					**Assuming Gamma Distribution**									
2226					95% Approximate Gamma UCL	N/A					95% Adjusted Gamma UCL	N/A		
2227														
2228					**Lognormal GOF Test**									
2229					Shapiro Wilk Test Statistic	0.919					**Shapiro Wilk Lognormal GOF Test**			
2230					10% Shapiro Wilk Critical Value	0.789					Data appear Lognormal at 10% Significance Level			
2231					Lilliefors Test Statistic	0.295					**Lilliefors Lognormal GOF Test**			
2232					10% Lilliefors Critical Value	0.389					Data appear Lognormal at 10% Significance Level			
2233					**Data appear Lognormal at 10% Significance Level**									
2234					**Note GOF tests may be unreliable for small sample sizes**									
2235														
2236					**Lognormal Statistics**									
2237					Minimum of Logged Data	-4.828					Mean of logged Data	-4.292		
2238					Maximum of Logged Data	-3.912					SD of logged Data	0.478		
2239														
2240					**Assuming Lognormal Distribution**									
2241					95% H-UCL	0.124					90% Chebyshev (MVUE) UCL	0.0266		
2242					95% Chebyshev (MVUE) UCL	0.032					97.5% Chebyshev (MVUE) UCL	0.0394		

2243					99% Chebyshev (MVUE) UCL	0.054									
2244															
2245					**Nonparametric Distribution Free UCL Statistics**										
2246					**Data appear to follow a Discernible Distribution**										
2247															
2248					**Nonparametric Distribution Free UCLs**										
2249					95% CLT UCL	0.020							95% BCA Bootstrap UCL	N/A	
2250					95% Standard Bootstrap UCL	N/A							95% Bootstrap-t UCL	N/A	
2251					95% Hall's Bootstrap UCL	N/A							95% Percentile Bootstrap UCL	N/A	
2252					90% Chebyshev(Mean, Sd) UCL	0.025							95% Chebyshev(Mean, Sd) UCL	0.03	
2253					97.5% Chebyshev(Mean, Sd) UCL	0.036							99% Chebyshev(Mean, Sd) UCL	0.0498	
2254															
2255					**Suggested UCL to Use**										
2256					95% Student's-t UCL	0.025									
2257					**Recommended UCL exceeds the maximum observation**										
2258															
2259					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
2260					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
2261					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
2262															
2263					**Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be**										
2264					**reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.**										
2265															
2266	**Perfluorooctanoic acid (PFOA)_Cheetham Wetlands**														
2267															
2268					**General Statistics**										
2269					Total Number of Observations	33							Number of Distinct Observations	10	
2270					Number of Detects	32							Number of Non-Detects	1	
2271					Number of Distinct Detects	9							Number of Distinct Non-Detects	1	
2272					Minimum Detect	0.002							Minimum Non-Detect	0.001	
2273					Maximum Detect	0.014							Maximum Non-Detect	0.001	
2274					Variance Detects	1.1790E-							Percent Non-Detects	3.03%	
2275					Mean Detects	0.0053							SD Detects	0.00343	
2276					Median Detects	0.0045							CV Detects	0.639	
2277					Skewness Detects	1.072							Kurtosis Detects	0.777	
2278					Mean of Logged Detects	-5.421							SD of Logged Detects	0.64	
2279															
2280					**Normal GOF Test on Detects Only**										
2281					Shapiro Wilk Test Statistic	0.849							**Shapiro Wilk GOF Test**		
2282					1% Shapiro Wilk Critical Value	0.904							Detected Data Not Normal at 1% Significance Level		
2283					Lilliefors Test Statistic	0.163							**Lilliefors GOF Test**		
2284					1% Lilliefors Critical Value	0.18							Detected Data appear Normal at 1% Significance Level		
2285					**Detected Data appear Approximate Normal at 1% Significance Level**										
2286															
2287					**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**										
2288					KM Mean	0.0052							KM Standard Error of Mean	6.0336E-4	
2289					90KM SD	0.0034							95% KM (BCA) UCL	0.0063	
2290					95% KM (t) UCL	0.0062							95% KM (Percentile Bootstrap) UCL	0.0063	
2291					95% KM (z) UCL	0.0062							95% KM Bootstrap t UCL	0.00642	
2292					90% KM Chebyshev UCL	0.0070							95% KM Chebyshev UCL	0.00787	
2293					97.5% KM Chebyshev UCL	0.0090							99% KM Chebyshev UCL	0.0112	
2294															
2295					**Gamma GOF Tests on Detected Observations Only**										
2296					A-D Test Statistic	1.126							**Anderson-Darling GOF Test**		
2297					5% A-D Critical Value	0.755							Detected Data Not Gamma Distributed at 5% Significance Level		
2298					K-S Test Statistic	0.163							**Kolmogorov-Smirnov GOF**		
2299					5% K-S Critical Value	0.157							Detected Data Not Gamma Distributed at 5% Significance Level		
2300					**Detected Data Not Gamma Distributed at 5% Significance Level**										
2301															
2302					**Gamma Statistics on Detected Data Only**										
2303					k hat (MLE)	2.724							k star (bias corrected MLE)	2.489	
2304					Theta hat (MLE)	0.0019							Theta star (bias corrected MLE)	0.00216	
2305					nu hat (MLE)	174.3							nu star (bias corrected)	159.3	
2306					Mean (detects)	0.0053									
2307															
2308					**Gamma ROS Statistics using Imputed Non-Detects**										
2309					GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
2310					GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)										
2311					For such situations, GROS method may yield incorrect values of UCLs and BTVs										
2312					This is especially true when the sample size is small.										
2313					For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
2314					Minimum	0.002							Mean	0.00552	
2315					Maximum	0.014							Median	0.005	
2316					SD	0.0034							CV	0.63	
2317					k hat (MLE)	2.71							k star (bias corrected MLE)	2.484	
2318					Theta hat (MLE)	0.0020							Theta star (bias corrected MLE)	0.00222	
2319					nu hat (MLE)	178.9							nu star (bias corrected)	163.9	

| | | |

| | | |

2474	**Detected Data appear Normal at 1% Significance Level**													
2475														
2476	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**													
2477	KM Mean					0.0064				KM Standard Error of Mean		2.7498E-4		
2478	90KM SD					0.0012				95% KM (BCA) UCL		0.00682		
2479	95% KM (t) UCL					0.0068				95% KM (Percentile Bootstrap) UCL		0.00684		
2480	95% KM (z) UCL					0.0068				95% KM Bootstrap t UCL		0.00696		
2481	90% KM Chebyshev UCL					0.0072				95% KM Chebyshev UCL		0.00762		
2482	97.5% KM Chebyshev UCL					0.0081				99% KM Chebyshev UCL		0.00915		
2483														
2484	**Gamma GOF Tests on Detected Observations Only**													
2485	A-D Test Statistic					0.823				**Anderson-Darling GOF Test**				
2486	5% A-D Critical Value					0.74				Detected Data Not Gamma Distributed at 5% Significance Level				
2487	K-S Test Statistic					0.212				**Kolmogorov-Smirnov GOF**				
2488	5% K-S Critical Value					0.198				Detected Data Not Gamma Distributed at 5% Significance Level				
2489	**Detected Data Not Gamma Distributed at 5% Significance Level**													
2490														
2491	**Gamma Statistics on Detected Data Only**													
2492	k hat (MLE)					24.34				k star (bias corrected MLE)		20.53		
2493	Theta hat (MLE)					2.6812E-				Theta star (bias corrected MLE)		3.1785E-4		
2494	nu hat (MLE)					925				nu star (bias corrected)		780.2		
2495	Mean (detects)					0.0065								
2496														
2497	**Gamma ROS Statistics using Imputed Non-Detects**													
2498	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs													
2499	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)													
2500	For such situations, GROS method may yield incorrect values of UCLs and BTVs													
2501	This is especially true when the sample size is small.													
2502	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates													
2503	Minimum					0.004				Mean		0.0085		
2504	Maximum					0.01				Median		0.01		
2505	SD					0.0019				CV		0.23		
2506	k hat (MLE)					16.46				k star (bias corrected MLE)		15.35		
2507	Theta hat (MLE)					5.1645E-				Theta star (bias corrected MLE)		5.5370E-4		
2508	nu hat (MLE)					1448				nu star (bias corrected)		1351		
2509	Adjusted Level of Significance (β)					0.044								
2510	Approximate Chi Square Value (N/A, α)					1267				Adjusted Chi Square Value (N/A, β)		1264		
2511	95% Gamma Approximate UCL					0.0090				95% Gamma Adjusted UCL		0.00909		
2512														
2513	**Estimates of Gamma Parameters using KM Estimates**													
2514	Mean (KM)					0.0064				SD (KM)		0.00122		
2515	Variance (KM)					1.4931E-				SE of Mean (KM)		2.7498E-4		
2516	k hat (KM)					27.58				k star (KM)		25.71		
2517	nu hat (KM)					2427				nu star (KM)		2263		
2518	theta hat (KM)					2.3268E-				theta star (KM)		2.4956E-4		
2519	80% gamma percentile (KM)					0.0074				90% gamma percentile (KM)		0.00808		
2520	95% gamma percentile (KM)					0.0086				99% gamma percentile (KM)		0.00972		
2521														
2522	**Gamma Kaplan-Meier (KM) Statistics**													
2523	Approximate Chi Square Value (N/A, α)					2153				Adjusted Chi Square Value (N/A, β)		2150		
2524	95% KM Approximate Gamma UCL					0.0067				95% KM Adjusted Gamma UCL		0.00675		
2525														
2526	**Lognormal GOF Test on Detected Observations Only**													
2527	Shapiro Wilk Test Statistic					0.927				**Shapiro Wilk GOF Test**				
2528	10% Shapiro Wilk Critical Value					0.917				Detected Data appear Lognormal at 10% Significance Level				
2529	Lilliefors Test Statistic					0.223				**Lilliefors GOF Test**				
2530	10% Lilliefors Critical Value					0.18				Detected Data Not Lognormal at 10% Significance Level				
2531	**Detected Data appear Approximate Lognormal at 10% Significance Level**													
2532														
2533	**Lognormal ROS Statistics Using Imputed Non-Detects**													
2534	Mean in Original Scale					0.0064				Mean in Log Scale		-5.067		
2535	SD in Original Scale					0.0012				SD in Log Scale		0.189		
2536	95% t UCL (assumes normality of ROS data)					0.0067				95% Percentile Bootstrap UCL		0.00673		
2537	95% BCA Bootstrap UCL					0.0067				95% Bootstrap t UCL		0.00675		
2538	95% H-UCL (Log ROS)					0.0067								
2539														
2540	**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**													
2541	KM Mean (logged)					-5.067				KM Geo Mean		0.0063		
2542	KM SD (logged)					0.189				95% Critical H Value (KM-Log)		1.696		
2543	KM Standard Error of Mean (logged)					0.043				95% H-UCL (KM -Log)		0.00674		
2544	KM SD (logged)					0.189				95% Critical H Value (KM-Log)		1.696		
2545	KM Standard Error of Mean (logged)					0.043								
2546														
2547	**DL/2 Statistics**													
2548	**DL/2 Normal**									**DL/2 Log-Transformed**				
2549	Mean in Original Scale					0.0056				Mean in Log Scale		-5.192		
2550	SD in Original Scale					0.0011				SD in Log Scale		0.183		

2551					95% t UCL (Assumes normality)	0.0059					95% H-Stat UCL	0.00593			
2552	**DL/2 is not a recommended method, provided for comparisons and historical reasons**														
2553															
2554	**Nonparametric Distribution Free UCL Statistics**														
2555	**Detected Data appear Normal Distributed at 1% Significance Level**														
2556															
2557	**Suggested UCL to Use**														
2558					95% KM (t) UCL	0.0068									
2559															
2560	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.														
2561	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.														
2562	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.														
2563															
2564	**Perfluorooctanoic acid (PFOA)_Skeleton Creek**														
2565															
2566	**General Statistics**														
2567					Total Number of Observations	84					Number of Distinct Observations	18			
2568					Number of Detects	60					Number of Non-Detects	24			
2569					Number of Distinct Detects	17					Number of Distinct Non-Detects	2			
2570					Minimum Detect	0.002					Minimum Non-Detect	0.001			
2571					Maximum Detect	0.03					Maximum Non-Detect	0.01			
2572					Variance Detects	4.7237E-					Percent Non-Detects	28.57%			
2573					Mean Detects	0.011					SD Detects	0.00687			
2574					Median Detects	0.01					CV Detects	0.588			
2575					Skewness Detects	1.296					Kurtosis Detects	1.337			
2576					Mean of Logged Detects	-4.611					SD of Logged Detects	0.587			
2577															
2578	**Normal GOF Test on Detects Only**														
2579					Shapiro Wilk Test Statistic	0.839					**Normal GOF Test on Detected Observations Only**				
2580					1% Shapiro Wilk P Value	1.3645E-					Detected Data Not Normal at 1% Significance Level				
2581					Lilliefors Test Statistic	0.256					**Lilliefors GOF Test**				
2582					1% Lilliefors Critical Value	0.132					Detected Data Not Normal at 1% Significance Level				
2583	**Detected Data Not Normal at 1% Significance Level**														
2584															
2585	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**														
2586					KM Mean	0.0099					KM Standard Error of Mean	7.4153E-4			
2587					90KM SD	0.0065					95% KM (BCA) UCL	0.0112			
2588					95% KM (t) UCL	0.011					95% KM (Percentile Bootstrap) UCL	0.0112			
2589					95% KM (z) UCL	0.011					95% KM Bootstrap t UCL	0.0112			
2590					90% KM Chebyshev UCL	0.012					95% KM Chebyshev UCL	0.0132			
2591					97.5% KM Chebyshev UCL	0.014					99% KM Chebyshev UCL	0.0173			
2592															
2593	**Gamma GOF Tests on Detected Observations Only**														
2594					A-D Test Statistic	1.628					**Anderson-Darling GOF Test**				
2595					5% A-D Critical Value	0.757					Detected Data Not Gamma Distributed at 5% Significance Level				
2596					K-S Test Statistic	0.185					**Kolmogorov-Smirnov GOF**				
2597					5% K-S Critical Value	0.115					Detected Data Not Gamma Distributed at 5% Significance Level				
2598	**Detected Data Not Gamma Distributed at 5% Significance Level**														
2599															
2600	**Gamma Statistics on Detected Data Only**														
2601					k hat (MLE)	3.255					k star (bias corrected MLE)	3.104			
2602					Theta hat (MLE)	0.0035					Theta star (bias corrected MLE)	0.00376			
2603					nu hat (MLE)	390.6					nu star (bias corrected)	372.4			
2604					Mean (detects)	0.011									
2605															
2606	**Gamma ROS Statistics using Imputed Non-Detects**														
2607	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs														
2608	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)														
2609	For such situations, GROS method may yield incorrect values of UCLs and BTVs														
2610	This is especially true when the sample size is small.														
2611	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates														
2612					Minimum	0.002					Mean	0.0112			
2613					Maximum	0.03					Median	0.01			
2614					SD	0.0058					CV	0.522			
2615					k hat (MLE)	4.408					k star (bias corrected MLE)	4.259			
2616					Theta hat (MLE)	0.0025					Theta star (bias corrected MLE)	0.00263			
2617					nu hat (MLE)	740.6					nu star (bias corrected)	715.5			
2618					Adjusted Level of Significance (β)	0.047									
2619					Approximate Chi Square Value (715.48, α)	654.4					Adjusted Chi Square Value (715.48, β)	653.4			
2620					95% Gamma Approximate UCL	0.012					95% Gamma Adjusted UCL	0.0123			
2621															
2622	**Estimates of Gamma Parameters using KM Estimates**														
2623					Mean (KM)	0.0099					SD (KM)	0.00652			
2624					Variance (KM)	4.2558E-					SE of Mean (KM)	7.4153E-4			
2625					k hat (KM)	2.315					k star (KM)	2.24			
2626					nu hat (KM)	388.9					nu star (KM)	376.3			
2627					theta hat (KM)	0.0042					theta star (KM)	0.00443			

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2782	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.														
2783	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.														
2784															
2785	**Perfluorooctanoic acid (PFOA)_Ashcroft Avenue Ponds**														
2786															
2787	**General Statistics**														
2788					Total Number of Observations	18					Number of Distinct Observations	9			
2789					Number of Detects	12					Number of Non-Detects	6			
2790					Number of Distinct Detects	9					Number of Distinct Non-Detects	1			
2791					Minimum Detect	0.005					Minimum Non-Detect	0.01			
2792					Maximum Detect	0.28					Maximum Non-Detect	0.01			
2793					Variance Detects	0.0059					Percent Non-Detects	33.33%			
2794					Mean Detects	0.0425					SD Detects	0.0768			
2795					Median Detects	0.015					CV Detects	1.808			
2796					Skewness Detects	3.157					Kurtosis Detects	10.38			
2797					Mean of Logged Detects	-3.943					SD of Logged Detects	1.147			
2798															
2799	**Normal GOF Test on Detects Only**														
2800					Shapiro Wilk Test Statistic	0.512					**Shapiro Wilk GOF Test**				
2801					1% Shapiro Wilk Critical Value	0.805					Detected Data Not Normal at 1% Significance Level				
2802					Lilliefors Test Statistic	0.327					**Lilliefors GOF Test**				
2803					1% Lilliefors Critical Value	0.281					Detected Data Not Normal at 1% Significance Level				
2804	**Detected Data Not Normal at 1% Significance Level**														
2805															
2806	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**														
2807					KM Mean	0.0306					KM Standard Error of Mean	0.0154			
2808					90KM SD	0.0624					95% KM (BCA) UCL	0.0584			
2809					95% KM (t) UCL	0.0573					95% KM (Percentile Bootstrap) UCL	0.0584			
2810					95% KM (z) UCL	0.0558					95% KM Bootstrap t UCL	0.14			
2811					90% KM Chebyshev UCL	0.0767					95% KM Chebyshev UCL	0.0975			
2812					97.5% KM Chebyshev UCL	0.127					99% KM Chebyshev UCL	0.183			
2813															
2814	**Gamma GOF Tests on Detected Observations Only**														
2815					A-D Test Statistic	1.067					**Anderson-Darling GOF Test**				
2816					5% A-D Critical Value	0.765					Detected Data Not Gamma Distributed at 5% Significance Level				
2817					K-S Test Statistic	0.239					**Kolmogorov-Smirnov GOF**				
2818					5% K-S Critical Value	0.255					Detected data appear Gamma Distributed at 5% Significance Level				
2819	**Detected data follow Appr. Gamma Distribution at 5% Significance Level**														
2820															
2821	**Gamma Statistics on Detected Data Only**														
2822					k hat (MLE)	0.761					k star (bias corrected MLE)	0.626			
2823					Theta hat (MLE)	0.0558					Theta star (bias corrected MLE)	0.0678			
2824					nu hat (MLE)	18.27					nu star (bias corrected)	15.04			
2825					Mean (detects)	0.0425									
2826															
2827	**Gamma ROS Statistics using Imputed Non-Detects**														
2828	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs														
2829	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)														
2830	For such situations, GROS method may yield incorrect values of UCLs and BTVs														
2831	This is especially true when the sample size is small.														
2832	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates														
2833					Minimum	0.005					Mean	0.0317			
2834					Maximum	0.28					Median	0.01			
2835					SD	0.0638					CV	2.015			
2836					k hat (MLE)	0.83					k star (bias corrected MLE)	0.729			
2837					Theta hat (MLE)	0.0387					Theta star (bias corrected MLE)	0.0434			
2838					nu hat (MLE)	29.89					nu star (bias corrected)	26.24			
2839					Adjusted Level of Significance (β)	0.0357									
2840					Approximate Chi Square Value (26.24, α)	15.57					Adjusted Chi Square Value (26.24, β)	14.78			
2841					95% Gamma Approximate UCL	0.0534					95% Gamma Adjusted UCL	0.0562			
2842															
2843	**Estimates of Gamma Parameters using KM Estimates**														
2844					Mean (KM)	0.0306					SD (KM)	0.0624			
2845					Variance (KM)	0.0038					SE of Mean (KM)	0.0154			
2846					k hat (KM)	0.24					k star (KM)	0.237			
2847					nu hat (KM)	8.629					nu star (KM)	8.525			
2848					theta hat (KM)	0.127					theta star (KM)	0.129			
2849					80% gamma percentile (KM)	0.0435					90% gamma percentile (KM)	0.092			
2850					95% gamma percentile (KM)	0.15					99% gamma percentile (KM)	0.307			
2851															
2852	**Gamma Kaplan-Meier (KM) Statistics**														
2853					Approximate Chi Square Value (8.52, α)	3.042					Adjusted Chi Square Value (8.52, β)	2.736			
2854					95% KM Approximate Gamma UCL	0.0856					95% KM Adjusted Gamma UCL	0.0952			
2855															
2856	**Lognormal GOF Test on Detected Observations Only**														
2857					Shapiro Wilk Test Statistic	0.899					**Shapiro Wilk GOF Test**				
2858					10% Shapiro Wilk Critical Value	0.883					Detected Data appear Lognormal at 10% Significance Level				

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Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	9.303	k star (bias corrected MLE)	7.208
Theta hat (MLE)	0.0010	Theta star (bias corrected MLE)	0.00138
nu hat (MLE)	241.9	nu star (bias corrected)	187.4
Mean (detects)	0.0099		
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)			
For such situations, GROS method may yield incorrect values of UCLs and BTVs			
This is especially true when the sample size is small.			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.004	Mean	0.00994
Maximum	0.017	Median	0.01
SD	0.0029	CV	0.293
k hat (MLE)	11.41	k star (bias corrected MLE)	9.314
Theta hat (MLE)	8.7079E-	Theta star (bias corrected MLE)	0.00107
nu hat (MLE)	365.2	nu star (bias corrected)	298
Adjusted Level of Significance (β)	0.0335		
Approximate Chi Square Value (298.05, α)	259.1	Adjusted Chi Square Value (298.05, β)	254.9
95% Gamma Approximate UCL	0.0114	95% Gamma Adjusted UCL	0.0116
Estimates of Gamma Parameters using KM Estimates			
Mean (KM)	0.0094	SD (KM)	0.00313
Variance (KM)	9.7673E-	SE of Mean (KM)	8.5890E-4
k hat (KM)	9.071	k star (KM)	7.411
nu hat (KM)	290.3	nu star (KM)	237.2
theta hat (KM)	0.0010	theta star (KM)	0.00127
80% gamma percentile (KM)	0.012	90% gamma percentile (KM)	0.014
95% gamma percentile (KM)	0.015	99% gamma percentile (KM)	0.0193
Gamma Kaplan-Meier (KM) Statistics			
Approximate Chi Square Value (237.17, α)	202.5	Adjusted Chi Square Value (237.17, β)	198.9
95% KM Approximate Gamma UCL	0.011	95% KM Adjusted Gamma UCL	0.0112
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.905	**Shapiro Wilk GOF Test**	
10% Shapiro Wilk Critical Value	0.889	Detected Data appear Lognormal at 10% Significance Level	
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**	
10% Lilliefors Critical Value	0.215	Detected Data Not Lognormal at 10% Significance Level	
Detected Data appear Approximate Lognormal at 10% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0093	Mean in Log Scale	-4.732
SD in Original Scale	0.0032	SD in Log Scale	0.355
95% t UCL (assumes normality of ROS data)	0.0107	95% Percentile Bootstrap UCL	0.0106
95% BCA Bootstrap UCL	0.0107	95% Bootstrap t UCL	0.011
95% H-UCL (Log ROS)	0.0112		
Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution			
KM Mean (logged)	-4.726	KM Geo Mean	0.00886
KM SD (logged)	0.36	95% Critical H Value (KM-Log)	1.919
KM Standard Error of Mean (logged)	0.104	95% H-UCL (KM -Log)	0.0113
KM SD (logged)	0.36	95% Critical H Value (KM-Log)	1.919
KM Standard Error of Mean (logged)	0.104		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.009	Mean in Log Scale	-4.786
SD in Original Scale	0.0035	SD in Log Scale	0.41
95% t UCL (Assumes normality)	0.0105	95% H-Stat UCL	0.0112
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Normal Distributed at 1% Significance Level			
Suggested UCL to Use			
95% KM (t) UCL	0.0105		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			
Perfluorooctanoic acid (PFOA)_Kidbroke Road Drain			

3013	**General Statistics**														
3014					Total Number of Observations	5					Number of Distinct Observations	3			
3015					Number of Detects	3					Number of Non-Detects	2			
3016					Number of Distinct Detects	3					Number of Distinct Non-Detects	1			
3017					Minimum Detect	0.005					Minimum Non-Detect	0.01			
3018					Maximum Detect	0.03					Maximum Non-Detect	0.01			
3019					Variance Detects	1.7500E-					Percent Non-Detects	40%			
3020					Mean Detects	0.015					SD Detects	0.0132			
3021					Median Detects	0.01					CV Detects	0.882			
3022					Skewness Detects	1.458					Kurtosis Detects	N/A			
3023					Mean of Logged Detects	-4.47					SD of Logged Detects	0.903			
3024															
3025	**Warning: Data set has only 3 Detected Values.**														
3026	**This is not enough to compute meaningful or reliable statistics and estimates.**														
3027															
3028															
3029	**Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,**														
3030	**refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,**														
3031	**but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).**														
3032	**The Chebyshev UCL often results in gross overestimates of the mean.**														
3033	**Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.**														
3034															
3035	**Normal GOF Test on Detects Only**														
3036					Shapiro Wilk Test Statistic	0.893					**Shapiro Wilk GOF Test**				
3037					1% Shapiro Wilk Critical Value	0.753					Detected Data appear Normal at 1% Significance Level				
3038					Lilliefors Test Statistic	0.314					**Lilliefors GOF Test**				
3039					1% Lilliefors Critical Value	0.429					Detected Data appear Normal at 1% Significance Level				
3040	**Detected Data appear Normal at 1% Significance Level**														
3041	**Note GOF tests may be unreliable for small sample sizes**														
3042															
3043	**Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs**														
3044					KM Mean	0.011					KM Standard Error of Mean	0.00531			
3045					90KM SD	0.0097					95% KM (BCA) UCL	N/A			
3046					95% KM (t) UCL	0.0223					95% KM (Percentile Bootstrap) UCL	N/A			
3047					95% KM (z) UCL	0.0197					95% KM Bootstrap t UCL	N/A			
3048					90% KM Chebyshev UCL	0.0269					95% KM Chebyshev UCL	0.0341			
3049					97.5% KM Chebyshev UCL	0.0442					99% KM Chebyshev UCL	0.0638			
3050															
3051	**Gamma GOF Tests on Detected Observations Only**														
3052					A-D Test Statistic	0.303					**Anderson-Darling GOF Test**				
3053					5% A-D Critical Value	0.637					Detected data appear Gamma Distributed at 5% Significance Level				
3054					K-S Test Statistic	0.282					**Kolmogorov-Smirnov GOF**				
3055					5% K-S Critical Value	0.435					Detected data appear Gamma Distributed at 5% Significance Level				
3056	**Detected Data Not Gamma Distributed at 5% Significance Level**														
3057															
3058	**Gamma Statistics on Detected Data Only**														
3059					k hat (MLE)	2					k star (bias corrected MLE)	N/A			
3060					Theta hat (MLE)	0.0075					Theta star (bias corrected MLE)	N/A			
3061					nu hat (MLE)	12					nu star (bias corrected)	N/A			
3062					Mean (detects)	0.015									
3063															
3064	**Gamma ROS Statistics using Imputed Non-Detects**														
3065	GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs														
3066	GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)														
3067	For such situations, GROS method may yield incorrect values of UCLs and BTVs														
3068	This is especially true when the sample size is small.														
3069	For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates														
3070					Minimum	0.005					Mean	0.013			
3071					Maximum	0.03					Median	0.01			
3072					SD	0.0097					CV	0.75			
3073					k hat (MLE)	2.914					k star (bias corrected MLE)	1.299			
3074					Theta hat (MLE)	0.0044					Theta star (bias corrected MLE)	0.01			
3075					nu hat (MLE)	29.14					nu star (bias corrected)	12.99			
3076					Adjusted Level of Significance (β)	0.0086									
3077					Approximate Chi Square Value (12.99, α)	5.886					Adjusted Chi Square Value (12.99, β)	3.978			
3078					95% Gamma Approximate UCL	0.0287					95% Gamma Adjusted UCL	N/A			
3079															
3080	**Estimates of Gamma Parameters using KM Estimates**														
3081					Mean (KM)	0.011					SD (KM)	0.0097			
3082					Variance (KM)	9.4000E-					SE of Mean (KM)	0.00531			
3083					k hat (KM)	1.287					k star (KM)	0.648			
3084					nu hat (KM)	12.87					nu star (KM)	6.482			
3085					theta hat (KM)	0.0085					theta star (KM)	0.017			
3086					80% gamma percentile (KM)	0.0187					90% gamma percentile (KM)	0.0281			
3087					95% gamma percentile (KM)	0.0385					99% gamma percentile (KM)	0.0634			
3088															
3089	**Gamma Kaplan-Meier (KM) Statistics**														

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3167					nu hat (MLE)	98.65					nu star (bias corrected)	N/A			
3168					Mean (detects)	0.0025									
3169															
3170					**Estimates of Gamma Parameters using KM Estimates**										
3171					Mean (KM)	0.0025					SD (KM)	5.0000E-4			
3172					Variance (KM)	2.5000E-					SE of Mean (KM)	5.0000E-4			
3173					k hat (KM)	25					k star (KM)	18.81			
3174					nu hat (KM)	600					nu star (KM)	451.3			
3175					theta hat (KM)	1.0000E-					theta star (KM)	1.3294E-4			
3176					80% gamma percentile (KM)	0.0029					90% gamma percentile (KM)	0.00326			
3177					95% gamma percentile (KM)	0.0035					99% gamma percentile (KM)	0.00403			
3178															
3179					**Gamma Kaplan-Meier (KM) Statistics**										
3180											Adjusted Level of Significance (β)	0.029			
3181					Approximate Chi Square Value (451.33, α)	403.1					Adjusted Chi Square Value (451.33, β)	396.1			
3182					95% KM Approximate Gamma UCL	0.0028					95% KM Adjusted Gamma UCL	0.00285			
3183															
3184					**Lognormal GOF Test on Detected Observations Only**										
3185					**Not Enough Data to Perform GOF Test**										
3186															
3187					**Lognormal ROS Statistics Using Imputed Non-Detects**										
3188					Mean in Original Scale	0.0026					Mean in Log Scale	-6.012			
3189					SD in Original Scale	9.5054E-					SD in Log Scale	0.364			
3190					95% t UCL (assumes normality of ROS data)	0.0030					95% Percentile Bootstrap UCL	0.00307			
3191					95% BCA Bootstrap UCL	0.0031					95% Bootstrap t UCL	0.00318			
3192					95% H-UCL (Log ROS)	0.0032									
3193															
3194					**Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution**										
3195					KM Mean (logged)	-6.012					KM Geo Mean	0.00245			
3196					KM SD (logged)	0.203					95% Critical H Value (KM-Log)	1.845			
3197					KM Standard Error of Mean (logged)	0.203					95% H-UCL (KM -Log)	0.0028			
3198					KM SD (logged)	0.203					95% Critical H Value (KM-Log)	1.845			
3199					KM Standard Error of Mean (logged)	0.203									
3200					**Note: KM UCLs may be biased low with this dataset. Other substitution method recommended**										
3201															
3202					**DL/2 Statistics**										
3203					**DL/2 Normal**						**DL/2 Log-Transformed**				
3204					Mean in Original Scale	0.0045					Mean in Log Scale	-5.417			
3205					SD in Original Scale	9.9620E-					SD in Log Scale	0.291			
3206					95% t UCL (Assumes normality)	0.0051					95% H-Stat UCL	0.00548			
3207					**DL/2 is not a recommended method, provided for comparisons and historical reasons**										
3208															
3209					**Nonparametric Distribution Free UCL Statistics**										
3210					**Data do not follow a Discernible Distribution**										
3211															
3212					**Suggested UCL to Use**										
3213					95% KM (t) UCL	0.0034									
3214					**Warning: Recommended UCL exceeds the maximum observation**										
3215															
3216					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.										
3217					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.										
3218					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.										
3219															
3220	**Perfluorooctanoic acid (PFOA)_Addison Wetland Drain**														
3221															
3222					**General Statistics**										
3223					Total Number of Observations	16					Number of Distinct Observations	2			
3224					Number of Detects	2					Number of Non-Detects	14			
3225					Number of Distinct Detects	1					Number of Distinct Non-Detects	1			
3226															
3227					**Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!**										
3228					**It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).**										
3229															
3230					**The data set for variable Perfluorooctanoic acid (PFOA)_Addison Wetland Drain was not processed!**										
3231															
3232															

Appendix C Selection of receptors of concern

Table C1 Accumulated Data, All Species and Sources

Table C2 Bird and Mammal Species Screening

Appendix C Ecological Database Search Results
Table C1 Accumulated Data, All Species and Sources

			Ecologist Reports									Databases				
			Aurecon (2022) Desktop				Aurecon (2022) Field					NatureKit	FFG Act	EPBC Act		
Group	Common Name	Scientific Name	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	Elgin (2025)		Status	Status	Migratory	Occurrence
Amphibian	Common Froglet	*Crinia signifera*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Amphibian	Golden Bell Frog	*Litoria raniformis*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Amphibian	Green and Golden Frog	*Litoria raniformis*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Amphibian	Growling Grass Frog	*Litoria raniformis*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	Sighting	Vulnerable	Vulnerable	-	Species or species habitat known to occur within area
Amphibian	Southern Bell Frog	*Litoria raniformis*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Amphibian	Warty Swamp Frog	*Litoria raniformis*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Aquatic Flora	Bladderwort	*Utricularia sp.*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Flora	Common Reed	*Phragmites sp.*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Flora	Common water-plantain	*Alisma plantago-aquatica*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Flora	Curly-Leaf Pondweed	*Potamogeton crispus*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Flora	Dwarf Brooklime	*Gratiola pumilo*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Aquatic Flora	Eelgrass	*Heterozostera tasmanica*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Aquatic Flora	Filamentous Algae	-	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Flora	Grey Mangrove	*Avicennia marina subsp. australasica*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Aquatic Flora	Gutweed	*Ulva Intestinalis*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Flora	Red Algae	-	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Flora	Sea Tassel	*Ruppia megacarpa*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Flora	Shore Spleenwort	*Asplenium decurrens*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Aquatic Flora	Water Milfoil	*Myriophyllum sp.*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Flora	Sea Lettuce	*Ulva lactuca*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Aquatic Flora	Seagrass	*Tyhpa spp.*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Aquatic Flora	Slender Knotweed	*Persicaria decipiens*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Amphipod	*Order Amphipoda*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Invertebrate	Brine Shrimp	*Artemia sp.*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Common Yabby	*Cherax destructor*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Invertebrate	Damselfly larvae	*Order Odonata*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Invertebrate	Dragonfly Larvae	*Order Odonata*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Invertebrate	Estuarine Sea Spider	*Amarinus laevis*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Invertebrate	European Shore Crab	*Carcinus maenas*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Freshwater Shrimp	*Paratya australiensis*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Invertebrate	Glass Shrimp	*Macrobrachium intermedium*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Juvenile Crabs	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Aquatic Invertebrate	Pond Snails	*Gastropoda*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Water Boatman	*Corixidae*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Aquatic Invertebrate	Sand Shrimp	*Crangon septemspinosa*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	Southern Calmari	*Sepioteuthis australis*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Aquatic Invertebrate	European Green Crab	*Carcinus maenas*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Bird	Australian pelican	*Pelecanus conspicillatus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Australian White Ibis	*Botaurus poiciloptilus*	Y	Y	Y	Y	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Black Shouldered Kite	*Elanus axillaris*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Black Swan	*Threskiornis moluccus*	-	-	-	-	Y	Y	Y	Y	Elgin (2025) Observed	-	-	-	-	-
Bird	Antipodean Albatross	*Diomedea antipodensis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Bird	Bar-tailed Godwit	*Limosa lapponica*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable	Endangered	Migratory Wetlands Species	Species or species habitat known to occur within area
Bird	Chestnut Teal	*Anas castanea*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Common Starling	*Sturnus vulgaris*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Crested Pidgeon	*Ocyphaps lophotes*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Dusky moorhen	*Gallinula tenebrosa*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Eurasian Coot	*Fulica atra*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Bird	Flesh-footed Shearwater	*Ardenna carneipes*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bird	Great Egret	*Ardea alba*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Grebe	*Podicipedidae*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	House Sparrow	*Passer domesticus*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Indian Myna	*Acridotheres tristis*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Little Black Cormorant	*Phalacrocorax sulcirostris*	-	-	-	-	X	X	X	X	Elgin (2025) Observed)	-	-	-	-	-
Bird	Little Cormorant	*Microcarbo niger*	-	-	-	-	Y	Y	Y	Y	Elgin (2025) Observed)	-	-	-	-	-
Bird	Little Curlew	*Numenius minutus*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bird	Little Pied Cormorant	*Microcarbo melanoleucos*	-	-	-	-	X	X	X	X	Elgin (2025) Observed)	-	-	-	-	-
Bird	Mandarin Duck	*Aix galericulata*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Masked Lapwing	*Vanellus miles*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Black-browed Albatross	*Thalassarche melanophris*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Pacific Black Duck	*Anas superciliosa*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Pied Stilt	*Himantopus leucocephalus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Black-tailed Godwit	*Limosa limosa*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Endangered	Migratory Wetlands Species	Roosting known to occur within area
Bird	Purple Swamphen	*Porphyrio porphyrio*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Royal Spoonbill	*Platalea regia*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Broad-billed Sandpiper	*Limicola falcinellus*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Sandpiper	*Actitis sp.*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Buller's Albatross, Pacific Albatross	*Thalassarche bulleri*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Silver Gull	*Chroicocephalus novaehollandiae*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Bird	Campbell Albatross, Campbell Black-browed Albatross	*Thalassarche impavida*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Common Noddy	*Anous stolidus*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Marine Birds	-
Bird	Common Sandpiper	*Actitis hypoleucos*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		Migratory Wetlands Species	-
Bird	Curlew Sandpiper	*Calidris ferruginea*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Critically Endangered	Migratory Wetlands Species	Species or species habitat known to occur within area
Bird	Tern	*Sternidae*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Bird	Double-banded Plover	*Charadrius bicinctus*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	White-faced Heron	*Egretta novaehollandiae*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Mammal	Dusky Dolphin	*Lagenorhynchus obscurus*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Marine Species	-
Bird	Plains-wanderer	*Pedionomus torquatus*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Critically Endangered	-	Species or species habitat likely to occur within area
Bird	Australian Painted Snipe	*Rostratula australis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat likely to occur within area
Bird	Fork-tailed Swift	*Apus pacificus*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Marine Birds	-
Bird	Great Knot	*Calidris tenuirostris*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Vulnerable	Migratory Wetlands Species	Roosting known to occur within area
Bird	Gang-gang Cockatoo	*Callocephalon fimbriatum*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat likely to occur within area
Bird	Gould's Petrel	*Pterodroma leucoptera leucoptera*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Reptile	Green Turtle	*Chelonia mydas*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Species	Species or species habitat may to occur within area
Bird	Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	*Limosa lapponica baueri*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat known to occur within area
Bird	South-eastern Hooded Robin, Hooded Robin (south-eastern)	*Melanodryas cucullata cucullata*	-	-	-	-	-	-	-	-	-	-	-	Endangered	-	-
Shark	Grey Nurse Shark	*Carcharias taurus*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Marine Species	-
Bird	Australian Fairy Tern	*Sternula nereis nereis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area

Appendix C Ecological Database Search Results
Table C1 Accumulated Data, All Species and Sources

			Ecologist Reports									Databases				
			Aurecon (2022) Desktop				Aurecon (2022) Field					NatureKit	FFG Act	EPBC Act		
Group	Common Name	Scientific Name	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	Elgin (2025)		Status	Status	Migratory	Occurrence
Bird	Grey-tailed Tattler	*Tringa brevipes*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered	-	Migratory Wetlands Species	-
Mammal	Humpback Whale	*Megaptera novaeangliae*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Species	Species or species habitat may to occur within area
Bird	Indian Yellow-nosed Albatross	*Thalassarche carteri*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat likely to occur within area
Bird	Brown Treecreeper (south-eastern)	*Climacteris picumnus victoriae*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Reptile	Leatherback Turtle, Leathery Turtle, Luth	*Dermochelys coriacea*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Species	Species or species habitat known to occur within area
Bird	Little Tern	*Sternula albifrons*	-	-	-	-	X	X	X	X	Elgin (2025) Desktop	Sighting	Critically Endangered	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Diamond Firetail	*Stagonopleura guttata*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Reptile	Loggerhead Turtle	*Caretta caretta*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Species	Species or species habitat known to occur within area
Bird	Eastern Hooded Plover	-	-	-	-	-	X	X	X	X	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Bird	Fairy Prion (southern)	*Pachyptila turtur subantarctica*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Bird	Long-toed Stint	*Calidris subminuta*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Grey Falcon	*Falco hypaleucos*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Bird	Northern Giant Petrel	*Macronectes halli*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Northern Royal Albatross	*Diomedea sanfordi*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Bird	Osprey	*Pandion haliaetus*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Northern Buller's Albatross, Pacific Albatross	*Thalassarche bulleri platei*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat may to occur within area
Bird	Pacific Golden Plover	*Pluvialis fulva*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		Migratory Wetlands Species	-
Bird	Painted Honeyeater	*Grantiella picta*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Bird	Southern Whiteface	*Aphelocephala leucopsis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Bird	Blue-winged Parrot	*Neophema chrysostoma*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	-	Vulnerable	-	Species or species habitat known to occur within area
Bird	Latham's Snipe	*Gallinago hardwickii*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	Sighting	-	Vulnerable	-	Species or species habitat known to occur within area
Bird	Pectoral Sandpiper	*Calidris melanotos*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Black Falcon	*Falco subniger*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered		-	-
Bird	Plumed Egret	*Ardea intermedia plumifera*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered	-	-	-
Bird	Pin-tailed Snipe	*Gallinago stenura*	X	Y	Y	X	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Eastern Curlew	*Numenius madagascariensis*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Critically Endangered	-	Species or species habitat known to occur within area
Bird	Orange-bellied Parrot	*Neophema chrysogaster*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Critically Endangered	-	Species or species habitat known to occur within area
Bird	Regent Honeyeater	*Anthochaera phrygia*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Critically Endangered	-	Foraging, feeding or related behaviour likely to occur within area
Shark	Porbeagle, Mackerel Shark	*Lamna nasus*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Marine Species	-
Bird	Swift Parrot	*Lathamus discolor*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Critically Endangered	-	Species or species habitat likely to occur within area
Bird	Australasian Bittern	*Botaurus poiciloptilus*	Y	Y	Y	Y	Y	Y	Y	Y	Elgin (2025) Desktop	Sighting	Critically Endangered	Endangered	-	Species or species habitat known to occur within area
Mammal	Pygmy Right Whale	*Caperea marginata*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Marine Species	-
Bird	Red-necked Stint	*Calidris ruficollis / Calidris minuta*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Fairy Tern	*Sternula nereis*	X	Y	Y	X	-	-	-	-	-	Sighting	Critically Endangered	Vulnerable	-	-
Bird	Ruddy Turnstone	*Arenaria interpres*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Endangered	Vulnerable	Migratory Wetlands Species	Roosting known to occur within area
Bird	Freckled Duck	*Stictonetta naevosa*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Bird	Little Egret	*Egretta garzetta*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Bird	Marsh Sandpiper	*Tringa stagnatilis*	X	Y	X	X	-	-	-	-	-	Sighting	Endangered		-	-
Bird	White-bellied Sea-Eagle	*Haliaeetus leucogaster*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Bird	White-faced Storm-Petrel	*Pelagodroma marina*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Bird	Ruff	*Calidris pugnax*	X	Y	X	X	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Bird	Salvin's Albatross	*Thalassarche salvini*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Bird	Common Greenshank	*Tringa nebularia*	X	Y	Y	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Endangered	Endangered	-	Species or species habitat known to occur within area
Bird	Lesser Sand Plover	*Charadrius mongolus*	X	Y	X	X	-	-	-	-	-	Sighting	Endangered	Endangered	-	-
Bird	Red Knot	*Calidris canutus*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Endangered	Vulnerable	-	Species or species habitat known to occur within area
Bird	Terek Sandpiper	*Xenus cinereus*	-	-	-	-	-	-	-	-	-	Sighting	Endangered	Vulnerable	-	-
Bird	Sharp-tailed Sandpiper	*Calidris acuminata*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	-	Vulnerable	Migratory Wetlands Species	Roosting known to occur within area
Bird	Australasian Shoveler	*Spatula rhynchotis*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Blue-billed Duck	*Oxyura australis*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Caspian Tern	*Hydroprogne caspia*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Diamond Dove	*Geopelia cuneata*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Eastern Great Egret	*Ardea alba modesta*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Lewin's Rail	*Lewinia pectoralis*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Little Eagle	*Hieraaetus morphnoides*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Musk Duck	*Biziura lobata*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Bird	Shy Albatross	*Thalassarche cauta*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Bird	Sooty Albatross	*Phoebetria fusca*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat likely to occur within area
Bird	Sooty Shearwater	*Ardenna grisea*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Species or species habitat may to occur within area
Bird	Greater Sand Plover	*Charadrius leschenaultii*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Vulnerable	Vulnerable	-	Species or species habitat known to occur within area
Bird	Grey Plover	*Pluvialis squatarola*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable	Vulnerable	-	-
Bird	Hooded Plover	*Thinornis cucullatus*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable	Vulnerable	-	-
Bird	Southern Giant-Petrel, Southern Giant Petrel	*Macronectes giganteus*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Fish	Australian Grayling	*Prototractes maraena*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Fish	Blue Warehou	*Seriolella brama*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Conservation Dependent	-	Species or species habitat known to occur within area
Fish	Common Galaxias	*Galaxias maculatus*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Fish	Eastern Blue-spot Goby	*Pseudohobius sp.*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Fish	Eastern Dwarf Galaxias, Dwarf Galaxias	-	-	-	-	-	X	X	X	X	Elgin (2025) Desktop/Observed	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Fish	Eastern mosquitofish	*Gambusia holbrooki*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Fish	European Carp	*Cyprinus carpio*	-	-	-	-	Y	Y	Y	Y	Elgin (2025) Observed	-	-	-	-	-
Fish	Flathead Gudgeon	*Philypnodon grandiceps*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Fish	Goldfish	*Carassius auratus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Fish	Goldfish/Carp Hybrid	*Carassius auratus x Cyprinus carpio*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Fish	Mullet	*Mugilidae*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Fish	Oriental Weatherloach	*Misgurnus anguillicaudatus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Fish	Short-finned Eel	*Anguilla australis*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Fish	Short-headed Lamprey	*Mordacia mordax*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Fish	Small fish	-	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Fish	Smallmouth Hardyhead	*Atherinosoma microstoma*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Fish	Southern Black Bream	*Acanthopagrus butcheri*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Fish	Yarra Pygmy Perch	*Nannoperca obscura*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Fish	Flounder	*Platichthys flesus*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	Sighting	-	-	-	-
Fish	Tupong (Congolli)	*Pseudaphritis urvillii*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Fish	Toadfish	*e.g. Opsanus tau, Tetractenos hamiltoni*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Fish	Fiddler Ray	*Trygonorrhina fasciata*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Fish	Yellowfin Goby	*Acanthogobius flavimanus*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Fish	Sprat	*Sprattus sprattus*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	-	-	-	-	-
Flora	Button Wrinklewort	*Rutidosis leptorhynchoides*	Y	X	X	X	-	-	-	-	Elgin (2025) Desktop	Sighting	Endangered	Endangered	-	Species or species habitat likely to occur within area
Flora	Large-headed Fireweed	*Senecio macrocarpus*	Y	X	X	X	-	-	-	-	-	Sighting	Critically Endangered	Vulnerable	-	-
Flora	Small Golden Moth Orchids	*Diuris basaltica*	Y	X	X	X	-	-	-	-	-	-	-	-	-	-

Appendix C Ecological Database Search Results
Table C1 Accumulated Data, All Species and Sources

			Ecologist Reports									Databases				
			Aurecon (2022) Desktop				Aurecon (2022) Field					NatureKit	FFG Act	EPBC Act		
Group	Common Name	Scientific Name	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	RAAF Swamp	Cheetham Wetlands	Sanctuary Lakes	Skeleton Creek	Elgin (2025)		Status	Status	Migratory	Occurrence
Flora	Spiny Rice-flower	*Pimelea spine*	Y	Y	X	X	-	-	-	-	-	-	-	-	-	-
Mammal	Southern Right Whale	*Eubalaena australis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	Migratory Marine Species	Species or species habitat known to occur within area
Mammal	European Rabbit	*Oryctolagus cuniculus*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Mammal	Fat-tailed Dunnart	*Sminthopsis crassicaudata*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Mammal	Grey-headed Flying-fox	*Pteropus poliocephalus*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Foraging, feeding or related behaviour likely to occur within area
Bird	Southern Royal Albatross	*Diomedea epomophora*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Mammal	New Holland Mouse, Pookila	*Pseudomys novaehollandiae*	-	-	-	-	-	-	-	-	-	-	-	Vulnerable	-	-
Bird	Swinhoe's Snipe	*Gallinago megala*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Wetlands Species	-
Mammal	Rakali (water rat)	*Hydromys chrysogaster*	-	-	-	-	X	X	X	X	-	-	-	-	-	-
Bird	Wandering Albatross	*Diomedea exulans*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Mammal	Spot-tailed Quoll	*Dasyurus maculatus maculatus (SE mainland population)*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Mammal	Yellow-bellied Sheathtail Bat	*Saccolaimus flaviventris*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Plant	Adamson's Blown-grass, Adamson's Blowngrass	*Lachnagrostis adamsonii*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Plant	Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed	*Lepidium hyssopifolium*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat likely to occur within area
Plant	Clover Glycine, Purple Clover	*Glycine latrobeana*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Plant	Fragrant Leek-orchid	*Prasophyllum suaveolens*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Critically Endangered	Endangered	-	Species or species habitat may to occur within area
Plant	Green-striped Greenhood	*Pterostylis chlorogramma*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat may to occur within area
Plant	Hoary Sun-orchid	*Thelymitra orientalis*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Critically Endangered	-	Species or species habitat may to occur within area
Plant	Hoary Sunray, Grassland Paper-daisy	*Leucochrysum albicans subsp. tricolor*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Plant	Large-fruit Fireweed, Large-fruit Groundsel	*Senecio macrocarpus*	Y	X	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Plant	Leafy Greenhood	*Pterostylis cucullata*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat may to occur within area
Plant	Matted Flax-lily	*Dianella amoena*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat known to occur within area
Plant	Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea	*Pimelea spinescens subsp. spinescens*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Critically Endangered	-	Species or species habitat known to occur within area
Plant	River Swamp Wallaby-grass, Floating Swamp Wallaby-grass	*Amphibromus fluitans*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Plant	Small Golden Moths Orchid, Early Golden Moths	*Diuris basaltica*	Y	X	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Plant	Spiny Peppercress	*Lepidium aschersonii*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat may to occur within area
Plant	Sunshine Diuris, Fragrant Doubletail, White Diuris	*Diuris fragrantissima*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Plant	Swamp Fireweed, Smooth-fruited Groundsel	*Senecio psilocarpus*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Plant	Trailing Hop-bush	*Dodonaea procumbens*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat likely to occur within area
Reptile	Common Blue-tongued Lizard	*Tiliqua scincoides scincoides*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Reptile	Eastern long-neck turtle	*Chelodina longicollis*	-	-	-	-	X	X	X	X	Elgin (2025) Observed	-	-	-	-	-
Bird	Whimbrel	*Numenius phaeopus*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		Migratory Wetlands Species	-
Shark	White Shark, Great White Shark	*Carcharodon carcharias*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Species	Species or species habitat known to occur within area
Bird	White-capped Albatross	*Thalassarche steadi*	X	Y	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	Migratory Marine Birds	Foraging, feeding or related behaviour likely to occur within area
Reptile	Striped Legless Lizard	*Delma impar*	Y	X	X	X	-	-	-	-	-	Sighting	Endangered	Vulnerable	-	-
Reptile	Swamp Skink, Eastern Mourning Skink	*Lissolepis coventryi*	-	-	-	-	-	-	-	-	-	-	-	Endangered	-	-
Reptile	Tiger Snake	*Notechis scutatus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Reptile	Tussock Skink	*Pseudemoia pagenstecheri*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Reptile	Victorian Grassland Earless Dragon	*Tympanocryptis pinguicolla*	-	-	-	-	-	-	-	-	-	-	-	Critically Endangered	-	-
Reptile	Grassland Earless Dragon	-	-	-	-	-	X	X	X	X	Elgin (2025) Desktop	-	-	Endangered	-	Species or species habitat may to occur within area
Reptile	Striped Legless Lizard	*Delma impar*	Y	X	X	X	-	-	-	-	Elgin (2025) Desktop	-	-	Vulnerable	-	Species or species habitat known to occur within area
Bird	White-throated Needletail	*Hirundapus caudacutus*	-	-	-	-	-	-	-	-	Elgin (2025) Desktop	Sighting	Vulnerable	Vulnerable	Migratory Terrestrial Species	Species or species habitat known to occur within area
Bird	Wood Sandpiper	*Tringa glareola*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		Migratory Wetlands Species	-
Bird	Yellow Wagtail	*Motacilla flava*	-	-	-	-	-	-	-	-	-	-	-	-	Migratory Terrestrial Species	-
Terrestrial Flora	Buloke	*Allocasuarina luehmannii*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered		-	-
Terrestrial Flora	Cut-leaf Burr-daisy	*Calotis anthemoides*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered		-	-
Terrestrial Flora	Glaucous Flax-lily	*Dianella longifolia var. grandis s.l.*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered		-	-
Terrestrial Flora	Pale Swamp Everlasting	*Coronidium gunnianum*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered		-	-
Terrestrial Flora	Spiny Rice-flower	*Pimelea spinescens subsp. spinescens*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered	Critically Endangered	-	-
Terrestrial Flora	Sunshine Diuris	*Diuris fragrantissima*	-	-	-	-	-	-	-	-	-	Sighting	Critically Endangered	Endangered	-	-
Terrestrial Flora	Basalt Podolepis	*Podolepis linearifolia*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Coast Hollyhock	*Malva preissiana s.s. (white-flowered coastal form)*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Coast Wirilda	*Acacia uncifolia*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Creeping Rush	*Juncus revolutus*	-	-	-	-	-	-	-	-	Elgin (2025) Observed	Sighting	Endangered		-	-
Terrestrial Flora	Derrinallum Billy-buttons	*Craspedia basaltica*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Floodplain Fireweed	*Senecio campylocarpus*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Giant Honey-myrtle	*Melaleuca armillaris subsp. armillaris*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Golden Cowslips	*Diuris behrii*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Marsh Saltbush	*Atriplex paludosa subsp. paludosa*	-	-	-	-	-	-	-	-	Elgin (2025) Observed)	Sighting	Endangered		-	-
Terrestrial Flora	Pale-flower Crane's-bill	*Geranium sp. 3*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Rye Beetle-grass	*Tripogonella loliiformis*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Salt Lawrencia	*Lawrencia spicata*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Swamp Diuris	*Diuris palustris*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Tough Scurf-pea	*Cullen tenax*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-
Terrestrial Flora	Fragrant Saltbush	*Rhagodia parabolica*	-	-	-	-	-	-	-	-	-	Sighting	Vulnerable		-	-
Terrestrial Invertebrate	Beetle	*Order Coleoptera*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Blue Garden Flatworm	*Caenoplana coerulea*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Centipede	*Family Scolopendridae*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Cockchafer larvae	*Melolontha sp*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Cockroach	*Order Blattodea*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Common Earthworm	*Lumbricus terrestris*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Garden Slater	*Porcellionides pruinosus*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Golden Sun Moth	*Synemon plana*	Y	Y	X	Y	-	-	-	-	Elgin (2025) Desktop	Sighting	Vulnerable	Vulnerable	-	Species or species habitat known to occur within area
Terrestrial Invertebrate	Portuguese Millipede	*Ommatoiulus moreleti*	-	-	-	-	Y	Y	Y	Y	-	-	-	-	-	-
Terrestrial Invertebrate	Small Golden Moths	*Diuris basaltica*	Y	X	X	X	-	-	-	-	-	Sighting	Critically Endangered	Endangered	-	-
Terrestrial Invertebrate	Yellow Sedge-skipper Butterfly	*Hesperilla flavescens*	-	-	-	-	-	-	-	-	-	Sighting	Endangered		-	-

General Information		Identification and Conservation				Data Source	Bodyweight (g)		NAGY Food Intake Rates						Area Use		Trophic Level and Guild			
Class	Species	Identification and Conservation	FFG Status	EPBC Status	Type of Presence	Source	Lower	Upper	Applicable Categories	Adopted Category	a	b	Food Intake g FMI/day	Bodyweight Normalised g(FMI)/kg(BW)/day	Migration	Home Range	Environment	Trophic Level	Guild	Food intake rationale
Bird	Black Swan	Observed	-	-	-	BirdLife Australia	1700	8750	All birds, Anseriformes, Herbivorous birds	All birds	2.065	0.689	590	0.16	Sedentary (adults) / dispersive (young)	Sedentary in permanent wetlands	Aquatic	Primary consumer	Herbivore	Entirely herbivorous.
Bird	Osprey	Desktop	-	-	-	BirdLife Australia	1000	1500	All birds, Accipitriformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	300	0.3	Mostly sedentary	<1 km from waterway	Aquatic	Quaternary consumer	Carnivore	Carnivore: Mostly fish although small terrestrial vertebrates, seabirds and crustacea also recorded
Bird	White-bellied Sea-Eagle	Observed	Endangered		-	BirdLife Australia	2500	4200	All birds, Accipitriformes, Carnivorous birds	Carnivorous birds	3.048	0.665	550	0.22	Sedentary (adults) / dispersive (young)	100 km2	Aquatic	Quaternary consumer	Carnivore	Opportunistic carnivores: birds, reptiles, fish, mammals crustaceans and carrion
Bird	Shy Albatross	Desktop	-	Endangered	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	3400	4400	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	680	0.2	Poorly known. Adults may move only locally		Aquatic	Quaternary consumer	Carnivore	Mostly cephalopods and fish, particularly mackerel and redbait
Bird	Southern Giant-Petrel, Southern Giant Petrel	Desktop	-	Endangered	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	3800	5000	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	730	0.19	Partially migratory; some adults resident at most sites	180-500 km foraging range	Aquatic	Quaternary consumer	Carnivore	Carnivore (71-93% birds, 11-22% crustaceans, 1-4% fish, 2-12% cephalopods, 3-% mammals)
Bird	Indian Yellow-nosed Albatross, Atlantic Yellow-nosed Albatross	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	2200	2600	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	510	0.23	Migratory	Dispersive	Aquatic	Quaternary consumer	Carnivore	Mostly fish with some cephalopods but no detailed studies
Bird	Buller's Albatross, Pacific Albatross	Desktop	-	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	2400	3100	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	540	0.23	Migratory (Poorly known), adults local	-	Aquatic	Quaternary consumer	Carnivore	Mostly squid with some fish, krill and tunicates.
Bird	Northern Buller's Albatross, Pacific Albatross	Desktop	-	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	2400	3100	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	540	0.23			Aquatic	Quaternary consumer	Carnivore	Carnivore: Mostly squid with some fish, krill and tunicates
Bird	Sooty Albatross	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	2400	2700	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	540	0.23	Dispersive, possibly migratory	1200 km	Aquatic	Quaternary consumer	Carnivore	Carnivore Mostly cephalopods but fish, crustaceans, siphonophores and carrion including dead birds recorded
Bird	Black-browed Albatross	Desktop	-	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	2800	4500	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	600	0.21	Migratory in Australia April to August	430 km foraging range	Aquatic	Quaternary consumer	Carnivore	Carnivore (40% crustaceans, 39.5% fish)
Bird	White-capped Albatross	Desktop	-	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	3400	4400	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	680	0.2	Some populations migratory to waters off South Africa or South America, others remain at or near colonies all year.	-	Aquatic	Quaternary consumer	Carnivore	Mostly cephalopods and fish, particularly mackerel and redbait
Bird	Northern Giant Petrel	Desktop	-	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	3800	5000	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	730	0.19	Partly migratory	181 km foraging range	Aquatic	Quaternary consumer	Carnivore	Carnivore (53-64% birds, 14-32% crustaceans, 2-5% fish, 3% cephalopods, 18% mammals)
Bird	Antipodean Albatross, Wandering Albatross	Desktop	-	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	6000	11000	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	990	0.17	Migratory or dispersive	330-380 kg foraging distance	Aquatic	Quaternary consumer	Carnivore	Carnivore (54% fish, 35% cephalopods)
Bird	Southern Royal Albatross, Northern Royal Albatross (As Royal Albatross)	Desktop	-	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	8000	10000	All birds, Procellariforms, Marine birds, Carnivorous birds	Carnivorous birds	3.048	0.665	1200	0.15	Migratory, possibly circumpolar	Long-range dispersal	Aquatic	Quaternary consumer	Carnivore	Carnivore (80-85% cephalopods, 14-15% fish, 3% crustaceans)
Bird	Lesser Sand Plover	Observed	Endangered	Endangered	-	BirdLife Australia	56	71	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	44	0.79	Migratory (breed in northern hemisphere) Spring to Summer in Australia	Dispersive	Aquatic	Secondary consumer	Invertivore	Invertivorous: molluscs, worms, crustaceans and insects.
Bird	Yellow Wagtail	Desktop	-	-	-	BirdLife Australia	16	23	All birds, Passerines, Temperate meadow birds, Insectivorous birds	All birds	2.065	0.689	14	0.88	Migratory (breed in Africa) August to April in Australia	Dispersive	Aquatic	Secondary consumer	Invertivore	Invertivorous: terrestrial and aquatic invertebrates, mainly insects and their larvae.
Bird	Pacific Golden Plover	Observed	Vulnerable		-	BirdLife Australia	120	175	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	74	0.62	Mostly migratory (breed in northern hemisphere) September to Februaty in Australia	Evidence of residency, return to same site	Aquatic	Secondary consumer	Invertivore	Invertivore: molluscs, worms, insects, crustaceans, spiders.
Bird	Greater Sand Plover	Observed	Vulnerable	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	75	100	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	54	0.72	Mostly migratory (breed in Asia) August to March in Australia	Evidence of fidelity ('months at a time')	Aquatic	Secondary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: molluscs, worms, insects, crustaceans occasionally lizards and plants
Bird	Dusky moorhen	Observed	-	-	-	BirdLife Australia	350	700	All birds, Gruiformes, Temperate meadow birds, Omnivorous birds	All birds	2.065	0.689	120	0.34	Resident (adults observed to stay in same area for over 8 years)	Sedentary or dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous: vegetable matter, seeds, fruits, molluscs, insects, spiders, carrion and faeces
Bird	Chestnut Teal	Observed	-	-	-	BirdLife Australia	500	800	All birds, Anseriformes, Temperate meadow birds, Omnivorous birds	All birds	2.065	0.689	150	0.3	Migratory	Dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous: seeds, insects, plants, some molluscs and crustaceans
Bird	Blue-billed Duck	Observed	Vulnerable	-	-	BirdLife Australia	500	600	All birds, Anseriformes, Temperate meadow birds, Omnivorous birds	All birds	2.065	0.689	150	0.3	Dispersive (short-distance movements)	Resident (with irregular dispersion)	Aquatic	Secondary consumer	Omnivore	Omnivorous: plants, midge, caddisfly and dragonfly larvae
Bird	Eurasian Coot	Observed	-	-	-	BirdLife Australia	500	600	All birds, Gruiformes, Temperate meadow birds, Omnivorous birds	All birds	2.065	0.689	150	0.3	Dispersive	Dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous: aquatic vegetation, seeds, grass, occasionally aquatic insects, molluscs, crustaceans and eggs
Bird	Purple Swamphen	Observed	-	-	-	BirdLife Australia	850	1050	All birds, Gruiformes, Omnivorous birds	All birds	2.065	0.689	220	0.26	Some dispersive movements, possibly partly migratory	Dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous: mainly plants, occasionally insects, frogs, lizards, fish, young birds, eggs and small mammals
Bird	Freckled Duck	Observed	Endangered	-	-	BirdLife Australia	840	980	All birds, Anseriformes, Herbivorous birds	All birds	2.065	0.689	210	0.25	Dispersive Endemic to se. and sw. Australia	Dispersive (disperse widely)	Aquatic	Secondary consumer	Omnivore	Omnivorous: specialist filter feeder - crustaceans, insects, plants
Bird	Pacific Black Duck	Observed	-	-	-	BirdLife Australia	950	1100	All birds, Anseriformes, Omnivorous birds	All birds	2.065	0.689	230	0.24	Dispersive	Sedentary	Aquatic	Secondary consumer	Omnivore	Omnivorous: mainly plants, occasionally aquatic insects and crustaceans
Bird	Sharp-tailed Sandpiper	Observed	-	Vulnerable	Roosting known to occur within area	BirdLife Australia	66	91	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	49	0.74	Migratory (breed in northern hemisphere) September to March in Australia	Dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous: seeds, worms, molluscs, crustaceans and insects
Bird	Latham's Snipe	Observed	-	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	150	230	All birds, Charadriiformes, Temperate meadow birds, Carnivorous birds	Carnivorous birds	3.048	0.665	85	0.57	Mostly migratory (breed in northern hemisphere) September to Februaty in Australia	Dispersive	Aquatic	Secondary consumer	Omnivore	Omnivorous (43-60% plants, 40-56% animals: earthworms, spiders and insects)
Bird	Gould's Petrel	Desktop	-	Endangered	Species or species habitat may to occur within area	BirdLife Australia	134	210	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	81	0.6	Migratory (New Caledonia to Pacific)	Dispersive	Aquatic	Tertiary consumer	Carnivore	Poorly known, includes cephalopods and fish
Bird	Australasian Bittern	Observed	Critically Endangered	Endangered	Species or species habitat known to occur within area	BirdLife Australia	900	1400	All birds, Pelecaniformes, Carnivorous birds	Pelecaniformes	1.02	0.845	320	0.36	Sedentary	Sedentary in permanent wetlands	Aquatic	Tertiary consumer	Carnivore	Aquatic predator: eels, frogs and freshwater crayfish, occassional spiders, insects, other fish, reptiles and small mammals
Bird	White-faced Storm-Petrel	Observed	Endangered		-	BirdLife Australia	45	65	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	39	0.87	Migratory Some may remain in s. Aust. waters in winter	Foraging range 250-370 km	Aquatic	Tertiary consumer	Carnivore	Carnivorous: Pelagic crustaceans, small fish and other small surface plankton
Bird	Little Egret	Observed	Endangered		-	BirdLife Australia	325	390	All birds, Pelecaniformes, Carnivorous birds	Carnivorous birds	3.048	0.665	140	0.43	Dispersive	Short distances	Aquatic	Tertiary consumer	Carnivore	Primarily fish, also frogs and insects
Bird	Plumed Egret	Observed	Critically Endangered	-	-	BirdLife Australia	360	401	All birds, Pelecaniformes, Carnivorous birds	Carnivorous birds	3.048	0.665	150	0.42	Poorly known, sedentary	Possible dispersion	Aquatic	Tertiary consumer	Carnivore	Primarily fish but also frogs, with lizards and grasshoppers main food in drier habitats
Bird	Little Pied Cormorant	Observed	-	-	-	BirdLife Australia	410	880	All birds, Pelecaniformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	170	0.41	Dispersive	300 km in 6 months)	Aquatic	Tertiary consumer	Carnivore	Carnivore (38-55% fish, 45-61% crustaceans)
Bird	White-faced Heron	Observed	-	-	-	BirdLife Australia	450	880	All birds, Pelecaniformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	180	0.4	Locally nomadic	>100 km	Aquatic	Tertiary consumer	Carnivore	Carnivore (32-74% crustaceans, 13-87% fish, 12-36% insects, 0-27% worms)
Bird	Little Black Cormorant	Observed	-	-	-	BirdLife Australia	520	1210	All birds, Pelecaniformes, Marine birds, Carnivorous birds	Pelecaniformes	1.02	0.845	200	0.38			Aquatic	Tertiary consumer	Carnivore	Carnivore (73.6-100% fish, 3.9-24.8% crustaceans)
Bird	Eastern Great Egret	Observed	Vulnerable		-	BirdLife Australia	700	1200	All birds, Pelecaniformes, Temperate meadow birds, Carnivorous birds	Pelecaniformes	1.02	0.845	260	0.37			Aquatic	Tertiary consumer	Carnivore	Primarily fish, also frogs, insects and small birds
Bird	Caspian Tern	Observed	Vulnerable		-	BirdLife Australia	610	1323	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	220	0.36	Partly resident, partly dispersive	Up to 10km from nest sites, otherwise dispersive.	Aquatic	Tertiary consumer	Carnivore	Carnivorous: primarily fish (96.8%) and minor crustaceans (3.2%)
Bird	Flesh-footed Shearwater	Desktop	-	-	-	BirdLife Australia	580	750	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	210	0.36	Migratory (Trans-equatorial)	Dispersive	Aquatic	Tertiary consumer	Carnivore	Poorly known, includes cephalopods and fish
Bird	Australian White Ibis	Observed	-	-	-	BirdLife Australia	1400	2500	All birds, Pelecaniformes, Carnivorous birds	Pelecaniformes	1.02	0.845	460	0.33	Resident	Resident (sedentary)	Aquatic	Tertiary consumer	Carnivore	Carnivorous: aquatic animals including fish, frogs, freshwater crayfish, crickets, beetles and earthworms
Bird	Royal Spoonbill	Observed	-	-	-	BirdLife Australia	1500	1800	All birds, Pelecaniformes, Marine birds, Carnivorous birds	Pelecaniformes	1.02	0.845	490	0.33	Sedentary at most coastal sites	Sedentary	Aquatic	Tertiary consumer	Carnivore	Carnivore (42% fish, 33% insects, 25% crustaceans)
Bird	Australian pelican	Observed	-	-	-	BirdLife Australia	4000	6800	All birds, Pelecaniformes, Marine birds, Carnivorous birds	Pelecaniformes	1.02	0.845	1100	0.28	Dispersive		Aquatic	Tertiary consumer	Carnivore	Carnivore: Mostly fish but an eclectic carnivore and scavenger taking anything from insects and small crustaceans to ducks and small dogs
Bird	Little Tern	Observed	Critically Endangered	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	40	50	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	36	0.9	Migratory or partly migratory	Dispersive (frequent some areas for up to 2 months before migrating)	Aquatic	Tertiary consumer	Carnivore	Carnivorous: mainly small fish, occasionally crustaceans, insects, annelids and molluscs
Bird	Fairy Tern	Observed	Critically Endangered	Vulnerable	-	BirdLife Australia	70	70	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	53	0.76	Partly migratory and partly non-migratory (poorly known)	Sedentary (appear not to move regularly)	Aquatic	Tertiary consumer	Carnivore	Carnivorous: fish
Bird	Fairy Prion (southern)	Desktop	-	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	90	175	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	62	0.69	Migratory or dispersive	Dispersive (foraging flights >320 km possible)	Aquatic	Tertiary consumer	Carnivore	Carnivorous: mainly euphausiids and other small crustaceans with small amounts of fish and pteropods
Bird	Sooty Shearwater	Desktop	-	Vulnerable	Species or species habitat may to occur within area	BirdLife Australia	650	950	All birds, Procellariforms, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	230	0.35	Migratory (breeds in Australia) August to April in Australia	-	Aquatic	Tertiary consumer	Carnivore	Carnivore (89% fish, 5.3% cephalopods, 4.8% crustaceans)
Bird	Eastern Curlew	Observed	Critically Endangered	Critically Endangered	Species or species habitat known to occur within area	BirdLife Australia	150	300	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	87	0.58	Migratory February to April in Australia	Dispersive (move locally)	Aquatic	Tertiary consumer	Invertivore	Carnivorous: mainly crabs and small molluscs; also insects.
Bird	Common Greenshank	Observed	Endangered	Endangered	Species or species habitat known to occur within area	BirdLife Australia	200	300	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	110	0.55	Migratory (breed in Palaearctic)	Resident, possibly some dispersive movements	Aquatic	Tertiary consumer	Invertivore	Carnivorous: molluscs, crustaceans, insects, occassionally fish and frogs
Bird	Bar-tailed Godwit	Observed	Vulnerable	Endangered	Species or species habitat known to occur within area	BirdLife Australia	300	500	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	140	0.47	Migratory (breed in northern hemisphere) August to November in Australia	Dispersive (substantial local movement)	Aquatic	Tertiary consumer	Invertivore	Invertivorous: worms, molluscs, crustaceans, insects and some plants
Bird	Common Sandpiper	Observed		-	-	Birdlife Australia	38	84	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	34	0.89	Migratory (breed Eurasia) July to Februaty in Australia	Poorly known, dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: molluscs, crustaceans and insects, less common algae, seeds, worms, spiders, fish, frogs and tadpoles.
Bird	Wood Sandpiper	Observed	Endangered		-	BirdLife Australia	46	63	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	39	0.85	Migratory (breed in northern hemisphere) September to March in Australia	Poorly known, dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: insects and molluscs.
Bird	Marsh Sandpiper	Observed	Endangered		-	BirdLife Australia	65	70	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	49	0.75	Migratory (breed in northern hemisphere) July to March in Australia	Dispersive, 3 week residency	Aquatic	Tertiary consumer	Invertivore	Invertivorous: insects and molluscs.
Bird	Grey-tailed Tattler	Observed	Critically Endangered	-	-	BirdLife Australia	96	127	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	63	0.66	Mostly migratory (breed in northern hemisphere) August to April in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore	Carnivorous, mainly invertebrates: Polychaetes, molluscs, crustaceans, insects, occasionally fish
Bird	Pin-tailed Snipe	Desktop	-	-	-	BirdLife Australia	100	140	All birds, Charadriiformes, Temperate meadow birds, Carnivorous birds	Carnivorous birds	3.048	0.665	65	0.65	Migratory (breed in northern hemisphere) September to March in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: molluscs, insects and earthworms, occasionally crustaceans, seeds and vegetation
Bird	Swinhoe's Snipe	Observed	-	-	-	BirdLife Australia	100	140	All birds, Charadriiformes, Temperate meadow birds, Carnivorous birds	Carnivorous birds	3.048	0.665	65	0.65	Migratory (breed in northern hemisphere) Movements in Australia not known	Dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: earthworms, molluscs and insects (including beetles), occasionally vegetation
Bird	Lewin's Rail	Observed	Vulnerable		-	BirdLife Australia	75	100	All birds, Gruiformes, Temperate forest birds, Omnivorous birds	All birds	2.065	0.689	40	0.53	May be partly migratory	Resident/sedentary (present at some sites all year)	Aquatic	Tertiary consumer	Invertivore	Invertivore: molluscs, earthworms, arthropods, especially insects and crustaceans, occasionally frogs and eggs
Bird	Whimbrel	Observed	Endangered		-	BirdLife Australia	305	470	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	140	0.46	Migratory (breed in northern hemisphere) August to March in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: taking annelids, crustaceans, and, rarely, fish and birds
Bird	Terek Sandpiper	Observed	Endangered	Vulnerable	-	BirdLife Australia	45	110	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	38	0.84	Mostly migratory (breed in northern hemisphere) September to May in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: crustaceans and insects
Bird	Ruddy Turnstone	Observed	Endangered	Vulnerable	Roosting known to occur within area	BirdLife Australia	115	115	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	73	0.63	Migratory (breed in northern hemisphere) December to April in Australia	-	Aquatic	Tertiary consumer	Invertivore	Carnivorous: insects, worms, crustaceans, molluscs, spiders; occassionally eggs and carrion
Bird	Great Knot	Observed	Critically Endangered	Vulnerable	Roosting known to occur within area	BirdLife Australia	130	190	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	79	0.61	Mostly migratory (breed in northern hemisphere) August to March in Australia	Evidence of fidelity.	Aquatic	Tertiary consumer	Invertivore	Carnivorous (11% worms, 70% molluscs, 11.5% crustaceans, 6.5% starfish)
Bird	Grey Plover	Observed	Vulnerable	Vulnerable	-	BirdLife Australia	160	300	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	91	0.57	Migratory (breed in northern hemisphere) September to January in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore	Invertivorous: molluscs, insects, crustaceans, polychaete worms, and occasionally vegetation and seeds

Appendix C Selection of Receptors of Concern
Table C2 - Bird and Mammal Species Screening

General Information		Identification and Conservation				Data Source	Bodyweight (g)		NAGY Food Intake Rates						Area Use		Trophic Level and Guild			
Class	Species	Identification and Conservation	FFG Status	EPBC Status	Type of Presence	Source	Lower	Upper	Applicable Categories	Adopted Category	a	b	Food Intake g FMI/day	Bodyweight Normalised g(FMI)/kg(BW)/day	Migration	Home Range	Environment	Trophic Level	Guild	Food intake rationale
Bird	Curlew Sandpiper	Observed	Critically Endangered	Critically Endangered	Species or species habitat known to occur within area	BirdLife Australia	53	89	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	43	0.81	Migratory (breed in northern hemisphere) August to April in Australia	Evidence of residency, return to same site (e.g. bay)	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous: mainly invertebrates: worms, molluscs, crustaceans, and insects; also seeds
Bird	Black-tailed Godwit	Observed	Critically Endangered	Endangered	Roosting known to occur within area	BirdLife Australia	200	300	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	110	0.55	Migratory (breed in northern hemisphere) August to November in Australia	-	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: invertebrates and occasionally seeds
Bird	Long-toed Stint	Desktop	-	-	-	BirdLife Australia	20	30	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	22	1.1	Migratory (breed in northern hemisphere) Summer residency in Australia is dispersive.	Sedentary in permanent wetlands	Aquatic	Tertiary consumer	Invertivore/ omnivore	Poorly known, omnivorous: seeds, molluscs, crustaceans and insects.
Bird	Double-banded Plover	Desktop	-	-	-	BirdLife Australia	60	80	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	46	0.77	Mostly migratory, some sedentary (breed in NZ) March to August in Australia	Evidence of residency, return to same site (e.g. bay)	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous: mainly invertebrates: molluscs, insects, crustaceans and spiders; sometimes seeds and fruits.
Bird	Ruff	Desktop	-	-	-	BirdLife Australia	110	180	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	71	0.65	Migratory (breed in Eurasia and Alaska) September to April in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore/ omnivore	Invertivorous/omnivorous
Bird	Pied Stilt	Observed	-	-	-	BirdLife Australia	170	195	All birds, Charadriiformes, Carnivorous birds	All birds	2.065	0.689	71	0.42	Dispersive	May be resident (defend breeding site for months)	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: Aquatic and terrestrial invertebrates, molluscs, crustaceans, insects; occasionally seeds
Bird	Masked Lapwing	Observed	-	-	-	BirdLife Australia	250	370	All birds, Charadriiformes, Temperate meadow birds, Omnivorous birds	All birds	2.065	0.689	93	0.37	Migratory	Resident	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: molluscs, worms, millepedes, centipedes, insects, crustaceans, occasionally seeds
Bird	Australasian Shoveler	Observed	Vulnerable		-	BirdLife Australia	545	852	All birds, Anseriformes, Omnivorous birds	All birds	2.065	0.689	160	0.29	Dispersive	800 km from nest sites	Aquatic	Tertiary consumer	Invertivore/ omnivore	Aquatic invertivorous omnivore (48.7% insects, 23.8% plants, 21.7% molluscs, 5.8% crustaceans,)
Bird	Musk Duck	Observed	Vulnerable		-	BirdLife Australia	1550	2400	All birds, Anseriformes, Omnivorous birds	All birds	2.065	0.689	330	0.21	Sedentary / dispersive (breeding)	Sedentary in permanent wetlands	Aquatic	Tertiary consumer	Invertivore/ omnivore	Aquatic invertivorous omnivore (43.5% insects, 27.4% plants, 16.2% molluscs, 10.8% crustaceans,3% fish, 3% frogs, <1% other)
Bird	Red Knot	Observed	Endangered	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	120	120	All birds, Charadriiformes, Marine birds, Carnivorous birds	Marine birds	3.221	0.658	75	0.63	Migratory (breed in northern hemisphere) August to December in Australia	Dispersive	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: worms, bivalves, gastropods, crustaceans and echinoderms, occasionally plants
Bird	Eastern Hooded Plover	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	90	100	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	46	0.51	Resident	Poorly known, evidence of seasonal flocking	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: Polychaetes, molluscs, crustaceans, insects, turions and seeds
Bird	Hooded Plover	Observed	Vulnerable	Vulnerable	-	BirdLife Australia	90	100	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	46	0.51	Dispersive (Poorly known)	Dispersive	Aquatic	Tertiary consumer	Invertivore/ omnivore	Omnivorous, mainly invertebrates: Polychaetes, molluscs, crustaceans, insects, plants
Bird	Australian Painted Snipe	Desktop	-	Endangered	Species or species habitat likely to occur within area	BirdLife Australia	125	130	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	58	0.46	Unknown, possibly migratory	May be dispersive (move to flooded areas)	Aquatic	Tertiary consumer	Omnivore	Omnivore: vegetation, seeds, insects, worms and molluscs, crustaceans and other invertebrates
Bird	Red-necked Stint	Desktop	-	-	-	BirdLife Australia	26	28	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	19	0.73	Migratory (breed in northern hemisphere) August to March in Australia	10-25 km Sedentary in permanent wetlands	Aquatic	Tertiary consumer	Omnivore	Omnivorous (50% plants, 30-40% crustaceans, 20-40% insects)
Bird	Broad-billed Sandpiper	Desktop	-	-	-	BirdLife Australia	37	55	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	25	0.68	Migratory (breed in northern hemisphere) October to March in Australia	Poorly known, evidence of fidelity	Aquatic	Tertiary consumer	Omnivore	Omnivorous: seeds, worms, molluscs, crustaceans and insects
Bird	Pectoral Sandpiper	Desktop	-	-	-	BirdLife Australia	52	95	All birds, Charadriiformes, Omnivorous birds	All birds	2.065	0.689	31	0.6	Mostly migratory (breed in northern hemisphere) September to March in Australia	Possibly dispersive	Aquatic	Tertiary consumer	Omnivore	Omnivorous: algae, seeds, crustaceans, arachnids and insects
Bird	Orange-bellied Parrot	Observed	Critically Endangered	Critically Endangered	Species or species habitat known to occur within area	BirdLife Australia	40	50	All birds, Psittaciformes, Temperate forest birds, Herbivorous birds, Nectarivores birds	Nectarivores birds	3.475	0.679	43	1.1	Migratory (breed southwest Tasmania)	1-2 km from roost	Terrestrial	Primary consumer	Herbivore	Herbivore (seeds of grasses)
Bird	Gang-gang Cockatoo	Desktop	-	Endangered	Species or species habitat likely to occur within area	BirdLife Australia	250	260	All birds, Psittaciformes, Temperate forest birds, Herbivorous birds, Nectarivores birds	Nectarivores birds	3.475	0.679	150	0.6	Unknown, possibly migratory	limited data <10 km	Terrestrial	Primary consumer	Herbivore	Herbivore (seeds of grasses)
Bird	Diamond Dove	Observed	Vulnerable		-	BirdLife Australia	30	35	All birds, Columbiformes, Temperate meadow birds, Herbivorous birds	All birds	2.065	0.689	22	0.73	Dispersive		Terrestrial	Primary consumer	Herbivore	Herbivore (seeds of grasses)
Bird	Crested Pidgeon	Observed	-	-	-	BirdLife Australia	150	250	All birds, Columbiformes, Temperate meadow birds, Herbivorous birds	All birds	2.065	0.689	65	0.43	Apparently sedentary, resident or locally dispersive	<10 km	Terrestrial	Primary consumer	Herbivore	Herbivore
Bird	Blue-winged Parrot	Observed	-	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	50	60	All birds, Psittaciformes, Temperate forest birds, Herbivorous birds, Nectarivores birds	Nectarivores birds	3.475	0.679	49	0.98	Mostly migratory, poorly known	-	Terrestrial	Primary consumer	Herbivore	Herbivore (seeds of grasses)
Bird	Diamond Firetail	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	17	20	All birds, Passerines, Temperate forest birds, Granivorous birds	All birds	2.065	0.689	15	0.88	Resident or sedentary	90% <10 km, 10% >10 km	Terrestrial	Primary consumer	Herbivore	Herbivore (seeds of grasses)
Bird	Swift Parrot	Observed	Critically Endangered	Critically Endangered	Species or species habitat likely to occur within area	BirdLife Australia	60	80	All birds, Psittaciformes, Temperate forest birds, Nectarivores birds, Herbivorous birds	Nectarivores birds	3.475	0.679	56	0.93	Migratory (breed Tasmania)	5-6 km foraging	Terrestrial	Secondary consumer	Herbivore	Herbivore
Bird	Regent Honeyeater	Observed	Critically Endangered	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	BirdLife Australia	40	45	All birds, Passerines, Temperate forest birds, Nectarivores birds	Nectarivores birds	3.475	0.679	43	1.1	Unknown, possibly migratory	81% <10 km, 87%<100 km	Terrestrial	Secondary consumer	Herbivore/ omnivore	Omnivore primarily plants and lesser invertebrates
Bird	Painted Honeyeater	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	20	25	All birds, Passerines, Temperate forest birds, Nectarivores birds	Nectarivores birds	3.475	0.679	27	1.4	Partly Migratory	<10 km	Terrestrial	Secondary consumer	Herbivore/ omnivore	Omnivore primarily plants and lesser invertebrates
Bird	South-eastern Hooded Robin, Hooded Robin (south-eastern)	Desktop	-	Endangered	-	BirdLife Australia	17	27	All birds, Passerines, Temperate forest birds, Insectivorous birds	All birds	2.065	0.689	15	0.88	Resident or sedentary.	<10 km	Terrestrial	Secondary consumer	Invertivore	Arthropods, mainly insects; occasionally seeds
Bird	Fork-tailed Swift	Desktop	-	-	-	BirdLife Australia	30	40	All birds, Apodiformes, Temperate forest birds, Insectivorous birds	Apodiformes	1.466	1.216	92	3.1	Migratory (breed in northern hemisphere)	-	Terrestrial	Secondary consumer	Invertivore	Insectivorous, taking a wide variety of insects and spiders
Bird	White-throated Needletail	Observed	Vulnerable	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	115	120	All birds, Apodiformes, Temperate forest birds, Insectivorous birds	Apodiformes	1.466	1.216	470	4.1	Migratory (breed in northern hemisphere) September to Febnary in Australia	Dispersive	Terrestrial	Secondary consumer	Invertivore	Insectivorous, taking a wide variety of insects and spiders
Bird	Southern Whiteface	Desktop	-	Vulnerable	Species or species habitat known to occur within area	BirdLife Australia	10	15	All birds, Passerines, Temperate forest birds, Insectivorous birds	All birds	2.065	0.689	10	1	Sedentary or resident	<10 km	Terrestrial	Secondary consumer	Invertivore	Mainly insects, but also seeds and leaves
Bird	Brown Treecreeper (south-eastern)	Desktop	-	Vulnerable	Species or species habitat likely to occur within area	BirdLife Australia	30	35	All birds, Passerines, Temperate forest birds, Insectivorous birds	All birds	2.065	0.689	22	0.73	Resident	<10 km	Terrestrial	Secondary consumer	Invertivore	Invertivorous (96-99% ants, 1-4% spiders)
Bird	Little Curlew	Desktop	-	-	-	BirdLife Australia	150	175	All birds, Charadriiformes, Carnivorous birds	Carnivorous birds	3.048	0.665	85	0.57	Migratory (breed in northern hemisphere) September to April in Australia	Dispersive	Terrestrial	Secondary consumer	Invertivore	Omnivorous: mainly insects, also seeds and berries
Mammal	Dusky Dolphin	Desktop	-	-	-	Atlas of Living Australia	69000	85000	All mammals, Eutherians, Carnivora, Carnivores	Carnivores	0.469	0.848	5900	0.086	Migratory		Aquatic	Quaternary consumer	Carnivore	Feeds on fish and squid, preying on primary and secondary consumers in marine ecosystems. Forages in open ocean waters.
Mammal	Pygmy Right Whale	Desktop	-	-	-	Atlas of Living Australia	3000000	4000000	All mammals, Eutherians, Carnivora, Carnivores	Carnivores	0.469	0.848	150000	0.05	Migratory		Aquatic	Secondary–Tertiary consumer	Carnivore	Filter-feeds on zooplankton and small fish, acting as a secondary consumer (zooplankton) or tertiary consumer (fish). Forages in marine environments.
Mammal	Humpback Whale	Desktop	-	Vulnerable	Species or species habitat may to occur within area	Atlas of Living Australia	40000000	40000000	All mammals, Eutherians, Carnivora, Carnivores	Carnivores	0.469	0.848	1300000	0.033	Migratory		Aquatic	Secondary–Tertiary consumer	Carnivore	Filter-feeds on krill, plankton, and small fish. Primarily secondary when eating zooplankton, tertiary when consuming fish. Forages in marine environments.
Mammal	Southern Right Whale	Desktop	-	Endangered	Species or species habitat known to occur within area	Atlas of Living Australia	80000000	80000000	All mammals, Eutherians, Carnivora, Carnivores	Carnivores	0.469	0.848	2400000	0.03	Migratory		Aquatic	Secondary–Tertiary consumer	Carnivore	Filter-feeds on zooplankton, copepods, and krill, primarily as a secondary consumer, potentially tertiary if consuming small fish. Forages in marine environments.
Mammal	Rakali (water rat)	Observed	-	-	-	Atlas of Living Australia	500	1000	All mammals, Eutherians, Carnivora, Omnivores, Carnivores, Terrestrial mesic mammals	Terrestrial mesic mammals	1.607	0.672	100	0.2	Resident		Aquatic	Secondary–Tertiary consumer	Omnivore	Primarily carnivorous, eating aquatic insects, crustaceans, fish, and some plants. Secondary consumer (invertebrates) to tertiary (fish). Forages in aquatic environments like rivers and wetlands.
Mammal	European Rabbit	Observed	-	-	-	Atlas of Living Australia	1200	2500	All mammals, Eutherians, Rodentia, Herbivores, Granivores, Terrestrial mesic mammals	Rodentia	0.588	0.864	270	0.23	Resident		Terrestrial	Primary consumer	Herbivore	Strict herbivore, consuming grasses, leaves, and roots. Forages on land in grasslands and forests.
Mammal	Grey-headed Flying-fox	Desktop	-	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	Atlas of Living Australia	600	1000	All mammals, Chiropteran (bats), Diprotodont marsupials, Herbivores, Terrestrial mesic mammals	Herbivores	2.606	0.628	140	0.23	Dispersive		Terrestrial	Primary consumer	Herbivore	Frugivorous, feeding on fruits, nectar, and pollen. Forages in terrestrial environments, primarily forests and urban areas.
Mammal	Fat-tailed Dunnart	Observed	Vulnerable		-	Atlas of Living Australia	10	20	All mammals, Marsupials, Desert marsupials, Insectivores, Carnivores, Desert mammals	Marsupials	1.667	0.649	7.4	0.74	Dispersive		Terrestrial	Secondary consumer	Invertivore	Primarily eats insects and small invertebrates, functioning as a secondary consumer. Forages on land in arid and semi-arid habitats.
Mammal	Yellow-bellied Sheath tail Bat	Observed	Vulnerable		-	Atlas of Living Australia	20	30	All mammals, Chiropteran (bats), Marsupials, Insectivores, Terrestrial mesic mammals	Terrestrial mesic mammals	1.607	0.672	12	0.6	Dispersive		Terrestrial	Secondary consumer	Invertivore	Insectivorous, feeding on insects caught in flight. Functions as a secondary consumer. Forages in terrestrial environments, often over forests or open areas.

Appendix D Exposure estimation and risk characterisation

Appendix D - Dose Estimation

Exposure Point Concentrations

Area of Interest	Abiotic Media		Aquatic Biota				
	Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	mg/kg	*µg/L*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*	*mg/kg*
Cheetham Wetlands	0.048	0.12	0.025	0.058	0.035	0.053	0.065
Laverton RAAF Swamp	0.059	1.3	0.013	0.056	0.17	1.1	1.1
Sanctuary Lakes	0.0044	0.068	0.011	0.025	0.02	0.08	0.076
Skeleton Creek	0.12	0.29	0.007	0.024	0.025	0.97	0.32

Biotic Media Intake

Receptors	Bodyweight	Nagy (2001) Fresh Matter Intake				Aquatic Biota				
		Category	a	b	FMI	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	g	-	-	-	g(FM)/day	%	%	%	%	%
Birds										
Black Swan	3700	All birds	2.065	0.689	590	100%	0%	0%	0%	0%
Hooded Plover	90	All birds	2.065	0.689	46	33%	33%	33%	0%	0%
Dusky Moorhen	350	All birds	2.065	0.689	120	40%	25%	25%	0%	10%
Australasian Bittern	900	Pelecaniformes	1.02	0.845	320	0%	10%	10%	20%	60%
Royal Spoonbill	1500	Pelecaniformes	1.02	0.845	490	0%	25%	25%	25%	25%
Osprey	1000	Marine birds	3.221	0.658	300	0%	3%	0%	77%	20%
Long-toed Stint	20	Marine Birds	3.221	0.658	23	20%	40%	40%	0%	0%
Great Egret	700	Pelecaniformes	1.02	0.845	260	0%	10%	10%	40%	40%
Mammals										
Rakali	500	Mesic mammals	1.607	0.672	100	10%	30%	30%	10%	20%

Abiotic Media Intake

Receptors	Bodyweight	Nagy (2001) Dry Matter Intake				Sediment Intake		US EPA (1993) Surface Water Intake			
		Category	a	b	DMI	Proportion DMI (soil)	Sediment Intake	Category	a	b	SW Intake
	g		-	-	g(DM)/day	-	g(sed)/day				L/day
Birds											
Black Swan	3700	All birds	0.638	0.685	180	0.11	20	Bird	0.059	0.67	0.14
Hooded Plover	90	All birds	0.638	0.685	14	0.3	4.2	Bird	0.059	0.67	0.012
Dusky Moorhen	350	All birds	0.638	0.685	35	0.02	0.7	Bird	0.059	0.67	0.029
Australasian Bittern	900	Pelecaniformes	0.279	0.845	87	0.104	9	Bird	0.059	0.67	0.055
Royal Spoonbill	1500	Pelecaniformes	0.279	0.845	130	0.104	14	Bird	0.059	0.67	0.077
Osprey	1000	Marine Birds	0.88	0.658	83	0.02	1.7	Bird	0.059	0.67	0.059
Long-toed Stint	20	Marine Birds	0.88	0.658	6.3	0.3	1.9	Bird	0.059	0.67	0.0043
Great Egret	700	Pelecaniformes	0.279	0.845	71	0.104	7.4	Bird	0.059	0.67	0.046
Mammals											
Rakali	500	Mesic mammals	0.5	0.678	34	0.028	0.95	Mammal	0.099	0.9	0.053

Appendix D - Dose Estimation

Dose Estimation

Cheetham Wetlands

		Abiotic Media		Aquatic Biota					Total
		Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish	Sum
Receptors	**Area Use Factor**	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day
Birds									
Black Swan	0.25	6.5E-05	1.1E-06	1.0E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.1E-03
Hooded Plover	1	2.2E-03	1.6E-05	4.3E-03	9.9E-03	6.0E-03	0.0E+00	0.0E+00	2.2E-02
Dusky Moorhen	0.25	2.4E-05	2.5E-06	8.5E-04	1.3E-03	7.5E-04	0.0E+00	5.5E-04	3.4E-03
Australasian Bittern	0.25	1.2E-04	1.8E-06	0.0E+00	5.3E-04	3.0E-04	9.5E-04	3.5E-03	5.4E-03
Royal Spoonbill	1	4.5E-04	6.2E-06	0.0E+00	4.7E-03	2.9E-03	4.3E-03	5.3E-03	1.8E-02
Osprey	0.1	8.2E-06	7.1E-07	0.0E+00	5.2E-05	0.0E+00	1.2E-03	3.9E-04	1.7E-03
Long-toed Stint	0.5	2.3E-03	1.3E-05	2.9E-03	1.4E-02	8.0E-03	0.0E+00	0.0E+00	2.7E-02
Great Egret	0.5	2.6E-04	3.9E-06	0.0E+00	1.1E-03	6.5E-04	4.0E-03	4.9E-03	1.1E-02
Mammals									
Rakali	1	9.1E-05	1.3E-05	5.0E-04	3.5E-03	2.1E-03	1.1E-03	2.6E-03	9.9E-03

Laverton RAAF Swamp

		Abiotic Media		Aquatic Biota					
		Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish	Sum
Receptors	**Area Use Factor**	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day
Birds									
Black Swan	1	3.2E-04	4.9E-05	2.1E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	2.5E-03
Hooded Plover	0.1	2.8E-04	1.7E-05	2.2E-04	9.5E-04	2.9E-03	0.0E+00	0.0E+00	4.4E-03
Dusky Moorhen	0.5	6.0E-05	5.4E-05	9.0E-04	2.4E-03	7.5E-03	0.0E+00	1.9E-02	3.0E-02
Australasian Bittern	0.1	5.9E-05	7.9E-06	0.0E+00	2.0E-04	6.0E-04	7.8E-03	2.3E-02	3.2E-02
Royal Spoonbill	0.25	1.4E-04	1.7E-05	0.0E+00	1.2E-03	3.5E-03	2.3E-02	2.3E-02	5.0E-02
Osprey	0.05	5.0E-06	3.8E-06	0.0E+00	2.5E-05	0.0E+00	1.3E-02	3.3E-03	1.6E-02
Long-toed Stint	0.5	2.8E-03	1.4E-04	1.5E-03	1.3E-02	3.9E-02	0.0E+00	0.0E+00	5.6E-02
Great Egret	0.05	3.1E-05	4.3E-06	0.0E+00	1.1E-04	3.2E-04	8.0E-03	8.0E-03	1.6E-02
Mammals									
Rakali	0.1	1.1E-05	1.4E-05	2.6E-05	3.4E-04	1.0E-03	2.2E-03	4.4E-03	8.0E-03

Sanctuary Lakes

		Abiotic Media		Aquatic Biota					
		Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish	Sum
Receptors	**Area Use Factor**	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day
Birds									
Black Swan	1	2.4E-05	2.6E-06	1.8E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.8E-03
Hooded Plover	1	2.1E-04	9.1E-06	1.9E-03	4.3E-03	3.4E-03	0.0E+00	0.0E+00	9.8E-03
Dusky Moorhen	0.25	2.2E-06	1.4E-06	3.8E-04	5.3E-04	4.3E-04	0.0E+00	6.5E-04	2.0E-03
Australasian Bittern	0.25	1.1E-05	1.0E-06	0.0E+00	2.2E-04	1.8E-04	1.4E-03	4.0E-03	5.8E-03
Royal Spoonbill	1	4.1E-05	3.5E-06	0.0E+00	2.0E-03	1.6E-03	6.5E-03	6.2E-03	1.6E-02
Osprey	0.1	7.5E-07	4.0E-07	0.0E+00	2.3E-05	0.0E+00	1.8E-03	4.6E-04	2.3E-03
Long-toed Stint	0.5	2.1E-04	7.3E-06	1.3E-03	6.0E-03	4.6E-03	0.0E+00	0.0E+00	1.2E-02
Great Egret	0.5	2.4E-05	2.2E-06	0.0E+00	4.7E-04	3.7E-04	6.0E-03	5.5E-03	1.2E-02
Mammals									
Rakali	0.5	4.2E-06	3.6E-06	1.1E-04	7.5E-04	6.0E-04	8.0E-04	1.5E-03	3.8E-03

Skeleton Creek

		Abiotic Media		Aquatic Biota					
		Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish	Sum
Receptors	**Area Use Factor**	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day	mg(dose)/kg(bw)/day
Birds									
Black Swan	1	6.5E-04	1.1E-05	1.1E-03	0.0E+00	0.0E+00	0.0E+00	0.0E+00	1.8E-03
Hooded Plover	0.5	2.8E-03	1.9E-05	6.0E-04	2.1E-03	2.2E-03	0.0E+00	0.0E+00	7.6E-03
Dusky Moorhen	1	2.4E-04	2.4E-05	9.6E-04	2.1E-03	2.1E-03	0.0E+00	1.1E-02	1.6E-02
Australasian Bittern	0.5	6.0E-04	8.9E-06	0.0E+00	4.3E-04	4.5E-04	3.5E-02	3.4E-02	7.0E-02
Royal Spoonbill	0.5	5.5E-04	7.4E-06	0.0E+00	1.0E-03	1.0E-03	4.0E-02	1.3E-02	5.5E-02
Osprey	0.1	2.0E-05	1.7E-06	0.0E+00	2.2E-05	0.0E+00	2.2E-02	1.9E-03	2.4E-02
Long-toed Stint	0.5	5.5E-03	3.1E-05	8.0E-04	5.5E-03	6.0E-03	0.0E+00	0.0E+00	1.8E-02
Great Egret	0.5	6.5E-04	9.5E-06	0.0E+00	4.5E-04	4.7E-04	7.0E-02	2.4E-02	9.6E-02
Mammals									
Rakali	1	2.3E-04	3.1E-05	1.4E-04	1.4E-03	1.5E-03	1.9E-02	1.3E-02	3.5E-02

Appendix D - Risk Characterisation

Cheetham Wetlands

Receptors	Background Dose	TRV	Dose	Hazard	Hazard Index from Pathway						
					Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	%	*mg/kg(bw)/day*	*mg/kg(bw)/day*	-	%	%	%	%	%	%	%
Birds											
Black Swan	0%	0.00772	0.0011	1.4E-01	6%	0%	94%	0%	0%	0%	0%
Hooded Plover	0%	0.00772	0.022	2.8E+00	10%	0%	19%	44%	27%	0%	0%
Dusky Moorhen	0%	0.00772	0.0034	4.4E-01	1%	0%	25%	36%	22%	0%	16%
Australasian Bittern	0%	0.00772	0.0054	7.0E-01	2%	0%	0%	10%	6%	18%	65%
Royal Spoonbill	0%	0.00772	0.018	2.3E+00	3%	0%	0%	27%	16%	24%	30%
Osprey	0%	0.00772	0.0017	2.2E-01	0%	0%	0%	3%	0%	73%	24%
Long-toed Stint	0%	0.00772	0.027	3.5E+00	9%	0%	11%	51%	30%	0%	0%
Great Egret	0%	0.00772	0.011	1.4E+00	2%	0%	0%	10%	6%	37%	45%
Mammals											
Rakali	0%	0.0011	0.0099	9.0E+00	1%	0%	5%	35%	21%	11%	26%

Laverton RAAF Swamp

Receptors	Background Dose	TDI	Dose	Hazard	Hazard Index from Pathway						
					Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	%	*mg/kg(bw)/day*	*mg/kg(bw)/day*	-	%	%	%	%	%	%	%
Birds											
Black Swan	0%	0.00772	0.0025	3.2E-01	13%	2%	85%	0%	0%	0%	0%
Hooded Plover	0%	0.00772	0.0044	5.7E-01	6%	0%	5%	22%	66%	0%	0%
Dusky Moorhen	0%	0.00772	0.03	3.9E+00	0%	0%	3%	8%	25%	0%	64%
Australasian Bittern	0%	0.00772	0.032	4.1E+00	0%	0%	0%	1%	2%	25%	73%
Royal Spoonbill	0%	0.00772	0.05	6.5E+00	0%	0%	0%	2%	7%	45%	45%
Osprey	0%	0.00772	0.016	2.1E+00	0%	0%	0%	0%	0%	79%	21%
Long-toed Stint	0%	0.00772	0.056	7.3E+00	5%	0%	3%	23%	69%	0%	0%
Great Egret	0%	0.00772	0.016	2.1E+00	0%	0%	0%	1%	2%	49%	49%
Mammals											
Rakali	0%	0.0011	0.008	7.3E+00	0%	0%	0%	4%	13%	28%	55%

Appendix D - Risk Characterisation

Sanctuary Lakes

Receptors	Background Dose	TDI	Dose	Hazard	Hazard Index from Pathway: Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	%	*mg/kg(bw)/day*	*mg/kg(bw)/day*	-	%	%	%	%	%	%	%
Birds											
Black Swan	0%	0.00772	0.0018	2.3E-01	1%	0%	99%	0%	0%	0%	0%
Hooded Plover	0%	0.00772	0.0098	1.3E+00	2%	0%	19%	44%	35%	0%	0%
Dusky Moorhen	0%	0.00772	0.002	2.6E-01	0%	0%	19%	27%	21%	0%	33%
Australasian Bittern	0%	0.00772	0.0058	7.5E-01	0%	0%	0%	4%	3%	24%	69%
Royal Spoonbill	0%	0.00772	0.016	2.1E+00	0%	0%	0%	12%	10%	40%	38%
Osprey	0%	0.00772	0.0023	3.0E-01	0%	0%	0%	1%	0%	79%	20%
Long-toed Stint	0%	0.00772	0.012	1.6E+00	2%	0%	10%	50%	38%	0%	0%
Great Egret	0%	0.00772	0.012	1.6E+00	0%	0%	0%	4%	3%	49%	44%
Mammals											
Rakali	0%	0.0011	0.0038	3.5E+00	0%	0%	3%	20%	16%	21%	40%

Skeleton Creek

Receptors	Background Dose	TDI	Dose	Hazard	Hazard Index from Pathway: Sediment	Surface Water	Aquatic Plants	Benthic Invertebrates	Pelagic Invertebrates	Predator Fish	Prey Fish
	%	*mg/kg(bw)/day*	*mg/kg(bw)/day*	-	%	%	%	%	%	%	%
Birds											
Black Swan	0%	0.00772	0.0018	2.3E-01	37%	1%	62%	0%	0%	0%	0%
Hooded Plover	0%	0.00772	0.0076	9.8E-01	37%	0%	8%	27%	28%	0%	0%
Dusky Moorhen	0%	0.00772	0.016	2.1E+00	1%	0%	6%	13%	13%	0%	67%
Australasian Bittern	0%	0.00772	0.07	9.1E+00	1%	0%	0%	1%	1%	49%	49%
Royal Spoonbill	0%	0.00772	0.055	7.1E+00	1%	0%	0%	2%	2%	72%	24%
Osprey	0%	0.00772	0.024	3.1E+00	0%	0%	0%	0%	0%	92%	8%
Long-toed Stint	0%	0.00772	0.018	2.3E+00	31%	0%	4%	31%	34%	0%	0%
Great Egret	0%	0.00772	0.096	1.2E+01	1%	0%	0%	0%	0%	73%	25%
Mammals											
Rakali	0%	0.0011	0.035	3.2E+01	1%	0%	0%	4%	4%	54%	37%

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