EVR3035
RAAF WILLIAMS
POINT COOK
VICTORIA
FORMER FIRE TRAINING AREA

ENVIRONMENTAL AND HERITAGE MANAGEMENT PLAN

Revision Status

Issue /Rev	Date	Revision Description	By	Checked	Checked	Approved
Rev 0	12/04/13		JD	DM	BM	
Rev1	01/05/13		JD	DM	BM	
Rev 2	10/05/13		JD	DM	BM	
Rev 3	13/08/13		JD	DM	BM	

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1. PURPOSE AND SCOPE

The purpose of this Environmental and Heritage Management Plan (EHMP) is to describe the management controls, procedures and protocols to be implemented as part of the remediation works at RAAF Williams Base, Point Cook (Base).

2. DEFINITIONS

AHD – Australian Height Datum
CHL – Commonwealth Heritage List
DNAPL – Dense Non Aqueous Phase Liquid
DTD – Direct Thermal Desorption
ECC – Environmental Clearance Certificate
ECS – Emissions Control System
EHMP – Environmental and Heritage Management Plan
EPBC – Environment Protection and Biodiversity Conservation Act 1999
EPS – Enviropacific Services
FOD – Foreign Object Debris
FTA – Fire Training Area
ITP – Inspection and Test Plan
ITR – Inspection and Test Report
PB – Parsons Brinckerhoff (Consultants)
PCI – Primary Chemicals of Interest
RAAF – Royal Australian Air Force
SEPP – State Environmental Protection Policy
WP – Work Procedure
WTP – Water Treatment Plant

3. INTRODUCTION, OBJECTIVES AND PROJECT BACKGROUND

Enviropacific Services have been engaged by Department of Defence (Defence) to undertake contamination remediation works at the former Fire Training Area (FTA) at RAAF Williams Base, Point Cook. The former FTA Site comprises an area of approximately 27 hectares located in the south east of the Base. The Site is contaminated by a range of organic chemicals present as a Dense Non-Aqueous Phase Liquid (DNAPL). The contamination is a result of historical training activities carried out by fire-fighters at the Site. The DNAPL present is a source of dissolved phase groundwater contamination which has migrated towards Port Phillip Bay and has the potential to impact the environment and off-site receptors.

The aim of the remediation at the Site is to remove the primary source of groundwater contamination thereby reducing the dissolved phase contaminant concentrations in groundwater and subsequent off-site migration.

The general scope of Enviropacific works at the Site includes:

- Establishment of environmental controls including Environmental Enclosures and Emissions Control Systems (ECS).
- Installation of sheet piling for excavation support.
- Excavation of contaminated materials located in defined areas associated with Pits A and B.
- Management and treatment of potentially contaminated water associated with excavation works.
- Transport and management of contaminated soils, including stockpiling and pre-treatment processing.
- Treatment of contaminated soils via ex-situ Direct Thermal Desorption (DTD).
- Reinstatement of treated materials and revegetation on completion of treatment works.
- Deconstruction of DTD Plant and demobilisation from site.

4. SITE DESCRIPTION AND CURRENT LAND USES

The Site is shown in *Figure 1*: *Base Boundary,* and is broadly broken into the RAAF Williams Base (Base) and the Enviropacific Works Area (the Site) incorporating the former FTA and the Enviropacific Site Compound.

The Site is bounded by:

- RAAF Lake to the north
- Port Phillip Bay to the south
- Point Cook Coastal Park and the adjacent Point Cooke Marine Sanctuary to the north and east controlled by Parks Victoria
- The Base runway and Southern Tarmac Areas to the west

The Base has been an operational airfield for approximately 100 years. Prior to this it was used as grazing land. Point Cook is considered to be the birth place of the Royal Australian Air Force (RAAF) and is the oldest continually operating military airfield in the world. The Base is currently predominantly used for training purposes.

The FTA portion of the Site was historically used for fire training purposes. Various chemicals including fuels and chlorinated solvents are understood to have been placed into Pits A and B within the Site and poured over plane fuselages, metal drums, car bodies and a range of other waste materials before being ignited. Once fire training activities ceased, Pits A and B are understood to have been filled with solid and potentially liquid wastes. Pits A and B are considered to be the primary sources of contamination and represent the primary sources of on-going groundwater contamination.

Site investigations by others have confirmed extensive contamination within the shallow sand aquifer underlying the Site. DNAPL has been encountered over an area of approximately 8,400m2 and extends a significant distance down hydraulic gradient from Pits A and B towards the shore line and Port Phillip Bay. The DNAPL plume extends approximately 120m from Pit A and approximately 60m from Pit B. The DNAPL consists of over 120 organic compounds, of which twelve have been identified as primary chemicals of interest (PCI) based on identified presence in DNAPL and dissolved phase contamination of groundwater. Dissolved phase contamination associated with the DNAPL is also present within the shallow aquifer and has been detected within Port Phillip Bay at levels not adversely impacting on human or ecological health. The twelve PCIs are considered to represent the greatest risk of migration with the potential to impact down gradient receptors, including Port Phillip Bay.

5. IMPLEMENTATION, RESPONSIBILITIES AND UPDATING PROTOCOL

Responsibility for the implementation of all aspects of this Environmental and Heritage Management Plan (EHMP) lies with Enviropacific. The Enviropacific Project Manager has overall responsibility for the implementation of the EHMP. Functional responsibility for monitoring and field activities lies with the Enviropacific Site Manager.

All Enviropacific personnel involved in the implementation of this plan are qualified and experienced in the operation and response associated with similar management plans and will ensure that all procedures are followed as detailed in the plan. Third party consultants will be engaged as required to undertake specialist activities. The plan will be implemented in conjunction with a series of Work Procedures. Each Work Procedure will provide details on a specific task, procedure or process required as part of the EHMP.

Regular inspections will be undertaken during the project to ensure compliance with the EHMP, and regulatory requirements. Enviropacific will utilise Inspection and Test Reports (ITRs), weekly WHS and Environmental Inspection Checklists, and daily visual inspections to ensure that all controls and actions contemplated under this plan are being implemented. Hold Points will be identified within the relevant Inspection and Test Plans (ITPs) and all Hold Points will be released as per the Hold Point Release form.

The Organisational Chart below shows the relationship between key project participants.

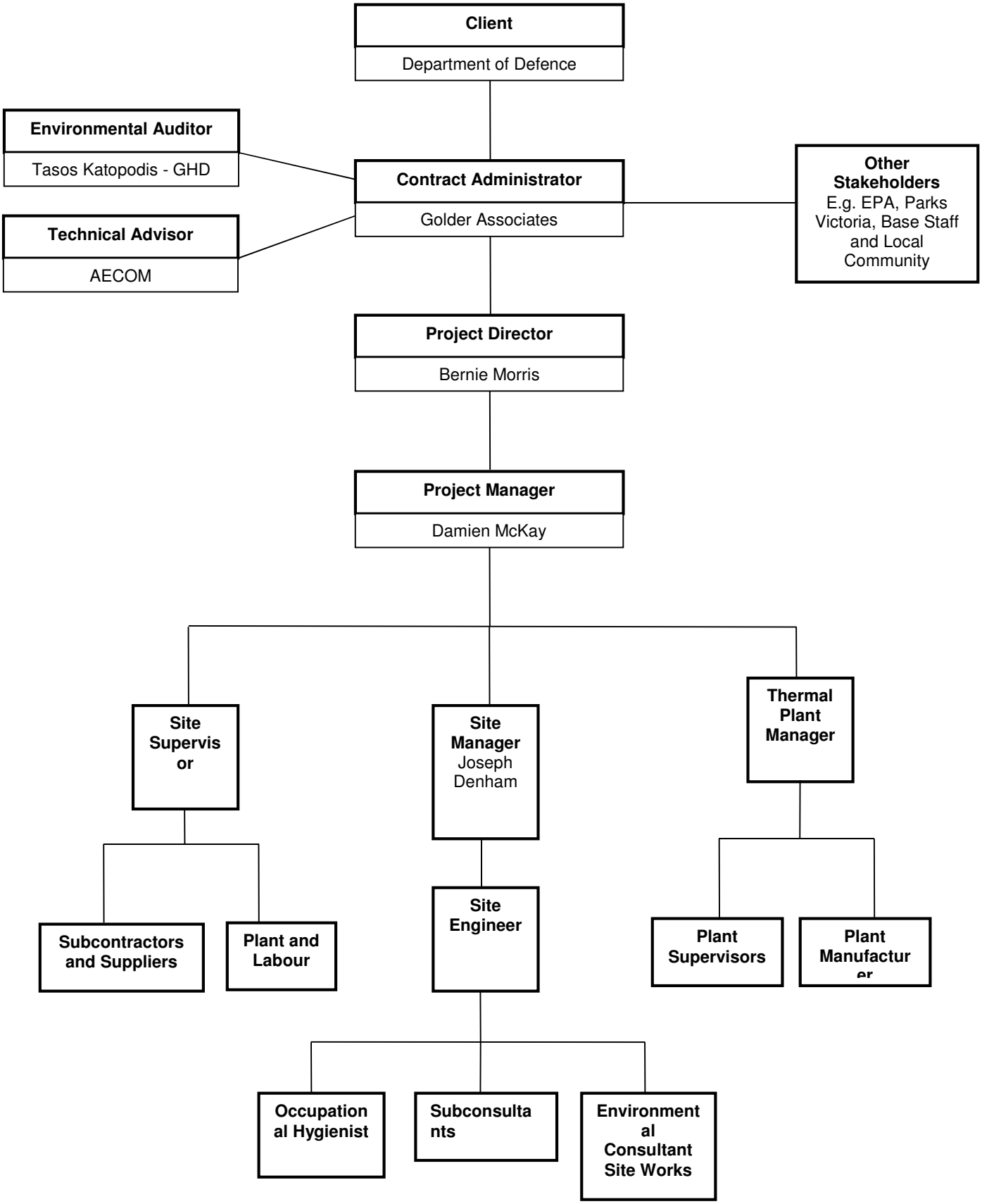


Table 1: Works Procedures, ITP's and ITR's

Work Procedure	Title	ITP
WP01	Site Access	ITP01
WP02	Site Investigation Works	ITP02
WP03	UXO Assessment and Management Plan	ITP03
WP04	Site Preliminaries, Facilities and Works Control	ITP04
WP05	Air Quality Management Plan	ITP05
WP06	Noise Management Plan	ITP06
WP07	Installation of Excavation Support	ITP07
WP08	Wastewater Management Plan	ITP08
WP09	Construction, Commissioning and Operation of WTP	ITP09
WP10	Excavation Plan	ITP10
WP11	Soil Pre-treatment Plan	ITP11
WP12	Materials Handling and Tracking Plan	ITP12
WP13	Construction, Commissioning and Operation of DTD Plant	ITP13
WP14	Acid Sulphate Soil Management Plan	ITP14
WP15	Treated Materials Validation Plan	ITP15
WP16	Re-instatement and Revegetation Management Plan	ITP16
WP17	Services Installation Plan	ITP17
WP18	Fitness for Work Procedure	ITP18
WP19	Traffic Management Plan	ITP19
Inspection Test Reports (ITR)*		
Document Number	Title	
ITR01	Off Site Shipping Form	
ITR02	On Site Soil Movement Form	
ITR03	Materials Import Form	
ITR04	Incoming Product Inspection Form	

* ITR's will be produced as required by individual Work Procedures.

6. REGULATORY REQUIREMENTS AND APPROVALS

6.1. Commonwealth Legislation

- The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the primary legislation governing conservation and maintenance of biodiversity at Defence sites.
- The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act) provides for the protection of Aboriginal cultural heritage values including places and objects. Under this Act a person must not adversely affect declared significant Aboriginal areas, Aboriginal objects or Aboriginal remains.
- The National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, 1999) is relevant to the remediation of the Site.

6.2. Victorian Legislation

- Environmental Protection Act 1970;
- National Environment Protection Council (Victoria) Act 1995;
- Wildlife Act 1987;
- Coastal Management Act 1995;
- Planning and Environment Act 1987;
- Flora and Fauna Guarantee Act 1988;
- Catchment and Land Protection Act 1994;
- Environment Protection (Industrial Waste Resources) Regulations 2009;
- State Environment Protection Policy (Prevention and Management of Contamination of Land), 2002
- (Land SEPP);
- State Environment Protection Policy (Groundwaters of Victoria), 1997 (Groundwater SEPP);
- State Environment Protection Policy (Waters of Victoria), 2003 (Water SEPP);
- State Environment Protection Policy (Air Quality Management), 2001;
- State Environment Protection Policy (Ambient Air Quality), 1999; and
- State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) No. N1.

7. PROPOSED WORKS

The main works to be undertaken by Enviropacific are:

- Establishment of environmental controls including Environmental Enclosures and Emissions Control Systems (ECS).
- Installation of sheet piles for excavation support.
- Excavation of contaminated materials located in defined areas associated with Pits A and B.

- Management and treatment of potentially contaminated water associated with excavation works.
- Management of impacted solid wastes.
- Transport and management of contaminated soils, including stockpiling and pre-treatment processing.
- Treatment of contaminated soils via ex-situ Direct Thermal Desorption (DTD).
- Reinstatement of treated materials and revegetation on completion of treatment works.
- Deconstruction of DTD Plant and demobilisation from site.

The works also include the following tasks:

- Preparation of detailed Management Plans and Work Procedures for the works.
- Obtaining approvals and licences required to undertake the project from relevant authorities.
- Preliminaries and site preparation.
- Environmental and Heritage Management.
- Construction, commissioning and undertaking Proof of Performance (PoP) testing prior to commencing full scale treatment works.
- Validation of treated materials.
- Providing support for the validation of completed excavations.

8. ENVIRONMENTAL HAZARDS AND RISK ASSESSMENT

8.1. Flora and Fauna

Two reports concerning Flora and Fauna at the Site have been provided to Enviropacific as Documents for Information.

- Initial Environmental Review, RAAF Williams, Former Fire Training Area, Pt. Cook, Victoria. ENSR, 2008.
- RAAF Williams, Point Cook, Former Fire Training Area (FTA) - Stage 4 Remediation and Validation Project – Vegetation Survey. Parsons Brinckerhoff, Jan 2011.

Areas of 'Moderate' and 'Low' ecological constraints have been identified (by PB) within the Site and are illustrated in *Figure A-2 Ecological Constraint* of the RAAF Williams, Point Cook, Former Fire Training Area (FTA) - Stage 4 Remediation and Validation Project –Vegetation Survey, Parsons Brinckerhoff, Jan 2011. This figure is attached, with the location of the proposed services runs (HV Power and water) included. Ground disturbance within these areas will be minimised where possible by utilising dedicated haul roads and limiting excavation activities to within the defined areas associated with Pit A and Pit B and proposed equipment and infrastructure locations. *Figure 2: Site Layout* shows the proposed layout of equipment and infrastructure. Wherever possible services will be run at the edge of existing access tracks.

An area of 'High' ecological constraint is present north of the Site adjacent to the RAAF Lake. This area is outside of the existing fence lines and no works will take place within this area.

Exotic species are prevalent throughout the Site, occurring within all areas of constraint. Whilst the area of 'Low' constraint contains fewer native species, the density of exotic species is higher than other Site areas. To minimise the potential introduction and spread of weed species:

- Equipment and vehicles will be restricted to dedicated haul roads;
- Cleared vegetation will be either mulched and stored onsite in a single location, or transported offsite;
- At the completion of works, areas of ground disturbed by Enviropacific activities will be revegetated in accordance with the Specification and WP15 Re-Instatement and Revegetation Management Plan.

Where it is unavoidable for vehicles or plant to remain on the access tracks then the site wash down facility will be utilised to remove any soil or debris to avoid the spreading of weeds to other areas of the base.

No Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) or Flora and Fauna Guarantee Act 1988 (FFG) listed flora and fauna species have been recorded during either investigation or survey and Enviropacific have not been advised of the presence of such.

8.2. European and Indigenous Heritage

The Base is included on the Commonwealth Heritage List (CHL) under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC).* These heritage listings recognise the outstanding heritage value of the Base to Australia as the oldest continually operating airfield in the world and the central role it has played in the development of the RAAF. A Heritage Management Plan (ERM, 2008) developed for the Base has been provided to Enviropacific as a Document for Information. Nine heritage precincts are identified within the ERM (2008) Heritage Management Plan and have been given a Heritage Value Ranking from exceptional to low.

The following precincts have been identified as potentially being affected by the remediation works and are shown in *Figure 3: Heritage Location Plan*.

- South Tarmac – Oldest and most extensive complex of World War I military aviation buildings – *Exceptional Heritage Value*
- North Tarmac – World War II RAAF Training facilities and Bellman Hangars – *High Heritage Value*
- Entry – The entrance to RAAF Williams contains 1930's developments including the sentry boxes and gates – *Moderate Heritage Value*

The Site has no known indigenous heritage values or significant sites. However, previous surveys of adjacent coastal land and other areas in the Point Cook region have revealed the presence of indigenous artefacts and other sites of importance. It is therefore considered a

possibility that indigenous artefacts may be present at the Site. Given the highly disturbed environment associated with historical activities undertaken at the FTA this is considered low risk.

Unforseen archaeological discoveries are considered possible at RAAF Base Williams and may be found during the course of excavation works. The potential for significant artefacts to be found exists, particularly in the less developed areas around the Base perimeter.

The following legislation is applicable to the remediation works at the Site.

- Environment Protection and Biodiversity Conservation Act 1999
- Aboriginal and Torres Strait Islander Heritage Protection Act 1984

8.2.1. Purpose and Scope

The aim of this management sub plan is to prevent disturbance or damage to heritage listed structures or precincts during remediation works and to ensure compliance with relevant legislation and regulations. In order to access the former FTA, all personnel, plant, materials and equipment will be required to travel through the Entry, North Tarmac and South Tarmac Precincts. This sub-plan describes the control and mitigation measures to be implemented, and the Enviropacific personnel responsible for their implementation.

8.2.2. Control Measures and Responsibilities

Before any significant works on Site can occur, an Environmental Clearance Certificate (ECC) signed by the Regional Defence Senior Environmental Manager is required to be in place. The Enviropacific Site Manager is responsible for ensuring all personnel and sub-contractors comply with any conditions or requirements set out in the ECC along with the provisions and control measures contained in this sub-plan.

- All personnel working at the site are required to attend an Enviropacific Site Induction that will include identification of heritage issues and requirements prior to the commencement of works. The site induction will include the location of the heritage precincts on site.
- Visitors and delivery drivers will be escorted from Gate 9, through the South Tarmac Precinct to the Enviropacific Site.
- Only rubber tyred vehicles will be permitted to pass through the 3 heritage precincts. All tracked plant will be unloaded within the Enviropacific Site.
- An exclusion zone and fencing will be installed around heritage items if identified within the Site. There are no known heritage items within the Site.
- If suspected indigenous or non-indigenous culturally significant material is found during works, all work nearby will stop immediately with steps taken to prevent further disturbance and the Contract Administrator notified.
- Where culturally significant items are found on Site, exclusion zones are to be established and clearly marked with tape, fencing or pegs.

- Only after written confirmation is given by the Contract Administrator, in consultation with the relevant government agency, shall work recommence in the area.
- If any of the requirements or control measures in this sub-plan are found to have been breached, the Contract Administrator must be notified immediately and a Non Conformance Investigation conducted by the Enviropacific Project Manager.

The Enviropacific Project Manager is responsible for compliance with the relevant regulations. All EPS site management (PM, PE, Supervisor) have the responsibility to contact the Contract Administrator immediately if any suspected heritage material is uncovered.

8.3. Water Management

The proximity to the works of sensitive receptors such as Port Phillip Bay and the RAAF Lake, combined with the large quantity of impacted groundwater to be encountered during the excavation, make water management one of the most critical aspects of the project. Erosion and siltation controls will be developed and modified as the project progresses. A Water Treatment Plant (WTP) will be designed and constructed to manage the impacted groundwater and other waste waters generated during the works. Disposal of treated groundwater will be via infiltration trenches.

The following legislation and guidelines are applicable to the remediation works at the site:

- Environment Protection Act 1970
- SEPP (Waters of Victoria) 2003
- Guidelines for Environmental Management, Use of Reclaimed Water – EPA Publication 464.2, June 2003

8.3.1. Purpose and Scope

The objective of this management plan is to identify any potential impacts on water quality from the Point Cook Remediation Project, and detail the management measures that will be implemented to minimise the risk of these impacts occurring. Specifically, it is the goal of the management plan to:

- Minimise the risk of water coming into contact with contaminated materials;
- Identify areas which pose a risk of generating contaminated water;
- Contain all surface water or groundwater within these areas;
- Transfer all potentially contaminated water to a primary storage;
- Treat all potentially contaminated water through an onsite Water Treatment Plant; and
- Ensure only water meeting approved discharge criteria is released from the Site.

8.3.2. Potential Sources of Adverse Water Impacts

Key potential sources of adverse water impacts are listed below:

- Contaminated groundwater from dewatering excavations;
- Contaminated water runoff from stockpile areas, wash down areas and wheel wash;
- Contaminated water runoff from DTD concrete slab;
- Water generated from DTD Scrubber;
- General erosion and sedimentation caused by runoff of uncontaminated areas of the site;
- Inadequate treatment of contaminated water prior to discharge or reuse onsite; and
- General site wastewater.

8.3.3. Control Measures and Responsibilities

Water management during the works can be broadly divided into two categories:

1. Management of 'Potentially Impacted Water' including:

    - Groundwater
    - Process water from DTD
    - Wash waters
    - Stormwater collected in dirty areas (eg. DTD slab)

2. Management of 'Non Impacted Stormwater', including:

    - Stormwater falling on areas outside of remediation areas.
    - Stormwater collected from the roof of Environmental Enclosures.

The management of potentially impacted water is detailed in WP08 Wastewater Management Plan. Further details on the management controls to be implemented to prevent adverse impacts to non impacted stormwater are detailed below.

Sediment and Erosion Control

Sediment and erosion controls and general installation locations are described in this section. With the absence of stormwater infrastructure, it is anticipated that controls will be limited to the management of overland flows via silt fences and diversion bunds.

The site is relatively flat and a detailed topographical survey will need to be undertaken to determine the most suitable location for controls prior to the commencement of construction activities. It is assumed that parts of the Site will grade towards the RAAF Lake, with other parts draining towards Port Phillip Bay. It is also expected that some low lying portions of the Site will not drain, and that the surface water disperses through the underlying sands.

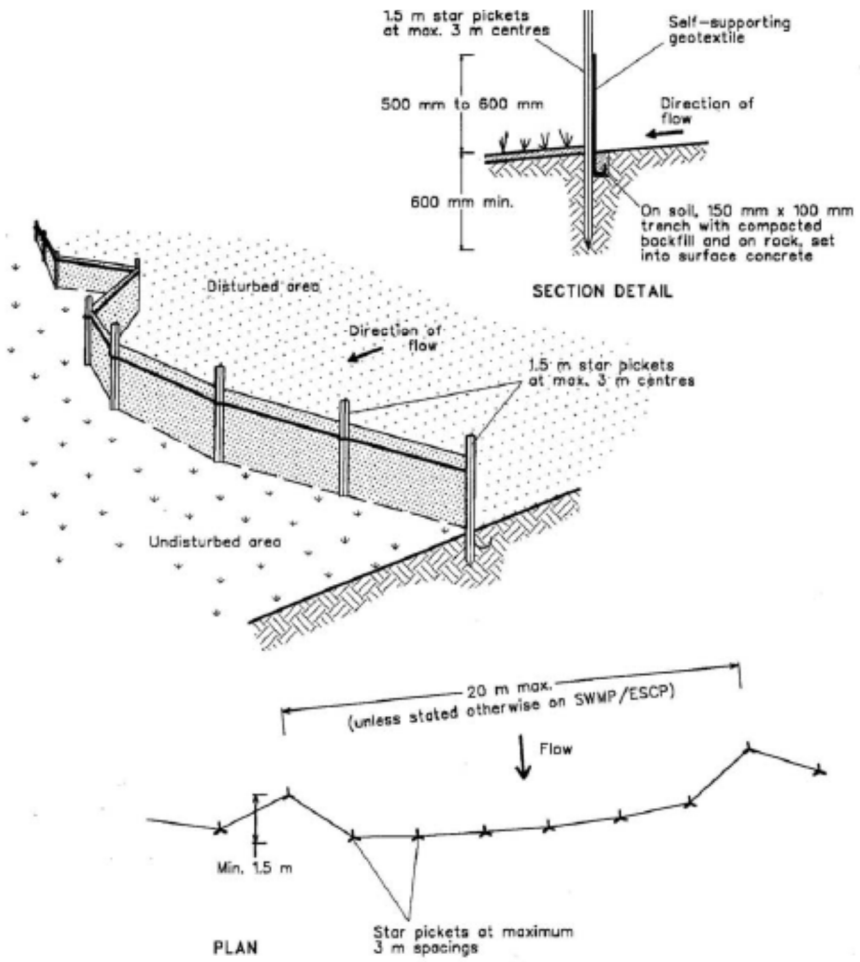
A detailed Erosion and Sediment Control Diagram can only be developed following the completion of the topographical survey. However it is expected that the following controls will be included as a minimum:

- A silt fence along rear of the existing seawall.
- A silt fence along the northern boundary of the works area adjacent the RAAF Lake.
- Diversion bunds upstream of disturbed areas.

Silt Fences

The purpose of silt fencing is to physically remove suspended/entrained soil materials from passing sediment and erosion controls. They are provided only as a secondary control to potentially contaminated surfaces, should primary containment fail. Silt fences will be installed downstream of remedial excavations and areas of disturbed soil surfaces.

Silt fencing is to be installed as shown in the figure below. The most important considerations are that the fence is structurally robust, and the base of the fence is anchored (typically through burial) to ensure silt does bypass the barrier through weak areas or gaps.



Diversion Bunds

Diversion bunds will be created to prevent non-impacted stormwater from coming into contact with contaminated sediments or soil. Typically the bunds will be created up

gradient of excavations or disturbed areas to divert the overland flows around and away from the disturbed areas. The location of the bunds will be determined following the detailed Site survey and included in the Erosion and Sediment Control Diagram.

Rainwater from Structures

Where practical rainwater falling on the excavation and pre-treatment enclosures will be collected and transferred to a 100kl holding tank. Collection will be via gutters mounted on the eaves of the structures, or on ground mounted lined swales. The gutters will either gravity drain to the holding tank, or to a pit and transferred to the tank via a float operated sump pump.

Uses for the stored rainwater may include:

- Backup process water for the DTD in the event of failure of the Base supply;
- Water supply for wash bay; and
- Water for dust control purposes.

8.4. Air Quality Management

Air quality management is considered to be a critical aspect of the remediation works. The works have the potential to generate dust, VOC's, stack emissions and nuisance odours and a number of control measures are required in order to mitigate the effects of these.

The following legislation and guidelines are applicable to the remediation works at the site:

- Environment Protection Act 1970
- SEPP (Ambient Air Quality) 1999
- SEPP (Air Quality Management) 2001

8.4.1. Purpose and Scope

The aim of this management sub-plan is to protect the beneficial use of the atmosphere by preventing or minimising any adverse effects or impacts from dust, VOC's, stack emissions and nuisance odours generated during the works. For further details regarding the management of air quality at the site, reference should be made to work procedure *WP05 Air Quality Management Plan.*

8.4.2. Control Measures and Responsibilities

In order to mitigate any adverse effects or impacts from dust, VOC's, stack emissions and nuisance odours, Enviropacific will implement a number of control measures. The Enviropacific Site Manager will be responsible for ensuring compliance with the control measures and requirements of this sub-plan and compliance will be audited by the Project Manager.

Emission Control Measures

Two Environmental Enclosures will be established on Site in order to capture and treat VOC's and nuisance odours and prevent windblown dust. One enclosure will be utilised as a pre-treatment and processing facility, with the second being located above the active excavation area. Each Environmental Enclosure will have an associated Emission Control System (ECS) designed to be capable of extracting and exchanging the entire volume of air within the enclosure, twice per hour. The ECS's will combine particulate and activated carbon filtration vessels to treat the extracted air, prior to discharge to atmosphere. Regular exhaust monitoring will be conducted to ensure carbon breakthrough does not occur.

All impacted material will be stockpiled in either the excavation or pre-treatment enclosures. Under no circumstances will odorous or suspected contaminated material be stockpiled outside of the enclosures. The pre-treatment enclosure will be based on a concrete slab to minimise the potential for impact on underlying soils.

The thermal desorption process incorporates a number of components and processes aimed at removing particulates and gases to ensure air quality criteria are not exceeded.

- Cyclone – Removes larger dust particles following thermal desorption of contaminants.
- Thermal Oxidiser – Destroys gaseous contaminants by thermal oxidation with a >99% destruction efficiency.
- Rapid Quench System – Reduces potential for Dioxin and Furan formation.
- Baghouse - Removes fine particulates.
- Acid Gas Scrubber – Removes corrosive acid vapour.

The WTP will be designed to reduce emissions and nuisance odours as far as is practicable. Storage and settlement tanks will be covered where possible to reduce odour issues. The water treatment process will incorporate an Air Stripper Unit with stripped air being treated via activated carbon filtration prior to being discharged to atmosphere. Regular exhaust monitoring will be conducted to ensure carbon breakthrough does not occur.

The effectiveness of the air quality controls will be monitored in accordance with WP05 Air Quality Management Plan.

A contaminated atmosphere will be present within the Environmental Enclosures during normal operation. The quality of the air inside the enclosures will be monitored with respect to Human Health in accordance with WP05 Air Quality Management Plan.

A Complaints Register will be maintained with all complaints received being directed to AECOM.

8.5. Noise Management

Noise generated during remediation works is required to be within the limit acceptable to the relevant regulatory bodies at the Base boundary. The following legislation and guidelines are applicable to the remediation works at the site:

- Environmental Protection Act 1970
- SEPP (Control of Noise from Commerce, Industry and Trade) No. N-1

8.5.1. Purpose and Scope

The aim of this management sub-plan is to protect the existing noise environment by preventing or minimising any adverse effects or impacts on sensitive land uses from noise emissions generated by the works.

8.5.2. Control Measures and Responsibilities

The Enviropacific Site Manager will be responsible for ensuring compliance with the control measures and requirements of this sub-plan. The following control and mitigation measures will be implemented.

- Site hours - normal hours of work, excluding operation of the DTD plant and associated infrastructure, will be between 7.00am and sunset, Monday to Saturday. No work shall be conducted on Sundays or public holidays.
- The DTD plant and associated infrastructure including the WTP, may operate 24 hours per day, 7 days per week. Where practicable, plant shutdowns and maintenance will be scheduled to minimise noise at weekends.
- The Site layout has been prepared to utilise the Environmental Enclosure as a barrier between the DTD and sensitive receptors.
- The DTD plant will be fitted with a silenced compressor to minimise noise outputs from the plant.
- Where practicable, all site noise sources will have a maximum operating noise level of 85db(A);
- The condition of exhaust systems on the excavators and other heavy machinery will be assessed to ensure that they are operating efficiently.
- Generators and pumps will be shrouded where practicable to reduce emitted noise levels.
- A Complaints Register will be maintained with all complaints received being directed to AECOM.
- Noise generation and associated mitigation measures will be communicated as part of the Enviropacific Site Induction.

The effectiveness of the noise controls will be monitored in accordance with WP06 Noise Management Plan. This will include background noise monitoring prior to the main works occurring.

8.6. Waste Management

During the works, various types of waste will be generated including solid inert waste encountered during excavation, plastic and cardboard packaging waste and putrescible waste from Site amenities.

Handling, tracking, storage, treatment and disposal of waste will be managed in accordance with this sub-plan in conjunction with the Enviropacific QHSE Plan and Work Procedure WP11 Materials Handling and Tracking Plan.

The following legislation and guidelines are applicable to the remediation works at the site:

- Environment Protection (Industrial Waste Resource) Regulations 2009 (IWRG100)
- Industrial Waste Resource Guideline 600.2 (December 2010) *Waste Categorisation*
- Industrial Waste Resource Guideline 631 (June 2009) *Solid Industrial Waste Hazard Categorisation and Management*
- Industrial Waste Resource Guideline 644.1 (June 2010) *Used Containers – Transport and Management*
- Protection of the Environment Operations Act 1997 (POEO Act)
- Protection of the Environment Operations (Waste) Regulation 2005

8.6.1. Purpose and Scope

The aim of this management sub-plan is to prevent or minimise any adverse safety or environmental impacts from waste during the works. Emphasis will be placed on minimising waste generation and maximising reuse and recycling where possible, with all waste to be classified appropriately and disposed of safely and lawfully.

The plan also aims to prevent the generation of Foreign Object Debris (FOD) such as windblown packaging which poses a threat to aircraft operations at the Base.

8.6.2. Control Measures and Responsibilities

The Enviropacific Site Manager will be responsible for ensuring compliance with the control measures and requirements of this sub-plan.

Solid Inert Waste

- Oversize material will be removed from excavated soils via a physical separation process generally comprising an excavator mounted sieving bucket, ALLU mixing/crushing bucket and/or track mounted vibrating screen.
- Oversized material will be stockpiled within the pre-treatment enclosure before being sent for decontamination, stockpiling or further processing.
- All contaminated oversized waste encountered on site will be stored in a manner that minimises the impacts of the waste on the environment.
- Waste will be classified by the Technical Advisor as either Solid Inert Waste (clean) or Industrial Waste (contaminated).

- Industrial Waste that cannot be effectively decontaminated to meet the classification of Solid/Inert Waste will be disposed off-site to an appropriate licensed facility.
- Solid Inert Waste will be utilised on site where possible to reduce off-site disposal to landfill (e.g. construction of haul roads), where permitted by the Contract Administrator.
- Recyclable wastes (e.g. scrap metal) will be decontaminated in the wash down area with resulting wastewater being transferred to the WTP. The waste will then be transferred by a licensed waste carrier to an appropriate recycling facility where applicable. Separate recycling bins will be provided onsite for different waste streams.

Packaging and Putrescible Waste

- Packaging waste will be stored neatly in appropriate covered bins to prevent potential for FOD. Bin lids will be latched to prevent accidental release of the bin contents.
- Putrescible waste will be stored in appropriate covered bins to prevent nuisance caused by scavengers. Bin lids will be latched to prevent accidental release of the bin contents.
- All loads entering or leaving the Base are to be covered and will be inspected for loose packaging to prevent the potential for FOD.
- Enviropacific personnel and subcontractors will be informed of their responsibility to reduce waste and recycle where possible.
- Preference will be given to suppliers that minimise the amount of packaging used to deliver their goods.
- All personnel will receive instruction on what waste materials can be recycled and where the appropriate bins are located during the Enviropacific Site Induction.

Asbestos Waste

- Asbestos waste will be removed according to relevant guidelines and disposed of at a licensed landfill by a licensed transporter in accordance with Work Procedure WP16 Asbestos Control Plan.

In the event of a failure to comply with this plan the Project Manager will undertake a Non Conformance Investigation to determine the cause of the problem. As a result of the investigation, work practices or waste management procedures will be modified as necessary to improve waste management.

8.7. Plant and Equipment

Various plant and equipment will be utilised by Enviropacific in order to carry out the remediation works. Plant will be selected based on suitability to carry out a given task and will be subjected to a number of inspections prior to starting work on site.

8.7.1. Purpose and Scope

The aim of this sub-plan is to prevent any adverse safety or environmental impacts arising from the use of mobile and static plant during the remediation works.

8.7.2. Control Measures and Responsibilities

The Enviropacific Site Supervisor and Thermal Plant Manager will be responsible for ensuring compliance with the control measures and requirements of this sub-plan. The following controls will be implemented.

- Pre-commencement Inspections of all plant prior to starting work on site.
- Plant details are to be recorded on the Mobile Plant Register.
- Daily Pre-start Inspections of all plant before each shift.
- Plant Risk Assessments and Standard Operating Procedures to be held on file.
- Up to date plant maintenance records to be kept with each piece of plant.
- Regular maintenance of all plant to be carried out.
- Plant to be operated in accordance with manufacturer specifications.
- Competent operators only to operate plant. This is generally demonstrated by providing a ticket, card or licence from a registered training organisation. These are inspected by Enviropacific personnel during site inductions, with details being recorded on the Site Induction Checklist together with a photocopy of the ticket.
- Spill kits to be readily available on Site and in the main working areas including at the excavation environmental enclosure, the pre-treatment environmental enclosure, the DTD, the WTP and at any fuel storage location.
- Plant is to be isolated and tagged out in the event of a breakdown.
- Plant is to be decontaminated as required prior to being demobilised from Site.

9. TRAINING AND AWARENESS

As a minimum, all site personnel and operators are required to provide evidence that they have undertaken an Occupational Health and Safety Construction Induction.

Enviropacific staff qualifications, training and competencies are recorded in electronic format on the Enviropacific Management System. Skills and competencies of all Enviropacific personnel shall be recorded prior to and/or upon their commencement. Subcontractor training certificates and licences shall be recorded on the Site Induction Checklist during the induction process.

Site induction training will be conducted in reference to this plan, in conjunction with the Enviropacific QHSE Plan. A register of all those inducted will be kept on site.

Specific training for individual tasks will also be conducted in accordance with the Work Procedures and SWMS. Where a project activity requires specialised training or licences, details of this will be recorded on the SWMS for that activity.

10. ENVIRONMENTAL MONITORING

Detailed management plans have been developed with regards to Environmental Monitoring at the Site. Air and Noise will be monitored in accordance with management plans WP05 Air Quality Management Plan and WP06 Noise Management Plan.

Monitoring will be carried out in accordance with the following:

Air Quality

- SEPP (Ambient Air Quality) 1999
- SEPP (Air Quality Management) 2001

Noise

Monitoring will be undertaken using a Class 1 Noise Logger according to AS IEC 61672.1 – 2004 Electro Acoustics – Sound Level Meters Part 1: Specifications and will log the following noise descriptions;

- LAmax
- LA10
- LA90
- LAeq

Stack Emissions

As part of the thermal treatment, water treatment and emission control processes, stack emissions will be monitored continuously with monitoring taking into consideration the following EPA Publication:

- EPA Victoria Publication No 440. 1: A guide to the Sampling and Analysis of Air Emissions and Air Quality.

11. EMERGENCY RESPONSE PROCEDURES

This section contains details of emergency contacts and directions to the nearest hospital. Additional emergency response procedures and protocols can be found in the Enviropacific QHSE Plan.

In the event of an emergency, the Enviropacific Project Manager should be notified as soon as possible. The Enviropacific Project Manager will in turn contact the Contract Administrator.

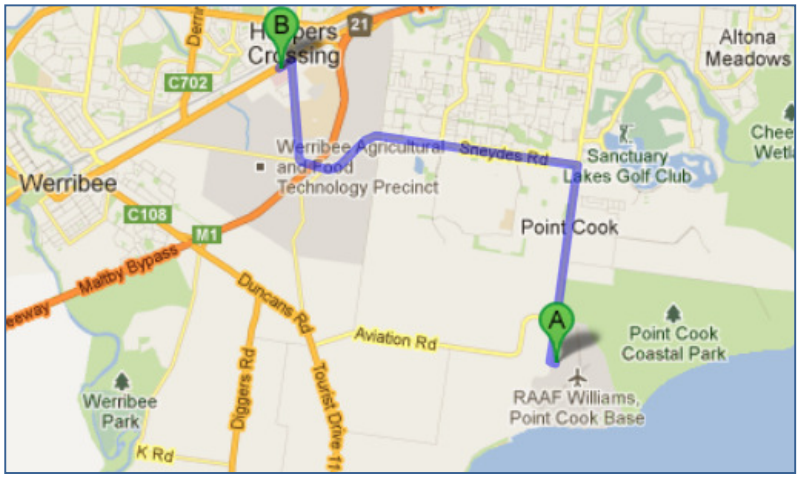
11.1. Emergency Contacts

Table 2: Emergency Contacts

Type	Description / Contact
Police, Ambulance, Fire Brigade	000 or 112 from mobile
Werribee Mercy Hospital	03 9216 8888
Victorian Poisons Information Centre	13 11 26
After hours contact / Project Manager	Damien McKay: 0428 435 147
Contract Administrator	Tom Harper: 0388 623 788 or 0422 094 864
Airfield Manager	Ralph LePore: 03 9395 1937
Gas Company - LPG	TBC
Water Company	City West Water: 13 26 42
Electrical Company	Powercor: 13 24 12
CASA	Anthony Lawler 02 6217 1410
WorkSafe Victoria	General: 03 9641 1444 Emergency: 1323 60
Federal Safety Commissioner Hot Line	1800 652 500
CFA – Point Cook	03 9395 3837
MFB – Laverton (Station 40)	1300 668 006

11.2. Hospital Route

The nearest hospital to site is the Werribee Mercy Hospital, 298-310, Princes Hwy Werribee, VIC, 3030



Directions to nearest hospital:
Take the 1st Right onto Williams Road.
Continue onto Point Cook Road.
Turn Left onto Sneydes Road
Continue onto Hoppers Lane and go through one roundabout.
Turn Left onto C109 Princes Highway
Destination is on the left.
Journey is 10.1km and approximately 13 minutes.

11.3. Incident Reporting & Complaints

All environmental incidents will be reported and investigated in accordance Section 7.2 of the project QHSE Plan. Incidents will include any uncontrolled spills or discharges. Any complaints received will be handled in accordance with the complaints handling procedure detailed in Section 10.3 of the QHSE Plan.

12. REFERENCES

ERM (2008): RAAF Williams Point Cook, Heritage Management Plan.

Department of Defence: RAAF Base Williams, Point Cook, Former Fire Training Area, Contamination Remediation Works – Remediation Technical Specification.

Initial Environmental Review, RAAF Williams, Former Fire Training Area, Pt. Cook, Victoria. ENSR, 2008.

RAAF Williams, Point Cook, Former Fire Training Area (FTA) - Stage 4 Remediation and Validation Project –Vegetation Survey. Parsons Brinckerhoff, Jan 2011.

13. FIGURES

- Figure 1: Base Boundary
- Figure 2: Site Layout
- Figure 3: Heritage Location Plan
- Figure A-2 Ecological Constraint (Parsons Brinckerhoff, Jan 2011.)