Community Information Session
Army Aviation Centre Oakey (AACO) – Environmental Investigation

August 2015
Session #5
Welcome

• emergency exits/ bathrooms
• tonight’s meeting: 6pm – 7.30pm
• this session will cover:
  – what’s been done to-date
  – long-term strategy
  – the next 12 months
  – question and answer session
• project team introductions
Background
The purpose of the Army Aviation Centre Oakey (AACO) Environmental Investigation is to understand impacts on the environment from past use of fire-fighting foams in training activities

- Defence periodically assesses groundwater on its bases, including Oakey
- in 2010, sampling results showed evidence of PFOS and PFOA in the groundwater beneath the AACO
- further assessments indicated the impact had travelled beyond the AACO
  - this was informed by targeted off-base sampling in early 2013 and wider scale sampling undertaken in 2014 and 2015.
Background

- Fire-fighting training activities have occurred at the Army Aviation Centre Oakey (AACO) for decades
- Aqueous Film Forming Foam (AFFF) is used to extinguish Class B fires (flammable liquid and gas fires)
- Historical AFFF products contained Polyfluoroalkyl substances (PFAS) including:
  - Perfluorooctanoate Sulfonic Acid (PFOS)
  - Perfluorooctanoic Acid (PFOA)
- In 2008, Defence implemented a policy to restrict use of AFFF with PFOS/ PFOA
- Defence only discharges AFFF products during emergencies or incidents, and not in training activities.
About PFOS and PFOA

• PFOS and PFOA are:
  – two of the many types of per- and polyfluorinated chemicals (PFCs)
  – PFCs are fluorosurfactants or per and polyfluoroalkyl substances (PFAS)
  – used for many years in a wide variety of common household and industrial products
  – present at trace concentrations throughout the environment and in most homes
About PFOS and PFOA

- PFCs, such as PFOS and PFOA, have been used to make coatings and products that resist:
  - heat
  - oil
  - stains
  - grease
  - water
- most people living in developed areas are likely to have background levels in blood
The investigation to date
Late-2013 to mid-2015

- sampling and testing local water bores to the west and south-west of the base (112 bores)
- sampling and testing surface water and sediment within select drainage lines (43 locations) and Oakey Creek (13 locations)
- community water use survey (120 responses)
- on-the-ground and desktop research
- engaging with State and Commonwealth government agencies and regulators
As a precaution, it has been recommended that residents within the Investigation Area not drink the bore water.

- assisting residents access to an alternative water supply on a case by case basis
- development of long-term management strategies
- altering water use on AACO to minimise contamination recharge

Late-2013 to mid-2015
Drinking water screening levels

- Australia has no guidelines for assessing PFOS and PFOA concentrations in human drinking water.
- Defence is using Provisional Health Advisory (PHA) values developed in 2009 by the Office of Water, a division of the US Environmental Protection Agency (EPA).
- The PHA values represent a concentration above which action should be taken to reduce exposure to PFOS and PFOA in drinking water.
- The PHA value for PFOS is 0.2 µg/L (micrograms per litre) and PFOA is 0.4 µg/L.
- The following maps show the project Investigation and Detection Areas, and bore water test results (to May 2015), as compared to the PHA values for human drinking water.
Investigation & Detection Areas

PFOS

PFOA
Recreational water screening levels

- the Australian Government National Health and Medical Research Council (NHMRC) and World Health Organisation (WHO) have produced guidance for applying drinking water guidelines to assess concentrations for primary contact recreation activities (e.g. swimming).
  - the NHMRC and WHO guidance suggest that applying a factor of 10 to drinking water assessment criteria accounts for the reduced exposure by oral ingestion of water during swimming.
  - this guidance does not relate to exposure from dermal contact (e.g. exposure through skin when swimming).
  - when applying this guidance to the PHA drinking water values, a concentration of \(2.00\mu g/L\) is set for PFOS and \(4.00\mu g/L\) is set for PFOA for recreational waters.
Soil/Sediment screening levels

- Australia has no guidelines for assessing PFOS and PFOA in soil or sediment.
- Defence is using residential soil screening levels developed in 2009 by US EPA for assessment of direct contact with dry sediment (i.e. as soil).
- The USEPA Region 4 residential soil screening level for PFOS is 6 mg/kg (milligrams per kilogram) and PFOA is 16 mg/kg.
Water and sediment sampling to date

- **Groundwater**
  - 112 bores tested
  - PFCs > drinking water screening levels in 42 bores
- **creek sampling/ results**
  - 13 Oakey Creek sample locations
  - PFCs > recreational water screening levels at 1 location
- **drainage line sampling/ results**
  - 43 sediment sample locations
  - PFCs detected at 39 locations, all < human health screening levels for direct soil contact
- reports available on project website.
Planning ahead

• Defence has been looking ahead and developing a plan for the Investigation
• the aim is to prioritise and schedule the short-to-medium term actions from 2014 to 2018
• it includes broad timeframes for anticipated site investigations and technical assessments required to understand the extent of the contamination, its potential impacts and how impacts will be managed.
Looking ahead

Discovery and Immediate Risk Response

1. Understanding the contamination and potential impacts
2. Assessing the contamination and its potential risks
3. Managing the contamination
4. Longer-term actions

2013 – current
current – late 2015
2015 – mid 2016
mid 2015 – 2018
post-2018

Ongoing consultation with relevant government agencies and regulators, and stakeholders
The next 12 months
mid 2015 – mid 2016
Key activities (mid 2015 – mid 2016)

- Hydrogeological assessment
- Human health and ecological risk assessment
- Management options assessment

AACO Environmental Investigation

Ongoing water assistance and regular community updates

Liaising with relevant government agencies and regulators
Hydrogeological assessment

• started July 2015
• this involves:
  – periodic sampling and testing of ground and surface water
  – targeted soil sampling
  – installing new groundwater monitoring wells at key locations
  – hydrogeological assessment and modelling.

*Hydrogeology is about how groundwater is distributed and moves through the soil and rocks of the Earth’s crust, particularly in aquifers*
Hydrogeological assessment

- Defence will install new monitoring wells at the AACO base and surrounding areas
- ten wells at five locations off-site (additional wells to be installed on AACO)
- all on Government-owned land, mainly roadside easements
- drilling rigs will be used to drill the wells to the required depth.

Image: Drilling rig
Human health and ecological risk assessment

- published guidelines are not available for all of the possible exposure pathways identified for human health and the environment at Oakey
- a risk assessment to obtain more detail about potential for risks to human health and ecology has been commissioned
- selected flora and fauna will be tested to inform the risk assessment
- guidance sought from State government departments to determine relevant screening criteria.
Human health and ecological risk assessment

- testing animals and crops that are part of the human food chain, as well as some that are not
- specific plant and animal species yet to be determined
- undertaken based on the technical requirements of the investigation
Management options assessment

• Defence is considering a wide range of options for managing contamination sources
• ongoing liaison with industry and regulatory professionals around the globe
• evaluation of identified management options will be informed by outcomes of future activities
Community enquiries
Community enquiries

- Most frequent enquiry topics
  - Bore water testing
  - General project information
  - Water use and supply/ general water solution
  - Test results
  - Human health concerns
  - Concerns about exposure through skin contact
  - Concerns about exposure through drinking

- Enquiry channels
  - 161 project hotline calls
  - 52 emails
  - 2 letters
Defence blood testing activity

- Defence funding was approved for limited blood testing of up to 100 samples
- the testing is focused on a sample group of Oakey residents who have drunk bore water on a regular basis over the last 3 years
- to be eligible for blood testing, residents also need to have lived within the contamination detection area and had bores tested that indicate elevated levels of PFOS and/or PFOA
- no test results will be issued until testing is completed for all participants
- results will be sent directly from the pathologist to participants as soon as possible after all testing is completed
Human health

• there has not been extensive research completed in Australia and/or overseas
• a conclusive link has not been established between exposure to these chemicals and specific health effects
Legal considerations

• Defence is not able to provide legal advice about:
  – property values
  – individual legal representation
  – the terms of engagement offered by legal representatives

• landholders should seek their own independent legal advice from relevant industry professionals

• individual community members seeking to represent their own interests, in respect of any potential claim, should direct their claim to the Office of Defence Special Counsel at dl.specialcounsel@defence.gov.au

• claims should include supporting information demonstrating the nature, extent and quantification of any alleged loss or damage.
Questions?
Thank you

Contact us

Phone: 1800 136 129 free call *(Monday to Friday, 8.30am to 5pm)*

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