

The Senate

Foreign Affairs, Defence and Trade
References Committee

Inquiry into firefighting foam contamination
Part A - RAAF Base Williamtown

February 2016

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ISBN 978-1-76010-365-1

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Printed by the Senate Printing Unit, Parliament House, Canberra.

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Abbreviations

AACO	Army Aviation Centre Oakey
ADF	Australian Defence Force
AFFF	aqueous film forming foam
CFCL	Commercial Fishermen's Cooperative Limited
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
Defence	Department of Defence
DPI	Department of Primary Industries (NSW)
EPA	Environmental Protection Authority (or Agency)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ENTOX	National Research Centre for Environmental Toxicity
FCRAG	Fullerton Cove Residents Action Group
µg/L	microgram per litre
NICNAS	National Industrial Chemical Notification and Assessment Scheme
NSW	New South Wales
NTN	National Toxics Network
OECD	Organisation for Economic Cooperation and Development
PFA	Professional Fishermen's Association
PFAS	perfluoroalkyl and polyfluoroalkyl substances
PFHxS	perfluorohexane sulfonate
PFOS	perfluorooctane sulfonate
PFOA	perfluorooctanoic acid
POPs	Persistent Organic Pollutants
RAAF	Royal Australian Air Force
'the red zone'	NSW EPA investigation zone
Stockholm Convention	Stockholm Convention on Persistent Organic Pollutants
US	United States
WCFC	Wild Caught Fishers Coalition
WSRAG	Williamtown and Surrounds Residents Action Group

Recommendations

Recommendation 1

6.14 The committee recommends that Defence immediately review its provision of water and replacement of water infrastructure to affected residents to ensure it is sufficient to meet their needs.

Recommendation 2

6.19 The committee recommends that the Commonwealth Government, with the advice of the NSW Department of Primary Industries, develop an initial compensation package for the commercial fishermen affected by the closures of Fullerton Cove and Tilligerry Creek.

Recommendation 3

6.23 The committee recommend that Defence examine providing additional mental health and counselling support services to those affected by contamination at RAAF Base Williamtown.

Recommendation 4

6.26 The committee recommends that Defence and the NSW Government examine establishing a joint taskforce to coordinate the response of government agencies to the contamination from RAAF Base Williamtown.

Recommendation 5

6.32 The committee recommends the Commonwealth Government commit to voluntarily acquire property and land which is no longer fit for purpose due to PFOS/PFOA contamination from RAAF Base Williamtown.

Recommendation 6

6.35 The committee recommends that if PFOS/PFOA contamination from RAAF Base Williamtown causes permanent or long-term fishing closures, the Commonwealth Government should:

- commit to compensate and purchase the relevant rights of fisherman affected; and
- establish an industry transition program for affected commercial fishermen to assist them relocate or transfer to other industries.

Recommendation 7

6.41 The committee recommends that Defence arrange and fund a program of blood tests for residents in the investigation area on an annual basis.

Recommendation 8

6.43 The committee recommends that Defence release a policy statement to clarify its environmental obligations and responsibilities for contamination which

spreads to non-Commonwealth land. In particular, it should clarify the capacity of State and Territory environment regulation to apply to its activities.

Chapter 1

Introduction

Referral of inquiry and terms of reference

1.1 On 30 November 2015, the Senate referred matters relating to perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) contamination at RAAF Base Williamtown and other sites to the Foreign Affairs, Defence and Trade References Committee for inquiry and report.¹

1.2 The terms of reference for the inquiry are as follows:

That the following matters, in relation to perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) contamination, be referred to the Foreign Affairs, Defence and Trade References Committee for inquiry and report:

- (a) by 4 February 2016 on PFOS and PFOA contamination at RAAF Base Williamtown and Australian Defence Force facilities, with reference to:
 - (i) what contamination has occurred to the water, soil and any other natural or human made structures in the RAAF Base Williamtown and the surrounding environs,
 - (ii) the response of, and coordination between, the Commonwealth Government, including the Department of Defence and RAAF Base Williamtown management, and New South Wales authorities to PFOS/PFOA contamination, including when base employees, local residents and businesses, Port Stephens and Newcastle City Councils, and the New South Wales Environmental Protection Agency (EPA) were informed of the contamination,
 - (iii) the adequacy of consultation and coordination between the Commonwealth Government, the New South Wales Government, Port Stephens and Newcastle City Council, the Department of Defence and Australian Defence Force, affected local communities and businesses, and other interested stakeholders,
 - (iv) whether appropriate measures have been taken to ensure the health, wellbeing and safety of Australian military and civilian personnel at RAAF Base Williamtown,
 - (v) the adequacy of health advice and testing of defence and civilian personnel and members of the public exposed, or potentially exposed, to PFOS/PFOA in and around RAAF Base Williamtown,

1 *Journals of the Senate*, 30 November 2015, pp. 3518-3519.

- (vi) the adequacy of Commonwealth and state and territory government environmental and human health standards and legislation, with specific reference to PFOS/PFOA contamination at RAAF Base Williamtown,
 - (vii) what progress has been made on remediation works at RAAF Base Williamtown, and the adequacy of measures to control further contamination,
 - (viii) what consideration has been undertaken of financial impacts and assistance to affected business and individuals, and
 - (ix) any other related matters; and
- (b) by 30 April 2016 on PFOS and PFOA contamination on other Commonwealth, state and territory sites in Australia where firefighting foams containing PFOS and PFOA were used, with reference to:
- (i) what Commonwealth, state and territory facilities have been identified as having PFOS/PFOA contamination, and what facilities may potentially still be identified as being contaminated,
 - (ii) the response of, and coordination between, the Commonwealth, state and territory governments, local governments, commercial entities and affected local communities,
 - (iii) what measures have been taken by the Commonwealth and state and territory governments, to ensure the health, wellbeing and safety of people in close proximity to known affected sites,
 - (iv) the adequacy of public disclosure of information about PFOS/PFOA contamination,
 - (v) what consideration has been undertaken of financial impacts on affected businesses and individuals,
 - (vi) the adequacy of Commonwealth and state and territory government environmental and human health standards and legislation, with specific reference to PFOS/PFOA contamination,
 - (vii) what progress has been made on the remediation and the adequacy of measures to control further PFOS/PFOA contamination at affected Commonwealth, state and territory sites,
 - (viii) what investigation and assessment of contaminated sites and surrounding areas has occurred, and
 - (ix) any other related matters.

Conduct of the inquiry

1.3 The committee advertised the inquiry on its website calling for submissions to be lodged by 14 December 2015 for part (a) of the inquiry and 5 February 2016 for part (b) of the inquiry. The committee also wrote directly to a range of people and

organisations likely to have an interest in matters covered by the terms of reference, drawing their attention to the inquiry and inviting them to make written submissions.

1.4 As of 4 February 2016, the committee received 110 submissions for the inquiry. The submissions are listed at [Appendix 1](#) and are available from the committee's website: www.aph.gov.au/senate/fadt. The bulk of the submissions received were from individuals and businesses affected by PFOS/PFOA contamination around RAAF Base Williamtown and Army Aviation Centre Oakey (AACO). Additional information and the responses to questions on notice received during the inquiry are listed at [Appendix 2](#).

1.5 On 3 December 2015, the committee held an initial public hearing for the inquiry at Parliament House in Canberra. On 22 December 2015, the committee held a second public hearing at the Newcastle City Hall in Newcastle. A list of witnesses who appeared at these hearings is available at [Appendix 3](#). The *Hansard* transcripts of these public hearings are available via the committee's website.

Structure of the report

1.6 The first part of the inquiry's terms of reference are directed to the circumstances at RAAF Base Williamtown, but also include other Australian Defence Force facilities. In particular, the inquiry received substantial evidence regarding PFOS/PFOA contamination at AACO. However, the committee has not received sufficient evidence regarding contamination at AACO as part of first part of its inquiry to make recommendations. The committee intends to further examine the situation in Williamtown and Oakey in conjunction with the second part of its inquiry.

1.7 The committee's report is structured as follows:

- Chapter 2 provides a brief background to inquiry and a summarised timeline of events;
- Chapter 3 examines the impacts on the community around RAAF Base Williamtown;
- Chapter 4 will look at the impact of the fishing industry and the financial assistance provided;
- Chapter 5 will assess the response of government departments and authorities; and
- Chapter 6 contains the committee's view and recommendations

Acknowledgements

1.8 The committee thanks all of those who contributed to the inquiry by making submissions, providing additional information or appearing at the public hearings to give evidence.

Note on references

1.9 References to the committee *Hansard* are to the proof *Hansard*. Page numbers may vary between the proof and official *Hansard* transcripts.

Chapter 2

Background

Introduction

2.1 This chapter will provide a brief background to the inquiry. One of the focuses of the inquiry related to when government agencies and other stakeholders became aware of the nature of the PFOS/PFOA contamination at RAAF Base Williamtown and how they responded. A summarised timeline of these events is included.

PFOS and PFOA

2.2 Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are two types of man-made perfluorinated compounds (PFCs) or perfluorinated alkylated substances (PFAS).¹ These compounds have been used in a range of industrial, commercial and domestic products for decades, due to their ability to repel oil, grease, and water. In particular, high concentrations of PFOS and PFOA have been used to make aqueous film forming foam (AFFF), a component of firefighting foams. These firefighting foams have been used for nearly 50 years on Defence and civilian facilities in Australia due to their effectiveness in extinguishing liquid fuel fires.²

2.3 PFCs, including PFOS/PFOA, are chemically and biologically stable in the environment and resist typical environmental degradation processes. As a result, these chemicals are extremely persistent in the environment. PFOS/PFOA are water-soluble and can migrate readily from soil to groundwater, where they can be transported long distances. Studies have shown that PFOS/PFOA also bioaccumulate and biomagnify in wildlife and enter the human food chain.³

2.4 Due to these characteristics, PFOS/PFOA are regarded as 'emerging contaminants' or pollutants which are potentially a threat to human health or the environment.⁴ PFOS and PFOA are eliminated slowly from the human body, and concentrations of the chemicals in the body can increase over time if they are continuously consumed in food or water. They have been shown to have effects,

1 Buck et al, 'Perfluoroalkyl and Polyfluoroalkyl Substances in the Environment: Terminology, Classification, and Origins', *Integrated Environmental Assessments and Management*, October, 2011, pp 513–541.

2 Department of Defence, response to question on notice 93, Supplementary Budget Estimates, 21 October 2015, p. 2.

3 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 3.

4 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 1.

particularly in the liver, at low doses in animal tests but the scientific literature on the effect of PFOS/PFOA in humans does not give clear, unambiguous results.⁵

2.5 PFOS was added to Annex B of the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) in May 2009. This convention aims to protect human health and the environment from the effects of persistent organic pollutants (POPs). Australia is a party to the Stockholm Convention, but has not ratified this particular amendment. PFOA is currently being considered for listing under the Stockholm Convention.

2.6 As evidence of the health and environment risks has emerged, global manufacturers and other users have moved to replace long-chain PFCs (such as PFOS/PFOA) with shorter-chain PFCs which are currently considered less toxic and less bioaccumulative. However, PFOS/PFOA continues to be used in some circumstances.⁶

2.7 From the 1970s until the mid-2000s, the main AFFF product used by Defence at its facilities was 3M Lightwater which contains PFAS, including PFOS/PFOA. 3M Lightwater was gradually phased out and replaced by 'Ansulite', which contains significantly lower concentrations of PFOS/PFOA.⁷ In December 2011, Defence added PFOS/PFOA to its routine environmental monitoring, particularly at facilities where firefighting foams may have been used. In 2012, Defence detected PFOS/PFOA at RAAF Base Williamtown, near Newcastle in New South Wales (NSW).

2.8 RAAF Base Williamtown is headquarters to Australia's Air Combat Group and shares its runway facilities with the civilian Newcastle Airport. It is located approximately 15 km north of the city of Newcastle in a semi-rural setting with agricultural land, water catchment reserve and State Conservation Areas surrounding the base.⁸ It has been used as a military air base since its establishment in 1941. The base is a significant employer in the Port Stephens region and supports a number of related private sector operators and defence contractors. Approximately 3,500 fulltime personnel work onsite.⁹

5 NICNAS, *Submission 47*, p. 2.

6 NICNAS, *Submission 47*, p. 3.

7 URS Australia, Stage 2 report, p. 2.

8 URS Australia, Stage 2 report, p.1.

9 Ms Kate Washington MP, *Submission 32*, p. 1.

Summarised timeline of events

2.9 The following is a summarised timeline of events giving a brief background as to how government agencies became aware of the PFOS/PFOA contamination at RAAF Base Williamtown. It is not a complete list of all events and other timelines have been provided to the inquiry by Defence and New South Wales Environmental Protection Authority (NSW EPA).

Pre-2000

2.10 During the 1970s to the mid-2000s, firefighting foam containing PFOS/PFOA produced by the 3M company was used by Defence at RAAF Base Williamtown and other ADF facilities.

2000

2.11 In May 2000, the 3M company, the primary manufacturer of PFOS, announced a voluntary phase out following negotiations with the US Environment Protection Agency (US EPA). This was the result of emerging scientific evidence about its persistence in the environment and long-term health and environmental effects.¹⁰ Following this decision, in July 2000, the Organisation for Economic Cooperation and Development (OECD) Task Force on Existing Chemicals member countries (including Australia) agreed to informally work together to collect information on the environmental and human health hazards of PFOS to produce a hazard assessment.¹¹

2002

2.12 The 3M Company, completed a voluntary phase-out of PFOS production in 2002.¹² In 2002, reports of fish-kills are observed by Defence environment management officers 'following the accidental, incidental or deliberate release of fire fighting foam [on Defence sites] into aquatic environments'.¹³

2.13 The initial OECD report on PFOS was finalised in November 2002. In particular, it described PFOS as 'persistent, bioaccumulative and toxic to mammalian species' and recommended further research to 'predict risk to humans'.¹⁴

10 US EPA, 'EPA and 3M announce Phase Out of PFOS', *Media Release*, 16 May 2000.

11 NICNAS, *Submission 47*, p. 3.

12 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 2.

13 *Submission 34*, p. 2.

14 OECD, Cooperation on Existing Chemicals, *Hazard Assessment of PFOS and its Salts*, 21 November 2002, p. 5.

2003

2.14 On 30 April 2003, the Department of Health's National Industrial Chemicals Notification and Assessment Scheme (NICNAS) released an alert recommending that PFOS/PFOA firefighting products such as AFFF be restricted to essential use only, and that AFFF should not be used for fire training/testing purposes.¹⁵

2.15 In May 2003, Defence's Environmental Stewardship, Environment, Heritage and Risk Branch prepared an internal report titled 'Environmental Issues Associated with Defence use of AFFF'. The key findings of this report include:

Defence uses [AFFF] product produced by the 3M company. This AFFF product contains non-biodegradable fluorosurfactants (specifically [PFOS and PFOA]) that are environmentally persistent, bioaccumulative and toxic to animals and humans. Both PFOS and PFOA have been implicated with a variety of cancers and toxic health effects in humans that have had long term exposure to products containing PFOS/PFOA. 3M are ceasing the production of this AFFF product in 2003, and Defence will have to source an alternative product. Appropriate drainage, containment and disposal of foam waste-water will still be required for any replacement foam product.

Current Defence AFFF use and waste management practices are inconsistent and generally fall below the best practice of other national and international organisations.

Across many Defence facilities AFFF waste-water is not appropriately collected or disposed of. Based on these past and current practices there is a risk that PFOS/PFOA has contaminated Defence land as well as neighbouring properties, creeks, dams, and reservoirs.¹⁶

2004

2.16 The Stockholm Convention on Persistent Organic Pollutants came into force on 17 May 2004, with Australia ratifying the Convention on 20 May 2004 and becoming a Party on 18 August 2004.

2.17 In 2004, Defence investigated alternative AFFF products to replace the 3M company product.

2007

2.18 Defence published *Environmental Guidelines for Management of Fire Fighting Aqueous Film Forming Foam (AFFF) Products* which acknowledged the

15 NICNAS, *Submission 47*, p. 4.

16 Sonia Colville and Nicole McCarron, *Environmental Issues Associated with Defence use of AFFF*, Environmental Stewardship, Environment, Heritage and Risk Branch, May 2003, p. 1 [emphasis in original].

potential adverse impacts associated with historical AFFF products and noted that 3M Lightwater must not be procured.¹⁷

2009

2.19 In May 2009, the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants decided to amend the Convention Annexes to add nine new chemicals including PFOS.¹⁸ The decision was communicated to Parties on 26 August 2009. The Stockholm Convention characterises PFOS as 'extremely persistent and has substantial bioaccumulating properties...[i]t has a capacity to undergo long-range transport and also fulfils the toxicity criteria of the Stockholm Convention'. However, it provides for the production of PFOS in firefighting foam as an 'acceptable purpose'.¹⁹

2.20 In October 2009, Hunter Water sampled Pump Station 9 near RAAF Base Williamtown and conducted analysis for PFOS/PFOA. PFOA was found to be below the limit of detection. PFOS was found to be at a concentration of 0.03 micrograms per litre – marginally above the limit of detection (0.02 micrograms per litre).

2010

2.21 The then Department of Sustainability, Environment, Water, Population and Communities commenced consultations with interested stakeholders including state and territory government agencies, and affected industry, environment and public health groups in December 2010 regarding ratification of the amendment to the Stockholm Convention.

2011

2.22 In 2011, Defence included monitoring for PFOS and PFOA in its environmental activities. Routine monitoring in December 2011 finds two elevated detections on RAAF Base Williamtown.²⁰

2012

2.23 In February 2012, NSW Government established the NSW EPA as an independent statutory authority.

17 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 7.

18 *Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its fourth meeting*, 8 May 2009, p. 68.

19 Defence, *Submission 87*, p. 15.

20 Defence, *Submission 87*, p. 15. Defence noted that, prior to this time, the levels of PFOS/PFOA were not known (due to inability to accurately measure).

2.24 In March 2012, results from routine monitoring by Defence find elevated levels of PFOS/PFOA at 8 out of 12 locations on RAAF Base Williamtown and elevated levels in surface water leaving the base.²¹

2.25 On 2 May 2012, Defence contacts the NSW EPA to advise of surface water detections off-site at RAAF Base Williamtown and requests a meeting. On 10 May 2012, NSW EPA received confidential briefing that there is on-site PFOS contamination in soil and surface water leaving RAAF Base Williamtown and that a detailed Stage 1 contamination investigation is to be undertaken.²² NSW EPA requested data and reports and urges Defence to 'urgently notify Hunter Water, Port Stephens Council, the media, the community and other stakeholders'.²³

2.26 Also in May 2012 Defence advised Hunter Water that firefighting foams containing PFOS/PFOA were used on the base and there was the potential for contamination. In response to this advice, Hunter Water tested all of its bores in the Tomago Borefield for PFOS/PFOA on 22 May 2012. All samples, including the sample from Pump Station 9, returned nil detects for PFOS/PFOA.²⁴

2013

2.27 In January 2013, the NSW EPA receives advice from Defence regarding groundwater PFOS/PFOA contamination on part of RAAF Base Williamtown.

2.28 In March 2013, Defence receives the *Stage 1 – Conceptual Site Model for AFFF Contamination* prepared by GHD. The Stage 1 report findings regarding the contamination on RAAF Base Williamtown include:

Detectable PFOS and PFOA concentrations in groundwater are widespread on [RAAF Base Williamtown]. The highest concentrations associated with the fire training pit and fire training pad, trade waste facilities, Lake Cochran...and the former landfill.

Off-site groundwater samples including those nearby to [Hunter Water] extraction points reported no detectable PFOS or PFOA.

On-site and off-site surface water and drain sediments at [RAAF Base Williamtown] were found to contain detectable concentrations of PFOS and PFOA.²⁵

2.29 The report identifies a number of 'existing and/or potential future human receptors of contaminated soil and groundwater offsite'. These include:

21 *Submission 87*, p. 15.

22 Mr Barry Buffier, NSW EPA, *Committee Hansard*, 22 December 2015, p. 45; Defence, *Submission 87*, p. 5. Defence, *Submission 87*, p. 15.

23 NSW EPA, responses to questions on notice, 22 December 2015, p. 2.

24 Hunter Water, response to question on notice, 22 December 2015, p. 2.

25 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, p. iii.

- consumers of potable water (however it notes, 'there is no evidence to suggest the [Hunter Water] bores contain PFOS or PFOA at detectable concentrations');
- recreational users of surface water e.g. swimming pools, recreational users of the receiving waters for groundwater and stormwater;
- use of irrigation water or stock-watering water via domestic/stock bores;
- consumers of marine biota; and
- consumers of terrestrial fauna.²⁶

2.30 Using a Defence Contamination Risk Assessment Tool, the Stage 1 report rates nearly all of the investigated sites as 'Very High' risk noting legislative compliance, reputation, environment and heritage and financial efficiency as 'key risk drivers'. The Stage 1 report outlines a large number of data gaps in understanding the risk of the contamination and proposes a sampling and analysis quality plan for further investigations.²⁷

2.31 Defence engages a contractor to undertake the Stage 2 Environmental Investigation. However, this contractor goes into business liquidation and was unable to continue (undated).²⁸

2.32 On 28 March 2013, the NSW EPA writes to Defence requesting advice on the management strategy for the contamination.

2.33 On 20 May 2013, the Port Stephens Council receives correspondence from Defence outlining the results of Stage 1 of the investigation.

The letter stated that detectable levels of Perflurooctane sultanate (PFOS) and Perfluorooctanoic acid (PFOA) were found in on-site and off-site surface water and drain sediments at RAAF Base Williamtown. It also stated off-site ground water samples showed no detectable PFOS or PFOA. The letter alerted Council officers to the issue but indicated that, at that early stage, further research was needed to understand the possible risks. The initial advice did not indicate immediate cause for alarm and that further investigations were underway.²⁹

2.34 On 22 May 2013, Hunter Water also received notification from Defence regarding contamination moving off-base.³⁰ On 24 May 2013, NSW EPA receives

26 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, p. iii.

27 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, pp 76-77.

28 *Submission 87*, p.5.

29 *Submission 26*, p. 3.

30 Mr Darren Cleary, Hunter Water, *Committee Hansard*, 22 December 2015, p. 10.

RAAF Williamtown Stage 1 – Conceptual Site Model for AFFF Contamination from Defence.³¹

2.35 On 20 June 2013, NSW EPA brief on groundwater contamination at RAAF Base Williamtown is received by the Hon Robyn Parker MP, NSW Minister for the Environment. The brief highlights that data gaps are significant in the understanding of risks posed by the PFOS/PFOA contamination and the lack of NSW EPA regulatory control of Defence.³²

2.36 On 18 November 2013, the NSW EPA raised the issue of contamination at RAAF Base Williamtown with the Department of the Environment. The letter concludes:

The EPA wrote to [Defence] on 26 September 2013 requesting an update on the Stage 2 works and proposing a meeting with all relevant agencies to outline and discuss the further investigation works. To date the EPA has received no response to this letter.

As you are no doubt aware, given that [Defence] is a Commonwealth Government agency the EPA does not have a regulatory role in this matter. This letter is to formally notify your agency of the current situation at the Williamtown RAAF Base for any further actions you may consider necessary.³³

2014

2.37 In April 2014 Defence engaged a new contractor, URS Australia, for the Stage 2 Environmental Investigation. Sampling commenced in May 2014.³⁴

2.38 In September 2014 Defence wrote to stakeholders including Newcastle Airport Limited, NSW EPA, Hunter Water, Port Stephens Council, NSW Department of Primary Industries (Office of Water), NSW Health (Hunter New England District) and NSW Office of Environment and Heritage to advise that the Stage 2 Environmental Investigation had commenced. In September 2014, Hunter Water makes the decision to embargo the use of Pump Stations 7 and 9 for water supply purposes based on the risk of drawing PFOS/PFOA contaminants towards borelines.³⁵

2.39 In November 2014, sampling undertaken on and off-site. These include 185 groundwater samples; 20 surface water samples; 230 soil samples; 35 sediment samples; 30 vegetation samples; 18 biota samples.³⁶

31 NSW EPA, response to questions on notice, 22 December 2015, Attachment A.

32 NSW EPA, response to questions on notice, 22 December 2015, Attachment A.

33 NSW EPA, responses to questions on notice, 22 December 2015, Attachment C.

34 *Submission 87*, p. 5.

35 Hunter Water, response to question on notice, 22 December 2015, p. 2.

36 *Submission 87*, p. 16.

2015

2.40 In May 2015, Hunter Water tested water from Pump Station 9 near RAAF Base Williamstown and detected PFOS/PFOA contaminants.

2.41 In May 2015, Defence prepares *Defence Contamination Directive #8 – Interim Screening Criteria*, which outlines interim screening levels for PFOS/PFOA on Defence site.

2.42 On 14 May 2015, URS Australia provides verbal overview of preliminary Stage 2 data to Defence. On 9 June 2015, Defence receives preliminary Stage 2 data.

2.43 In June 2015, the European Union submitted a proposal to the Persistent Organic Pollutants Review Committee to list PFOA and related compounds under the Annexes of the Stockholm Convention.³⁷

2.44 On 3 August 2015, Defence received draft Stage 2 report conducted by URS Australia. The report found:

PFAS are present across a range of environmental media both within the Base and in several off-Site areas. Investigations of source areas on-Base showed the presence of PFAS in soil at elevated concentrations immediately adjacent to these source areas.

Concentrations of PFAS in groundwater exceeding the human health screening criteria were found in proximity to on-Site source areas and in several off-Site areas. PFAS concentrations in groundwater in off-Site areas were generally lower than those within the Base, but also exceeded the screening criteria in some instances. Off-Site concentrations which exceeded the screening criteria were mostly confined to the land south of the Base and the Tilligerry State Conservation Area to the east. Given the likely direction of flow, the groundwater present in off-Site areas to the south and to the east was considered most likely to be impacted.

On-Site and off-Site surface water investigations show that surface water is a migration pathway for PFAS. In particular, PFAS were found in the drain adjacent to the Fire Training Pad, Lake Cochran, Dawsons Drain, Moors Drain and Tilligerry Creek. Off-Site migration of dissolved-phase PFAS in surface water appears likely to have resulted in impacted sediments at investigation locations downstream from the Base. Aquatic fauna sampled in these off-Site areas did not report PFAS concentrations exceeding the adopted ecological screening criteria.³⁸

2.45 However, the Stage 2 report cautioned that

37 Persistent Organic Pollutants Review Committee, *Proposal to list pentadecafluorooctanoic acid (CAS No: 335-67-1, PFOA, perfluorooctanoic acid), its salts and PFOA-related compounds in Annexes A, B and/or C to the Stockholm Convention on Persistent Organic Pollutants*, 9 June 2015.

38 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 143.

It should be noted that the presence of concentrations higher than the adopted screening criteria does not necessarily indicate an unacceptable risk. Rather, it indicates that potential exposures to these chemicals should be evaluated in greater detail, taking into account site-specific pathways of exposure.³⁹

2.46 It also highlighted that a number of data gaps are present which require further investigation. These included findings that:

The nature and extent of off-Site groundwater dissolved-phase PFAS impacts requires further assessment...;

The hydrogeological pathways between the Base and potential off-Site human and ecological receptors require more detailed investigation...;and

The nature and extent of off-Site surface water, sediment and aquatic fauna impacts from the Base boundary to Fullerton Cove and Tilligerry Creek requires further assessment.⁴⁰

2.47 On 4 August 2015, Defence sent the draft Stage 2 report to stakeholders NSW EPA, Hunter Water, NSW Department Primary Industries (Office of Water), NSW Health, Newcastle Airport. On 12 August 2015, Defence held a stakeholder meeting to go through the Stage 2 report.

2.48 On 3 September 2015, the NSW EPA advised Defence it was issuing a media release announcing precautionary measures that day. The media release stated that Defence had made NSW EPA aware that 'legacy fire-fighting chemicals had been found in some surface water, groundwater and in small numbers of fish around the Williamstown RAAF Base and Newcastle Airport'.⁴¹ The NSW EPA noted that, while 'at this stage any risk to human health appears to be low', it was taking a 'precautionary approach to this preliminary advice'. It announced:

In keeping with this precautionary approach the NSW Government is advising potentially impacted residents...to not drink bore water and to not eat fish caught in the nearby area or eggs from backyard chickens that have been drinking bore water in the area...

As a precaution, there will be a closure of commercial and recreational fisheries and oyster harvest for up to one month in both Fullerton Cove and the Upper Tilligerry Creek.

Potentially affected bores are isolated to an area covering part of the Tomago and Stockton sandbeds and there is no risk to the reticulated (town) water supply.⁴²

39 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 143.

40 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 145.

41 NSW Environmental Protection Agency, 'Department of Defence and NSW Government investigating chemicals around Williamstown RAAF Base', *Media Release*, 3 September 2015.

42 NSW Environmental Protection Agency, 'Department of Defence and NSW Government investigating chemicals around Williamstown RAAF Base', *Media release*, 3 September 2015.

2.49 Defence also issued a media release on 3 September 2015. It stated that '[p]reliminary tests have identified [PFOS] and [PFOA] in ground water south of Williamtown RAAF Base and Newcastle Airport' and '[t]hese substances have also been identified in Tilligerry Creek and Fullerton Cove and some aquatic life in these waterways'. The media release included:

Defence is aware that the NSW Government issued a media release today recommending that residents in the affected area avoid drinking bore water, eating fish caught from the Tilligerry Creek or Fullerton Cove or consuming eggs from backyard chickens on those properties in the area.

The health and safety of people who reside near our bases and Defence personnel who work, or have worked, at these bases is a high priority for Defence. Despite extensive research, scientific studies into the possible human health impacts are inconclusive.⁴³

2.50 On 16 September 2015, the NSW Government announced two reviews of the management of contaminated land sites. The first review, led by the NSW Chief Scientist, Professor Mary O'Kane and an Expert Panel, was formed to advise the NSW Government on the planned and ongoing management of the RAAF Base Williamtown contamination. The second review by Professor Mark Taylor of Macquarie University, would consider the EPA's implementation of the findings of the Auditor-General's 2014 report into managing contaminated sites.

2.51 On 30 September 2015, at the Tomago community consultation event, Air Commodore Steve Robertson is reported as stating 'Defence polluted here, Defence pays' in relation to the question of compensation for contamination.⁴⁴

2.52 On 1 October 2015, a Williamtown Contamination Investigation Community Reference Group (CRG) was established to 'support local communities to address concerns related to the detection of [PFOS] and [PFOA] in nearby surface water, groundwater and biota in the vicinity of the Williamtown RAAF base'. The CRG is headed by the Parliamentary Secretary for the Hunter, Mr Scot MacDonald MLC.

2.53 On 2 October 2015, the Expert Panel recommended 'lifting a temporary ban on oyster harvesting' but 'advised that a ban on commercial and recreational fishing should continue for the time being after some species were found to contain [PFOS] at levels which cause some concern'.

2.54 On 8 October 2015, the Expert Panel, after reviewing preliminary samples extended the NSW EPA investigative area to the east to the Tilligerry Creek fisheries closure area.⁴⁵

43 Department of Defence, 'Ground water contamination at RAAF Base Williamtown', *Media release*, 3 September 2015.

44 Michael McGowan, 'Defence to blame so it should pay: base boss', *Newcastle Herald*, 30 September 2015, available at: <http://www.theherald.com.au/story/3394545/defence-to-blame-so-it-should-pay-base-boss/> (accessed 18 January 2016).

2.55 On 20 October 2015, the EPA released preliminary surface and ground water investigation results. Bore and surface water sample water were generally consistent with the reported in the Stage 2 report undertaken by Defence, being highest near the base and decreasing at distance.

2.56 On 26 October 2015, Defence commenced Stage 2B environmental investigation. Over 900 samples are expected to be collected, along with completion of a Human Health Risk Assessment and an Ecological Risk Assessment.⁴⁶

2.57 On 27 October 2015, the Expert Panel recommended a further eight-month ban on fishing while human health risk assessment is undertaken. It stated:

The proposed ban on commercial and recreational fishing in the designated area is recommended to remain in place until 30 June 2016. Meanwhile, the Expert Panel has restated the need for local residents to heed other precautionary advice until the human health risk assessment is complete.

As such, residents who live inside the investigation area should not:

- drink or prepare food from private water bores, or water from dams, ponds, creeks or drains (town water is safe)
- eat eggs from backyard chickens or milk from cows and goats that have been drinking bore water or surface water in the area; and
- eat fish, prawns or wild oysters caught in the nearby area.⁴⁷

2.58 The NSW Department of Primary Industries indicated 'the eight month fishing ban extension is devastating news for commercial fishers, many of whom have had no income these past eight weeks'. NSW EPA CEO Mr Barry Buffier stated:

The NSW Government is strongly committed to the "polluter pays" principle and Defence is the polluter in this case. As such, the EPA expects Defence to provide appropriate and timely financial assistance to members of the community and businesses who are adversely impacted due to pollution from the RAAF base. We are vigorously pursuing this.⁴⁸

2.59 On 4 November 2015, the Assistant Minister for Defence announced an assistance package for commercial fishers affected by NSW Government precautionary closures of Fullerton Cove and Tilligerry Creek.⁴⁹

45 NSW Government, *Williamstown RAAF Base contamination – FAQs*, 12 November 2015, p. 2.

46 Department of Defence, response to questions on notice, Question 12, pp 4-5.

47 *NSW Government Gazette*, No 92 of 30 October 2015, p. 3426.

48 NSW EPA, 'Williamstown Expert Panel recommends an extension to the fishing closures in Fullerton Cove and upper Tilligerry Creek', *Media Release*, 27 October 2015.

49 *Submission 87*, p. 17.

2.60 On 11 November 2015, the NSW EPA updated its advice that, as a precaution, residents and young children should not swim in pools filled with bore water or local creeks, dams, drain or ponds in the investigation area.⁵⁰

2.61 On 3 December 2015, the committee held a public hearing for the inquiry at Parliament House in Canberra.

2.62 On 8 December 2015, NSW Premier Mike Baird met with the Prime Minister and Defence minister to discuss Williamtown.

2.63 On 21 December 2015, Hunter Water released the results of tests confirming that Grahamstown Dam, a major water source for the Newcastle area, was free of firefighting foam contaminates.⁵¹

2.64 On 22 December 2015, the committee held a public hearing at the Newcastle City Hall in Newcastle.

2.65 On 23 December 2015, the NSW Government announced an assistance package for Williamtown residents affected by contamination from the RAAF base. This package includes a program to connect affected developed properties within the investigation area to town water, an investment in new contamination testing equipment and the deployment of additional community liaison staff to help address concerns of the local community.⁵²

2.66 Also on 23 December 2015, the interim report of Professor Mark Taylor into management of contamination at RAAF Base Williamtown is released (dated 14 December 2015).⁵³ While characterising the actions of the NSW EPA and NSW government agencies (from August 2015) as 'responsive, timely and appropriate', Professor Taylor's interim report highlights a lack of clarity in the regulation of contamination spreading from Defence land to non-Commonwealth owned land.⁵⁴

2016

2.67 On 8 January 2016, media reports that Defence is prepared to sign a trade wastewater agreement with Hunter Water for RAAF Base Williamtown 'which

50 *Submission 87*, p. 17.

51 Hunter Water, 'Hunter Water publishes PFOA/PFOS test results for local dams', *Media release*, 21 December 2015, p. 1.

52 NSW Government, 'NSW Government help for Williamtown residents', *Media release*, 23 December 2015, p. 1.

53 The Hon Mark Speakman MP, Minister for the Environment, 'Williamtown Interim Report Now Online', *Media release*, 23 December 2015.

54 Professor Mark Taylor, *Interim Report*, 14 December 2015, pp 25-28.

includes accepting unlimited liability for any damage caused by contaminants entering the sewer'.⁵⁵

55 ABC News, 'Defence officials ready to sign Williamtown trade wastewater deal', 8 January 2016, available at <http://www.abc.net.au/news/2016-01-08/defence-officals-ready-to-sign-williamtown-trade-wastewater-deal/7075490> (accessed 13 January 2016).

Chapter 3

Impacts on the affected community

Introduction

3.1 This chapter will consider the evidence received regarding the impact on the community of the contamination at RAAF Base Williamtown. The majority of submissions received were from persons in this area outlining how they had been affected by the announcement of the contamination. A number of key issues were raised. These included:

- the precautionary measures;
- health issues;
- mental health concerns;
- property value and investment;
- access to water; and
- primary industries and other businesses.

Precautionary measures

3.2 On 8 October 2015, the Expert Panel reviewed preliminary test results from surface water. Based on the results the Expert Panel resolved to extend the current NSW EPA investigation area to include major surface water drains and creeks and the Tilligerry Creek fisheries closure area. All residents located in the investigation area (Figure. 1) have been advised to continue to take precautions while further assessments are undertaken. These precautionary measures include:

- not drinking or preparing food from private water bores, or water from dams, ponds, creeks or drains;
- not consuming eggs from backyard chickens or milk from cows and goats that have been drinking bore water or surface water in the area; and
- not consuming fish, prawns or wild oysters caught in the nearby area.¹

3.3 Several affected residents expressed their concern that there was no clarity regarding the period these precautionary measures would need to be applied. At the public hearing Mr Cain Gorfine from the Williamtown and Surrounds Residents Action Group (WSRAG) articulated these concerns:

[N]ot only has the precautionary approach shut everything down but it has also put our lives on hold. Regardless of what our levels come back as in our water or our surface water, the same precautions still apply indefinitely. Why?... (1) because it is still leaching from the base and they do not know

1 NSW Government, *Williamtown RAAF Base contamination – FAQs*, 12 November 2015, p. 2.

how to contain it and (2) the unique hydrology of the area necessitates, by that very fact, that groundwater and surface water mix according to the charge and discharge rates of the aquifer. So what might be contaminated today may not be contaminated tomorrow, and vice versa. They just do not know.²

3.4 The uncertainty of the situation facing the affected residents was also highlighted by Ms Rhianna Gorfine who observed:

[W]e have been advised that for the last 40 or 50 years these contaminants have been leaving the base. They do not know whether we are at the start of the contamination, the middle of the contamination or the end of the contamination.³

Health issues

3.5 Due to the previous industrial use of PFOS/PFOA there is a background level of these compounds present in the Australian population and wildlife. The medical research regarding the impact of elevated levels of PFOS and PFOA in humans is still developing. However, the NSW Government's information sheet noted that potentially adverse health effects cannot be excluded:

Studies of workers exposed to these chemicals have not consistently shown adverse health effects, though impact on blood cholesterol levels, thyroid function and liver size have been reported in some studies. Mothers exposed to high levels of PFOA in the drinking water did not have an increased risk of birth defects in their children... Where there is not enough scientific evidence to assess health effects in humans, any effects in animals are then assessed. Certain laboratory experiments on rats have indicated some potential to promote cancer, but it is not clear if these results have implications for human health.⁴

3.6 PFOS/PFOA have half-lives in human beings ranging from 2 to 9 years, depending on the study.⁵ The Department of Health's National Industrial Chemicals Notification and Scheme (NICNAS) provided the following:

PFOS and PFOA are eliminated very slowly from the human body, and so concentrations of the chemicals in the body increase over time if they are continuously consumed in food or water. They have been shown to have effects, particularly in the liver, at low doses in animal tests but the scientific literature on their effects in humans does not give clear, unambiguous results.⁶

2 *Committee Hansard*, 22 December 2015, pp 35-36.

3 *Committee Hansard*, 22 December 2015, p. 36.

4 NSW Government, *Williamstown RAAF Base contamination – FAQs*, 12 November 2015, pp 2-3.

5 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 3.

6 *Submission 47*, p. 2.

3.7 Professor Ravi Naidu from CRC CARE noted that once the pathways to human exposure are closed or minimised then levels of PFCs in the human system will reduce over time. He observed that the 'half life of PFCs in the human system is somewhere between 3.8 to 5.4 years so for it to come out of the system can take that long, although for animals it can vary quite a lot'.⁷ His colleague, Professor Megharaj Mallavarapu noted that because these chemicals were persistent, bioaccumulative and toxic a precautionary approach should be taken in relation to human health while further research is conducted.⁸

3.8 Defence repeatedly emphasised in its evidence to the committee that there was no conclusive evidence regarding the human health effects of PFOS and PFOA. In particular, it highlighted that there were 'no globally accepted peer review studies showing that exposure to PFOS and PFOA affects human health'.⁹ Further, the National Health and Medical Research Council did not specify a level for these chemicals in the Australian Drinking Water Guidelines updated in March 2015. It noted that 'long-term health studies in the USA of the workers that manufactured this product do not show any chronic health effects'.¹⁰ It stated:

Possible health impacts from long term exposure to PFOS or PFOA are not fully understood. The compounds are 'emerging contaminants' and, to date, research into the possible effects on human health is not conclusive.¹¹

3.9 However, the National Toxics Network (NTN), a non-governmental organisation working in the area of toxic chemicals and contamination, disputed the statement that it was unknown whether PFOS/PFOA causes adverse health effects in humans.¹² It noted that, in 2006, the Persistent Organic Pollutants Review Committee of the Stockholm Convention had concluded:

Given the inherent properties of PFOS, together with demonstrated or potential environmental concentrations that may exceed the effect levels for certain higher trophic level biota such as piscivorous birds and mammals; and given the widespread occurrence of PFOS in biota, including in remote areas; and given that PFOS precursors may contribute to the overall presence of PFOS in the environment, it is concluded that PFOS is likely, as a result of its long-range environmental transport, to lead to significant adverse human health and environmental effects, such that global action is warranted.

7 *Committee Hansard*, 22 December 2015, p. 28.

8 For example, Professor Megharaj Mallavarapu, CRC CARE, *Committee Hansard*, 22 December 2015, pp 26-27.

9 Department of Defence, response to question on notice 93, Supplementary Budget Estimates, 21 October 2015, p. 3.

10 *Committee Hansard*, 3 December 2015, p. 2.

11 *Submission 87*, p. 12.

12 *Submission 29*, p. 2.

3.10 NTN stated that '[o]ngoing research after the completion of the PFOS risk profile has only served to confirm the toxicity of this most persistent chemical, including its serious immunotoxicity in humans and its synergistic effects in mixtures with other perfluorinated chemicals, like PFOA'.¹³

3.11 Further, NTN highlighted that PFOA 'has now been nominated for inclusion in the Stockholm Convention due to its dangerous toxicity, extreme persistence, bioaccumulation and long-range transport':

At the October 2015 meeting of the UN POPs Review Committee, committee members concluded that PFOA met all criteria for further evaluation as a POP; a decision that starts its journey to global elimination. In a consensus decision, the experts agreed that PFOA causes – "kidney and testicular cancer, disruption of thyroid function and endocrine disruption in women". In addition, they concluded PFOA was highly persistent, and does not undergo any degradation under environmental conditions.¹⁴

3.12 Another area of conflicting views was in relation to the need for health checks and blood testing of affected residents. While Defence has previously funded blood testing of some residents affected by firefighting foam contamination in Oakey in Queensland, it did not support blood-testing for affected residents around RAAF Base Williamtown. It stated:

Defence understands that there are no specific health conditions which have been globally accepted to be directly caused by exposure to PFOS or PFOA. As a result, there are no particular health conditions that could be screened for in a health check. NSW Health has stated that while blood tests can provide a measure of PFOS, they are not recommended because they do not predict the level of health risk.¹⁵

3.13 Dr Mathew Klein from Defence described blood-testing as 'not a good idea'. He told the committee:

Unfortunately, it does not give us an indication of a particular level of risk. It does not give us an indicator of a particular medical management. It also creates a huge degree of anxiety.¹⁶

3.14 In contrast, many residents wished to receive support to undertake blood tests and other health testing. The Williamtown and Surrounds Residents Action Group (WSRAG) articulated the anxiety that many residents already felt:

We...have to live in fear of any past, present and future health effect to not only us, but our pets and livestock. Since day one we have been calling on

13 *Submission 29*, p. 2.

14 *Submission 29*, p. 3.

15 Department of Defence, response to question on notice 95, Supplementary Budget Estimates, 21 October 2015, p. 2.

16 *Committee Hansard*, 22 December 2015, p. 63.

systemic and systematic testing of people, animals, all water sources including surface and ground water and biota within the red zone. Such has been the lack of involvement from Defence that we have been forced to conduct our own testing, at our own expense.¹⁷

3.15 Mr Cain Gorfine from the WSRAG told the committee:

What we have been calling for from the get-go, and what we continue to call for, is proper blood screening to be conducted for residents for use down the track. [W]e note that potentially there is no-one here today representing Hunter New England area health or anyone who can bring a toxicology point of view and provide objective information....¹⁸

[O]ur legal advice would suggest it is vitally important, because we need to reserve our rights in relation to any potential future health consequences later on down the track. The science may be fluid and changing as we speak, but we cannot turn around in 15 years and say, 'Gee, I wish we had had some thorough screening done so we could have some comparative data.'¹⁹

3.16 The Fullerton Cove Residents Action Group (FCRAG) also wished for a health study 'to establish a base line for future health monitoring'. It described the NSW Health's position as 'not convincing' and noted blood testing was being undertaken in other countries in response to potential PFOS/PFOA contamination.²⁰ The NSW Farmers' Association also observed:

The interim report into a current inquiry into a similar PFOS contamination in Victoria...contains a recommendation that the Victorian Government assess the feasibility of providing voluntary testing for PFOS to those affected. The Government, through the Department of Health and Human Services, is to report on the feasibility of this process by September 2015. NSW Farmers understands that these tests would not be considered valid, but such recommendations underline the community concern about testing for human health and the anxieties for those in the immediate vicinity.²¹

3.17 The provision of health advice to affected residents was criticised with many affected residents expressing uncertainty regarding their circumstances. The Port Stephens Council considered it was 'clear that information being disseminated to property owners and the public related to human health has been poorly communicated and managed, has been confusing and entirely inadequate'.²²

17 *Submission 36*, p. 2

18 *Committee Hansard*, 22 December 2015, p. 33.

19 *Committee Hansard*, 22 December 2015, p. 37.

20 *Submission 13*, p. 4.

21 *Submission 35*, p. 9.

22 *Submission 26*, p. 12.

3.18 Concerns regarding the health and welfare of ADF and civilian personnel at RAAF Base Williamtown who were potentially exposed to firefighting foams were also raised during the inquiry.²³ For example, it was noted a study of firefighters working with AFFF at training facilities in Australia found that the concentrations of PFOS were positively associated with years of employment involving AFFF contact.²⁴

3.19 Mr Grzeskowiak from Defence told the committee that the staff who have lived on the base at Williamtown were unlikely to have been significantly exposed to the PFOS/PFOA as RAAF Base Williamtown operates off town water. Further:

The firefighters who would have used these foams are probably the cohort of people who may have had an exposure, although, as I think we have discovered, the main exposure routes are through ingestion. The advice I have received is that dermal contact—that is, contact on the skin—with the firefighting foam is not a route for it to get into the body.²⁵

3.20 However, the Defence submission acknowledged that '[g]iven that Defence used AFFF widely from the 1970s to the early 2000s, there is no accurate way to assess the exact number of Defence personnel who may have been exposed to PFOS and PFOA'. It noted that Defence personnel can access the Defence Exposure Evaluation Scheme (DEES) which open to current and former employees of the Department and Australian Defence Force cadets who suspect that they have been exposed to a hazard.²⁶

Mental health issues

3.21 Many submitters and witnesses were concerned about the impact of the stress and uncertainty caused by the contamination on the mental health of affected residents. For example, Mr Gorfine, who interacts with many Williamtown residents through his role with the WSRAG noted:

People are pacing the halls [at] night. They are fighting with their spouses....People are scared.²⁷

3.22 Mr Lindsay Clout from the FCRAG also made the point that the 'mental-health pressure is mounting on people because there is such little information...because this is an emerging contaminant—about the health impacts':

There is anecdotal information out there and a little bit of hyperbole as well, which is adding to the problem. As soon as an ailment comes onto an individual, what do they think? Whether or not it is associated with this

23 For example, Ms Kate Washington MP, *Submission 32*, p. 5.

24 Anna Rotander et al, 'Elevated levels of PFOS and PFHxS in firefighters exposed to aqueous film forming foam (AFFF)', *Environmental International*, September 2015, pp 28-34.

25 *Committee Hansard*, 22 December 2015, p. 69.

26 *Submission 87*, p. 19.

27 *Committee Hansard*, 22 December 2015, p. 39.

chemical is often secondary, because the mental-health pressures are mounting as time goes on.²⁸

3.23 The local member, Ms Kate Washington MP told the committee that the stress of the contamination had led to 'very real and very concerning' mental health issues in the community and that since the news of the contamination she had witnessed 'many residents in distress'. In particular, she emphasised the need for 'ongoing and accessible mental health services available to all residents affected'.²⁹ Ms Washington stated:

The uncertainty of the nature and extent of the health impacts particularly, is causing deep concern. The loss of livelihoods and the plummeting property values is also, understandably, placing immense pressure on affected families.

I have written to State and Federal Ministers seeking financial support for families who require counselling, together with additional counselling services to meet the need.³⁰

3.24 At the Newcastle hearing, Ms Calvert from the NSW Department of Premier and Cabinet reported that through the community engagement process there 'are significant concerns around individuals in the community that have been impacted by this particular event—certainly mental health'. She stated:

In the community drop-in events, we have had to provide mental health officers that people could go and talk to. We have also provided the non-government sector, such as the Red Cross, who provided psychological first aid in the first instance. Through the EPA fact sheets and through Health, we have been making sure that people know the pathways to have access to support in that area as well, but it has been quite traumatic for a number of individuals in that area, and we recognise that; it is acknowledged.³¹

Property value and investments

3.25 The NSW EPA's investigative area for PFOS/PFOA contamination from RAAF Base Williamstown was frequently referred to as the 'red zone'. When questioned about the selection of the 'red zone', the NSW EPA noted that it was not 'making determinations about a particular level of contamination on an individual lot-by-lot basis'. The investigation area had been determined on the basis on information regarding where the NSW EPA believed there was a higher likelihood of contamination being present.³²

28 *Committee Hansard*, 22 December 2015, p. 40.

29 *Committee Hansard*, 22 December 2015, p. 2.

30 *Submission 32*, p. 4.

31 *Committee Hansard*, 22 December 2015, p. 57.

32 Mr Adam Gilligan, NSW EPA, *Committee Hansard*, 22 December 2015, p. 56.

3.26 The impact on the value of property and investments located within the investigation area was frequently raised. Mr Gorfine from the WSRAG described the worth of properties in the affected area as 'zero'.³³ He commented that '[p]erceptions are reality, properties and businesses within the red zone are worthless'.³⁴

3.27 This sudden change in the value of property and investments was a significant shock to residents. In particular, Mr Gorfine observed that a large percentage of people in the affected area are pensioners or self-funded retirees who 'have built up their nest eggs and their properties'. He noted they have had 'all that taken away' due to the contamination announcement.³⁵ He told the committee:

The impact it is having, regardless of whatever future health effects may arise, is that no-one wants to come and live in our area or touch the area. From an economic point of view we are being crushed. We have a young family, with three kids, and a half-a-million dollar mortgage. The property is worth nothing. If I go and spend \$50 on a tin of paint to paint my gutters I am overcapitalising. I have no future, economically.³⁶

3.28 Similarly, Ms Julienne Curry described how her family had purchased a property in the affected area in 2014:

Our purpose for the move was to substantially improve the property with a view to selling it with a fair capital gain to supplement our retirement funds. We undertook due diligence in relation to researching the area as part of our conveyancing and there were no impediments to suggest this was anything other than a desirable property in a great location...

Full knowledge of this disaster was available to relevant bodies well before we purchased our property but it wasn't made available to us as buyers. Obviously if it had been shared before September 3rd we would never have made the mistake of buying a property in Williamstown. Nor would we have made such a large financial investment in improvements...

Worse than this is the fact we remain in the "Red Zone" with no hope of this changing due to the unpredictable nature of the way the contamination may travel in the future. This translates into a massive financial loss for us, as like others, our property is not desirable to purchasers and is severely reduced in value. While claims that its value is now zero seem extreme it is probably close to the truth.³⁷

3.29 Like many residents, Ms Curry hoped for urgent action 'in the form of compensation or compulsory acquisition at pre-contamination value'.³⁸

33 *Committee Hansard*, 22 December 2015, p. 35.

34 *Submission 36*, p. 2.

35 *Committee Hansard*, 22 December 2015, p. 39.

36 *Committee Hansard*, 22 December 2015, p. 39.

37 *Submission 106*, p. 1.

38 *Submission 106*, p.1.

Water access and use

3.30 Much of the area around RAAF Base Williamtown is currently not on town water or with sewer access. Mr Justin Hamilton from the FCRAAG outlined:

Fullerton Cove and parts of Williamtown are on tank water, and originally bore water. Most farms have one or two bores, and the water aquifers are the same aquifers that pump to Grahamstown Dam when they are on. They have been topped up in people's tanks, and they have been used to drink from for more than 100 years.³⁹

3.31 Defence outlined that if contamination was detected in an area that residents use for drinking water, Defence was providing free drinking water to that household. Currently, 38 households were being provided with drinking water by Defence.⁴⁰ Mr Grzeskowiak from Defence stated:

Our priority has been, and continues to be, that Defence personnel, residents and businesses continue to have access to safe drinking water. We have asked the residents near RAAF Base Williamtown to let us know if and how they are using bore water. Where they are using it for drinking, we are testing their bores. Where it is their only source of drinking water, we are providing fresh potable water free of charge.⁴¹

3.32 However, a number of concerns were raised with sustainability of this approach. Mr Buffier from the NSW EPA noted that 'groundwater that is down gradient from the Williamtown base may remain unfit for domestic use for decades as a result of the contamination'. He recommended 'the Commonwealth should arrange for the provision of reticulated potable water to the affected properties'.⁴²

3.33 Similarly, the Port Stephens Council noted 'the identification of the chemicals of potential concern...in both the surface and groundwater system has significantly restricted the ability of property owners located within the investigation area to utilise a water source that has historically been available to them for drinking, agricultural and other domestic and commercial purposes'. It stated:

It is our view that Defence has an obligation to make available to all affected properties an alternate long term water supply. It is suggested that the water supply should be a reticulated supply managed by Hunter Water Corporation. In that instance, the provision of a reticulated water supply should be funded by Defence with planning to be commenced immediately.⁴³

39 *Committee Hansard*, 22 December 2015, p. 35.

40 Mr Steven Grzeskowiak, Defence, *Committee Hansard*, 22 December 2015, p. 62.

41 *Committee Hansard*, 3 December 2015, p. 2.

42 *Committee Hansard*, 22 December 2015, p. 47.

43 *Submission 26*, p. 9.

3.34 Ms Kate Washington stated:

In addition, families who have experienced positive bore water test results have received only bottled water in response. Initially, there were reports of water tanks being delivered but that appears to have ceased. When a family was recently informed of a positive water tank result, the family has only received bottled water and has been forced to buy their own replacement water tank. I have requested reimbursement for the family and additional assistance. To date, I have had no response.⁴⁴

3.35 Mr Clout from the FCRAAG reported some residents were driving to Stockton to the local park to fill drums of water. Mr Hamilton also noted:

[W]e have bottled water being delivered to our residents—[but] we do not have a disposal system yet for the empty bottles—and we have a hotline that our residents ring that does not get answered when they run out of water.⁴⁵

Water supply

3.36 Another impact of on the community was the potential restriction on water supplied from the region. For example the FCRAAG described the contamination as putting at risk the Newcastle City water supply. It noted that Hunter Water was now no longer pumping from Tomago Sand Beds bores close to contamination site and the three bores closed off represented two per cent of the city's drinking water.⁴⁶

3.37 Hunter Water outlined that it had ceased drawing water from three bores around RAAF Base Williamstown – PS9, PS7 and PS5. At the hearing on 22 December 2015, Mr Darren Cleary from Hunter Water emphasised the importance of the Tomago Sand Beds to the overall water supply to the lower Hunter region. He indicated that while Hunter Water could manage the embargo of certain bores around RAAF Base Williamstown, the longer term issues were 'of concern'.⁴⁷ He noted:

The Tomago Sand Beds supply approximately 20 per cent of the drinking water to the lower Hunter. We service around 575,000 customers in the lower Hunter. The sand beds are a very important water source for us. We do not run them or extract water from them all the time, but in dry conditions, when the levels in our two major dam storages fall, the sand beds are a particularly important water source for us.⁴⁸

3.38 In its submission Hunter Water noted:

44 Ms Kate Washington MP, *Submission 32*, p. 4.

45 *Committee Hansard*, 22 December 2015, p. 39.

46 *Submission 13*, p. 2.

47 *Committee Hansard*, 22 December 2015, p. 7.

48 *Committee Hansard*, 22 December 2015, p. 5.

Based on the risk of drawing Perfluoroalkyl Substances (PFAS) towards Hunter Water borelines, pumping stations PS5, PS7 and PS9 have been embargoed. In 2015 PFAS contamination has been detected at PS9, presumed to be from a plume of contamination originating from the North East corner of the RAAF Base Williamtown.

The impact of not being able to use these borelines is a reduction in the overall yield of drinking water from the Tomago Sandbeds. Hunter Water estimates that the loss of these bore lines represents around a 10% reduction in the amount of water that can be accessed over the long term from Tomago Sandbeds and around a 15% reduction in the peak production capacity of the Tomago Sandbeds. This represents 1.5 billion litres of water.⁴⁹

Loss of long term production capacity will have an impact on when a new water source will be required as the region grows into the future. It is estimated that this loss will bring forward the required timing of a new water source by 2 to 3 years. The cost of bringing forward the next source augmentation is in the order of tens of millions of dollars...

Given the significant community investment and benefit that is obtained from the Tomago Sandbeds groundwater scheme, it is incumbent on the Australian Government to make every effort to restore Hunter Water's ability to use this important drinking water source. Failing this, Hunter Water will seek financial compensation for the expense that will be incurred in providing alternative water supply capability.⁵⁰

3.39 On water supply issues, Defence noted that it was 'working closely with Hunter Water Corporation and has already committed to share groundwater and modelling results in order to develop any management strategies that may be required for the aquifer'.⁵¹

Primary industries and other businesses

3.40 Evidence regarding the impact on primary industry and other businesses located within the NSW EPA investigation area was limited. While the Commonwealth Government has provided an assistance package for the commercial fishers, other primary producers have not received financial assistance.

3.41 Defence stated that it was 'unaware of any land-based primary producers affected by the contamination in the investigation zone'. It noted that primary producers 'have not been advised to stop using bore water to water vegetables or crops, or as drinking water for stock'.⁵² The local member, Ms Kate Washington MP highlighted the concerns of some primary producers:

49 *Submission 11*, p. 1.

50 *Submission 11*, pp. 1–2.

51 *Committee Hansard*, 3 December 2015, p. 2.

52 *Submission 87*, p. 23.

People are sitting there saying, 'My bores are higher than what is acknowledged as being contaminated water in Queensland. Am I in some way acting inappropriately to use that at all for anything? What if I use it for my beef and it gets contaminated? What do I do about beef? Do I tell people that my cattle are drinking this water? Is my land now contaminated? Should I be notifying the Contaminated Land Register?' It is creating the damage. You can imagine. People are in this moral and legal conundrum: 'What do I do?'⁵³

3.42 The FCRAAG noted that the pollution of the groundwater, leading the NSW EPA to recommend that bore water not be used, has meant that residents and farmers off base have been unable to use this water for growing vegetables and for livestock.⁵⁴ Mr Hamilton from the Fullerton Cove Residents Action Group also stated:

We have some residents who farm fine alpaca wool, others who breeds dairy cows. They feed and breed the dairy cows on the fine pasture, and then send them out to feedlots. We are being told not to eat the eggs or the chickens, but these cows are grazing on the grass in the rich flood plains and then being sent to feedlots to feed milk for all of us and all of you. We have an Angus stud across the road and they are grazing on the grass right now.⁵⁵

3.43 The NSW Farmers' Association recommended that Defence 'provides a clear and accessible format guide for farmers to apply for specific costs in regard to the impact on their business of closures as a result of PFOS/PFOA'.⁵⁶ It noted that it had written to Air Commander Steve Roberton at RAAF Base Williamtown 'to request that [D]efence fully compensates farmers affected by the loss of productivity and costs incurred in relation to the contamination.'⁵⁷

53 *Committee Hansard*, 3 December 2015, p. 19.

54 *Submission 13*, p. 2.

55 *Committee Hansard*, 22 December 2015, p. 36.

56 *Submission 35*, p. 3.

57 *Submission 35*, p. 8.

Chapter 4

Fishing industry and financial assistance

Introduction

4.1 This chapter will examine the impact on the fishing industry arising from the fishing closures of Fullerton Cove and Tilligerry Creek and the financial assistance package which has been provided to affected commercial fishermen.

Fishing closures

4.2 Precautionary temporary fishing closures were introduced at Fullerton Cove and Tilligerry River on 3 September 2015. At its first meeting, the Expert Panel noted that one of the most likely primary pathways for human exposure, apart from drinking water, is the consumption of fish. The fishing closures were based on a preliminary risk assessment which indicated there were 'pathways to tolerable daily intake exceedances'.¹ On 27 October 2015, the fishing closures for Fullerton Cove and Tilligerry Creek were extended for a further 8 months to June 2016.

4.3 In September 2015, NSW Department of Primary Industries (DPI) (Fisheries) undertook preliminary sampling of fish, prawn and mud crabs in the Tilligerry Creek and Fullerton Cove areas:

The preliminary results showed PFOS to be present in the samples taken, no PFOA was detected in any sample.

The analysis of the results showed that based upon dietary exposure as determined by health based guidance values of Tolerable Daily Intake (TDI) there was low health risk concern for the general population...however for people who may consume large amounts of seafood from the areas, there is a potential to exceed the health based guidance values. Further, while health based guidance values are not exceeded for the general population, some species of fish and crustacea have the potential to significantly contribute to a person exposure to PFOS.

On consideration of these results the Williamstown Expert Panel has identified need for further analysis of a wider selection of seafood, as part of the Human Health Risk Assessment.²

4.4 During October 2015, the NSW DPI (Fisheries) collected prawn samples from Fullerton Cove and the Hunter River with the assistance of commercial fishers. The Expert Panel preliminary risk assessment of the samples indicated:

1 Williamstown Contamination Expert Panel, Meeting minutes, 23 September 2015, p. 2.

2 Williamstown Contamination Expert Panel, *Preliminary Dietary Exposure Assessment – Seafood – Tilligerry Creek and Fullerton Cove, Williamstown NSW*, 3 November 2015, p. 1.

The levels of PFOS detected showed there was no significant food safety risk for the average consumer of prawns in the areas outside of the existing closure zone. There is the potential for higher exposure to PFOS for fishing communities, to consume prawns more frequently and in greater amounts than the average consumer, at two locations outside the closure area and this requires further investigation and evaluation in the form of a human health risk assessment.

Upon consideration of the findings commercial prawn fishers from the Hunter region have collectively agreed to extend their voluntary ban on trawling over the whole the Hunter River until further assessment is undertaken.³

Fishing industry impacts

4.5 Ms Tricia Beatty from the Professional Fishermen's Association (PFA) noted that the area mainly impacted by the contamination and closures was the Estuary General Fishery:

That is a very diverse, multispecies, multimethod fishery that can operate in 76 of the New South Wales estuary systems. It is a very diverse commercial fishing industry with approximately 600 fishing businesses authorised to use 17 types of fishing gear. This fishery is a significant contributor to the regional and state economies by providing high-quality seafood and bait to the community... The Newcastle region is classified as region 4 and extends from Tuggerah Lakes to Crowdy Head. There are approximately 200 estuary general fishers in region 4 who hold an entitlement to fish the Hunter River and there are 24 estuary prawn trawl Hunter River endorsements.⁴

4.6 In terms of the impact of the closures to the broader fishing industry, Ms Beatty stated:

We cannot quantify the damage at this point in time of the contamination to our industry. The main impacts have been the access to our fishing stocks by the fishers, the devaluation of our fishing businesses, the additional stress to available stocks that are not available, the financial assistance difficulties our industry has faced, the impact to the local Commercial Fishermen's Cooperative and the sheer mental stress on commercial fishers and their families.

Financial impacts

4.7 It was clear from the evidence that the financial impact of the closures on the affected commercial fishers has been immediate and severe. The Wild Caught Fishers Coalition (WCFC) emphasised that an estimated 32 plus family operated fishing

3 Williamtown Contamination Expert Panel, *Preliminary PFOS Risk Assessment for Seafood – Hunter River prawns*, p. 1.

4 *Committee Hansard*, 22 December 2015, p. 13.

businesses had been impacted by weeks of being unable to work.⁵ It described the affected fishermen as having their livelihood 'stripped', income 'taken' and generations of business growth 'wiped' and their local brand reputation 'burnt'.⁶

4.8 Similarly, the Commercial Fishermen's Co-op Limited (CFCL) outlined:

Fishers have had to remove children from child care, remove all non-essential spending, they are struggling to put food on the table. Some have mortgages on their homes, with repayments unable to be claimed, and many other personal expenses that cannot be met.⁷

4.9 Mr Robert Gauta from the CFCL the described the 'fishermen in this industry [as] small cottage-based fishers; they are not big-turnover businesses'. He noted that '[t]heir income is their major source of replenishment that they need, and they are hurting since the first day of the closure'.⁸ The CFCL also noted that it had suffered a 'significant decrease in income due to the fishing closures'. It relied on 'commissions received from the product supplied by fishers to operate, and any reduction equates to reduced operating income, however, fixed costs remain'.⁹

4.10 The rigid nature of the commercial fishing industry was also a factor in the impact of the closures. Several fishers highlighted that they had made significant business investments or that the Hunter River Estuary Prawn Shares they had purchased were not transferable. The difficulty for fishers to move to other areas due to the closures was also emphasised. For example, Ms Beatty characterised the management arrangements the fisheries, based on shares and endorsements, as restricted and 'highly complex':

A fisherman who is endorsed to operate in one region is not necessarily able to operate in another region.

Due to the closures, fishers can no longer access traditional grounds. Some have advised that they are unable to go to other grounds as their fishing businesses are set up for that region. A fisherman might have a net set up for specific gear and for a specific targeted species, and his whole business might be based on that particular river. If he is told to go to another section....it may be quite impossible for him to do so...

As you can imagine, if you go fishing in one area all your life and you are forced to go to another area, your business costs are going to be higher and your time fishing is going to be longer, just to try to bring in the quantity again.¹⁰

5 *Submission 30*, p. 5.

6 *Submission 30*, p. 4.

7 *Submission 27*, p. 3.

8 *Committee Hansard*, 22 December 2015, p. 16.

9 *Submission 27*, p. 4.

10 *Committee Hansard*, 22 December 2015, p. 13.

Stress and mental health impacts

4.11 The mental health impacts of the fishing closures were apparent in many submissions. The WCFC stated:

Livelihoods have been heavily impacted and the extent is dramatically showing. The emotional stress is taking a toll on each fisher individually that is causing personal concerns and increased mental fatigue. It has become evident that anxiety, depression and personal sense of self-worth is increasingly challenged, coupled with the unknown facts that again cause direct anguish to these men. Many fishermen are experiencing sleepless nights due to worry, financial concerns and the uncertainty of what their future holds hence the ability to fully be self-sufficient and provide for their families.¹¹

4.12 Ms Beatty from the PFA also highlighted the 'significant stress and mental impact on fishermen and their families' and noted that fishermen who can go into other regions are now forced to have 'significant time away from their families'.¹²

4.13 Ms Chantel Walker from the WCFC told the committee that while there had been some drop-in sessions provided there were no free counselling services available for affected commercial fishers in the Newcastle area.¹³ The NSW DPI noted that it had arranged a meeting on 21 October 2015 at the Newcastle Fishermen's Co-operative 'to provide social and financial support for fishers impacted by the closures':

NSW DPI Rural Resilience, Rural Financial Counsellors, Rural Adversity Mental Health Program (RAMHP), the Red Cross, the Salvation Army and Human Services attended the event. NSW DPI has intervened on two occasions seeking Salvation Army support for distressed families and on one occasion with RAHMP. NSW DPI is offering training for fishers (funded by NSW DPI) and is offering a two day overnight event for fishers wives or partners in January 2016 to assist them with developing skills and destress (funded by DPI).¹⁴

Reputational damage

4.14 A further consequence of the fishing closures was the impact on Port Stephens' broader reputation as an area of food and seafood production. For example the CFCL observed:

Due to the contamination and the precautionary closure of commercial fishing in the area, consumers are now questioning the safety of eating seafood from the region. Tests conducted have shown that this seafood is safe to eat but the seafood loving public have justifiable concerns that are

11 *Submission 30*, p. 6.

12 *Committee Hansard*, 22 December 2015, p. 14.

13 *Committee Hansard*, 22 December 2015, p. 22.

14 *Submission 108*, p. 1.

impacted on the price and demand of seafood from the region. This in turn further escalates the damage done by the contamination to the commercial fishing community of the region.¹⁵

4.15 The NSW Farmers' Association also noted the impact of the long term brand damage to the region. It stated that although 'it has been established that oysters do not present a health risk, the Tilligerry Creek Harvest Area will have ongoing monitoring for six months and is currently suffering from collateral "brand damage" because fishers continue to be subject to closure'.¹⁶ It gave the example of an oyster business with a lease in Tilligerry creek which reported a 30 per cent drop in sales due to consumer concern about the contamination impact on Port Stephens oysters.¹⁷

Other impacts

4.16 The closures had also created stress on the remaining fishing stocks which could be accessed.¹⁸ Mr Kevin Radnidge from the WCFC noted that following the NSW DPI's testing of prawns, fishers were informed they could work an area 'between Hexham Bridge and Raymond Terrace'. However, he stated '[i]t is not a very big part of the river, and with 20-odd prawn trawlers up there we would probably wipe everything out in two days, so sustainability just was not there'.¹⁹ The possibility of temporarily opening new fishing regions such as the Karuah River or Lake Macquarie to allow affected fishermen to utilise different areas had been raised with DPI but had not been accepted.²⁰

4.17 Mr Gauta from the CFCL identified the uncertainty created by the contamination as the key problem for commercial fishers:

Probably the biggest issue we have is that we do not know. We do not know what you will get if you eat so many prawns or if you will get sick. We do not know if this is the start or the end of the leaching or the middle point of the leaching. That is what is hardest to deal with.²¹

4.18 Mr Adam Gilligan from the NSW EPA observed there would be a need for ongoing sampling in the fishing closure areas:

[E]ven where we have had oysters come back clear, we understand that while ever there are contaminants continuing to flow into the environment, the situation may change in those fisheries. And so even once we have done

15 *Submission 27*, p. 4.

16 *Submission 35*, p. 2.

17 *Submission 35*, p. 6.

18 Ms Tricia Beatty, *Committee Hansard*, 22 December 2015, p. 13.

19 *Committee Hansard*, 22 December 2015, p. 20.

20 Mr Kevin Radnidge, *Committee Hansard*, 22 December 2015, p. 23.

21 Mr Robert Gauta, CFCL, *Committee Hansard*, 22 December 2015, p. 18.

a comprehensive set of sampling to understand the situation right now, there will be a need to do that again into the future.²²

4.19 The related issue of delays in testing was also raised. Ms Beatty noted:

Industry has agreed to close the river until results of further testing are deemed acceptable to protect the brand of our seafood, which the industry is extremely protective of. However, our agreement was that this was conditional on continued testing, but that continued testing has not occurred. We are very disappointed that the schedule for testing in the future has not been arranged.²³

4.20 Professor O'Kane, the Chair of the Expert Panel, hoped that some results might be available before June but acknowledged that '[e]verything is slipping a bit in time'.

This is why we are requesting that Defence do the exposure pathway work, with the analysis and sampling we have recommended. That is why we put that fishing ban on until the end of June 2016 because the timing needed to go through all the samples and the limitation on machines and so on to do the sampling, which is at least until the end of June.²⁴

Financial assistance

4.21 On 4 November 2015, the Commonwealth Government announced it would provide a financial assistance package to commercial fishers adversely affected by the NSW Government's fishing closures at Tilligerry Creek and Fullerton Cove. As part of the assistance package:

[C]ommercial fishers who derive the majority of their income from fishing in the areas affected by the bans may be eligible for an Income Recovery Subsidy equivalent to Newstart or Youth Allowance, and Business Assistance Payments of up to \$25,000.

Commercial fishers who have experienced financial hardship as a direct result of the closure of fisheries linked to the PFOS/PFOA contamination around RAAF Base Williamstown may be eligible to receive the Income Recovery Subsidy backdated from the date of the original fisheries closure on 4 September 2015.

The Business Assistance Payment is a \$5000 lump sum to eligible businesses to assist with immediate costs. Affected businesses may also be eligible for further hardship payments of up to \$20,000.²⁵

22 *Committee Hansard*, 22 December 2015, p. 54.

23 *Committee Hansard*, 22 December 2015, p. 14.

24 *Committee Hansard*, 3 December 2015, p. 13.

25 The Hon Darren Chester MP, Assistant Minister for Defence, 'Federal Government supports commercial fishers in Tilligerry Creek and Fullerton Cove', *Media release*, 4 November 2015, p. 1.

4.22 The assistance package, which is administered by the Department of Human Services, will be available until June 2016.²⁶

4.23 However, the financial assistance package provided to affected fishermen was viewed as inappropriate and inadequate. For example, Ms Washington stated:

The financial assistance package which is now being provided to commercial fishers took too long to be put in place given that their losses were immediate and obvious. In addition, what was ultimately offered does not in any way compensate the fishers for their actual losses and is merely an offering that assists survival.

As a result of the financial strain on commercial fisher families, an independent charity organisation, AussieCare, has stepped in to assist families with groceries though the Christmas period is most welcome. But the fact that this is necessary is clear evidence of the inadequacy of the Federal Government has provided.

Moreover, the final package offered was not designed in consultation with industry representatives or NSW DPI. As a result, the package does not address the seasonal nature, and other unique aspects, of the industry.²⁷

4.24 The Wild Caught Fishers Coalition stated:

Financial packages that have been released to commercial fisherman are inadequate and the application process is lengthy and stressful. There has been very little if any consultation in relation to the effectiveness of these packages directly among those impacted. These packages do not provide the assurances required and do not cover income that would normally have been generated from a working business.²⁸

4.25 Ms Beatty from the PFA noted that due to the risk-profile of the fishing industry many fishing families need to save significant amounts of money as they did not have access to banking loans. This meant that many fishers were unable to receive the financial assistance that was available because they had too much money saved. She stated:

We had a lot of difficulties in accessing financial assistance. The fishermen that I spoke to had never walked into a Centrelink office, and they found it demeaning to do so. They are proud fishermen, often fourth or fifth generational fishermen; they did not want to be demeaned by asking for financial assistance.²⁹

26 Department of Defence, *Submission 87*, p. 8.

27 *Submission 32*, p. 4.

28 *Submission 30*, p. 6.

29 *Committee Hansard*, 22 December 2015, p. 14.

4.26 Similarly the CFCL described the assistance packed as inappropriately 'geared towards farmer-type costs being designed for the Northern Cattle Farmers during their past export disruption':

The estuarine fishers from the specific region have, in general, low business costs but a normally steady income. This package only addresses assistance to business costs, not income. For income assistance the impacted fisher must negotiate through a number of bureaucratic processes which are asset dependent, often resulting in no assistance. To receive the equivalent to the Newstart Payment was an embarrassment to fishers, who have worked hard to provide for their families a lifestyle that reflected their effort.³⁰

4.27 The NSW Farmers' Association noted that their members, oyster farmers in the Tilligerry Creek Harvest Area, were excluded from the Income Recovery Subsidy and Business Payments schemes set up in November.³¹

4.28 Mr Ian Lyall from the NSW DPI confirmed that financial assistance for affected businesses had been raised with Defence. However:

On 4 November, Defence released their assistance packages for fishers only—not for oyster farmers or the community. They developed that package without consultation with DPI or the fishers, so there are some hiccups in it.³²

4.29 NSW DPI also noted that it was 'seeking amendment to the Farm Household Support program to get eligibility for fishers'.³³

30 *Submission 27*, p. 3.

31 *Submission 35*, p. 2.

32 *Committee Hansard*, 22 December 2015, p. 57.

33 *Submission 108*, p. 1.

Chapter 5

Government response

5.1 This chapter will examine the response of Commonwealth and NSW Government agencies to the contamination at RAAF Base Williamtown. Key issues raised during the inquiry included:

- community notification;
- community engagement;
- coordination of the response;
- environment regulation issues;
- remediation and management of RAAF Base Williamtown; and
- compensation issues.

Community notification

5.2 Many of those affected by the contamination expressed frustration that they had not been notified earlier by government agencies as to the potential risks of contamination. Ms Washington told the committee it has been 'difficult for anyone to stomach the most fundamental question: if Defence, the EPA, Port Stephens Council and Hunter Water all knew about the contaminants exiting the base in 2012, why wasn't our community given the benefit of the same information?'. In particular, she noted, earlier notification would potentially have allowed people to have had 'less exposure to the contaminants'.¹

5.3 There was strong criticism of Defence's approach to community notification. In particular, Defence had prepared an internal report in May 2003 on its use of firefighting foam which included a key finding that based on 'past and current practices, there is a risk that PFOS/PFOA has contaminated Defence land as well as neighbouring properties, creeks, dams and reservoirs'.² The PFA stated:

In reviewing the timelines of the ADF response to the use of PFOS and PFOA and actions once the leak was determined, the PFA believes that the ADF demonstrated a lack of appreciation of the potential severity of the issue. Certainly the timeframes and the lack of immediate action demonstrate that the ADF do not comprehensively appreciate the role and responsibility it has within the community.³

1 *Committee Hansard*, 22 December 2015, p. 1. *Submission 32*, p. 2.

2 Sonia Colville and Nicole McCarron, *Environmental Issues Associated with Defence use of AFFF*, May 2003, p. 1.

3 *Submission 28*, p. 2.

5.4 The summarised timeline in Chapter 2 contains some of the detail regarding how information regarding the nature and extent of the contaminants on and around RAAF Base Williamtown emerged. In particular, the Stage 1 and Stage 2 environmental investigations undertaken by Defence were viewed as critical to the understanding of the extent of the contamination.

5.5 Mr Buffier from the NSW EPA told the committee that the Stage 1 report 'did not identify a clearly defined route by which contaminants were finding their way to humans, known as an exposure pathway' and therefore 'did not provide sufficient information at the time to notify the community'. However, he noted it was of sufficient concern for the NSW EPA to request that Defence conduct 'further investigations into the extent of off-site contamination and the potential exposure pathways'.⁴

5.6 Mr Buffier outlined how the NSW EPA took a risk management approach to the issue of when to inform the community regarding the issue. On the basis of the Stage 1 report, the NSW EPA considered it was 'not appropriate, with our paucity of knowledge at the time, to inform and alarm the community'. Further, it expected 'better information [from Defence] for the community relatively soon'.⁵

5.7 Defence provided the preliminary Stage 2 report to the NSW EPA and other stakeholders on 4 August 2015. Mr Buffier explained that on the basis of the draft Stage 2 report 'there was now a likely exposure pathway, and on a precautionary basis we took the view that we should take steps to close off those pathways'. Mr Buffier noted that PFOS was a chemical of concern:

The report told us that we now had it not only offsite in surface water and in sediments but also offsite in groundwater and, most significantly, in biota. That told us that we had a clear and credible pathway to human health exposure. So if you accept that the chemical might cause concerns once it is ingested by humans and there is an exposure pathway, then that was the significant change in information that warranted the swift response by us once that came to light.⁶

5.8 He noted:

[W]e worked closely as government agencies to respond to its findings, in particular closing its exposure pathways, including the establishment of the Williamtown investigation area, the closure of fisheries and oyster operations in Tilligerry Creek and Fullerton Cove, where there was a high likelihood of biological impact. On the day we made those decisions, 3 September, we issued a media release, and the next day, on 4 September, we did a letterbox drop to all the residents in the investigation area.⁷

4 *Committee Hansard*, 22 December 2015, p. 45.

5 *Committee Hansard*, 22 December 2015, p. 46.

6 *Committee Hansard*, 22 December 2015, p. 53.

7 *Committee Hansard*, 22 December 2015, p. 46.

5.9 The NSW EPA described a 'reluctance' on the part of Defence to issue a media release at that time. In these discussions there appear to have been conflicting views regarding the potential liability for any precautionary measures taken following an announcement.⁸ Mr Grzeskowiak from Defence commented that its 'preferred mechanism would have been for Defence to engage the community at the time we had the final verified report'. He stated:

My personal advice was that we would much rather have organised some form of meeting in this area and talked to people as a way of getting that message out. That was Defence's preferred approach. We thought that a media statement late in the evening would raise alarm, and that is clearly what has occurred.⁹

5.10 In its timeline of events leading to notification of the community, the Defence submission made an observation regarding the preliminary Stage 2 report:

Typically these reports are not relied upon for community advice or formal decision making due to potential for significant errors being detected during quality assurance/technical verification stages.¹⁰

5.11 In his interim report of the NSW EPA approach to RAAF Base Williamtown, Professor Mark Taylor found that, while the NSW EPA's actions from August 2015 period have been appropriate, it has been 'reactive':

The public could have been informed earlier in a comprehensive fashion had action been taken sooner by the EPA. Specifically, these actions should have focussed on the extent of contamination in the community where the EPA has carriage of responsibility.¹¹

5.12 However, Professor Taylor also highlighted that a lack of clarity in responsibilities for environmental regulation of Commonwealth Government land and agencies had hindered the capacity of the NSW EPA to influence the situation.

Community engagement

5.13 A number of problems with the engagement and communication of information to the community by government agencies were identified following the announcement of the fishing closures and precautionary measures in September 2015. For example, Ms Kate Washington MP noted that from the outset the media has been the main source of information for affected residents. She stated:

8 For example, Mr Adam Gilligan, NSW EPA, *Committee Hansard*, 22 December 2015, p. 53; Mr Michael Lysewycz, Defence, *Committee Hansard*, 22 December 2015, p. 67.

9 *Committee Hansard*, 22 December 2015, p. 67.

10 *Submission 87*, p. 16.

11 Professor Mark Taylor, 'Stage One of Review of NSW EPA's Management of Contaminated Sites', *Interim Report*, December 2015, p. 26.

Whilst I appreciate that conveying news of potential contamination in any manner would be difficult, many residents took umbrage with the manner in which they were informed. Moreover, not all affected residents engage with the media and so learning of the news via neighbours, was not optimal.¹²

5.14 The PFA and the CFCL condemned the lack of information, commitment and consultation demonstrated by Defence. They described:

Minimum communication to the community and stakeholder groups from [Defence] regarding their activities, any mitigation activities and intention to assist or compensate. Information has only been filtered through DPI or the Community Reference Group.

In the first 7 meetings of the Community Reference Group there was no consistency in [Defence] representatives - with 8 different people representing at the first 7 meetings.

Lack of any consistency in responses between different [Defence] representatives regarding compensation and activities.

A large amount of questions through the Community Reference Group are responded to by the ADF as requiring responses at a later date.¹³

5.15 The Port Stephens Council was also critical:

[T]here was and continues to be no clear coordinated communications strategy. This would have greatly assisted in ensuring key messages were consistent and confusion in the community was managed for such a high profile issue. Coupled with the apparent impromptu and piecemeal communications from various agencies was the fact that undated fact sheets were distributed to the community, while key agencies such as the EPA were reliant upon Council for the communication of matters on social media due to the lack of an EPA presence on Facebook.

Council also had concerns that the agencies with lead communication responsibility were also those furthest removed from the public, meaning they were somewhat out of touch with the needs of the local community. The first community meeting, which was held out of the area and at a venue that serves alcohol, is an example of this. The meeting was poorly facilitated and at times lacked the tact, diplomacy and compassion the audience required. It was also far too long, with presentations from various government agencies prioritised over community participation.¹⁴

5.16 Professor O'Kane, who chairs the Expert Panel, noted that NSW Government agencies were using multiple methods to engage with the affected community. In particular a community drop-in centre has been established at a local school 'where people can go and talk to representatives of various agencies like Health, or Water, or

12 *Submission 32*, p. 1.

13 *Submission 28*, pp 2-3.

14 *Submission 26*, p. 6.

DPI fishing' on a one-to-one basis. She described it as a 'powerful communication mechanism because there is no time limit' and '[p]eople can sit and talk as they need to'.¹⁵ Ms Washington also characterised the community drop-in sessions as successful 'providing a forum for residents to ask questions of experts and agencies one-on-one [and also] a much-needed forum for people to share their concerns and experiences with other residents'. However, she reported:

Gaining appropriate and consistent information from [Defence] has been challenging for residents, businesses and myself. This lack of information has created a space for rumour and misinformation to propagate and grow.

Reports of conflicting information being given to residents from [Defence] and the EPA are especially concerning as it fuels the mistrust.¹⁶

5.17 Ms Washington advocated 'a one-stop-shop approach whereby residents could contact one number with any concern'. She argued it 'should not have been the residents' responsibility to determine which agency, or level of government, could address their particular concern'.¹⁷

5.18 The NSW Farmers' Association recommended that 'Defence, as the polluter, chair the Community Reference Group and take greater responsibility for engaging with the community and the industries operating in the affected region'.¹⁸

5.19 Mr Grzeskowiak outlined that Defence first met with community members on 16 September 2015 and had been involved with the NSW Community Reference Group. He noted:

We have an individual on the ground, Air Vice Marshal Greg Evans. He has been there for some weeks now. His role is to be our main point of contact with the community. We have established a website, a hotline and an email line. We have done letterbox drops to people where we think we need to go and offer them the opportunity of having their bores or water tanks tested. We are trying to engage as much as we can.¹⁹

Coordination

5.20 The response to contamination at RAAF Base Williamtown from September involved a large number of government agencies and other stakeholders. Mr Buffier, from the NSW EPA, characterised it as a complex situation which 'involves multiple state and federal agencies, a number of new specialist working groups, including the Expert Panel, the Community Reference Group and the Elected Representatives

15 *Committee Hansard*, 3 December 2015, p. 14.

16 *Submission 32*, p. 3.

17 *Submission 32*, p. 3.

18 *Submission 35*, p. 8.

19 *Committee Hansard*, 3 December 2015, p. 4.

Group'.²⁰ Defence reported that it was 'working closely with key Federal stakeholders Departments of Health, Environment, Infrastructure and Regional Development, and Air Services Australia to ensure a consistent strategic management approach'. It was also 'working closely with state and local authorities and councils to ensure a consistent policy approach'.²¹

5.21 However, the Port Stephens Council considered the chain of command and hierarchy across government agencies was 'not clear':

With a large number of agencies involved...it appeared as though the community and agencies were confused as to who does what. For example, the Office of Chief Scientist issued media releases on similar content areas before the EPA, which was confusing for the community. It was apparent from a Council perspective that there were too many players, too many subcommittees and no clear and defined leadership and ultimate accountability. Further, no clear strategies or project plan exists that Council has seen spanning the entire scope of works across various agencies.²²

5.22 The Port Stephens Council stated:

The weekly technical phone meetings/hook ups, whilst admirable in the attempt to coordinate agencies, [proved] unsuccessful. The majority of the actions identified in this forum were continually deferred or carried over with little real progress made. These meetings just reinforced Council's view that the process was cumbersome - there appeared no accountability to follow through and deliver on actions.²³

5.23 It recommended a coordinated approach be considered similar to that used for the April 2015 storm and flood disaster recovery process. It argued that the 'appointment of a coordinated, staffed body which is seen to be independent of government allows for the necessary actions to be determined and allocated ensuring each agency knows exactly what is expected of it'.²⁴

Testing times and differing approaches

5.24 Tensions between Defence and NSW government agencies were apparent during the inquiry. Defence commented that its 'direct access to the NSW Government Williamtown Expert Panel has been limited as Defence is not a member'.²⁵ The Chair

20 *Committee Hansard*, 22 December 2015, p. 45.

21 Department of Defence, response to question on notice 95, Supplementary Budget Estimates, 21 October 2015, p. 3.

22 *Submission 26*, p. 5.

23 *Submission 26*, p. 6.

24 *Submission 26*, p. 6.

25 *Submission 87*, p. 7.

of the Expert Panel, Professor Mary O'Kane noted that Defence had initially been invited to be observers but that the 'general feeling of my colleagues was that it did not allow free discussion' and the invitation was retracted.²⁶

5.25 A key point of difference between Defence and NSW Government agencies appeared to be in regard to the program for sampling and testing of the contamination in and around RAAF Base Williamtown. Defence advised it was currently undertaking an environmental investigation in line with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM):

Defence is taking approximately 900 samples of ground water, surface water, soil, sediment and biota in and around RAAF Base Williamtown. This activity is known as the Stage 2B Environmental Investigation and includes the development of a human health risk assessment, an ecological risk assessment, an assessment of remediation options and development of a remediation plan. This process is intended to be completed by August 2016, with interim reporting in June 2016.²⁷

5.26 Defence noted that the Expert Panel advised that 'additional sampling beyond the NEPM guidelines are required as part of the Stage 2B Environmental Investigation sampling plan'. Defence stated:

Based on current information, it is too early to determine whether the sampling methodology outlined in the NSW Government Williamtown Expert Panel's Scoping Document will be necessary. In accordance with the process outlined in the ASC NEPM, an assessment of the source-pathway-receptor linkages will be undertaken before the sampling program is finalised, so that it appropriately reflects the exposure potential associated with each pathway. The need to undertake the sampling recommended by the NSW Government Williamtown Expert Panel is being evaluated as the potential exposure pathways are determined.²⁸

5.27 Professor O'Kane highlighted that the focus of the Expert Panel was providing results to the affected communities 'as quickly as possible' and stated it was really concerned about timely engagement from [Defence]'. She commented:

[W]e need to understand the exposure pathways for the chemicals, and we have proposed a big list of sampling for food and liquids. It is not happening at the speed that we think is important, particularly because we have a fishing ban on and various other advisories. The other issue is we have requested more environmental samplings from our water working group, cleared by the Expert Panel. That is not moving at a speed that we would like, because that also informs what we do in the exposure pathways

26 *Committee Hansard*, 3 December 2015, p. 15.

27 *Submission 87*, p. 7.

28 *Submission 87*, p. 7.

works. There is a level of concern from the New South Wales government and its agencies on that issue.²⁹

5.28 Mr Clearly from Hunter Water noted that the speed of Defence environment investigations had been a frustration. He considered 'a lot more work can and should be done to understand where the contamination is and how it is moving through the groundwater and the surface water'. He suggested '[a]dditional monitoring bores need to be put on Defence land, additional sampling needs to be undertaken, and then more detailed technical investigations need to occur to characterise where the contaminants are and how they are moving'.³⁰ Mr Buffier from the NSW EPA argued:

The New South Wales EPA and expert panel have provided advice on the scope of a comprehensive human health risk assessment and it now needs to be finalised. Defence needs to meet the full costs of this sampling and analysis, although to date many of these tasks have been undertaken by New South Wales agencies to speed up the process.³¹

5.29 Part of the NSW Government's assistance package for the Williamstown area, announced on 23 December 2015, included an investment in a 'new Liquid Chromatography-Mass Spectrometer, to speed up testing of soil, water, biota and milk'.³²

Environmental regulation issues

5.30 The scale of the issues of environmental regulation on Defence sites was highlighted by Mr Colin Tinder, a former Defence environmental manager. He described a '200-year legacy of contaminated sites on and off the Defence estate':

The Defence estate is larger than that managed by most State National Parks Services and Defence land contained many places that were of national significance in terms of environmental and heritage conservation...Literally thousands of instances of legacy contamination [are] known to exist at Defence sites (many of which dated from WWII) – including contamination arising from ordnance use (conventional and chemical), landfills and burial pits, fuel leaks, chemicals (including cocktails of hydrocarbon solvents), metals – including mercury, and even radioactive materials.³³

5.31 The relationship between the Commonwealth, state and territory and local governments regarding environmental regulation has been described as a 'scrambled egg'. An analysis by Dr Chris McGrath from the University of Queensland in 2012

29 *Committee Hansard*, 3 December 2015, p. 11.

30 *Committee Hansard*, 22 December 2015, pp 5–6.+

31 *Committee Hansard*, 22 December 2015, p. 47.

32 NSW Government, 'NSW Government help for Williamstown residents', *Media release*, 23 December 2015, p. 1.

33 *Submission 34*, p. 2.

observed that 'the three tiers of government in Australia have become so entwined that it often becomes difficult to distinguish their roles in a logical, neat way'. He noted:

The first key thing to understand is that state governments were historically responsible for environmental management, and they still often resent the Commonwealth intruding into these matters. State, territory and local governments still handle the vast bulk of day-to-day decisions and administration of land and water management such as around 250,000 town planning approvals a year. In contrast, the main Commonwealth environmental law, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), deals with only around 400 referrals each year.³⁴

5.32 In November 1997, the Council of Australian Governments agreed in principle to Heads of Agreement on Commonwealth and State roles and responsibilities for the Environment (Heads of Agreement). The Heads of Agreement do not appear to clearly delineate the responsibilities of Commonwealth agencies (such as Defence) in relation to compliance with state environment and planning laws. For example, relevant listed exceptions to compliance include matters relating to 'on-ground airport management' and 'national defence'. However, it also outlines that where exceptions are permitted, 'Commonwealth activities will, as far as possible, be undertaken in a way that seeks to achieve at least the equivalent requirements of State legislation'.³⁵

5.33 Defence stated that it operates under federal environmental legislation but that it also 'seeks to comply' with the intent of state or territory environmental legislation.³⁶ It noted:

Defence is required to meet the obligations of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) in the conduct of activity which has potential environmental impacts. The EPBC Act covers matters of national environmental significance and actions affecting Commonwealth land.

As a matter of operational practice Defence undertakes environmental testing and investigations consistent with State environmental obligations to monitor environmental impacts and develop appropriate mitigation measures, if required.³⁷

5.34 In relation to its response to the contamination at RAAF Base Williamtown, Defence stated:

34 Dr Chris McGrath, Australia's scrambled egg of government: who has the environmental power?' *The Conversation*, 5 December 2012.

35 *Heads of Agreement on Commonwealth and State roles and State roles and responsibilities for the Environment*, Attachment 3.

36 Department of Defence, response to question on notice 7, 3 December 2015, p. 1.

37 *Submission 87*, p. 2.

The *National Environment Protection Council Act, 1994* (Cth), allows for the making of National Environment Protection Measures...One of those National Environment Protection Measures is the National Environment Protection (Assessment of Site Contamination) Measure 1999 (the ASC NEPM). Australian States and Territories are responsible for implementation of the NEPM through relevant statutory controls in each jurisdiction. Defence is committed to acting in a manner consistent with relevant jurisdictional environmental legislation and regulations.

The ASC NEPM provides a means to support the protection of human health and the environment by establishing a nationally consistent approach to the assessment of site contamination. The ASC NEPM is intended to be used by all parties associated with site contamination including regulators, site assessors, environmental auditors, land owners, developers and industry.³⁸

5.35 The NSW EPA, through the *Contaminated Land Management Act 1997* and the *Protection of the Environment Operations Act 1997*, regulates contaminated land in NSW. However, Ms Buffier noted that the NSW EPA does not have regulatory powers over Defence and thus little power to influence Defence's response times to contamination issues. Further, there is no ready avenue for the EPA to undertake independent action, because it is financed on the basis that it has regulatory powers to compel polluters to undertake the necessary action.³⁹

5.36 Mr Buffier argued that there needs to be a regulatory regime to incentivise Defence to adhere to the same environmental standards applied to the rest of the community, and there needs to be an authority to regulate contamination issues.⁴⁰ He stated:

...Defence has been slow to accept responsibility for actions needed to deal with the contamination and provide necessary information. If this contamination was caused by industry or by another New South Wales government agency, such as Hunter Water, the response would have been different because the EPA has clear powers to regulate those sectors...Throughout all of this process we have sought a cooperative approach with Defence on environmental issues impacting state land, but the EPA has not been in a position to compel Defence to respond in a timely and effective manner. This has resulted in state agencies needing to step in to do some of that work. This issue has starkly highlighted a gap in both the regulation and accountability of government agencies such as Defence for pollution and contamination. Whereas the EPA can regulate state agencies and regularly holds them to account through penalty notices,

38 *Submission 87*, p. 6.

39 *Committee Hansard*, 22 December 2015, p. 45.

40 *Committee Hansard*, 22 December 2015, p. 47.

there is no equivalent body regulating Commonwealth bodies and holding them to account for their actions in relation to contaminated land.⁴¹

5.37 An absence of federal oversight of Defence's environment activities was also highlighted in the NSW EPA's briefing note to the responsible NSW Minister on 29 May 2013 which observed:

Given [Defence] is a federal agency, EPA has no statutory control. In a similar situation in Sydney where contamination has entered "NSW land" from a [Defence] site the EPA has been advised by the federal agency concerned that they have exemption from certain State laws. [Defence] has previously advised EPA that environmental oversight of its operations is by the federal Department of Sustainability, Environment, Water, Populations and Communities (SEWPaC). The [Defence] cover letter noted it had not informed SEWPaC as the contamination has been determined not to cause a significant impact to the environment under the *Environment Protection and Biodiversity Conservation Act 1999*.⁴²

5.38 Mr Buffier told the committee that, due to its concerns, the NSW EPA attempted to escalate the issue by notifying the Department of the Environment.⁴³ The Department of the Environment acknowledged that it received correspondence from the NSW EPA on 18 November 2013 notifying it of site contamination investigations being undertaken at Williamtown RAAF Base and 'for any further actions you may consider necessary'. The Department of the Environment did not respond to this letter and has not had any further correspondence with the NSW EPA on the matter.⁴⁴

5.39 A number of submissions to the inquiry considered that legislative reform was necessary to correct this absence of regulatory clarity. For example, the Port Stephens Council noted that there had been concern expressed 'about the relationship between regulator and polluter, which has been seen in some quarters as being too close, while the legislative capacity for the NSW Government to regulate the Commonwealth is seen to be insufficient'.⁴⁵ It stated:

It appears that Defence is a self-regulating entity without oversight from an independent environmental regulator. The lack of any connection between Commonwealth and state legislative provisions relating to significant pollution and contamination situations on Commonwealth land has contributed to the current inadequately managed situation. Council believes there are very real opportunities to improve the legislative link between the Commonwealth and the states to ensure environmental pollution and contamination incidents are appropriately managed.

41 *Committee Hansard*, 22 December 2015, p. 46.

42 NSW EPA, response to questions on notice, 22 December 2015, Attachment A.

43 *Committee Hansard*, 22 December 2015, p. 50.

44 Department of the Environment, response to questions on notice, 22 December 2015, p. 2.

45 *Submission 26*, p. 5.

Specifically;

Consideration should be given to the appointment of a Commonwealth environmental regulator and implementation of an environmental regulatory framework overseeing [Defence] activities on Commonwealth land;

Consideration should be given to a comprehensive review of Commonwealth and state legislation relating to mandatory notifications to environmental agencies across all states when pollution and contamination incidents result from Commonwealth activities;

Consideration should be given to a comprehensive review of legislative provisions to allow state-based environmental agencies (i.e. NSW EPA) to have a greater regulatory role in environmental and contamination incidents involving the Commonwealth. This review must consider a broader regulatory role for the state environmental agencies in the investigation and management of pollution and contamination situations where the pollution and contamination has caused significant impacts off Commonwealth land.⁴⁶

5.40 Mr Gorfine from the Williamstown and Surrounds Residents Action Group held similar views:

[W]e would hope at the end of this inquiry that, as an absolute minimum, proper legislative changes are enacted and put in place to ensure that New South Wales EPA or an equivalent body has the teeth to regulate and control pollution events over Commonwealth lands.

Going forth from that, there need to be in place proper checks and balances along the way if there is a pollution event on Commonwealth land. There need to be reporting requirements, and failure to report those contamination events must have consequences.⁴⁷

5.41 The need for better interaction between the Commonwealth and state and territory environmental regulators was also highlighted during the committee's inquiry. For example, the NSW Farmers' Association observed:

Unfortunately the NSW EPA has no jurisdiction over a Commonwealth entity like the Department of Defence. Although Defence did engage with the EPA early in its examination of the problems PFOS/PFOA might have caused at the base, it is unclear how this ongoing engagement was managed and what policy governed it. Further, it is unclear how frequently Defence engaged with the EPA throughout its examination of the facts-on-the-ground at Williamstown.⁴⁸

46 *Submission 26*, pp 7-8.

47 *Committee Hansard*, 22 December 2015, p. 35.

48 *Submission 35*, p. 7.

5.42 It recommended a protocol be established 'to govern interaction between federal departments, including Defence, and the EPA (or equivalent) to ensure that jurisdictions can have confidence that their constituent industries and communities are not threatened by the effects of polluting activities'.⁴⁹

Environmental standards

5.43 A key problem identified during the inquiry was that there are no national environmental standards in Australia for levels of the chemicals that have been used in firefighting foams. Defence emphasised that the National Health and Medical Research Council does not specify levels for these chemicals in the national Australian drinking water quality guidelines.⁵⁰ Mr Grzeskowiak from Defence told the committee:

There are no health standards in Australia for tolerance of this chemical in drinking water at whatever level and there are no state or territory equivalent standards either. There are not many places in the world where those sorts of standards are in place. There are a few standards emerging in the US and the UK that we are aware of, and we are using them. It is clear that globally this is still an emerging contaminant that is not fully understood.⁵¹

5.44 In January 2009, the US EPA's Office of Water established a provisional health advisory of 0.2 micrograms per liter ($\mu\text{g/L}$) for PFOS and 0.4 $\mu\text{g/L}$ for PFOA to assess the potential risk from short-term exposure of these chemicals through drinking water. However, other jurisdictions have adopted different standards.

5.45 On 19 May 2015, Defence published *Defence Contamination Direction #8 – Interim Screen Criteria*. The directive explains these criteria 'are based on industry collaboration and current understanding' with the intent 'to support the progression of relevant activities on the Defence estate in a nationally consistent manner'.⁵² In particular, it set out interim screening levels for the following:

- ground water (Human health – drinking water) - PFOS 0.2 $\mu\text{g/L}$; PFOA 0.4 $\mu\text{g/L}$; and
- surface water (Human health – consumption of fish) - PFOS 0.65 ng/L ; PFOA 300 ng/L .⁵³

5.46 In his interim report on the NSW EPA's management of contaminated sites, Professor Mark Taylor recommended the NSW EPA 'should set interim guidelines for PFOS/PFOA for a range of environmental samples including soil, sediment and

49 *Submission 35*, p. 7.

50 *Submission 87*, p. 4.

51 *Committee Hansard*, 3 December 2015, p. 7.

52 Defence, *Defence Contamination Direction #8 – Interim Screen Criteria*, 19 May 2015, p. 1.

53 Defence, *Defence Contamination Direction #8 – Interim Screen Criteria*, 19 May 2015, pp 3-5.

groundwater, as a matter of priority, pending finalisation of national guidelines'. He also recommended the NSW Government engage with Commonwealth and other agencies and experts to establish national guidelines for PFOS/PFOA.⁵⁴

Remediation and management of contaminated areas

5.47 Conflicting evidence was received regarding the remediation options for RAAF Base Williamtown and its continued environmental management. A number of submitters argued Defence should prioritise remediation so further contaminants would not leave RAAF Base Williamtown. This was considered a priority to prevent further movement of contaminants but also to provide certainty for residents and businesses that levels of contaminants would not increase in the future. For example, the NSW Farmers Association recommended that 'Defence immediately detail its plan for how it will achieve remediation so that surrounding communities and industries can be assured that they can go about their business with security'.⁵⁵

5.48 Addressing contamination in Lake Cochran, in particular, was seen as an urgent priority. For example, Mr Buffier from the NSW EPA stated:

Defence needs to take immediate action to address the migration of further contamination from the Williamtown base, with the goal that, by the end of June 2016, a successful containment strategy for Lake Cochran and other identified hotspots of contamination on the base is in place. It is quite feasible to replace Lake Cochran in another facility—a lined facility that would ensure there was no contamination coming from the area.⁵⁶

5.49 However, Defence stated that despite 'research worldwide, few effective or viable large scale remediation techniques have been identified'. Defence indicated that 'it is unable to put a timeline on remediation at this time...[but] will continue to investigate potential remediation options'.⁵⁷ In response to the repeated calls for measures to 'block stormwater egress off the base and...stop groundwater traversing across the base', Defence stated:

There is no feasible way to stop water leaving the base because measures to prevent this would effectively create a dam. This could create flooding and potentially affect civil and military operations on the airfield. However, there may be opportunities to prevent localised contamination spreading by the use of either physical barriers or chemical binding additives.

All of these potential solutions require further significant technical design feasibility studies as part of a range of potential options for containment and

54 Professor Mark Taylor, 'Stage One of Review of NSW EPA's Management of Contaminated Sites', *Interim Report*, December 2015, p. 27.

55 *Submission 35*, p. 3.

56 *Committee Hansard*, 22 December 2015, p. 47.

57 Department of Defence, response to question on notice 94, Supplementary Budget Estimates, 21 October 2015, p. 2.

remediation. Currently the effectiveness of these solutions could not be guaranteed and could potentially hasten the spread of contamination. Defence is currently investigating remediation options as a priority.⁵⁸

5.50 Mr Grzeskowiak stated Defence's engaged engineers and consultants have not suggested solutions to prevent contaminated water leaving the base. He told the committee that methods described at the hearing 'were unlikely to stop contaminated water leaving the base under all circumstances':

The simplistic view of building a dam or something that stops all run-off from the base would put Newcastle Airport out of action the next time there was a heavy rainstorm, simply because it would become flooded. So it is not a credible scenario.⁵⁹

5.51 Defence noted that it had 'recently completed a remediation program at Point Cook, while the program was not initiated to remediate PFOS/PFOA, amounts of these contaminants were detected during the remediation program'. It stated:

Remediation of just under a hectare was undertaken by many months of continuous burning of soil at very high temperatures. Large scale aquifer remediation is problematic. Defence continues to investigate options for large scale remediation of groundwater in situ.⁶⁰

5.52 The geology around RAAF Base Williamtown also appeared to be a major factor contributing to the difficulties of remediation. Professor Ravi Naidu from CRC CARE described the geology as 'quite unique':

There is a surface sandy layer that allows things to move through and then you have a clay layer within a depth of three or four metres, or maybe five. What we found was a lot of contaminants are locked at that depth...

[The clay] holds onto these contaminants. The water table goes to a depth of four metres and so every time you have precipitation, for instance, the water table rises and, as it rises, it gets in touch with these low contaminants which are released. When the water table goes down again, it carries with it those contaminants. Of course, water moves, and it moves it from the hot zone beyond the soil zone. You also notice PFCs moving rapidly in the three- to four-metre zone and, when they hit the clay layer, that is where they normally sit. Because they are quite recalcitrant, they do not degrade and therefore they will be there for a very long time unless you lock them up there or dig them out.⁶¹

5.53 However, Professor Naidu was of the view that scientific and technical expertise existed to deal with the contamination:

58 *Submission 87*, p. 10.

59 *Committee Hansard*, 22 December 2015, p. 68.

60 Department of Defence, response to question on notice 94, Supplementary Budget Estimates, 21 October 2015, p. 2.

61 *Committee Hansard*, 22 December 2015, p. 30.

I think the approach here would be passive coupled with active remediation. Passive is what should contain the plume, and active is when you start remediating the plume. That is the approach that needs to be taken. There is absolutely no doubt that once your contaminants get into the subsurface environment, you are looking at a very heterogeneous, complex system. And for a heterogeneous, complex system you never have a simple solution. It is not cheap; it costs money.⁶²

5.54 During community statements at the public hearing on 22 December 2015, Mr Des Maslen, who operates an environmental management company, also told the committee that a viable remediation program exists for the contamination from Lake Cochrane.⁶³

5.55 A large capital works project is currently underway at RAAF Base Williamtown for the development of facilities and infrastructure for the New Air Combat Capability Project. Several submissions argued these works should be halted until PFOS/PFOA contamination issues on the site are resolved. The Williamtown and Surrounds Resident's Action Group argued that due to the unique hydrology of the land there should be a moratorium 'placed on any significant developments or proposed developments within the red zone until such time as NSW Health, NSW EPA and expert hydrological advice advises otherwise'.⁶⁴ Similarly, Mr Lindsay Clout from the FCRAAG stated:

Defence have been engaged in major development works on the base, which include extensive earthworks on a known contaminated site and pumping groundwater that has been hindering excavation and foundation works. These works had been underway for some time, with no controls in place for the spread of the contamination until we, the community, protested. Now we are told Defence are preparing a management plan, which I can tell you has not seen the light of day, and magically two carbon filtration machines have been acquired to treat groundwater, but they tell us these machines cannot be used to stop the pollution leaking from Lake Cochran.⁶⁵

5.56 Defence noted that the facilities and infrastructure works currently being undertaken at RAAF Base Williamtown were subject to an environmental management plan which incorporated the treatment of ground water encountered during the conduct of the works.⁶⁶ Defence noted that it was using the activated carbon filtering process around the works for the New Air Combat Capability project. Mr Grzeskowiak stated:

62 *Committee Hansard*, 22 December 2015, p. 31.

63 *Committee Hansard*, 22 December 2015, p. 42.

64 *Submission 36*, p. 1.

65 *Committee Hansard*, 22 December 2015, p. 34.

66 Department of Defence, response to question on notice 94, Supplementary Budget Estimates, 21 October 2015, p. 2.

The environmental legislation we work under requires that we have to do dewatering if we are going to be digging. The water that is taken out of the aquifer is sampled. If it is above a certain level, it is put through an activated carbon filtering process to reduce the contaminant below that level and then it is put back into the ground after the works are finished, which is again in accordance with the environmental legislation that we work under.⁶⁷

5.57 Defence also stated that, on current projects at RAAF Base Williamtown, all disturbed soil is being tested for PFOS/PFOA and being stockpiled on site while remediation options are investigated. Any contaminated water which is being encountered during excavation is being treated to safe drinking water levels before being introduced back into the environment.⁶⁸

5.58 The Port Stephens Council stated:

At RAAF Base Williamtown, significant civil works are currently being undertaken as a part of the Joint Strike Fighter upgrade involving the movement of large volumes of soil and likely the interception of ground water. Council has not been provided any information explaining the civil works and the interaction of these works with the existing contamination situation. It is suggested that Defence consider providing information explaining the works and the link with the contamination.⁶⁹

Contamination on other Defence and civilian sites

5.59 PFOS and PFOA remain significant residual contaminants at many sites globally, for example, at many of the world's 49,000 airports (including 450 civilian and military airports in Australia). Foams containing these chemicals have also been deployed on fires at traffic, truck and railway accidents and even building fires. As at airports, the chemicals can escape into the surrounding urban or rural environment and contaminate water supplies.⁷⁰ Mr Grzeskowiak for Defence described the extensive previous use of firefighting foams containing PFOS/PFOA in Australia and overseas:

[T]hese firefighting foams—never mind the other products and materials that have used this chemical—would have been widely used by both military and civil airfield firefighters, plus the rural fire services, plus metropolitan fire services, plus probably at any industrial site that was processing hydrocarbons at a scale—refineries, large fuel storage depots, those sorts of things. So we know that the chemical has been used

67 *Committee Hansard*, 3 December 2015, p. 6.

68 Department of Defence, response to question on notice 94, Supplementary Budget Estimates, 21 October 2015, p. 2.

69 *Submission 26*, p. 10.

70 CRC CARE, 'Case Study – Fighting fire-fighting foam', 15 December 2014, available at: <http://www.crccare.com/case-study/fighting-fire-fighting-foam> (accessed 22 January 2016).

extensively worldwide for quite a long time, since certainly the early seventies, for firefighting and a range of other applications.

5.60 In its submission, Defence indicated it had undertaken a review of its estate to identify further areas for investigation:

AFFF containing PFOS/PFOA has been used extensively around the world for both military and civilian purposes to suppress class B liquid fuel fires. AFFF has been used at a wide range of airfields, fuel storage depots, vehicle yards, on Naval platforms etc.⁷¹

Following a Defence estate-wide desk top review of Aqueous Film Forming Foam (AFFF) use, 16 sites have been identified as a priority for further investigation (Category 1 Properties). These sites have been selected based on Defence's understanding of how AFFF was used at each site and any information known about water use and hydro-geology in the area. This is based on the information Defence has up to this point. We will continue to review as we better understand the nature of this emerging contaminant.

Defence will undertake community consultation as it conducts environmental investigations at other bases.⁷²

5.61 Mr Colin Tinder, a former Director of Environmental Impact Management at Defence, stated:

AFFF contamination would not only be a matter of risk that exists at RAAF Williamtown. With similar practices having been adopted around Australia it is likely, in fact probable, that AFFF will be found in the soil at most other sites where fire fighting training and equipment testing has been conducted. Sites like RAAF Base Townsville drain to the World Heritage Area of the Great Barrier Reef.

While AFFF contamination of the environment is a serious and troublesome issue and that has had serious effects on the livelihood and well being of Defence's neighbours at Williamtown, it is likely to be present at multiple more Defence sites. It can also reasonably be assumed that it will also occur off-site.⁷³

5.62 Ms Beatty from the PFA also highlighted potential national implications for the fishing industry of PFOS/PFOA contamination:

We are also concerned that this is not a unique situation and has the potential to impact on other commercial fishing industries throughout Australia. We strongly urge consideration of remediation activities in any areas in Australia identified as at risk.⁷⁴

71 Department of Defence, response to question on notice 93, Supplementary Budget Estimates, 21 October 2015, p. 2.

72 Department of Defence, response to question on notice 10, 3 December 2015, p. 1.

73 *Submission 34*, p. 6.

74 *Committee Hansard*, 22 December 2015, p. 14.

5.63 There were also indications other contaminants may be leaving Defence facilities. For example, Mr Gorfine from the Williamstown and Surrounds Residents Action Group noted that independent water testing which has been conducted has 'come back not only with PFOS and PFOA levels but with other hydrocarbons such as avgas [aviation gasoline] and other potential pollutants'.⁷⁵

Ratification of Stockholm Convention Annex

5.64 In response to a question on notice, the Department of the Environment noted that 'listing of PFOS on the Stockholm Convention in 2009 does not enter into force for Australia until the domestic treaty making process is complete and an instrument of ratification has been transmitted'.⁷⁶ The Department of the Environment indicated this process was proceeding:

The Department is continuing to develop a complete picture of all PFOS use in Australia, and refining options for implementation of the Stockholm Convention requirements. This has included consultation with impacted business, industry and state and territory governments, among others. The next step will be the release of a regulation impact statement on the regulatory implications of ratification under the Convention for consultation, including cost benefit and regulatory burden analyses which have been commissioned by the Department.⁷⁷

5.65 The National Toxics Network recommended urgent regulatory action to ensure Australians are protected from ongoing exposure to PFCs. It urged the Australian Government to 'immediately ratify and take action on the persistent organic pollutants in the Stockholm Convention including the listing of PFOS in 2010'.⁷⁸

Compensation issues

5.66 Defence indicated that the issue of compensation is 'a matter separate to financial assistance and will depend upon a determination as to liability and quantification of losses attributable to actions by the Commonwealth'. It stated:

[It] is too early to make any decisions as to compensation, as both the extent and effects of the contamination are not currently understood, and will not be understood for some time as environmental investigations continue. Legal issues relevant to compensation are informed by evidence and interpretation of evidence – both as to the sources of contamination, actions that give rise to an alleged loss, the actual loss claimed and possible contributory causal issues. There are a range of investigations and considerations that are in train – covering scientific, environmental,

75 *Committee Hansard*, 22 December 2015, p. 37.

76 Department of the Environment, response to question on notice, 22 December 2015, p.1 [emphasis in original].

77 Department of the Environment, response to question on notice, 22 December 2015, p.1.

78 *Submission 29*, Attachment 1, p. 3.

engineering and health matters. Defence is closely involved in these and will take them into account when considering claims for compensation.⁷⁹

5.67 This view was repeated at the public hearings. Mr Grzeskowiak told the committee it was 'too early for formal acceptance of liability' and 'there was no formal proposition for a compensation scheme'. However, he noted Defence was working with some people who are in the process of making claims against Defence, representing the Commonwealth, for reimbursement of some costs.⁸⁰ Mr Grzeskowiak acknowledged that Defence was 'aware of a community expectation that there might be compensation', but he could not 'comment on what the government might decide in due course'.⁸¹ He stated:

[T]he testing we are doing is to try to understand the nature of the contaminant and where it is; the research we are doing is to try to understand, from global research, what the likely health effects might be. They are being done in a professional and systematic way... We know the community is concerned, and yet the research we have done tells us that there are no proven health links between adverse health outcomes and exposure to these chemicals. We know that in the Australian community there is a background level of exposure that we would all have.⁸²

5.68 The Defence Legal Counsel, Mr Michael Lysewycz stated:

We read and sympathise with the statements by community members who are apprehensive about suffering loss. When it comes to compensation, there are different ways in which people may suffer loss. We will have to look at each one of those to establish potential liability and actual loss and see how that can be redressed. In other cases, we have been particularly responsive to claims as they come through. We do not shy away from the responsibility—the Commonwealth does not—but there are certain thresholds that have to be passed before we can actually pay money out of the public purse...

All I can say is that the law concerning liability and assessment of compensation and quantum is quite complex. We try to do that as quickly as possible once we have the evidence. Going back to the earlier point about admission of liability, I can tell you that I have not advised the department on liability because I do not have the evidence on which to base that assessment.⁸³

5.69 There was high level of frustration expressed during the inquiry regarding Defence's refusal to commit to compensate those affected by the contamination from RAAF Base Williamtown. For example, Mrs Beatty from the PFA described how the

79 *Submission 87*, p. 9.

80 *Committee Hansard*, 22 December 2015, p. 64.

81 *Committee Hansard*, 3 December 2015, p. 4.

82 *Committee Hansard*, 22 December 2015, p. 65.

83 *Committee Hansard*, 3 December 2015, p. 6.

handling 'or lack thereof' by Defence in 'discussions surrounding the "polluter pays" principle and compensation to those impacted has been highly stressful and unsatisfactory for our industry'.⁸⁴ Professor O'Kane observed that the NSW Government 'has a very strong principle of polluter pays'. If the contamination was the result of activities on RAAF Base Williamtown 'it would be Defence and therefore the Commonwealth' who would bear liability.⁸⁵ She stated:

We are very concerned that Defence is not responding to the sense of polluter pays. They are the polluter. We would like to see Defence being a model polluter in that we would hope that government would always be the best type of agency when something is happening and polluter-pays is a very important principle. So we are concerned that we are not getting the response that we would expect from an industry polluter, for example. We are very concerned about the timeliness from the point of view of being able to inform the community, both in Williamtown and more generally.⁸⁶

Compensation mechanisms

5.70 Appropriate avenues for compensation from Defence and the Commonwealth were also discussed in detail. For example, Mr Donahoo urged the committee to recommend the government take a proactive stance and 'agree to voluntary acquisition of affected properties and to establish a credible compensation scheme...based on the ex gratia payments scheme with independent arbitrators and one level of independent appeal'.⁸⁷

5.71 Similarly, Ms Washington stated:

Defence knows that there is contamination and knows there are impacts on the community. Those impacts are very real, because we have the restrictions already in place, so Defence is aware that people are incurring costs that they would not have otherwise incurred. It is not right for those residents to have to wait two or three years down the track to make a civil claim to recover those losses, because they are known to be occurring now. I think it is unconscionable for Defence to not make reparation for those losses as they are incurred as we go through this process, before the process ends.⁸⁸

5.72 She urged the Commonwealth 'to immediately create a contingency fund from which residents can make claims against and for a line item to be created in the next

84 *Committee Hansard*, 22 December 2015, p. 14.

85 *Committee Hansard*, 3 December 2015, p. 15.

86 *Committee Hansard*, 3 December 2015, p. 15.

87 *Committee Hansard*, 22 December 2015, p. 41.

88 *Committee Hansard*, 22 December 2015, p. 3.

federal budget in recognition of the longer term losses which are likely to result from the processes that are already in train, being a compensation fund.⁸⁹

5.73 For the fishing industry, an important consideration in relation to potential compensation was the question of whether the fishing closures would become permanent requiring a 'buy-out' of affected commercial fishermen. For example, Ms Walker from the WCFC stated:

If they do close the river completely and do a buyout, I believe it needs to take into account the emotional side of people. It needs to take into account the loss of income that has occurred and the projected loss of income. My husband expected to prawn and fish that river every day, just about, for the next 30 years, so I believe that at least a good period of projected income needs to be taken into account. I also think costs for retraining or relocating need to be taken into account. If a fisherman still wants to fish but they cannot fish the Hunter River and they might want to buy an outside trawler or go somewhere else, I think that needs to be taken into account as well, because they would all be costs that would be incurred. It is something that has happened that is not their fault.⁹⁰

5.74 The PFA also argued that fishers' business have been impacted and that under the 'polluter's pay' requirement, Defence is required to financially compensate those impacted:

In the short term, the commercial fishing businesses impacted by the closure will require compensation for business interruption costs. Business interruption costs should cover the costs associated with the proportion of a business's catch that is no longer from the areas subject to the Fishing Closure or not substituted by fishing/relocating in other areas...

Longer term, business interruption costs may include relocation costs and related expenditure. If successive testing indicates sustained levels of PFOS above Total Dietary Intake (TOI) levels for seafood such that longer term or permanent closure is required, the affected businesses should be offered a permanent buy out using factors determined by an Advisory Group consisting of the PFA, Commercial Fishermen's Cooperative, Sydney Fish Markets and the DPI Fisheries. This would also include the remediation of impacted areas back to preserve and protect fish stocks in the region⁹¹

Legal action

5.75 The potential for class action against Defence for compensation was frequently raised. Mr Grzeskowiak told the committee that Defence was working with some people who are in the process of making claims against Defence, representing

89 *Committee Hansard*, 22 December 2015, p. 2.

90 *Committee Hansard*, 22 December 2015, p. 24.

91 *Submission 28*, pp 4-5.

the Commonwealth, for reimbursement of some costs.⁹² However, legal proceedings were not perceived as an optimal solution for those affected. For example, Mr John Donahoo told the committee:

[A] class action may take years to run its course, hence subjecting affected residents to more distress. Furthermore, considerable extra costs may likely be incurred by the Commonwealth to pay for the legal costs of the plaintiff and the defendant, and claimants will forfeit about 30 per cent of any compensation awarded to cover fees owed to their litigating funding company.⁹³

5.76 Ms Washington argued that affected residents and businesses 'should not have to expend their time and energy pursuing a civil action to recover losses that they have suffered as a result of government agencies'.⁹⁴ Similarly the PFA described a class action as an 'unrealistic' solution. It noted:

Class action requires significant resources, time and stress – something that should not be recommended as a path forward. We should have functional bureaucratic in place that protect these people...not ostracises and force them to take a judiciary approach.⁹⁵

5.77 Mr Shannon from Shine Lawyers observed that due to the complexity of liability issues regarding contamination 'a properly handled and engineered savvy legal Defence team could run citizens around for decades' before any compensation was decided.⁹⁶ He argued for a pragmatic approach to compensation which did not require a reliance on 'scientific certainty' regarding the impacts of the contamination. He stated:

Science does not do things quickly. This community type problem will require a community type approach which will be cutting to the quick, coming with the most probable explanation and understanding and addressing it in that manner.⁹⁷

92 *Committee Hansard*, 22 December 2015, p. 64.

93 *Committee Hansard*, 22 December 2015, p. 41.

94 *Committee Hansard*, 22 December 2015, p. 2.

95 *Submission 28*, p. 4.

96 *Committee Hansard*, 3 December 2015, p. 20

97 *Committee Hansard*, 3 December 2015, p. 17.

Chapter 6

Committee view and recommendations

Introduction

6.1 The first part of the committee's inquiry has been directed to PFOS/PFOA contamination from RAAF Base Williamtown. However, other Defence facilities where firefighting foam was extensively used have, or are likely to have, similar issues. In particular, the situation at Army Aviation Centre Oakey (AACO), Queensland arising from firefighting foam contamination has been raised with the committee.¹ The committee does not have sufficient evidence to address the other Defence facilities in this report and intends to explore this aspect in the second part of its inquiry.

6.2 However, the committee emphasises that this does not imply that the situation at AACO is less serious than RAAF Base Williamtown. It is clear from the submissions received that many residents in Oakey have been living with the uncertainty created by possible PFOS/PFOA contamination for a significant period. The Queensland authorities also appear to be less involved in assisting the community than their New South Wales equivalents.² This is a concerning situation and the committee will be seeking further evidence.

6.3 Similarly, due to the timing of the inquiry, the committee has not been able to fully complete its consideration of the contamination at RAAF Base Williamtown. There are several significant matters where questions remain. The committee acknowledges it may need to include further examination of the situation at RAAF Base Williamtown in the second part of its inquiry.

6.4 The immediate impact on the communities around RAAF Base Williamtown has been profound. The shadow of uncertainty regarding the spread of the pollutants has created fear and concern, but it has also had real and concrete impacts for these residents and businesses. This is a crisis for those people who have been told they have been drinking potentially contaminated water, that they cannot work or that their property may be worthless. Unfortunately, this situation has not received a crisis response from government agencies.

Community notification

6.5 A number of submitters and witnesses requested the committee inquire into the process of community notification regarding the contamination. As the summarised timeline in Chapter 2 indicates, there is a confusing picture as to what was known when by various government agencies regarding PFOS/PFOA contamination at RAAF Base Williamtown. Evolving scientific knowledge of the contaminants and improved technology for detection meant that an understanding of the extent of the contamination emerged gradually.

1 For example, Shine Lawyers, *Submission 88*.

2 For example, Mr Cain Gorfine, *Committee Hansard*, 22 December 2015, p. 35.

6.6 The committee does not consider it productive to attempt to pinpoint exactly when action should have been taken by Defence and other authorities regarding possible PFOS/PFOA contamination in water leaving the site. The focus now should be on providing assistance to those affected by the contamination and developing policies to ensure this event and future contamination incidents at Defence sites are effectively managed.

6.7 With hindsight, it is clear notification of the community should have occurred earlier. Further, delays in notification and advice have contributed to a sense of mistrust in the affected communities regarding the approach of Defence and other government agencies to the contamination. More importantly, the lack of timely notification has also prevented members of the affected communities from taking precautionary measures against drinking water or consuming products with potentially harmful levels of PFOS/PFOA.

6.8 The committee acknowledges that the decisions regarding when to commence notification of the community were made in an environment of scientific uncertainty. However, Professor Mark Taylor's interim assessment was that the Stage 1 Report results indicated that a 'pathway into the human food chain was highly likely or imminent' and this should have prompted 'field sampling of waters, soils, biota and domestic livestock to understand the community and socio-economic activities at risk'. He concluded that the actions of NSW EPA and other NSW Government agencies were 'responsive, timely and appropriate' in notifying the community and taking precautionary steps when the draft Stage 2 report was eventually received from Defence.³

Recommendations

6.9 The community expects Commonwealth Government agencies, such as Defence, to be responsible custodians of the environment and exemplars in protecting public health. While there appear to be many points of failure in the response to PFOS/PFOA contamination at RAAF Base Williamtown, the most acute problem appears to be a lack of Commonwealth Government leadership and a reluctance to take full responsibility. The approach of Defence to this issue has been criticised, but also the unsatisfactory engagement of other Commonwealth Government agencies, including the Department of the Environment and the Department of Human Services and Centrelink.

6.10 In this context, the committee has made a number of recommendations to Defence and to the Commonwealth Government more broadly. The first recommendations focus on access to water issues, the provision of mental health and counselling services, initial compensation of the fishing community and the coordination of the response of government agencies. Later recommendations focus on providing certainty for affected residents and commercial fishermen in the longer term. Finally, the committee makes recommendations on some related issues – blood testing and the application of environmental regulations to Defence.

3 Professor Mark Taylor, *Interim report*, 2015, p. 25.

An urgent response to immediate need

Access to water

6.11 The first priority, clearly, should be the health of affected residents of Williamstown and Fullerton Cove. Access to uncontaminated water is important to ensure that there is no further exposure to contaminants for both residents and their property. The committee welcomes the NSW Government's commitment to connect affected properties in the investigation area to town water. This is an important development which will assist residents in the longer term.

6.12 However, this NSW Government program will take significant time to complete.⁴ While the program is being undertaken, many residents will continue to rely on bottled water and their existing domestic water systems. The committee was concerned to hear that some residents were finding it necessary to drive to local parks to fill containers with town water. There also appeared to be misunderstandings and unclear advice provided in relation to the provision of replacement water tanks to affected residents.⁵

6.13 The committee welcomes the commitment of Defence to follow up all the concerns of affected residents which have been raised during the inquiry, such as the collection of water bottles once they are used.⁶ However, in the view of the committee, Defence should reassess its provision of water to affected residents to ensure their needs are being adequately met.

Recommendation 1

6.14 The committee recommends that Defence immediately review its provision of water and replacement of water infrastructure to affected residents to ensure it is sufficient to meet their needs.

Initial compensation to commercial fishermen

6.15 Many parts of the fishing industry reliant on access to Fullerton Cove and Tilligerry Creek have been financially damaged by the fishing closures. These are members of the community who are in urgent need of financial assistance, having received reduced or no income since the closures were announced. The fact that some of the affected fishermen are being forced to rely on local charities and food vouchers is an indication that the current financial assistance package is inadequate and unsustainable.⁷

6.16 The Commonwealth Government, with the advice of the NSW Department of Primary Industries, should use previous catch take and income records to adequately compensate commercial fishermen for the interruption to their businesses caused by

4 Sam Norris, 'State govt announces \$4 million for reticulated water to make good on Williamstown contamination', *Port Stephens Examiner*, 23 December 2015.

5 For example, Mrs Kim Smith, *Committee Hansard*, 22 December 2015, p. 44.

6 Mr Steven Grzeskowiak, Defence, *Committee Hansard*, 22 December 2015, p. 68.

7 Ms Walker, *Committee Hansard*, 22 December 2015, p. 22.

the fishing closures. This initial compensation should cover the period of the precautionary closures – currently September 2015 to June 2016.

6.17 The Commonwealth Government has multiple avenues to provide discretionary financial assistance to the affected commercial fishermen including through act of grace payments, ex gratia payments, the Compensation for Detriment Caused by Defective Administration Scheme or through another specifically established compensation scheme.

6.18 A pragmatic approach should be taken to providing this initial compensation. Given the unique characteristics of the fishing industry, any compensation program should be undertaken with the input of local relevant stakeholders such as the Professional Fishermen's Association, the Commercial Fishermen's Co-op and the Wild Caught Fishers Coalition.

Recommendation 2

6.19 The committee recommends that the Commonwealth Government, with the advice of the NSW Department of Primary Industries, develop an initial compensation package for the commercial fishermen affected by the closures of Fullerton Cove and Tilligerry Creek.

Additional counselling and support services

6.20 While this has been a slow-moving disaster, it nonetheless has been a disaster for those affected. The stress caused by the contamination and its effect on the mental health of residents and local business people was frequently raised with the committee. It is natural that people fearing for their health, employment or financial future due to events beyond their control to have deep feelings of stress, anger, depression and anxiety. All affected residents and business people should be able to access counselling and assistance if they need them.

6.21 The committee welcomes the NSW Government's commitment to 'establish dedicated local engagement officers in the Williamstown area to provide ongoing support to residents'. Further, some additional mental health support services have been established for affected Williamstown residents by Hunter New England Health.⁸ The NSW Department of Primary Industries has also outlined the mental health assistance and other support services it has provided to members of the local fishing industry.⁹

6.22 The emergency management of natural disasters, such as bushfires, often include additional and specialised mental health support services for those impacted. Defence, together with other Commonwealth Government agencies, should examine how it can effectively provide further counselling and mental health support services to those people affected by the contamination from RAAF Base Williamstown.

8 Dan Cox, 'Williamstown residents welcome mental health service following air force base chemical contamination', *ABC News*, 29 January 2016.

9 *Submission 108*, p. 1.

Recommendation 3

6.23 The committee recommend that Defence examine providing additional mental health and counselling support services to those affected by contamination at RAAF Base Williamtown.

A taskforce response

6.24 While some praised the communications approach of the NSW government agencies, the evidence received by the committee was sharply critical of Defence's approach to community engagement.¹⁰ The Expert Panel and the Committee Reference Group appear to be working effectively, but a single accessible point of contact appears to be missing. Affected community members referred to 'getting the run around', having difficulty finding advice as well as receiving different advice from different agencies.

6.25 In this context, the committee considers there may be value in considering the establishment of a joint NSW-Commonwealth Government taskforce to coordinate assistance and to be a 'one-stop shop' for communication and engagement with the affected community.

Recommendation 4

6.26 The committee recommends that Defence and the NSW Government examine establishing a joint taskforce to coordinate the response of government agencies to the contamination from RAAF Base Williamtown.

Providing certainty

6.27 A safe level of human exposure to PFOS and PFOA will be established through the Human Health Risk Assessment. However, this is unlikely to assist the affected residents and fishermen in the short term. As further contamination has not been prevented from leaving the RAAF Base Williamtown, further movement of the PFOS/PFOA contamination in the ground water or surface water may exceed whatever safe level of consumption is determined. It is possible that adequate remediation of the RAAF Base Williamtown could take many years, or may prove impossible.

6.28 In the view of the committee, it is important Defence take a proactive position on the issue of compensation to provide reassurance to those impacted by the contaminants. It is not acceptable that Defence intends to wait for a class action for compensation to be arranged by affected residents and commercial fishermen. A long drawn out legal process will be wasteful and damaging for all concerned. Defence and the Commonwealth Government should not wait until the 'the science is in' before committing to providing adequate compensation to affected communities.

6.29 To provide certainty to affected residents and fishermen, the Commonwealth Government should publicly commit to compensating for losses caused by PFOS/PFOA contamination from RAAF Base Williamtown. The principle of 'polluter

10 For example, Commercial Fishermen's Cooperative, *Submission 27*, p. 2.

pays' should be upheld by the Commonwealth Government in the same way it should be expected apply to a private company which caused contamination on neighbouring properties or waterways.

Property

6.30 The committee is of the view that the Commonwealth Government should commit to the voluntary acquisition of properties which are not longer fit for purpose due to contamination from PFOS/PFOA arising from the use of firefighting foam at RAAF Base Williamtown. For example, if a farm relies on bore water, and that water is found to exceed (or be likely to exceed) safe levels of PFOS/PFOA the Commonwealth Government should commit to acquire it. If soil on a residential property is found to be contaminated beyond safe levels, the Commonwealth Government should commit to acquire the affected property to allow the owners to relocate, if they wish.

6.31 The committee acknowledges that a commitment to adequate compensation could be costly for the Commonwealth. However, when contamination issues are resolved, either through remediation of the land or the degradation or dispersal of the relevant pollutants, the Commonwealth will be able to sell or utilise the property acquired to recover this cost. Potentially, this process could take years to complete. Nonetheless, the Commonwealth Government is best placed to manage the risks of ownership of land which it has played a key role in contaminating.

Recommendation 5

6.32 The committee recommends the Commonwealth Government commit to voluntarily acquire property and land which is no longer fit for purpose due to PFOS/PFOA contamination from RAAF Base Williamtown.

Fishing closures

6.33 During the inquiry the precedent of the contamination of Sydney Harbour and the subsequent buy-out of fishermen was raised several times. The committee agrees with the recommendation made by Mr Buffier from the NSW EPA that 'if the results of the human health risk assessment indicate levels which exceed contemporary health standards, particularly for fish, the Commonwealth should undertake a buyout of the licences of affected commercial fishermen by the end of 2016'.¹¹

6.34 The committee also broadly agrees with the Professional Fishermen's Association's suggestions for 'three programs to provide economic relief to fishers: an unemployment compensation program (loss of income), a voluntary Fishing Business (gear) buyout program, and a voluntary retraining program'.¹² Again, these compensation programs should be undertaken with input from the NSW Department of Primary Industries, the Professional Fishermen's Association, the Wild Caught Fishers Coalition and other relevant local stakeholders.

11 *Committee Hansard*, 22 December 2015, p. 47.

12 PFA, *Submission 28, Supplementary Submission*, p. 2.

Recommendation 6

6.35 The committee recommends that if PFOS/PFOA contamination from RAAF Base Williamtown causes permanent or long-term fishing closures, the Commonwealth Government should:

- **commit to compensate and purchase the relevant rights of fisherman affected; and**
- **establish an industry transition program for affected commercial fishermen to assist them relocate or transfer to other industries.**

Remediation and management

6.36 There were conflicting views expressed during the inquiry regarding options for remediation of RAAF Base Williamtown and the surrounding area. Based on the evidence received, the committee does not consider it is in a position to make specific recommendations regarding remediation or management at this time. The committee notes that Defence has committed to follow-up remediation strategies as a priority.

Voluntary blood testing

6.37 There appears to be an evolving Defence approach to blood testing for PFOS/PFOA. While Defence funded blood tests for affected residents of Oakey, it now relies on NSW Health advice that blood tests are 'not recommended because they don't predict level of health risk'.¹³ Witnesses from NSW Health were not available to be questioned regarding this position at the Newcastle public hearing.

6.38 While there may not be a strictly medical reason to undertake blood testing of affected residents, in the view of the committee that should not be the only factor considered. Voluntary blood testing of affected residents, tracked over time, could provide other valuable information. For example, the results of testing could lead to evidence regarding pathways of exposure. It could also be important in determining subsequent entitlements to compensation for health outcomes in the future.

6.39 If further exposure is avoided, it is understood that these contaminants will naturally leave the human body over time. It is important that this is tracked to ensure this process is occurring for the affected residents. Consequently, the committee's view is that that Defence should fund a program to offer annual blood testing of those affected residents in the investigation area who wish to be tested.

6.40 The committee acknowledges that blood testing for levels of PFOS/PFOA, when medical knowledge regarding the impact of these contaminants is incomplete, could possibly cause additional anxiety for those persons tested. Nonetheless, the arguments put by Defence against blood testing were not convincing. Uncertainty regarding levels of exposure is also causing anxiety for affected residents. Furthermore, people interested in blood tests are likely to obtain them privately

13 NSW Health, 'PFOS and PFOA - Williamtown RAAF site contamination', *Fact Sheet*, September 2015.

regardless. As a matter of fairness, when affected residents are interested in blood testing for PFOS/PFOA, they should not have to arrange and pay for it themselves.

Recommendation 7

6.41 The committee recommends that Defence arrange and fund a program of blood tests for residents in the investigation area on an annual basis.

Environmental regulation of contamination

6.42 One of the main issues to surface in the evidence to the committee is the lack of clarity in the application of environmental regulations when contamination spreads from land controlled by Defence to non-Commonwealth land. This was illustrated by the evident problems of the NSW EPA in its dealings with Defence and the apparent absence of involvement of the Department of the Environment. The committee agrees with the view of Professor Mark Taylor that '[i]t needs to be clear and transparent to whom the Department of Defence is accountable for contamination caused by it on non-Commonwealth land'.¹⁴ The committee intends to explore this issue thoroughly in the second part of its inquiry. Initially, Defence should publically clarify its own view on the extent of its obligation and responsibilities to comply with environmental regulations.

Recommendation 8

6.43 The committee recommends that Defence release a policy statement to clarify its environmental obligations and responsibilities for contamination which spreads to non-Commonwealth land. In particular, it should clarify the capacity of State and Territory environment regulation to apply to its activities.

Conclusion

6.44 Many people affected by the contamination stated that the worse part of the situation was the uncertainty regarding the level of contamination and the impact this contamination would have on their lives. The response of government agencies, particularly Defence, to this crisis should have been to mitigate this uncertainty where it could be effectively managed. Unfortunately, an apparent lack of appreciation of the severity of the situation and a reluctance to commit to appropriate compensation has meant that Defence, and the Commonwealth Government, have further damaged the affected community.

6.45 The response of Commonwealth Government agencies can be contrasted with the response of the NSW Government. In particular, the announcement by the NSW Government that affected residents will be connected to town water, that new testing equipment will be acquired and additional mental health services will be provided indicates an understanding of the situation and community concerns which has been lacking at the federal level. It is difficult to disagree with Premier Mike

14 Professor Mark Taylor, 'Stage One of Review of NSW EPA's Management of Contaminated Sites', *Interim Report*, December 2015, p. 27.

Baird's assessment that this can be seen as the NSW Government addressing a 'void' which should have been filled by the Commonwealth Government.¹⁵

6.46 There are likely to be many other military and civilian airports, firefighting training sites and as well as other facilities which will have legacy PFOS/PFOA contamination through the use of firefighting foams. Establishing an effective policy and legislative framework for resolving this issue should be a key objective to prevent the crisis which has impacted the community around RAAF Base Williamtown from being repeated. The committee is concerned that, if the mistakes made regarding contamination at RAAF Base Williamtown are not addressed promptly by Defence then they will almost certainly be repeated at other sites in the future. The committee will continue to examine these issues in the second part of its inquiry.

Senator Alex Gallacher
Chair

15 NSW Government, 'NSW Government help for Williamtown residents', *Media release*, 23 December 2015, p. 1.

Dissenting report of Coalition senators

1.1 The PFOS/PFOA contamination at RAAF Base Willamtown has clearly had terrible consequences for residents and commercial fishermen affected by the NSW Government's precautionary measures and the fishing closures of Tilligerry Creek and Fullerton Cove. Unfortunately, it has been the fear and uncertainty regarding the spread and effects of these contaminants which has caused the most significant impacts for the community.

1.2 In these circumstances, it is important to take a measured and evidence-based approach in response to the contamination. It must be recognised that there have been no peer reviewed studies in Australia or internationally which confirm a link between these chemicals and human health impacts. As Defence highlighted to the committee '[l]ong term, large scale health studies of workers in the USA exposed to high levels of these chemicals do not show chronic health effects'.¹

1.3 Significantly, Defence is currently conducting a large scale human health risk assessment which will provide a better understanding of the contamination from the base and its potential risks. Until this study is completed (in June 2016) it is premature for the committee to be making significant recommendations regarding this situation. In particular, Coalition senators cannot support the recommendation of the majority report to arrange and fund a program of blood tests for residents in the investigation area on an annual basis. The advice of the NSW Health authorities on the efficacy of blood testing is clear:

There are approximately 30000 chemicals in use across Australia. For the vast majority of these, including PFOS and PFOA, very little is known about possible health effects in people...

While blood tests can provide a measure of PFOS, they are not recommended because they don't predict level of health risk.²

1.4 Coalition senators question the value of conducting blood testing for these chemicals if there is no useful information to be derived based on the results (beyond the precautionary measures already being taken). A significant proportion of the population will have a background level of PFOS/PFOA from the previously wide domestic and industrial use of these chemicals. Blood testing can potentially cause needless anxiety and stress for those people who are tested. While each person can consult with their own doctor for medical advice and treatment appropriate for them, the advice of the NSW Government health experts on large scale blood testing should be respected until better data is available.

1 *Submission 87*, p. 4.

2 NSW Health, *PFOS and PFOA – Willamtown RAFF site contamination*, 11 September 2015, pp 1-2.

Recommendation 1

1.5 Coalition senators recommend that the Commonwealth Government continue to follow the advice of NSW Health experts in relation to blood testing for PFOS and PFOA.

1.6 Coalition senators support the Baird Government's assistance package to the affected community through the provision of reticulated water to homes, the purchase of new testing equipment and additional community support, including mental health support services. This is the sort of practical interim assistance the Commonwealth Government should also be looking to provide while the Human Health Risk Assessment and other investigations into the extent of the contamination are being completed.

1.7 The Commonwealth Government has delivered a financial assistance package to support the commercial fishers who have had their income reduced through not being able to work in the areas closed by the NSW Government. However, it is apparent from the evidence received that the commercial fishing industry in this area has specific needs and unique characteristics. Some parts of the financial assistance package have not been targeted to the needs of these commercial fishermen. More work can be done to tailor the financial assistance package to the needs of these commercial fishers. Any adjustments should be undertaken with the assistance of the NSW Government and commercial fishing industry stakeholders such as the Professional Fishermen's Association.

Recommendation 2

1.8 Coalition senators recommend that the Commonwealth Government cooperate with the NSW Government and commercial fishing stakeholders, to better target the financial assistance package to the needs of commercial fishermen impacted by the fishing closures at Tilligerry Creek and Fullerton Cove.

Recommendation 3

1.9 Coalition senators recommend that Defence, and the Commonwealth Government, support the interim assistance measures provided by the NSW Government to support the affected community.

1.10 Liberal senators agree with the majority report's statement that there are likely to be other sites in Australia where residual PFOS and PFOA contamination exists through the previous use of firefighting foams. However, medical understanding of the effects of these emerging contaminants on human health is still progressing. In this context, caution should be applied to any response by government and the framework for addressing the legacy of these contaminants should be clearly based on the available scientific evidence.

1.11 Coalition senators do not support recommendations 2, 5 or 6 of the majority report pending the outcome of further scientific information.

Senator Chris Back
Deputy Chair

Senator David Fawcett

Australian Greens additional comments

Pollution and accountability

1.1 The Australian Greens initiated the inquiry into contamination at the Williamstown RAAF Base because of the extent and seriousness of the issue.

1.2 The Department of Defence has not provided adequate support for Williamstown residents. There has been a lack of transparency on the issue by the Department. This approach has compounded the problems arising from the contamination in the Red Zone and the surrounding area.

1.3 Section 6.7 of the report notes that the failure to quickly notify local residents has resulted in community confusion and mistrust, and has impacted upon the community's ability to undertake proper precautionary measures against consuming harmful levels of PFOS and PFOA. As the report notes proper remediation of the site 'could take many years, or may prove impossible' (6.27).

1.4 The Australian Greens believe that recovery from incidents like this should be focused around community support, environmental remediation and health improvement, not deflections and public relations strategising by government departments.

1.5 The Australian Greens recognise that in many cases local residents and businesses are still in the dark about the impact that this contamination has had on their own health, water sources and the local environment.

1.6 Many residents, living inside the Red Zone and near the Red Zone, have formed residents' action groups to share information and campaign for remediation, compensation and adequate health and environmental tests. The Australian Greens note that the tenacity of these residents and action groups has been a great asset to the inquiry.

1.7 As identified by the report the most serious issue arising from the contamination has been the 'lack of Commonwealth Government leadership and a reluctance to take full responsibility' for both the issue and the handling of the issue (6.9).

1.8 The Department of Defence's failure to formalise a compensation scheme reflects poorly on the Turnbull Government. Other federal government agencies including Centrelink and the Department of the Environment have also not demonstrated adequate responsibility. The Australian Greens consider the Department of Defence's response to be passive at best.

1.9 The Australian Greens thank the committee secretariat, participating Senators, hearing witnesses and all other community members who contributed to this inquiry, including those who made submissions.

1.10 The Australian Greens agree with the committee's report and its recommendations. We support the inclusion of the recommendations below, and we urge that the Department of Defence act on all recommendations immediately.

1.11 The committee report notes NSW EPA's argument that 'there needs to be a regulatory regime to incentivise Defence to adhere to the same environmental standards applied to the rest of the community, and there needs to be an authority to regulate contamination issues' (5.36). The report also notes that there is no federal oversight of Defence's environment activities, nor are there national environmental standards in Australia for levels of the chemicals that have been used in firefighting foams (5.37; 5.43).

Recommendations

- **The Department of Defence and other relevant departments to work together to develop national environmental standards for firefighting foam chemicals, in line with world's best practice.**
- **Regulatory mechanisms should be developed to regulate contamination issues and ensure Defence adheres to environmental standards.**
- **In the interim, Defence to follow the NSW EPA's advice (5.48) and immediately take steps to contain contamination in Lake Cochrane.**

1.12 The Committee report notes that, although it is not in a position to make specific recommendations regarding remediation, Defence has committed to follow-up remediation strategies as a priority (6.36).

Recommendation

- **The Department of Defence to provide a report updating the committee on its progress on remediation strategies within six months.**

1.13 The committee report recommends that the federal government publicly commits to compensating both fishers and residents for any losses caused by the contamination. The Australian Greens note that these losses may include the devaluation of properties. Further the Committee recommends an initial compensation package for affected commercial fishers (6.20).

1.14 The Australian Greens note that section 6.18 of the report advises that a more thorough compensation program should be designed immediately with the input of local relevant stakeholders.

Recommendations

- **The Department of Defence and related government agencies to proactively offer immediate, adequate compensation schemes for residents and workers who have been affected by the contamination.**
- **Compensation to be offered to those who have incurred loss of income, business damage, property devaluation, medical and health costs, and other hidden costs.**
- **The term "fishing" also include prawning.**

1.15 The Department of Defence and related government agencies should offer voluntary acquisition of properties which have been significantly damaged or devalued, either due to irreparable environmental damage or due to perceptions of diminished value of the real estate. Recommendation 5 of the report sets out that the Turnbull Government should undertake the voluntary acquisition of properties which are 'no longer fit for purpose'.

Recommendation

- **The federal government offers voluntary acquisition of properties which have been significantly devalued by the contamination due to perceptions of diminished value of the real estate.**

1.16 The Australian Greens are in agreement with the Williamstown and Surrounds Residents Action Group that existing or proposed developments within the 'Red Zone' should be suspended until the NSW EPA, NSW Health and hydrology experts advise otherwise (5.55).

Recommendation

- **The Department of Defence to suspend plans for current and proposed developments at the Williamstown RAAF Base until the contamination is removed.**

1.17 The Defence Department should install a program to fully fund blood testing for residents and all workers who may have been exposed on the base, in and around the 'Red Zone', on an annual basis. The Australian Greens note such testing will help to contribute to international knowledge about the effects of PFOS/PFOA chemicals.

Recommendation

- **The Department of Defence to be proactive about offering this testing to residents and workers.**

Senator Lee Rhiannon

Appendix 1

Submissions

- 1 Mr Desmond Maslen
- 2 Mr Daniel Perrin
- 3 Ms Roslyn Perrin
- 4 Mrs Janice Robinson
- 5 Mrs Marion Cox
- 6 Professor Matti Lang
- 7 Mrs Deborah Sketchley
- 8 Mr Jason Hewitt and Ms Karen Peak
- 9 Mr E Serhan
- 10 Newcastle Airport Business Park
- 11 Hunter Water Corporation
- 12 Mr John Luke and Ms Sue Luke
- 13 Fullerton Cove Residents Action Group
- 14 Mr Peter Jones
- 15 Mr Chris Hyde
- 16 The O'Connell Family
- 17 Name Withheld
- 18 Mr Phillip Goodwin
- 19 Mrs Christine Sykes
- 20 Ms Julie Banks and Mr Graham Banks
- 21 Ms Trish McLuckie and Mr Martin Vitiello
- 22 Ms Kristy Banks
- 23 Ms Pauline Eltoft

- 24 Ms Helen Bawden
- 25 Ms Yvonne Parslow and Mr Craig Wilkin
- 26 Port Stephens Council
- 27 Commercial Fishermen's Co-operative Ltd
- 28 Professional Fishermen's Association Inc
- 28. Supplementary to submission 28
- 29 National Toxics Network
- 30 Wild Caught Fishers Coalition
- 31 Port Stephens Greens
- 32 Ms Kate Washington MP, Member for Port Stephens
- 33 Mr Robert Roseworne
- 34 Mr Colin Trinder
- 35 NSW Farmers' Association
- 36 Williamtown and Surrounds Resident's Action Group
- 37 Miss Chantel Walker and Mr John Hewitt
- 38 Mr Kevin Radnidge
- 39 Mr Phillip Radnidge
- 40 Mr Stephen Wilks
- 41 Mr David Woodward
- 42 Mr William Madge
- 43 Mr David Blanch
- 44 Confidential
- 45 Mr John and Mrs Beverley Hewitt
- 46 Mr Fred Haskins
- 47 National Industrial Chemicals Notification and Assessment Scheme
- 48 Mr & Mrs Robert & Suzane Hamilton

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- 49 Name Withheld
- 50 Mr Michael Tarrent
- 51 Mr and Mrs Geoff Hyde
- 52 Name Withheld
- 53 Name Withheld
- 54 Mr Peter Gillies and Joanne Robinson
- 55 Mr Matt and Marie Killick
- 56 Mrs Julie Woodward
- 57 Name Withheld
- 58 Warrigal East Coast Charters
- 59 Jennifer Spencer and Chris Weise
- 60 Mr Stanley and Ms Marlene Hannaford
- 61 Mr Mark Sheldon
- 62 Mr Braiden Micallef
- 63 Ms Kim-leeanne King
- 64 Mr Robert O'Brien
- 65 Ms Lillian Gibson
- 66 Mr Mathew Hollis
- 68 Mr John Verdich
- 69 Mr Troy Clarke
- 70 Ms Susan Dodt
- 71 Bernie and Alma Haaijer
- 72 Jeff and Jenny Vietheer
- 73 Name Withheld
- 74 Veronica and Rodney Watson
- 75 Dr Michelle Chan

- 76 Name Withheld
- 77 Mr Ian and Jodie Plumridge
- 78 Ms Fay Henry
- 79 Mr Arthur and Ms Elva Hiscock
- 80 Mark and Kerry Develyn
- 81 Ms Coral Kelly
- 82 Name Withheld
- 83 Name Withheld
- 84 Mr Brad Hudson
- 85 Mr Robert Knauth
- 86 Dianne Priddle and David Jefferis
- 87 Department of Defence
- 88 Shine Lawyers
- 89 Mr John Donahoo
- 89.1 Supplementary to submission 89
- 90 Mr Gary Watson
- 91 Ms Sonya Street
- 92 Kelly and Jon-Antoni Turnbull
- 93 Mr Daryal Tunnah
- 94 Mr Peter Sexton
- 95 Mrs Samantha Kelly
- 96 Mr Warren Munro
- 97 Ms Shirlee Buckley
- 98 Ms Lucinda Hornby
- 99 Mrs Yvette Davidson
- 100 Mr Robert and Mrs Kathryn Cram

- 101 Mr Andre Hemmerle
- 102 Mr Eric Donaldson
- 103 Ms Edwina Schmidt
- 104 Ms Jean Armstrong
- 105 Ms Robyn Wilkins
- 106 Ms Julianne Curry
- 107 Name Withheld
- 108 NSW Department of Primary Industries
- 109 Confidential
- 110 Name Withheld

Appendix 2

Tabled documents, answers to questions on notice and additional information

Tabled documents

1. Department of Defence, opening statement by Mr Steve Grzeskowiak, tabled at public hearing, 3 December 2015
2. Professor Mary O'Kane, Williamtown Contamination Expert Panel–Terms of Reference, tabled at public hearing, 3 December 2015
3. Professor Mary O'Kane, Williamtown Contamination Expert Panel–Meeting Minutes 1-11, tabled at public hearing 3 December 2015
4. NSW Department of Primary Industries, situation report–Williamtown contamination, tabled at public hearing, 22 December 2015

Additional information

1. Letter of correction of evidence at public hearing held 3 December 2015, received from Department of Defence, 15 December 2015

Answers to questions on notice

- 1 Professor Mary O'Kane - response to comments and answers to question on notice from public hearing held on 3 December 2015 (received 17 December 2015)
- 2 Department of Defence - response to comments and answers to question on notice from public hearing held on 3 December 2015 (received 21 December 2015)
- 3 Department of Environment - response to comments and answers to question on notice from public hearing held on 22 December 2015 (received 18 January 2016)
- 4 Hunter Water - response to comments and answers to question on notice from public hearing held on 22 December 2015 (received 18 January 2016)
- 5 Department of Defence - response to comments and answers to question on notice from public hearing held on 22 December 2015 (received 19 January 2016)
- 6 Hunter Water–updated - response to comments and answers to question on notice from public hearing held on 22 December 2015 (received 21 January 2016)

- 7 NSW Environment Protection Authority response to comments and answers to question on notice from public hearing held on 22 December 2015 (received 25 January 2016)

Appendix 3

Public hearings and witnesses

Thursday 3 December 2015

Department of Defence

Mr Steve Grzeskowiak, Deputy Secretary, Estate and Infrastructure

Ms Alison Clifton, Assistant Secretary, Environment and Engineering

Dr Ian Gardner, Principal Medical Adviser (Department of Veterans' Affairs)

Mr Michael Lysewycz, Defence Special Counsel

Brigadier Noel Beutel, Director General, Capital Facilities and Infrastructure

NSW Chief Scientist and Engineer

Professor Mary O'Kane, Chair, Williamstown Contamination Expert Panel

Shine Lawyers

Mr Peter Shannon, Partner

Mr Rory Ross, Senior Solicitor

Tuesday 22 December 2015

Ms Kate Washington, Member for Port Stephens

Hunter Water Corporation

Dr Darren Cleary, Chief Operation Officer

Professional Fishermen's Association Inc

Ms Patricia Beatty, President

Commercial Fishermen's Co-operative Ltd

Mr Robert Gauta, General Manager

Wild Caught Fishers Coalition

Mr Kevin Radnidge, President

**Global Centre for Environment Remediation, University of Newcastle,
Cooperative Research Centre for Contamination Assessment and Remediation of
the Environment (CRC CARE)**

Professor Ravi Naidu, Managing Director

Professor Megharaj Mallavarapu, Professor of Environmental Biotechnology

The Tom Farrell Institute for the Environment, University of Newcastle

Dr Steve Lucas, Research Project Manager

Williamtown and Surrounds Residents Action Group

Mr Cain Gorfine, President

Ms Rhianna Gorfine, Convenor

Fullerton Cove Residents Action Group

Mr Lindsay Clout, President

Mr Justin Hamilton, Public Officer

NSW Environment Protection Authority

Mr Barry Buffier AM, Chair and Chief Executive

Mr Craig Lamberton, Director, Hazardous Incidents and Environmental Health

Mr Adam Gilligan, Director Hunter Region

NSW Department of Primary Industries

Mr Ian Lyall, Manager, Aquaculture

Mr John Paul Williams, Region Hydrogeologist

NSW Department of Premier and Cabinet

Ms Jodie Calvert, Assistant Region Coordinator

Department of Defence

Mr Steven Grzeskowiak, Deputy Secretary, Estate and Infrastructure

Ms Alison Clifton, Assistant Secretary, Environment and Engineering

Mr Michael Lysewycz, Defence Special Counsel

Brigadier Noel Beutel, Director General, Capital Facilities and Infrastructure

Mr Mathew Klein, Senior Medical Advisor, Occupational and Environmental Medicine

Community speakers

Mr John Donahoo, private capacity

Ms Suzane Hamilton, private capacity

Mrs Lucinda Hornby, private capacity

Mr Des Maslen, private capacity

Mr Leonard O'Connell, private capacity

Mrs Deborah Sketchley, private capacity

Mrs Kim Smith, private capacity

Miss Chantel Walker, private capacity

