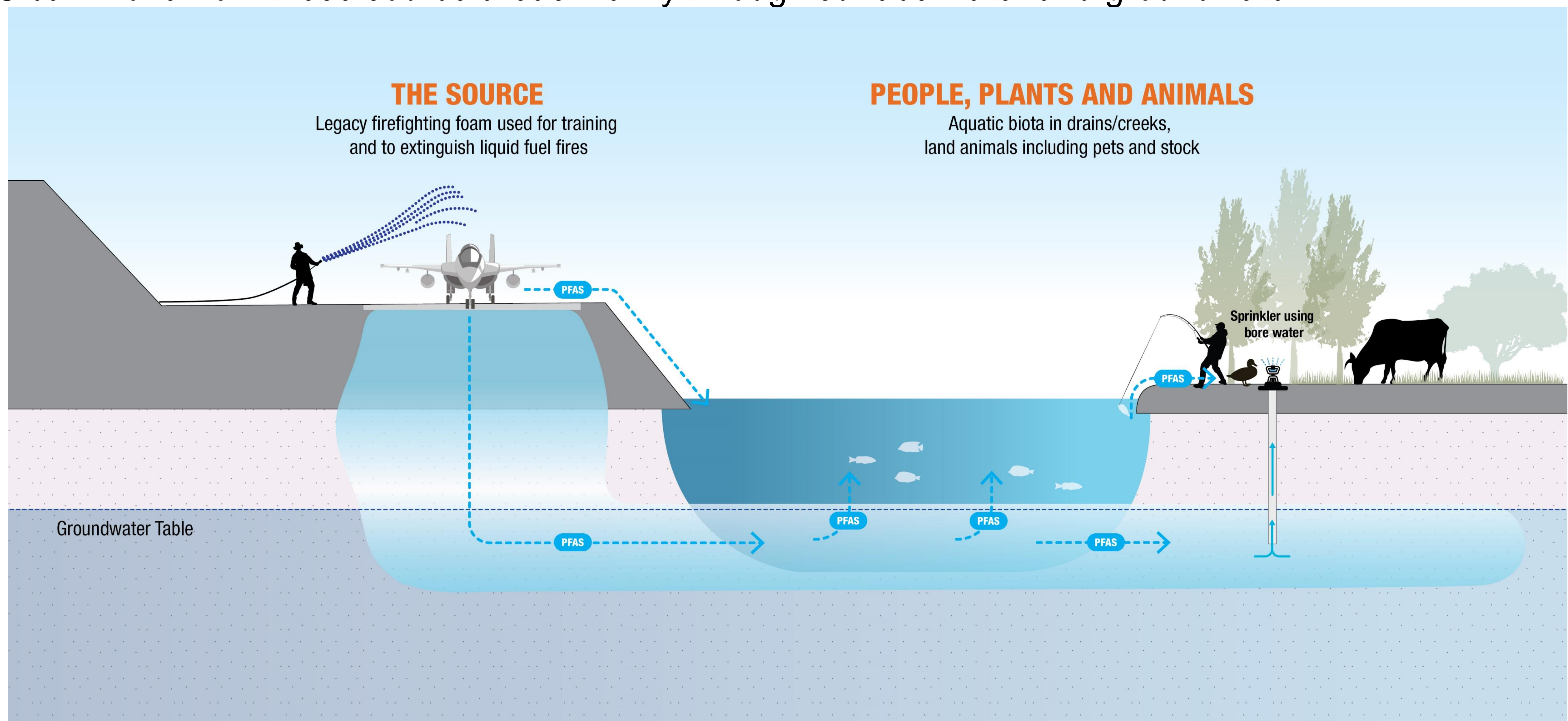




## How does PFAS move through the environment?

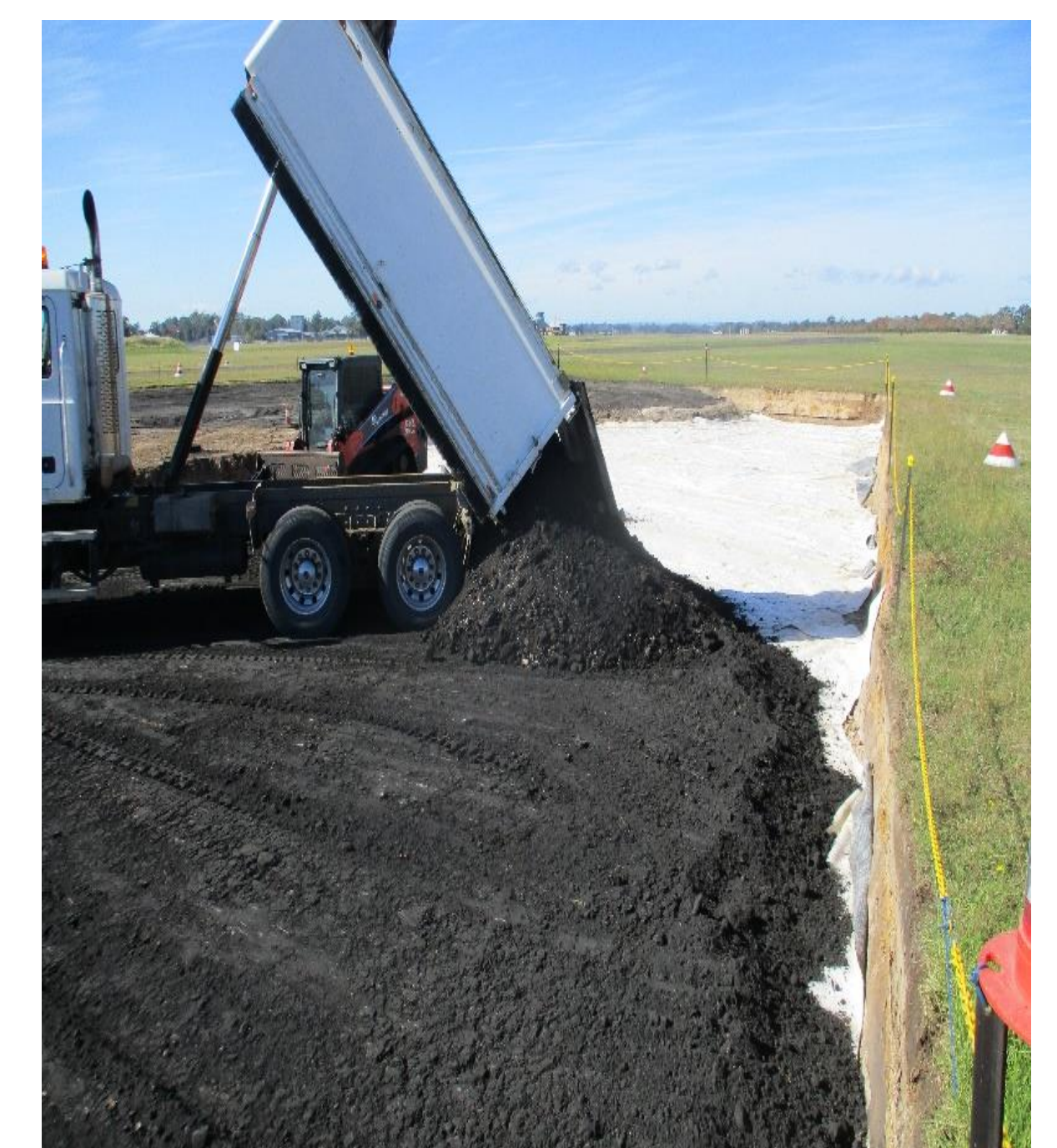
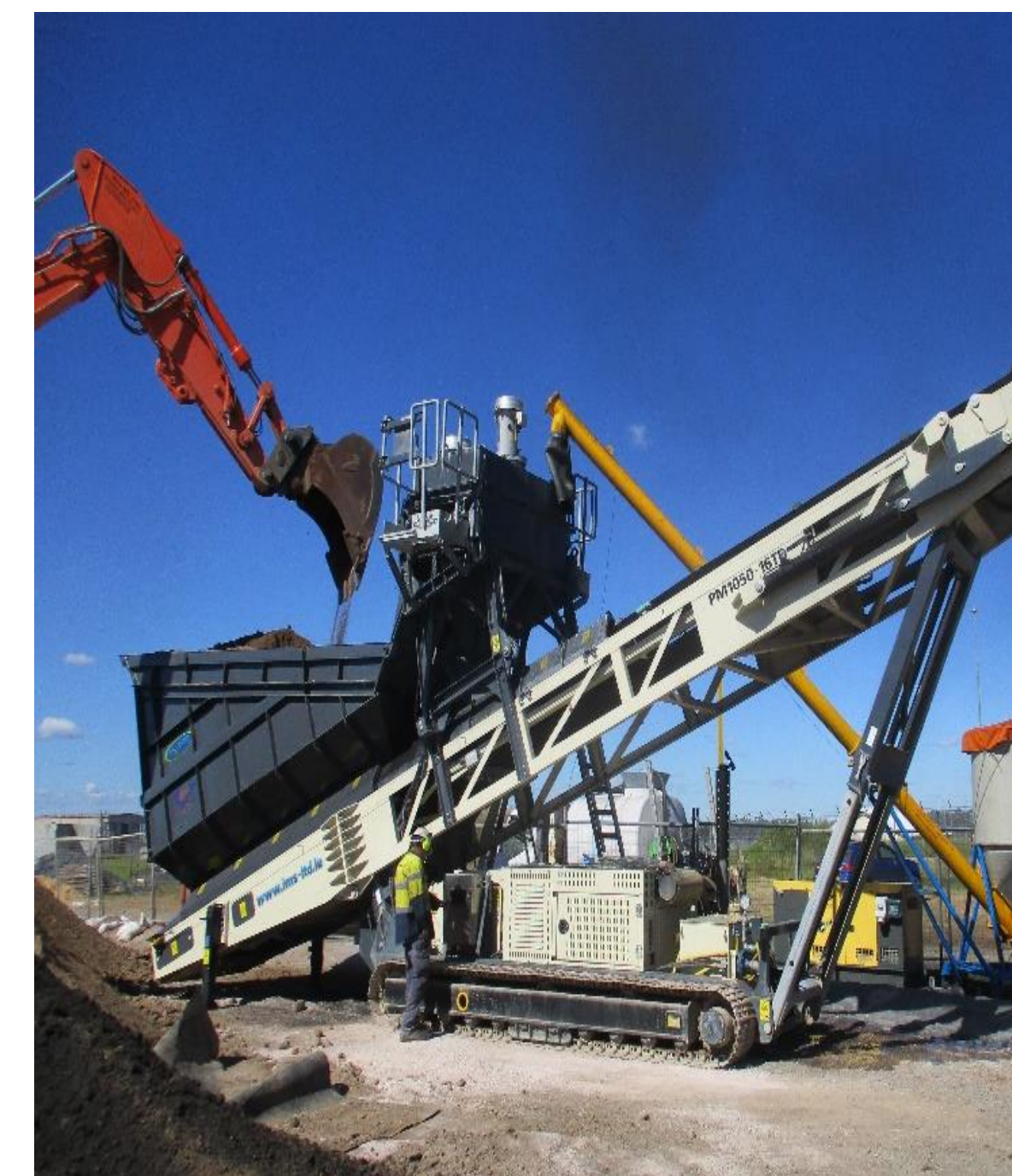
Per- and poly-fluoroalkyl substances (PFAS) are found in soils and on the surface of areas where legacy firefighting foams containing PFAS were used or stored on base. These are commonly referred to as source areas.

PFAS can move from these source areas mainly through surface water and groundwater.





## Remediation of the former fire training ground



3,900 m<sup>3</sup> of soil excavated for treatment destruction off base.

**Action**

Clay liner placed in excavation pits above remaining PFAS contaminated soils

**Outcome**

PFAS migration from this source area reduced by almost 99%.

Soil stabilisation prevents PFAS from moving, and is:

- ✓ a suitable treatment for moderate to low level PFAS contaminated soil
- ✓ a more sustainable option.

Contaminated soils with very high concentrations of PFAS were:

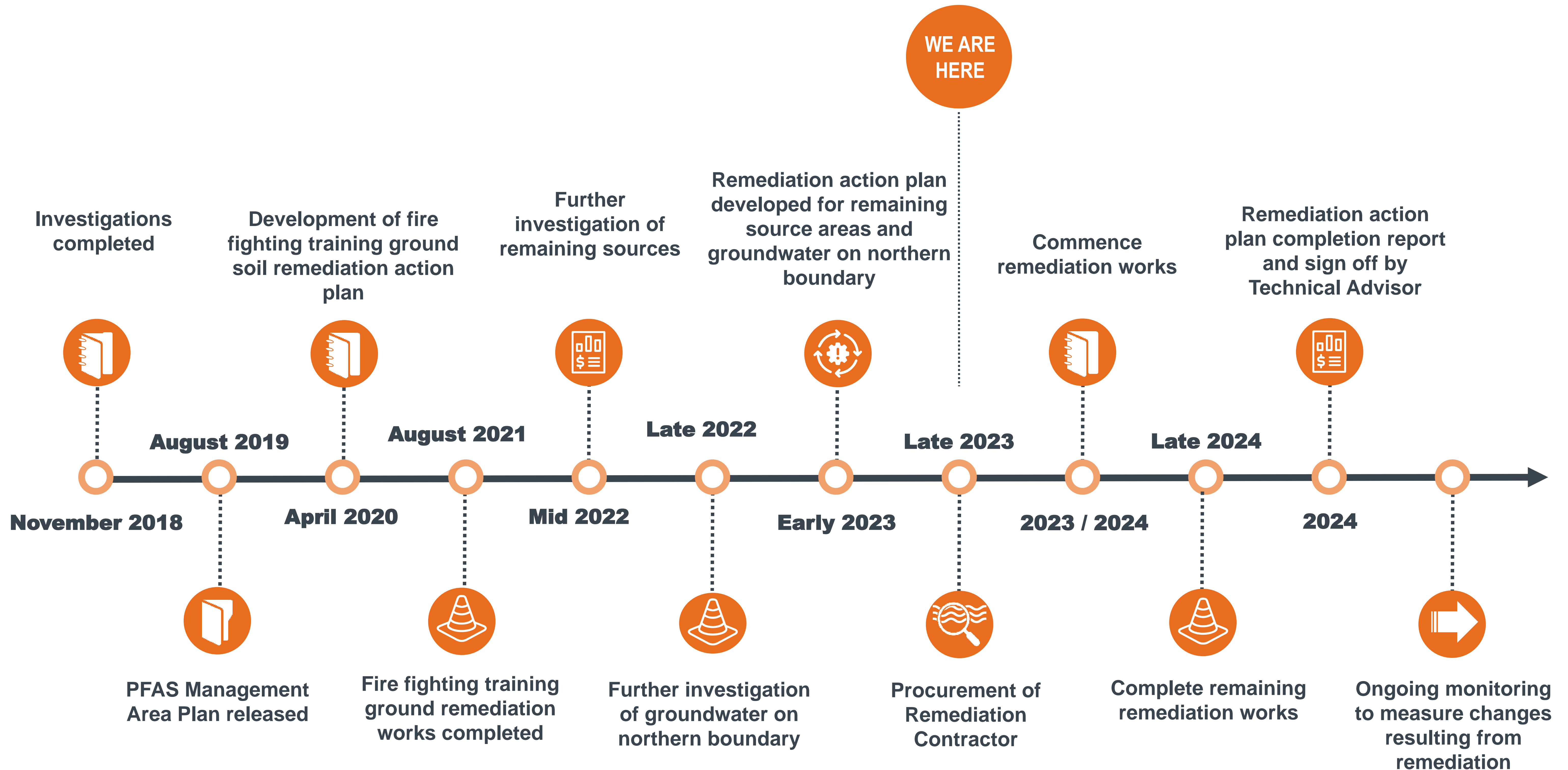
- ✓ removed from the base
- ✓ destroyed at a licensed facility in Victoria by a high temperature treatment process.

Clay liners:

- ✓ prevents rainwater removing remaining PFAS from the contaminated soil at depth.



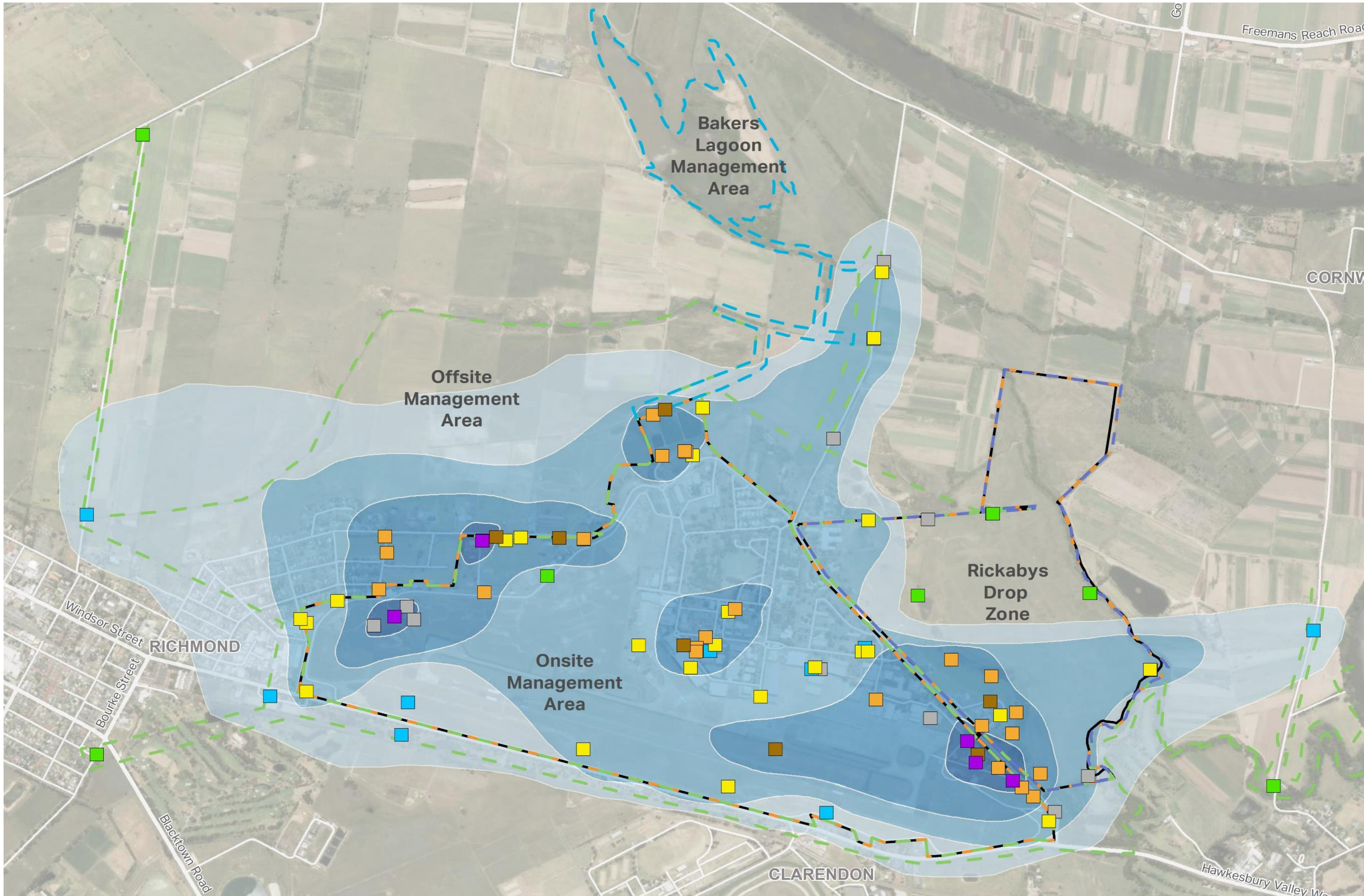
## RAAF Base Richmond: timeline of remediation activity





# PFAS INVESTIGATION AND MANAGEMENT PROGRAM

## 2023



**Management Area Boundary**

- Bakers Lagoon Management Area
- Offsite Management Area
- Onsite Management Area
- Rickabys Drop Zone

**Interpreted PFOS + PFHxS Concentration Ranges (µg/L)**

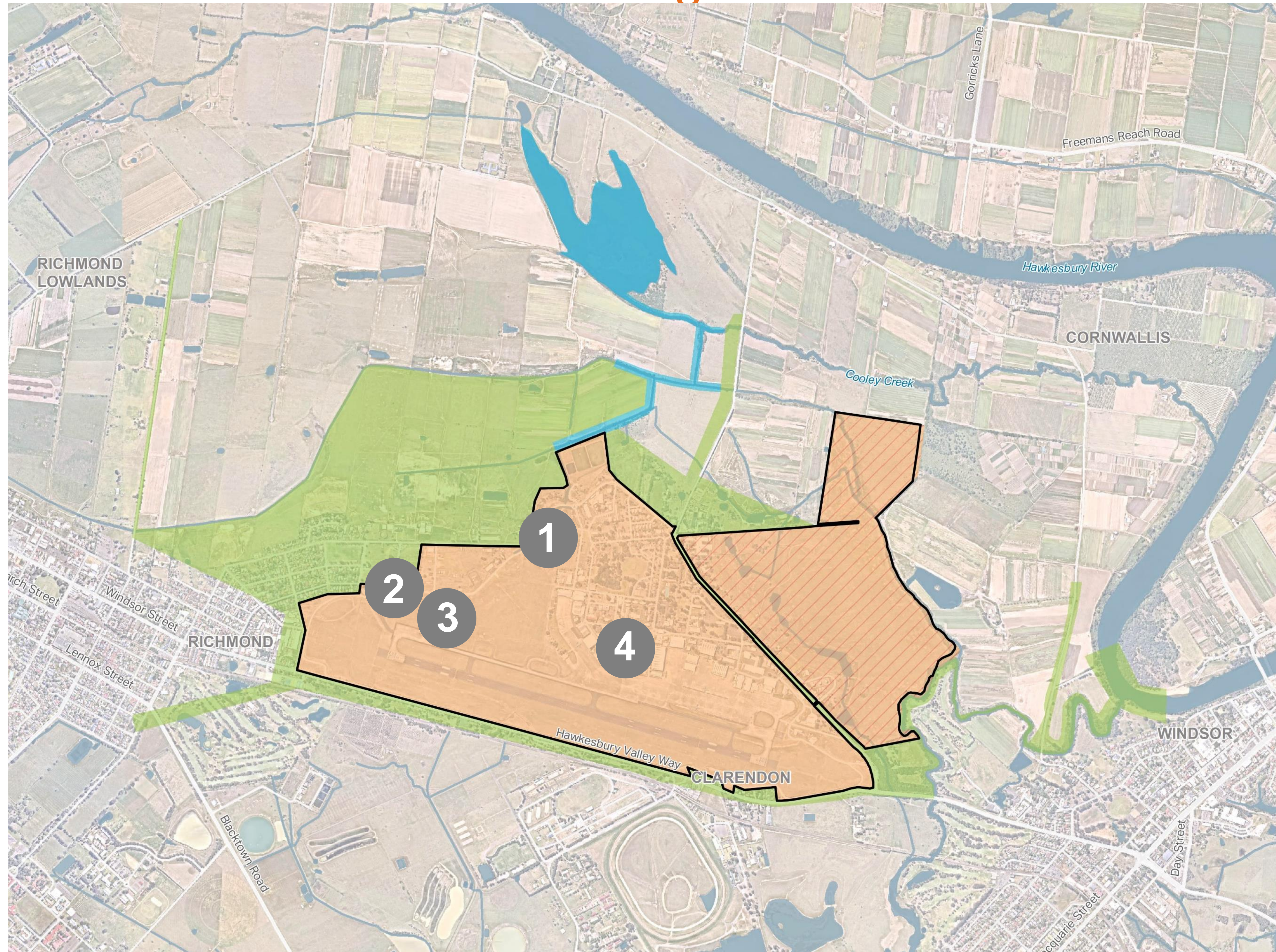
- LOR - 0.07
- > 0.07 - 10
- > 10 - 50
- > 50

**Groundwater - PFOS + PFHxS (µg/L)**

- > 50
- > 10 - 50
- > 1 - 10
- > 0.07 - 1
- Limit of Reporting - 0.07
- < Limit of Reporting
- Not Sampled/Accessed or in Scope



## RAAF Base Richmond Management Area



### Legend

-  Defence Site Boundary
-  Bakers Lagoon Management Area
-  Offsite Management Area
-  Onsite Management Area
-  Rickabys Drop Zone

### ID Key PFAS source areas

- 1** Airfield foam cannon testing
- 2** Former fire training ground
- 3** Areas south of former fire training ground
- 4** Fire station building



## Targeted Groundwater Investigation

### Background

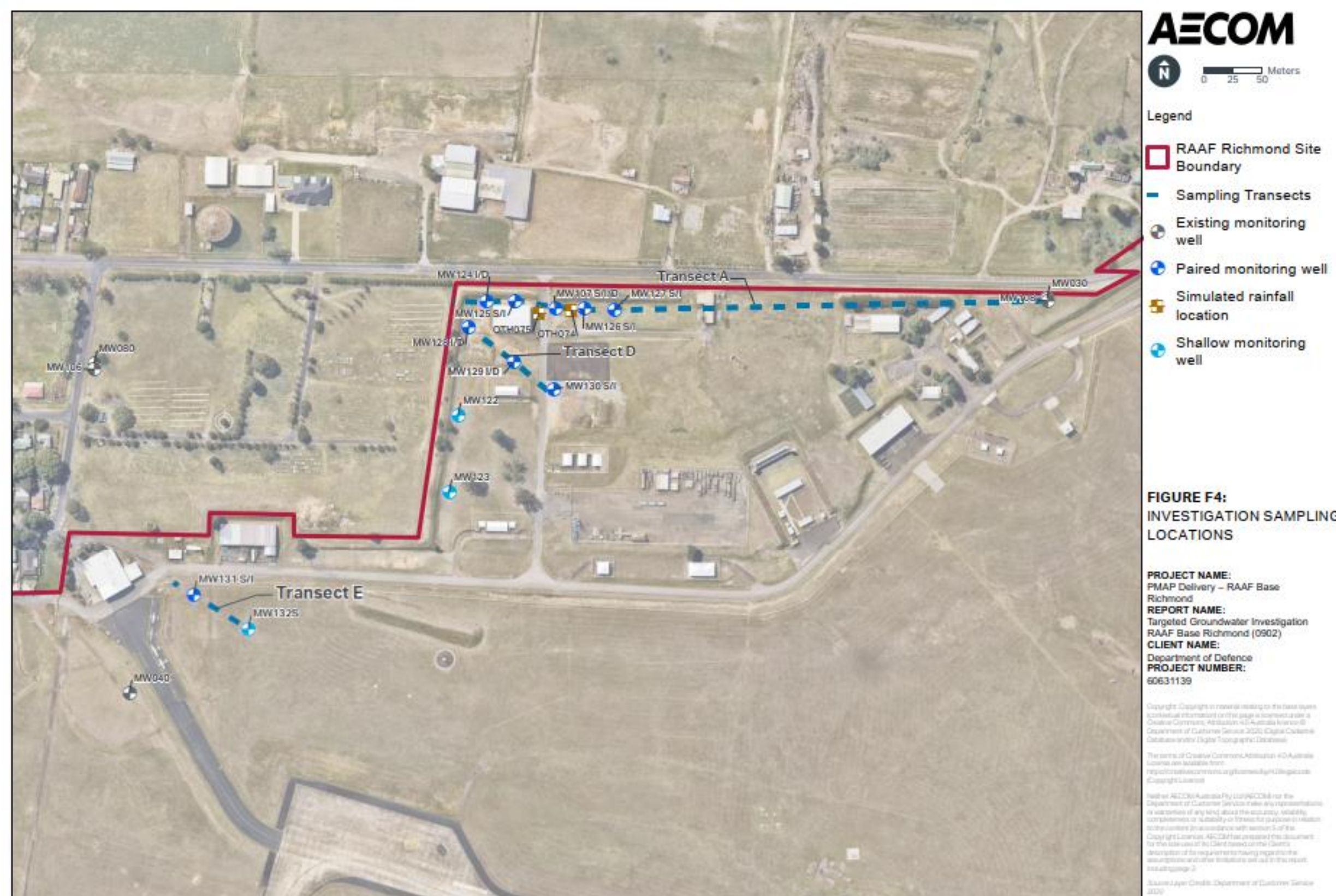
- Testing of groundwater at the northern boundary (adjacent to the firefighting foam test facility) in May 2022, reported a sudden increase in PFAS concentrations.
- Further investigations were undertaken to clarify the source and whether management actions were required.

### Further Investigations

- A further 20 groundwater wells were installed, two simulated rainfall tests were undertaken and soil samples were collected in the area to locate a possible source of the PFAS.

### Results

- Elevated PFAS concentrations were localised in shallow groundwater near the base boundary and not associated with a broader PFAS plume.
- Increases may have been the result of heavy and prolonged rainfall moving PFAS from a nearby source area into shallow groundwater.
- The movement of PFAS from the base is mostly from surface water
- Further monitoring of groundwater wells on the northern boundary will be undertaken to detect changes in PFAS concentrations and movement over the northern boundary, especially in response to rainfall.
- While the overall amount of PFAS leaving the Base is low, Defence will conduct ongoing groundwater remedial works in this area.
- The remediation works may include a passive absorptive barrier or pump and treat.
- These works are expected to commence in early to mid 2024.



Investigation sampling locations