Surrey Hills Mill

Public Environment Report

Forico Pty Ltd

05 December 2025

→ **The Power of Commitment**

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1. Introduction

The Surrey Hills Mill was purchased by the Tasmanian Forest Operating Sub-Trust (TFOST) in September 2014 and is operated by Forico Pty Ltd (Forico). The Surrey Hills Mill operates within the parameters of an Environment Protection Notice (EPN) issued under the *Environmental Management and Pollution Control Act 1994* (EMPCA). The EPN for the Surrey Hills Mill, numbered 7476/4, sets out the permit conditions in Schedule 2 of the EPN, with the most recent update issued in May 2016.

Previously, a Public Environmental Report (PER) was required to be submitted under Regulation 9 of the Environmental Management and Pollution Control (General) Regulations 2017, to the Director of the Environment Protection Authority Tasmania (EPA) on a triennial basis. Regulation 9 has since been repealed, however, to support transparent reporting practices, Forico has elected to voluntarily develop and submit a PER to the EPA.

This report is the fourth PER submitted for the Surrey Hills Mill site and covers the operating period of 1/07/2022 – 30/06/2025. The previous three PERs submitted to the Director were for 05/09/2014 – 30/06/2016, 01/07/2016 – 30/06/2019 and 01/07/2019 – 30/06/2022.

Condition G6 of EPN 7476/4 requires submission of an Annual Environmental Review (AER) to the Director of the EPA, presenting specific content requirements and stipulating the reporting period to end on 30 June each year. This PER is aimed to simultaneously satisfy both the AER requirement for the year in which the PER three-year reporting period ends, along with the full three-year PER period.

The methodology to compile this PER incorporated the following:

– Desktop review of environmental data collected over the reporting period, including site water monitoring, emissions, and wastes;
– Site visits were conducted in July 2025, including discussions of environmental incidents that may have occurred during the reporting period, and environmental related procedural or process changes; and
– Presentation of draft for review and clarification process prior to finalisation.

The scope of the report is limited to the operations at the Surrey Hills Mill site and does not include any further Forico operations, which encompasses a broad range of activities in the forest and wood products sector. For information on broader operations, including detailed information of both greenhouse emissions and sequestrations relating to the entire Forico group (inclusive of the Surrey Hills Mill site), please refer to the Forico website, and in particular the annual versions of Forico's Natural Capital Reports.

Hard copies of this public environmental report are available by request via the "Contact Us" section of the Forico website: **www.forico.com.au**

1.1 Scope and limitations

This report: has been prepared by GHD for Forico Pty Ltd and may only be used and relied on by Forico Pty Ltd for the purpose agreed between GHD and Forico Pty Ltd as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than Forico Pty Ltd arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Statement of Acknowledgement

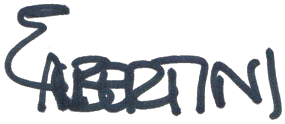
In fulfilment of condition G6 of EPN 7476/4, we present the following information which encompasses site operations of the Forico Surrey Hills Mill. This report has been scoped and formatted to meet the requirements of the Public Environmental Report (PER) as described by the Environmental Management and Pollution Control (General) Regulations 2017 Annual Fee Remission Guidelines Second edition March 2010 (updated 1 July 2019) and the Annual Environmental Review (AER) as described in Condition G6.

The reporting period of this PER is from 1 July 2024 to 30 June 2025 and is the fourth PER submitted to the Director of the EPA.

The purpose of the PER is to:

– Document and review the Surrey Hills Mill site's compliance in relation to environmental monitoring, reporting and performance conditions as detailed in EPN 7476/4;
– Review site-based commitments and targets for the reporting period;
– Communicate site-based commitments and targets for the coming period; and
– Provide a public record of environmental performance for one of Forico's two wood fibre processing sites.

As Chief Executive Officer of Forico, I endorse the following information as an accurate record of the activities of the Forico Surrey Hills Mill for the nominated period.



Evangelista Albertini

Chief Executive Officer

Forico Pty Limited

3. About Forico

Forico is Tasmania's largest private plantation management company. Representing a new era of plantation forestry in Tasmania, Forico has a strong focus on supply chain management in an environment that prioritises people and environmental performance. Forico has operated in the Tasmanian plantation resource sector for over 10 years, building and maintaining a sustainable business model on assets that were first established by prior forest-based business entities over the previous 40 years.

3.1 Company profile and commitments

Forico is an integrated timber plantation, forest management, and forest products export business operating within Tasmania. Forico manages approximately 173,000 hectares (ha) of land in Tasmania, comprised of 88,000 ha of plantation, 77,000 ha of natural forest, 3,309 ha of infrastructure, and 3,939 ha of other infrastructure. Forico has a skilled workforce of 118 direct employees, and approximately 360 contractors and sub-contractors.

The Forico business comprises of:

- A seedling establishment nursery at Somerset;
- Plantation operations, harvesting and replanting activities, including the management of natural forests on the Forico estate;
- Administrative bases in Launceston and Ridgley (The Forico Corporate Office is located in Launceston, Tasmania with a regional office at Ridgley in north-west Tasmania);
- Fibre Technology Laboratory materials testing facility at Ridgley;
- Surrey Hills Mill at Hampshire (the subject of this report); and
- Long Reach Mill and Fibre Export facility in the Tamar Valley.

With these key assets, Forico is committed to a sustainable plantation forestry sector in Tasmania. It produces high-quality, internationally certified plantation fibre products while meeting independently verified sustainable forest management standards. Forico has the supply chain infrastructure and export marketing capabilities to manage the entire supply chain from seed to market efficiently. Sustainable management of all assets, including the wood chipping mills, is a vital component of the Forico business.

»Forico's Purpose – We are custodians of the natural environment, entrusted to use our natural resources for the betterment of future generations and to preserve and create value for our investors.

3.2 Environmental sustainability commitments

The Forico board approved an updated Forico Environmental Sustainability Policy on 13 May 2025, with a review of the policy planned for May 2027. The policy is provided as Appendix A and can also be found on the Forico website.

> ***»Forico is an integrated asset management company that is committed to sustainability, including responsible environmental management throughout all our business activities in Tasmania. We believe that the wood fibre we grow on the estate, from carbon dioxide it sequesters to downstream value adding processes we undertake, enhances economic, social and natural capital values for Tasmania. As such we undertake our business activities consistent with our Sustainable values and environmental aspiration to be nature positive and provide overall ecosystem benefits from our management of the land estate and business activities.«***

Forico's Environmental Sustainability Policy demonstrates the company's commitment to minimising environmental impacts. Forico seeks to achieve a balance between economic viability, social contribution and environmental and cultural heritage responsibility through:

- Leadership;
- Best Practice;
- Adding Value;
- Low Impact;
- Conservation;
- Biodiversity;
- Meaningful Communication; and
- Competent Workforce.

This Policy sets the framework for planning and operational practices at the Surrey Hills Mill.

3.3 Environmental Management Systems

Forico currently operates under the umbrella of a Safety, Health and Environmental Management System (SHE-EMS) to manage environmental issues across the business. Forico's SHE-system is structured on the Plan-Do-Check-Act (PDCA) activity model which is integral to site operations. This is presented in Figure 3.1.

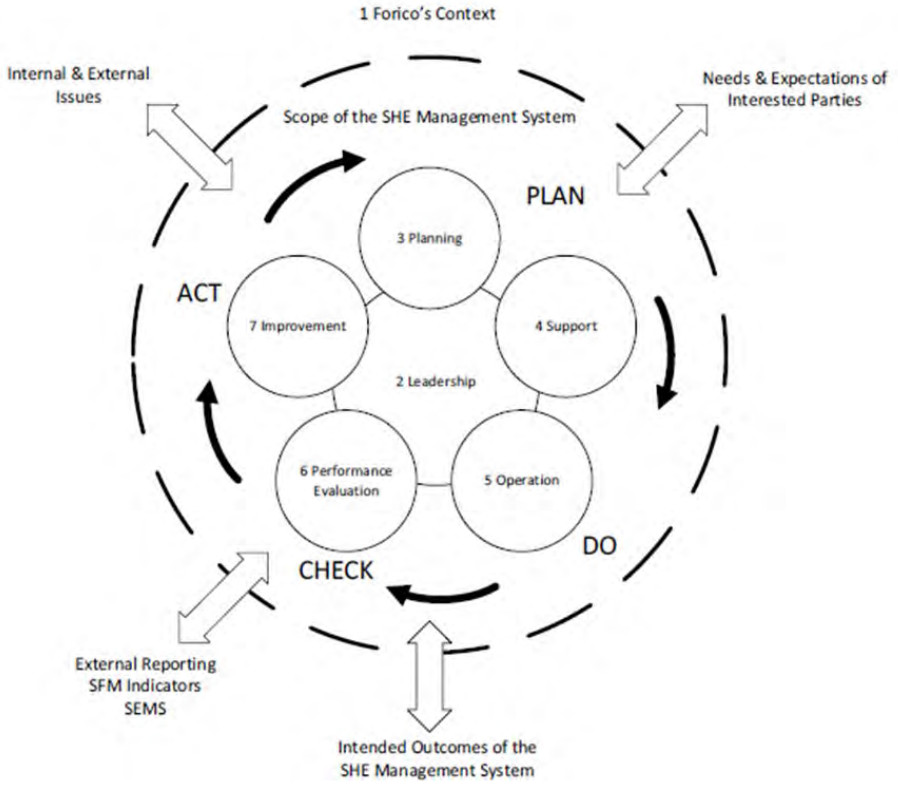


Figure 3.1 Conceptual model of the Plan-Do-Check-Act business cycle within Forico's SHE system.

Forico's SHE system is embedded through the training and development of staff and contractors by delivering tailored inductions and documented assessments. All inductees are provided with the Forico Environmental Sustainability Policy at the point of induction, with reinforcement through display on site notice boards.

Beyond induction, ongoing training is provided to permanent staff and contractors, including Risk Management and Environmental Awareness units, to provide an ongoing focus on environmental and safety issues. Environmental Awareness topics include:

- Hydrocarbon management;
- Wastewater quality;
- Protected Environmental Values (PEVs) of the local river(s) and the importance of their ongoing protection;
- Waste management;
- Emergency management;
- Legal accountabilities; and
- Forico's Environmental Sustainability Policy.

3.3.1 Certification

Forico has achieved formal accreditation to various nationally and internationally recognised accreditation systems regarding product stewardship and environmental management practices. Of relevance to this PER are:

- AS/NZS ISO14001:2016 – Environmental Management Systems; and
- FSC-STD-40-003, FSC-STD-40-004, FSC-STD-40-005, FSC-STD-50-001– Chain of Custody for Certified Wood and Forest Products.

The Environmental Management Systems certification applies across all Forico's operations. SCS Global issued the original audit certificate in July 2018. Recertification was undertaken in June 2024, and the certification was issued in July 2024 and valid through July 2027 (Appendix B).

The Chain of Custody standards are also integral to operations at Surrey Hills, providing a trail of supply to link the resources processed to sustainably managed source forest. All wood processed at the Surrey Hills Mill has been sourced from plantations that meet the Forico sustainable management criteria, with a chain of custody trail to provide a transparent mechanism to track all material inputs. This certification was updated to the newer FSC Standard standard (FSC-STD-40-003, FSC-STD-40-004, FSC-STD-40-005, FSC-STD-50-001) through the audit process in May 2025. The certificate, expiring in June 2027, is attached as Appendix C.

The environmental policies and certification processes provide accountable processes for market certainty, and regulatory oversight.

3.3.2 Surrey Hills Mill Environmental Management Plan

As a practical implementation tool for environmental improvement at the Surrey Hills Mill site, an Environmental Management Plan (EMP) was prepared and adopted in 2020. The objectives of the EMP are as follows:

- Encourage best practice environmental management through commitment, planning, review and continuous improvement;
- Prevent and minimise adverse impacts on the environment;
- Identify the potential for, and respond to, environmental incidents, accidents and emergency situations and take corrective action;
- Identify and control possible environmental hazards associated with the operations at the site;
- Define responsibilities for personnel in maintaining environmental integrity;
- Provide a description of all monitoring procedures required to identify and respond to impacts on the environment;
- Implement complaint reporting procedures and maintain records of complaints and response to complaints;
- Provide key information for the induction of new employees and site sub-contractors; and
- Ensure ongoing relevant environmental training and awareness programmes are provided.

Forico intend to regularly update upon this document to achieve continual environmental performance improvements.

3.3.3 Community engagement

A key pillar of all of Forico's operations is social responsibility. This includes Forico staff through commitments to health and safety, but also the communities in which Forico works. Forico strives to engage with local communities and provide a transparent and accountable operational framework, including active engagement through various sustainability reporting initiatives. These reporting initiatives are available from the Stakeholder Engagement page of the Forico website (www.forico.com.au).

One major element of Forico's recent community engagement has been meaningful engagement with the Tasmanian Aboriginal community. To this end, Forico's first Reconciliation Action Plan (RAP) commenced in January 2021. The Forico RAP encompasses a broad range of initiatives to develop and strengthen relationships with Aboriginal community members and build Forico's internal knowledge and practices to recognise the significance of the original custodians of the land where Forico works.

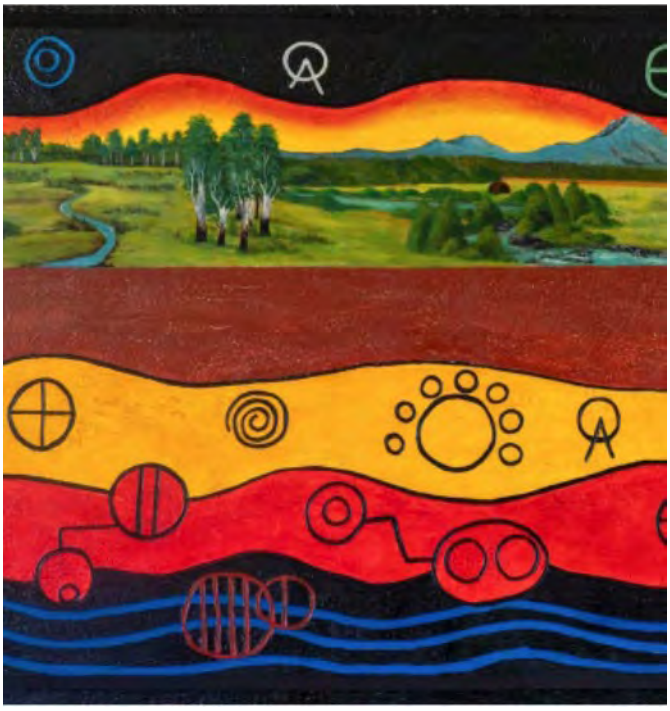


Figure 3.2 Artwork by Aunty Judith-Rose Thomas for Forico RAP

The other pillar of Forico's operations is social responsibility. This includes not only Forico's people, with commitments to health and safety, but also the communities in which Forico works. Forico continue to engage with local communities, and provide a transparent and accountable operational framework, including active engagement through sustainability reporting, and using Forico's website to communicate up to date works in local community areas.

On a broader community basis, any feedback or complaints received by the public across Forico's operations are documented and followed up, with any relevant Surrey Hills Mill-related issues summarised in Section 10 of this PER.

4. Legal and Policy Requirements

4.1 Relevant Acts and instruments

The principal environmental obligations for the Forico Surrey Hills Mill are those legislated under the *Environmental Management and Pollution Control Act 1994* (EMPCA). Tasmania enacts the requirements under EMPCA through a suite of interrelated legislation which forms a framework for Tasmania's resource management and planning systems, comprising the following:

– *Land Use Planning and Approvals Act 1993;*
– *Tasmanian Planning Commission Act 1997;*
– *Tasmanian Civil and Administrative Tribunal Act 2020;*
– *State Policies and Projects Act 1993;*
– *Environmental Management and Pollution Control Act 1994;*
– *Historic Cultural Heritage Act 1995;* and
– *Major Infrastructure Development Approvals Act 1999.*

Other legislative instruments and polices have relevance to operational aspects of the Surrey Hills Mill, including:

– *(Commonwealth) Biosecurity Act 2015;*
– *(Commonwealth) Export Control Act 2020;*
– *Biosecurity Act 2019;*
– State policies under the *State Policies and Projects Act 1993* including:
  - State Policy on Water Quality Management 1997; and
  - National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended May 2013. Note: National Environment Protection Measures (NEPMs) are automatically adopted as State Policies under section 12A.
– Tasmanian Environment Protection Policies made under section 96K of EMPCA, including:
  - Environment Protection Policy (Air Quality) 2004; and
  - Environment Protection Policy (Noise) 2009.

4.2 Proceedings and infringements

In relation to the Surrey Hills Mill, no proceedings or infringements were recorded during the three year reporting period from 01/07/2022 – 30/06/2025, with:

– No proceedings (or prosecutions) issued under Tasmanian or Commonwealth environmental legislation, or the environmental provisions of other legislation;
– No infringement notices issued under EMPCA; or
– No enforcement action taken under any other Tasmanian or Commonwealth environmental legislation, the environmental provisions of other legislation, or the environmental provision of council by-laws.

5. Surrey Hills Mill Operations

5.1 Site description

The Surrey Hills Mill site is located at 2753 Ridgley Highway, Hampshire, within title references 164460/1 and 101903/1 (refer Figure 5.1). The area is zoned as a Rural under the Tasmanian Planning Scheme - Burnie. Located approximately 30 km south of Burnie in the northwest of Tasmania, the surrounding area is dominated by plantation forest. The nearest residential zone is the township of Hampshire, located approximately 4 km to the northeast.

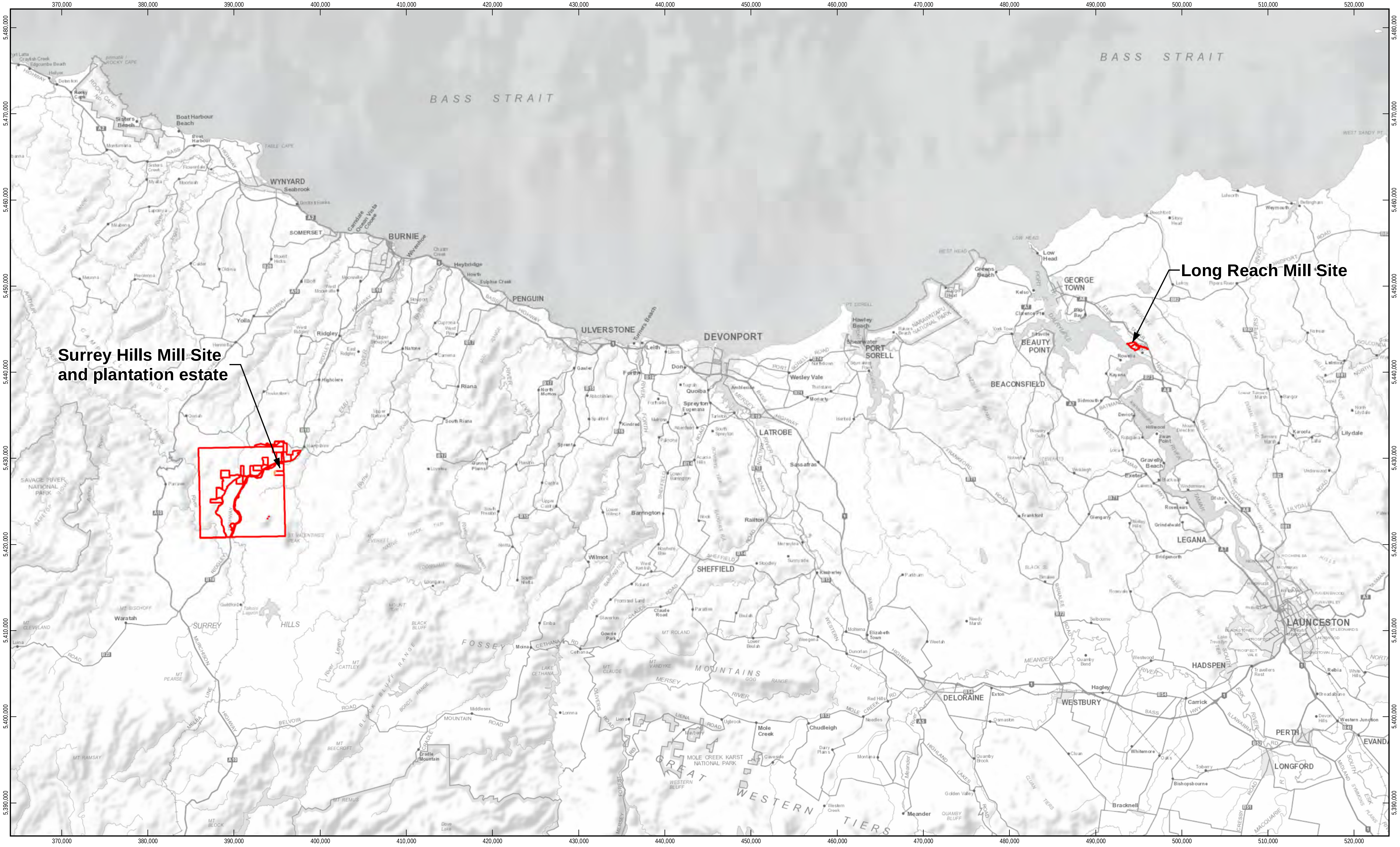
The site consists of the Surrey Hills Mill Industrial Site and the Surrey Hills Mill Irrigation Area.

The facility resumed operations in July 2015 and has the capability to operate on a 24/7 year-round basis. Under current wood supply and product demand conditions, production at Surrey Hills Mill operates 16 hours a day, with log supply operating 24 hours over a five-day week. The scale of operation is currently regulated to a maximum production quantity of 1,600,000 tonnes per annum.

Product is sourced from Forico's managed plantation estate, inclusive of 88,000 ha of plantations dispersed across the northern Tasmania (managed by Forico's Strategic Resources, Land Management and Plantations Teams). The estate is dominated by commercial plantation species, predominately *Eucalyptus nitens*, which serve as the primary export product from the Surrey Hills Mill site, along with a smaller fraction of *Eucalyptus globulus* and *Pinus radiata*.

The Surrey Hills Mill site is located on an undulating landform at 500 m elevation. Its climate is temperate, with a median annual rainfall of 1,422 mm. Rainfall is higher in winter periods, with an average of 123.8 mm in July, and lower in summer periods, with an average of 44.9 mm in January. Annual temperature averages range between 16.9°C and 9.3°C for the site.

The site's geology, as per an analysis undertaken in 2015, is described as Tertiary basalt (tholeiitic to alkalic) sediments overlying older Cambrian-related rocks. Sediments are predominantly brown mudstones, claystone, and weather varieties (silty and baked clays). Surface soils are typically strongly weathered clay silts or silty clays, with gravelly varieties of these present.



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0 1.5 3 6 9 12 15

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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LEGEND

Forico Long Reach and Surrey Hills Mill Sites

GHD

Forico Public Environmental Report

Job Number	12579675
Revision	A
Date	22 Jul 2022

Forico Mill Locations

Figure 4.1

2 Salamanca Square, Hobart Tasmania 7000 Australia **T** 61 3 6210 0600 **E** hbamail@ghd.com **W** www.ghd.com

G:\32\12547848\GIS\Maps\Deliverables\12547848_SiteLocations_A3L_RevA.mxd

Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by:tdcoates

5.2 Site activity profile

The woodchip production process and site material flows for the Surrey Hills Mill are described below, along with key activities within the site.

5.2.1 Woodchip Production Process

Forico's woodchip production process is defined as a vertically integrated process that functions as a 'from seed to port' system.

The process involves the culturing and management of hardwood production trees over an approximately 15 year grow out phase and softwood production trees for approximately 28 years. Trees are then harvested, de-barked, and transported to Forico processing facilities. Logs are then mechanically chipped to a form that complies with product technical specifications for chip form and size to meet market requirements and suitability for bulk shipping transport.

5.2.2 Site Material Flows

The scope of Forico's processing flow includes the input of raw materials (comprised of debarked logs in round form), processing into the final product of uniform size bulk woodchips. Residual by-products mostly comprise wood particles that are either too small (fines) or too large (reject chips) in relation to customer specifications (see Figure 5.2).

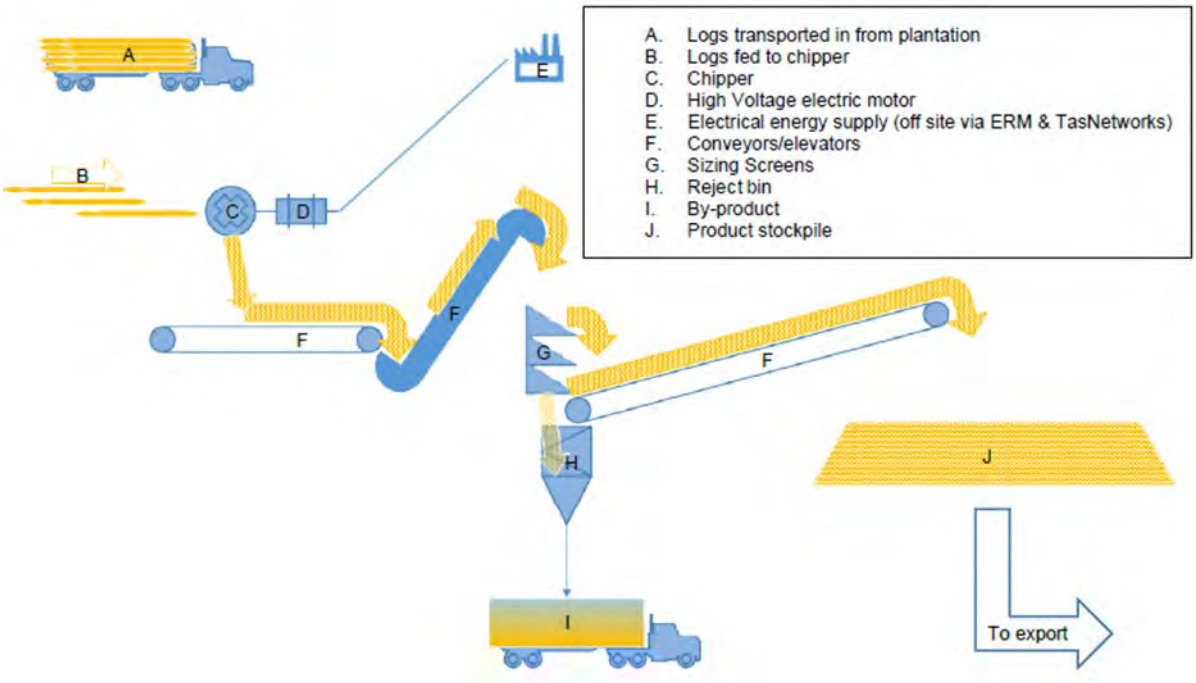

Figure 5.2 Forico Surrey Hills Mill conceptual process flow

5.2.3 Key Activities

The facility currently accepts on average 100 log truck consignments per day, and approximately 80 trucks per day transporting woodchips to the wharf facility at the Port of Burnie, owned by TasPorts. Transport of logs into the site and transport of woodchips for export is undertaken by external contractors.

Access into the site and forestry estate is limited through a staffed boom gate, with site security provided during the times when the Mill is closed. Incoming trucks are weighed in, with the log source recorded and correlated with gatehouse data on accepted supply areas. A Logmeter undertakes a 3D scan of the load, providing data on volume in addition to mass. This new technology has significantly improved the quality of input materials and reduced the carbon footprint of transporting heavier logs with high moisture content. The payment for transport is

based on volume, providing a direct incentive for Forico's harvest and haulage contractors to dry logs in the forest to enhance log transport efficiency.

De-barked logs in round form are unloaded onto the concrete log yard. This concrete apron was installed in 2018 and includes provision for drainage controls to minimise hydrocarbon-spill pollution risk. Logs are brought into the chipper area, then fed into the mill. Chips are moved via conveyors to sizing screens, separating the product into chips for export, residual bark, and fines. Contaminated chips are stockpiled for use in landscaping applications, with bark and fines stockpiled separately for various reuse applications (described further in Sections 6.2 and 6.2.1 on waste management).

5.3 Level of activity for reporting period

Activity level metrics for the monitoring period are tabulated below for:

– Annual totals for chip production; and
– Fresh water consumption

Table 5.1 Annual Totals (tonnes) of hardwood chip production, Surrey Hills Mill 01 July 2022 – 30 June 2025

Variable	2024-2025	2023-2024	2022-2023
Total Chip Production* (t)	636,800	675,492	791,668

** Condition Q1 of EPN 7476/4 regulates the scale of the activity to 1.6 million tonnes per year of woodchips produced.*

Table 5.2 Annual Totals (kilolitres- kL) for freshwater consumption (water drawn from the Emu River), Surrey Hills Mill 1 July 2022 – 30 June 2025.

Variable	2024-2025	2023-2024	2022-2023
Water Consumption* (kL)	589	557	739

** Condition Q1 of EPN 7476/4 regulates the scale of the activity to 5.8 megalitres per day.*

The mill monitors energy consumption against the rate of production in gross metric tonnes (gmt) to provide data to support energy efficiency measures on site. These are shown in Figure 5.3 and Figure 5.4.

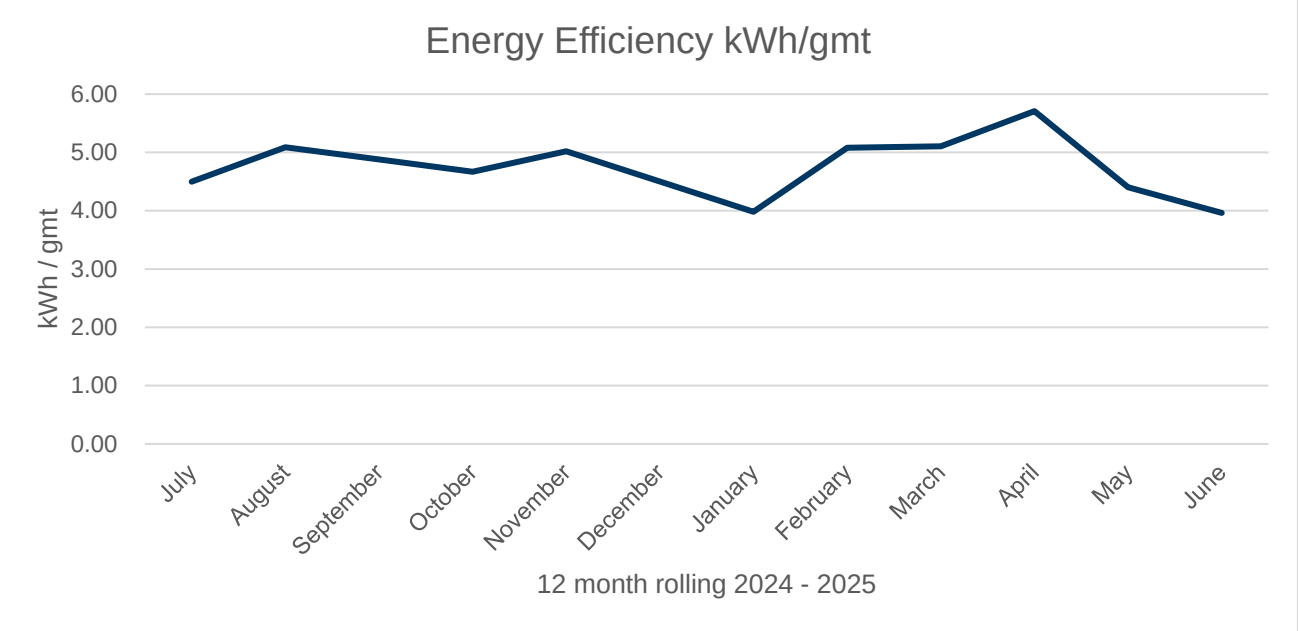

Figure 5.3 Energy consumption per gmt produced, 2024 – 2025 reporting period

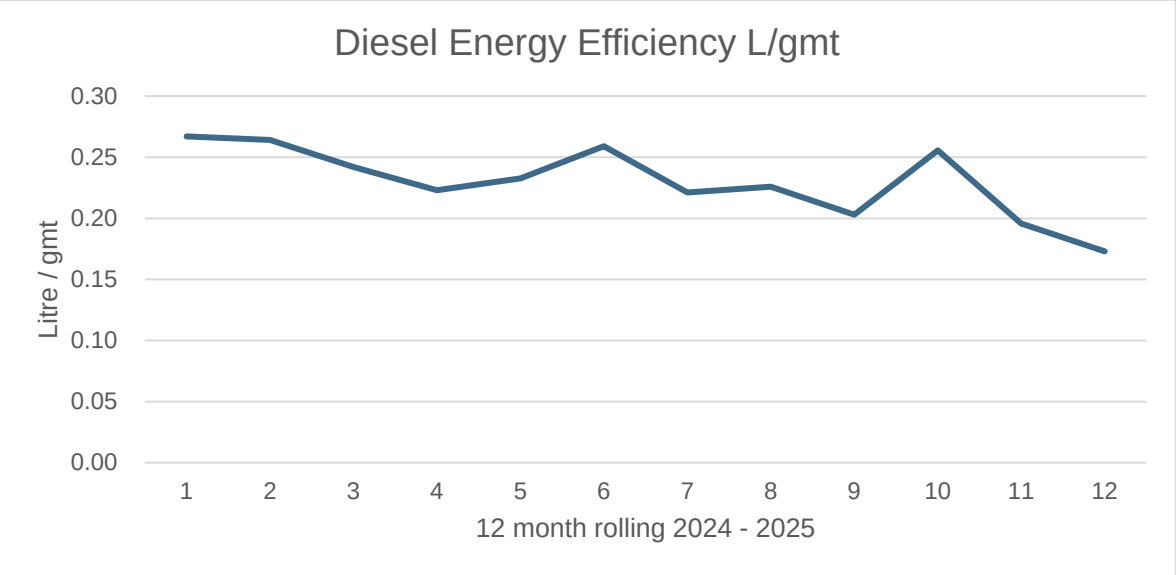

Figure 5.4 Diesel consumption per gmt

5.4 Operating hours

The mill site's production operates on a five-day week, with two eight-hour shifts per day and a scheduled maintenance period each week. Delivery of logs and transport of the woodchips is undertaken by a specialist transport contractor with permanently assigned trucks operating on a 24 hour / 5 day basis for log delivery and 24 hour / 7 day basis for woodchip transport.

The Mill site production operation hours are presented in Table 5.3.

Table 5.3 Operational shift hours

Day	Operating hours
Monday, Tuesday, Wednesday, Thursday, Friday	6am - 10 pm
Saturday and Sunday	Closed

5.5 Site key environmental values

The key environmental values present at the site include:

– Catchments of Loudwater River and Emu River, with associated Protected Environmental Values (PEVs); and
– Amenity of a rural forestry-based area.

Both the Loudwater and the Emu Rivers exhibit similar in-stream characteristics in the area of the Surrey Hills Mill, with basaltic boulders and cobbles dominating the substrate and in-stream vegetation dominated by trailing aquatic sedges (e.g. *Isolepis fluitans*) and mosses. Aquatic fauna is dominated by invertebrates including those of the *Baetidae*, *Leptophlebiidae*, *Rhyacophiloidea*, *Chironomidae* and *Amphipoda* taxons.

5.6 Description of emissions

The Surrey Hills Mill has a relatively simple environmental footprint. Each major environmental aspect and its corresponding actual or potential impact are described below under three environmental emission categories of atmospheric, water and land/soil.

5.6.1 Atmospheric emissions

Emissions of pollutants, such as nitrous oxides (NOx), Particulate Matter (PM10, PM2.5) etc are associated with diesel powered mobile plant and equipment at the Surrey Hills Mill site. A further minor atmospheric emission is metal fume associated with casting metal babbitts onto chipper knives in the site's knife sharpening room.

Emissions of greenhouse gases from the site can be attributed to mobile plant. It is considered the contribution of the Surrey Hills site is relatively minor and it is noted that according to the 2023 Natural Capital Report, Forico sequesters more carbon dioxide equivalent (CO2-e) than it emits. Readers with an interest in Forico's greenhouse profile can reference Forico's comprehensive annual Natural Capital Reports published on Forico's website (www.forico.com). The Natural Capital Report's Greenhouse section aggregates CO2-e emissions from across the group and are subject to third party verification processes.

Noise from the chipping is produced from chipper knife impact on logs and motor noise. While the local noise levels within the site boundary can be elevated from this chipper noise, the remote location of the facility results in negligible noise impacts to the closest sensitive receptors residences in the township of Hampshire.

It is acknowledged that one noise complaint from the public was received (see Section 6.5) relating to truck movements associated with the Surrey Hills Mill.

Overall, the Surrey Hills Mill facility has a relatively benign emission profile regarding atmospheric emissions as outlined in the 2023 Natural Capital Report.

5.6.2 Water Emissions

Environmentally relevant water emissions from the Surrey Hills Mill site are a function of rainfall on hardstand surfaces, leading to leaching of wood-based stockpiles of product (chip) or wastes and subsequent organic enrichment and eutrophication of those stormwaters. Additionally, the use of hydrocarbons for lubrication and fuel by mobile plant are matters for routine management of the site, which are well managed by engineering controls and management practices.

The Surrey Hills Mill's management practice is to capture and combine leachates and stormwaters into a single network and then dispose of the organically enriched liquor via an irrigation network. This then leads to an indirect groundwater outflow, likely (in part at least) moving to the Loudwater River as a subterranean flow.

All liquors captured by the combined drainage network, including on-site detention and holding ponds, are diverted to the irrigation area. A portion of the liquor and nutrients disposed by this process is expected to be taken up by the plantation stock and soil microbes within the irrigation plot.

5.6.3 Contaminated land

Instances of contaminated soils and or land at Surrey Hills Mill is related to past practices and uses of the site, rather than current operations. Localised hydrocarbon contamination from legacy infrastructure was identified in 2015. The sources of contamination were two radial cranes that were decommissioned and removed during the Recommissioning Project in 2015. The hydrocarbons were used in hydraulic power packs that transmitted fluid power throughout the crane gantries. This resulted in one confirmed and a second likely circular contaminated zone identified on the Surrey Hills Mill site. A Soil Investigation study was undertaken in May 2025 and confirmed there is minimal remaining soil contamination on site and there are no restrictions on the site for further commercial activities.

6. Environmental Performance

6.1 Environment related procedural or process changes

6.1.1 2024-2025 reporting period

Opportunities to improve environment related procedures or processes during the 2024-2025 reporting period were:

– Installation of a new fire water tank; and
– Investigation undertaken into the viability of a saw line that will result in virtually 100% recovery of timber, substantially reducing fines production.

6.1.2 2023-2024 reporting period

Two environmentally relevant equipment/process changes occurred at the Surrey Hills Mill during the 2023-2024 reporting period. These included:

– New Wagner L90 loader procured and deployed; and
– Ongoing energy efficiency measures.

Upgrading equipment generally improves operating efficiencies, reduces emissions, and reduces the risk of hydrocarbon leakage. Implementing waste reduction and recycling measures also reduces operational environmental impacts.

6.1.3 2022-2023 reporting period

Several environmentally relevant equipment/process changes occurred at the Surrey Hills Mill during the 2022-2023 reporting period. These included:

– Fire suppression ring water main replaced with 8” HDPE, and pumps serviced;
– Cardboard and paper recycling implemented;
– Wastewater irrigation pumps serviced/upgraded;
– Covers added to spill kits;
– Hard faced wear plates installed on mill chipper face, increased working life from 2-4 years;
– New Komatsu WA500 loader purchased and deployed;
– Reduced wastewater due to installation of water automation process on the log line; and
– Paperless log ticketing system implemented through the LOGR app.

Upgrading equipment generally improves operating efficiencies, reduces emissions and reduces risk of leakage. Implementing waste reduction and recycling measures reduces operational environmental impacts.

6.2 Generation and management of solid and liquid waste

The Surrey Hills Mill generates two key waste streams:

– Wood based process material by-products, including fines, reject chips and bark; and
– Non-process wastes, such as oils, packaging, tyres etc.

By-products are detailed here to align with the definition of ‘waste’ under EMPCA.

Data collected on waste disposal for the full reporting period are provided below as annual totals. Veolia Environmental Services (Aust) Pty Ltd are the main non-process waste service provider for the Surrey Hills Mill site.

6.2.1 Process waste (by-products)

Wood based by-products include fines, reject chips and bark. Fines are the most significant by-product waste by volume and are segregated at the screening phase of the chip production process. The reject chips can be generated at any time due to suspected contamination, sacrificial use for bulk product handling, biodegradation etc. Bark is a generic term that refers to miscellaneous woody debris generated, mostly by log handling. This is a minor waste stream as true log de-barking is undertaken at point of harvest in the forest estate and so does not occur on the Surrey Hills Mill site.

Annual totals of major wood-based waste streams are summarised below in Table 6.1. These include fines, bark, and reject chips.

Table 6.1 Total wood-based process waste generated per annum

Wood process waste	2024-2025 (gmt)	2023-2024 (gmt)	2022-2023 (gmt)
Total waste fines generation	11,886	11,540	13,166
Total waste bark generation	4,154	5,022	5,659
Total waste reject chip generation	779	888	727

6.2.2 Non-process material wastes

Non-process wastes (solid and liquid) include wastewater, oils, packaging, and hydrocarbon-contaminated materials. Waste disposal metrics for the reporting period are provided below as annual totals for both liquid and solid waste. Scrap metal is measured in tonnes generated, waste oil in litres of oil recovered and/or removed, general solid waste is documented in m^3, and wastewater discharge to irrigation is measured in kL. Annual totals of non-processing waste are shown in Table 6.2.

No consignments of scrap metal were removed from the site in this reporting year. It continues to be stockpiled for recycling.

General solid waste is stored in skip bins on the site, and Veolia regularly removes it for disposal at the Dulverton Regional Landfill.

Wastewater is reused on site for irrigation.

Tasmania Oil reprocesses waste oil in Wivenhoe.

Table 6.2 Annual totals of non-processing waste metrics

Material description	2024-2025	2023-2024	2022-2023
Scrap metal for processing and recycling (t)	0	0	0
Solid General to Dulverton Regional Landfill (m^3)	24.5	12	72
Wastewater discharge to irrigation system (kL)	695	585	674
Oil to oil recycling facility (L)	3,000	21,400	1,800

Wastewater discharge to the irrigation system in the 2022-2025 reporting period has decreased markedly from previous reporting periods as shown in Table 6.3. This decline has been achieved through the installation of timers and automatic mechanisms for process water application on the log line. Previously water was consumed

whenever the plant was operating, whereas now the water supply into the log line is linked to the motor activation and deactivation.

Table 6.3 Annual wastewater discharge to irrigation system from 2017-2018 to 2024-2025

Variable	2024-2025	2023-2024	2022-2023	2021-2022	2020-2021	2019-2020	2018-2019	2017-2018
Wastewater discharge (kL)	695	585	674	5,128	9,737	20,412	8,245	5,779

6.2.3 Controlled and special wastes

Veolia are engaged (under commercial ECM Set ID 70049002) to handle and dispose of controlled waste substances, including general landfill waste, sludge, sanitary waste, and waste oils from the Surrey Hills Mill site. A consolidated summary of the Surrey Hills Mill site controlled waste disposal is provided below in Table 6.4.

Veolia operate a Liquid Treatment Plant for waste oil recovery which itself is regulated under EPN 9596/1. Veolia are registered waste handlers, holding Certificate of Registration No. CWTEMP129TA.

No consignments of Asbestos Containing Material (ACM) have been removed from the site. To Forico's knowledge, there has been no ACM identified on the site.

Table 6.4 Waste removed from Surrey Hills Mill by Veolia for 2022-2025 reporting period

Waste type	2024-2025	2023-2024	2022-2023
General Landfill (t)	12	12	6.24
DAF Sludge (t)	10	10	9
Cardboard (t)	0.99	1.06	0.49
Sanitary (t)	0.04	0.03	0.02
Oily Water (t)	3	11	4
Total	**26.03**	**34.09**	**19.76**

6.2.4 Re-use/waste minimisation initiatives

The Surrey Hills Mill site seeks to continually optimise production processes to reduce total process waste. The challenge of reducing process waste and diverting stockpiled fines to reuse options is ongoing. As a clean and uniform product, the fines present a potential opportunity for use as an energy or compost production input. However, this relies on a viable facility located at a distance that renders the material cost-effective from a handling and transport perspective. To date, no single solution has been identified to fully utilise ongoing production of fines, or the accumulated stockpile.

Table 6.5 Wood waste destination for the nominated reporting periods

Wood process waste	2024-2025	2023-2024	2022-2023
Fines to stockpile (t)	7,386	9,137	10,238
Fines to reuse (direct off-site) (t)	3,894	1,717	2,928
Fines to reuse (off-site from stockpile) (t)	3,722	1,011	1,466
Bark to stockpile (t)	4,396	5,135	5,264
Waste chips direct off-site (t)	879	874	452

Forico's approach is to first identify opportunities to reduce the waste generation. This is linked to production throughput but is largely controlled by chip product specifications and can only be mitigated to some extent by continual product sampling and subsequent adjustment of some process parameters.

In the 2023-2024 AER, it was stated that, HIF Tasmania had announced a commercial-scale e-fuels facility to be constructed near the SHM. The project is currently in the permitting and design phase. Once operational, this facility is expected to use wood process waste generated as feedstock into the e-Fuel production process.

Discussions remain ongoing with other commercial operators seeking wood process waste for inclusion in industrial processes. These reuse opportunities include incorporating wood process waste streams into kiln and boiler fuel and for feedstock into the production of alternative fuels. At this stage no further progress has been made.

In addition to exploring potential new end uses, Forico continue to supply fines and wood process waste products for reuse as animal bedding and as a feedstock into the Dulverton Organics Compost Facility, which has been using the wood process wastes in co-composting with high nutrient wastes (e.g. sewage sludge and dairy effluent).

While several viable options are being progressed, there remains no single sustainable solution for wood waste generated by the Surrey Hills Mill to date. A trial of fines use in plantation silviculture concluded in the 2024 – 2025 reporting period. Forico is monitoring the effectiveness of this trial from a cost-benefit perspective, with a final report prepared detailing the outcome of the trial provided in Appendix D. A final decision on the ongoing suitability of using fines in broadscale plantation establishment will be made in the 2025 calendar year.

6.3 Composting trial

An ongoing trial to understand the composting process of woodchip fines and the implication of the material's application to the soil has been undertaken at Reynolds Road at the Surrey Hills Mill site. A five-year review of the composting trial was released in January 2025. The trial found that soil chemistry saw no appreciable negative impact, or that any further environmental harms were made. Eucalyptus trees in the trial area should be further assessed to understand their growth and development, and if there are any allelopathic constraints. The study is attached to this PER in Appendix D.

6.4 Legacy soil contamination

Contamination of soil had occurred at the site from historic use by prior operators of the Surrey Hills Mill. This localised hydrocarbon contamination was identified during the site's 2015 Recommissioning Project.

The source(s) of contamination were determined to be two radial cranes that were decommissioned and removed during the Recommissioning Project in 2015. The hydrocarbons used in hydraulic power packs for the crane gantries resulted in one confirmed and a second likely contaminated zone being identified on the Surrey Hills Mill site.

As detailed in the 2019-2022 PER, the soil remediation project was completed, with final data submitted to the EPA. A soil contamination investigation was undertaken in May 2025 at the North Crane Mound, and it was found that no soil samples exceeded the Health Screening Levels (HSL) or the Ecological Screening Levels. This means that the site available to be used for commercial development and there are no requirements for the removal of any soil.

Hydrocarbon remediation works have concluded at the site.

A soil investigation was undertaken in 2025 to determine if any residual hydrocarbon contamination was present. No soil samples exceeded Health Screening Levels (HSL) or Ecological Screening Levels. This means the site is able to be used for commercial development and the is no risk to ecologically sensitive receptors from the soil. This report is attached to this PER in Appendix E.

6.5 Environmental incidents or incidents of non-compliance

6.5.1 2024-2025 reporting period

No significant environmentally related incidents directly relevant to the Surrey Hills Mill activity were recorded during the 2024-2025 reporting year. Similarly, there were no known incidents of non-compliance to the conditions of EPN 7476/4 relating to the activity identified or recorded for the reporting year.

There are four reported environmental incidents that occurred during the reporting period as follows:

– Atlas Copco Air Compressor Hydraulic Hose failure that resulted in an oil leak of approximately 2-5 litres being spilled (01/02/2025)
– A hydraulic hose burst on a contractor's truck whilst folding trailer up with a small quantity of oil being spilled. The spill was contained and cleaned immediately to ensure no oil tracked onto roads (28/04/2025).
– Fines bin truck expelled up to 2 litres of oil. The spill was contained and cleaned up to ensure the spread of the oil was minimised (09/07/2024).
– Fresh rubbish was found thrown on the ground on Estate Road, it was reported and managed (14/05/2025).

All hydrocarbon spill contamination was contained using spill kits available on site and disposed of appropriately.

No product/chip spills occurred (onsite or during transit) during the current reporting period.

6.5.2 2023-2024 reporting period

No significant environmentally related incidents directly relevant to the Surrey Hills Mill activity were recorded during the 2023-2024 reporting year. Similarly, there were no known incidents of non-compliance to the conditions of EPN 7476/4 relating to the activity identified or recorded for the reporting year.

There were two minor environmental incidents that occurred during the reporting year as follows:

– A non-conformance was identified after a delivery of an internally bunded container (IBC) containing an environmentally hazardous material. The IBC was temporarily stored (for a period of approx. 15 minutes) in an area that was not suitably bunded. The incorrect temporary storage was identified quickly and rectified immediately (12/12/2023).
– Concrete sleepers were found dumped by an unknown person/s on Deacon Substation Road. The waste has been managed in accordance with the EMP (24/04/2024).

No hydrocarbon, hazardous substances, or product/chip spills occurred (onsite or during transit) during this reporting period.

6.5.3 2022-2023 reporting period

No significant environmentally related incidents directly relevant to the Surrey Hills Mill activity were recorded during the 2022-2023 reporting year. Similarly, there were no known incidents of non-compliance to the conditions of EPN 7476/4 relating to the activity identified or recorded for the reporting year.

There were two minor environmental incidents that occurred during the reporting year as follows:

– A hydraulic hose burst on a contractor's log truck resulting in a small quantity of hydraulic oil being spilled (19/09/2022).
– A contractor's log truck was found to have a leaking fuel tank while on site (11/01/2023).

In both hydrocarbon spill instances, the contamination was contained using spill kits available on site and disposed of appropriately.

No product/chip spills occurred (onsite or during transit) during this reporting period.

7. Environmental Monitoring Results

Site water monitoring currently operates through two main components of the Surrey Hills Mill:

– Surface water monitoring (Surface run-off sampling at the Station Road composting site, and surface run-off collection infrastructure on-site); and
– Groundwater monitoring (Site contamination and water quality for irrigation activity).

The Surrey Hills Mill site is required to submit a report detailing the monitoring of the following aspects of site operations annually as a requirement of EPN 7476/4. Monitoring requirements and conditions for these criteria are detailed in Table 7.1.

Table 7.1 Environmental Monitoring Requirements and Conditions for the Surrey Hills Mill

Monitoring point and parameters	Frequency
Groundwater Monitoring for irrigation Area (Condition M2 in EPN 7476/4)	
Irrigation Monitoring Bores (DB5 and TPB) Standing Water Level (m above AHD), Oxygen-Reduction Potential (mV), Conductivity (µS/cm) pH	 Quarterly Quarterly Quarterly Quarterly
Effluent Emissions (Condition E1 in EPN 7674/4)	
Polluted stormwater discharged from the Land Free from grease, oils, solids and discolouration Discharge limits for water: – pH between 6.5 and 8.5 – Biochemical Oxygen Demand (BOD5) <40 mg/L – Total Suspended Solids (TSS) <60 mg/L – Oil and grease <10 mg/L	

7.1 Groundwater monitoring

The Surrey Hills Mill site drainage and monitoring layout can be seen below in Figure 7.1.

Previously, groundwater was monitored at the Surrey Hills Mill using five (5) groundwater monitoring bores. The three (3) primary bores (A, B and C) were in place to check for evidence of hydrocarbon contamination near the decommissioned radial cranes. Following soil remediation works completed in 2020, the requirement for ongoing monitoring is no longer in place.

The remaining two (2) bores provide surveillance of any impact on the groundwaters associated with the irrigated plantation area. The irrigation program utilises a combination of stormwater, process water, and leachate waters from the Mill activity. Quarterly monitoring requirements (as per Condition M2 of EPN 7674/4) for irrigation bores DB5 and TPB, provide evidence for management control of any localised effects from the reuse of this water.

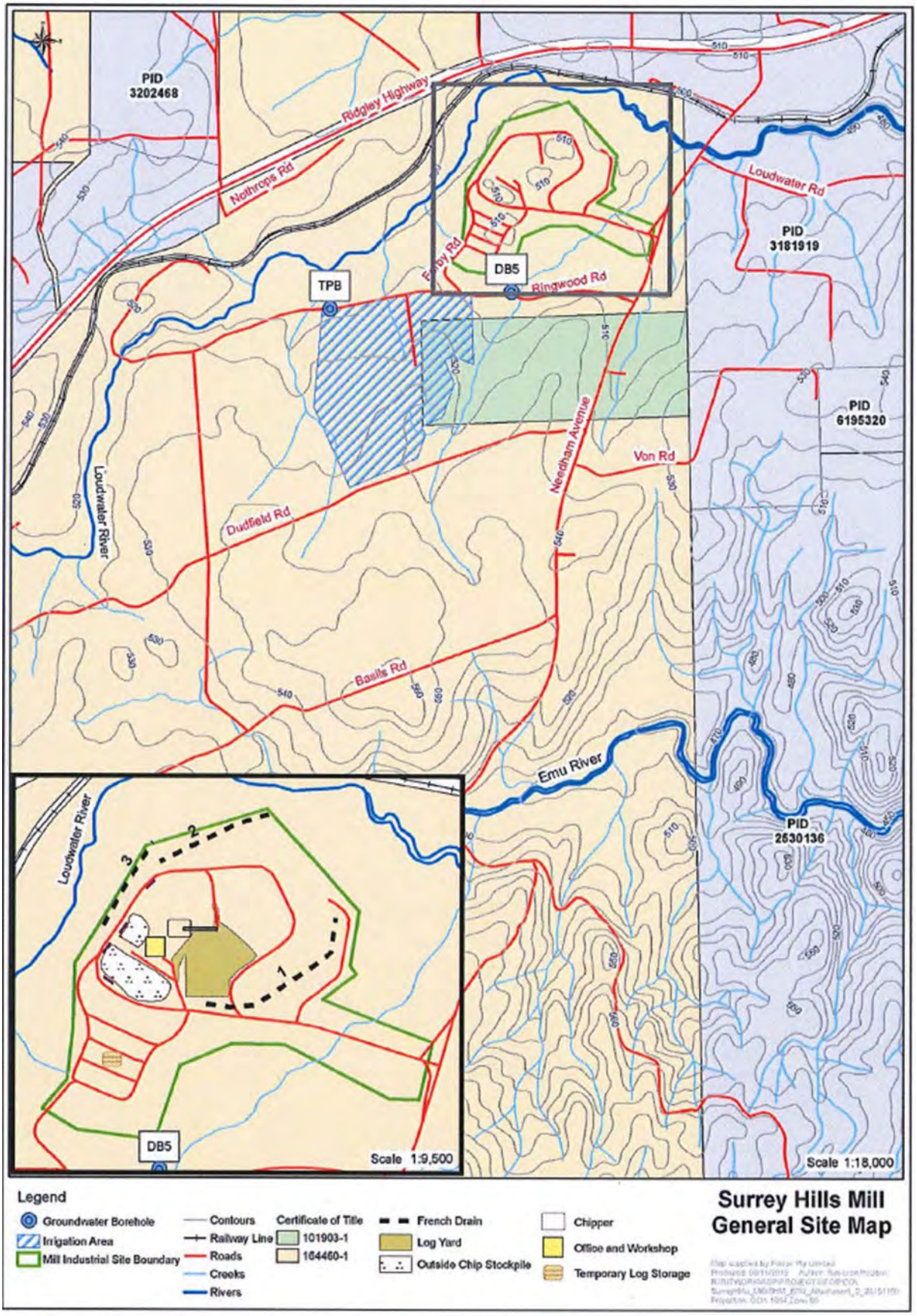

Figure 7.1 Site layout and monitoring locations

7.2 Groundwater monitoring for irrigation bores

The results of the groundwater sampling results collected for this reporting period are presented below in Table 7.2 for irrigation bore DB5, and Table 7.3 for irrigation bore TPB. Locations of the irrigation bores are shown on Figure 7.1.

Table 7.2 Laboratory analyses of groundwater samples for Irrigation Bore DB5 from 24/08/2022 – 30/06/2025

DB5 Monitoring Data					
Analyte	pH	Temperature	Conductivity (SpCond)	Oxygen – Reduction Potential (ORP)	Standing Water Level (SWL)
Units	pH	ºC	µS/cm	mV	(m) above height datum (AHD)
Date					
24/08/2022	5.6	8.8	64.4	921.1	506.6
28/11/2022	5.29	11.06	72.32	642.4	505.8
03/03/2023	5.2	13.4	80.3	760.7	504.8
31/05/2023	5.6	10.6	81.3	797	505.6
25/08/2023	5.9	9.6	71.6	498.4	505.9
28/11/2023	5.7	11.1	78.1	326.6	505.4
26/02/2024	5.3	15.4	75	701.7	504.8
17/06/2024	5.4	9.5	82.45	62.7	505.3
18/09/2024	5.5	8.6	73.5	94.6	505.7
17/12/2024	5.5	14.1	78.4	105.2	505.3
17/04/2025	5.5	11.2	79.5	-51.6	504.3
30/06/2025	5.4	9.3	87	79.1	505.8

Table 7.3 Laboratory analyses of groundwater samples for Irrigation Bore TBD from 24/08/2022 – 30/06/2025

TBD Monitoring Data					
Analyte	pH	Temperature	Conductivity (SpCond)	Oxygen – Reduction Potential (ORP)	Standing Water Level (SWL)
Units	pH	ºC	µS/cm	mV	(m) above height datum (AHD)
Date					
24/08/2022	5.2	10.6	71	700.6	506.0
28/11/2022	4.96	11.53	64.88	629.1	505.6
03/03/2023	5.7	13.3	106.9	998	504.4
31/05/2023	5.8	11.3	88.3	654.5	505.2
25/08/2023	5.5	10.7	67.6	425.8	505.7
28/11/2023	5.5	11.6	63.9	606.8	505.2
26/02/2024	5.6	13	86.8	566	504.5
17/06/2024	5.9	10.6	103.7	2.9	505.1
18/09/2024	5.5	10.2	89.6	64.4	505.9
17/12/2024	5.7	12.94	96.9	4	505.7
17/04/2025	5.9	11.3	115.6	-33.6	504.6

TBD Monitoring Data					
30/06/2025	6	10.2	137.8	-63.5	505.8

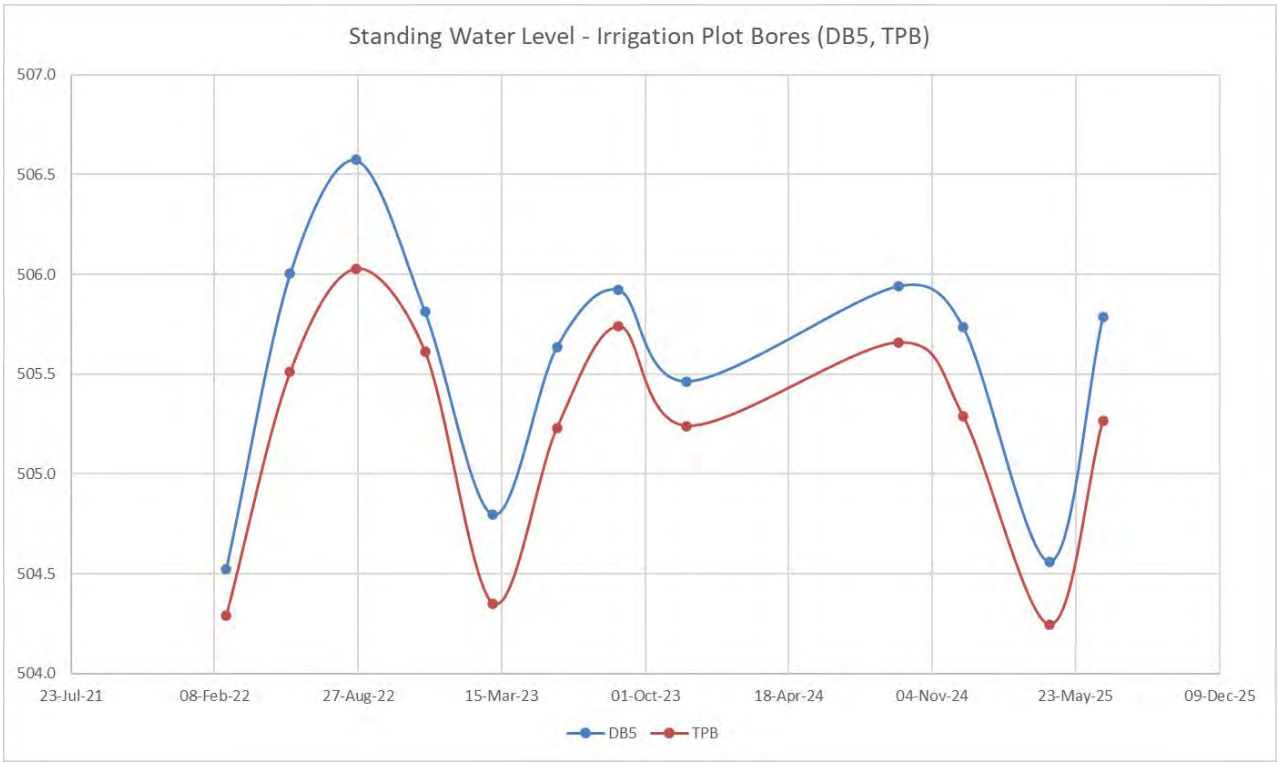

Figure 7.2 Time series data of groundwater standing water level (m AHD)

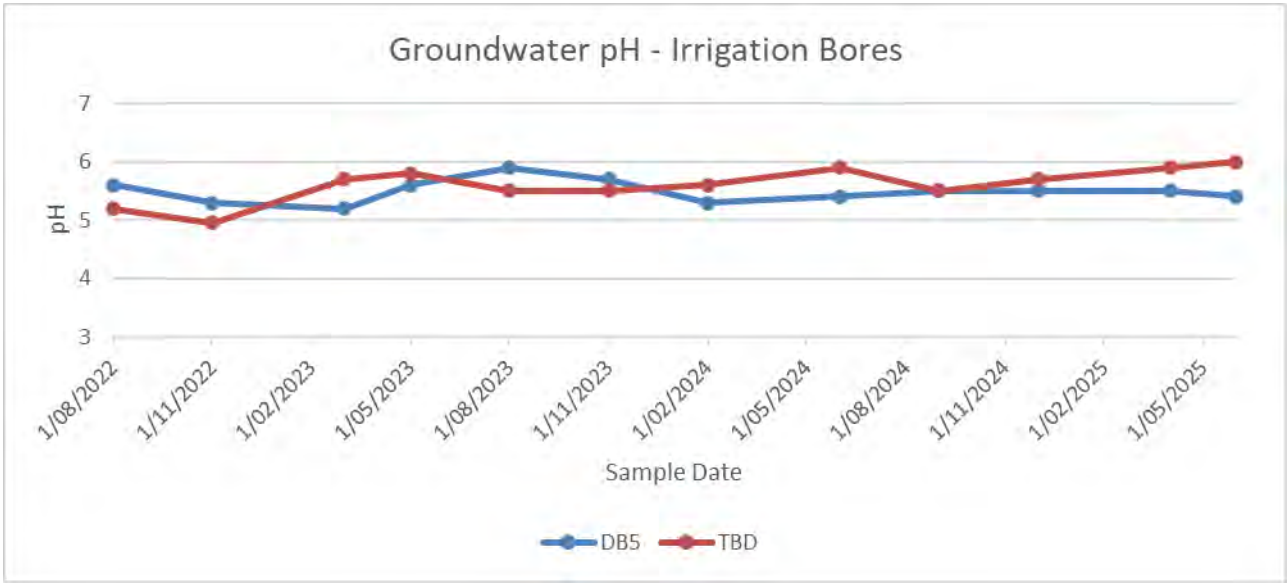

Figure 7.3 Groundwater pH at Surrey Hills Mill irrigation bores from 01/07/2022 – 30/06/2025

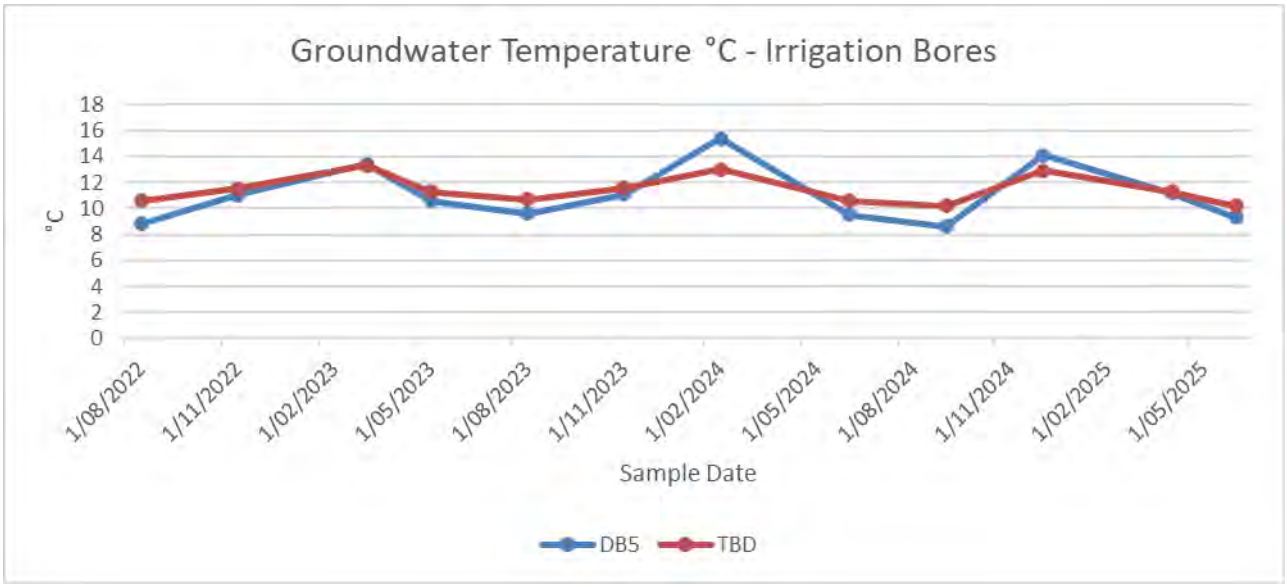

Figure 7.4 Groundwater temperature at Surrey Hills MIll irrigation bores from 01/07/2022 – 30/06/2025

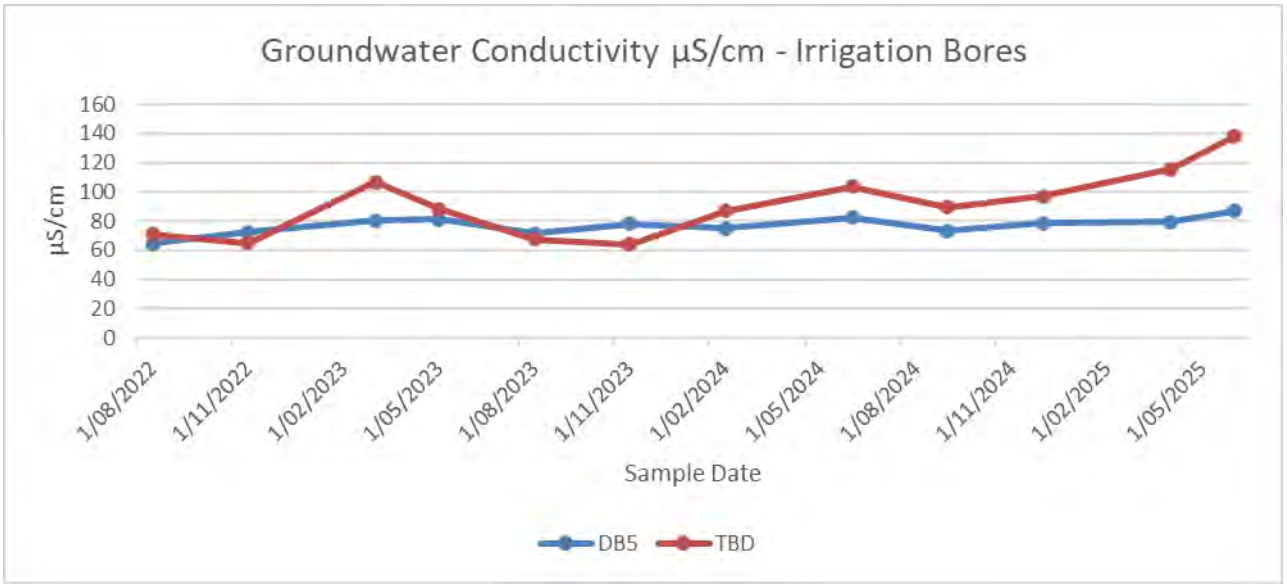

Figure 7.5 Groundwater Conductivity at Surrey Hills Mill irrigation bores from 01/07/2022-30/06/2025

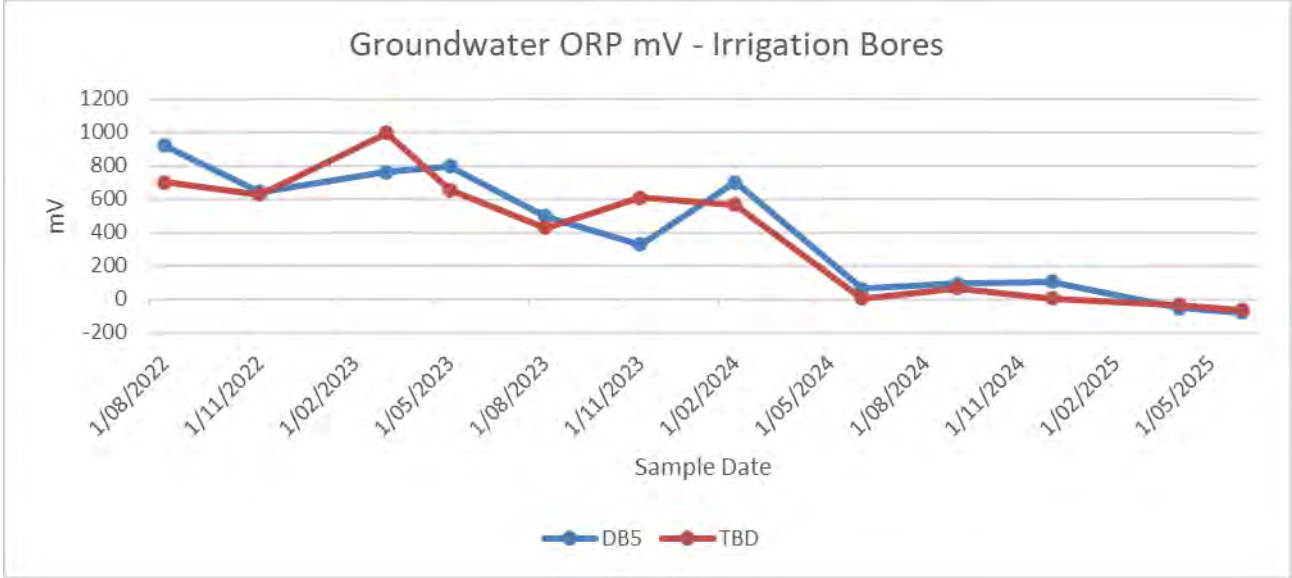

Figure 7.6 Groundwater ORP at Surrey Hills Mill irrigation bores from 01/07/2022 – 30/06/2025

7.3 Interpretation of groundwater monitoring results

Oxygen-Reduction Potential (ORP) showed a negative trend in the 2024-2025 reporting period and over the PER reporting period. While the cause is unexplained, low and negative ORP values can indicate an increase in decomposing organic matter. This may be associated with the progression of the compost trial.

The increase in conductivity is noted and will be monitored during the 2025-2026 reporting period.

All other values are below identified LORs/upper limits of groundwater criteria for the site and are consistent with the levels observed in prior reports.

7.4 Surface water monitoring

There is no direct release of wastewater from the site, with wastewater from the Surrey Hills Mill site utilised in the forestry irrigation plot area, and as such has the quality tested as part of the irrigation bore sampling programme.

8. Hazardous Substances

The Surrey Hills Mill site utilises fuel drums for mobile refuelling operations stored in the fuel storage facility. A spill kit is within the storage facility, which is also fully bunded to capture all hydrocarbons in the event of a leak or spill.

All lubrication and hydraulic oils are stored within the enclosed oil storage facility, providing adequate security to contain any spillages as per conditions H1, H2 and H3 of EPN 7476/4. There is an oil and fuel spill recovery kit within the oil storage facility, and a waste bin for oily wastes, including clean up materials from a minor spillage event (see Section 6.5). Waste such as oily rags are stored in a separate bin for disposal through a licenced waste contractor. Used oil containers are also stored in the oil storage facility for collection from the supply companies.

Fuels, oils, and chemicals are carefully managed to minimise spill risk. The site features bunded containment areas and all loading aprons have been converted to impervious concrete hardstand. Hardstand areas surrounding containment areas feature two triple-interceptor drains that in the event of spillage, all material is captured and drained to a sump so as not to contaminate soil or water. The site operates under an updated and approved Environmental Procedure document for the Purchase and Disposal of Oils, and emergency/spill procedures. No breaches of limits specified in conditions H1, H2 or H3 or specified in the Site EMP regarding hazardous substances have occurred during the current monitoring period.

Figure 8.1 Oil fuel spill recovery kits

Figure 8.2 Hazardous materials/storage

Figure 8.3 Hazardous substances containment structures

9. Atmospheric Emissions

Overall, the Surrey Hills Mill facility has a relatively benign or insignificant emission profile regarding atmospheric emissions.

Dust emissions are not significant at the site, given the concrete apron installed at the log yard and the use of well-maintained hardstand areas. There is some dust generation from the woodchipping process, particularly from the wind-blowing fine particulates from the woodchip and fines stockpiles. Whilst this is not a significant environmental hazard within the surrounding plantation estate, it does create some irritation for site personnel in some wind conditions.

There is also the potential to create dust through the transport of woodchips and fines. It is a regulatory requirement that trucks leaving the site utilise effective covers to prevent product spillage or dust (Condition A1 of EPN 7476/4).

Measures as implemented at the site and detailed in the site EMP include the following:

– Minimise impacts on staff from dust emissions;
– Implement on-site traffic and operational controls to prevent unnecessary dust generation;
– Limit vehicles to specified routes around the site and ensure adherence to speed limits;
– Dust masks are available for staff needing to work outside in windy conditions;
– Dust suppression techniques (such as watering) to maintain moist conditions on exposed areas, stockpiles and unsealed roadways when necessary; and
– All vehicles carrying loads of materials that may be subject to dispersal by wind or spill (e.g. woodchips and fines) use effective control measures such as tarpaulins or load dampening.

10. Register of Public Complaints

Forico maintains and tracks the views of the various stakeholders on the business, including a register of public complaints. Only one complaint was received relating to the operations of the Surrey Hills Mill for the reporting period from 01/07/2022 to 30/06/2025. This complaint is outlined below:

– A noise complaint was received from a Ridgley resident in relation to excessive noise from woodchip cartage contractor (25/01/2023). The incident was followed up with the contractor with a request for more caution in this area in relation to driving practices. The Site Manager attempted to discuss further with the resident but received no response.

11. Environmental Commitment Performance

11.1 2024-2025 reporting period

Commitment target	Status	Progress commentary
Analyse the viability of alternative timber processing options to substantially improve timber recovery Target: Determine if any new processes can feasibly be implemented at Surrey Hills	**Ongoing**	Alternative processes are scheduled to be presented to the board, and feasibility studies remain ongoing. It is anticipated that a decision will be made in the 2025 – 2026 reporting period.
Improve energy efficiency through renewal of power factor correction units Target: Complete renewal of all power factor correction units in Mill by the end of 2024.	**Ongoing**	This process is still ongoing, with energy efficiency measures being implemented across the site including the renewal of power factor correction units.
Reuse / Recycling of overhead chipper bins Target: When removing the overhead chip bins, investigate opportunities for repurposing or recycling the steel.	**Ongoing**	The overhead chipper bins are still in situ. Opportunities for re-use, re-purposing or recycling are ongoing.
Continue to explore and develop opportunities for reuse and recycling of wood waste products from the Mill Target: Continue to explore beneficial reuse options with third party bio-fuel, composting or material reuse partners. In particular, seek to expand opportunities to utilise fines as a resource.	**Ongoing**	An eFuel facility has been proposed to be constructed on the Forico estate at Surrey Hills. This facility remains in permitting and design phase. Additional siting options for this facility are being investigated. Fines are provided to agricultural enterprises for use in animal husbandry, this remains the key reuse option at the Surrey Hills Mill. While this is a viable re-use option, transport costs can be a prohibitive factor.

11.2 2023-2024 reporting period

Commitment target	Status	Progress commentary
Improve energy efficiency through renewal of power factor correction units Target: Complete renewal of all power factor correction units in Mill by the end of 2024.	**Ongoing**	This process is still ongoing, with energy efficiency measures being implemented across the site including the renewal of power factor correction units.

Commitment target	Status	Progress commentary
Reuse / Recycling of overhead chipper bins Target: When removing the overhead chip bins, investigate opportunities for repurposing or recycling the steel.	**Ongoing**	The overhead chipper bins are still in situ. Opportunities for re-use, re-purposing or recycling are ongoing.
Continue to explore and develop opportunities for reuse and recycling of wood waste products from the Mill Target: Continue to explore beneficial reuse options with third party bio-fuel, composting or material reuse partners. In particular, seek to expand opportunities to utilise fines as a resource.	**Ongoing**	An eFuel facility has been proposed to be constructed on the Forico estate at Surrey Hills. This facility is in the permitting and design phase. Fines are provided to agricultural enterprises for use in animal husbandry. While this is a viable re-use option, transport costs can be a prohibitive factor.

11.3 2022-2023 reporting period

Commitment target	Status	Progress commentary
Continue Station Road Composting Trial and Assess Results	**Ongoing**	In this reporting period a tree mortality survey was completed as a part of the ongoing monitoring and assessment phase of the trial.
Identify and implement opportunities to process waste into profitable products or at least minimal cost legal disposal in the short term.	**Ongoing**	Forico have an ongoing cost neutral agreement with the Dulverton Organic Facility to reuse some of the wood waste generated at the Surrey Hills Mill site. The resource is particularly useful for composting with high nutrient feedstocks such as sewage sludge, and provides a consistent source of carbon into the process. However, this arrangement cannot keep up with the supply of fines, which remains in excess with a growing stockpile on site. Forico will continue to assess other opportunities in the bio-fuel and organic recycling industries. The composting trial results will also inform the cost and benefit analysis, and Forico will explore opportunities for this closed loop system.
20% reduction in fines generation rate circa 1.1 % w/w	**Closed**	A 20% reduction in waste fines has not been achieved due to export specifications and process requirements
Hydrocarbon safety and storage based on safety investments	**Achieved**	Identify and implement safety focused infrastructure to reduce the chance of spills or incidents resulting in local site contamination – improving hardstands, storage facilities, and the inclusion of additional triple interceptor drains.

Appendix A

Forico Environmental Sustainability Policy

ENVIRONMENTAL SUSTAINABILITY POLICY

1 Purpose

Forico Pty Limited (Forico) is an integrated asset management company that is committed to sustainability, including responsible environmental management throughout all our business activities in Tasmania. We believe that the wood fibre we grow on the estate, from carbon dioxide it sequesters to downstream value adding processes we undertake, enhances economic, social and natural capital values for Tasmania.

As such we undertake our business activities consistent with our Sustainable values and environmental aspiration to be nature positive and provide overall ecosystem benefits from our management of the land estate and business activities.

2 Scope

Our Environmental Sustainability Policy applies to all aspects of our operations, from Seed to Market.

3 Procedural Principles

Forico will achieve a balance between economic viability, social contribution and environmental and cultural heritage responsibility through:

- **Leadership –** Promoting sound environmental stewardship principles within our own company and encouraging others to do likewise.
- **Best Practice –** Implementing, managing and regularly reviewing a robust integrated business management system that complies with the FSC® Certification Scheme, the PEFC recognised RW Certification Scheme and the ISO14001 Certification Scheme, which are routinely audited and verified by expert third parties.
- **Adding Value –** Growing, producing, and processing quality wood fibre products from plantation sources through managing the entire forest estate for sustainable outcomes.
- **Low Impact –** Protecting the environment, preventing pollution, the avoidable generation of waste, and optimising energy use throughout our chain of production and processing from a life cycle perspective.
- **Conservation –** Identifying, maintaining and enhancing natural forest and landscapes for ecosystem services.
- **Biodiversity –** Protection and enhancement of flora and fauna in the natural landscapes and production forests we manage on the estate.
- **Meaningful Communication –** Proactively engaging and communicating in an open and transparent fashion with interested and affected stakeholders.
- **Competent Workforce –** Ensuring our employees have adequate resources and appropriate skills through targeted training and awareness programmes.

- **Shared Responsibility –** Ensuring our suppliers and contractors share Forico's commitment to sustainability and responsible environmental management and are similarly trained and aware.
- **Challenging Ourselves –** Setting challenging objectives and targets to address any significant environmental aspects, compliance obligations, and other identified risks and opportunities that may arise through our commitment to continual improvement to enhance our environmental performance; and
- **Compliance –** Complying with all relevant legislation, regulatory frameworks, permits, codes of practice and our other voluntary commitments.

4 Definitions

RW – Responsible Wood.

FSC® – Forest Stewardship Council.

ISO14001 – An internationally recognised standard for environmental management systems that is applicable to any business or organisation, regardless of size, location or income.

PEFC – Programme for the Endorsement of Forest Certification Schemes.

5 References

- Forico website (www.forico.com.au).
- Forico Forest Management Plan.

Checked and Confirmed Compliance with Statutory Requirements ☒

Authorisation:	Board Approval ☒ CEO Approval ☐ Other ☐
Name and Signature: **Chief Executive Officer**	Name: Evangelista Albertini Signature: 
Date:	13 May 2025
Date to be Reviewed:	May 2027

Signatures:

Board Controlled Document Approval:	I hereby state that I have found no errors in the contents of this controlled quality document. The document has been approved by the Board and is ready for release.		
Name:	**Evangelista Albertini FORICO\alberte**	Title:	
	Evangelista Albertini		2025-06-16 10:57:21 (UTC+00:00)
Electronically Signed in	M-Files	Timestamp	

Appendix B

Certificate of Approval for AS/NZS IS0-14001-2016

CERTIFICATE OF REGISTRATION

SCS Global Services does hereby attest that an independent assessment was conducted on behalf of:

Forico Pty Limited

16 Techno Park Drive, Kings Meadows, Tasmania 7249, Australia

Has been assessed by SCS Services and found to be in conformance to the following standard:

AS/NZS ISO 14001-2016

For the following scopes:

- Business activities of Forico Pty Limited including office functions, seedling propagation and growing, log receival and processing, stockpiling and ship loading of forest products.

The validity of this certificate will be maintained with annual surveillance audits and recertification audits every three years.

CERTIFIED by SCS Global Services
ISO 14001
SCS-EMS-00004

JAS-ANZ
WWW.JASANZ.ORG/REGISTER

SCS Global Services, 2000 Powell Street, Suite 600
Emeryville, CA 94608 USA

Certificate Number: **SCS-EMS-00004**
Initial Certification Date: **July 28, 2018**
Valid From: **July 10, 2024**
Valid To: **July 09, 2027**

Scott Coye-Huhn, Vice President, EBC Division

Continued from page 1

The following five (5) sites are included in the scope of certification:

- Main office: 16 Techno Park Drive, Kings Meadows TAS 7249 Australia
- Somerset Nursery: 20 McKays Road, Somerset TAS 7322 Australia
- Ridgley Office: 15-17 Circular Road, East Ridgley TAS 7321 Australia
- Long Reach Mill: 3523 East Tamar Highway, Long Reach TAS 7253 Australia
- Surrey Hills Mill: 2753 Ridgley Highway, Hampshire TAS 7321 Australia

Scott Coye-Huhn, Vice President, EBC Division

SCS Global Services, 2000 Powell Street, Suite 600
Emeryville, CA 94608 USA

Appendix C

Certificate of Approval for Chain of Custody Forest and Tree-based Products (FSC-STD-40-003, FSC-STD-40-004, FSC-STD-40-005, FSC-STD-50-001)

SCS Global Services *does hereby certify that an independent audit has been completed and conformity to the applicable standard(s) has been confirmed for:*

Forico Pty Limited

16 Techno Park Drive, Kings Meadows, Tasmania 7249, Australia

This multi-site certificate covers the production of hardwood and softwood fibre products using the transfer and percentage systems. It also covers a due diligence system for the control of wood sourced from the Tasmanian region.

The facility(s) are hereby Chain of Custody certified to sell products as:

FSC 100%, FSC Mix

The assessment has been conducted by SCS Global Services in accordance with the protocols of the Forest Stewardship Council® A.C. (FSC®).

FSC Standard: FSC-STD-40-003, FSC-STD-40-004, FSC-STD-40-005, FSC-STD-50-001

Certificate Code: SCS-COC-701535

Trademark License Code: FSC-C104643

CW Code : SCS-CW-701535

FSC
www.fsc.org
FSC® A000521

The mark of responsible forestry

RESPONSIBLE FORESTRY CERTIFIED SCS GLOBAL SERVICES

Valid from: 27/05/2025
(DD/MM/YYYY)

Expiry date: 30/06/2027
(DD/MM/YYYY)

SCSglobal SERVICES

Maggie Schwartz, Vice President, Natural Resources
SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA

Certification Addendum

Forico Pty Limited

Certificate Number: (SCS-COC-701535)

This addendum contains the additionally certified locations approved by SCS Global Services to participate in the use of the FSC® Chain of Custody Certification.

Additional Locations

Forico Pty Limited: 16 Techno Park Drive, Kings Meadows, Tasmania, 7249, Australia, (SCS-COC-701535-)
Forico Pty Limited , Long Reach Mill: 3523 East Tamar Highway, Long Reach, Tasmania, 7253, Australia, (SCS-COC-701535-B)
Forico Pty Limited, Surrey Hills Mill: 2753 Ridgley Highway, Hampshire, Tasmania, 7321, Australia, (SCS-COC-701535-C)

Appendix D

Surrey Hills Mill Reuse of Wood Fines: 5 year review of the composting trial

Forico Pty Ltd

Surrey Hills Mill Reuse of Wood Fines

5 year review of the composting trial

January 2025

Pinion Advisory
112 Wright Street | East Devonport | Tasmania | 7310
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Report author: Jason Lynch

An appropriate citation for this report is: Pinion Advisory, Forico, Surrey Hills Mill Reuse of Wood Chip Fines, 5 year review of the trial program, January 2025

Document status: FINAL

Date	Status /Issue number	Authorised by	Transmission method
15/2/2025	1	Jason Lynch	Email

This report has been prepared in accordance with the scope of services described in the contract or agreement between Pinion Advisory and the Client. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and Pinion Advisory accepts no responsibility for its use by other parties.

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Executive summary

This report provides a 5 year progress report and assessment of Forico's Surrey Hills Mill wood chip fines reuse program.

A trial program has been developed to provide a scientific basis to characterise the composting process of the wood chip fines and understanding the implications of applying this material to the soil on an ex-forestry coup at Reynolds Road, Surrey Hills.

The Reynolds Road site wood chip fines application trial consists of 29 bays with 7 separate treatments which involved varying application rates of wood chip fines, nitrogen fertiliser and lime.

The impact on the soil fertility levels has been variable, and the over the 5 years of the trial program the soil fertility levels initially increased as a result of the application of the application of wood chip fines but the most recent (January 2025) soil fertility levels have generally declined. The soil fertility levels have generally declined in response to normally biological processes (e.g. leaching, acidification and adsorption), soil incorporation when the eucalyptus seedlings were planted out and nutrient uptake by vegetation (e.g. eucalyptus trees) and soil biology.

It is reasonable to consider the wood chip fines decomposition process has effectively been completed on bay 2, 6, 11, 18 and 21 as evidenced by:

1. Significant reduction in the volume of the wood chip fines present and typically they are almost completely absent as aground cover.
2. Chemical analysis of the wood chip fines with the key measure being the significantly reduced carbon nitrogen (C:N) ratio now reaching levels ranging from 20.1-51.6:1 compared to the initial stock pile C:N ratio value of 365.

Based on the trial results to date it would be appropriate to rank the wood chip fines chemical decomposition, as per based on the reduction of the volume of wood chip fines, organic carbon and C:N ratio, ranked from 1st to 6th, as per treatments 2 (1st), 5, 6, 3, 1 and 4 (6th). Treatments 2, 5 and 6 includes the application of both nitrogen fertiliser and lime, whilst treatments 1, 3 and 4 only include the application of nitrogen fertiliser.

In terms of a ranking based on the economics associated with the cost of inputs (e.g. lime and nitrogen fertiliser) relative to the volumetric decomposition and chemical decomposition of the wood chip fines the ranking is as per treatments 5 (1st), 4, 6, 2 and 3 (5th). Treatment 1, as per bay 26, has been excluded from the economic ranking as whilst the wood chip fines have been chemically decomposed their volume has not been substantially reduced.

Treatment 5 cost \$0.93/m^3 of wood chip fines to achieve a comprehensive breakdown of the wood chip fines in terms of the cost benefit of both the volumetric reduction and chemical decomposition.

It would be appropriate to assess the performance of the eucalyptus trees to determine if any timber production changes have occurred.

1 Back ground

Forico's Surrey Hills Mill produces wood chips from eucalyptus plantation forest timber and a by-product of this operation is the production of wood chip fines.

The management options for the wood chip fines are limited, and it has been determined by Forico that a potential opportunity to reuse this material as a soil ameliorant on the surrounding Surrey Hills forestry estate.

The opportunity to apply these wood chip fines offers a range of potential positive benefits including reducing soil erosion, weed suppression, soil moisture conservation, carbon sequestration and a source of nutrients. A range of specific negative aspects can be associated with the application of wood chip fines includes nitrogen draw, soil acidification and the potential for off-site movement of the material due to wind erosion and surface water movement.

A trial program has been developed to provide a scientific basis to characterise the composting process of the wood chip fines and understanding the implications of applying this material to the soil on an ex-forestry coup at Reynolds Road, Surrey Hills.

In November 2018 the wood chip fines characteristics and the Reynolds Road site soil fertility levels were assessed.

The Reynolds Road site wood chip fines application trial consists of 29 bays with 7 separate treatments which involved varying application rates of wood chip fines, nitrogen fertiliser and lime.

In September and October 2019, the wood chip fines were applied to the site and along with the initial nitrogen fertiliser and lime applications as per 1 of the 7 different treatments, and subsequently in early 2020 nitrogen application#2 was applied. Refer Table 1

Table 1 Wood chip fines composting treatment details

Treatment	Fines Addition	Fines Application Rate Depth (m)	Nitrogen application		Lime Application
			Application #1 (kg/m^3 of fines)	Application #2 (kg/m^3 of fines)	Application Rate (kg/ha)
1	Yes	0.200	2.5	0.0	5000
2	Yes	0.200	1.25	1.25	5000
3	Yes	0.100	2.5	0.0	5000
4	Yes	0.200	2.5	0.0	2500
5	Yes	0.200	1.25	1.25	2500
6	Yes	0.100	2.5	2.5	2500
7	No	N/A	0	0	0

On 13th January 2025 the trial site was evaluated for a 3rd time and the assessments included soil and wood chip fines temperature, wood chip fines depth and testing for a range of analytes to assess the progress of the decomposing wood chip fines and impact on the soil fertility levels.

2 Trial site assessment methodology

The Reynolds Road trial was assessed using the following methodology:

1. 7 bays were assessed, numbers 2, 6, 11, 18, 21, 22 & 26.

   The specific wood chip fines volume, nitrogen and lime treatments applied to each bay are detailed in Appendix B Table 9.

   Based on current industry urea ($700/T) and lime ($50/T) prices the cost for each treatment is show in Table 2.

Table 2 Cost per treatment for each of the trial bays.

Trial bay	Treatment	Cost ($/m^3 of wood chip treated)
2	3	1.98
6	6	1.86
11	4	1.81
18	2	1.87
21	5	0.93
22	Nil	0
26	1	0.91

2. 6 separate sampling sites along each bay.
3. At each sampling site the following data was recorded:
   a. GPS location. Appendix A Table 8 for sampling site GPS locations
   b. Wood chips fines temperature
   c. Soil temperature
   d. Depth of the wood chip fines
   e. Observations including odour, colour of the wood chip fines and soil and presence of soil biology (eg worms and fungi).
4. At each sampling site a representative sample of the wood chip fines and soil were obtained including:

a. A sample of the wood chip fines which includes a composite from the top of the material to the soil surface

b. A topsoil sample taken from 0-10cm depth

c. The bulk wood chip fines and soils were then sub sampled, chilled ASAP and sent for analysis the same day to the respective laboratories.

ALS Environmental analysed the wood chip fines and Nutrient Advantage analysed the soil samples.

Soil sample analytes included phosphorus, potassium sulphur, pH, cation exchange capacity, electrical conductivity, organic carbon, phosphorus buffer index, exchangeable sodium percentage, trace elements (boron, copper, iron, manganese, zinc), phosphorus environmental risk index and nitrogen (ammonia, nitrate and kjeldahl).

The wood chip fines analytes included pH, solids, conductivity, nitrogen (ammonia, nitrite, nitrate and kjeldahl), organic matter, total organic carbon and carbon/nitrogen ratio.

3 Results

3.1 Trial site seasonal conditions

An analysis of the seasonal climate conditions during the trial period from January 2020 until January 2025 has highlighted:

- Below average rainfall in 2020 (-153mm), 2023 (-138mm) and 2024 (-48) whilst above average rainfall in 2021 (+171mm) and 2022 (+305mm). Figure 1.
- Temperatures have been typically warmer than the rolling average 30 day throughout the trial period, with the exception of extended cooler conditions during autumn 2020 and spring 2022. Figure 2.

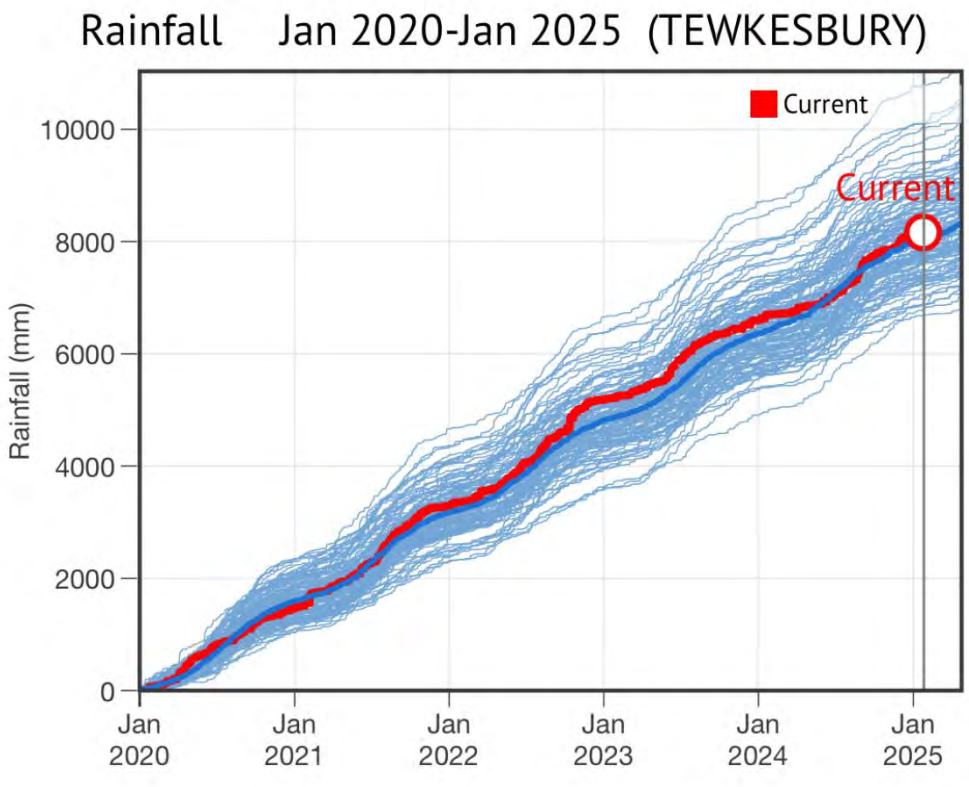

Figure 1 Accumulated rainfall from January 20 to January 2025 (Tewkesbury weather station, CliMate)

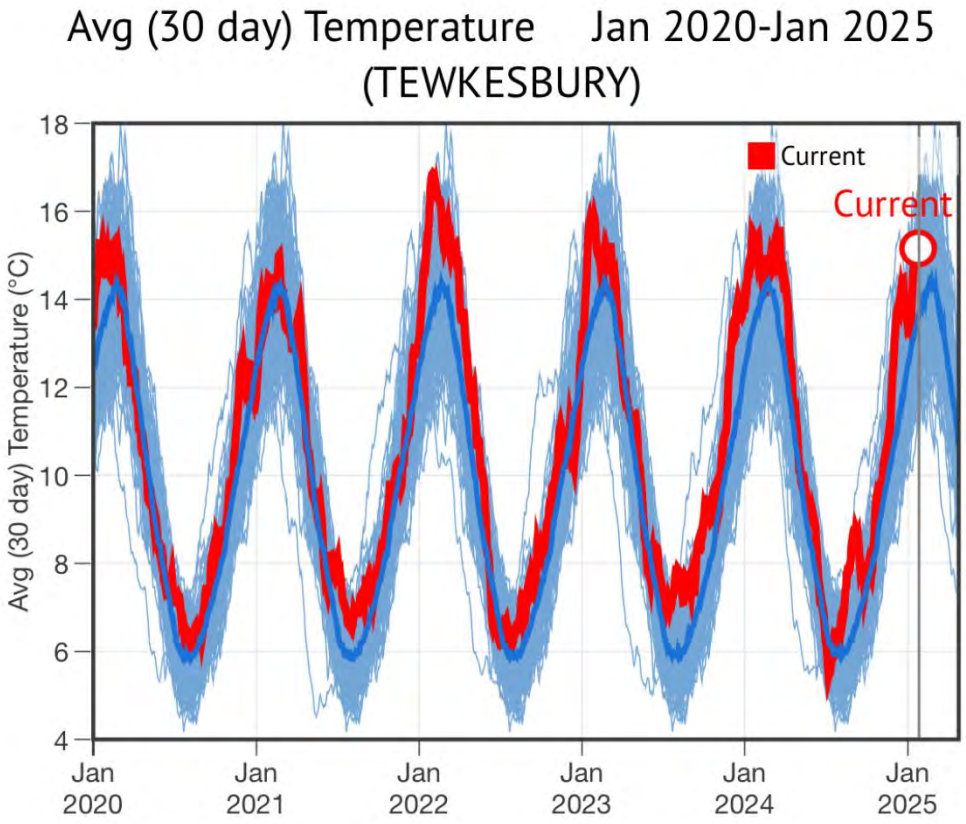

Figure 2 Average 30 day rolling temperature from January 2020 to January 2025 (Tewkesbury weather station, CliMate)

3.2 General observations

On the day of the assessment (13th January 2025) general observations of the trial site include:

- The weather was overcast with mild temperatures (18°c), light north easterly wind with a persistent light misty rain throughout the day.
- Limited weed pressure was present on all bays 2, 6, 11, 18 and 26, and typically included occasional gorse (*Ulex europeas*), bracken (*Pteridium esculentum*), fireweed (*Senecio linearifolius*) and scotch thistles (*Onopordum acanthium*) plants.
- High weed pressure was observed on bays 21 and 22 and included large gorse plants which covered extensive areas of these bays.
- Eucalyptus trees appeared to be growing well, with the exception of the low lying ground in the central area of the trial site and associated natural drainage line which run to the south. The exception was in much of bay 26, where the eucalyptus seedlings had not established.
- In all bays, with the exception of bay 22 and 26, the wood chip fines were mostly absent due to a combination of decomposition and disturbance. Bay 22 actually had less wood chip fines present than bay 26.
- Where the wood chip fines were present, they had a brown and heavily weathered appearance on the surface and no discernible colour difference was present between the bays and different treatments, with the exception of bay 26 where the wood chips were visibly less weathered.
- Very few worms were present in the majority of all soil sampling sites. This is likely due to the drier condition of the soils and typical absence of worms during summer.
- In all cases the wood chip fines had a faint earthy odour.
- The soil beneath all the wood chip fines typically had an earthy odour.
- No mycelial growth was observed to be present in any of the wood chip fines.
- Average soil temperatures of 15.9 °c and ranged from 15.1 to 16.5°c. Refer to Table 3.
- Average wood chip fines temperature of 16.6°c (only for bay 26). Refer to Table 3.
- Average wood chip fines varied in depth from 4-8cm (only for bay 26). Refer to Table 3.
- Please note that due the absence of the wood chip fines present on bays 2, 6, 11, 18 and 21 it was not possible to obtain a wood chip depth or temperature value. Refer to Table 3.

Table 3 Bay wood chip fines depth and temperature and soil temperature

Bay	2	6	11	18	21	22	26
Soil temperature (°c)	16.5	16.2	15.8	16.1	15.7	16.3	15.1
Wood chip fines temperature (°c)	Not applicable due to the typical absence of the wood chips and very shallow depth.					NA	16.6
Wood chip fines depth (cm)						2-6+	4-12+

3.3 Soil fertility results

The soil fertility analysis of the trial bays showed a number of differences between the baseline November 2018, September 2020 and January 2025 nutrient levels.

The key differences between the January 2025 and the September 2020 soil fertility levels (refer Table 4 and Table 5) include:

- Overall increase soil phosphorus (with the exception of bays' 2, 21 and 22 which increased), electrical conductivity, copper and zinc (with the exception of bay 21 which had no change).
- Overall decrease in potassium, pH_{water} (with the exception of bay 21 which increased), manganese, iron and boron.
- Variable changes occurred to:
    - Nitrogen kjeldahl, with bays' 2, 11 and 22 increased, whilst bays' 6, 18 and 21 decreased with the exception of bay 26 which did not change.
    - Organic carbon (OC), with bays' 2, 6, 22 and 26 increased, whilst bays' 11, 18 and 21 decreased.
    - Cation exchange capacity (CEC), with bays' 11, 18 and 26 increased whilst rows' 2, 6, 21 and 22 decreased.
    - Exchangeable sodium percentage (ESP), with bays' 2, 21 and 26 increased whilst bays 6, 11, 18 decreased.
    - Sulphur, with bay 6 decreased, bays' 2, 18, 21, 22 and 26 increased and no change in bay 11.
    - Phosphorus buffer index (PBI) increased with bay 22 increased, bay 26 which decreased and no change in bay 2, 6, 11, 18 and 21.

In terms of the magnitude of changes in soil fertility in general the differences where minor, with the exception of the differences in the soil potassium levels.

It should be noted that for all measures of soil fertility are low, with the exception of the potassium, organic carbon, zinc, manganese and iron. The potassium, OC, zinc, manganese and iron level are present at marginal to high levels and this can be attributed partially to the natural fertility of the soils and from the import of the nutrients in the wood chips fines.

Table 4 Variation between the September 2020 and January 2025 soil fertility levels for bays 2, 6, 11 and 18.

Bay	2	6	11	18
Phosphorus (mg/kg)	Increase (+2)	Increase (+2)	Increase (+1.5)	Decrease (-5)
Potassium (mg/kg)	Decrease (-134)	Decrease (-150)	Decrease (-180)	Decrease (-160)
Sulphur (mg/kg)	Increase (+2.1)	Decrease (-0.5)	No change	Increase (+3.8)
pH$_{water}$	Decrease (-0.7)	Decrease (-1.0)	Decrease (-0.8)	Decrease (-0.8)
ECse (dS/m)	Increase (+0.78)	Increase (+1.1)	Increase (+1.24)	Increase (+1.77)
Phosphorus buffer index	No change	No change	No change	No change
Organic carbon (%)	Increase (+3.34)	Increase (+1.23)	Decrease (-4.66)	Decrease (-1.66)
Cation exchange capacity	Decrease (-2.47)	Decrease (-0.32)	Increase (+0.82)	Increase (+0.96)
Nitrogen Kjeldahl (%)	Decrease (-0.09)	Decrease (-0.09)	Increase (+0.11)	Decrease (-0.27)
Exchangeable sodium (%)	Increase (+0.1)	Decrease (-0.1)	Decrease (-1.0)	Decrease (-1.4)
Copper (mg/kg)	Increase (+0.47)	Increase (+0.02)	Increase (+0.21)	Increase (+0.06)
Zinc (mg/kg)	Increase (+0.13)	Increase (+0.09)	Increase (+0.06)	Decrease (+0.08)
Manganese (mg/kg)	Decrease (-27.3)	Decrease (-37.2)	Decrease (-55)	Decrease (-7.7)
Iron (mg/kg)	Decrease (-120)	Decrease (-100)	Decrease (-89)	Decrease (-130)
Boron(mg/kg)	Decrease (-0.46)	Decrease (-0.39)	Decrease (-0.34)	Decrease (-0.18)

Table 5 Variation between the September 2020 and January 2025 soil fertility levels for bays' 21, 22 and 26.

Bay	21	22	26
Phosphorus (mg/kg)	Decrease (-9)	Increase (+6)	Increase (+2)
Potassium (mg/kg)	Decrease (-161)	Decrease (-43)	Decrease (-30)
Sulphur (mg/kg)	Increase (+1.2)	Increase (+7)	Increase (+2.7)
pH_{Water}	Increase (+0.2)	Decrease (-0.6)	Decrease (-0.1)
ECse (dS/m)	Increase (+1.01)	Increase (+1.06)	Increase (+1.25)
Phosphorus buffer index	No change	Increase (+200)	Decrease (-300)
Organic carbon (%)	Decrease (-4.38)	Increase (+0.16)	Increase (+2.39)
Cation exchange capacity	Decrease (-5.39)	Decrease (-2.27)	Increase (+6.0)
Nitrogen Kjeldahl (%)	Decrease (-0.42)	Increase (+0.47)	No change
Exchangeable sodium (%)	Increase (+0.33)	Decrease (-2.1)	Decrease (-2.1)
Copper (mg/kg)	Increase (-0.29)	Increase (+0.56)	Increase (+0.56)
Zinc (mg/kg)	No change	Increase (+0.17)	Increase (+0.17)
Manganese (mg/kg)	Decrease (-31)	Decrease (-39)	Decrease (-39)
Iron (mg/kg)	Decrease (-114)	Decrease (-20)	Decrease (-20)
Boron(mg/kg)	Decrease (-1.03)	Decrease (-0.3)	Decrease (-0.5)

The key differences between the initial 2018 and the January 2025 soil fertility levels (refer Table 6) include:

- Overall decreased in sulphur, ESP, zinc and boron levels.
- Overall increase in manganese levels.
- Variable changes occurred to:
    - Phosphorus, with bays' 6 and 11 increased whilst bays' 21 and 26 decreased.
    - Potassium, with bays' 6, 11 and 21 decreased whilst bay 26 increased.
    - pH_{water}, with bays' 6, 11 and 21 decreased whilst bay 26 increased.
    - OC, with bays' 6 and 26 increased whilst bays' 11 and 21 decreased.
    - PBI, with bays' 6, 11 and 21 decreased whilst bay 26 increased.
    - The nitrogen kjeldahl, with bay 6 increased whilst bays' 11, 21 and 26 increased.

- EC, with bay 6 decreased whilst bays' 11, 21 and 26 increased.
- CEC, with bays' 6, 11 and 26 increased whilst bay 21 decreased.
- Copper, with bays' 6, 11 and 26 decreased whilst bay 21 increased.

In terms of the magnitude of changes in soil fertility in general the differences where minor, with the exception of the PBI levels.

The phosphorus environmental risk index (PERI) has remained very low due to the exceptionally high phosphorus buffer index values of these soils, and therefore the risk of offsite movement of phosphorus is extremely low.

Table 6 Variation between the applicable September 2018 and January 2025 soil fertility levels for bays' 2, 11, 18 and 26.

Bay	6	11	21	26
Phosphorus (mg/kg)	Decrease (-6.1)	Decrease (-1.4)	Increase (+3)	Increase (+12.3)
Potassium (mg/kg)	Decrease (-110)	Decrease (-40)	Decrease (-61)	Increase (+10)
Sulphur (mg/kg)	Decrease (-1.9)	Decrease (-3.8)	Decrease (-1.2)	Decrease (-0.6)
pHwater	Decrease (-1.0)	Decrease (-0.4)	Increase (+0.7)	Increase (+1.3)
ECse (dS/m)	Decrease (-0.5)	Increase (+0.8)	Increase (+0.5)	Increase (+1.25)
Phosphorus buffer index	Increase (+600)	Increase (+600)	Increase (+400)	Decrease (-100)
Organic carbon (%)	Increase (+1.83)	Decrease (-0.06)	Decrease (-0.92)	Increase (+1.59)
Cation exchange capacity	Increase (+0.7)	Increase (+1.35)	Decrease (-1.08)	Increase (+5.34)
Nitrogen Kjeldahl (%)	Increase (+0.6)	Decrease (-0.2)	Decrease (-0.02)	Decrease (-0.07)
Exchangeable sodium (%)	Decrease (-0.8)	Decrease (-1.0)	Decrease (-0.9)	Decrease (-1)
Copper (mg/kg)	Increase (+0.27)	Increase (+0.12)	Decrease (-0.04)	Increase (+0.63)
Zinc (mg/kg)	Decrease (-0.15)	Decrease (-0.4)	Decrease (-0.27)	Decrease (-0.14)
Manganese (mg/kg)	Decrease (-2.2)	Decrease (-4)	Decrease (-9)	Increase (+5)
Iron (mg/kg)	Increase (+63)	Increase (+45)	Increase (+30)	Increase (+144)
Boron(mg/kg)	Decrease (-0.35)	Decrease (-0.22)	Decrease (-0.17)	Decrease (-0.14)

A summary of the November 2018, March and September 2020 and January 2025 soil test results are shown in Appendix D Table 10 to Table 13, with the complete January 2025 20 results in Appendix E Table 15 to Table 21.

3.4 Wood chip fines nutrient analysis results

The wood chip fines nutrient analysis showed a number of differences between the baseline stockpiled wood chip fines and subsequently in March and September 2020 and January 2025 nutrient levels. Detailed differences are showed in Appendix D Table 14.

The key differences relating to the September 2020 and January 2025 include wood chip fines analysis includes:

- General increase in solids, nitrogen ammonia, and nitrogen kjeldahal.
- General decrease in pH, electrical conductivity (with the exception bays' 2 and 18 which have increased), nitrogen nitrite, nitrogen nitrate, organic matter, total organic carbon levels and carbon/nitrogen ration levels.

The key differences relating to the initial stockpile and January 2025 include wood chip fines analysis includes:

- General increase in pH, solids, nitrogen ammonia, nitrogen nitrate (with the exception of bays' 11 and 26 which have decreased) nitrogen nitrate (with the exception of bays' 11 and 26 which have not changed) and nitrogen kjeldahal.
- General decrease in electrical conductivity (with the exception bays' 2 and 18 which have increased), organic matter (with the exception of bay 11 which has increased), total organic carbon levels (with the exception of bay 11 which has increased) and carbon/nitrogen ration levels.

It is reasonable to consider that the wood chip fines have been fully composted in all bays/treatments, and further decomposition will be as a result of the combined effects of weathering and soil based biological activity through assimilation of the organic matter into the soil.

4 Discussion

The wood chip fines reuse trial can be considered to have been fully completed, and there is clear evidence that the field-based composting program has been successful.

Previous conversations with the contractor who undertook the compost spreading work was positive in terms of being able to manage the wood chip fines, fertiliser and lime spreading process effectively.

There is no evidence of off-site movement of the wood chip fines outside of the trial site area.

It is reasonable to suggest there is a negligible risk of environmental harm due to the wood chip fines moving into adjacent and nearby forest, n wood chip fines were observed to be present on the track which surrounds the trial site nor on the edges of the adjacent plantation forest.

It appears that the decomposition of the wood chip fines has been largely completed in bays 2, 6,11, 18 and 21, and this is based on a combination of the chemical analysis and very significant reduction in the volume of wood chip fines (as per almost completely absent as ground cover).

The wood chip fines present on bays' 22 and 26 have undergone chemical decomposition (as per the very significant reduction in the carbon to nitrogen ratio), however the volume of the wood chip fines present has not reduced unlike almost complete absence of the wood chip fines in bays' 2,6, 11, 18 and 21.

It should be noted that much of bay 22 was covered by a timber trash from the clean-up of the previous plantation.

The residual wood chip fines present in January 2025 were more alkaline compared to the stockpile, although compared to the 2020 analysis the wood chips are more acidic. The progressive soil acidification could be attributed to a various factors including the degradation of the wood chips, incorporation/soil disturbance at the time when the eucalyptus trees where planted, natural acidification processes and the weathering out of the lime applied in the various treatments.

The wood chip fines have a generally higher nitrogen content (ammonia, nitrite, nitrate and Kjeldahl) and this largely indicates that the biological decomposition of the wood chip fines has occurred, and the overall carbon to nitrogen ratio in all cases has decreased significant and is representative of stable compost.

The soil nutrient testing provides indications that the impact of the application of the wood chips on the soil fertility after 5 years has been variable but overall, the changes have been relatively minor. The changes in the soil fertility levels includes:

- Phosphorus changes have been variable, with bays' 6 and 11 slightly increased whilst bays' 21 and 26 slightly decreased. The overall changes to the soil phosphorus levels have been minor.
- Potassium changes have been variable, with bays' 6, 11 and 21 slightly decreased whilst bay 26 slightly increased. The overall changes to the soil potassium levels have been minor.

- Sulphur levels have all decreased. The overall changes to the soil sulphur levels have been minor.
- pH changes have been variable, with bays' 6, 11 and 21 decreased whilst bay 26 increased.
- EC changes have been variable, with bay 6 decreased whilst bays' 11, 21 and 26 increased. The overall changes to the soil EC levels have been minor.
- PBI changes have been variable, with bays' 6, 11 and 21 decreased whilst bay 26 increased. The overall changes to the soil EC levels have been minor.
- OC changes have been variable, with bays' 6 and 26 increased whilst bays' 11 and 21 decreased. The overall changes to the soil OC levels have been minor.
- CEC changes have been variable, with bays' 6, 11 and 26 increased whilst bay 21 decreased. The overall changes to the soil CEC levels have been minor.
- The nitrogen kjeldahl changes have been variable, with bay 6 increased whilst bays' 11, 21 and 26 increased. The overall changes to the soil nitrogen kjeldahl levels have been minor.
- ESP levels have all decreased. The overall changes to the soil ESP levels have been minor.
- Copper changes have been variable, with bays' 6, 11 and 26 decreased whilst bay 21 increased. The overall changes to the soil copper levels have been minor.
- Zinc levels have all decreased. The overall changes to the soil zinc levels have been minor.
- Manganese levels have all increased. The overall changes to the soil manganese levels have been minor.
- Boron levels have all decreased. The overall changes to the soil boron levels have been minor.

It is reasonable to consider the wood chip fines decomposition process has effectively been completed on bay 2, 6, 11, 18 and 21 as evidenced by:

1. Significant reduction in the volume of the wood chip fines present and typically they are almost completely absent as aground cover.
2. Chemical analysis of the wood chip fines with the key measure being the significantly reduced carbon nitrogen (C:N) ratio now reaching levels ranging from 20.9-37:1 compared to the initial stock pile C:N ratio value of 365.

Based on the trial results to date it reasonable to rank the wood chip fines chemical decomposition, as per based on the organic carbon level (e.g. the lower the value the better) and C:N ratio, ranked from 1st to 6th, as per treatments 2 (1st), 5, 6, 3, 1 and 4 (6th). Treatments 2, 5 and 6 are based on the application of both nitrogen fertiliser and lime, whilst treatments 1, 3 and 4 only include the application of nitrogen fertiliser.

In terms of a ranking based on the economics associated with the cost of inputs (e.g. lime and nitrogen fertiliser) relative to the volumetric decomposition of the wood chip fines the ranking is as per treatments 5 (1st), 4, 6, 2 and 3 (5th). Treatment 1 has been excluded as whilst the wood chip fines have been chemically decomposed their volume has not been reduced.

Table 7 provides a ranking of the different wood chip fines treatments based on the chemical decomposition and overall economic cost/benefit.

Table 7 Ranking of the trial treatments in terms of achieving wood chip fines decomposition process (as per organic matter and total organic carbon content).

Bay	Trial treatment	Presence of wood chip fines (e.g. volume reduction)	Total Organic Carbon (Jan 2025 result)		Carbon nitrogen ratio		Financial cost benefit ranking ($/m³)
			Value (%)	Ranking	Value (%)	Ranking	
Stockpile			36.8			365	
2	3	Largely absent	31.2	5th	32.8	4th	5th
6	6		26.6	3rd	28.8	3rd	3rd
11	4		42.2	6th	37	5th	2nd
18	2		17.3	1st	20.9	1st	4th
21	5		22.6	2nd	23.2	2nd	1st
26	1	Present	29.8	4th	51.6	6th	Excluded

5 Recommendations

The results of the reuse wood chip fines trial are positive and are show the wood chip fines will decompose and with no appreciable negative impact on the soil chemistry and/or creating environmental harms.

The height and diameter of the eucalyptus trees should be assessed across the trial site in order to evaluate their growth and development and determine what effect the various treatments may have had and understanding any possible allelopathic constraints on the plantation forest.

After 5 years, treatment 5 would appear to be the most economic option at $\$0.93/m^3$ of wood chip fines to achieve a comprehensive breakdown of the wood chip fines in terms of the cost benefit of both the volumetric reduction and chemical decomposition.

6 References

King A (2018), Surrey Hills Mill Reuse of Wood Fines Project No. 6419, Environmental Service and Design, Tasmania, Australia.

Australian CliMate, GRDC and University of Queensland, Australian Government 2020. Accessed January 2025.

The SILO climate datasets. https://www.longpaddock.qld.gov.au/ Accessed January 2025.

Information provided by Paul Sturzaker, site manager, Forico Pty Ltd.

Appendix

Appendix A Trial site images

Image 1 Typical view of the interrow area in bays 2, 6, 11 and 18 with an almost complete absence of wood chip fines.

Image 2 Typical view of the interrow area along bay 11 and 18 with very limited amounts of woof chip fines present.

Figure 3 Bay 26 (easterly view)

Image 3 Gorse weed present on bay 22 (easterly view)

Image 4 Typical shallow depth of the remnant wood chip fines present in bays 2, 6, 8, 11 and 21.

Image 5 Depth of the remnant wood chips fines present on bay 26.

Appendix B Trial site soil and wood chip fines sampling locations

Table 8 Trial site bay soil and wood chip fines sampling locations (GDA 94 MGA Zone55)

Sample site	Bay						
	2	6	11	18	21	22	26
1	5429627 397263.7	5429561 397404.5	5429737 397338.9	5429656 397564.3	5429829 397465.3	5429687 397616.8	5429847 397543.6
2	5429601 397283.5	5429593 397379.5	5429709 397364.9	5429680 397543.3	5429796 397490.2	5429710 397596.3	5429830 397561.4
3	5429564 397321.9	5429620 397351.4	5429686 397388.5	5429709 397515.4	5429804 397588.2	5429734 397571.8	5429804 397588.2
4	5429548 397334.7	5429637 397334.9	5429660 397410.0	5429741 397486.4	5429713 397569.0	5429767 397543.1	5429783 397610.2
5	5429533 397349.4	5429657 397316.7	5429636 397431.8	5429772 397455.3	5429692 397589.7	5429796 397515.7	5429763 397627.7
6	5429561 397404.5	5429690 397283.2	5429605 397469.0	5429809 397418.4	5429668 397611.4	5429823 397491,2	5429731 397660.5

Appendix B Trial site treatments

Table 9 Trial site treatments

Bay	Treatment Allocation	Bay Volume m^3	Lime added at start (kg)	Urea added at start (kg)	Topdressed Urea Applied 8/7/20
1	4	328	391	820	
2	3	181	828	453	
3	2	367	881	459	459
4	7	0	0	0	
5	4	412	496	1030	
6	6	222	518	555	
7	3	228	1067	570	
8	7	0	0	0	
9	5	389	467	486	486
10	1	474	1148	1185	
11	4	484	586	1210	
12	1	486	1178	1215	
13	1	482	1169	1205	
14	1	476	1153	1190	
15	7	0	0	0	
16	5	463	560	579	579
17	4	457	553	1143	
18	2	452	1094	565	565
19	3	231	1079	578	
20	6	228	533	570	
21	5	454	548	568	
22	7	0	0	0	
23	1	408	982	1020	
24	7	0	0	0	
25	4	420	506	1050	
26	1	373	896	933	
27	1	360	863	900	
28	4	343	410	858	
29	6	170	388	425	

Appendix C Reynolds Road trial site map

Image 6 Reynolds Road trial site layout map

Appendix D Soil and wood chip fines analytical results summary

Table 10 Soil analysis historical comparison (part 1 of 4)

Sample	Date	Sample#	P Colwell (mg/kg)	K Available (mg/kg)	S KCl40 (mg/kg)	pH		ECse (dS/m)	Phosphorus Buffer Index	Organic Carbon (Walkley Black)	CEC (c ml (+)/kg)	Phosphorus Environmental Risk Index
						1:5 water	1:5 CaCl2					
Bay 2	3/20	022071029	20	200	7.7	4.5	4.1	0.28	2000	8.4	9.34	0.01
	9/20	022070787	9	380	2	5.4	4.8	0.22	2000	6.3	11	0
	1/25	130393534	11	150	4.1	5.1	4.5	1.0	2000	9.64	8.53	0.01
Bay 6	9/18	021993586	16	340	4.4	5.7	4.6	0.5	1400	7	8.28	0.01
	3/20	022071028	13	290	3.3	6.2	4.9	0.7	2000	4.87	5.43	0.01
	9/20	02207086	8	380	3	6.2	5.1	0.1	2000	7.6	9.3	0
	1/25	130393533	9.9	230	2.5	5.2	4.6	1.2	2000	8.83	8.98	0.00
Bay 11	9/18	021993585	8.1	220	6.8	5.5	4.5	0.5	1600	7.2	6.67	0.01
	3/20	022071027	16	350	5.1	5.8	4.9	1.0	1900	8.16	6.28	0.01
	9/20	022070785	8	360	3	5.9	4.8	0.06	2000	11.8	7.2	0
	1/25	130393532	9.5	180	3.0	5.1	4.6	1.3	2000	7.14	8.02	0.0
Bay 18	3/20	022071026	22	220	7.1	4.6	4.3	4.9	2000	8.72	6.41	0.01
	9/20	022070784	23	310	2	5.7	4.7	0.13	2000	10.8	7.2	0.01
	1/25	130393530	18	150	5.8	4.9	4.4	1.9	2000	9.14	8.16	0.01

Table 11 Soil analysis historical comparison (part 2 of 4)

Sample	Date	Sample#	P Colwell (mg/kg)	K Available (mg/kg)	S KCl40 (mg/kg)	pH		ECse (dS/m)	Phosphorus Buffer Index	Organic Carbon (Walkley Black)	CEC (c ml (+)/kg)	Phosphorus Environmental Risk Index
						1:5 water	1:5 CaCl2					
Bay 21	9/18	021993583	17	160	7.4	4.1	4.1	0.6	1600	9.6	8.39	0.01
	3/20	022071025	10	250	4.4	5.0	4.5	3	2000	6.52	7.72	0.01
	9/20	022070783	23	260	5	4.8	4.1	0.09	2000	12.9	12.7	0.01
	1/25	130393526	14	99	6.2	5.0	4.5	1.1	2000	8.52	7.31	0.01
Bay 22	3/20	022071024	17	160	6.1	4.8	4.3	1.2	2000	8.26	8.18	0.01
	9/20	022070782	10	130	6	5	4.3	0.04	1800	7.7	7.1	0.01
	1/25	130393528	16	87	13	4.4	4.3	1.1	2000	7.86	5.83	0.01
Bay 26	9/18	021993582	9.7	230	6.3	5.4	4.3	0.5	1800	7	6.66	0.01
	3/20	022071023	19	390	4.5	5.7	4.7	0.6	2000	8.27	5.41	0.01
	9/20	022070781	20	270	3	5.8	4.7	0.05	2000	6.2	6	0.01
	1/25	130393527	22	240	5.7	5.7	5.0	1.3	1700	8.59	12.0	0.01

Table 12 Soil analysis historical comparison (part 3 of 4)

Sample	Date	Sample#	Nitrogen			Exchangeable Sodium%	Copper (mg/kg)	Zinc (mg/kg)	Manganese (mg/kg)	Iron (mg/kg)	Boron (mg/kg)
			Kjeldahl (%)	Nitrate (mg/kg)	Ammonium (mg/kg)						
Bay 2	3/20	022071029	0.68	150	160	0.98	0.16	0.13	26	88	1.0
	9/20	022070787	0.62	100	85	1.2	0.12	0.26	34	250	1.1
	1/25	130393534	0.53	45	8.9	1.3	0.59	0.39	6.7	130	0.64
Bay 6	9/18	021993586	0.38			2.3	0.37	0.45	12	57	0.96
	3/20	022071028	0.4	2.8	360	2.4	0.88	0.22	100	220	1.1
	9/20	02207086	0.53	13	270	1.6	0.62	0.21	47	220	1
	1/25	130393533	0.44	56	12	1.5	0.64	0.30	9.8	120	0.61
Bay 11	9/18	021993585	0.38			2.5	0.42	0.57	20	46	0.78
	3/20	022071027	0.46	25	160	1.8	0.89	0.29	200	210	1.2
	9/20	022070785	0.47	6.1	160	2.3	0.33	0.11	71	180	0.9
	1/25	130393532	0.36	60	10	1.3	0.54	0.17	16	91	0.56
Bay 18	3/20	022071026	0.69	270	370	1.4	0.27	0.25	21	93	0.87
	9/20	022070784	0.79	37	300	2.6	0.43	0.27	25	250	1
	1/25	130393530	0.52	84	8.7	1.3	0.49	0.19	7.3	120	0.82

Table 13 Soil analysis historical comparison (part 4 of 4)

Sample	Date	Sample#	Nitrogen			Exchangeable Sodium%	Copper (mg/kg)	Zinc (mg/kg)	Manganese (mg/kg)	Iron (mg/kg)	Boron (mg/kg)
			Kjeldahl (%)	Nitrate (mg/kg)	Ammonium (mg/kg)						
Bay 21	9/18	021993583	0.58			2.1	0.35	0.40	11	36	0.74
	3/20	022071025	0.40	150	100	1.2	0.41	0.27	31	110	1.0
	9/20	022070783	0.98	33	6.9	0.87	0.02	0.13	33	180	1.6
	1/25	130393526	0.56	52	8.6	1.2	0.31	0.13	2.0	66	0.57
Bay 22	3/20	022071024	0.59	53	23	1.3	0.3	0.33	13	61	1.1
	9/20	022070782	0.56	13	7.4	1	0.14	0.1	2.4	25	1
	1/25	130393528	0.63	50	4.3	1.5	0.12	0.11	1.4	24	0.43
Bay 26	9/18	021993582	0.37			2.1	0.35	0.40	11	36	0.74
	3/20	022071023	0.47	0.59	8.7	2.2	0.27	0.42	310	310	1.7
	9/20	022070781	0.44	5.2	62	3.2	0.42	0.09	55	200	1.1
	1/25	130393527	0.44	52	9.1	1.1	0.98	0.26	16	180	0.60

Table 14 Wood chip fines analysis comparative historical results

Bay	Date	2	6	11	18	21	26
pH CaCl2	Stock pile	2.9					
	Mar 2020	5.9	6.6	5.8	6.8	6.7	6.9
	Sep 2020	5.5	5.9	5.6	5.6	6.2	6.9
	Jan 2025	4.9	4.7	4.2	4.6	4.9	5.4
ECse (µS/m)	Stock pile	696					
	Mar 2020	157	166	114	355	302	246
	Sep 2020	51	81	100	81	106	243
	Jan 025	109	34	80	96	53	152
Solids (%)*	Stock pile	29.9					
	Mar 2020	26.1	33.3	29.7	34.7	32.5	30.9
	Sep 2020	93.0	91.8	92.6	93.5	93.8	93.9
	Jan 2025	87.7	80.9	67.9	81.1	80.3	52.6
Nitrogen Ammonia (mg/kg)	Stock pile	<20					
	Mar 2020	170	260	120	780	280	750
	Sep 2020	40	60	30	100	80	100
	Jan 2025	40	60	50	40	60	20
Nitrogen Nitrite (mg/kg)	Stock pile	<0.1					
	Mar 2020	0.4	0.2	1.5	1.5	2.9	0.1
	Sep 2020	0.3	0.2	0.5	0.5	0.4	0.6
	Jan 2025	0.1	0.1	<0.1	0.1	0.3	<0.1
Nitrogen Nitrate (mg/kg)	Stock pile	0.48					
	Mar 2020	0.7	0.5	21	1.5	2.9	0.1
	Sep 2020	0.8	1.0	<0.1	0.1	0.1	0.1
	Jan 2025	2.5	3.3	0.1	25.2	19.4	0.3

*samples oven dried in order to obtain all N results due to timelines for laboratory analysis and sample decomposition

Bay	Date	2	6	11	18	21	26
Nitrogen Kjeldahl (mg/kg)	Stock pile	942					
	Mar 2020	6730	3410	14410	9160	4810	2180
	Sep 2020	1300	1290	1260	1660	1330	1240
	Jan 2025	9790	9220	11400	8260	9750	5780
Organic matter (%)	Stock pile	63.4					
	Mar 2020	57.8	70.1	75	60.1	78.5	68.6
	Sep 2020	83.1	67.2	80.5	55.2	61.9	77.1
	Jan 2025	55.4	45.8	72.8	29.9	39.0	51.4
Total organic carbon	Stock pile	36.8					
	Mar 2020	33.5	40.6	43.5	35.2	45.6	39.8
	Sep 2020	48.2	39	46.7	32	35.9	44.7
	Jan 2025	31.2	26.6	42.2	17.3	22.6	29.8
Carbon/Nitrogen Ratio	Stock pile	365					
	Mar 2020	49.8	119	30.2	38.1	94.1	182
	Sep 2020	370	302	370	193	270	360
	Jan 2025	32.8	28.8	37.0	20.9	23.2	51.6

Appendix E Soil complete test results

Table 15 Bay 2 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 786053

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA
WORLD RECOGNISED ACCREDITATION

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory
Number: 11958

Sample Number:	130398534	Paddock Name:	FSR2TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	150	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	49	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.085		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	21	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	4.6	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.5		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.0	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	9.64	%	04-018-UV1	30/01/2025 to 3/02/2025
Nitrate Nitrogen	45	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	8.9	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.53	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	4.1	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	11	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	3.24	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	120	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.39	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	4.2	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	1.8	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.11	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	190	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	2.1	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	8.53	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.3	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	24	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	2.3		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	5.1		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.10	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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Incitec Pivot Limited - ABN 42 004 080 264
8 South Rd, Werribee Vic 3030
Toll-free: 1800 803 453 Fax: (61 3) 9974 0699

SOIL ANALYSIS REPORT

Report Number: 786053

Sample Number:	130393534	Paddock Name:	FSR2TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	<10	mg/kg	04-083-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.59	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.39	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Manganese (DTPA)	6.7	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Iron (DTPA)	130	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.64	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.01		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

The results pertain only to the sample submitted.
This document shall not be reproduced except in full.
Analyses performed on soil dried at 40°C and ground to 2mm or less.
^ NATA accreditation does not cover the performance of this service.
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Table 16 Bay 6 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 786001

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory
Number: 11958

Sample Number:	130393533	**Paddock Name:**	FSR6TS	**Date Sampled:**	23-Jan-2025
Test Code:	E85	**Sample Name:**		**Date Received:**	24-Jan-2025
Purchase Order No:	18Foric_CONS	**Sample Depth:**	0 to 10 cm	**Date of Report:**	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	230	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	55	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.088		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	20	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	6.5	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.6		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.2	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	8.83	%	04-018-UV1	30/01/2025 to 3/02/2025
Nitrate Nitrogen	56	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	12	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.44	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	2.5	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	9.9	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	<2.00	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	210	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.59	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	4.9	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	1.8	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.13	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	140	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	1.5	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	8.98	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.5	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	17	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	2.7		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	5.2		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.12	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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SOIL ANALYSIS REPORT

Report Number: 786001

Sample Number:	130393533	Paddock Name:	FSR6TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	13	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.64	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.30	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Manganese (DTPA)	9.8	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Iron (DTPA)	120	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.61	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.00		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

The results pertain only to the sample submitted.
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Table 17 Bay 11 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 786000

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA

Report Authorised
Paul Kennelly
Laboratory Manager

NATA Accredited Laboratory
Number: 11958

Sample Number:	130393532	Paddock Name:	FSR11TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	180	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	58	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.079		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	17	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	5.8	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.6		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.3	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	7.14	%	04-018-UV1	31/01/2025 to 3/02/2025
Nitrate Nitrogen	60	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	10	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.36	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	3.0	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	9.5	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	<2.00	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	180	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.46	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	4.5	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	1.3	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.10	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	140	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	1.6	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	8.02	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.3	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	20	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	3.5		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	5.1		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.13	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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SOIL ANALYSIS REPORT

Report Number: 786000

Sample Number:	130393532	Paddock Name:	FSR11TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	<10	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.54	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.17	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Manganese (DTPA)	16	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Iron (DTPA)	91	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.56	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.00		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

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Table 18 Bay 18 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 785999

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory
Number: 11958

Sample Number:	130398530	Paddock Name:	FSR18TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	150	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	50	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.075		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	13	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	4.7	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.4		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.9	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	9.14	%	04-018-UV1	31/01/2025 to 3/02/2025
Nitrate Nitrogen	84	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	8.7	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.52	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	5.8	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	18	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	4.38	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	120	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.38	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	4.1	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	1.0	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.11	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	230	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	2.5	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	8.16	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.3	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	31	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	4.1		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	4.9		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.18	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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SOIL ANALYSIS REPORT

Report Number: 785999

Sample Number:	130393530	Paddock Name:	FSR18TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	<10	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.49	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.19	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Manganese (DTPA)	7.3	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Iron (DTPA)	120	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.82	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.01		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

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Table 19 Bay 21 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 786051

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA
WORLD RECOGNISED ACCREDITATION

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory Number: 11958

Sample Number:	130393526	Paddock Name:	FSR21TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	99	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	45	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.066		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	6.4	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	3.5	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.5		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.1	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	8.52	%	04-018-UV1	30/01/2025 to 3/02/2025
Nitrate Nitrogen	52	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	8.6	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.56	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	6.2	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	14	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	2.93	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	52	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.25	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	3.3	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	0.47	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.084	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	290	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	3.2	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	7.31	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.2	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	44	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	7.0		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	5.9		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.11	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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SOIL ANALYSIS REPORT

Report Number: 786051

Sample Number:	130393526	Paddock Name:	FSR21TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	<10	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.31	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.13	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Manganese (DTPA)	2.0	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Iron (DTPA)	66	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.57	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.01		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

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Table 20 Bay 22 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 786052

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory
Number: 11958

Sample Number:	130393528	Paddock Name:	FSR22TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	87	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	1.7	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.73		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	3.4	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	3.8	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	4.3		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.1	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	7.86	%	04-018-UV1	30/01/2025 to 3/02/2025
Nitrate Nitrogen	50	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	4.3	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.63	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	13	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	16	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	3.53	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	2000		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	47	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.22	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	0.10	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	0.20	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.089	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	470	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	5.2	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	5.83	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.5	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	90	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	0.50		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	4.4		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.11	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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8 South Rd, Werribee Vic 3030
Toll-free: 1800 803 453 Fax: (61 3) 9974 0699

SOIL ANALYSIS REPORT

Report Number: 786052

Sample Number:	130393528	Paddock Name:	FSR22TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	10	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.12	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.11	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Manganese (DTPA)	1.4	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Iron (DTPA)	24	mg/kg	04-024-ICP8	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.43	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.01		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

The results pertain only to the sample submitted.
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^ NATA accreditation does not cover the performance of this service.
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Table 21 Bay 26 complete soil test laboratory results (pages 1 and 2)

Nutrient Advantage

SOIL ANALYSIS REPORT

ASPAC

Report Number: 785998

Pinion Advisory Pty Ltd
43 Formby Road
EAST DEVONPORT
TAS 7310

NATA
WORLD RECOGNISED ACCREDITATION

Report Authorised
Paul Kennelly
Laboratory Manager
NATA Accredited Laboratory
Number: 11958

Sample Number:	130393527	Paddock Name:	FSR26TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Available Potassium ^	240	mg/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium % of Cations	78	%	04-026-ICP8	3/02/2025 to 3/02/2025
Grass Tetany Risk Index ^	0.055		04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium % of Cations	14	%	04-026-ICP8	3/02/2025 to 3/02/2025
Potassium % of Cations	5.1	%	04-026-ICP8	3/02/2025 to 3/02/2025
Soil Colour	Brown		04-042-PHYS	3/02/2025 to 3/02/2025
Soil Texture	Sandy Loam		04-042-PHYS	3/02/2025 to 3/02/2025
pH (1:5 CaCl2)	5.0		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (Sat. Ext.) ^	1.3	dS/m	04-054-WCALC	3/02/2025 to 3/02/2025
Organic Carbon (W&B)	8.59	%	04-018-UV1	31/01/2025 to 3/02/2025
Nitrate Nitrogen	52	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Ammonium Nitrogen	9.1	mg/kg	04-063-FIA3	30/01/2025 to 31/01/2025
Total Nitrogen (Kjeldahl)	0.44	%	04-040-STOT1	29/01/2025 to 31/01/2025
Sulphur (KCl40)	5.7	mg/kg	04-021-ICP2	30/01/2025 to 3/02/2025
Phosphorus (Colwell)	22	mg/kg	04-013-COL_P	29/01/2025 to 4/02/2025
Phosphorus (Olsen)	4.93	mg/kg	04-030-OLS_P	30/01/2025 to 30/01/2025
Phosphorus Buffer Index (PBI-Col)	1700		04-020-ICP17	31/01/2025 to 31/01/2025
Potassium (Colwell)	230	mg/kg	04-044-COL_K	29/01/2025 to 4/02/2025
Potassium (Amm-acet.)	0.61	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Calcium (Amm-acet.)	9.4	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Magnesium (Amm-acet.)	1.7	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Sodium (Amm-acet.)	0.13	cmol(+)/kg	04-026-ICP8	31/01/2025 to 3/02/2025
Aluminium (KCl)	13	mg/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Aluminium (KCl)	0.14	cmol(+)/kg	04-027-ICP9	30/01/2025 to 31/01/2025
Cation Exchange Capacity (Amm-acet.)	12.0	cmol(+)/kg	04-026-ICP8	3/02/2025 to 3/02/2025
Sodium % of cations	1.1	%	04-026-ICP8	3/02/2025 to 3/02/2025
Aluminium % of Cations	1.2	%	04-026-ICP8	3/02/2025 to 3/02/2025
Calcium/Magnesium Ratio	5.5		04-026-ICP8	31/01/2025 to 3/02/2025
pH (1:5 Water)	5.7		04-031-PH	30/01/2025 to 31/01/2025
Electrical Conductivity (1:5 water)	0.13	dS/m	04-031-PH	30/01/2025 to 31/01/2025

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SOIL ANALYSIS REPORT

Report Number: 785998

Sample Number:	130393527	Paddock Name:	FSR26TS	Date Sampled:	23-Jan-2025
Test Code:	E85	Sample Name:		Date Received:	24-Jan-2025
Purchase Order No:	18Foric_CONS	Sample Depth:	0 to 10 cm	Date of Report:	4-Feb-2025
Grower Name:	Forico				

Analyte	Result	Units	Method Code	Analyte Testing Period
Chloride	<10	mg/kg	04-083-FIA3	30/01/2025 to 31/01/2025
Copper (DTPA)	0.98	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Zinc (DTPA)	0.26	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Manganese (DTPA)	16	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Iron (DTPA)	180	mg/kg	04-024-ICP6	31/01/2025 to 3/02/2025
Boron (Hot CaCl2)	0.60	mg/kg	04-025-ICP7	30/01/2025 to 3/02/2025
Phosphorus Environmental Risk Index ^	0.01		04-020-ICP17	31/01/2025 to 31/01/2025

Sample condition on receipt: Suitable for testing.

The results pertain only to the sample submitted.
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Appendix F Wood chip fines analysis results

Table 22 Wood chip fines analysis laboratory results (part 1 of 2)

Page	: 3 of 4
Work Order	: EM2501113
Client	: The Trustee for Pinion Advisory Unit Trust
Project	: FSR PC Assessment

Analytical Results

Sub-Matrix: WOODCHIP (Matrix: SOIL)

Compound	CAS Number	LOR	Unit	Sample ID	FSR2PC	FSR6PC	FSR11PC	FSR18PC	FSR21PC
				Sampling date / time	20-Jan-2025 00:00	20-Jan-2025 00:00	20-Jan-2025 00:00	20-Jan-2025 00:00	20-Jan-2025 00:00
					EM2501113-001	EM2501113-002	EM2501113-003	EM2501113-004	EM2501113-005
					Result	Result	Result	Result	Result
EA001: pH in soil using 0.01M CaCl extract									
pH (CaCl2)	----	0.1	pH Unit		4.9	4.7	4.2	4.6	4.9
EA010: Conductivity (1:5)									
Electrical Conductivity @ 25°C	----	1	µS/cm		109	34	80	96	53
EA030: Total Solids									
Total Solids	----	0.1	%		87.7	80.9	67.9	81.1	80.3
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		12.3	19.1	32.1	18.9	19.7
EK055: Ammonia as N									
Ammonia as N	7664-41-7	20	mg/kg		40	60	50	40	60
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg		0.1	0.1	<0.1	0.1	0.3
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg		2.4	3.2	0.1	25.1	19.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		2.5	3.3	0.1	25.2	19.4
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		9790	9220	11400	8260	9750
EK062: Total Nitrogen as N (TKN + NOx)									
^ Total Nitrogen as N	----	20	mg/kg		9790	9220	11400	8280	9770
EP001: Organic Carbon/Nitrogen Ratio									
Carbon:Nitrogen Ratio	----	0.02	-		32.8	28.8	37.0	20.9	23.2
EP004: Organic Matter									
Organic Matter	----	0.5	%		55.4	45.8	72.8	29.9	39.0
Total Organic Carbon	----	0.5	%		32.1	26.6	42.2	17.3	22.6

Table 23 Wood chip fines analysis laboratory results (part 2 of 2)

Page	: 4 of 4
Work Order	: EM2501113
Client	: The Trustee for Pinion Advisory Unit Trust
Project	: FSR PC Assessment

Analytical Results

Sub-Matrix: WOODCHIP (Matrix: SOIL)			Sample ID	FSR26PC	---	---	---	---
			Sampling date / time	20-Jan-2025 00:00	---	---	---	---
Compound	CAS Number	LOR	Unit	EM2501113-006	-------	-------	-------	-------
				Result	---	---	---	---
EA001: pH in soil using 0.01M CaCl extract								
pH (CaCl2)	---	0.1	pH Unit	**5.4**	---	---	---	---
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	---	1	µS/cm	**152**	---	---	---	---
EA030: Total Solids								
Total Solids	---	0.1	%	**52.6**	---	---	---	---
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	---	1.0	%	**47.4**	---	---	---	---
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	**20**	---	---	---	---
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	14797-65-0	0.1	mg/kg	<0.1	---	---	---	---
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N (Sol.)	14797-55-8	0.1	mg/kg	**0.3**	---	---	---	---
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	---	0.1	mg/kg	**0.3**	---	---	---	---
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	---	20	mg/kg	**5780**	---	---	---	---
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	---	20	mg/kg	**5780**	---	---	---	---
EP001: Organic Carbon/Nitrogen Ratio								
Carbon:Nitrogen Ratio	---	0.02	-	**51.6**	---	---	---	---
EP004: Organic Matter								
Organic Matter	---	0.5	%	**51.4**	---	---	---	---
Total Organic Carbon	---	0.5	%	**29.8**	---	---	---	---

Appendix E

Soil Investigation: Forico Hampshire Mill

Soil Investigation

Forico Hampshire Mill

Project No: 9710
May 2025

ABN: 97 107 517 144
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FINAL	R Cooper	ES&D	30/06/2025

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1 Introduction

In March 2025, Environmental Service and Design (ES&D) were hired by Forico to investigate possible hydrocarbon contamination at the site of the North Crane mound. The crane was decommissioned and removed in 2015.

Forico plans to excavate the crane mound and prepare the area for constructing a new partially enclosed structure to be used as a pallet-making facility.

The investigation by ES&D aimed to determine the concentration of hydrocarbons in the ballast and clay material at the north crane mound and subsequently assess the suitability for the proposed use of the area. The goal was to evaluate if residual hydrocarbon contamination levels were below the Health Screening Levels (HSL), Ecological Screening Levels (ESL), and Ecological Investigation Levels (EIL) specified for commercial/industrial premises, making the area suitable for industrial use. It also included assessing hydrocarbon contaminant levels in excavated materials to classify them correctly and ensure appropriate licensed disposal in accordance with Environment Protection Authority (EPA) requirements. In some cases, certain contamination can remain in situ without posing unacceptable human health or ecological risks. Based on the results, soil will be excavated and repositioned to create a suitable surface for the construction project.

2 Scope of Works

The scope of the assessment included:

- Field investigations and discussion with Forico staff.
- Development of a sampling and analysis plan
- Sampling and analysis of site soil and interpretation of results
- Delineation of contaminated areas if necessary
- Preparation of the assessment report

3 Basis for Assessment

As a state policy for the purposes of the State Policies and Procedures Act 1993, the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM) was the guideline used for the assessment.

The Information Bulletin No. 105: Classification and Management of Contaminated Soil for Disposal (EPA 2018) was used to determine the method of disposal. Rehabilitation onsite will be an option for the impacted soil on the site.

4 Site Details

The Forico Surrey Hills Mill is located near Hampshire. The north crane mound is located in the northeast corner of the mill site.

Figure 1: Site overview

Figure 2 Northern Mound

5 Methodology

Sampling was divided into three areas:

- The area directly east of the crane mound where material from the South Crane mound was historically stored for rehabilitation
- The area to the north and west of the crane mound where material from an unknown source has been stockpiled
- The North Crane mound itself, extending as far as the former location of the outer rail

Each auger hole was drilled to the point of refusal.

On the 8th of May 2025 10 holes were drilled using a trailer mounted drill with a 4-inch auger bit.

A further 17 samples were collected on the 16th of May 2025 from 7 trenches dug using a 2- ton excavator.

Figure 3: View to the south on the eastern side of the crane mound with borehole N03 in foreground

Figure 4: Soil sampling locations

5.1 Soil

Ten bores were drilled using a trailer mounted auger with a 4-inch auger bit. Samples were collected at a depth of 0.6m-0.8m and a further sample was taken at the bottom of each hole when the auger met refusal, between 1.2m and 1.7m.

Trenches were dug using an excavator in two stages, to a depth of ~0.7m and then to natural soil depth, between 1.7m- 2.5m below the top of the crane mound. Samples were collected for each stage.

Samples were collected according to AS 4482.1 (2005) and AS 4482.2 either with a hand trowel or by hand, depending on soil density, with the sampler wearing single-use nitrile gloves. Soil was placed directly into glass jars and into a chilled Esky before being sent to the laboratory overnight for analysis.

5.2 Vapour

Vapour readings were obtained using a calibrated photo ionization detector (PID).

Readings from boreholes were taken immediately following the extraction of the auger for each hole and immediately following each stage of excavation of the trenches. Rainfall was below 25mm during the 48 hours prior to sampling each day, which complies with *Technical Report for Petroleum Vapour Intrusion (PVI) Guidance*.

5.3 Analysis

Analysis of soil samples was completed by ALS Laboratory Springvale. ALS are NATA accredited for the tests completed in this report.

Each sample was assayed for TRH/TPH hydrocarbons and BTEXN (benzene, toluene, ethylbenzene, xylenes and naphthalene).

6 Results

Soil results are compared against NEPM Health Screening Levels (HSLs), Health Investigation Levels (HILs) and Ecological Screening Levels (ESLs) in Table 1 below. Commercial and industrial, sandy/coarse soil limits were used for comparison.

Table 2 compares soil results with EPA Tasmania's Information Bulletin 105 (IB105) concentration limits for C10-C36 hydrocarbons for Level 1 and Level 2 contaminated soil.

Figures with an "< "symbol indicate that results are below the laboratory's limit of reporting (LOR).

Table 1: Laboratory results

Sample ID	Site ID	Sample Depth	F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Total Xylenes
HSL D 0-1m (Clay)							4	NL	NL	NL
HSL D 1-2m (clay)							6			
ESL Commercial/ Industrial					2500	6600	95	135	185	95
Borehole samples										
NC01	N01	0.9-1.0	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC02	N02	0.7-0.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC03	N03	0.7-0.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC04	N04	0.7-0.8	<10	<50	150	<100	<0.2	<0.5	<0.5	<0.5
NC05	N05	0.6-0.7	<10	<50	1520	370	<0.2	<0.5	<0.5	<0.5
NC06	N06	0.6-0.7	<10	<50	1010	290	<0.2	<0.5	<0.5	<0.5
NC07	N06	1.3-1.5	<10	<50	1080	290	<0.2	<0.5	<0.5	<0.5
NC08	N07	0.7-0.9	<10	<50	670	180	<0.2	<0.5	<0.5	<0.5
NC09	N08	0.3-0.4	<10	<50	1130	290	<0.2	<0.5	<0.5	<0.5
NC10	N08	1.0-1.2	<10	<50	910	250	<0.2	<0.5	<0.5	<0.5
NC11	N09	0.3-0.4	<10	<50	780	210	<0.2	<0.5	<0.5	<0.5
NC12	N09	1.4-1.5	<10	<50	1260	320	<0.2	<0.5	<0.5	<0.5
NC13	N10	0.9-1.0	<10	<50	620	170	<0.2	<0.5	<0.5	<0.5
NC14	N10	1.6-1.7	<10	<50	660	160	<0.2	<0.5	<0.5	<0.5
Trench Samples										
NC15	N11	0.5	<10	<50	400	<100	<0.2	<0.5	<0.5	<0.5
NC16	N11	1.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC17	N12	0.5	<10	<50	340	<100	<0.2	<0.5	<0.5	<0.5
NC18	N12	1.7	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC19	N13	0.7	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC20	N13	1.9	<10	<50	200	<100	<0.2	<0.5	<0.5	<0.5
NC21	N13	1.9	<10	<50	280	<100	<0.2	<0.5	<0.5	<0.5
NC22	N14	2	<10	<50	290	110	<0.2	<0.5	<0.5	<0.5
NC23	N15	1.9	<10	<50	240	110	<0.2	<0.5	<0.5	<0.5
NC24	N16	1.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC25	N17	1.8	<10	<50	240	<100	<0.2	<0.5	<0.5	<0.5
NC26	N18	0.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC27	N18	1.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC28	N19	0.6	<10	<50	280	<100	<0.2	<0.5	<0.5	<0.5
NC29	N19	2.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC30	N20	0.6	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
NC31	N20	2	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5

Table 2: Comparison of results with IB105 Maximum Concentration Levels for C10-C36 Petroleum Hydrocarbons

Site ID	Sample ID	C10-C36 TPH (mg/kg)
Level 1: Fill material		**1000mg/kg**
Level 2: Low level contaminated soil		**5000mg/kg**
N04	NC04	110
N05	NC05	**1700**
N06	NC06	**1140**
N06	NC07	**1210**
N07	NC08	750
N08	NC09	**1260**
N08	NC10	**1020**
N09	NC11	870
N09	NC12	**1410**
N10	NC13	700
N10	NC14	740
N11	NC15	450
N12	NC17	400
N13	NC20	170
N13	NC21	340
N14	NC22	350
N15	NC23	210
N17	NC25	280
N19	NC28	330

6.1 QA/QC

6.1.1 Laboratory QA/QC

ALS produce a laboratory QA/QC certificate with each certificate of analysis. This shows results for method blank, duplicate, lab control, matrix spike and surrogate recovery tests, as well as holding time and QA/QC sample frequency compliancy.

- EM2508079 (soil 1) - no QA/QC outliers existed.
- (soil 2) - holding time outliers existed for analysis of some VOCs (styrene and vinyl chloride). As these results were <LOR, this breach can be considered minor.

6.1.2 Field QA/QC

One field duplicate was taken for this report; N21 is a soil duplicate of N20, taken at 1.9m depth during the second stage of sampling by excavator. Relative percent differences (RPD) of this pair are given below in Table 3. Limits are based on the limits ALS uses, the rules of which are shown in Table 3. RPDs were all within limits.

Table 3: Soil RPDs

Analyte	Units	LOR	NC20	NC21	RPD < 70%
Moisture Content	%	1	37.3	37.6	0.79
Total Petroleum Hydrocarbons					
C6 - C9 Fraction	mg/kg	10	<10	<10	
C10 - C14 Fraction	mg/kg	50	<50	<50	
C15 - C28 Fraction	mg/kg	100	<100	120	
C29 - C36 Fraction	mg/kg	100	170	220	22.72
C10 - C36 Fraction (sum)	mg/kg	50	170	340	50
Total Recoverable Hydrocarbons					
C6 - C10 Fraction	mg/kg	10	<10	<10	
C6 - C10 Fraction minus BTEX (F1)	mg/kg	10	<10	<10	
>C10 - C16 Fraction	mg/kg	50	<50	<50	
>C16 - C34 Fraction	mg/kg	100	200	280	28.57
>C34 - C40 Fraction	mg/kg	100	<100	<100	
>C10 - C40 Fraction (sum)	mg/kg	50	200	280	28.57
>C10 - C16 Fraction minus Naphthalene (F2)	mg/kg	50	<50	<50	
BTEXN					
Benzene	mg/kg	0.2	<0.2	<0.2	
Toluene	mg/kg	0.5	<0.5	<0.5	
Ethylbenzene	mg/kg	0.5	<0.5	<0.5	
meta- & para-Xylene	mg/kg	0.5	<0.5	<0.5	
ortho-Xylene	mg/kg	0.5	<0.5	<0.5	
Total Xylenes	mg/kg	0.5	<0.5	<0.5	
Sum of BTEX	mg/kg	0.2	<0.2	<0.2	
Naphthalene	mg/kg	1	<1	<1	

Table 4: ALS RPD rules

Result	RPD limit
< 10x LOR	No limit
10x-20x LOR	50%
> 20x LOR	20%

7 Discussion

Soil and vapour results show that the level of F3 and F4 petroleum hydrocarbons in the samples taken are all below NEPM health and ecological guideline trigger values. No benzene was detected in any sample.

7 samples from 4 boreholes were assessed as Level 2 low level contaminated soil under the IB105 (Table 2) with C10-C36 levels >1000mg/kg. In addition, 4 further samples from 3 boreholes, N07, N09 and N10, had results over 700mg/kg. These holes are all located on the northwest side of the crane mound outside of the rail line.

The source of contamination in this area is likely to be the material which has been stockpiled in this area.

Figure 5: Sites with results assessed as Level 2 soils under IB105 (red circles)

8 Conclusions and Recommendations

No soil samples exceeded Health Screening Levels (HSL), allowing the site to be used for commercial development. All samples were below ESL, indicating no need for soil removal due to acceptable risk to ecological receptors, even if a pathway did exists to receptors. If soil is removed as waste, areas with Level 2 material require EPA approval and disposal at a Level 2 landfill.

Although samples did not exceed health and environmental limits, Table 5 shows that some of the soil on site is classified as Level 2 contaminated soil. This will need to be taken into consideration during excavation and transport of soil if required.

Management Measures:

Material excavated from the north and west sides of the North Crane mound should be turned over to natural ground level, approximately 1.8m and sprayed with soil conditioner (microbs), to allow for the dissipation / remediation of remaining petroleum hydrocarbons in the soil. This is recommended but is not necessary.

The area can be recontoured according to construction requirements. There are no restrictions on using soil for recontouring, but Level 2 material is preferably used away from enclosed areas. If soil needs to be removed from the site, there are no restrictions except that it is preferable to leave Level 2 material on the site. EPA approval is required before it is removed.

References

National Environmental Protection (Assessment of Site Contamination) Measure, *Guideline on the Investigation Levels for Soil and Groundwater*, Schedule B (1), (1999) as amended 2013

National Environmental Protection (Assessment of Site Contamination) Measure, *Guideline on the Investigation Levels for Soil and Groundwater*, Schedule B (2), (1999) as amended 2013

Land Information System Tasmania (TheLIST) www.thelist.tas.gov.au

Technical Report for Petroleum Vapour Intrusion (PVI) Guidance
https://crccare.com/wpcontent/uploads/2022/12/CRCCARETechreport23-PetroleumhydrocarbonvapourintrusionassessmentAustralianguidance2.pdf

BOM climate data online http://www.bom.gov.au/climate/data/?ref=ftr

EPA Tasmania Information Bulletin 105 Classification and Management of Contaminated Soil for Disposal

https://epa.tas.gov.au/Documents/Information%20Bulletin%20105%20-%20Classification%20of%20Contaminated%20Soils%20%28IB105%29%20V3_2018.pdf

Appendix

Appendix 1 – Laboratory Certificates

CERTIFICATE OF ANALYSIS

Work Order	: **EM2508079**	Page	: 1 of 9
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: ALL REPORTS	Contact	: Hannah White
Address	: 80 MINNA ROAD PO BOX 651 HEYBRIDGE TASMANIA, AUSTRALIA 7316	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6442 4037	Telephone	: +61-3-8549 9600
Project	: 9710-Forico-Crane Decontamination	Date Samples Received	: 12-May-2025 11:04
Order number	: ----	Date Analysis Commenced	: 15-May-2025
C-O-C number	: ----	Issue Date	: 19-May-2025 15:11
Sampler	: MAJA ASPAAS		
Site	: HAMPSHIRE		
Quote number	: EN/222		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC01	NC02	NC03	NC04	NC05
			Sampling date / time	08-May-2025 10:55	08-May-2025 11:22	08-May-2025 11:56	08-May-2025 12:15	08-May-2025 12:29
Compound	CAS Number	LOR	Unit	EM2508079-001	EM2508079-002	EM2508079-003	EM2508079-004	EM2508079-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**15.8**	**10.2**	**10.0**	**28.7**	**20.5**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	**650**
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	**110**	**1050**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	**110**	**1700**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	**150**	**1520**
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	**370**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	**150**	**1890**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**99.4**	**102**	**105**	**98.8**	**91.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC01	NC02	NC03	NC04	NC05
				Sampling date / time	08-May-2025 10:55	08-May-2025 11:22	08-May-2025 11:56	08-May-2025 12:15	08-May-2025 12:29
Compound	CAS Number	LOR	Unit		EM2508079-001	EM2508079-002	EM2508079-003	EM2508079-004	EM2508079-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**90.8**	**93.0**	**91.4**	**89.4**	**82.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**94.4**	**96.2**	**93.4**	**95.0**	**89.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC06	NC07	NC08	NC09	NC10
			Sampling date / time	08-May-2025 13:44	08-May-2025 13:58	08-May-2025 14:12	08-May-2025 14:20	08-May-2025 14:36
Compound	CAS Number	LOR	Unit	EM2508079-006	EM2508079-007	EM2508079-008	EM2508079-009	EM2508079-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**19.8**	**18.1**	**22.5**	**16.6**	**22.6**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	**430**	**470**	**300**	**510**	**400**
C29 - C36 Fraction	----	100	mg/kg	**710**	**740**	**450**	**750**	**620**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**1140**	**1210**	**750**	**1260**	**1020**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	**1010**	**1080**	**670**	**1130**	**910**
>C34 - C40 Fraction	----	100	mg/kg	**290**	**290**	**180**	**290**	**250**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**1300**	**1370**	**850**	**1420**	**1160**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**104**	**96.5**	**101**	**104**	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC06	NC07	NC08	NC09	NC10
				Sampling date / time	08-May-2025 13:44	08-May-2025 13:58	08-May-2025 14:12	08-May-2025 14:20	08-May-2025 14:36
Compound	CAS Number	LOR	Unit		EM2508079-006	EM2508079-007	EM2508079-008	EM2508079-009	EM2508079-010
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**91.9**	**84.6**	**84.3**	**88.2**	**85.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**95.7**	**90.5**	**87.9**	**94.1**	**91.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC11	NC12	NC13	NC14	----
			Sampling date / time	08-May-2025 14:47	08-May-2025 14:56	08-May-2025 15:02	08-May-2025 15:12	----
Compound	CAS Number	LOR	Unit	EM2508079-011	EM2508079-012	EM2508079-013	EM2508079-014	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**23.9**	**18.1**	**18.6**	**22.0**	**----**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	**----**
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	**----**
C15 - C28 Fraction	----	100	mg/kg	**350**	**570**	**280**	**300**	**----**
C29 - C36 Fraction	----	100	mg/kg	**520**	**840**	**420**	**440**	**----**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**870**	**1410**	**700**	**740**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	**----**
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	**----**
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	**----**
>C16 - C34 Fraction	----	100	mg/kg	**780**	**1260**	**620**	**660**	**----**
>C34 - C40 Fraction	----	100	mg/kg	**210**	**320**	**170**	**160**	**----**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**990**	**1580**	**790**	**820**	**----**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	**----**
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	**----**
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	**----**
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**109**	**115**	**105**	**109**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC11	NC12	NC13	NC14	----
				Sampling date / time	08-May-2025 14:47	08-May-2025 14:56	08-May-2025 15:02	08-May-2025 15:12	----
Compound	CAS Number	LOR	Unit		EM2508079-011	EM2508079-012	EM2508079-013	EM2508079-014	--------
					Result	Result	Result	Result	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**94.3**	**94.9**	**86.4**	**89.8**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**97.8**	**95.2**	**94.5**	**95.4**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124

QUALITY CONTROL REPORT

Work Order	: **EM2508079**	Page	: 1 of 5
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: ALL REPORTS	Contact	: Hannah White
Address	: 80 MINNA ROAD PO BOX 651 HEYBRIDGE TASMANIA, AUSTRALIA 7316	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6442 4037	Telephone	: +61-3-8549 9600
Project	: 9710-Forico-Crane Decontamination	Date Samples Received	: 12-May-2025
Order number	: ----	Date Analysis Commenced	: 15-May-2025
C-O-C number	: ----	Issue Date	: 19-May-2025
Sampler	: MAJA ASPAAS		
Site	: HAMPSHIRE		
Quote number	: EN/222		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6577846)									
EM2508079-001	NC01	EA055: Moisture Content	----	0.1 (1.0)*	%	15.8	13.9	12.5	0% - 50%
EM2508079-011	NC11	EA055: Moisture Content	----	0.1 (1.0)*	%	23.9	22.1	7.7	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6574213)									
EM2507914-043	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2508079-005	NC05	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6574300)									
EM2508079-001	NC01	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2508093-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	560	540	4.8	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	440	430	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6574213)									
EM2507914-043	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2508079-005	NC05	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6574300)									
EM2508079-001	NC01	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2508093-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	750	730	3.1	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6574300) - continued									
EM2508093-001	Anonymous	EP071: >C34 - C40 Fraction	----	100	mg/kg	600	560	5.7	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	130	120	9.1	No Limit
EP080: BTEXN (QC Lot: 6574213)									
EM2507914-043	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EM2508079-005	NC05	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6574213)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	105	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6574300)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	810 mg/kg	108	80.0	120
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	2880 mg/kg	108	80.0	120
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1460 mg/kg	107	80.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6574213)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	105	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6574300)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1120 mg/kg	111	80.0	120
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3800 mg/kg	106	80.0	120
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	260 mg/kg	114	80.0	120
EP080: BTEXN (QCLot: 6574213)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	98.4	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	97.2	65.8	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	97.1	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	102	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	103	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	90.0	61.8	123

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6574213)							
EM2507967-006	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	86.3	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6574300)							
EM2508079-002	NC02	EP071: C10 - C14 Fraction	----	810 mg/kg	110	70.0	130
		EP071: C15 - C28 Fraction	----	2880 mg/kg	109	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6574300) - continued							
EM2508079-002	NC02	EP071: C29 - C36 Fraction	----	1460 mg/kg	108	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6574213)							
EM2507967-006	Anonymous	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	83.1	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6574300)							
EM2508079-002	NC02	EP071: >C10 - C16 Fraction	----	1120 mg/kg	113	70.0	130
		EP071: >C16 - C34 Fraction	----	3800 mg/kg	108	70.0	130
		EP071: >C34 - C40 Fraction	----	260 mg/kg	114	70.0	130
EP080: BTEXN (QCLot: 6574213)							
EM2507967-006	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	96.4	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	97.0	57.1	131

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2508079**	Page	: 1 of 5
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: ALL REPORTS	Telephone	: +61-3-8549 9600
Project	: 9710-Forico-Crane Decontamination	Date Samples Received	: 12-May-2025
Site	: HAMPSHIRE	Issue Date	: 19-May-2025
Sampler	: MAJA ASPAAS	No. of samples received	: 14
Order number	: ----	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**----**	----	----	**15-May-2025**	22-May-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**15-May-2025**	22-May-2025	✓	**15-May-2025**	22-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**16-May-2025**	22-May-2025	✓	**16-May-2025**	25-Jun-2025	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**15-May-2025**	22-May-2025	✓	**15-May-2025**	22-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**16-May-2025**	22-May-2025	✓	**16-May-2025**	25-Jun-2025	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
NC01, NC02, NC03, NC04, NC05, NC06, NC07, NC08, NC09, NC10, NC11, NC12, NC13, NC14	**08-May-2025**	**15-May-2025**	22-May-2025	✓	**15-May-2025**	22-May-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH - Semivolatile Fraction	EP071	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CERTIFICATE OF ANALYSIS

Work Order	: **EM2508644**	Page	: 1 of 11
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR ROD COOPER	Contact	: Hannah White
Address	: 80 MINNA ROAD PO BOX 651 HEYBRIDGE TASMANIA, AUSTRALIA 7316	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6431 2999	Telephone	: +61-3-8549 9600
Project	: 9710 - Forico - Crane Decontamination	Date Samples Received	: 20-May-2025 10:55
Order number	: ----	Date Analysis Commenced	: 20-May-2025
C-O-C number	: ----	Issue Date	: 23-May-2025 10:15
Sampler	: MAJA ASPAAS		
Site	: Hampshire		
Quote number	: EN/222		
No. of samples received	: 17		
No. of samples analysed	: 17		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Sample 001, 004, 011 was received broken.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC15	NC16	NC17	NC18	NC19
			Sampling date / time	16-May-2025 11:21	16-May-2025 11:42	16-May-2025 12:00	16-May-2025 12:11	16-May-2025 12:26
Compound	CAS Number	LOR	Unit	EM2508644-001	EM2508644-002	EM2508644-003	EM2508644-004	EM2508644-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**38.6**	**35.2**	**32.9**	**29.2**	**39.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	**160**	<100	**140**	<100	<100
C29 - C36 Fraction	----	100	mg/kg	**290**	<100	**260**	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**450**	<50	**400**	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	**400**	<100	**340**	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**400**	<50	**340**	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**90.0**	**84.3**	**78.3**	**84.0**	**78.3**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC15	NC16	NC17	NC18	NC19
				Sampling date / time	16-May-2025 11:21	16-May-2025 11:42	16-May-2025 12:00	16-May-2025 12:11	16-May-2025 12:26
Compound	CAS Number	LOR	Unit		EM2508644-001	EM2508644-002	EM2508644-003	EM2508644-004	EM2508644-005
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**92.4**	**86.8**	**83.6**	**88.0**	**81.1**
4-Bromofluorobenzene	460-00-4	0.2	%		**113**	**104**	**99.8**	**104**	**96.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC20	NC21	NC22	NC23	NC24
				Sampling date / time	16-May-2025 12:48	16-May-2025 12:56	16-May-2025 13:12	16-May-2025 13:38	16-May-2025 13:55
Compound	CAS Number	LOR	Unit		EM2508644-006	EM2508644-007	EM2508644-008	EM2508644-009	EM2508644-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**37.3**	**37.6**	**37.0**	**39.3**	**35.7**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	**120**	**140**	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**170**	**220**	**210**	**210**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**170**	**340**	**350**	**210**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**200**	**280**	**290**	**240**	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	**110**	**110**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**200**	**280**	**400**	**350**	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**76.5**	**77.8**	**80.5**	**75.2**	**64.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC20	NC21	NC22	NC23	NC24
				Sampling date / time	16-May-2025 12:48	16-May-2025 12:56	16-May-2025 13:12	16-May-2025 13:38	16-May-2025 13:55
Compound	CAS Number	LOR	Unit		EM2508644-006	EM2508644-007	EM2508644-008	EM2508644-009	EM2508644-010
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**79.6**	**80.4**	**81.6**	**78.8**	**65.9**
4-Bromofluorobenzene	460-00-4	0.2	%		**93.8**	**94.3**	**93.4**	**91.9**	**80.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC25	NC26	NC27	NC28	NC29
			Sampling date / time	16-May-2025 14:02	16-May-2025 13:59	16-May-2025 14:15	16-May-2025 14:32	16-May-2025 14:44
Compound	CAS Number	LOR	Unit	EM2508644-011	EM2508644-012	EM2508644-013	EM2508644-014	EM2508644-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**27.4**	**14.1**	**33.7**	**36.2**	**35.0**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	**100**	<100	<100	**110**	<100
C29 - C36 Fraction	----	100	mg/kg	**180**	<100	<100	**220**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**280**	<50	<50	**330**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	**240**	<100	<100	**280**	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**240**	<50	<50	**280**	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**74.6**	**81.0**	**80.3**	**88.0**	**67.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC25	NC26	NC27	NC28	NC29
			Sampling date / time	16-May-2025 14:02	16-May-2025 13:59	16-May-2025 14:15	16-May-2025 14:32	16-May-2025 14:44
Compound	CAS Number	LOR	Unit	EM2508644-011	EM2508644-012	EM2508644-013	EM2508644-014	EM2508644-015
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued								
Toluene-D8	2037-26-5	0.2	%	**79.3**	**86.1**	**81.9**	**92.7**	**69.2**
4-Bromofluorobenzene	460-00-4	0.2	%	**93.0**	**101**	**97.0**	**108**	**81.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	NC30	NC31	----	----	----
			Sampling date / time	16-May-2025 15:11	16-May-2025 15:25	----	----	----
Compound	CAS Number	LOR	Unit	EM2508644-016	EM2508644-017	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**32.7**	**33.8**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**81.5**	**64.8**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	NC30	NC31	----	----	----
				Sampling date / time	16-May-2025 15:11	16-May-2025 15:25	----	----	----
Compound	CAS Number	LOR	Unit		EM2508644-016	EM2508644-017	--------	--------	--------
					Result	Result	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
Toluene-D8	2037-26-5	0.2	%		**86.4**	**66.5**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	0.2	%		**103**	**78.4**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	51	125
Toluene-D8	2037-26-5	55	125
4-Bromofluorobenzene	460-00-4	56	124

QUALITY CONTROL REPORT

Work Order	: **EM2508644**	Page	: 1 of 5
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR ROD COOPER	Contact	: Hannah White
Address	: 80 MINNA ROAD PO BOX 651 HEYBRIDGE TASMANIA, AUSTRALIA 7316	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: +61 03 6431 2999	Telephone	: +61-3-8549 9600
Project	: 9710 - Forico - Crane Decontamination	Date Samples Received	: 20-May-2025
Order number	: ----	Date Analysis Commenced	: 20-May-2025
C-O-C number	: ----	Issue Date	: 23-May-2025
Sampler	: MAJA ASPAAS		
Site	: Hampshire		
Quote number	: EN/222		
No. of samples received	: 17		
No. of samples analysed	: 17		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	2IC Organic Chemist	Melbourne Organics, Springvale, VIC

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6589580)									
EM2508619-001	Anonymous	EA055: Moisture Content	----	0.1	%	<0.1	<0.1	0.0	No Limit
EM2508644-010	NC24	EA055: Moisture Content	----	0.1 (1.0)*	%	35.7	37.6	5.3	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6589295)									
EM2508644-001	NC15	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM2508644-011	NC25	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6589864)									
EM2508644-001	NC15	EP071: C15 - C28 Fraction	----	100	mg/kg	160	140	15.7	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	290	270	8.5	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2508644-011	NC25	EP071: C15 - C28 Fraction	----	100	mg/kg	100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	180	180	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6589295)									
EM2508644-001	NC15	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EM2508644-011	NC25	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6589864)									
EM2508644-001	NC15	EP071: >C16 - C34 Fraction	----	100	mg/kg	400	360	11.2	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM2508644-011	NC25	EP071: >C16 - C34 Fraction	----	100	mg/kg	240	230	5.8	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6589864) - continued									
EM2508644-011	NC25	EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 6589295)									
EM2508644-001	NC15	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EM2508644-011	NC25	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6589295)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	36 mg/kg	86.3	58.6	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6589864)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	810 mg/kg	94.0	80.0	120
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	2880 mg/kg	92.7	80.0	120
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	1460 mg/kg	96.1	80.0	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6589295)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	82.3	59.3	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6589864)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	1120 mg/kg	93.2	80.0	120
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	3800 mg/kg	92.8	80.0	120
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	260 mg/kg	93.5	80.0	120
EP080: BTEXN (QCLot: 6589295)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	84.1	61.6	117
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	88.3	65.8	125
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	87.8	65.8	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	93.3	64.8	134
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	99.4	68.7	132
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	109	61.8	123

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6589295)							
EM2508644-002	NC16	EP080: C6 - C9 Fraction	----	28 mg/kg	65.8	33.4	124
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6589864)							
EM2508644-002	NC16	EP071: C10 - C14 Fraction	----	810 mg/kg	92.6	70.0	130
		EP071: C15 - C28 Fraction	----	2880 mg/kg	91.4	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6589864) - continued							
EM2508644-002	NC16	EP071: C29 - C36 Fraction	----	1460 mg/kg	94.3	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6589295)							
EM2508644-002	NC16	EP080: C6 - C10 Fraction	C6_C10	33 mg/kg	61.6	30.8	120
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6589864)							
EM2508644-002	NC16	EP071: >C10 - C16 Fraction	----	1120 mg/kg	91.5	70.0	130
		EP071: >C16 - C34 Fraction	----	3800 mg/kg	91.3	70.0	130
		EP071: >C34 - C40 Fraction	----	260 mg/kg	91.0	70.0	130
EP080: BTEXN (QCLot: 6589295)							
EM2508644-002	NC16	EP080: Benzene	71-43-2	2 mg/kg	66.8	54.4	127
		EP080: Toluene	108-88-3	2 mg/kg	72.6	57.1	131

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EM2508644**	Page	: 1 of 5
Client	: **ENVIRONMENTAL SERVICE AND DESIGN PTY LTD**	Laboratory	: Environmental Division Melbourne
Contact	: MR ROD COOPER	Telephone	: +61-3-8549 9600
Project	: 9710 - Forico - Crane Decontamination	Date Samples Received	: 20-May-2025
Site	: Hampshire	Issue Date	: 23-May-2025
Sampler	: MAJA ASPAAS	No. of samples received	: 17
Order number	: ----	No. of samples analysed	: 17

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
NC15, NC16, NC17, NC18, NC19, NC20, NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**----**	----	----	**20-May-2025**	30-May-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
NC15, NC16, NC17, NC18, NC19, NC20, NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**20-May-2025**	30-May-2025	✓	**21-May-2025**	30-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC15, NC16, NC17, NC18, NC19, NC20	**16-May-2025**	**21-May-2025**	30-May-2025	✓	**21-May-2025**	30-Jun-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**21-May-2025**	30-May-2025	✓	**22-May-2025**	30-Jun-2025	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
NC15, NC16, NC17, NC18, NC19, NC20, NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**20-May-2025**	30-May-2025	✓	**21-May-2025**	30-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC15, NC16, NC17, NC18, NC19, NC20	**16-May-2025**	**21-May-2025**	30-May-2025	✓	**21-May-2025**	30-Jun-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**21-May-2025**	30-May-2025	✓	**22-May-2025**	30-Jun-2025	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
NC15, NC16, NC17, NC18, NC19, NC20, NC21, NC22, NC23, NC24, NC25, NC26, NC27, NC28, NC29, NC30, NC31	**16-May-2025**	**20-May-2025**	30-May-2025	✓	**21-May-2025**	30-May-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Appendix F

Environment Protection Notice (EPN) No 7476/4

ENVIRONMENT PROTECTION NOTICE No. 7476/4

Issued under the *Environmental Management and Pollution Control Act 1994*

Issued to: **FORICO PTY LIMITED**
ACN 169 204 059
10 TECHNO PARK DR
KINGS MEADOWS TAS 7249

Environmentally Relevant Activity: **The operation of a woodchip mill (ACTIVITY TYPE: Woodchip Mills)**
SURREY HILLS WOODCHIP MILL, 2753 RIDGLEY HWY
HAMPSHIRE TAS 7321

GROUNDS

I, Wes Ford, Director, Environment Protection Authority, (the Director), being satisfied in accordance with section 44(1)(d) of the *Environmental Management and Pollution Control Act 1994* (EMPCA) that in relation to the above-mentioned environmentally relevant activity that it is desirable to vary the conditions of a permit (see table below) hereby issue this environment protection notice to the above-mentioned person as the person responsible for the activity.

Permit No.	Date Granted	Granted By
5937	16 February 1994	Director of Environmental Control

PARTICULARS

The particulars of the grounds upon which this notice is issued are:

1 The permit conditions need to be varied to reflect current or updated terminology and/or to clarify the meaning of the conditions.

2 The permit conditions refer to *The Environment Protection Act 1973* which has been repealed and replaced by the EMPCA. It is necessary to vary condition(s) remove references to the repealed Act.

3 A regulatory limit which sets the maximum scale or throughput of the activity is needed because any increase in scale or throughput may result in additional environmental impacts or emissions that were not considered at the time of granting of the permit.

4 Conditions are needed to bring the permit into accordance with the development and planning requirements under the EMPCA and the *Land Use and Planning Approvals Act 1993*.

5 A condition requiring notification of a change of ownership of The Land is needed because this Notice may affect title to land and the new owner's interests may be affected by pollutants emitted or disturbed by the activity.

6 It is necessary to add a condition requiring a public complaints register to be maintained so that the Director can appraise the frequency and characteristics of complaints which may indicate nuisance should any complaints be received.

7 It is necessary to add a condition requiring the submission of a publicly available Annual Environmental Review to inform the Director and the public of the environmental performance of the activity.

8 The permit does not have specific and measurable limits for effluent quality for water being discharged from The Land. A condition is needed to control emissions from the activity and to impose limits upon those emissions to reflect current State Policies or Environment Protection Policies.

9 Conditions are required to ensure that infrastructure to manage water traversing and discharged from The Land is maintained so that the infrastructure functions as designed and effectively controls water to minimise environmental harm and/or nuisance.

10 The permit does not contain conditions in relation to dealing with environmentally hazardous substances. Environmentally hazardous substances are likely to be stored and handled on The Land and current best practice environmental management necessitates conditions to be added for the storage and handling of environmentally hazardous substances.

11 The permit does not have a condition requiring the provision of spill kits. It is desirable to add a condition requiring provision, in suitable locations, of spill kits appropriate for the environmental hazardous substances held on The Land for use in any incident to minimise the emissions of a pollutant into the environment.

12 Monitoring and reporting requirements set out in the permit conditions need to be varied to reflect current best practice environmental management and to require accurate measurement of emissions and their impact upon the receiving environment and to consistently inform the Director of the results of monitoring.

13 The permit does not contain conditions in relation to the adequate management of the activity and/or The Land should the activity temporarily suspend operations. It is necessary to add a condition requiring management of the activity during temporarily suspended operations.

14 It is desirable to add a condition to require management and monitoring of the contaminated soil temporarily stockpiled on the North Crane Mound on The Land to reduce environmental liabilities.

15 Permit conditions G4 and G5 need to be removed to reflect that specific requirements are no longer applicable because they reference documents relating to the activity that have been superseded or are now redundant.

16 It is necessary to remove permit conditions G6, E1, N1 and N2 because they detail requirements that have been fulfilled and/or are no longer required.

17 It is necessary to remove condition S1 because the requirement is a legal obligation under the EMPCA and Regulations thereunder and references a document relating to the activity that has been superseded or is now redundant.

DEFINITIONS

Unless the contrary appears, words and expressions used in this Notice have the meaning given to them in Schedule 1 of this Notice and in the EMPCA. If there is any inconsistency between a definition in the EMPCA and a definition in this Notice, the EMPCA prevails to the extent of the inconsistency.

REQUIREMENTS

The person responsible for the activity must comply with the varied permit conditions as set out in Schedule 2 of this Notice.

INFORMATION

Attention is drawn to **Schedule 3**, which contains important additional information.

PENALTIES

If a person bound by an environment protection notice contravenes a requirement of the notice, that person is guilty of an offence and is liable on summary conviction to a penalty not exceeding 1000 penalty units in the case of a body corporate or 500 penalty units in any other case (at the time of issuance of this Notice one penalty unit is equal to $154.00).

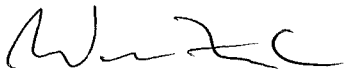
NOTICE TAKES EFFECT

This notice takes effect on the date on which it is served upon you.

APPEAL RIGHTS

You may appeal to the Appeal Tribunal against this notice, or against any requirement contained in the notice, within 14 days from the date on which the notice is served, by writing to:

The Chairperson
Resource Management and Planning Appeal Tribunal
GPO Box 2036
Hobart TAS 7001

Signed: 

DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date: 20/5/16

Table Of Contents

Attachments

Schedule 1: Definitions

Activity means any environmentally relevant activity (as defined in Section 3 of EMPCA) to which this document relates, and includes more than one such activity.

Authorized Officer means an authorized officer under section 20 of EMPCA.

Director means the Director, Environment Protection Authority holding office under Section 18 of EMPCA and includes a person authorised in writing by the Director to exercise a power or function on the Director's behalf.

DRP means Decommissioning and Rehabilitation Plan.

EMPCA means the *Environmental Management and Pollution Control Act 1994.*

Emu River Weir means the weir located on the Emu River at E 394712, N 5426583.

Environmental Harm and **Material Environmental Harm** and **Serious Environmental Harm** each have the meanings ascribed to them in Section 5 of EMPCA.

Environmental Nuisance and **Pollutant** each have the meanings ascribed to them in Section 3 of EMPCA.

Environmentally Hazardous Material means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.

Person Responsible is any person who is or was responsible for the environmentally relevant activity to which this document relates and includes the officers, employees, contractors, joint venture partners and agents of that person, and includes a body corporate.

Product means woodchips.

Reporting Period means the 12 months ending on 30 June of each year.

Stormwater means water traversing the surface of the land as a result of rainfall.

Tasmanian Noise Measurement Procedures Manual means the Noise Measurement Procedures Manual referred to in regulation 4 of the *Environmental Management and Pollution Control (Miscellaneous Noise) Regulations 2014.*

The Land means the land on which the activity to which this document relates may be carried out, and includes: buildings and other structures permanently fixed to the land, any part of the land covered with water, and any water covering the land. The Land falls within the area defined by:

1. the areas demarcated as Mill Industrial Site Boundary and Irrigation Area in Attachment 1 of this Notice; and
2. falls within the boundaries of Titles of Reference 164460/1 and 101903/1.

Waste has the meaning ascribed to it in Section 3 of EMPCA.

Schedule 2: Conditions

Maximum Quantities

Q1 Regulatory limits

1 The activity must not exceed the following limits (annual fees are derived from these figures):

1.1 1,600,000 tonnes per year of product.

1.2 5.8 megalitres per day of water drawn from the Emu River weir.

General

G1 Access to and awareness of conditions and associated documents

A copy of these conditions and any associated documents referred to in these conditions must be held in a location that is known to and accessible to the person responsible for the activity. The person responsible for the activity must ensure that all persons who are responsible for undertaking work on The Land, including contractors and sub-contractors, are familiar with these conditions to the extent relevant to their work.

G2 Incident response

If an incident causing or threatening environmental nuisance, serious environmental harm or material environmental harm from pollution occurs in the course of the activity, then the person responsible for the activity must immediately take all reasonable and practicable action to minimise any adverse environmental effects from the incident.

G3 No changes without approval

1 The following changes, if they may cause or increase the emission of a pollutant which may cause material or serious environmental harm or environmental nuisance, must only take place in relation to the activity if such changes have been approved in writing by the EPA Board following its assessment of an application for a permit under the *Land Use Planning and Approvals Act 1993*, or approved in writing by the Director:

1.1 a change to a process used in the course of carrying out the activity; or

1.2 the construction, installation, alteration or removal of any structure or equipment used in the course of carrying out the activity; or

1.3 a change in the quantity or characteristics of materials used in the course of carrying out the activity.

G4 Change of ownership

If the owner of The Land upon which the activity is carried out changes or is to change, then, as soon as reasonably practicable but no later than 30 days after becoming aware of the change or intended change in the ownership of The Land, the person responsible must notify the Director in writing of the change or intended change of ownership.

G5 Complaints register

1 A public complaints register must be maintained and made available for inspection by an Authorized Officer upon request. The public complaints register must, as a minimum, record the following detail in relation to each complaint received in which it is alleged that environmental harm (including an environmental nuisance) has been caused by the activity:

1.1 the time at which the complaint was received;

1.2 contact details for the complainant;

1.3 the subject-matter of the complaint;

1.4 any investigations undertaken with regard to the complaint; and

1.5 the manner in which the complaint was resolved, including any mitigation measures implemented.

2 Complaint records must be maintained for a period of at least 3 years.

G6 Annual Environmental Review

1 Unless otherwise specified in writing by the Director, a publicly available Annual Environmental Review for the activity must be submitted to the Director each year within three months of the end of the reporting period. Without limitation, each Annual Environmental Review must include the following information:

1.1 a statement by the General Manager, Chief Executive Officer or equivalent for the activity acknowledging the contents of the Annual Environmental Review;

1.2 subject to the *Personal Information Protection Act 2004*, a list of all complaints received from the public during the reporting period concerning actual or potential environmental harm or environmental nuisance caused by the activity and a description of any actions taken as a result of those complaints;

1.3 details of environment-related procedural or process changes that have been implemented during the reporting period;

1.4 a summary of the amounts (tonnes or litres) of both solid and liquid wastes produced and treatment methods implemented during the reporting period. Initiatives or programs planned to avoid, minimise, re-use, or recycle such wastes over the next reporting period should be detailed;

1.5 details of all non-trivial environmental incidents and/or incidents of non compliance with permit or environment protection notice conditions that occurred during the reporting period, and any mitigative or preventative actions that have resulted from such incidents;

1.6 a summary of the monitoring data and record keeping required by these conditions. This information should be presented in graphical form where possible, including comparison with the results of at least the preceding reporting period. Special causes and system changes that have impacted on the parameters monitored must be noted. Explanation of significant deviations between actual results and any predictions made in previous reports must be provided;

1.7 identification of breaches of limits specified in these conditions and significant variations from predicted results contained in any relevant DPEMP or EMP, an explanation of why each identified breach of specified limits or variation from predictions occurred and details of the actions taken in response to each identified breach of limits or variance from predictions;

1.8 a list of any issues, not discussed elsewhere in the report, that must be addressed to improve compliance with these conditions, and the actions that are proposed to address any such issues;

1.9 a summary of fulfilment of environmental commitments made for the reporting period. This summary must include indication of results of the actions implemented and explanation of any failures to achieve such commitments; and

1.10 a summary of any community consultation and communication undertaken during the reporting period.

Atmospheric

A1 Covering of vehicles

Vehicles carrying loads containing material which may blow or spill must be equipped with effective control measures to prevent the escape of the materials from the vehicles when they leave The Land or travel on public roads. Effective control measures may include tarpaulins and load dampening.

Effluent Disposal

E1 Effluent emissions

1 Polluted stormwater that will be discharged from The Land must be collected and treated prior to discharge to the extent necessary to prevent serious or material environmental harm, or environmental nuisance; and

2 All effluent emissions, including polluted stormwater, discharged from The Land must be visually free from grease, oil, solids and unnatural colouration; and

3 The pH of effluent discharged from The Land must be between 6.5 and 8.5; and

4 The concentration in the effluent discharged from The Land of the parameters listed in Column 1 of Table 1 below must not exceed the limits in Column 3 when measured in the units in Column 2.

5 **Table 1: Discharge limits for water discharged from The Land**

Column 1	Column 2	Column 3
Parameter	**Units**	**Emission limit**
Biochemical Oxygen Demand (BOD_5)	mg/L	40
Total Suspended Solids (TSS)	mg/L	60
Oil & Grease	mg/L	10

E2 Maintenance of settling ponds and drainage lines

Sediment settling ponds and open rip rap drainage lines on The Land must be periodically cleaned out to ensure that the design capacity and functionality is maintained. Sediment removed during this cleaning must be securely deposited such that sediment will not be transported off The Land by surface run-off.

Hazardous Substances

H1 Storage and handling of hazardous materials

1 Unless otherwise approved in writing by the Director, all environmentally hazardous materials, including all chemicals, fuels, and oils, held on The Land in volumes exceeding 250 litres must be stored and handled in accordance with the following:

1.1 Any storage facility must be contained within a spill collection bund with a net capacity of whichever is the greater of the following:

1.1.1 at least 110% of the combined volume of any interconnected vessels within that bund; or

1.1.2 at least 110% of the volume of the largest storage vessel; or

1.1.3 at least 25% of the total volume of all vessels stored in that spill collection bund; or

1.1.4 the capacity of the largest tank plus the output of any firewater system over a twenty minute period.

1.2 All activities that involve a significant risk of spillages, including the loading and unloading of bulk materials, must take place in a bunded containment area or on a transport vehicle loading apron.

1.3 Bunded containment areas and transport vehicle loading aprons must:

1.3.1 be made of materials that are impervious to any environmentally hazardous material stored within the bund;

1.3.2 be graded or drained to a sump to allow recovery of liquids;

1.3.3 be chemically resistant to the chemicals stored or transferred;

1.3.4 be designed and managed such that any leakage or spillage is contained within the bunded area (including where such leakage emanates vertically higher than the bund wall);

1.3.5 be designed and managed such that the transfer of materials is adequately controlled by valves, pumps and meters and other equipment wherever practical. The equipment must be adequately protected (for example, with bollards) and contained in an area designed to permit recovery of any released chemicals;

1.3.6 be designed such that chemicals which may react dangerously if they come into contact have measures in place to prevent mixing; and

1.3.7 be managed such that the capacity of the bund is maintained at all times (for example, by regular inspections and removal of obstructions).

H2 Hazardous materials (< 250 litres)

Unless otherwise approved in writing by the Director, each environmentally hazardous material, including chemicals, fuels and oils, held on The Land in discrete volumes not exceeding 250 litres, but not including discrete volumes of 25 litres or less, must, as far as practical and to the reasonable satisfaction of the Director, be located within bunded areas or spill trays which are designed to contain at least 110% of the volume of the largest container.

H3 Spill kits

Spill kits appropriate for the types and volumes of materials handled on The Land must be kept in appropriate locations to assist with the containment of spilt environmentally hazardous materials.

Monitoring

M1 Dealing with samples obtained for monitoring

1 Any sample or measurement required to be obtained under these conditions must be taken and processed in accordance with the following:

1.1 Australian Standards, NATA approved methods, the American Public Health Association Standard Methods for the Analysis of Water and Waste Water or other standard(s) approved in writing by the Director;

1.2 samples must be tested in a laboratory accredited by the National Association of Testing Authorities (NATA), or a laboratory approved in writing by the Director, for the specified test;

1.3 results of measurements and analysis of samples and details of methods employed in taking measurements and samples must be retained for at least three (3) years after the date of collection;

1.4 measurement equipment must be maintained and operated in accordance with manufacturer's specifications and records of maintenance must be retained for at least three (3) years; and

1.5 noise measurements must be undertaken in accordance with the Tasmanian Noise Measurement Procedures Manual.

M2 Groundwater monitoring for the irrigation area

1 Field measurement of groundwater in irrigation area monitoring bores TPB and DB5, as shown in Attachment 1 of this Notice, must be undertaken at the frequency specified in Column 3 of Table 2 below for the parameters specified in Column 1 and must be reported annually to the Director in the units specified in Column 2.

2 Table 2: Irrigation area groundwater monitoring requirements

Column 1 Parameters	Column 2 Units	Column 3 Frequency
Standing water level	M (above height Datum)	Quarterly
Oxygen-Reduction Potential	mV	Quarterly
Conductivity	µS/cm	Quarterly
pH	pH units	Quarterly

M3 Surface water and groundwater monitoring for the former crane mounds

1 Unless otherwise approved in writing by the Director the following monitoring must be undertaken.

2 Representative samples must be collected at the former north crane mound surface water monitoring locations NCM Surface Sample 1 and NCM Surface Sample 2, as shown in Attachment 2 of this Notice, at the frequency specified in Column 3 of Table 3 below and analysed for the parameters specified in Column 1 using the method specified in Column 4 and must be reported annually to the Director in the units specified in Column 2.

3 Table 3: Surface water monitoring requirements for the former north crane mound

Column 1 Parameters	Column 2 Units	Column 3 Frequency	Column 4 Method
pH	pH units	6 monthly	Field measurement
Conductivity	µS/cm	6 monthly	Field measurement
Biological Oxygen Demand (BOD_5)	mg/L	6 monthly	Laboratory Analysis
Total Residual Hydrocarbons (TRH) (F1 & F2)	µg/L	6 monthly	Laboratory Analysis

4 Representative samples must be collected at the former south crane mound groundwater monitoring bores A, B and C, as shown in Attachment 2 of this Notice, at the frequency specified in Column 3 of Table 4 below and analysed for the parameters specified in Column 1 using the method specified in Column 4 and must be reported annually to the Director in the units specified in Column 2.

5 Table 4: Former south crane mound groundwater monitoring requirements

Column 1 Parameters	Column 2 Units	Column 3 Frequency	Column 4 Method
pH	pH units	Quarterly	In field measurement
Conductivity	µS/cm	Quarterly	In field measurement
Total Dissolved Solids (TDS)	mg/L	Quarterly	Laboratory Analysis
Chemical Oxygen Demand (COD)	mg/L	Quarterly	Laboratory Analysis
Total Residual Hydrocarbons (TRH) (F2 & F3)	µg/L	Quarterly	Laboratory Analysis
Total Suspended Solids	mg/L	Quarterly	Laboratory Analysis

Rehabilitation

R1 Notification of cessation

Within 30 days of becoming aware of any event or decision which is likely to give rise to the permanent cessation of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to cease or has ceased.

R2 DRP requirements

Unless otherwise approved in writing by the Director, a Decommissioning and Rehabilitation Plan (DRP) for the activity must be submitted for approval to the Director within 30 days of the Director being notified of the planned cessation of the activity or by a date specified in writing by the Director. The DRP must be prepared in accordance with any guidelines provided by the Director.

R3 Implementation of the DRP

Following permanent cessation of the activity, rehabilitation of The Land must be carried out in accordance with the most recent Decommissioning and Rehabilitation Plan (DRP) approved by the Director.

R4 Temporary suspension of activity

1 Within 30 days of becoming aware of any event or decision which is likely to give rise to the temporary suspension of the activity, the person responsible for the activity must notify the Director in writing of that event or decision. The notice must specify the date upon which the activity is expected to suspend or has suspended.

2 During temporary suspension of the activity:

2.1 The Land must be managed and monitored by the person responsible for the activity to ensure that emissions from The Land do not cause serious environmental harm, material environmental harm or environmental nuisance; and

2.2 If required by the Director a Care and Maintenance Plan for the activity must be submitted, by a date specified in writing by the Director, for approval. The person responsible must implement the approved Care and Maintenance Plan, as may be amended from time to time with written approval of the Director.

3 Unless otherwise approved in writing by the Director, if the activity on The Land has substantially ceased for 2 years or more, rehabilitation of The Land must be carried out in accordance with the requirements of these conditions as if the activity has permanently ceased.

Waste Management

WM1 Stockpiled Contaminated Soil Management Plan

1 Within 18 months of the date of issue of this Notice, or by a date otherwise specified in writing by the Director, a Stockpiled Contaminated Soil Management Plan for the treatment, reuse, or disposal of contaminated soil located on the former north crane mound must be submitted to the Director for approval.

2 The plan must be prepared in accordance with any reasonable guidelines provided by the Director.

3 Without limitation, the plan must include details of the following:

3.1 details of how the stockpiled contaminated soil will be treated, reused or disposed of;

3.2 a table containing all of the major commitments made in the plan;

3.3 an implementation timetable for key aspects of the plan; and

3.4 a reporting program to regularly advise the Director of the results of the plan.

4 The person responsible must implement and act in accordance with the approved plan.

5 In the event that the Director, by notice in writing to the person responsible, either approves a minor variation to the approved plan or approves a new plan in substitution for the plan originally approved, the person responsible must implement and act in accordance with the varied plan or the new plan, as the case may be.

Schedule 3: Information

Legal Obligations

LO1 EMPCA

The activity must be conducted in accordance with the requirements of the *Environmental Management and Pollution Control Act 1994* and Regulations thereunder. The conditions of this document must not be construed as an exemption from any of those requirements.

LO2 Change of responsibility

If the person who is or was responsible for the activity ceases to be responsible for the activity, they must notify the Director in accordance with Section 45 of the EMPCA.

Other Information

OI1 Waste management hierarchy

1 Wastes should be managed in accordance with the following hierarchy of waste management:

1.1 waste should be minimised, that is, the generation of waste must be reduced to the maximum extent that is reasonable and practicable, having regard to best practice environmental management;

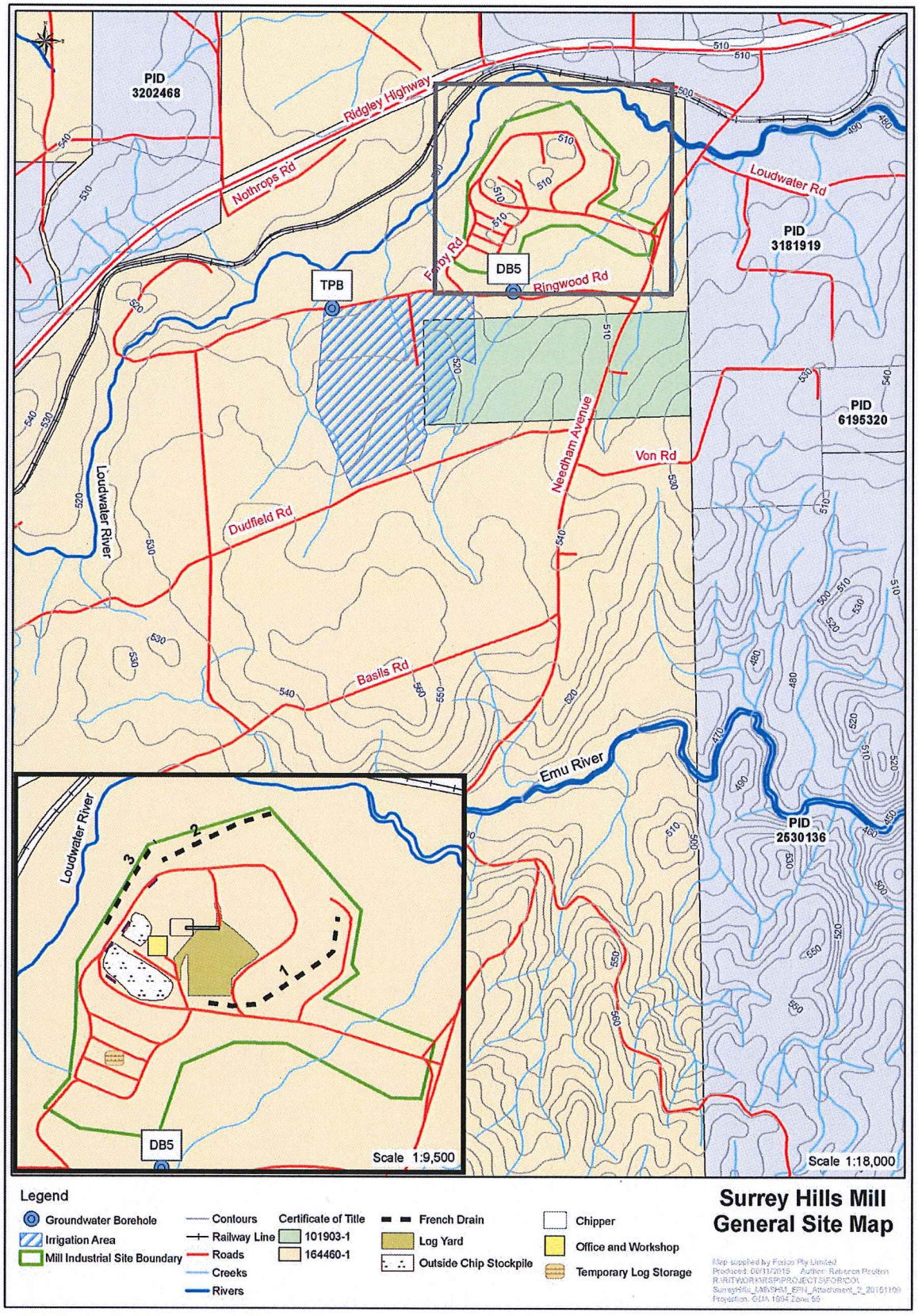
1.2 waste should be re-used or recycled to the maximum extent that is practicable; and

1.3 waste that cannot be re-used or recycled must be disposed of at a waste depot site or treatment facility that has been approved in writing by the relevant planning authority or the Director to receive such waste, or otherwise in a manner approved in writing by the Director.

OI2 Notification of incidents under section 32 of EMPCA

Where a person is required by section 32 of EMPCA to notify the Director of the release of a pollutant, the Director can be notified by telephoning 1800 005 171 (a 24-hour emergency telephone number).

ATTACHMENT 1
The Land
(Source: Forico Pty Limited)

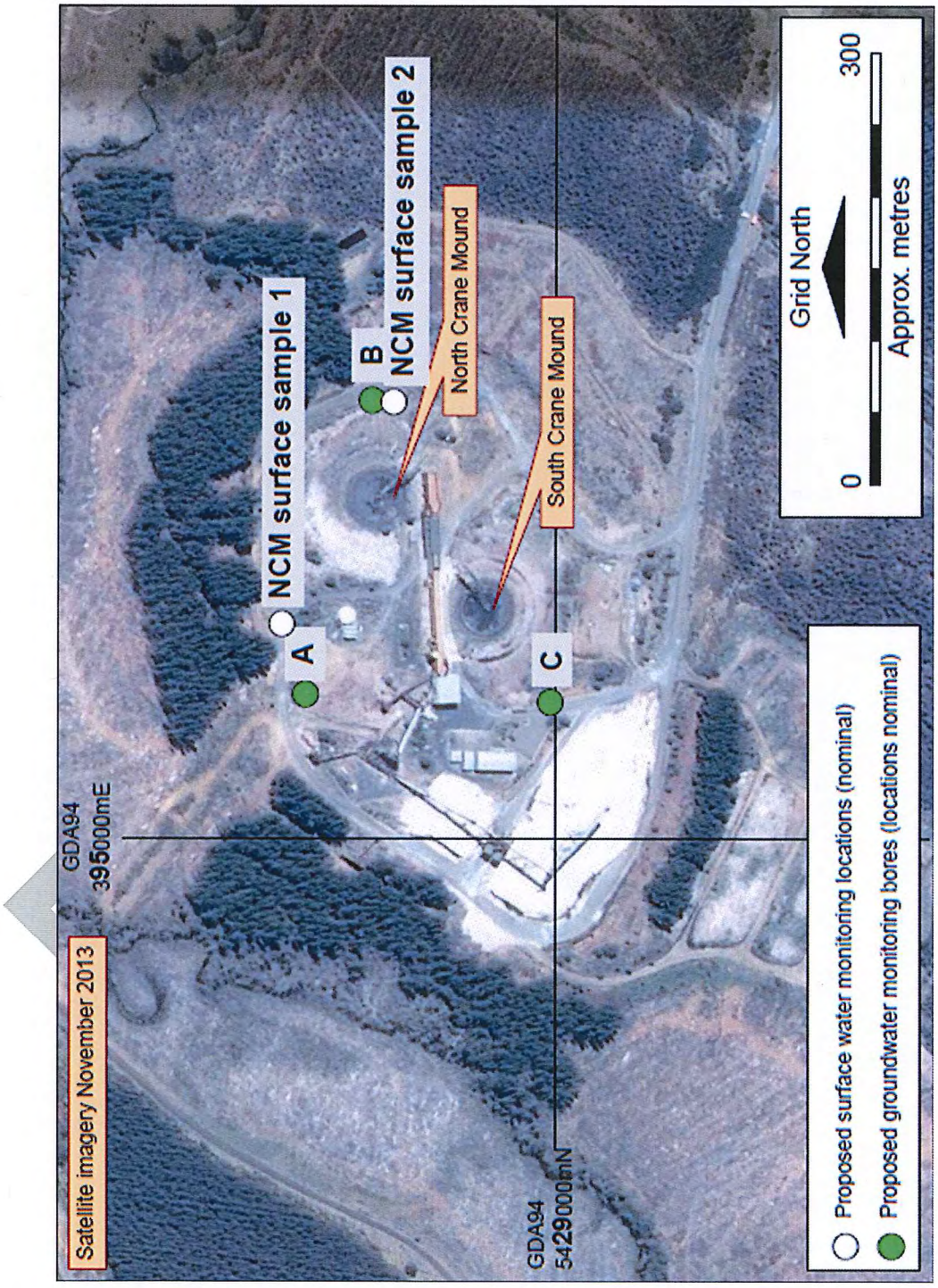


DIRECTOR, ENVIRONMENT PROTECTION AUTHORITY

Date of issue 20 MAY 2016

ATTACHMENT 2
Former Crane Mounds Monitoring Locations

(Source: Cromer, W. C. (2015). *Surrey Hills Mill: surface water and groundwater monitoring program for the former South Crane Mound.* Unpublished report for Forico Pty Ltd by William C. Cromer Pty Ltd, 28 July 2015)



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