



Prestons Waste Treatment Facility



Amendment Report

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Acronyms and Abbreviations

Acronym	Definition
ADG Code	Australian Dangerous Goods Code (NTC, 2022)
AEP	Annual Exceedance Probability
AQIA	Air Quality Impact Assessment
Arcadis	Arcadis Australia Pty Limited
ASS	Acid Sulfate Soil
ATPIA	Addendum Traffic Impact Assessment
CEMP	Construction Environmental Management Plan
Controlled waste NEPM	<i>National Environment Protection (Movement of Controlled Waste between States and Territories) Measure</i>
Council	Liverpool City Council
DA	Development Application
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
Draft OAQMP	Draft Operational Air Quality Management Plan
Draft OEMP	Draft Operational Environmental Management Plan
Draft OWMP	Draft Operational Waste Management Plan
e.g.	for example
EIS	Environmental Impact Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulations	<i>Environmental Planning and Assessment Regulations 2021</i>
EPA	NSW Environmental Protection Authority
EPL	Environmental Protection License
FRNSW	Fire and Rescue NSW
GAC	Granular activated carbon
HiQ	HiQ Waste Treatment Services Pty Ltd (the Applicant)
HVAC	Heating, ventilation and air conditioning
IBC tank	Intermediate Bulk Container Tank
IPC	Independent Planning Commission
Km	Kilometres
L/s	litres per second
LGA	Liverpool Local Government Area
Liverpool LEP 2008	<i>Liverpool Local Environmental Plan 2008</i>

Acronym	Definition
LWTP	Liquid Waste Treatment Plant
m	Metre
m ²	square metres
m ³	cubic meter
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
PASS	Potential Acid Sulfate Soil
PCB	Polychlorinated Biphenyls
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
Planning Systems SEPP	<i>State Environmental Planning Policy (Planning Systems) 2021</i>
PM	Particulate Matter
PMF	Probable Maximum Flood
RSW	Restricted solid waste
RtS	Response to submission
SEARs	Secretary's Environmental Assessment Requirements
SIAs	Specific Immobilisation Approvals
SSD	State Significant Development
SSD 9346594	State Significant Development application
Submissions Report	Response to Submissions Report
The Applicant	HiQ Waste Treatment Services Pty Ltd
The Facility	The proposed building of which waste is received, treated, processed and disposed of at Prestons Waste Transfer Facility
The Proposal	Construction and operation of a Waste Treatment Facility for the receipt, treatment and storage of contaminated soils, water and sludges (as referred to in Appendix B Amended Proposal Description)
The Site	9-13 Whyalla Place, Prestons NSW
This Report	Amendment Report
Tpa	tonnes per annum
VCZ	Volcanic clinoptilolite zeolite
VOC	Volatile Organic Compound

Executive Summary

HiQ Waste Treatment Services Pty Ltd seek to construct and operate a Waste Treatment Facility (the Proposal). The Proposal aims to provide a strategic waste treatment service that would play a key role in the delivery of construction and development within Western Sydney and the wider region.

The Proposal is State Significant Development (SSD) and HiQ has prepared an Environmental Impact Statement (EIS) which was on public display between 19 November 2021 and 16 December 2021. Following the EIS exhibition, a Response to Submission (RtS) Report (Arcadis, 2023) was prepared to provide a summary and analysis of public submissions and a response to requests for further information and clarification on the assessment approach received from the Department of Planning, Housing and Infrastructure (DPHI, formally DPE) and other agencies during the EIS exhibition. The RtS Report was submitted to DPHI on 15 May 2023.

An Amendment Report (dated September 2024) was developed to assess several minor amendments to the Proposal as exhibited in the EIS and described in the RtS Report. Feedback was received by key stakeholders on the Amendment Report, and as such minor changes and additions were made to the amendments proposed in the Amendment Report. This Revised Amendment Report (hereafter referred to as the Amendment Report) has been prepared to consolidate the amendments made since the EIS and RtS Report. This report therefore supersedes the Amendment Report dated September 2024.

The proposed amendments include:

- Changes to Proposal operations:
 - Removal of chemical oxidation as a treatment process onsite for soils and liquid waste
 - Reduction in the proposed throughput of the Facility from 270,000 tpa to 210,500 tpa
 - Updates to the bay allocations and storage limits at any one time for each of the waste streams
 - Reduction in the number of waste codes to be accepted onsite
 - Reduction in the total storage volume of recovered recyclable material to be stored onsite from 100m³ to 50m³
 - Reduction in the number of office staff from 30 people to 21 people
 - Removal of construction staging, enabling Stage 1 and Stage 2 operations to commence concurrently.
- Design refinements:
 - The arrangement of the bays and pits within the Facility have been updated to maximise the potential capacity of the Facility.
 - Updates to the water management and fire services infrastructure
 - The number of car parking spaces has been reduced from 40 (including one accessible parking space) to 36 (including one accessible parking space) to reflect the reduction in the number of office staff.
 - The flooring of Compartment 2 would be coated in an epoxy lining to ensure the longevity of the flooring due to its exposure to different contaminants.
- Clarifications in response to agency comments:
 - No Per- and polyfluoroalkyl substances (PFAS) contaminated soil will be accepted onsite above the Restricted Solid Waste (RSW) criteria
 - No Polychlorinated biphenyl (PCB) contaminated waste will be accepted onsite above the scheduled chemical waste criteria
 - Specific Immobilisation Approvals (SIAs) sought for the Site would reflect existing immobilisation technologies used in Australia and globally that have demonstrated scientific basis for immobilisation.

- A proportion of the liquid waste and packaged waste accepted at the Facility will meet the classification of Dangerous Goods Class 8, Packing Groups II and III under the Australian Dangerous Goods Code (NTC, 2022). Additionally, two of the reagents to be used within the Liquid Waste Treatment Plant (LWTP) are also classified as Dangerous Goods Class 8 Packing Group II. These reagents would be stored separately above the Probable Maximum Flood (PMF) level.
- HiQ have updated all documentation to recognise that PFAS material accepted onsite may meet the classification of Dangerous Goods Class 9 Packing Group III.
- Further clarification has been provided around the management of spent treatment materials from the LWTP, including granular activated carbon (GAC) and volcanic clinoptilolite zeolite (VCZ)
- Further clarification has been provided on the waste classification of material to be accepted onsite.
- HiQ have identified contingency measures in the event that a Trade Waste Agreement cannot be obtained (either for part or all of the proposed discharge volumes).
- HiQ have committed to storing hydrochloric acid and caustic soda in separate compartments.
- Clarification has been provided on the approximate timeframe for bioremediation treatment
- Clarification has been provided on how and where the proposal documentation addresses the *Industrial Chemicals Environmental Management (Register) Instrument (2022)* (ICHeMS) minimum standards (Section 3.2 of OWMP).
- Subsequent documentation:
 - In response to NSW Environmental Protection Authority (EPA) queries a series of draft operational management plans have been prepared which outline how the Facility would operate and the relevant environmental controls which would be in place to manage potential risks.
 - A Hazard Risk Assessment risk assessment has been completed which considered 106 potential risks associated with the Facility's operation. Environmental controls have been embedded into the design and management procedures for the Facility, in order to minimise the impact of these potential risks.
 - A Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) has been prepared to provide further detail regarding the proposed safety and environmental controls specific to the management of liquid and hazardous waste and their associated risks.
 - A draft Acid Sulfate Soils Management Plan (ASSMP) and a draft Bioremediation Management Plan (BMP) have been prepared.

The proposed amendments do not change the type or significance of impacts assessed in the EIS and refined in the RtS Report. There are no changes to the construction or ongoing operational impacts assessed in the EIS associated with the amendments.

Revised management measures for the Proposal have been prepared and are included as Appendix C.

1 Introduction

HiQ Waste Treatment Services Pty Ltd (HiQ) (the Applicant) are seeking approval under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) to construct and operate a Waste Treatment Facility (Facility) for the receipt, treatment and storage of contaminated soils, water and sludges at their Site at 9-13 Whyalla Place, Prestons NSW (the Site).

1.1 Approval process to date

The following steps have been carried out as part of the approval process for the Proposal:

- Preparation of a Scoping Report (Golder, 2020) for submission to the Department of Planning, Housing and Infrastructure (DPHI)
- DPHI issued Secretary's Environmental Assessment Requirements (SEARs) on 14 October 2020
- Participation in ongoing community and stakeholder engagement
- An Environmental Impact Statement (EIS) was prepared to support the Proposal in accordance with the requirements of Part 4 of the EP&A Act. The EIS addressed the SEARs (Golder, 2021). The EIS was placed on public exhibition between 19 November 2021 and 16 December 2021
- Following the EIS exhibition, a Response to Submission (RtS) Report (Arcadis, 2023) was prepared to provide a summary and analysis of public submissions and a response to requests for further information and clarification on the assessment approach received from DPHI and other agencies during the EIS exhibition. The RtS Report was submitted to DPHI on 15 May 2023
- Following submission of the RtS Report, several agencies and DPHI have sought further clarification on the Proposal.
- An Amendment Report (dated September 2024) was developed to assess several minor amendments to the Proposal as exhibited in the EIS and described in the RtS Report. Feedback was received by key stakeholders on the Amendment Report (September 2024), and as such minor changes and additions were made to the amendments proposed in the Amendment Report. This Revised Amendment Report (hereafter referred to as the Amendment Report) has been prepared to consolidate the amendments made since the EIS and RtS Report. This report therefore supersedes the Amendment Report dated September 2024.

An Amended Proposal description (Appendix B), Draft Operational Environmental Management Plan (OEMP – Appendix F), Draft Operational Air Quality Management Plan (OAQMP – Appendix G), Draft Operational Waste Management Plan (Appendix H), Draft Operational Traffic Management Plan (OTMP – Appendix I), a Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) and a Hazard Identification Report (Appendix L) have been prepared to support this Amendment Report.

A description of each of the Appendices provided as part of this Amendment Report is provided in Table 1-1.

The Amended Proposal Description provided in this Amendment Report supersedes the Updated Proposal Description provided in the RtS Report and the Proposal as described in the EIS. The findings of the impact assessments associated with the Proposal as presented in the EIS and clarified in the RtS Report remain applicable unless stipulated otherwise in this Report. A summary of the relevant up to date documentation is provided in the Document Status Table (Appendix D).

Table 1-1 Description of Appendices and key documentation

Document	Description
Amendment Report	<p>Provides an overview of the changes to the Proposal since the EIS that have arisen as a result of:</p> <ul style="list-style-type: none"> • Changes to Proposal operations: due to progression of design and in response to stakeholder feedback • Design refinements: due to progression of design, aspects associated with the physical description of the Proposal and the Site layout have been altered • Clarifications in response to agency comments: a number of updates have been made to the Proposal description in response to agency comments • Subsequent documentation: additional documentation has been prepared to provide further clarity on the Facility's operation. <p>The Amendment Report also provides responses to agency comments on the Proposal.</p>
Appendix A – Statutory Compliance Table	Considers the Amendment Reports compliance against the statutory requirements considered within the EIS.
Appendix B – Proposal Description <i>Annexure A to Appendix B - Waste type and treatment type table</i> <i>Annexure B to Appendix B – Contaminant concentrations and treatment table</i>	<ul style="list-style-type: none"> • Appendix B provides a description of the revised Proposal. Appendix B provides a description of the revised Proposal, including its built form, construction and operations. • Annexure A of the Proposal Description provides a list of the waste codes to be accepted onsite. Additionally, the document outlines the waste type, facility tonnage limits, delivery and treatment methodology, acceptance and treatment limits and ultimate disposal location for each waste type to be handled at the Facility. • Annexure B of the Proposal Description provides the contaminants of concern and concentration limits of waste that would be accepted by the Facility.
Appendix C – Revised Environmental Management Measures	Provides a consolidated set of revised environmental management measures.
Appendix D – Document Status Table	Provides an overview of the EIS chapters, making note of which sections have been superseded by subsequent documentation, and if so, what relevant document section should be referred to.
Appendix E – Consolidated Design Drawings	Provides a consolidated set of design drawings for the Facility.
Appendix F – Draft Operational Environmental Management Plan	Provides an overview of the procedures and controls in place to manage the operations and potential environmental impacts of the Facility's operations.

Document	Description
Appendix G – Draft Operational Air Quality Management Plan	Provides an overview of the procedures and controls in place to manage and reduce air quality impacts from the Facility operations.
Appendix H – Draft Operational Waste Management Plan	Provides an overview of the procedures and controls in during the Facility operations. The plan details the specific procedures involved during waste receipt, treatment and offtake.
Appendix I – Draft Operational Traffic Management Plan	Provides an overview of the car parking and heavy vehicle operations for the Project Site.
Appendix J – Hazardous Industry Guidance Note	Provides recommendation from a hazard and risk specialist that the Facility is not deemed to meet the definition of a potentially hazardous industry.
Appendix K – Liquid and Hazardous Waste Report	Summarises the environmental controls in place to manage the risks associated with liquid and hazardous waste.
Appendix L – Hazard Identification Report	Provides the outcomes of the hazard and risk identification workshop which identified 106 potential risks associated with the Facilities operation. Appropriate environmental controls to manage these risks were also outlined.
Appendix M – Previous EPA Comments	Provides response to EPAs’ comments from June, August and 4 December 2023 and from 26 April 2024.

1.2 Overview of the Proposal

HiQ are proposing to construct and operate the Facility for the receipt, treatment and storage of contaminated soils, liquid waste and sludges at their site at 9-13 Whyalla Place, Prestons NSW (the Site). Waste received at the Site would include:

- Packaged waste
- Acid sulfate soil (ASS) and potential acid sulfate soil (PASS)
- Contaminated liquid and solid wastes.

These wastes would be classified, in accordance with the NSW EPA Waste Classification Guidelines (2014), as one of the following:

- Liquid waste
- General solid waste (non-putrescible)
- Acid Sulfate Soils
- Restricted solid waste
- Hazardous waste

Treatment methodologies for wastes include:

- Physical screening
- Chemical separation
- Bioremediation
- Immobilisation.

The Applicant is proposing to undertake Site upgrade works to optimise the existing Site to allow the processing and treatment of the waste streams listed above, with a throughput capacity of up to 210,500 tonnes per annum (tpa). The Site would comprise three key compartments (refer Figure 1-1):

- Compartment 1 (existing): Waste treatment storage, transfer bays and treatment of soil, muds and sludges. Dewatering plant, water tanks, wheel wash, weighbridge, reagent storage and leachate collection pits.
- Compartment 2 (proposed): LWTP and reagent storage area. The flooring of Compartment 2 will include an epoxy lining to ensure the longevity of the warehouse floor after exposure to contaminants (notably PFAS).
- Compartment 3 (proposed): Mobile plant and equipment, cement silo, storage of packaged waste and resource recovery materials storage area.

Site upgrade works would include installation of weighbridges, extension of the existing building to establish Compartment 2 and Compartment 3, excavation of storage pits, construction of internal material storage bunkers, and installation of plant.

Construction would occur over approximately 12 months and works would include:

- Extension of the warehouse building
- Installation of weighbridges
- Internal fit out of the warehouse building, including installation of push walls and material bays
- Installation of liquid waste treatment plant (LWTP) including tanks, silos, filters, pumping and dosing systems.
- Installation of heating, ventilation and air conditioning (HVAC) and firefighting systems
- Reconfiguration of the office and amenities block to add staff decontamination facilities, laboratory and office spaces.

Operations would include:

- Storage, classification and transfer of contaminated soil, including ASS/PASS
- Storage, classification and transfer of packaged waste in intact containers
- Storage, classification, transfer and treatment of contaminated liquids and sludges
- Shredding of non-contaminated, inert packaged waste
- Treatment of contaminated soil by bioremediation
- Treatment of contaminated soil in accordance with both general and specific immobilisation approvals. Soil immobilisation may be undertaken using a mobile high shear mixer, at various locations within the building. Soil immobilisation treatment procedures are outlined in the draft Operational Waste Management Plan (OWMP).
- Treatment of ASS
- Operation of the LWTP.

1.3 Overview of proposed amendments

Following the preparation of the RtS Report, a number of amendments have been made to the Proposal and an Amended Proposal Description has been prepared (Appendix B). Updated and Consolidated Plans have been prepared and are provided in Appendix E. A detailed description of Amendments made to the Proposal is provided in Chapter 5. A Conceptual layout of the Amended Proposal is provided in Figure 1-1. In summary the Amended Proposal Description (Appendix B) includes:

- **Changes to Proposal operations:** due to progression of design and in response to stakeholder feedback, the following aspects associated with the Proposal operations have been updated:
 - Chemical oxidation has been excluded from the Proposal as a treatment process onsite for soils and liquid waste. The bays originally allocated to chemical oxidation have been reallocated to immobilisation and ASS
 - The proposed annual throughput of the Facility has been reduced from 270,000 tpa to 210,500 tpa. Additionally, the onsite storage limits for each of the waste streams at any one time have also been reduced
 - Bay sizing and waste type allocations have been updated. There would be a total of 32 bays and / or pits within the facility. Each of the soil bays measure five metres by five metres, segregated by concrete push walls which measure six metres in height. The storage volume for each of the bays is dependent on the characteristics of each individual soil batch (depending on the level of cohesiveness of the soil). Based on the dimensions of the bay it has been estimated that on average 60 cubic metres (m³) of soil material could be contained within each of the bays. The sludge and drill mud pits have been calculated to have a storage capacity of approximately 58 m³ of material based on the slope of the pit measuring 11 degrees
 - The number of waste codes to be accepted onsite has been reduced in response to stakeholder comments and review of the market (refer Annexure A to the Amended Proposal Description Appendix B)
 - Reduction in the total storage volume of recovered recyclable material to be stored onsite from 100 m³ to 50 m³.
 - HiQ has recently reviewed the number of staff likely to work in the office facilities within the Proposal and have determined that the number of office staff would be limited to 21 people at any one time rather than the maximum total of 30 identified in the EIS.
 - Removal of staging of the Proposal. It had originally been proposed to construct and operate the Facility in two stages (Stage 1 for contaminated soil and packaged waste and Stage 2 for the LWTP). It is now proposed to construct Stage 1 and Stage 2 concurrently. All reference to staging have therefore been removed.
- **Design refinements:** due to progression of design, the following aspects associated with the physical description of the Proposal and the Site layout have been altered:
 - The arrangement of the bays and pits within the Facility have been updated to maximise the potential capacity of the Facility.
 - Water management infrastructure has been updated. The design of the leachate management system has been updated from bunding of blocks of bays to instead utilise the slope of the bays to contain waters. All Per- and polyfluoroalkyl substances (PFAS) bays will remain bunded. The entire building would be bunded with 250 mm bunds provided at each of the entries and exits to the building.
 - The car parking design for the Proposal has been revised to reflect the decrease in staff numbers and provide additional access space around the parking bays. The number of car parking spaces would be reduced from 40 (including one accessible parking space) to 36 (including one accessible parking space), resulting in a reduction of four parking spaces.

- The Fire services design has been updated in accordance with relevant standards and the EIS assessment. The following design elements are included in the designs: site connection, fire hydrant system, fire hose reels, portable fire extinguishers, fire detection systems and spent fire water management.
- The flooring of Compartment 2 would be coated in an epoxy lining to ensure the longevity of the flooring due to its exposure to different contaminants (in particular PFAS).
- **Clarifications in response to agency comments:** the Proposal description has been updated to clarify the waste types to be accepted on Site (in relation to the waste classification guidelines) and the treatment types that would be subject to the SIAs that would be sought from the NSW Environmental Protection Authority (EPA). Clarifications include:
 - No PFAS contaminated soil will be accepted onsite above the Restricted Solid Waste (RSW) criteria
 - No Polychlorinated biphenyl (PCB) contaminated waste will be accepted onsite above the scheduled chemical waste criteria
 - SIAs sought for the Site would reflect existing immobilisation technologies used in Australia and globally that have demonstrated scientific basis for immobilisation
 - In response to the EPA's comments, further clarification on the waste classification of material to be accepted onsite has been provided.
 - A proportion of the liquid waste and packaged waste accepted at the Facility will meet the classification of Dangerous Goods Class 8, Packing Groups II and III under the Australian Dangerous Goods Code (NTC, 2022). The Facility will only accept liquid waste and packaged waste with this classification in volumes of less than 25 tonnes and 50 tonnes, for Class 8 Packing Group II and III respectively. Once accepted onsite, Class 8 Dangerous Goods (DGs) will either be delivered directly to a designated tank within the LWTP or a designated bay within the packaged waste storage area. By-products of the treatment process would either undergo further treatment or would be disposed of at an appropriately licenced landfill, as described in Section 7 of the Draft OWMP (Appendix H). Additionally, two of the reagents to be used within the LWTP are also classified as Dangerous Goods Class 8 Packing Group II. These reagents would be stored separately above the Probable Maximum Flood (PMF) level.
 - HiQ have updated all documentation to recognise that PFAS material accepted onsite may meet the classification of Dangerous Goods Class 9 Packing Group III, in accordance with the Australian Dangerous Goods Code (NTC, 2022)
 - Further clarification has been provided about the contaminant types and levels that would be received at the Facility for waste that is classified as hazardous waste
 - Further clarification has been provided around the management of spent treatment materials from the LWTP, including granular activated carbon (GAC) and volcanic clinoptilolite zeolite (VCZ)
 - HiQ have identified contingency measures in the event that a Trade Waste Agreement cannot be obtained (either for part or all of the proposed discharge volumes). In the event that not all water can be discharged to sewer, treated liquid waste would be collected within tankers and removed offsite for disposal.
 - In response to the EPA's concerns around the co-location of Hydrochloric acid (37 wt.%) and Caustic soda (30 wt.%) within Compartment 2, HiQ have committed to store these separately. Caustic soda will be stored in Compartment 2 whilst the Hydrochloric acid will be stored in a locked safety cabinet in Compartment 1.
 - Clarification has been provided on the approximate timeframe for bioremediation treatment.

- Clarification has been provided on how and where the proposal documentation addresses the *Industrial Chemicals Environmental Management (Register) Instrument (2022)* (ICHeMS) minimum standards (Section 3.2 of OWMP).
- **Subsequent documentation:** several additional documents have been drafted in response to Agency queries to provide further clarity around the Facility's operation, these documents include:
 - In response to EPA queries a series of draft operational management plans (Appendix F to Appendix I) have been prepared which outline how the Facility would operate and the relevant environmental controls which would be in place to manage potential risks.
 - A Hazard Identification Report (Appendix L) has been completed which considered 106 potential risks associated with the Facility's operation. Environmental controls have been embedded into the design and management procedures for the Facility, in order to minimise the impact of these potential risks.
 - A Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) has been prepared to provide further detail regarding the proposed safety and environmental controls specific to the management of liquid and hazardous waste and their associated risks (as identified in the Hazard Identification Report (Appendix L)).
 - In response to the EPA's comments, a draft Acid Sulfate Soils Management Plan (ASSMP) and a draft Bioremediation Management Plan (BMP) have been prepared and included as Appendix F and Appendix G to the OWMP.

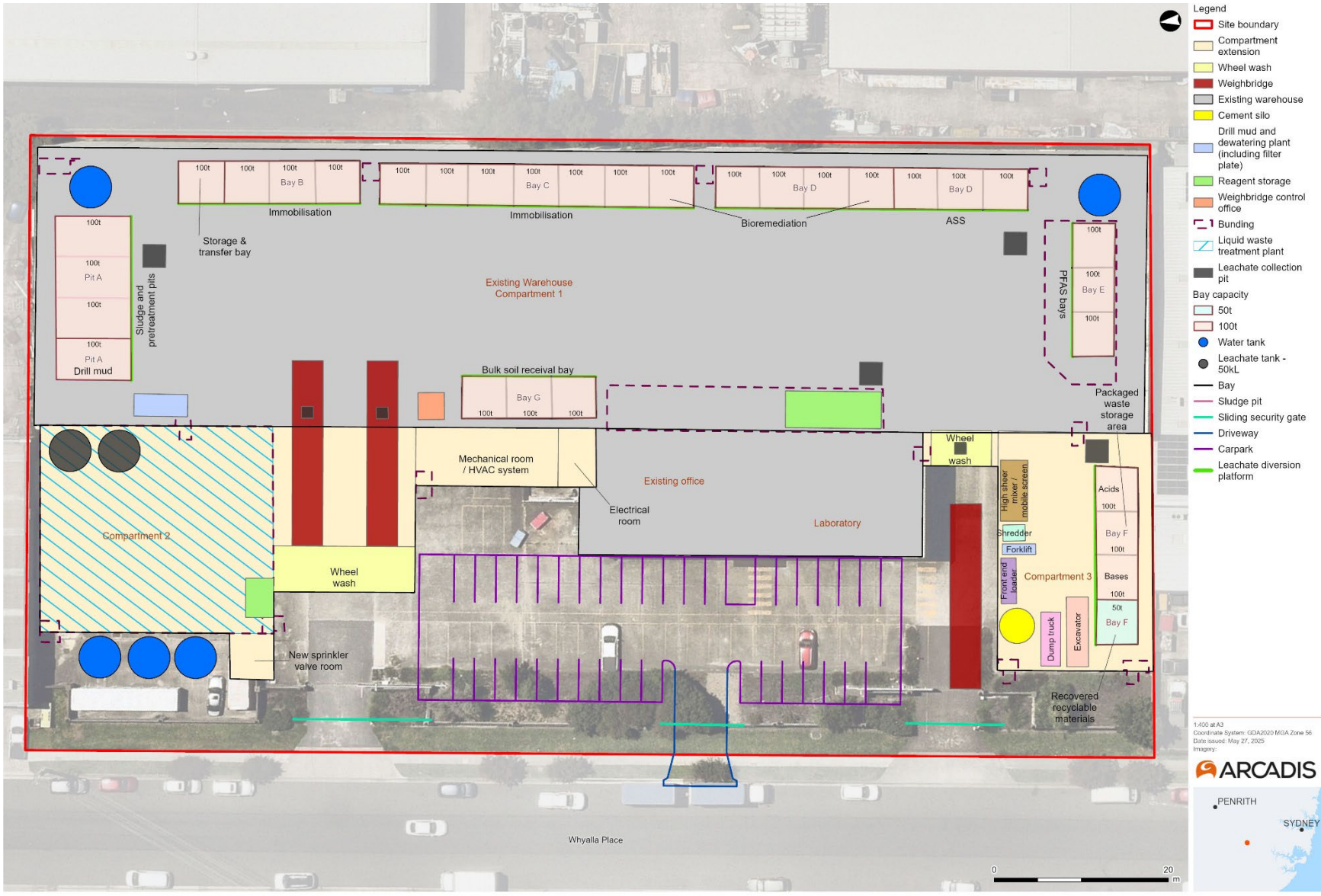


Figure 1-1 Facility conceptual site layout

1.4 Purpose of this Report

This Amendment Report has been developed in accordance with Appendix D to the *State Significant Development Guidelines* (DPIE, 2022). This Report is designed to be a standalone report which draws on relevant information from the EIS and RtS Report. This Amendment Report is structured as follows:

Table 1-2: Structure of this Amendment Report

Description	Section
An overview of the approval process to date, the proposal as described in the RtS Report and the proposed amendments	Chapter 1
An overview of the strategic context of the Proposal and identification of updates to the strategic context since exhibition of the EIS	Chapter 2
An overview of the statutory context of the Proposal	Chapter 3
A summary of engagement undertaken for the Proposal	Chapter 4
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2 Strategic context

This chapter summarises the strategic context for the Proposal as presented in Chapter 3 of the EIS. The proposed amendments do not change how the Proposal aligns to this strategic context.

2.1 Summary of strategic context in the EIS

The following strategies were outlined in the EIS:

- **NSW Waste Avoidance and Resource Recovery Strategy 2014-21** (EPA, 2014): The Proposal aligns with national and state waste management objectives and would reduce the environmental risk of waste directly, through the treatment of contaminated soils, contaminated sludges and liquid wastes
- **NSW Waste and Sustainable Materials Strategy 2041 Stage 1 Plan: 2021–2027** (DPIE, 2021): The Proposal would contribute to addressing immediate and future capacity deficits within NSW as identified within the Strategy. The Proposal directly supports each of the focus areas of the strategy through providing capacity for waste treatment in the Western Sydney area, promoting a circular economy and increasing resource recovery and efficiency
- **Greater Sydney Region Plan: A Metropolis of Three Cities** (Greater Sydney Commission, 2018a): The Proposal supports the Plans' objective to optimise self-sufficiency through developing greater localised precinct-wide waste processing capacity that promotes efficiency
- **Our Greater Sydney 2056: Western City District Plan** (Greater Sydney Commission, 2018b): The Plan recognises that as the District's population grows, there is a need for new recycling and resource recovery infrastructure to help manage the growth in waste. In providing for waste treatment and resource recovery of materials for reuse, the Proposal aims to keep resources circulating in our economy to maximise value, generate local jobs and minimise waste
- **Future Transport Strategy 2056** (TfNSW, 2022): The strategy outlines a number of new infrastructure projects which the Proposal is well placed to service., These include the Western Sydney Infrastructure Plan, the Western Sydney Airport, the Outer Sydney Orbital and Western Sydney Aerotropolis
- **NSW Waste Less, Recycle More Initiative** (EPA, 2016): The government initiative includes \$48 million in funding to support the development of new infrastructure for both municipal, commercial and construction and demolition waste materials. The Proposal is consistent with the aim of this funding by proposing new infrastructure for waste materials.

The proposed amendments are minor changes to the Proposal description and do not change the Proposal's contribution to the strategic planning documents listed above.

2.2 Changes since exhibition of the EIS

Following exhibition of the EIS in November 2021, the *Towards a Circular Economy: Enhancing the NSW Resource Recovery Framework* (EPA, 2023) and the *Draft NSW Waste and Circular Infrastructure Plan* (EPA, 2025) were released:

2.2.1 Towards a Circular Economy: Enhancing the NSW Resource Recovery Framework

Towards a Circular Economy: Enhancing the NSW Resource Recovery Framework (NSW Resource Recovery Framework) sets out the actions the EPA will take to implement the recommendations of the Independent Review of the Resource Recovery Framework to improve recovery, reuse, and circularity of resources. The Resource Recovery Framework groups the 22 recommendations into seven themes. The key themes and the Proposal's alignment to those themes include:

- **Improving guidance and documentation for resource recovery orders and exemptions:** The Proposal would comply with the regulatory requirements of resource recovery exemptions and orders and facilitate the appropriate treatment of soils that may be subject to recovery orders and exemptions allowing resources to be reused in our economy to maximise value, generate local jobs and minimise waste.
- **Improving transparency, data, and accessibility:** The Proposal would comply with all waste tracking and documentation requirements and support the EPA in this regard.
- **Investigate regulatory framework changes:** The Proposal would comply with all regulatory requirements and ensure systems are in place to meet any new regulatory requirements that may occur; through implementation of the OEMP.
- **Embedding improvements in planning:** The Proposal would provide infrastructure to support waste treatment and management within the Western Sydney area, promoting a circular economy and increasing resource recovery and efficiency. As noted above, the Proposal is well placed to support a number of new infrastructure projects that are in the planning and development stages. These include the Western Sydney Infrastructure Plan, the Western Sydney Airport, the Outer Sydney Orbital and Western Sydney Aerotropolis.
- **Developing a more targeted regulatory approach:** In providing for waste treatment and resource recovery of materials for reuse, the Proposal aims to keep resources circulating in our economy to maximise value and minimise waste. HiQ welcomes EPA's commitment to achieve higher quality materials from waste generators and improve protections for consumers of recovered resources, such as those that would be generated by the Proposal.
- **Considering approaches to contaminants:** The EPA will take an evidence-based approach to identifying and managing asbestos contaminants as well as emerging contaminants. HiQ would continue to engage with the EPA on appropriate treatment technologies and management of existing and emerging contaminants into the future.

The Proposal seeks to promote circular principles by treating soils to a level where they would be appropriate for reuse where feasible. Ultimately, the Proposal aims to maximise the recovery of resources, using known and approved treatment technologies, in line with the EPA requirements and strategies.

2.2.2 Draft NSW Waste and Circular Infrastructure Plan

Draft NSW Waste and Circular Infrastructure Plan has been developed to tackle critical infrastructure shortfalls and build a more resilient circular economy to prevent a 'looming waste crisis in Greater Sydney'. Amongst streamlining processes for extending existing landfills and reducing reliance on landfill through energy from waste, the plan sets out how NSW Government agencies will work together with industry and local councils to strengthen how they will strategically plan for waste and recycling infrastructure to meet the needs of Greater Sydney's growing populations.

The proposal aligns with the plan and seeks to promote waste infrastructure in NSW by constructing and operating a first in the state facility that has the capability to receive, treat and store contaminated soils, liquid waste and sludges. By addressing the critical need for specialized waste treatment capabilities to manage complex waste streams, this facility will play a pivotal role in supporting the sustainable growth of Greater Sydney. The proposal aligns with the major theme of the plan by ensuring Greater Sydney has sufficient infrastructure to be able to meet the needs of Sydney's growing population and market trends, such as the construction and demolition industry.

3 Statutory context

This chapter summarises the statutory context of the Proposal. This includes an overview of the State and Commonwealth approvals as presented in Chapter 3 of the EIS. The proposed amendments do not change the permissibility of the Proposal or approvals required.

An updated statutory compliance table for the amended proposal is provided in Appendix A of this report.

3.1 Overview of statutory requirements

As described in Chapter 3 of the EIS and Chapter 1 of the RtS Report, the Proposal is assessable under Part 4, Division 4.7 of the EP&A Act as State significant development.

At the time of exhibition of the EIS, the Proposal was assessable as State significant development by virtue of clause 23, Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011*, which refers to:

Waste and resource management facilities

(3) Development for the purpose of a resource recovery or recycling facilities that handle more than 100,000 tonnes per year of waste.

The Site is on land zoned IN3 Heavy Industrial Zoning under the *Liverpool Local Environmental Plan 2008* and the Proposal is therefore permissible under the EP&A Act.

3.2 Changes to the EP&A Regulation

Environmental Planning and Assessment Regulation 2000 was superseded by the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), following finalisation of the EIS. Transitional arrangements under Schedule 6, clause 3 of the *Environmental Planning and Assessment Regulation 2021* mean that the provisions of the *Environmental Planning and Assessment Regulations 2000* continue to apply to the Proposal.

3.3 Changes to State environmental planning policies

Following the finalisation of the EIS, 45 NSW environmental planning instruments were repealed and consolidated into new instruments. The consolidation was administrative and did not change the legal effect of the previous instruments.

The former *State Environmental Planning Policy (State and Regional Development) 2011* was incorporated in the *State Environmental Planning Policy (Planning Systems) 2021*. The Proposal is deemed State significant development in accordance with Clause 23 in Schedule 1 of the *State Environmental Planning Policy (Planning Systems) 2021*.

3.4 Statutory compliance of the proposed amendments

HiQ is proposing amendments to the Proposal described in the EIS and the RtS Report. This Amendment Report has been prepared in accordance with section 197(3) of the EP&A Regulation.

The proposed amendments do not change the permissibility of the Proposal. The assessment and approval requirements under the EP&A Act, including pre-conditions and mandatory considerations, are described in Chapter 3 of the EIS.

An updated statutory compliance table for the amended proposal is provided in Appendix A of this report.

4 Engagement

This Chapter outlines the consultation and engagement that has occurred during the EIS and RtS Report preparation, as well as consultation that has occurred subsequently, leading to the proposed amendments.

4.1 Agency engagement

4.1.1 Overview

HiQ is committed to undertaking meaningful community and stakeholder engagement and consultation throughout the life of the Proposal. Agencies were consulted to inform the EIS and planning of the Proposal. A summary of the consultation with government agencies during preparation of the EIS is provided below:

- Consultation with Liverpool City Council regarding clarification of Council's comments on the SEARs including stormwater management information for the Site. In addition, clarification was sought on potential management plan requirements should the Proposal be approved
- Consultation with the EPA was carried out. The EPA advised at the time that they had no further comment other than what has been provided in comments to the SEARs for the Proposal
- Consultation with Environment, Energy & Science Group referring to the Biodiversity Waiver that was received in correspondence for the Proposal
- Consultation with Heritage NSW regarding the need for an Aboriginal Cultural Heritage Report (ACHAR). Heritage NSW identified that an ACHAR was not required for assessment of the Proposal
- Consultation with NSW Fire and Rescue has been sought through phone contact. NSW Fire and Rescue provided comments to the SEARs that they seek to provide comment once approvals have been granted
- Consultation with Sydney Water regarding the Trade Waste Application was undertaken 18 September 2020 with Sydney Water advising a Tappin Application should be made closer to EIS approval
- Consultation with Transport for NSW was carried out in relation to confirming the status of nearby road project upgrades.

Consultation that has occurred since the EIS is summarised below in Section 4.1.2.

4.1.2 Engagement undertaken and issues raised

This section summarises the feedback received from government agencies on the Proposal since the RtS Report, where HiQ has been able to accommodate the requests of the agencies the design has been amended.

4.1.2.1 NSW Fire and Rescue

A letter response was received from FRNSW on the 24 May 2023 in response to DPHI correspondence regarding the RtS Report. Table 4-1 presents the key comments raised and HiQ’s response.

Table 4-1 Response to NSW Fire and Rescue

Advice	Detail	Response / Comment
No further comments	<p>FRNSW note responses at 4.2 of the RtS Report, when implemented, would satisfy the recommendations made by FRNSW in our previous letter concerning this matter dated 28 March 2022 (D22/23521).</p> <p>FRNSW therefore submit no further comments or recommendations for consideration, nor any requirements beyond that specified by applicable legislation at this stage.</p>	<p>While FRNSW noted no further information was required, the Applicant has updated the Fire Services Design (provided in Appendix E3) to this Amendment Report.</p> <p>A description of the additional fire services incorporated into the Facility design is provided in Section 5.2.4.</p>

4.1.2.2 Sydney Water

A letter response was received from Sydney Water on the 29 May 2023 in response to DPHI correspondence regarding the RtS Report. Table 4-2 presents the key comments raised and HiQ’s response.

It is noted that further, ongoing, email correspondence has continued with Sydney Water subsequent to receiving the formal response to the RtS Report. A draft Section 73 feasibility application and subsequent information was prepared and submitted to Sydney Water in July 2024. Sydney Water has requested further information on the operation of the Facility following submission of this application. This information will not be available until following project approval and completion of detailed design. As such the application is currently on hold until more project detail is available.

Table 4-2 Response to Sydney Water comments

Advice	Detail	Response / Comment
Water servicing coordinator	<p>Sydney Water notes that the proponent plans to consult with a Water Servicing Coordinator and lodge a feasibility application during the detailed design phase. However, as per previous advice dated 22nd of September 2020 and 18th of January 2022, the proponent was informed by Sydney Water to contact a Water Servicing Coordinator to inform the design process and submit a feasibility without delay. This is a critical step to ensure the development meets Sydney Waters requirements</p>	<p>HiQ notes Sydney Water’s comments. A preliminary feasibility assessment was lodged in July 2024. In response to the application Sydney Water raised a case identification number for the Facility and identified areas where additional information was requested. In response to the request for further information, HiQ provided:</p> <ul style="list-style-type: none"> The Draft OWMP to provide an outline of the key operational elements of the Proposal

Advice	Detail	Response / Comment
Feasibility application	<p>and to confirm that Sydney Water has the capacity to service the development.</p> <p>The proponent has yet to submit a feasibility application with Sydney Water. Lodging the feasibility application during the detailed design phase may result in potential delays to the development due to possible objections by Sydney Water at later application stages. Please note that Sydney Water does not hold capacity within our network for possible development needs.</p>	<ul style="list-style-type: none"> • The Amended Proposal Description • Information regarding daily water use and proposed discharge volumes (including under a peak day) • The latest Hydraulic Design drawings <p>An updated feasibility assessment was relodged in October 2024 with the additional information requested by Sydney Water. Sydney Water has requested further information on the operation of the Facility following submission of the above information. This information will not be available until following project approval and completion of detailed design. As such the application is currently on hold until more project detail is available.</p> <p>In parallel, HiQ has considered alternate options should Sydney Water not be able to accommodate the discharge volumes (either in full or in part). This is described in Section 5.3.7.</p>
Feasibility requirements	<p>If the development presents potentially large water servicing demands or impacts on our wastewater network are anticipated, further investigation may be required to determine the servicing requirements for the site.</p> <p>The proponent’s response (page 13) notes that: “During Stage 1 water from the leachate collection system would be captured in temporary holding tanks and tested <i>and either disposed of to sewer</i>, if it meets the requirements of a trade waste agreement with Sydney Water, or tankered offsite for disposal”.</p> <p>The potential quantity and volume is required to be assessed via the feasibility process.</p>	<p>Noted.</p> <p>Section 4.10 of the OEMP outlines predicted water usage rates for key onsite activities.</p> <p>Potable water usage for the Prestons WTF and ancillary facilities is anticipated to be around 126.12 kL/year. This covers the water usage required for the kitchen and ablution facilities.</p> <p>Total water usage for process applications and dust suppression is estimated be around 4,000 kL/year. This includes:</p> <ul style="list-style-type: none"> • 1,000 kL/year for dust suppression and moisture conditions • 2,500 kL/year for wheel wash and truck wash activities • 500 kL/ year for bioremediation. <p>Further information regarding proposed discharge volumes is in the process of being provided to Sydney Water as part of the feasibility application process.</p> <p>As described in Section 5.1.6, the Proposal is no longer proposed to be staged. An interim solution for leachate generation during Stage 1 is therefore no longer required.</p> <p>It is noted that minimal leachate generation is expected at the Facility, with a maximum of 50 litres daily</p>

Advice	Detail	Response / Comment
	<p>It is recommended that a Water Servicing Coordinator is engaged, and a Feasibility application is lodged with Sydney Water prior to a Section 73 application being made.</p> <p>We advise you do this as soon as possible to prevent potential delays to any future development approvals or servicing strategy.</p>	<p>HiQ notes Sydney Water’s comments. A preliminary draft feasibility assessment was lodged in July 2024. In response to the application Sydney Water raised a case identification number for the Facility, and identified areas where additional information was requested. In response to the request for further information, HiQ provided:</p> <ul style="list-style-type: none"> • The Draft OWMP to provide an outline of the key operational elements of the Proposal • The Amended Proposal Description • Information regarding daily water use and proposed discharge volumes (including under a peak day) • The latest Hydraulic Design drawings <p>Sydney Water has requested further information on the operation of the Facility following submission of the above information. This information will not be available until following project approval and completion of detailed design. As such the application is currently on hold until more project detail is available.</p> <p>In parallel, HiQ has considered alternate options should Sydney Water not be able to accommodate the discharge volumes (either in full or in part). This is described in Section 5.3.7.</p>
Water Servicing Coordinator	<p>Water Servicing Coordinators manage applications for feasibility applications. All Water Servicing Coordinators have designer accreditation and can provide design services.</p> <p>Please follow this link to find a list of Water Servicing Coordinators: Water servicing coordinators (sydneywater.com.au).</p>	<p>HiQ notes Sydney Water’s comments. A draft feasibility application has been submitted. HiQ will work with Sydney Water during the detailed design phase to accommodate any design solutions suggested by Sydney Water where possible.</p>
Trade Waste	<p>The proponent will be required to request permission to discharge trade wastewater to Sydney Water’s sewerage system. You must obtain Sydney Water approval for this permit before any business activities can commence. It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.</p> <p>For additional information relating to trade waste the proponent can contact businesscustomers@sydneywater.com.au.</p>	<p>Noted. HiQ has commenced discussions with Sydney Water in relation to the Trade wastewater licence.</p>

4.1.2.3 Department of Planning and Environment – Environment and Heritage Group

A letter response was received from the Environment and Heritage Group (EHG) of the former DPE on the 2 June 2023 in response to DPE correspondence. Table 4-3 presents the key comments raised and HiQ's response.

Table 4-3 Response to DPHI Environment and Heritage Group comments

Advice	Detail	Response / Comment
Flooding	EHG's previous flooding advice on the SSD's Environmental Impact Statement dated 16 December 2021 related to the development of a Flood Emergency Response Plan (FERP) and the required backup services to support the FERP. These requirements have been addressed in the submitted RtS Report. As such, EHG provides no further comment relating to flooding.	Noted
Landscape plan	To assist in mitigating heat island effects from the proposed development and to improve future biodiversity values of the site, EHG recommends that a Landscape Plan is prepared to address the loss of existing landscaping works. This Plan should maximise the use of locally indigenous species and specify the species that will be used, the pot size (100L for trees and 200mm for shrubs) and diversity/number of replacements as well as the required maintenance schedule (minimum of two years). The preparation and implementation of the Landscape Plan could be addressed via the inclusion of appropriate conditions of consent.	HiQ note EHG's comments and agree to prepare a Landscape Plan for the Proposal. An updated Environmental Management Measure has been included (G3) to confirm this commitment (refer Appendix C).

4.1.2.4 Liverpool City Council

A letter response was received from Liverpool City Council (Council) on the 6 June 2023 in response to DPHI correspondence in relation to the RtS Report. Council has confirmed their satisfaction with HiQ's response to their concerns raised in comments provided on the 20 December 2021.

Council has provided the following proposed Conditions of Consent for the development, which have been provided and responded to in Table 4-4.

A further meeting was held with Council on 12 December 2023 to discuss the comments regarding flooding planning considerations. A letter was sent to Council in response to comments raised during the meeting to confirm based on the Preliminary Risk Screening Assessment (PRSA) completed by Golder (2021), that the Proposal is not required to meet a flood planning level of the Probable Maximum Flood (PMF). However, all reagents and packaged waste classed as Class 8 Dangerous Goods would be stored above the PMF level on elevated racking and be stored in accordance with the relevant Australian Standards. Further clarification on the handling of Dangerous Goods at the Facility is provided in Section 5.3.5, the Amended Proposal Description (Appendix B), the Liquid and Hazardous Waste Risk Identification and Minimisation Report (Appendix K) and Letter from Whamcorp regarding Dangerous Goods (Appendix J).

Table 4-4 Response to Liverpool City Councils comments

Time period	Proposed condition	Response / Comment
A. Traffic Planning Considerations		
Council’s Transport Management Section has reviewed the addendum traffic and parking assessment and should the application be determined the following traffic related conditions are to be included as consent conditions:		
Prior to Issue of Construction Certificate	<p>1. A layout of the proposed development car parking areas and access arrangements (including, EV charging space, driveways, grades, turn paths, sight distance requirements in relation to aisle width/lengths, and parking bay dimensions) shall be prepared in accordance with AS 2890.1-2004, AS2890.6-2009 and AS 2890.2-2018 for heavy vehicle usage and submitted to Council for review.</p> <p>In addition, the Applicant must submit the design plans for any proposed works within the public road reserve and street lighting improvement fronting development site to Council for review, if required, approval and provide a copy of the endorsed documents to the Certifier for approval.</p>	<p>Detailed design of the facility will be carried out in alignment with the referenced Australian Standards.</p> <p>HiQ agree to prepare this for submission to Council for review and approval, if required.</p>
	<p>2. Detailed assessment is to be carried out to assess whether parking restriction is required to maintain adequate sight distance at the driveway. The assessment report is required, parking restriction is to be submitted to Council for the Liverpool Traffic Committee approval. The access arrangement and car parking design after Council’s endorsement is to be approved by the Certifier.</p>	<p>HiQ agree to prepare this for submission to Council for review and approval during the post approval phase.</p>
	<p>3. The applicant shall submit a Section 138 <i>Roads Act 1993</i> application to Council for any proposed new driveway and road work in, on or over a public road including the payment of application and inspection fees.</p>	<p>Noted.</p>
	<p>4. An Operational Traffic Management Plan (OTMP) should be prepared by an accredited practitioner and submitted to and endorsed by Council’s Transport Management Section as part of the development consent conditions. The OTMP is to include measures to manage traffic</p>	<p>A Draft Operational Traffic Management Plan (OTMP) has been prepared by Stanbury Traffic Planning for the Facility. This is provided in Appendix I. The Draft OTMP will be updated following project approval as part of the detailed design phase.</p>

Time period	Proposed condition	Response / Comment
	<p>and parking impacts of the proposed day to day use and ensure safe vehicle movements on the subject site as well as surrounding roads.</p> <p>5. A Construction Traffic Management Plan (CTMP) detailing updated construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be prepared for future developments and submitted to and endorsed by Council’s Transport Management Section prior to the issue of a Construction Certificate. The CTMP is to outline the need for a Road Occupancy Permit issued by Council or Transport Management Centre if required. Works within the road reserve shall not commence until the construction traffic management plan has been endorsed</p>	<p>Noted.</p> <p>HiQ has committed to this in management measures G1 and TT1 (see Appendix C).</p>
<p>During construction</p>	<p>6. All works within the road reserve shall be constructed by the applicant, at no cost to Council, and all signage is to be in accordance with the TfNSW Traffic Control at Worksites Manual and the TfNSW Delineation Guideline.</p>	<p>Noted.</p>
	<p>7. If a works zone is required, an application must be made to Council’s Transport Management Section. The application is to indicate the exact location required and the applicable fee is to be included. If parking restrictions are in place, an application to have the restrictions moved, will need to be made.</p>	<p>Noted.</p>
	<p>8. Notice must be given to Council’s Transport Management Section of any interruption to pedestrian or vehicular traffic within the road reserve, caused by the construction of this development. A Traffic Control Plan, prepared by a suitably accredited practitioner must be submitted to and approved by Council’s Transport Management Section, at least 7 days prior to implementation. This includes temporary closures for delivery of materials, concrete pours etc.</p>	<p>HiQ has committed to a Construction Traffic Management Plan in management measures G1 and TT1 (see Appendix C). The requirement for a Traffic Control Plan will be included in the Construction Traffic Management Plan.</p> <p>HiQ notes Council’s requirement and will submit the Traffic Control Plans for any works that would interrupt traffic or pedestrian movements within the road reserve to Council’s Transport Management Section a minimum of 7 days prior to works.</p>

Time period	Proposed condition	Response / Comment
	<p>9. Applications must be submitted to and approved by Council’s Transport Management Section for any road closures. The applicant is to include a Traffic Control Plan, prepared by a suitably qualified person, which is to include the date and times of closures and any other relevant information.</p>	<p>HiQ notes Council’s comment and agrees to prepare this for submission to Council for review and approval, if required, a minimum of 7 days prior to the proposed works.</p>
	<p>10. All the construction vehicles shall enter and exit the site in a forward direction.</p>	<p>Noted. This requirement will be stipulated in the Construction Traffic Management Plan that will be developed in accordance with management measures G1 and TT1 (see Appendix C).</p>
	<p>11. Parking for all construction workers should be accommodated within the development site.</p>	<p>Noted.</p>
<p>Prior to Occupation</p>	<p>12. Prior to the issue of an Occupation Certificate, the Principal Certifying Authority shall ensure that all works associated with a S138 Roads Act approval or S68 Local Government Act approval have been inspected and signed off by Liverpool City Council.</p>	<p>Noted.</p>
	<p>13. All the approved roadworks, traffic control devices, pedestrian crossings, signposting, line marking and street lighting are to be completed to Liverpool Council requirements, at no expense to Council or Transport for NSW.</p>	<p>Noted</p>
	<p>14. Council’s on-street assets such as footpath shall be protected at all times. Any damages shall be rectified by the applicant, at no cost to Council, and to Council’s satisfaction.</p>	<p>Noted</p>
<p>Post Occupation</p>	<p>15. The Operational Traffic Management Plan (OTMP) must be in place and implemented at all times. The OTMP is to be reviewed 12 months after the full operation including intersection performance assessment of the Whyalla Place/Jedda Road intersection, potential queueing out of the subject site.</p> <p>The review is to be carried out by an independent traffic engineer to identify whether improvement works are required to ensure that the intersection operates with a satisfactory level of service. The report is to</p>	<p>HiQ has committed to this in management measures G2 and TT1 (see Appendix C). A draft OTMP has been prepared and provided in Appendix I.</p>

Time period	Proposed condition	Response / Comment
	<p>be submitted to Council for review, if required, identified improvements is to be carried out by the proponent to Council’s satisfaction.</p>	
	<p>16. All loading and unloading must take place on the subject site. Goods and/or waste or extraneous material must not be stored in the vehicular manoeuvrings and parking areas. Those areas must be kept clear at all times for the free movement of vehicles.</p>	<p>HiQ has committed to this in management measure MW9 (see Appendix C).</p>
	<p>17. The operator of the development must not permit the reversing of vehicles onto or away from the road reserve. All vehicles must be driven forward onto and away from the development and adequate space must be provided and maintained on the land to permit all vehicles to turn in accordance with AS 2890.</p>	<p>Noted. The proposed traffic flow would operate in one-way with heavy vehicles entering and exiting the Site in a forward direction.</p>
<p>B. Flooding Planning Considerations</p>		
<p>The proposed development site is located within the Maxwells Creek catchment. The site is not affected by flooding under 1% Annual Exceedance Probability (AEP) event. However, it is affected by the Probable Maximum Flood (PMF) event.</p> <p>The proposed waste treatment facility is considered as a sensitive and hazardous development. The flood planning level for a sensitive and hazardous development is the Probable Maximum Flood (PMF) level, which is 24.5m AHD. However, the proposed waste treatment facility will be mostly located within the existing buildings, which are below the PMF (24.5m AHD) level. The applicant has requested to consider the proposed development as a concessional development and has proposed minimum floor level for new building extensions at a level of 23.6m AHD (1% AEP flood Plus 500mm freeboard).</p> <p>Considering the compatibility with the existing building floor levels and operational constraints, the minimum floor level of the building extensions at a level of 23.6m (1% AEP flood Plus 500mm freeboard) can be accepted. However, any potentially hazardous material shall not be stored below the Probable Maximum Flood (i.e., 24.5m Australian Height Datum). The proposal is supported subject to fulfilling the following conditions.</p>		
<p>Prior to Issue of Construction Certificate</p>	<p>1. All floor levels of the new building extensions shall be no lower than the 1% AEP flood Plus 500mm freeboard (i.e., 23.1m + 0.5m = 23.6m Australian Height Datum).</p>	<p>Consolidated Plans have been provided in Appendix E, showing floor levels for the new building extensions.</p> <p>HiQ has committed to this in management measure SW4 of the RtS report and reproduced in Appendix C.</p>
	<p>2. The structure shall be constructed from flood compatible building components below the Probable Maximum Flood (i.e., 24.5m Australian Height Datum).</p>	<p>Consolidated Plans have been provided in Appendix E, showing key building components and structural design.</p>

Time period	Proposed condition	Response / Comment
		HiQ has committed to this in management measure SW4 of the RtS Report and reproduced in Appendix C.
	3. An engineer’s report shall be required to certify that the structure can withstand the forces of floodwater including debris and buoyancy up to and including the Probable Maximum Flood (i.e., 24.5m Australian Height Datum).	HiQ has committed to this in management measure SW4 of the RtS Report and reproduced in Appendix C.
	4. Wastewater generated from the site including petroleum and other hazardous chemicals shall not be discharged into downstream site or Council’s stormwater system. Appropriate pollution control measures shall be provided to collect, treat and dispose hazardous pollutants from the site.	Noted. HiQ has commenced discussions with Sydney Water in relation to the Trade wastewater licence. Liquid waste would be treated to the requirements of the Trade wastewater license prior to discharge. No waste characterised as hazardous would be discharged.
	5. On-site water quality treatment facilities shall be provided to ensure that stormwater runoffs leaving the site comply with Council’s water quality standards. The treatment facilities shall capture all gross pollutants and liquid contaminants from the stormwater before discharging it to downstream or Council stormwater system. Water quality treatment works shall be designed using MUSIC modelling software and the water quality treatment system performance shall be verified using Council’s MUSIC link.	Noted. The Facility incorporates an onsite Liquid Waste Treatment Plant (LWTP). HiQ has commenced discussions with Sydney Water in relation to the Trade wastewater licence.
Prior to Issue of Occupation Certificate	6. An evacuation plan shall be developed and maintained, including suitable warning systems, signage and exits, to ensure the safe evacuation of people during floods up to and including the Probable Maximum Flood.	Noted. HiQ has committed to this in management measure FIM3 of the RtS Report and reproduced in Appendix C.
Conditions Relating to Use	7. There shall be no storage of materials below the Probable Maximum Flood (i.e., 24.5m Australian Height Datum), which may cause pollution or be potentially hazardous during any flood.	Any materials that are considered to be a Dangerous Goods Class 8 will be stored above the Probable Maximum Flood (PMF). This would include both reagents that are considered to be Dangerous Goods and packaged waste. It is not possible to prohibit the storage of all waste material to being above the PMF. As outlined in the RtS Report it is considered that under the Liverpool DCP, the Site falls under the definition of ‘concessional development’ as it is a

Time period	Proposed condition	Response / Comment
		<p>change of use which does not increase flood risk, having regard to property damage and personal safety. An assessment against the requirements of SEPP 33 (now the Resilience and Hazards SEPP 2021) was carried out as part of the EIS, concluding that the facility would not constitute a ‘potentially hazardous’ facility due to the limits of dangerous goods to be stored onsite. This has been confirmed by a Dangerous Goods specialist (see Appendix J).</p> <p>The Proposal incorporates a range of measures to minimise the potential for polluting discharges and is anticipated to be meet full compliance with its (future) Environmental Protection Licence. Consequently, the designations within Table 3 of the Liverpool DCP for ‘Commercial and Industrial’ land uses are considered more appropriate than ‘sensitive uses & facilities’. Commercial and industrial development are not required to be above the PMF, rather need to be above the 1% AEP +0.5m freeboard. Additionally:</p> <ul style="list-style-type: none"> • The Site is located outside the 1% Annual Exceedance Probability (AEP) flood extent (an elevation of 23.1 m AHD). The area is classified on Council’s online mapping as a low flood risk area, with a flood planning level of the 1% AEP plus 0.5m freeboard (equating to 23.6m AHD). • The Site is considered to have a relatively high level of flood immunity, up to and including the 1 in 500 year event and above the 1% AEP event. Given that the larger catchment area for Cabramatta Creek is less than 1000 km², the recommended AEP for the PMF is 10⁻⁷. This equates to a probability of it occurring of less than 1 in 10,000,000 years. <p>Additionally, the Facility is enclosed with rollover bunding (250mm) at all entry and exit points. Whilst the primary purpose of the bunding is to contain spills within the Facility, the bunding would also act in keeping floodwaters out in the case of an extreme weather event.</p> <p>The Facility would provide a critical piece of infrastructure within the Sydney region. There is currently a shortage of facilities within Sydney that are capable of receiving or treating contaminated wastes.</p> <p>In many cases, waste must be transported to Queensland or Victoria for disposal or treatment and is often left in situ for extended periods of time (often</p>

Time period	Proposed condition	Response / Comment
		<p>potentially in flood prone areas) awaiting transportation interstate. The Proposal offers a centralised, regulated and environmentally responsibly managed facility to receive, store and treat contaminated material. Consequently the environmental outcomes that can be achieved once the Proposal is operational are likely far superior than the current status quo.</p> <p>A Flood Emergency Response Plan will be prepared for the Facility as part of the overarching Emergency Response Plan (Environmental mitigation measure FIM3) and will include procedures for the removal of any soil classified as hazardous prior to any predicted high rainfall and flooding events (to HiQ's Yatala Facility).</p>

4.1.2.5 Transport for NSW

A letter was received from Transport for NSW (TfNSW) on 9 June 2023 in response to DPHI correspondence regarding the RtS Report. Table 4-5 presents the key comments raised in HiQ's response.

Table 4-5 Response to TfNSW comments

Advice	Detail	Response / Comment
Construction traffic	A Construction Pedestrian Traffic Management Plan (CPTMP) detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval prior to the issue of a Construction Certificate.	Noted. HiQ has committed to this in management measure G1 and TT1 of the RtS Report and reproduced in Appendix C.
Proposed car parking areas	The layout of the proposed car parking areas associated with the subject development (including, driveways, grades, turn paths, sight distance requirements in relation to landscaping and/or fencing, aisle widths, aisle lengths, and parking bay dimensions) should be in accordance with AS 2890.1-2004, AS2890.6-2009 and AS 2890.2-2018 for heavy vehicle usage. Parking Restrictions may be required to maintain the required sight distances at the driveway.	Detailed design of the facility will be carried out in alignment with the referenced Australian Standards. It is noted that design of the Proposal has progressed since submission of the RtS Report and an updated arrangement for parking is presented in this Amendment Report (Appendix E), which reflects the reduction in parking spaces due to the reduction in office staff to be accommodated at the facility.
Parking and swept path diagrams	Parking provision and swept path diagrams are to be provided to Council's satisfaction.	HiQ has prepared a draft Operational Traffic Management Plan (OTMP) which is provided in Appendix I. This includes updated swept path diagrams and displays the parking provisions. The final OTMP, to be prepared following project approval, can be provided for Council review as required.

4.1.2.6 NSW Environment Protection Authority

A brief summary of the correspondence and consultation with the EPA since exhibition of the EIS is provided below:

- A letter response was received from the EPA dated 14 January 2022, in response to exhibition of the EIS. The information provided in the RtS Report satisfied all issues raised in the EPA's submission in relation to noise; however issues the EPA required further information and clarification on waste management and the air quality impact assessment
- A letter response was received from the EPA on the 27 June 2023 in response to DPHI correspondence regarding the RtS Report, outlining the further information requirements and clarifications sought
- A meeting was held with the EPA on 31 July 2023 to seek further clarification on the matters raised by EPA in the letters of 27 June 2023 and 14 January 2023
- A meeting was held with the EPA on 4 October 2023 to clarify EPA's position on the acceptance of PFAS contaminated soils at the Site.
- A meeting was held with DPHI and EPA on 29 April 2024 to discuss the key concerns raised by the EPA and DPHI in the above correspondence.
- A further meeting with the EPA was held on 17 June 2024 to clarify the key remaining concerns
- A meeting was held with DPHI and the EPA on 20 March 2025 to provide a status update and discuss key remaining concerns

Documents in various draft and preliminary forms have been submitted for review by the EPA and DPHI with various rounds of comments being received. Table 4-6 summarises the issues raised in the EPAs' most recent letter submission from 16 December 2024. To avoid confusion previously addressed comments from the EPA for the period of June 2023 to April 2024 have been included in Appendix M. It is noted that section references made within the earlier EPA comments may no longer be applicable due to subsequent document updates.

Table 4-6 Response to the EPAs' comments from December 2024

EPA Comment	Response	Where Addressed
EPA Advice – Table 1: Wastes recommend for receipt at the facility subject to conditions		
<p>The EPA recommends [all proposed waste codes with the exception of M260, M180 and N100] and activities can be approved at the proposed facility subject to all conditions listed below being met:</p>		
<p>a) All wastes must be classified in accordance with the NSW EPA Waste Classification Guidelines prior to receipt.</p>	<p>As per Section 5.1 of the Draft Operational Waste Management Plan (OWMP) (Appendix H) all waste will be classified in accordance with the NSW EPA Waste Classification Guidelines prior to receipt. Following treatment at Facility all wastes would be reclassified prior to being sent for disposal or further treatment.</p> <p>Additional information and clarification around waste classification has been provided in Section 1.4.2 of the Amended Proposal Description (Appendix B) and Section 5.3.4 of this Amendment Report.</p>	<p>Section 5.1 of the Draft Operational Waste Management Plan (OWMP) (Appendix H)</p> <p>Section 1.4.2 of the Amended Proposal Description (Appendix B).</p> <p>Section 5.3.4 of this Amendment Report</p>
<p>b) All wastes received at the premises must be managed within a bunded area capable of containing any spills. This includes but is not limited to loading, unloading, storage and treatment. For any liquids, the bund must be capable of containing 110 percent of the contents of the largest tank and meet the relevant Australian Standard.</p>	<p>As detailed in Section 1.2.9 of the Amended Proposal Description (Appendix B) The Facility will be fully bunded, with each Compartment individually bunded. All waste will be received and managed within fully bunded areas.</p>	<p>Section 1.2.9 of the Amended Proposal Description (Appendix B).</p>
<p>c) Materials classified as Dangerous Goods must not be received at the premises except for DG Class 8 PG II and III.</p>	<p>As per EPA advice, PFAS should also be considered a Dangerous Good (DG Class 9 Packing Group III). As such the Proposal would receive materials classified as DG Class 8 PG II and III as well as PFAS material classified as Class 9 PG III.</p>	<p>Section 5.3.5 of this Amendment Report</p> <p>Section 1.4.4 of the Amended Proposal Description (Appendix B).</p>
<p>d) Materials must be segregated by compatibility and concentration. Acids and alkalis cannot be stored in the same bund. These must be managed in accordance with Australian Standard AS3780/2008 "the</p>	<p>A Hazard Identification Report (Appendix L) has been prepared by Sherpa which includes a detailed appraisal of the safety and environmental risks associated with the operation of the Facility.</p>	<p>Hazard Identification Report (Appendix L)</p>

EPA Comment	Response	Where Addressed
<p>storage and handling of corrosive substances" and meet Safe Work NSW requirements.</p>	<p>The Hazard Identification Report considered incompatible mixing risks within various plant area, activities and process units (see Risk ID 3, 12, 20, 27, 34, 36, 45, 47, 48, 61, 87, 95 and 100). No high risks were identified in the risk assessment with each of the risks identified as low and being effectively managed by the OEMP, OWMP and other respective mitigations. Only one medium managed risk was identified being associated with reagent spills in the LWTP reagent storage area. In response to this risk HiQ has committed to separately storing Hydrochloric Acid and Caustic Soda agents into separate Compartments (with separate bunding) (refer Section 1.5 of the Amended Proposal Description (Appendix B)).</p> <p>As per the Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) applicable wastes will be managed in accordance with Australian Standard AS3780/2008 "the storage and handling of corrosive substances" and meet Safe Work NSW requirements.</p> <p>Additional information has been provided Section 6.1.2 of the Draft OWMP (Appendix H) to specify that packaged waste found to have a low (acidic) pH and those with a high (alkaline) pH would be stored in separate bays in Bay F. Portable containment bunding will be maintained in place within each Bay underneath storage shelving in Bay F, in addition to the full compartment bunding.</p>	<p>Section 1.5 of the Amended Proposal Description (Appendix B).</p> <p>Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K)</p> <p>Section 6.1.2 of the Draft OWMP (Appendix H)</p>
<p>e) All wastes (solid and liquid) must be classified and disposed of to a facility that can lawfully accept the waste.</p>	<p>As per Section 7 of the Draft OWMP (Appendix H) all waste will be classified and disposed of to a facility that can lawfully accept the waste.</p>	<p>Section 7 of the Draft Operational Waste Management Plan (OWMP) (Appendix H)</p>
<p>f) A plan is required for wastes that are not acceptable to be received, unexpected finds and wastes that are not in suitable containers for storage and handling.</p>	<p>Section 5.8 of the Draft OWMP (Appendix H) outlines wastes that will not be accepted at the Facility and provides the procedure for unexpected finds and non-conforming waste. A detailed Waste Acceptance Protocol (Appendix E of the Draft OWMP) will be prepared prior to commenced of operations.</p>	<p>Section 5.8 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
<p>g) Soils contaminated with PFAS require a separate management process and plan and are not suitable to be received under the M250 or N120 classification. The NSW EPA waste classification guidelines addendum includes concentration limits for disposal, and these criteria are updated in accordance with the National Environmental Management Plan for PFAS. PFAS contaminated soils must be kept separate from other materials to prevent cross contamination</p>	<p>Waste codes M250 and N120 have been removed for the receipt of PFAS contamination (with remaining code M270 applied) (refer Section 1.4.3 of the Amended Proposal Description (Appendix B)).</p> <p>PFAS contaminated soil will be classified in accordance with the NSW EPA waste classification guidelines addendum. PFAS contaminated material (liquid or in soils) will not be accepted if they are above the Restricted waste criteria as set out in the NSW EPA waste classification guidelines addendum.</p> <p>PFAS contaminated soils will be kept separate from other materials to prevent cross contamination. PFAS soils will be stored in dedicated banded bays (Bay E) with no cross contamination with bulk soils.</p>	<p>Section 1.4.3 of the Amended Proposal Description (Appendix B).</p>
<p>h) Waste oils and mixed oily water (J100 and 120) must be managed in a separate treatment area and not be mixed with other chemicals.</p>	<p>As outlined in the Amended Proposal Description (Appendix B) and Draft OWMP (Appendix H) no waste batches (whether soil or liquid) will be mixed together for treatment. Waste oils treated within the LWTP will be treated separately and not mixed with other wastes.</p>	<p>Amended Proposal Description Appendix B). Draft OWMP (Appendix H)</p>
<p>i) Drilling mud must be classified as a solid or liquid waste based on the waste classification guidelines and assessed for contaminants of concern prior to receipt. Drilling mud that has come into contact with hazardous waste or special waste (asbestos) will not be considered for a resource recovery order and must be documented in the Operational Environment Management Plan, including details on storage, handling, and disposal. Drilling mud must be processed using the best available technology. Post separation, each fraction must be appropriately classified and disposed of to a facility that can lawfully accept the waste.</p>	<p>Further clarification regarding waste classifications has been provided in Section 5.3.4 of this Amendment Report and Section 1.4.2 of the Amended Proposal Description (Appendix B).</p> <p>Drilling muds will be classified in accordance with the NSW EPA waste classification guidelines and may be classified as either a solid waste or a liquid waste depending on its specific properties. Following treatment all material would be reclassified in accordance with the NSW EPA Waste classification guidelines.</p> <p>Section 6.3.2 of the Draft OWMP (Appendix H) outlines the procedure for the separation and treatment of drill muds including details on storage, handling and disposal. As outlined in Section 6.3.2 drill muds would only be subject to a Resource Recover Order (RRO) if it complies with the RRO and RRE for Treated Drilling Muds (2014).</p>	<p>Section 5.3.4 of this Amendment Report. Section 1.4.2 of the Amended Proposal Description (Appendix B). Section 6.3.2 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
EPA Advice – Table 2: Waste not recommended for receipt at the facility		
<p>The EPA recommends against the approval of the acceptance of the following waste streams (codes) and activities at the proposed facility at this stage. Detailed reasons are included in the table below:</p>		
<p>M260 – Highly odours organic chemicals (including mercaptans and acrylates).</p> <p>The proposed HVAC air/odour control system is not likely to be sufficient to control highly odours organic wastes and odour impacts to surrounding receivers are likely.</p>	<p>As noted in Section 1.4.3 of the Amended Proposal Description (Appendix B), waste code M260 is proposed for receipt in the form of packaged waste only, to be received and stored in closed IBC drum containers. IBC containers for storage of packaged waste will remain sealed while in storage with negligible odour release. No treatment is proposed of M260 waste types.</p>	<p>Section 1.4.3 of the Amended Proposal Description (Appendix B).</p>
<p>M180 Polychlorinated dibenzo-p-dioxin (any congener).</p> <p>There is no treatment technology proposed at the site for this waste stream. Specialist equipment and knowledge is required to treat or immobilise this waste stream and it should be handled with care.</p>	<p>As noted in Section 1.4.3 of the Amended Proposal Description (Appendix B), waste code M180 is proposed for receipt in the form of packaged waste only and will only be stored. No treatment is proposed of M180 waste types. As such no specialist equipment or knowledge is required.</p>	<p>Section 1.4.3 of the Amended Proposal Description (Appendix B).</p>
<p>N100 Containers and drums that are contaminated with residues of waste referred to in Table 1 of the Waste that must be tracked in NSW</p> <p>The EPA will require further information for wastes proposed to be accepted under waste code N100 as there is no treatment technology proposed at the site for this waste stream. Specialist equipment and knowledge is required to treat or immobilise residues from this waste, and it should be handled with care as it may include dangerous goods residues.</p>	<p>As noted in Section 1.4.3 of the Amended Proposal Description (Appendix B), waste code N100 is proposed for receipt in the form of packaged waste only and will only be stored. No treatment is proposed of N100 waste types. As such no specialist equipment or knowledge is required.</p>	<p>Section 1.4.3 of the Amended Proposal Description (Appendix B).</p>
Waste management		
<p>There is an inconsistent approach outlined in the ADR in relation to the acceptance of waste types. To illustrate the issue in the Amendment Report “Table 5-2 Waste material storage limits and locations contains” waste tracking code N120 has been used for contaminated soils, drill muds, sediments and sludges. The waste classification guidelines require the waste material to be a solid and drill muds and sludges are often</p>	<p>As outlined in Section 4.1 of the Draft OWMP (Appendix H), the first step for any waste to be received at the Facility is the characterisation of the waste in accordance with the NSW EPA Waste Classification Guidelines.</p>	<p>Section 4.1 and Table 72 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
<p>classified as liquids. Categorising waste by its nature is not consistent with requirements to classify waste in accordance with the EPA Waste Classification Guidelines.</p>	<p>Further clarification regarding waste classification has been provided in Section 1.4.2 of the Amended Proposal Description (Appendix B) and Section 5.3.4 of this Amendment Report.</p> <p>Waste can be categorised in a number of different ways, depending on the purpose of the categorisation. Four primary forms of categorisation have been adopted for the purpose of this Proposal:</p> <ul style="list-style-type: none"> • The classification of the waste in accordance with the NSW EPA Waste Classification Guidelines • The nature/type of the waste: being it's general characteristics as either soil, liquid waste, packaged waste, drill muds, and /or sludges • The waste code for the purpose of tracking of waste for transportation • The Dangerous Goods classification for any wastes that is deemed to be a Dangerous Good. <p>Waste coming to Site may have a categorisation under all four of these methods. Each method serves a unique purpose and all require consideration for the Proposal. It is noted however that Waste Classification represents the foremost regulatory method for categorising waste and takes priority over all other methods of categorising waste.</p> <p>Table 72 of the Draft OWMP (Appendix H) outlines the steps and process for classifying waste in accordance with the NSW EPA Waste Classification Guidelines.</p>	<p>Section 1.4.2 of the Amended Proposal Description (Appendix B)</p> <p>Section 5.3.4 of this Amendment Report</p>
<p>Reliance on the waste generator to be responsible for the consignment and classification of the waste should be reviewed. Whilst it is recognised that some information will be provided by the waste generator, the consignor and receiving facility all have obligations regarding waste classification when transporting and/or receiving trackable waste.</p>	<p>As per the EPA's guidance 'waste producer's tracking responsibilities': <i>Waste producers ... are responsible for ensuring that hazardous waste is characterised, transported and tracked in accordance with Part 4 of the POEO (Waste) Regulation 2014.</i></p> <p><i>A waste producer must:</i></p> <ul style="list-style-type: none"> • <i>ensure that waste is correctly characterised</i> • <i>ensure that the facility the waste is being transported to can legally accept it</i> 	<p>Section 5 of the Draft OWMP (Appendix H)</p> <p>Appendix E of the Draft OWMP</p>

EPA Comment	Response	Where Addressed
	<p>For the safety of Facility staff and the environment it is imperative waste has been pre-determined as acceptable for receipt at the Facility.</p> <p>Notwithstanding this, all waste received at the Facility will be verified and subject to a sampling procedure to ensure that the waste received matches the characteristics identified by the producer (refer to Section 5 of the Draft OWMP (Appendix H)). A detailed Waste Acceptance Protocol (Appendix E of the Draft OWMP) will be prepared prior to commenced of operations.</p>	
<p>Classification of the waste using the Australian Dangerous Goods Code (ADG Code) or for tracking requirements using waste codes is supplementary to the requirement for the waste to be classified in accordance with the EPA Waste Classification Guidelines.</p>	<p>Noted.</p> <p>As outlined in Section 5.1 of the Draft OWMP (Appendix H), the first step for any waste to be received at the Facility is the characterisation of the waste in accordance with the NSW EPA Waste Classification Guidelines.</p> <p>Further clarification regarding waste classification has been provided in Section 1.4.2 of the Amended Proposal Description (Appendix B) and Section 5.3.4 of this Amendment Report.</p> <p>Waste can be categorised in a number of different ways, depending on the purpose of the categorisation. Four primary forms of categorisation have been adopted for the purpose of this Proposal:</p> <ul style="list-style-type: none"> • The classification of the waste in accordance with the NSW EPA Waste Classification Guidelines • The nature/type of the waste: being it's general characteristics as either soil, liquid waste, packaged waste, drill muds, and /or sludges • The waste code for the purpose of tracking of waste for transportation • The Dangerous Goods classification for any wastes that is deemed to be a Dangerous Good. <p>Waste coming to Site may have a categorisation under all four of these methods. Each method serves a unique purpose and all require consideration for the Proposal. It is noted however that Waste Classification</p>	<p>Section 1.4.2 of the Amended Proposal Description (Appendix B)</p> <p>Section 5.1 of the Draft OWMP (Appendix H)</p> <p>Section 5.3.4 of this Amendment Report.</p>

EPA Comment	Response	Where Addressed
	<p>represents the foremost regulatory method for categorising waste and takes priority over all other methods of categorising waste.</p>	
<p>Reliance on historical results or previous batches for waste classification as outlined in section 1.4.7.2 (parra 4) is not an acceptable practise. EPA’s Sampling Design Guidelines Sampling Design part 1 - application and Sampling design part 2 - interpretation provides clear information about stockpile sampling sample storage and minimum frequency to draw meaningful conclusions about waste classification.</p>	<p>Section 5 of the Draft OWMP (Appendix H) and Section 1.4.8 of the Amended Proposal Description (Appendix B) have been updated to more clearly reflect this and remove reference to reliance on previous results.</p> <p>Reduced verification testing would most typically relate to packaged waste or liquid waste received from a regular customer. For example, if an industrial customer regularly produces a consistent byproduct waste stream from their practices that has been found to be of a highly consistent nature and is delivered to the Facility on highly regular basis a reduced frequency of sub batch analysis may be appropriate.</p>	<p>Section 5 of the Draft OWMP (Appendix H)</p> <p>Section 1.4.8 of the Amended Proposal Description (Appendix B)</p>
<p>All wastes accepted and generated at the premises must be assessed and classified in accordance with the Protection of the Environment Operations Act 1997 (POEO Act) and NSW EPA Waste Classification Guidelines as in force from time to time.</p>	<p>As per Section 4 and 5 of the Draft OWMP (Appendix H) all wastes will be assessed and classified in accordance with the Protection of the Environment Operations Act 1997 (POEO Act) and NSW EPA Waste Classification Guidelines.</p>	<p>Section 4 and 5 of the Draft OWMP (Appendix H)</p>
<p>The proponent must develop and implement a plan to confirm and verify the classification of waste to be received and accepted at the facility with ongoing testing to demonstrate compliance with these guidelines.</p>	<p>Section 4 and 5 of the Draft OWMP (Appendix H) outline the procedures that will be implemented during operations and the validation and verification testing that will be carried out to confirm waste received has been suitably classified under the NSW EPA Waste Classification Guidelines. A detailed Waste Acceptance Protocol (Appendix E of the Draft OWMP) will be prepared prior to commencement of operations.</p>	<p>Section 4 and 5, and Appendix E, of the Draft OWMP (Appendix H)</p>
<p>It is noted the bulk soils that are proposed to be accepted are to be included under the trackable waste code N120. This is very broad and includes soils contaminated with a wide range of contaminants. These soils must be classified using the waste classification guidelines, and soils classified as hazardous waste are not permitted to be accepted.</p>	<p>Since receipt of this comment further consultation has been carried out between HiQ, DPHI and the EPA to outline the criticality of the Facility being able to receive and treat hazardous soils in addressing a key market shortage in suitable infrastructure within the Greater Sydney region. Subject to further information being provided as part of this Amendment Report it has been agreed that this recommended condition that ‘hazardous waste not be permitted’ should be removed.</p> <p>As such, soils received at the Facility may be classified as:</p>	<p>Annexure B of the Amended Proposal Description (Appendix B).</p> <p>Section 1.4.2 of the Amended Proposal Description (Appendix B)</p>

EPA Comment	Response	Where Addressed
	<ul style="list-style-type: none"> • General solid waste (non-putrescible) • Hazardous waste • Restricted solid waste. <p>Additional information has been prepared and provided in Annexure B of the Amended Proposal Description (Appendix B). This includes:</p> <ul style="list-style-type: none"> • A list of the contaminant types that will be received at the Facility within soils • The maximum concentrations limits for each contaminant • The maximum annual and storage limits for receipt of waste characterised as hazardous waste. <p>Additional information has been added to Section 1.4.2 of the Amended Proposal Description (Appendix B) outlining the waste classifications for each of the proposed waste types to be received at the Facility.</p>	
<p><i>The proponent must develop and implement a waste acceptance plan. The plan must include:</i></p> <p><i>a) the proponent’s waste acceptance criteria for each waste type.</i></p> <p><i>b) the typical source(s) and method(s) of generation of each waste type.</i></p> <p><i>c) the expected chemical and physical composition for each waste, including associated contaminants and their maximum concentrations, and water content.</i></p> <p><i>d) the expected average and maximum quantity of each waste type to be received, stored and processed at the site at any time.</i></p> <p><i>e) the process used to treat each waste type, and how relevant contaminants are treated and/or removed from each waste stream.</i></p> <p><i>f) the expected average and maximum operational processing capacity for each waste type.</i></p>	<p>The Draft OWMP (Appendix H) describes the acceptance procedures, treatment procedures, storage requirements and environmental controls associated with the Facility’s operation.</p> <p>A more detailed Waste Acceptance Protocol (Appendix E of the Draft OWMP) will be prepared prior to commencement of operations.</p> <p>Annexure A and Annexure B of the Amended Proposal Description (Appendix B) and the Amended Proposal Description (Appendix B) currently outline:</p> <ul style="list-style-type: none"> • The typical sources and generation of each waste type • The maximum contamination concentrations that will be received in soil and packaged waste (liquid). • The expected average and maximum quantity of each waste type • The process used to treat each waste type • The expected average and maximum operational processing capacity for each waste type. 	<p>Appendix E of the Draft OWMP (Appendix H) – to be prepared</p> <p>Section 5 of the Draft OWMP (Appendix H)</p> <p>Amended Proposal Description (Appendix B)</p> <p>Annexure B of the Amended Proposal Description</p>

EPA Comment	Response	Where Addressed
<p><u>Receipt of unexpected waste</u></p> <p>During the licencing stage, the EPA will determine in consultation with the proponent the capabilities of the plant and the upper limits of chemical contaminants that are allowed to be present in incoming waste loads.</p> <p><i>The proponent must have in place thorough procedures, checks and testing on wastes arriving at the facility to verify that each waste type received has been classified correctly and is permitted to be received. This includes checking for additional contaminants or concentrations beyond the treatment capabilities of the plant. Where there is uncertainty or where data is inadequate or missing for contaminants of concern the waste must be kept separate until testing has been completed and a valid waste classification is arrived at.</i></p> <p><i>At the licencing stage the applicant will be required to demonstrate there is sufficient space and procedures so any unexpected waste can be stored, managed and disposed of at a facility that is lawfully allowed to receive it.</i></p>	<p>Annexure B of the Amended Proposal Description (Appendix B) outlines the upper limits (as a concentration limit) proposed for each contaminant type for soils, and sludges, and packaged waste. PFAS contaminated soil, would not exceed Restricted Solid Waste thresholds as described in the NSW EPA waste Classification Guidelines.</p> <p>Section 5 of the Draft OWMP describes the waste receipt, sampling and verification procedures that will be employed to confirm contaminant concentrations within waste received at the Facility. A more detailed Waste Acceptance Protocol (Appendix E of the Draft OWMP) will be prepared prior to commencement of operations</p> <p>Section 5.8 of the Draft OWMP (Appendix H) outlines the procedures that will be implemented should non-conforming waste be received at the Facility.</p> <p>As noted in Section 5.8 of the Draft OWMP (Appendix H) if a load is deemed to be rejected but has already been unloaded and the driver has left the Facility, the weighbridge operator or Site Manager would contact the driver or customer (pending duration of time passed since the waste was unloaded) to return to collect the load. While awaiting collection if needed the load would be moved into an empty bay until collection, or held in Bay G until collected. Any packaged waste would be temporarily stored in the separately bunded storage area adjacent to Bay G until collected.</p>	<p>Annexure B of the Amended Proposal Description (Appendix B)</p> <p>Section 5 of the Draft OWMP (Appendix H)</p>
<p><u>Waste storage requirements</u></p> <p>All waste must be stored in designated secure areas with appropriate containment and control measures for that waste</p>	<p>Section 1.4.9 of the Amended Proposal Description (Appendix B) describes the storage arrangements within the Facility. Each waste soil load will have its own designated bay with no batches mixed. Dedicated bays are provided for PFAS (with its own bunding), drill muds, sludges and packaged waste. Environmental controls have been embedded into the design and management procedures. These include the leachate collection and water management systems, wheel washes, HVAC and exhaust system, bunding design, fire infrastructure features and traffic control features.</p>	<p>Section 1.4.9 of the Amended Proposal Description (Appendix B)</p>

EPA Comment	Response	Where Addressed
<p><u>Emergency Response Plan</u></p> <p>A waste processing facility needs to have an emergency response plan to effectively manage and mitigate the risks associated with potential spills, leaks, or other incidents involving hazardous materials.</p> <p><i>The proponent must develop and implement an emergency response plan in line with the EPA’s Guideline: Pollution Incident Response Management Plans to handle any incidents that may arise from site operations including the receipt and management of non-conforming waste received at the premises</i></p>	<p>As per Environmental Management Measure G2 (refer Appendix C) HiQ have committed to the preparation of an Emergency Response Plan prior to the commencement of operations.</p>	<p>Revised Environmental Management Measures (Appendix C)</p>
<p><u>Timeframe for treatment of waste</u></p> <p><i>All waste received at the facility must be processed within a timeframe agreed to by the EPA and documented in a facility Waste Management Plan.</i></p> <p><i>The proponent must develop and implement an Operational Waste Management Plan (OWMP) detailing all aspects and procedures for operations at the facility</i></p>	<p>All waste received within the Facility will be verified and relocated to its storage and treatment bay within 24 hours of receipt.</p> <p>A detailed Draft OWMP has been prepared, provided in Appendix H, for the Facility outlining all aspects and procedures for operations at the Facility. This document will be finalised following receipt of Project Approval and an EPL.</p> <p>Approximate treatment times are outlined in Section 4.2 of the Draft OWMP (Appendix H). While these are indicative treatment times, there will be circumstances when treatment times vary (for example if verification testing indicates contamination levels remain too high after treatment, re-treatment may be required).</p>	<p>Section 4.2 of the Draft OWMP (Appendix H).</p>
<p><u>Bioremediation Management Plan</u></p> <p>At the licencing stage the proponent must develop and implement for all bioremediation activities a <i>Bioremediation Management Plan</i>. The <i>Bioremediation Management Plan</i> should include the following information:</p> <p><i>a) volume of soil to be treated and the concentrations of all relevant chemical substances, as well as their source and characteristics</i></p>	<p>A Draft Bioremediation Plan has been prepared and provided as Appendix G of the Draft OWMP (Appendix H of this Amendment Report). It is noted that this is an early draft, with further detail to be provided in consultation with the EPA during the licensing stage.</p> <p>The draft Bioremediation Plan includes:</p> <ul style="list-style-type: none"> • Concentration limits of each contaminant type that is proposed to be treated via bioremediation • Indicative annual and any one time volumes 	<p>Draft Bioremediation Plan (Appendix G of the Draft OWMP (Appendix H))</p> <p>Section 5.2, 6.2.1, 7 and 9.5 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
<p><i>b) remediation target concentrations and predicted time for achieving these targets</i></p> <p><i>c) the planned uses or destination of treated material, and options for material not successfully treated and/or containing other chemical substances</i></p> <p><i>d) suitability of site for the bioremediation program</i></p> <p><i>e) proposed management details—including reporting and corrective action</i></p> <p><i>f) details of treatment process, e.g. mixing, stockpiling area, bulking agents or other additives—sources, nature and mixing processes</i></p> <p><i>g) details of the treatment duration</i></p> <p><i>h) details of water collection and leachate treatment systems</i></p> <p><i>i) details of water and nutrient recycling to maintain soil moisture (as far as practicable) or, if not recycled, the details of treatment and disposal</i></p> <p><i>j) methods of extraction and treatment of volatile compounds before release to the atmosphere</i></p> <p><i>k) details of proposed soil sampling program and analytical procedures—sample numbers, parameters, frequency</i></p> <p><i>l) details of the bioremediation performance monitoring program.</i></p> <p>The proposal puts forward to treat wastes with a wide range of contaminants of concern using many different treatment methods in a comparatively small area. Therefore, managing waste treatment time and schedules must be achieved through implementing robust tracking and monitoring systems.</p> <p>These systems and the confirmed treatment schedules will need be agreed in writing with the EPA at the licensing stage. It is noted that the timeframe for bioremediation at a maximum of three months will mean</p>	<ul style="list-style-type: none"> • Proposed management details for bioremediation • Details for treatment processing, including mixing, stockpiling areas and description of additives • Remediation targets • Description of air quality management systems and other environmental controls <p>The draft Bioremediation Plan outlines indicative treatment timing, however this would be confirmed on a batch by batch basis.</p> <p>The majority of material to be treated via bioremediation would be treated from ‘Hazardous waste’ down to concentration levels to allow it to be classified as Restricted Solid Waste. It would then be disposed of to a suitably qualified landfill (refer Section 7 of the Draft OWMP). In the event that bioremediation fails, the batch will either undergo further treatment or would be transported to HiQ’s facility in Yatala for further treatment or disposal.</p> <p>Section 6.2.1 of the Draft OWMP (Appendix H) outlines overarching key management details for the operation of the Facility, including bioremediation. These are outlined in more detail in the draft Bioremediation Plan. Section 9.5 of the Draft OWMP (Appendix H) outlines reporting and corrective action requirements.</p> <p>Section 1.2.9 of the Amended Proposal Description (Appendix B) provides a detailed description of leachate collection and treatment, as well as water recycling to maintain soil moisture.</p> <p>A detailed sampling and analysis quality plan (Appendix A to the Draft OWMP (Appendix H) will be prepared in consultation with the EPA during the licensing stage for the proposal.</p>	<p>Section 1.2.9 of the Amended Proposal Description (Appendix B)</p>

EPA Comment	Response	Where Addressed
<p>that waste stream treatment throughput is low (in terms of annual throughput rates).</p> <p><i>Contingency measures including alternate locations for waste processing and disposal must be developed in the event that the treatment fails or is not achieved in the required time frame</i></p>	<p>Section 5 of the OMWP outlines how waste batches will be tracked to ensure adequate management of different waste batches and treatment techniques.</p>	
<p><u>Cross-contamination prevention</u></p> <p>The proponent must ensure wastes are treated, processed and stored separately and do not become cross contaminated upon receipt, during processing and when being dispatched from the plant. The proposed controls or procedures to guard against cross contamination do not give the EPA confidence that the facility will be able to be operated to prevent cross contamination of hazardous wastes.</p> <p>EPA Waste Classification Guidelines highlight that:</p> <p>“Two or more classes of waste must not be mixed in order to reduce the concentration of chemical contaminants. Dilution of contaminants is not an acceptable waste management option. This includes the addition of water to any waste prior to laboratory analysis for the purpose of waste classification”</p> <p><i>In addition to the proposed Sampling, Analysis Quality Plan (SAQP) it is recommended the applicant develop and implement robust procedures that are documented in the OWMP to ensure all waste materials are securely contained and cross-contamination cannot occur.</i></p>	<p>No batches of any type of waste will be mixed at any point during operations of the Facility.</p> <p>Each load of waste would be assigned a dedicated bay and there would be no mixing of loads. Cross-contamination of material loads within the high shear mixer would be avoided through washdown of the mixer between loads. All areas within the Facility will be bunded and run-off would be captured by the leachate diversion platforms. Each of the bays would be decontaminated using either Decon90 or Liquinox so that there is no residue left in the bay to prevent cross contamination between waste loads.</p> <p>Dedicated bays are provided for PFAS (with its own bunding), drill muds, sludges and packaged waste.</p> <p>Measures to prevent cross contamination are embedded throughout the Draft OWMP (Appendix H), specified within each treatment type procedure.</p>	<p>Draft OWMP (Appendix H).</p>
<p>Management of Industrial Chemicals</p>		
<p>Section 296B of the POEO Act makes it a pollution incident if there is a failure to comply with the risk management measures specified for industrial chemicals in the IChEMS Register. Under these measures users of IChEMS scheduled chemicals (including waste containing those chemicals) must undertake all reasonable practical measures to avoid</p>	<p>Risks associated with IChEMS chemicals (namely PFAS) have been considered within the Hazard Identification Report (Appendix L) and the Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K). Further detail regarding how IChEMS chemicals have been considered, and</p>	<p>Section 5.3.10 of this Amendment Report</p> <p>Hazard Identification Report (Appendix L)</p>

EPA Comment	Response	Where Addressed
<p>cross contamination. The definition of use of an IChEMS scheduled chemical is provided in the Section 296 of the POEO Act.</p> <p>The EPA believes the applicant has not adequately taken these risks into consideration. It appears the applicant is relying upon administrative controls as the sole line of defence to prevent cross contamination of IChEMS scheduled chemicals and waste.</p> <p><i>The EPA recommends the applicant redesign elements of the facility so there are separate entry, unloading, loading and storage areas for IChEMS scheduled 5, 6 and 7 chemicals and wastes (e.g. PFAS) and wastes which are not subject to these requirements.</i></p>	<p>the environmental controls to manage risks associated with these chemicals, has been provided in Section 5.3.10 of this Amendment Report.</p> <p>Further detail, assessing compliance with the principles of the IChEMS Regulations, has also be added to Section 3.2 of the OMWP (Appendix H).</p> <p>The Hazard Identification Report (Appendix L) assessed 106 potential environmental risks that may arise as a result of the operation of the Facility, including risks associated with the receipt and management of PFAS material. With the proposed environmental controls in place these would comprise no High risks and only four Medium environmental risks.</p> <p>Controls for environmental management of all waste types, including those that may be considered Industrial Chemicals, include a combination of physical controls and management procedures. Numerous physical controls have incorporated into the design of the Facility including:</p> <ul style="list-style-type: none"> • The Facility is fully impervious with rollover bunding (250mm) of the entirety of area. Each Compartment is bunded, with additional bunding provided around the PFAS soil bays, and reagent storage area in Compartment 1 • A designated set of Holding Tanks dedicated to PFAS contaminated liquid waste is provided in Compartment 2 • Compartment 2 will be bunded for liquid containment in accordance with pertinent Australian Standards and will be lined with epoxy sealer. • Processing lines include isolation valves, alarms, and manual emergency stop mechanism, which can be operated to isolate water within specific tanks or processing lines in the event of an emergency • To ensure capture of leachate, the design of the bays and pits incorporates a slope towards the back of each bay, directing any leachate to flow into the respective bay or pit. Leachate collection and treatment infrastructure is installed throughout the Facility. • All bays are separated by concrete push walls to prevent cross-contamination. 	<p>Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K).</p> <p>Section 3.2 of the OWMP</p>

EPA Comment	Response	Where Addressed
	<ul style="list-style-type: none"> • Spill kits and emergency wash showers provided throughout the Facility. • A Ventilation system - to be managed in accordance with the OAQMP • Dust suppression systems • Fire suppression infrastructure (hydrants, sprinklers, detection and alarm systems, and run-off containment). <p>The Facility has been designed to ensure separation of receipt and storage of PFAS contaminated soil. Soils containing PFAS would not be unloaded in the tipping bay and Bay G area, rather will be immediately directed to the dedicated, separately banded, PFAS bays, in Bay E. Liquid waste containing PFAS would be treated in it's own designated LWTP infrastructure. As such the Facility has already been designed for the complete separation of PFAS contaminated material.</p>	
<p>Some PFAS are volatile at ambient temperatures and when agitated in liquid. At the licencing stage the EPA will require the applicant to develop an air quality management plan that <i>demonstrates that air emissions generated during the treatment of liquid PFAS waste are adequately captured by the proposed air emissions system and that a separate closed loop system is not required to prevent contamination of air filtration equipment.</i></p>	<p>Generally, PFAS is not likely to be volatile at ambient temperatures. PFAS compounds are typically characterised by strong carbon-fluorine bonds, making them thermally stable and resistant to degradation.</p> <p>As outlined the Draft Air Quality Management Plan (Appendix G), the HVAC system has been designed to accommodate the inclusion of PFAS contaminated material and has found that it is not necessary, nor feasible, that a separate system be installed.</p> <p>It is further noted that Compartment 2 (where PFAS liquid waste will be treated) has been designed with dedicated exhaust inlets (internal) and air intakes (external), separate from the HVAC system for Compartment 1.</p> <p>As noted, a draft Air Quality Management Plan (Appendix G) has been prepared.</p>	<p>Draft Air Quality Management Plan (Appendix G)</p> <p>Revised Air Quality Impact Assessment (Zephyr 2022)</p>

EPA Comment	Response	Where Addressed
<p>It is noted that in table 1-2 Number and allocation of waste bays it is proposed to permit bioremediation bays to be interchangeable with other contaminated soil bays. Consideration should be given by the applicant to whether bioremediation bays should be interchangeable given the sensitivity microbes may have towards certain chemicals which may be commonplace at elevated concentration in contaminated soils, (e.g. Cr(VI), Pb and Ni, phenols, etc) thereby potentially compromising future bioremediation processes in that bay.</p> <p>The EPA notes that procedures and processes for bioremediation will need to be confirmed in a bioremediation management plan at the licencing stage.</p>	<p>As outlined in the Section 6.2 of the Draft OWMP (Appendix H) following removal of soils from each bay following treatment, bays will be decontaminated using either Decon 90 or Liquinox. This procedure will ensure no residual contaminants from a previous batch remains within a bay prior to the next soil batch being placed within the bay, allowing bays to be interchangeable.</p> <p>It is a key operational requirement that bays be interchangeable to allow for inevitable market fluctuations and peaks and troughs in tonnages of different soil and contaminant types.</p> <p>A Draft Bioremediation Management Plan has been prepared and is provided as Appendix G to the Draft OWMP (Appendix H).</p>	<p>Section 6.2 of the Draft OWMP (Appendix H)</p> <p>Draft Bioremediation Management Plan (Appendix G)</p>
<p><u>Decontamination of washdown and trucks</u></p> <p>It is noted that vehicles containing hazardous waste will enter and exit from the Premises. The risks of contamination from hazardous wastes are significant.</p> <p>All vehicles that deliver waste to the facility must be washed in a manner that does not pollute land or waters. Controls must be implemented that capture vehicle wash water, have it classified and direct it to a lawful facility for treatment and disposal.</p> <p>At the licencing stage the proponent will be required to submit to the EPA the decontamination process intended to be used for the trucks and washdown bays.</p>	<p>In general, with the exception of vacuum trucks unloading sludges, trucks accessing the Facility will not be owned and operated by HiQ. The washdown of trucks is not the responsibility of HiQ and generally would not occur onsite. In rare cases, for example if emergency washdown is required, truck washing would be carried out within the wheel wash bays. All water would be collected within the closed loops system and pumped to the LWTP for treatment, or pumped for disposal offsite.</p> <p>Vacuum trucks unloading sludges may opt to wash out residues from their truck. The residues would be washed out with residues directed into the sludge pit or directly to the LWTP (refer Section 5.7.2 of the Draft OWMP (Appendix H)).</p>	<p>Section 5.7.2 of the Draft OWMP (Appendix H)</p>
<p><u>Capacity to manage end products</u></p> <p>It is noted that all the waste received at the facility is proposed to be disposed either to landfill or by trade waste agreement with the local water authority. Disposal is the least preferable outcome under the EPA's Waste Hierarchy and does not align with NSW's Waste Avoidance and Resource Recovery Strategy, EPA's Circular Economy Policy, end-of-life framework or current Regulatory Strategy.</p>	<p>Section 7 of the Draft OWMP (Appendix H) outlines offtake procedures for waste. As outlined in the Amended Proposal Description (Appendix B) and the Draft OMWP (Appendix H) not all waste is proposed to be disposed of to landfill or trade waste agreement:</p> <ul style="list-style-type: none"> • Drill muds that are found to be compliant with the NSW EPA Resource Recovery Order (RRO) and Resource Recovery Exemption (RRE) The treated drill mud order 2014 will be transferred offsite for use in civil 	<p>Section 7 of the Draft OWMP (Appendix H)</p> <p>Section 1.4.10 and 1.4.11 of the Amended Proposal Description (Appendix B)</p>

EPA Comment	Response	Where Addressed
<p>The EPA would expect the applicant to address these issues in the OWMP by outlining procedures that will ensure all waste received and processed is managed in a way that achieves the highest order outcome and that all waste received is to be managed in accordance with best environmental practice. Prior to disposal or recovery, the methods or guidance that are used to classify waste or permit its re-use should be explicitly stated (e.g. EPA Sampling Design Guidelines, EPA Waste Classification Guidelines, Resource Recovery Order/Exemption etc).</p>	<p>applications (such as fill material (Section 1.4.10.3.2 of the Amended Proposal Description)</p> <ul style="list-style-type: none"> Recovered recyclable materials from physical screening such as timber, brick, plastics and metals would be suitable for further reprocessing and recycling. Following testing, these materials would be delivered to a third-party resource recovery facility for recycling (Section 1.4.11) Treated liquid waste and some soils, following treatment and validation, would be suitable for on and offsite reuse. On site reuse of water would include dust suppression and irrigation. Offsite soil reuse would include fill and other civil uses (Section 1.4.11 of the Amended Proposal Description). <p>Due to the nature of the majority of wastes accepted at the Facility, reuse and resource recovery is not an appropriate option and disposal would be required. For example, a large portion of the bulk soils received would be received as Hazardous Waste, and treated until contamination levels are such that the soil could be classified as Restricted Solid Waste. This waste classification is not suitable for reuse.</p> <p>Section 7 of the Draft OWMP (Appendix H) already includes processes for classifying treated waste and identify suitable offtake solutions, including where resource recovery may be appropriate.</p>	
<p><u>Storage of waste products</u></p> <p>At the licensing stage, the applicant will need to update the OWMP to provide the details outlined below for each waste product created at the facility:</p> <ul style="list-style-type: none"> Typical ranges of chemical concentrations Intended waste classification Proposed interim storage arrangements including location, primary and secondary containment measures, timeframes for collection Evidence that there is a commitment to accept these wastes, and these volumes must be validated prior to a licence being issued 	<p>Annexure A and Annexure B of the Amended Proposal Description (Appendix B) provides the maximum chemical ranges for each contaminant type (for soils, sludges, and packaged waste). Annexure B also includes the storage requirements for each waste type, their location and containment measures.</p> <p>Section 1.4.2 of the Amended Proposal Description (Appendix B) outlines the waste classifications for material that enters the Facility and it's expected final waste classification following treatment (Table 1-5 of the Amended Proposal Description).</p>	<p>Annexure B of the Amended Proposal Description (Appendix B)</p> <p>Section 1.4.2 of the Amended Proposal Description (Appendix B)</p>

EPA Comment		Response	Where Addressed																																									
<table border="1"> <thead> <tr> <th>Product</th> <th>Volume</th> </tr> </thead> <tbody> <tr><td>Drilling mud non-compliant with RRO</td><td>1200tpa</td></tr> <tr><td>Drilling mud byproduct – Separated solids</td><td>1200tpa</td></tr> <tr><td>Drilling mud waste water</td><td>0.8ML per annum</td></tr> <tr><td>Liquid waste water</td><td>65 ML per annum</td></tr> <tr><td>PFAS contaminated leachate from PFAS soil</td><td>Unknown tpa</td></tr> <tr><td>PFAS contaminated soil</td><td>7000tpa</td></tr> <tr><td>PFAS contaminated Liquid waste water treatment plant byproduct - GAC and resins</td><td>4000 tpa</td></tr> <tr><td>PFAS contaminated Waste Oil</td><td>1000 tpa</td></tr> <tr><td>PFAS contaminated filter cake</td><td>4000 tpa</td></tr> <tr><td>PFAS contaminated sludge</td><td>Unknown tpa</td></tr> <tr><td>Liquid waste water treatment plant byproduct Waste Oil</td><td>1000 tpa</td></tr> <tr><td>Liquid waste water treatment plant byproduct Filtercake</td><td>4000 tpa</td></tr> <tr><td>Bioremediated and immobilised contaminated soils</td><td>58000 tpa</td></tr> <tr><td>Contaminated scrap metal</td><td>1500 tpa</td></tr> <tr><td>Contaminated cardboard</td><td>750 tpa</td></tr> <tr><td>Contaminated plastic</td><td>1500 tpa</td></tr> <tr><td>Contaminated wood waste</td><td>3750 tpa</td></tr> <tr><td>Contaminated concrete, brick and rubble</td><td>7500 tpa</td></tr> <tr><td>Neutralised acid sulfate soils</td><td>26000tpa</td></tr> <tr><td>Leachate from PFAS contaminated soil</td><td>Unknown tpa</td></tr> </tbody> </table>	Product	Volume	Drilling mud non-compliant with RRO	1200tpa	Drilling mud byproduct – Separated solids	1200tpa	Drilling mud waste water	0.8ML per annum	Liquid waste water	65 ML per annum	PFAS contaminated leachate from PFAS soil	Unknown tpa	PFAS contaminated soil	7000tpa	PFAS contaminated Liquid waste water treatment plant byproduct - GAC and resins	4000 tpa	PFAS contaminated Waste Oil	1000 tpa	PFAS contaminated filter cake	4000 tpa	PFAS contaminated sludge	Unknown tpa	Liquid waste water treatment plant byproduct Waste Oil	1000 tpa	Liquid waste water treatment plant byproduct Filtercake	4000 tpa	Bioremediated and immobilised contaminated soils	58000 tpa	Contaminated scrap metal	1500 tpa	Contaminated cardboard	750 tpa	Contaminated plastic	1500 tpa	Contaminated wood waste	3750 tpa	Contaminated concrete, brick and rubble	7500 tpa	Neutralised acid sulfate soils	26000tpa	Leachate from PFAS contaminated soil	Unknown tpa	<p>Based on the nature of the material to be received at the Facility and the expected fluctuations in types and quantities it is not possible to secure a commitment for all waste outputs for receipt. Much of the waste will be sent to landfill where a commitment is not typical. In the event that any wastes cannot be received for offtake, they will be sent to HiQ's Yatala facility.</p>	
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Bulk soils																																												
<p>Bioremediation</p> <p>58,000 tonnes of contaminated soils are proposed to be accepted with 50,000 tonnes to be immobilised and a further 8,000 tonnes to be bioremediated. It is not clear whether there is sufficient segregation proposed to deal with all these wastes. In some cases, it may be possible to combine them, but they all have their own properties and potential incompatibilities. Mixing of wastes to achieve re-use or disposal criteria is not an acceptable practice.</p> <p>The use of bioremediation is for targeted contaminants and the presence of others can impact negatively upon the process. Bioremediation must be conducted in accordance with the principles outlined in EPA's Best Practice Note on land farming.</p> <p>At the licensing stage the applicant will be required to submit a bioremediation plan that clearly demonstrates how the bioremediation of</p>	<p>As outlined throughout the Amended Proposal Description (Appendix B) and the Draft OMWP (Appendix H) no mixing of any waste loads is proposed as part of the operations of the Facility.</p> <p>Each waste load will have its own designated treatment bay, separated by concrete push walls to segregate waste loads.</p> <p>A Draft Bioremediation Plan has been prepared and is provided as Appendix G to the Draft OWMP (Appendix H). Further detail regarding treatment times and volume capacity for bioremediation materials has been provided in Section 5.3.9 of this Amendment Report.</p>	<p>Amended Proposal Description (Appendix B)</p> <p>Draft OMWP (Appendix H)</p> <p>Draft Bioremediation Management Plan (Appendix G of the OWMP)</p> <p>Section 5.3.9 of this Amendment Report.</p>																																										

EPA Comment	Response	Where Addressed
<p><i>contaminated soils doesn't result in the main mechanism for contaminant reduction being due to mixing and volatilisation. A trial is recommended to demonstrate the efficacy of the bioremediation process.</i></p>		
<p>Specific Immobilisation Approvals</p> <p>There are a wide range of contaminants that are proposed to be immobilised through either a general or specific immobilisation approval. Any contaminated soils proposed to be accepted at the premises for contaminant immobilisation must have a General or Specific Immobilisation Approval in place under Part 10 of the Protection of the Environment Operations (Waste) Regulation 2014 prior to receipt.</p> <p>For wastes requiring immobilisation under a Specific Immobilisation Approval, any application must be in accordance with the EPA's published guidance on Immobilisation Approvals (https://www.epa.nsw.gov.au/your-environment/waste/tracking-transporting-hazardous-waste/immobilisation) and the process must be able to reliably immobilise the contaminant/s of concern.</p>	<p>Immobilisation will only be utilised for treatment of specific/targets contaminants (as outlined in Annexure B of the Amended Proposal Description (Appendix B)).</p> <p>Section 6.2.1.4 of the Draft OWMP (Appendix H) provides a detailed description of the immobilisation process. As noted in Section 6.2.1.4.2 contaminated soils that are required to be immobilised prior to disposal to landfill and are not covered by existing general immobilisation approvals require a specific immobilisation approval (SIA) from the NSW EPA. The EPA issues immobilisation approvals in accordance with clause Part 10 of the Protection of the Environment Operations (Waste) Regulation 2014.</p> <p>A draft application template is provided in Appendix D of the Draft OWMP (Appendix H), taken from the EPA's website.</p>	<p>Annexure B of the Amended Proposal Description (Appendix B)</p> <p>Section 6.2.1.4 and Appendix H of the Draft OWMP (Appendix H)</p> <p>Appendix D of the OWMP (Appendix H of this Amendment Report)</p>
<p>In Figure 1-10: Waste Reveal Process bench scale testing is proposed. Bench scale testing (which has potential for error when used for large stockpiles) may be appropriate where the waste has been homogenized. However, many wastes have a high degree of variability. For SIA purposes, a bench scale test extrapolated to 1000s of tonnes may not be appropriate and pilot trials may be required to test equipment and methodology.</p>	<p>Each individual waste bay has a maximum capacity of 60 m3. Each bay forms its own soil batch for treatment purposes. Soil properties are therefore tested on a maximum of this soil volume (note up to 100 tonnes). It is further noted that any soil batch will have come from a single source with no mixing of waste types.</p> <p>Further, as noted in Section 5.6.2 of the Draft OWMP (Appendix H) there may be additional verification carried out per batch (particularly for new customers).</p> <p>Additional clarification has been added to Section 5.6.1 of the Draft OWMP (Appendix H) noting that pilot testing may be required to determine treatment parameters for immobilisation or bioremediation.</p>	<p>Section 5.6.1 and 5.6.2 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
<p>In Figure 1-11: Soils, sediments and sludges process flow there is no testing component or pilot trials, it goes straight into immobilisation. This should be updated to include testing and pilot trials.</p> <p>It is noted that sludge might need pre-treatment with bentonite. This may result in dilution of the contaminants. Where possible sludges with intermediate moisture contents should be pressed to increase solids.</p>	<p>Figure 1-11 (now Figure 1-12) presents a summarised flow chart. More detailed flow charts are provided in the Draft OWMP (Appendix H). The EPA should refer to Section 5 (Figure 5-1) of the Draft OWMP for a more detailed flow chart for all waste received at the Facility.</p> <p>Additional clarification has been added to Section 5.6.1 of the Draft OWMP (Appendix H) noting that pilot testing may be required to determine treatment parameters for immobilisation or bioremediation.</p> <p>Additional wording has been added to the sludge treatment procedures (Section 6.3.1 of the draft OWMP (Appendix H), to include pressing of sludges with intermediate moisture content.</p>	<p>Figure 1-12 of the Amended Proposal Description (Appendix B)</p> <p>Section 5.6.1 and 6.3.1 of the draft OWMP (Appendix H),</p>
<p>It should be noted that metalloids such as arsenic and metals such as mercury form soluble phases in some cementitious systems, and this would need to be addressed in a specific immobilisation approval application.</p> <p>Note that for PAH reclassification, leachable concentration is not appropriate unless benzo(a)pyrene is the sole contaminant. The usual method is Unconfined Compressive Strength. See EPA’s Immobilisation Technical Note 2 for such contaminants and others that are immobilised using solidification techniques.</p>	<p>Noted, the specific treatment requirements for each waste batch will be outlined within Section 6.2.1.4.2 of the Draft OWMP (Appendix H) and the Specific Immobilisation Approval application (refer Appendix D of the draft OWMP (Appendix H).</p>	<p>Appendix D of the draft OWMP (Appendix H)</p>
<p><u>Acid Sulfate Soils</u></p> <p>Acid sulfate soils (ASS) must be managed in accordance with Part 4 of the EPA Waste Classification guidelines. At the licensing stage, the applicant will be required to develop and implement an Acid Sulfate Soil Management Plan (ASSMP). This must be able to demonstrate to the EPA how any processes and methods it proposes to use will result in homogeneous mixing and/or neutralisation of ASS material. This should ensure that the acidic species are neutralized. Only once neutralization is achieved can a waste classification be conducted. Onsite testing and</p>	<p>A Draft Acid Sulfate Soil Management Plan (ASSMP) has been prepared and provided as Appendix F to the Draft OWMP (Appendix H). The Draft ASSMP outlines measures for the neutralisation of ASS. Following treatment and prior to further treatment or dispatch for disposal, the material would be classified in accordance with the waste classification guidelines.</p> <p>Treatment of Acid Sulfate Soils will occur within the ASS storage and treatment bays (Bay D). Each bay has a holding capacity of 60m³, which will be the maximum volume of material treated as a single batch of ASS. The</p>	<p>Draft Acid Sulfate Soil Management Plan (ASSMP) has been prepared and provided as Appendix F to the Draft OWMP (Appendix H).</p>

EPA Comment	Response	Where Addressed
<p><i>validation are required in addition to reliance on third party assessments of PAS and ASS.</i></p> <p><i>It is noted that the applicant plans to use a front-end loader bucket for neutralising ASS batches under 500T. The EPA is of the opinion that this will not sufficiently neutralise the ASS and would be a highly odorous activity. At the licensing stage the EPA would require additional information about the Mixing Plant for ASS batches to consider potential licence conditions for this activity.</i></p>	<p>use of a front end loader bucket is considered suitable for treatment of this volume of material to suitable neutralise the ASS.</p>	
<p><u>Drill Mud</u></p> <p><i>It is unclear to the EPA what sources of the drilling mud will be, how the drilling muds will be treated and what any potential contaminants might be. It should be noted that drill mud can contain asbestos or hydrocarbons from the ground that was directionally drilled. The presence of any contaminants should be confirmed prior to receipt at the premises.</i></p> <p><i>The EPA notes at the licensing stage, additional information would be required to ensure that all contaminants in drilling muds are identified and can be removed. Drilling mud that has come into contact with hazardous waste will not be considered for a resource recovery order and is not deemed suitable for application to land. The processes and agreed chemical concentrations will need to be documented in the OEMP and will need to account for any drill mud that requires transport to landfill and include information regarding the storage handling and quantity of stockpiled drill mud at the site.</i></p>	<p>Section 6.3.2 of the Draft OWMP (Appendix H) outlines the treatment and management process for drill muds. Typical sources of drill muds will be construction projects (e.g. during geotechnical drilling). Drill muds, like all waste received at the Facility, will have undergone testing prior to receipt at the Site to confirm the presence of any contaminants, and will not be accepted if it contains asbestos or other non-conforming waste types.</p> <p>Drill muds will be delivered to the Facility in vacuum tanker trucks and unloaded directly into the drill mud plant for treatment.</p> <p>Drill muds are treated through the drill mud plant which includes a shaker sieve, desilter hydrocyclone and decanter centrifuge. By-products of this process are separated solids (rock and aggregate, coarse sands, and finer silt pressed into a filter cake) and wastewater.</p> <p>The separated solids output will undergo testing to determine compliance with the RRO and RRE for Treated Drilling Muds (2014). Compliant material will be transferred offsite for use in civil applications such as fill material. Material that doesn't meet the RRO/RRE specification (outlined in Table 6-18 of the Draft OWMP) will be transferred to a licenced landfill for disposal (or may undergo further treatment onsite). Wastewater from the process will be treated using the LWTP system and will be tested to ensure compliance with Sydney Water trade wastewater specifications. Wastewater will either be reused at the Facility for dust suppression or will be discharged to sewer.</p>	<p>Section 6.3.2 and Table 6-18 of the Draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
PFAS Chemicals		
<p><u>NSW Industrial Chemicals Environmental Management Standard Register</u></p> <p>The Industrial Chemicals Environmental Management (Register) Instrument 2022 (IChEMS Register) has been established by the Commonwealth, consisting of 7 schedules. In NSW, the IChEMS Register is implemented through POEO Act. For all scheduled industrial chemicals, all users and manufacturers in NSW must comply with the risk management measures, prohibitions, and restrictions specified in the IChEMS Register.</p> <p>Reviews of the IChEMS register must be conducted at a minimum of once every 6 months to ensure that all scheduled chemicals are managed to meet the relevant Risk Management Measures. The reviews of the IChEMS register should include the CAS RN list of chemicals listed in the register (available on the IChEMS website), to ensure that analysis for relevant chemicals is carried out. The review must also refer to CAS RN list of chemicals listed in the IChEMS Register</p>	<p>Section 9.5 of the Draft OWMP (Appendix H) outlines key reporting and compliance reviews, including a commitment to review the IChEMS register at a minimum of 6-monthly frequencies.</p>	<p>Section 9.5 of the Draft OWMP (Appendix H)</p>
<p><u>PFAS as a Dangerous Good</u></p> <p>In NSW any waste containing PFAS could be considered a dangerous good under the ADG Code. Many wastes containing PFAS chemicals can be designated Dangerous Goods (UN3077 for Solids and UN3082 for Liquids).</p>	<p>The Amended Proposal Description (Appendix B) and all other documentation has been updated to reflect PFAS as having the potential to be considered a Dangerous Good (Class 9 Packing Group III).</p>	<p>Amended Proposal Description (Appendix B)</p>
<p><u>PFAS Contaminated soil</u></p> <p><u>As outlined in the section “Management of Industrial Chemicals” the proponent will be required to separate the bund systems that deals with PFAS contaminated soil. There is potential for dust generation while the PFAS contaminated soil is unloaded, stored and loaded. At the licensing stage the applicant must provide to the EPA an updated OWMP documenting all procedures related to the management and storage of the identified PFAS contaminated soil. The OWMP must detail all practical measures to be taken to ensure there is no cross-contamination between the PFAS contaminated soil and the other waste received, processed and</u></p>	<p>PFAS soil will be stored in Bay E which is separately banded and would only contain PFAS contaminated soil.</p> <p>Section 6.2.3 of The Draft OWMP (Appendix H) provides a detailed procedure for the receipt and storage of PFAS Contaminated Soils.</p> <p>No mixing of waste batches will occur within the Facility and Bay E has been dedicated purely for PFAS contaminated material, preventing cross contamination.</p>	<p>Section 6.2.3 of the Draft OWMP (Appendix H)</p> <p>Revised Air Quality Impact Assessment (Zephyr, 2022)</p> <p>Draft Air Quality Management Plan (Appendix G)</p>

EPA Comment	Response	Where Addressed
<p><i>transported from the site. The proponent must develop and document procedures that address the potential for moisture loss while the soil is in storage and the potential for dust generation. Additionally, the OWMP must detail measures to ensure the disposal of PFAS byproducts follows best practice guidelines and adheres to all regulatory requirements</i></p>	<p>A Revised Air Quality Impact Assessment (AQIA) (Zephyr, 2022) was prepared and submitted as part of the Response to Submissions for the proposal, which included assessment of potential air quality impacts from the Facility’s operations (including the handling of PFAS material). A draft Air Quality Management Plan has been prepared and is provided in Appendix G which includes measures for dust management within the Facility.</p>	
<p><u>Additional information required by the EPA at the licensing stage for the PFAS Waste Water Treatment Plant will include:</u></p> <ul style="list-style-type: none"> • The proposed/expected maximum and average flow rates through the pre treatment and PFAS treatment units. The likely treatment duration, or factors that may affect treatment duration and effectiveness • Other contaminants that may be present with the PFAS including levels of hydrocarbons, heavy metals or other types of pollutants • Treatment concentration limits of the wastewater treatment plant <p>Evidence that the waste intended to be treated can be treated in such a way as to ensure that the chemical is destroyed or irreversibly transformed so that the remaining waste and environmental releases do not contain chemicals that exhibit Schedule 6 or Schedule 7 IChEMS risk characteristics</p>	<p>Noted. This information will be provided to the EPA following detailed design and during the license application process (as final flow rates will depend on final equipment and design).</p>	<p>N/A</p>
<p><u>By products from the PFAS Wastewater Treatment Plant</u></p> <p>IChEMS outlines procedures that must be strictly adhered to when managing the byproducts of the PFAS treatment plant. The applicant must ensure that all waste that has come into contact with IChEMS scheduled chemicals is treated according to the relevant IChEMS scheduled advice.</p> <p>Solid PFAS waste such as the PFAS filter cake and the PFAS sludge and other PFAS containing material must be classified in accordance with the Addendum to the Waste Classification Guidelines (2014) – Part 1:</p>	<p>Liquid waste contaminated with PFAS will be treated in its own dedicated liquid waste treatment tanks and equipment, with no mixing with other waste loads.</p> <p>Any spent material generated during the treatment of PFAS will be classified in accordance with the Waste Classification Guidelines (2014). Further clarification regarding treatment of PFAS contaminated byproducts has been provided in Section 6.4.2 of the draft OWMP.</p>	<p>Section 6.4.2 of the draft OWMP (Appendix H)</p>

EPA Comment	Response	Where Addressed
<p>classifying waste as amended from time to time and legally transported to a facility that is licenced to accept it.</p> <p>The EPA notes that producers and holders of PFAS waste must undertake all reasonably practical measures to avoid contamination of non PFAS wastes and must not dilute PFAS waste to lower the PFAS concentration below relevant waste handling and disposal thresholds. Best practice waste handling and disposal thresholds need to be regularly updated.</p> <p><i>At the licensing stage the applicant must provide to the EPA an updated OWMP documenting all procedures related to the management and storage of the identified PFAS by-products. The OWMP must detail all practical measures to be taken to ensure there is no cross contamination between the PFAS waste byproducts and the other waste received, processed and transported from the site. Additionally, the OWMP must detail measures to ensure the disposal of PFAS byproducts follows best practice guidelines and adheres to all regulatory requirements</i></p>		
<p>Environmental Liabilities</p>		
<p>Financial Assurance will be required</p> <p>The proponent should also be made aware that the EPA will require the provision of a financial assurance for the project prior to issuing an Environment Protection Licence. The amount and form of the financial assurance is to be agreed with the EPA once the detailed design is completed. This approach would enable the amount and form of financial assurance to properly reflect the EPA’s consideration of the following prescribed matters in the POEO Act:</p> <p>I. The degree of risk of environmental harm associated with the wastes and waste by products;</p> <p>II. The remediation work that may be required because of activities under the licence;</p> <p>III. The environmental record of the holder or former holder of the licence or proposed holder of the licence; and</p>	<p>Noted</p>	<p>N/A</p>

EPA Comment	Response	Where Addressed
<p>IV. Other matters prescribed in the regulations.</p> <p>The EPL could not be surrendered, or transferred to another person, except with the consent of the EPA in accordance with the POEO Act (which would include the transferee satisfying the EPA of its financial capacity to comply with the environmental protection measures in the EPL). The conditions of the EPL (including maintaining the financial assurance) would remain binding and enforceable against the holder of the EPL.</p>		
<p><u>Insurance may be required</u></p> <p>The proponent should be made aware that, consistent with section 72 of the POEO Act, the EPA may require the proponent to take out and maintain a policy of insurance to cover environmental incidents at the licensing stage.</p>	Noted	N/A
<p>Recoverable Materials</p>		
<p><u>Resource Recovery Orders and Exemptions</u></p> <p>The EPA doesn't permit the reuse/application of hazardous wastes on land. General Resource Recovery Orders and Exemptions (RROE) listed on the EPA website are not developed with hazardous waste streams in mind. All treated waste considered for reuse from this facility would need to be the subject of a successful application to the EPA for a specific RRO/E.</p>	<p>No waste that is received as Hazardous waste at the Facility will be dispatched under an RRO/E. Hazardous soil will be treated to levels consistent with the Restricted Solid Waste classification contaminant concentration levels and disposed of to landfill.</p>	<p>Section 1.4.2.1 of the Amended Proposal Description (Appendix B)</p>
<p><u>Onsite reuse of waste products</u></p> <p>IChEMS requirements prohibits the reuse of waste which has come into contact with schedule 7 PFAS contaminated waste. The EPA will not approve the onsite reuse of treated water derived from PFAS wastewater treatment. Even advanced treatments may not fully remove all PFAS compounds, posing environmental and health risks.</p>	<p>Noted. No liquid waste, originally contaminated with PFAS, will be reused within the Facility.</p>	<p>Section 1.4.10.4.3 of the Amended Proposal Description (Appendix B)</p>

EPA Comment	Response	Where Addressed
<p><u>Water</u></p> <p>The plans which have been provided to the EPA are based on the approval of the Trade Waste connection with Sydney Water. If the Trade Waste connection is not approved the EPA will require the applicant to provide detailed plans and updates to all documents contained within the ADR package to demonstrate it is able to accommodate the additional trucks and transport of liquid waste to a facility lawfully able to accept it for all liquid waste that would otherwise be discharged to the sewer.</p>	<p>A detailed description of the Facility’s contingency plans in the event the Trade Waste Agreement is not approved are provided in Section 5.3.7 of this Amendment Report. HiQ have identified contingency measures in the event that a Trade Waste Agreement cannot be obtained (either for part or all of the proposed discharge volumes). In the event that not all water can be discharged to sewer, treated liquid waste would be collected within tankers and removed offsite for disposal.</p> <p>Table 1-13 of the Proposal Description (Appendix B) identifies possible Sewage Treatment Plants (STPs) suitable for disposal of treated wastewater.</p> <p>Load out of treated water would be carried out during morning or afternoon hours of operation to avoid peak vehicle movement periods. Section 7.4.2 of the draft OWMP (Appendix H) prescribes the procedures for loading of liquid waste tankers.</p> <p>The revised Transport Impact Assessment (TIA) submitted as Appendix G to the RtS assessed the potential impact of the Proposal on the surrounding road network. The traffic generation from the Proposal identified in Section 2.1 of the revised TIA considered outbound vehicles from the LWTP (i.e. assessed water being removed offsite by tanker rather than discharged to sewer). Any impacts from tankering treated water offsite rather than discharging to sewer have therefore already been considered, and found to be acceptable.</p>	<p>Section 5.3.7 of this Amendment Report</p> <p>Section 7.4.2 of the draft OWMP (Appendix H)</p> <p>Table 1-13 of the Proposal Description (Appendix B)</p>
Operational Management		
<p><u>Spill response plans</u></p> <p>At the licensing stage, the applicant will be required to include within the OWMP comprehensive spill response plans to handle accidental spills/releases of each waste and end product at the site.</p>	<p>As per Environmental Management Measure G2 (refer Appendix C) HiQ have committed to the preparation of an Emergency Response Plan, which will include a comprehensive spill response, prior to the commencement of operations.</p>	<p>Revised Environmental Management Measures (Appendix C)</p>
<p><u>Storage of reagents</u></p>	<p>Two storage locations will be provided within the Facility, one in Compartment 1 and one in Compartment 2 (refer Figure 1-1 in this Amendment Report). Notably, Hydrochloric Acid and Caustic Soda will be</p>	<p>Figure 1-1 of this Amendment Report</p>

EPA Comment	Response	Where Addressed
<p>The applicant has provided to the EPA a large list of treatment reagents intended to be stored at the Premises. It is concerning to the EPA that the provided plans include storage of incompatible chemicals within the same bunded area. For example, HCl and NaOH must not be stored together.</p> <p><i>At the licensing stage, the applicant must submit to the EPA new plans that show how these chemicals will be stored within their own separate bunded areas. It is recommended that the combined “at any one time” total of these chemical reagents must not exceed 10 tonnes.</i></p>	<p>stored in separately, with Hydrochloric Acid to be stored in the Compartment 1 reagent storage area and Caustic Soda in the Compartment 2 reagent storage area. This is outlined in Section 1.4 of the Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) and Section 4.3 of the draft OWMP (Appendix H).</p>	<p>Section 1.4 of the Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K)</p> <p>Section 4.3 of the draft OWMP (Appendix H).</p>
<p>Integrated Waste Tracking</p>		
<p>The proposed facility will be required to use the Integrated Waste Tracking system under Part 4 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> (Waste Regulation), the transport and disposal of hazardous waste listed in Schedule 1 must be tracked when it is transported into, within or out of NSW. The waste producer, their authorised agent if appropriate, transporter and receiving facility manager are all responsible for ensuring that the waste is properly tracked. Waste tracking involves:</p> <ul style="list-style-type: none"> • obtaining approval from the EPA for the hazardous waste to be transported • completing required documentation • ensuring all parties are authorised to transport and receive the waste. <p>Under Parts 1 and 3 of Schedule 1 of the Waste Regulation, certain liquid wastes need to be tracked.</p>	<p>Noted. Section 9.5 of the Draft OWMP (Appendix H) outlines the procedures for tracking and reporting waste in accordance with Part 4 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> (Waste Regulation).</p>	<p>Section 9.5 of the Draft OWMP (Appendix H)</p>

4.1.2.7 SafeWork

An email was received on the 16 September 2024 from SafeWork in response to correspondence requesting comment on the proposal. Table 4-7 presents the key comments raised and HiQ's response.

Table 4-7 Response to SafeWork

Comment	Response / Comment
<p>The Person Conducting a Business or Undertaking (PCBU) managing the site should ensure that when working on the site, an assessment is undertaken to identify all hazardous chemicals that are currently present on site and comply with requirements of the NSW Work Health & Safety Act 2011 and NSW Work Health & Safety Regulations 2017 when developing and implementing any remediation / processing program. If any waste is classified as a dangerous goods then Chapter 7 Divisions 3 and 4 of the NSW Work Health & Safety Regulations 2017 relating to manifests of hazardous chemicals and placarding may apply.</p>	<p>A Hazard Identification Report (Appendix L) and a Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) have been prepared for the Proposal, which consider key safety risks and the storage and handling of hazardous chemicals.</p>
<p>In planning the WHS management of this process, the PCBU should ensure that all reasonably practicable measures to prevent exposure to these chemicals are considered and implemented during the transport, storage and processing.</p>	<p>The Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) outlines the relevant guidelines and standards and preventative controls for the handling of hazardous chemicals.</p>
<p>Consideration should be given to the above issue and addressed at the design and construction stages if plant and equipment for the treatment facility are built on site including adequate exhaust ventilation systems and other engineering controls to eliminate worker exposure to hazardous chemicals. If hazardous material are transferred off site, work processes should be designed to eliminate worker exposure to hazardous chemicals during the transfer process and any person / PCBU dealing / handling / processing the hazardous materials comply with the WHS management requirements established by the PCBU to eliminate worker exposure to hazardous chemicals.</p>	<p>As noted above, A Hazard Identification Report (Appendix L) and a Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) have been prepared for the Proposal, which consider key safety risks and the storage and handling of hazardous chemicals.</p> <p>The Facility includes an HVAC and ventilation system that will be operated in accordance with the OAQMP (Appendix G).</p> <p>Section 7.4 of the draft OWMP (Appendix H) outlines the waste loading procedures for the handling and loading of waste.</p>
<p>Where it is not reasonably practicable to prevent exposure, requirements outlined in Chapter 3 “General risk and workplace management” and Chapter 7 “Hazardous Chemicals and Schedule 14 requirements for health monitoring” of the Work Health and Safety Regulations 2017 should be followed.</p>	<p>Noted.</p>

4.1.3 Future engagement

None of the amendments change the planned consultation during detailed design, construction or operation of the Proposal. No new agencies are affected by the amendments and future consultation will remain consistent with the approach presented in the EIS.

4.2 Community engagement

4.2.1 Overview

Community engagement activities were undertaken to seek feedback and raise awareness of the Proposal during its development and preparation of the EIS. Community consultation activities undertaken to date include the following:

- Early engagement that commenced following submission of the initial scoping report (3 September 2020), including identifying community stakeholders and setting up appropriate engagement tools
- A notification letter was provided to the community providing details about the Proposal, contact details, the EIS process and encouraging feedback was mailed to identified community stakeholders on 9 March 2021
- Providing a variety of communication methods including emails and/or phone calls, provision of a project website, set up of a dedicated project email to receive feedback and provision of a postal address for written feedback.

A 'Community and Stakeholder Participation Strategy' was also developed as part of the EIS. The objectives of the Community Stakeholder Participation Strategy were to:

- Identify appropriate stakeholders for the Proposal and justification for their selection
- Inform identified stakeholders and the broader community about the main features, related issues and potential impacts of the Proposal that is accurate and timely
- Provide accessible and sufficient opportunity for stakeholder input to the Proposal.

4.2.2 Engagement undertaken and issues raised

As the proposed amendments were determined to result in similar and/or lesser impacts to those assessed in the EIS, further community consultation was not deemed necessary at this time.

4.2.3 Future engagement

None of the amendments change the planned consultation during detailed design, construction or operation of the Proposal. No new community stakeholders are affected by the amendments and future consultation will remain consistent with the approach presented in the EIS.

5 Description of the amendments

This chapter describes the proposed amendments to the Proposal that have been introduced as a result of changes to the Proposal operations, design progression, or in response to clarifications sought from stakeholders. A summary of the changes compared to information presented within the EIS and RtS is provided in Section 5.5.

5.1 Changes to the Proposal operations

The following changes have been made to the proposed operations of the Proposal in response to comments from agencies and through design progression.

5.1.1 Exclusion of chemical oxidation as a treatment technology

In response to comments from the EPA during the meeting of 4 October 2023, HiQ has decided to exclude the treatment of soils through chemical oxidation from the Proposal description. Treatment of soils on the Site would be limited to:

- Immobilisation in accordance with General Immobilisation Approvals (GIAs) and Specific Immobilisation Approvals (SIAs) – note that the facility would only treat wastes using micro-encapsulation immobilisation technologies, and reagents and processes used in Australia and globally that have demonstrated scientific basis for immobilisation (see further discussion at Section 5.3.3)
- Treatment of sludges
- Treatment of ASS/PASS
- Treatment of non-contaminated drilling mud
- Treatment of liquid waste.

The following reagents proposed for use in the chemical oxidation treatment procedure have been removed from the list of reagents to be stored onsite (Table 116 of the Amended Proposal description, Appendix B):

- Hydrogen Peroxide
- Potassium Permanganate
- Sodium Persulfate.

5.1.1.1 Justification

Chemical oxidation has been removed from the Proposal as a treatment technology as it is acknowledged it is not a preferred treatment approach by the EPA for several reasons, including:

- The use of strong chemical agents has the potential to lead to the generation of hazardous by-products and the release of harmful substances, if not appropriately managed
- Chemical oxidation can take a longer time to complete than other treatment technologies such as immobilisation, and was therefore determined not to be the most appropriate use of the facility areas
- While chemical oxidation may be effective for certain contaminants, it often requires large quantities of chemicals and energy, making it less sustainable.

For these reasons chemical oxidation of soil is not proposed as a treatment technology at the Facility.

5.1.2 Waste throughput volumes

A comprehensive review of the Facility's operational capacity as well as market conditions has been carried out in response to stakeholder queries. As a result of this review, HiQ are proposing to reduce the annual throughput to 210,500 tonnes per annum, as well as reducing the onsite storage limits for each of the waste streams at any one time, shown in Table 5-1.

Table 5-1: Waste types proposed for the Site

Type of Waste	Waste classification	Management	Tonnes per Annum
Packaged waste – Liquid	<ul style="list-style-type: none"> Liquid waste 	Contaminated packaged waste: no treatment, only storage	40,000t
Packaged waste – Solid	<ul style="list-style-type: none"> General solid non-putrescible Restricted solid waste 	Non-contaminated waste: shredding and offtake for disposal	
PFAS contaminated soils	<ul style="list-style-type: none"> General solid non-putrescible Restricted solid waste 	Storage only	7,500t
Bulk soils		Various methods:	58,000t
<i>Contaminated soils</i>	<ul style="list-style-type: none"> General solid waste (non-putrescible) 	<i>Primarily immobilisation</i>	<i>50,000t</i>
<i>Contaminated soils</i>	<ul style="list-style-type: none"> Restricted solid waste Hazardous waste 	<i>Primarily bioremediation</i>	<i>8,000t</i>
ASS	<ul style="list-style-type: none"> Acid sulfate soils 	Acid neutralisation in batches	26,000t
Drill muds	<ul style="list-style-type: none"> General solid waste (non-putrescible) Liquid waste 	Dewatering and liquid waste treatment	2,000t
Sediments and sludges	<ul style="list-style-type: none"> Liquid waste Restricted solid waste Hazardous waste 	Dependent on moisture content of sludges – dewatering, liquid waste treatment and soil decontamination	7,000t
Liquid waste	<ul style="list-style-type: none"> Liquid waste Restricted solid waste 	Treated and validated in 50 kL batches through the LWTP	70 ML
Total			210,500

The Facility would have a total of 28 bays and 4 pits. Each bay and pit would be dedicated to a separate specific waste batch as it is managed and would not undergo mixing. However, between batches (with the exception of the PFAS bays), bays and pits are interchangeable for the respective type of waste management. Indicatively though, the following bay allocations have been identified for the operation for the Facility:

- Bulk soil receipt: three bays
- Storage and transfer: one bay
- Immobilisation: ten bays
- Bioremediation: five bays
- ASS: three bays
- PFAS: three bays (non-interchangeable)
- Packaged waste: three bays
- Recovered recyclable materials: one bay
- Sludges: three pits
- Drill mud: one pit.

As a result of design refinements and the exclusion of chemical oxidation as a treatment technology, there have been amendments to the allocation of storage and treatment bays, compared to the Updated Proposal Description included in the RtS Report.

The total capacity of the Facility is a function of the maximum storage volume within each bay, the number of bays available, and the time waste needs to be stored in each bay. It also needs to be operable from a vehicle and machinery manoeuvrability perspective. Updated swept paths have been prepared to consider the updated layout and current throughput volumes (refer Section 5.2.1).

Each of the soil bays measure five metres by five metres, segregated by concrete push walls which measure six metres in height (as shown in Appendix E). The storage volume for each of the bays is dependent on the characteristics of each individual soil batch (i.e. depending on the level of cohesiveness of the soil). Based on the dimensions of the bay it has been estimated that an average of 60 m³ of material could be contained within each of the bays. This is based on a 45-degree slope of the soil material which has been deemed to be a reasonable average assumption (i.e. some material may be able to be stockpiled at a steeper slope whilst others may require a flatter slope based on the materials properties).

The sludge and drill mud pits have been calculated to have a storage capacity of approximately 58 m³ of material based on the slope of the pit measuring 11 degrees.

Table 5-2 sets out further details regarding the waste type, storage limit and the proposed location for storage and treatment of each of the waste types proposed to be received at the Site. The location of the bays and pits are shown in Figure 1-1. Further details are provided in the Amended Proposal Description (Appendix B).

Table 5-3, then provides a summary of the maximum capacity throughputs achievable for each waste type. As shown in Table 5-3 the proposed amended throughput would equate to, or be below, the average annual capacity of the Facility.

Table 5-2 Waste material storage limits and locations

Waste type	Applicable Waste Codes	Maximum any one time storage limit (tonnes)	Storage before treatment	Storage after treatment	Bay/ Pit No.#	Indicative allocated available bays	Approximate treatment time
Packaged wastes – including Dangerous Goods Class 8 PG II and III and Class 9	B100, C100, D120, D140, M270	400 t Note: no more than 50 m ³ of combustible material	Received and stored within containers – no treatment. Packaged waste classified as DG Class 8, PG II or PG III would be stored in a designated bay in compartment 3.	In Intermediate Bulk Containers (IBCs) or drums located adjacent to the office and amenities block, within the shed or within compartment 3.	F Dangerous Goods would be stored in a designated bay within Bay F	1	~2-4 days
Packaged wastes – Non-Dangerous Goods	J160, N120, N190, N140, N205, D130, D290, D160, D310, D150, D140, D190, N150, A100, D220, D120, D210, D300, M250, D360, H170, D270, D230, C100,		In intact IBCs or drums located within Compartment 3.	Skip bins up to 10 m ³ in capacity, removed for disposal as required.	F	2 (IBCs) 1 shredded waste	

Waste type	Applicable Waste Codes	Maximum any one time storage limit (tonnes)	Storage before treatment	Storage after treatment	Bay/ Pit No.#	Indicative allocated available bays	Approximate treatment time
	B100, T100, N160, R120, M230, F100, T120, F110, R140, A100, A110, D110, N100, D330, M150, A130, M210, M260, M180.						
PFAS contaminated soils	M270	300 t	N/A – no treatment	In designated bays – no treatment	E	3 (non-interchangeable)	Storage for up to 2 months
Bulk soils: 1,080 m ³ <i>Inclusive of dried drill muds</i>	N120, N190	Bioremediation: 2,000 t	Treated into specific, pre-allocated material bays, as identified in Figure 1-1.	Post treatment, each batch is unloaded into specific, pre-allocated bay. (refer to Figure 1-1)	C/D	5	~3 weeks – 3 months Note maximum annual volumes have been calculated utilising lowest treatment time

Waste type	Applicable Waste Codes	Maximum any one time storage limit (tonnes)	Storage before treatment	Storage after treatment	Bay/ Pit No.#	Indicative allocated available bays	Approximate treatment time
	N120, N190	Immobilisation: 2,000 t			B/C	10	~1-3 weeks
Acid Sulfate Soils	N/A	2,000 t	Treated into specific, pre-allocated material bays, as identified in Figure 1-1.	Post treatment, each batch is unloaded into specific, pre-allocated bay. (refer to Figure 1-1)	D	3	~4 days
Recovered recyclable materials (byproduct of physical soil screening)	N/A	50 t	N/A	Bays within Compartment 1 (refer to Figure 1-1)	B	1	~1-2 days
Drill muds	N120	400 t	Drill mud to be pumped into the drill mud pit and then pumped to drill mud plant (dewatering plant)	Sediments to be stored in specific soil bays Liquid to be stored in holding tanks in banded LWTP area	Pit A	1	~2 weeks

Waste type	Applicable Waste Codes	Maximum any one time storage limit (tonnes)	Storage before treatment	Storage after treatment	Bay/ Pit No.#	Indicative allocated available bays	Approximate treatment time
Sediments and sludges	N120	400 t	Sediments and sludges to be pumped into one of the sediment and sludges pits and then pumped to the dewatering plant.	Liquid to be stored in holding tanks in bunded LWTP area	Pit A	3	~2 weeks
Liquid waste	N140, N205, D130, D290, D160, J160, D310, D150, D140, D190, A100, D220, D120, D210, D300, M250, H170, D270, D230, C100, B100, A100, A110, D110, M270.	540 kL	Within holding tanks in bunded LWTP area Liquid waste classified as DG Class 8, PG II or PG III would be placed in a designated tank and transferred for immediate treatment.	Within holding tanks in bunded LWTP area	n/a	n/a	~2 days
Waste oils	J100, J120	1 t	N/A	1,000 L IBC located in bunded LWTP area	n/a	n/a	

n/a – these waste types will not be stored in bays, therefore no bays have been allocated.

Table 5-3 Total throughput capacity

Waste stream	Bay/pits	Number of available bays	Average capacity per bay (m ³)	Average total capacity (m ³)	Average time in bay (days)	Total capacity (annual - tpa)	Proposed annual volume
Incoming / storage							
Bulk soil	G	3	60	180	1	110,000	84,000
Packaged Waste	F	3	48	144	2	44,680	40,000
PFAS contaminated soil	E	3	60	180	14	7,980	7,500
Drill muds	Pit A	1	58	58	14	2,570	2,000
Sediments and sludges	Pit A	3	58	174	14	7,700	7,000
Liquid waste	LWTP	4	135 kL	540 kL	2	98,550 kL	70,000 kL
Treatment							
ASS	D	3	60	180	4	27,920	26,000
Bioremediation	C/D	5	60	300	21	8,860	8,000*
Immobilisation	B/C	10	60	600	7	53,200	50,000

* Note, maximum annual throughput for bioremediation has been determined based on the lowest treatment time of 3 weeks. It is possible that some batches may take longer to bioremediate than 3 weeks (up to 3 months) which would reduce overall annual throughput for this waste stream.

5.1.2.1 Justification

The amendments to the bay allocation and changes to the proposed volumes of waste that would be subject to the treatment technologies proposed have been driven by several factors, including:

- The removal of chemical oxidation as a treatment technology, which has freed up capacity in the treatment bays and allowed an increase in the volume of soils to be treated by immobilisation and ASS, while not changing the overall throughput of the facility
- A decrease in the Facility's throughput
- A decrease in the total volume of recovered recyclable materials to be stored onsite at any one time (see Section 5.1.4)
- Design refinements resulting in the reorganisation of bays and pits within the Facility
- A review of the overall capacity of the Facility.

The proposed amendments to the bay sizing, waste type allocation and reduced throughput would not result in additional impacts to those identified in the EIS and RtS Report. As a result of the reduced throughput the draft OTMP (Appendix I) has been updated to account for the lower volume of trucks that would be required (see Section 5.2.1). The swept path analyses have also been updated in the OTMP.

5.1.3 Waste codes to be accepted on Site

Post submission of the RtS report, the EPA sought further clarification on the types of waste to be received at the Facility and requested the number of waste codes proposed to be brought to Site be reduced from what was proposed in the EIS. HiQ has further reviewed the waste market within the Sydney region and have identified a number of waste codes that are not likely to be generated within the Sydney region and hence would not be brought to the Facility. These codes have been excluded from the Proposal description and would not be accepted at the Facility.

To provide further clarification, Table 5-4 identifies the waste type and relevant waste code, as established under the Controlled Waste National Environment Protection Measure (NEPM), that are proposed to be received at the Site and whether they are proposed for treatment or storage only. Wastes would be received from contaminated sites within the Sydney region. The table has been structured to align the descriptions and limits as they would appear in the Facility's future Environmental Protection Licence (EPL), with the activities as scheduled under the *Protection of the Environment Operations Act 1997*. The bulk soils (which comprise the majority of the waste to be received by the Facility) would fall under the N120 waste code, the remaining waste codes proposed for receipt at the Facility are expected to be received in low quantities in the form of liquid waste or packaged goods. The limits referred to below in Table 5-4 are not in reference to throughput limits, but rather outline the requirements for the waste code to meet the criteria for acceptance onsite as they would be presented within a future EPL.

Table 5-4 Waste codes proposed for receipt at the Facility

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
J100	Mineral Oils	N/A	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
J160	Waste Tarry Residues	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
N120	Soils contaminated with a substance or waste referred to in Parts 1 or 2 of Schedule 1 of the <i>Protection of the Environment Operations (Waste) Regulation 2021</i>	Waste Processing (Non-Thermal Treatment) Waste Storage	N/A	n/a
N190	Filter Cake	Waste Processing (Non-Thermal Treatment) Waste Storage	N/A	n/a
N140	Fire debris and Wash Waters	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
N205	Residues from industrial waste treatment	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D130	Arsenic; arsenic compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
D290	Barium compounds (excluding barium sulphate)	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D160	Beryllium; beryllium compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D310	Boron compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D150	Cadmium; cadmium compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D140	Chromium compounds (hexavalent and trivalent)	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D190	Copper compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
N150	Fly Ash	Waste Storage	N/A	n/a
A100	Waste resulting from surface treatment of metals and plastics	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
D220	Lead; lead compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D120	Mercury; mercury compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D210	Nickel compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D300	Non-toxic salts	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
M250	Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	Surface active agents that contain PFAS are permitted to be stored but not permitted to be processed at the premises.
D360	Phosphorus compounds excluding mineral phosphates	Waste Storage	N/A	n/a
H170	Waste from manufacture, formulation and use of wood preserving chemicals	Waste Storage	Waste Processing (Non-Thermal Treatment)	n/a

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
			Waste Storage	
D270	Vanadium compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D230	Zinc Compounds	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
C100	Basic solutions or bases in solid form	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
B100	Acidic solutions or acids in solid form	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
T100	Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	Waste Storage	Waste Storage	n/a
N160	Encapsulated, chemically-fixed, solidified or polymerised wastes that are referred to in this Part	Waste Storage	N/A	n/a
R120	Waste pharmaceuticals, drugs and medicines	Waste Storage	Waste Storage	n/a
J120	Waste oil/water, hydrocarbons/water mixtures or emulsions	N/A	Waste Processing (Non-Thermal Treatment)	n/a

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
			Waste Storage	
M230	Triethylamine catalysts for setting foundry sands	Waste Storage	N/A	n/a
F100	Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	Waste Storage	Waste Storage	n/a
T120	Waste from the production, formulation and use of photographic chemicals and processing materials	Waste Storage	Waste Storage	n/a
F110	Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	Waste Storage	Waste Storage	n/a
R140	Waste from the production and preparation of pharmaceutical products	Waste Storage	Waste Storage	n/a
A100	Waste resulting from surface treatment of metals and plastics	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
A110	Waste from heat treatment and tempering operations containing cyanides	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
D110	Inorganic fluorine compounds excluding calcium fluoride	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	n/a
N100	Containers and drums that are contaminated with residues of waste referred to in this Table	Waste Storage	N/A	Limited to containers & drums contaminated with

Waste Code	Waste Description	Activity by waste form		Other Limits
		Solid waste / packaged waste	Liquid waste	
				residues of waste referred to in this Table.
D330	Inorganic sulfides	Waste Storage	N/A	n/a
M150	Phenols, phenol compounds including chlorophenols	Waste Storage	N/A	n/a
M270	Per-and poly fluoroalkyl (PFAS) contaminated materials including waste PFAS containing products and contaminated containers (soils & liquid streams)	Waste Storage	Waste Processing (Non-Thermal Treatment) Waste Storage	PFAS contaminated soils are permitted to be stored but not permitted to be processed at the premises.
A130	Cyanides (inorganic)	Waste Storage	N/A	n/a
M210	Cyanides (organic)	Waste Storage	N/A	n/a
M260	Highly odorous organic chemicals (including mercaptans and acrylates)	Waste Storage	N/A	n/a
M180	Polychlorinated dibenzo-p-dioxin (any congener) Reactive chemicals	Waste Storage	N/A	n/a

5.1.3.1 Justification

HiQ has undertaken further review of the Sydney market and has determined that a number of waste types previously identified to be stored or treated on Site, are unlikely to be generated within the Sydney region. In response to the EPA's request to reduce the number of waste codes to be accepted at the Site, these codes have been excluded from the Amended Proposal Description (Appendix B) and the Waste code table (Table 5-4), and the waste material storage limits table (Table 5-2) above. The Waste code table has been developed to provide further clarification to government agencies, in particular the EPA, about the types of waste proposed to be received at the Site and the proposed treatment or storage for each waste code. The table has been developed to reflect the anticipated EPL condition for waste acceptance at the Site.

5.1.4 Change to volume of recovered recyclable material

Through the design development process, HiQ has decided to reduce the total storage volume of recovered recyclable material to be stored onsite from 100 m³ to 50 m³. The recovered recyclable material bay measures five metres by five metres, segregated by concrete push walls which measure six metres in height. Based on these dimensions it has been deemed feasible to stockpile 50 m³ of material within the bay.

The designated bay for storing recovered recyclable material would be clearly marked to indicate the allowed footprint and storage height, in compliance with the 50 m³ restriction. This will involve visually monitoring the volume of waste and implementing procedures to transport recovered recyclable materials offsite once the volume limit is close to being reached.

Reducing the volume of recyclable materials to be stored onsite at any one time would result in a reduction in the potential fire risk at the Site as this waste type is the only material defined as 'combustible waste material' under the NSW Fire and Rescue Fire Safety guidelines (NSW Fire and Rescue, 2020). Limiting the volume of this waste type to less than 50 m³ would mean that the Facility would be below the threshold that the FRNSW Guidelines apply (see Section 3 of the Guidelines – Application). However, the Proposal would continue to comply with the FRNSW Guidelines in accordance with management measure FIM2 (see Appendix C). Additionally, reducing the volume of recovered, recyclable material onsite at any one time would also have the benefit of freeing up space within the Facility providing for additional space as contingency for the facility.

The Hazard Identification Report (Sherpa, 2024) provided in Appendix L considered the risk of ignition to recovered recyclables. This risk (unmanaged) was assessed to present a Medium safety and environmental risk. The following environmental controls will be put in place to manage this risk:

- Storage limit of 50 m³ of recyclable materials onsite in accordance with the NSW Fire and Rescue Fire Safety guidelines (NSW Fire and Rescue, 2020)
- Access to fire reels and extinguishers, in accordance with the National Construction Code (NCC) and selected, located and distributed in accordance with AS 2444:2001
- The Compartment is enclosed by a fire-rated wall
- Preparation of a Fire Safety Study (FIM13 in Appendix C)
- The emergency response procedure which is detailed in the OEMP
- Staff training and inductions will be provided for all staff working onsite as outlined in the OEMP.

With these controls in place the residual risk associated with ignition to recovered recyclables were assessed to remain as Medium risk in relation to safety and Low risk in relation to the environment. Fire services designs will be updated with this Amendment Report as part of the detailed design.

5.1.4.1 Justification

HiQ has decided to reduce the volume of recovered recyclable materials to be stored at the Facility at any one time for the following reasons:

- To reduce the potential fire hazard associated with the storage of potentially combustible waste materials
- To reduce the number of bays required for the storage of recovered, recyclable materials and thereby providing some redundancy in storage capacity.

5.1.5 Staffing

HiQ has recently reviewed the number of staff likely to work in the office facilities within the Proposal and have determined that the number of office staff would be lower than the maximum total of 30 identified in the EIS.

Design progression has identified a total of up to 18 workstations within the office building, with two meeting rooms and changing facilities included. HiQ is proposing to limit the maximum number of office staff onsite at any one time to 21 people. It is anticipated that office staff would generally be present at the Site between 7AM to 3PM on weekdays.

The number of staff required to operate the Facility would remain the same as presented in the EIS and the RtS Report.

The staff shifts and numbers for operation of the Facility are as follows:

- Day shift (7am – 3pm): 10 staff maximum
- Afternoon shift (3pm – 11pm): 4 staff maximum
- Night shift (11pm – 7am): 4 staff maximum.

5.1.5.1 Justification

HiQ believe that there will be less need for office-based staff at the facility and therefore are proposing to limit the maximum number of staff within the offices to 21 people at any one time. This is a reduction in nine office staff from the 30 proposed within the EIS and RtS Report.

5.1.6 Removal of Proposal staging

In response to the EPA's concerns surrounding the staging of operation, HiQ have updated their construction plan to enable construction and operation of stages 1 and 2 concurrently. As a result of this change, all documentation submitted as part of the Amendment Report package has been updated to remove mention of staged operations.

5.1.6.1 Justification

The EPA raised concerns around the staging of the Facility due to the need for temporary leachate management to be in operation during Stage 1 prior to the construction and operation of the LWTP. To alleviate any concerns regarding appropriate leachate and water management from the outset of operations HiQ will construct and operate Stage 1 and Stage 2 concurrently.

5.2 Design refinements

Appendix E Consolidated design drawings have been prepared by SMEC Australia Pty Ltd. These are 70% designs based on the EIS. These plans will be updated at the detailed design stage based on the Amended Proposal Description and conditions of the EPL. The following changes to the RtS designs have been made in response to the design process.

5.2.1 Bay arrangements and swept paths

Since the RtS the arrangement of the bays and pits within the Facility has been updated to maximise the potential capacity of the Facility. The updated bay allocation per waste stream is as described in Section 5.1.2. As a result of this and due to the reduced through put of the Facility, an updated OTMP has been drafted (Appendix I). In response to further Agency queries the OTMP has included updated swept path analyses which consider the anticipated position of mobile plant and equipment whilst in use.

5.2.1.1 Justification

The bay arrangement has been updated since the RtS phase in an effort to optimise the Facility's layout and potential throughput capacity. Additionally, removal of chemical oxidation as a treatment methodology has provided extra bays for immobilisation and ASS. The updated swept path analyses confirm that the Facility's updated layout would remain functional considering the anticipated daily truck movements throughout the Facility.

5.2.2 Water management infrastructure

The design of the leachate management system has changed from that described in the RtS Report. The leachate management system would include the following:

- The PFAS bays would be bunded with urethane bunding, as shown in Figure 5-1, any leachate generated in the PFAS storage bays would be pumped using portable pumps into containers for disposal. Compartment 2 would be lined with epoxy lining to manage any accidental PFAS spills.
- The other bays and pits would be designed to slope to the back of the bay or pit. For the bays and pits, there would be a slightly elevated slab in front (leachate diversion platform), which is also sloped towards the back. This design ensures that all water and leachate from the material would drain towards the back of the bay or pit, keeping it from spilling outside of the bay or pit. The soils are not expected to produce large quantities of leachate, as such, any leachate produced would be reabsorbed by the material within the bay. In the event that leachate remains, a pump would be used to remove the leachate following removal of the waste material from the bay or pit. The leachate would then be treated by the LWTP.
 - The entire building would be bunded with 250 mm bunds that would be installed at each of the entries / exits to the building.
 - The primary containment bund of 250mm height would be capable of containing hydrants operating at 20L/s for a minimum of four hours, high hazard sprinklers operating for a minimum of two hours at 96 L/s in accordance with AS2419.1. This bunding height was determined to be sufficient based on the following equation:
 - Total hydrant and sprinkler water volume = $288 + 691.2 = 979.2$ kL
 - Total floor area excluding office = 5580 m²
 - Bunding height = $979.2 \times 1000 / 5,580 \text{ m}^2 = 175.5$ mm (minimum)

- Bund provided = 250 mm (sufficiently greater than the minimum)
- Section 1.2.9 of the Amended Proposal Description (Appendix B) provides an in-depth description of the leachate management system.
- Appendix E4 Hydraulic Services Design has a Hydraulics services Drainage Layout (Drawing H200) which provides further details on the leachate management system including the location of the leachate management pits, leachate pump stations and pipes.

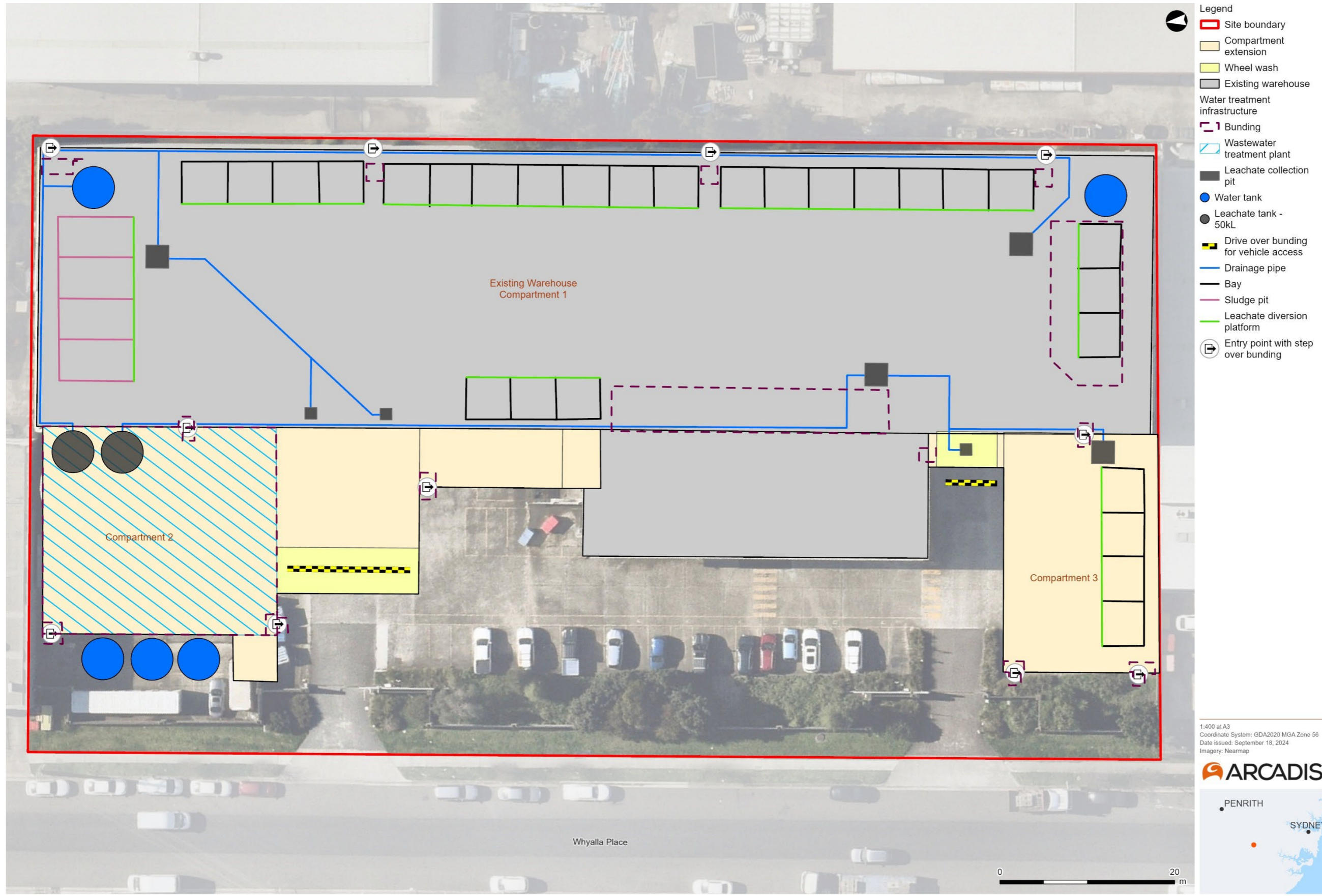


Figure 5-1: Conceptual site bunding and leachate treatment infrastructure

5.2.2.1 Justification

Further design development has identified a refined management strategy for leachate within the facility. Any leachate generated within the facility will be captured within the internal leachate management system, as described in the EIS and RtS Report; however, the bays will be designed so that water or leachate would flow to the back of the bays, rather than installing bunds in front of each bay. This would improve access to the bays while facilitating the management of leachate. Any leachate produced by the waste materials within the bays (which would be minor volumes considering the soil materials expected to be accepted) would be reabsorbed by the material and would not require extraction from the bays.

5.2.3 Car parking

As noted in Section 5.1.5, the maximum number of staff within the office building is proposed to be reduced from 30 to 21. The parking design for the Proposal has been revised to reflect the decrease in staff numbers and provide additional access space around the parking bays. The number of car parking spaces would be reduced from 40 (including one accessible parking space) to 36 (including one accessible parking space), resulting in a reduction of four parking spaces. This adjustment is justified by the decrease in staffing numbers within the office space, which more than compensates for the reduced parking capacity.

The full *Liverpool Development Control Plan 2008* (Liverpool DCP) car parking requirement of 22 spaces for the office space is proposed onsite. Based on the current design, the leasable floor area (LFA) of the office area is 760 m², comprising offices, workstations, meeting rooms and amenities. The provision of 22 car parking spaces for office workers allows for the full Liverpool DCP car parking requirement for the office and under the vast majority of circumstances during the day shift, as well as a surplus of 5 car parking spaces (see Figure 5-2). No change is proposed to the parking provision for the Facility staff, with 14 parking spaces to be provided for these staff.

A graph for how car parking could potentially operate on a typical day where all staff are onsite between 7:00AM and 3:00PM is provided in Figure 5-2. The orange line shows the car parking demand, should all office workers choose to use their cars while the blue line shows a scenario where 70 per cent of office workers use their car and 30 per cent use alternative transport. It has been assumed that 100 per cent of staff working within the Facility would drive their own car to work for both the blue and orange scenarios. As noted in the Stanbury Traffic Planning Report (Appendix E of the RtS Report), it is likely that on any given day, that there would be a proportion of staff that would car pool, catch public transport, work from home, visit Hi-Quality sites, be at meetings in other locations, not commence work in the office at 7:00AM or finish work in the office earlier than 3:00PM for that particular day.

The staff shift change over at 7:00AM and 3:00PM is expected to be the only time where all but one of the onsite spaces may be occupied. For all onsite car parking spaces to be occupied, this also requires that all office staff are onsite at 7:00AM and 3:00PM.

The orange line represents a very conservative case and it is considered that the proposed car parking provision of 36 car parking spaces is satisfactory and no demand for on-street car parking spaces is expected to be generated by staff of the Proposal.

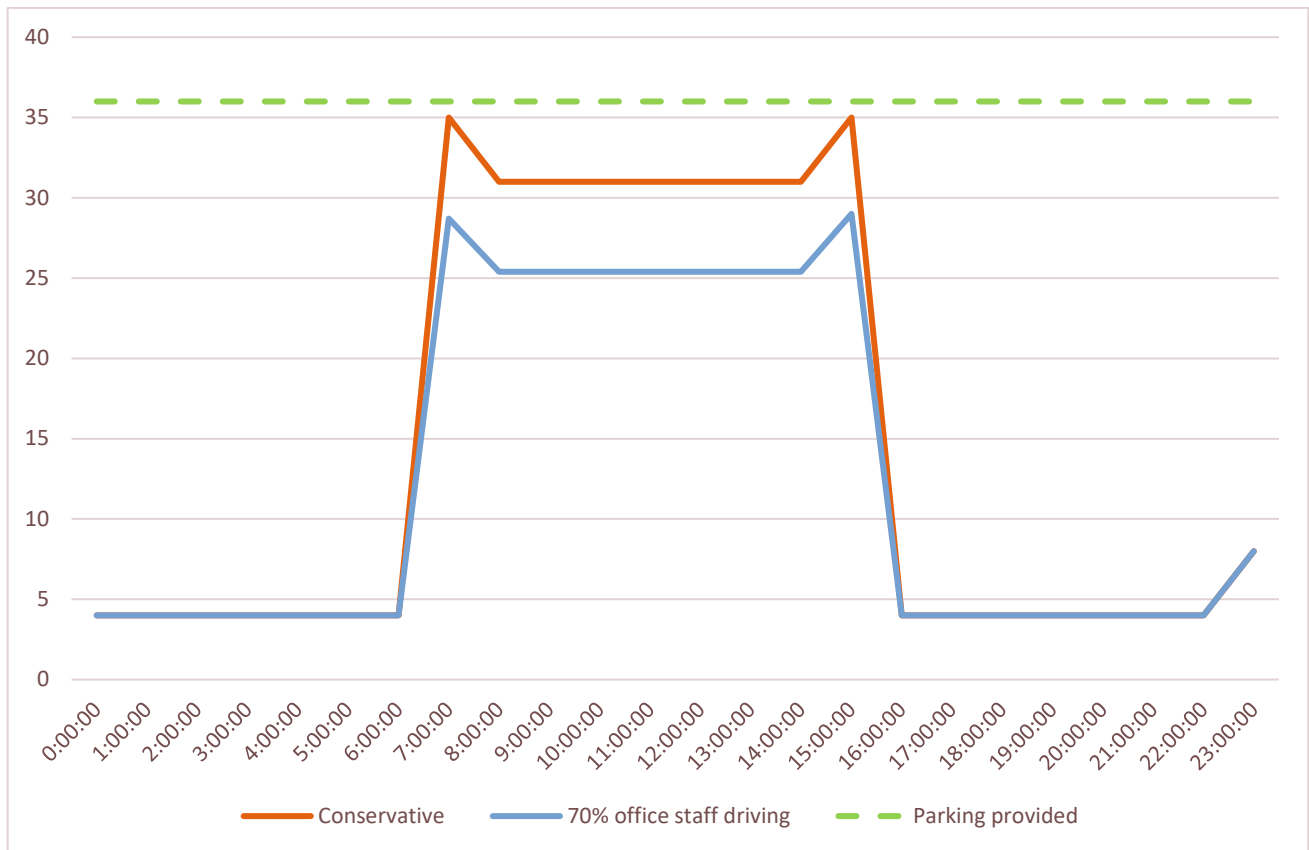


Figure 5-2: Estimated carparking demand onsite

Further measures to manage onsite car parking are documented in the draft OTMP (Appendix I).

5.2.3.1 Justification

A reduction in staff numbers within the office space means that fewer parking spaces are required. As a result, throughout design progression the car park has been reconfigured allowing for an increase in the width and accessibility of parking spaces.

The provision of parking spaces for office staff remains compliant with the Liverpool DCP requirements and no change is proposed to the parking spaces provided for staff working in the Facility.

5.2.4 Fire services design

Updates and development to the Fire Services Design (compared to those presented within the Fire and Incident Management Assessment (Appendix K of the EIS)) have been provided within developed in Appendix E3 Fire Services Design. The Fire Services Design has considered the following:

- Building code of Australia 2022 (BCA 2022)
- Fire Hydrant Installations Part 1 System Design, Installation and Commissioning (AS 2419.1 – 2021)
- Installation of Fire Hose reels (AS 2441 – 2005)
- Portable Fire Extinguishers & Fire Blankets – Selection & Location (AS 2444 – 2001)
- Automatic Fire Sprinkler Systems General Systems (AS 2118.1 – 2017)
- Fire Detection, Warning, Control and Intercom systems – System Design, Installation and Commissioning Part 1 Fire (AS 1670.1 – 2018)
- Fire & Incident Management Plan by Core Engineering group (Appendix K of the EIS)
- Environmental Impact Assessment report by Golder Facilities

- Fire engineering Report (ongoing)

The fire safety design includes the following design elements:

- Site connection
- Fire hydrant system
- Fire sprinkler system
- Fire hose reels
- Portable fire extinguishers
- Fire Detection systems
- Spent fire water management.

A mandatory Fire Safety Study is not required as the Proposal is not a potentially hazardous industry.

Notwithstanding, to support the fire services design and to inform the emergency management plan, the requirement for a Fire Safety Study prepared in accordance with Hazardous Industry Planning Advisory Paper No 2 Fire Safety Study Guidelines (DPIE, 2011) has been included in Appendix C as an Environmental management measures.

Fire services design will be completed during detailed design based on this amendment report and the conditions of the EPL.

5.2.4.1 Justification

Further design development has been undertaken in accordance with relevant standards and the EIS. This has increased the detail of the EIS plans. As the quantities of Dangerous Goods remain below the screening thresholds prescribed in Applying SEPP 33 (DoP, 2011) the facility is not considered a potentially hazardous development under the guideline and a Fire Safety Study has not been prepared at this stage. To support the design and emergency management plan a Fire Safety Study is proposed and included in Appendix C Environmental management measures.

5.2.5 Epoxy lining

The flooring of Compartment 2 will include an epoxy lining to ensure the longevity of the warehouse floor after exposure to contaminants (notably PFAS). The epoxy lining would be maintained on a regular basis to ensure the flooring has an appropriate level of protection.

5.2.5.1 Justification

There are several benefits to using an epoxy liner on the flooring of Compartment 2, including:

- **Chemical resistance:** The Facility flooring will be exposed to a range of contaminants that have the potential to degrade concrete. Using an epoxy liner aids in chemical resistance and ensures durability and longevity.
- **Protection against contamination:** concrete is naturally porous which allows liquids and contaminants to seep in causing structural damage and environmental risk. The epoxy lining provides a barrier and therefore prevents absorption into the concrete surface.
- **Resistance to abrasion:** the epoxy lining also acts as an abrasion free layer that protects the underlying concrete from the wear and tear resulting from the use of heavy machinery.

5.3 Clarifications

The following clarifications have been provided in response to Agency queries surrounding the Facility's operation.

5.3.1 PFAS contaminated soils

PFAS contaminated soil below the RSW criteria would be accepted at the Site for temporary storage in a dedicated PFAS soil storage area and would be transported to an offsite interstate licensed treatment and/or disposal facility (refer to the Amended Proposal Description (Appendix B) and the Waste Type and Treatment Table Annexure A to Appendix B). PFAS contaminated soils would be received from sites within the Sydney region.

A dedicated, separated and controlled area would be provided within the facility to prevent cross contamination of PFAS contaminated soils with other materials stored and treated at the facility. This area is identified on Figure 1-1. All PFAS material would be temporarily stored onsite then transported to either HiQ's Yatala facility for treatment and disposal or an appropriately licensed landfill. It is noted that HiQ's Yatala facility is one of only two facilities on the east coast of Australia that are licensed to receive and treat PFAS material.

The procedure for managing PFAS contaminated soils at the Facility is detailed in Section 6.2.3 of the Draft OWMP (Appendix H).

As per the EIS and RtS there would be no treatment of PFAS contaminated soils at the Facility. However, there is a need for a facility within Sydney to temporarily store PFAS contaminated soil as there is currently limited options for this material:

- There are no approved treatment facilities within NSW for PFAS contaminated soil and only one landfill that can accept PFAS contaminated soil
- PFAS contaminated material therefore typically requires transport to either QLD or VIC
- Concessions/waiting periods to enter QLD and VIC range from two weeks to three months. An interim solution is therefore required for the safe storage of PFAS contaminated material to minimise risk of harm to human health or the environment. The Proposal would accommodate the safe storage of soils with PFAS concentrations below the RSW criteria under the Addendum to the Waste Classification Guidelines (2014) – Part 1: classifying waste (EPA, 2016), prior to transport to an appropriately licenced landfill. PFAS contaminated material above the RSW limit would not be accepted onsite (EPA, 2016) (Table 5-5).

Table 5-5 Toxic Characteristic Leaching Procedure (TCLP) and Specific Contaminant Concentration (SCC) values for classifying waste by chemical assessment (EPA, 2016)

Contaminant ¹	Maximum values for leachable concentration and specific contaminant concentration when used together			
	General Solid Waste ²		Restricted Solid Waste	
Leachable concentration	Specific contaminant concentration		Leachable concentration	Specific contaminant concentration
	TCLP1 (mg/L)	SCC1 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)
Perfluorooctane sulfonate (PFOS) + Perfluorohexanesulfonic acid (PFHxS)	0.05	1.8	0.2	7.2
Perfluorooctanoic acid (PFOA)	0.50	18.0	2.0	72.00

1. PFOS and PFHxS are to be summed for comparison against the TCLP and SCC values.
2. Values are the same for general solid waste (putrescible) and general solid waste (non-putrescible)

Traces of PFAS are likely to be found in groundwater, surface water and soils in many urban areas due to their wide-spread use in everyday household items and their persistence in the environment (EPA, 2021). The Proposal would accept PFAS contaminated materials with low levels of PFAS contamination (i.e. that are below the RSW criteria) for storage at the facility prior to disposal at a facility licensed to accept RSW. Treatment of PFAS contaminated soils is not proposed on the Site.

It is noted that there is precedence for the storage of PFAS materials at waste storage and treatment facilities in NSW as Cleanaway Co Pty Ltd currently hold an EPL for their facility at St Marys, which permits to storage of PFAS contaminated materials (Waste Code M250) (EPL No. 12628).

5.3.2 PCB contaminated waste

As with PFAS contamination, traces of PCBs are likely to be present in soils and groundwater of urban areas. The Proposal would not treat PCB contamination; however, the facility would accept non-scheduled PCB waste for storage, as defined in the *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997* (i.e. material with PCB at concentration levels of less than 50 mg/kg).

All wastes containing PCBs would be disposed of at landfills licenced to receive the material after being temporarily stored at the Facility.

HiQ wish to clarify that treatment and storage of wastes with PCB concentrations above the scheduled waste criterion do not form part of the Proposal. Only wastes with PCB concentrations less than the PCB Chemical Control Order would be accepted onsite.

5.3.3 Specific Immobilisation Approvals to be sought for the Proposal

Where waste streams have been nominated for treatment by immobilisation, the waste would be treated either under a General Immobilisation Approval (GIA), or Specific Immobilisation Approval (SIA). Any waste that is not suitable for treatment under a GIA or SIA would be stored and sent offsite to a suitably licenced treatment or disposal facility. It is noted that HiQ currently undertake immobilisation at their Yatala Facility in Queensland, and therefore have an understanding of the treatment processes.

The EPA has requested draft applications for each chemical intended for treatment by immobilisation that would be the subject of an SIA, prior to determination of the Proposal's planning application. HiQ understands that these applications will need to be submitted to the EPA for approval before commencing waste treatment via immobilisation processes that are not subject to a GIA onsite. However, it is important to note that the SIAs are distinct from the planning approval process under the EP&A Act and licensing process under Chapter 3 of the *Protection of the Environment Operations Act 1997*. Each SIA will be applied for on an individual basis, depending on the contaminants present in each load.

Immobilisation would be undertaken in accordance with *Waste classification guidelines part 2: Immobilisation of waste* (NSW EPA, November 2014). This outlines the process for the two types of immobilisation approvals in accordance with Clause 10 of the *Protection of the Environment Operations (Waste) Regulation 2014*.

Immobilisation techniques can include:

- Natural immobilisation
- Chemical fixation
- Micro-encapsulation, and/or
- Macro-encapsulation.

As outlined in Section 6.2.1.4.2 of the OWMP the Facility would utilise micro encapsulation only. Immobilisation at the Facility will predominately use solidification / stabilisation technology, which has been identified as effective for treatment of selected contaminants (see ITRC – Development of Performance Specifications for Solidification/Stabilization (Interstate Technology & Regulatory Council (IRTC), July 2011). Immobilisation will involve mixing soil with cement, lime or other pozzolonic reagents. Each of the waste codes proposed to be treated by immobilisation are being undertaken at HiQ's operating Yatala Facility in Queensland.

As each waste load is unique and may require a separate SIA, the seeking of an SIA once the contaminants within a waste load are understood provides an opportunity for consultation with the EPA regarding the specific contaminants and waste type.

Draft procedures to manage wastes that may be subject to treatment in accordance with SIAs, are described in Section 6.2.1.4 of the Draft OWMP (Appendix H). Additionally, a draft template that would be used to apply for an SIA during the Facility's operation has been provided in Appendix D to the OWMP (Appendix H).

5.3.4 Waste types and classifications

Post submission of the RtS report, the EPA has requested further clarification on the classification of waste to be received at the Facility.

Waste can be categorised in a number of different ways, depending on the purpose of the categorisation. Four primary forms of categorisation have been adopted for the purpose of this Proposal:

- The classification of the waste in accordance with the NSW EPA Waste Classification Guidelines
- The nature/type of the waste: being its general characteristics as either soil, liquid waste, packaged waste, drill sludges and /or sludges
- The waste code for the purpose of tracking of waste for transportation
- The Dangerous Goods classification for any wastes that is deemed to be a Dangerous Good.

Waste coming to Site may have a categorisation under all four of these methods. Each method serves a unique purpose and all require consideration for the Proposal. It is noted however that Waste Classification represents the foremost regulatory method for categorising waste and takes priority over all other methods of categorising waste.

5.3.4.1 Waste types and classifications

Waste can be classified into one of six waste classification:

- Special waste
- Liquid waste
- Hazardous waste
- Restricted solid waste
- General solid waste (putrescible)
- General solid waste (non-putrescible).

As per clause 49 of Schedule 1 of the *Protection of the Environment Operations Act 1997 (POEO Act)* and in accordance with the *EPA Waste Classification Guidelines Part 1: Classifying waste*, the Facility would be receiving waste classified as:

- **Liquid waste:** Being any waste (excluding special waste) that has an angle of repose less than 5 degrees above horizontal, becomes free flowing at or below 60 degrees Celsius or when it is transported, is generally not capable of being picked up by a shade or shovel and is classified as liquid waste under an EPA gazettal notice.
- **General solid non-putrescible:** General solid waste (non-putrescible) refers to waste types that are not special, liquid, hazardous, restricted solid, or putrescible general solid waste. (putrescible). Non-putrescible materials typically do not readily decay under standard conditions, do not emit offensive odours, nor attract vermin or other vectors (such as flies, birds and rodents).
- **Restricted solid waste:** Waste is classified as restricted solid waste through chemical assessments to measure properties of waste. The SSC (specific contaminant concentration) and TCLP (toxicity characteristics leaching procedure) tests are used to determine whether the waste is classified as restricted solid. Waste is determined as Restricted solid waste if any of the SCC or TCLP threshold values are exceeded for general solid waste, and if the values exceed the restricted solid waste thresholds than the waste is classified as hazardous (Table 3 EPA Waste Classification Guidelines Part 1: Classifying waste).
- **Hazardous waste:** Waste may be deemed to be hazardous waste if it has either been pre-classified as such (under the Waste Classification Guidelines) or because it possesses hazardous characteristics (typically determined by it being either a Dangerous Good or due to its specific contaminant concentration (SCC) and/or toxicity characteristics leaching procedure (TCLP) test values).

Table 5-6 provides an indicative breakdown of the tonnes per annum for each waste type by waste classification. It is noted that the proportion of waste volumes split between the different waste classifications may differ year on year, in response to market forces, however the total volumes for any waste type would not be exceeded. Table 5-7 shows the intended volumes of treated waste following treatment.

Table 3 EPA *Waste Classification Guidelines Part 1: Classifying waste* provides contaminant concentrations that deem waste to be either restricted solid waste or hazardous waste, based on the specific contaminant types and its concentration. Annexure B to Appendix B provides a list of the contaminant concentrations for the hazardous waste proportion and the packaged waste proportion of the waste to be Facility.

Type of Waste	Management	Acid Sulfate Soils (indicative tpa)	Liquid waste (indicative tpa)	General solid non- putrescible (indicative tpa)	Restricted solid waste (indicative tpa)	Hazardous waste (indicative tpa)	Total Tonnes per Annum
Packaged waste – Liquid	Contaminated packaged waste: no treatment, only storage		35,000				40,000t
Packaged waste – Solid	Non-contaminated waste: shredding and offtake for disposal			5,000			
PFAS contaminated soils	Storage only				7,500		7,500t
Bulk soils	Various methods:				34,800	23,200	58,000t
<i>Contaminated soils</i>	<i>Primarily immobilisation</i>				30,000	20,000	<i>50,000t</i>
<i>Contaminated soils</i>	<i>Primarily bioremediation</i>				4,800	3,200	<i>8,000t</i>
ASS	Acid neutralisation in batches	26,000					26,000t
Drill muds	Dewatering and liquid waste treatment		200	1,800			2,000t
Sediments and sludges	Dependent on moisture content of sludges – dewatering, liquid waste treatment and soil decontamination		700	700	2,800	2,800	7,000t
Liquid waste	Treated and validated in 50 kL batches through the LWTP		70 ML				70 ML
Total							210,500

Table 5-7 Waste type by classification - post-treatment

Type of Waste	Management	Acid Sulfate Soils (indicative tpa)	Compliant trade wastewater	Liquid waste (indicative tpa)	General solid non-putrescible (indicative tpa)	Restricted solid waste (indicative tpa)	Hazardous waste (indicative tpa)	Total Tonnes per Annum
Packaged waste – Liquid	Contaminated packaged waste: no treatment, only storage			35,000				40,000t
Packaged waste – Solid	Non-contaminated waste: shredding and offtake for disposal				5,000			
PFAS contaminated soils	Storage only					7,500		7,500t
Bulk soils	Various methods:				34,800	23,200		58,000t
<i>Contaminated soils</i>	<i>Primarily immobilisation</i>				30,000	20,000		<i>50,000t</i>
<i>Contaminated soils</i>	<i>Primarily bioremediation</i>				4,800	3,200		<i>8,000t</i>
ASS	Acid neutralisation in batches				26,000			26,000t
Drill muds	Dewatering and liquid waste treatment		200		1,800			2,000t
Sediments and sludges	Dependent on moisture content of sludges – dewatering, liquid waste treatment and soil decontamination		700		3,500	2,800		7,000t
Liquid waste	Treated and validated in 50 kL batches through the LWTP		70 ML					70 ML
Total								210,500

5.3.5 Dangerous goods

Post submission of the RtS Report, the EPA and DPHI sought further clarification on the potential for waste being accepted at the Facility to meet the classification of Dangerous Goods under the Australian Dangerous Goods Code (NTC, 2022) (ADG Code).

Only Dangerous Goods Class 8, Packing Group II and III, and Dangerous Goods Class 9 Packing Group III, would be received at the Facility. It is noted that Dangerous Goods may be received, used and/or stored at the Facility in the form of:

- Waste in the form of packaged waste or liquid waste
- Soil (Class 9 Dangerous Goods code only)
- Reagents.

Some liquid waste and packaged waste that may be brought to Site may meet the classification of Dangerous Goods Code Class 8, Packing Groups II and III. Maximum storage and transport quantities at the Facility, including the transport and storage of reagents and wastes would be less than the thresholds set out in the *Hazardous and Offensive Development Application Guidelines: Applying SEPP 33*.

Table 5-8 sets out the limits that apply to the storage of Class 8 Dangerous Goods at the Facility and Table 5-9 sets out the transport limits that apply to the transport of Class 8 Dangerous Goods to the Facility.

This clarification of the Proposal has been reviewed by a Dangerous Goods specialist who has confirmed that the Proposal is not classified as a potentially hazardous industry under Applying SEPP 33, see Appendix J Letter from Whamcorp regarding Dangerous Goods¹.

Table 5-8: Storage limits for Class 8 Dangerous Goods

PG	Form	Bulk or packaged	Category	Maximum storage (tonne equivalent (te))	Total for PG (te)	Applying SEPP 33 threshold (te)
II	Liquid	Packaged	Reagent	10	23	25
		Bulk	Waste	10		
	Liquid or solid	Packaged	Waste	3		
III	Liquid	Bulk	Waste	40	45	50
	Liquid or solid	Packaged	Waste	5		

¹ It is noted that within Appendix J, some reagents are noted to be stored onsite that would be deemed to be DG Class 5.1, however this is no longer applicable. Only reagents that would be Class 8 would be stored at the Facility. The findings of Appendix J remain applicable (as this change would further reduce risks from storing of dangerous goods at the Facility).

Table 5-9: Transport movements for Class 5 and 8 Dangerous Goods and Applying SEPP 33 limits

DG Class/ Division	Form, bulk/packaged, load	Peak Weekly		Cumulative annual	
		Proposed	Applying SEPP 33 limit	Proposed	SEPP limit
5	Solid/liquid, packaged load > 5 te	Nil	30	Nil	500
8	Liquid, bulk, load >2 te	5	30	200	500
	Liquid or solid, packaged, >5 te	Nil		Nil	

As the quantities of Dangerous Goods remain below the screening thresholds prescribed in Applying SEPP 33 (DoP, 2011) the Facility is not considered a potentially hazardous development under the guideline.

Additionally, PFAS contaminated materials may be classified as Dangerous Goods Class 9 Packing Group III due to its potential to be an “environmentally hazardous substance”. In accordance with “Applying SEPP 33”, Class 9 Dangerous Goods are not subject to the screening method to determine likelihood of significant off-site risk. Notwithstanding, WorkCover NSW would be notified, and appropriate manifests and emergency management plans would be prepared if the quantity of Class 9 material at the Facility exceeds the threshold of 10,000kg or L. Once the material is accepted onsite, appropriate environmental controls would be implemented to manage the storage of PFAS contaminated soils, and for treatment of PFAS contaminated liquid waste.

5.3.5.1 Class 8 Dangerous Goods that can be accepted

As noted above, the only waste streams to be accepted onsite that would meet the classification of Dangerous Goods would be Dangerous Goods Code Class 8, Packing Groups (PG) II and III and PFAS Classified as Class 9. Liquid waste and packaged waste that meet the classification as a DG would be transported to the Site in accordance with the requirements of the ADG Code. The liquid waste and packaged waste would be received from industrial sites within the Sydney region. The liquid waste would be transferred to a designated tank in the LWTP. Packaged waste would be stored within a designated bay within the packaged waste storage area (Bay F – refer Figure 1-1). These would be stored and handled in accordance with *AS 3780-2008: The storage and handling of corrosive substances*. Section 5.1.3 summarises the waste codes that are proposed to be received under the Amended Proposal. It is noted that a number of waste codes that were originally proposed to be received at the Facility (as per the EIS) are no longer proposed to be received (refer Section 5.5); some of which would have constituted dangerous goods. As per the Amended Proposal the only remaining waste codes allowed to be received as dangerous good (Class 8 PG II and III and Class 9) are (refer Table 5-2):

- D120 Mercury, mercury compound
- C100 Basic solutions or bases in solid form
- B100 Acidic solutions or acids in solid form
- D140 Chromium compounds (VI).
- M270 Per-and poly fluoroalkyl (PFAS) contaminated materials including waste PFAS containing products and contaminated containers (soils & liquid streams)

5.3.5.2 Pre-screening process to avoid receiving Dangerous Goods

The process for accepting waste onsite would be as described in Section 5 of the Draft OWMP (Appendix H) and wastes that are classified as Dangerous Goods (other than liquid waste and packaged waste classified as Class 8 PG II or III) would not be accepted on site. In summary, the waste generator would classify the waste as part of the pre-screening procedure as to its Dangerous Goods Class and packing code. This ensures that HiQ is able to refuse acceptance of any waste streams that are classified as Dangerous Goods and manage the volumes and availability of storage location of Class 8 PG II and PG III liquid waste and Class 9 PG III PFAS contaminated material.

Table 5-4 in Section 5.1.3 provides a complete list of the waste codes proposed to be received at the Facility. It is noted that some of these waste codes would, in some circumstances, be considered dangerous goods. However, for material to be considered a Dangerous Good it must display dangerous characteristics. The Australian Dangerous Goods Code (2022) outlines the specific parameters/characteristics of a good that need to be met for the good to be considered a Dangerous Good. If a material is found to have these characteristics it would not be accepted at the Facility.

For example, one of the waste codes that would be accepted within either wastewater or liquid waste is D130 arsenic; arsenic compounds. Under certain circumstances arsenic can be deemed to be a dangerous good (Class 6.1 Packing Group II). However, arsenic can also be benign (especially if in its organic form), and low levels of arsenic are not considered to be dangerous (and are commonly found / naturally occurring in for example groundwater). The concentration of arsenic in a tanker of liquid wastewater would be low, and below the concentrations that would deem the wastewater to be dangerous or hazardous.

The Australian Dangerous goods Code (2022) sets out specific concentration thresholds that characterise certain substances as being dangerous. Several factors determine whether a substance is deemed to be dangerous (its concentration, chemical properties as well potential hazards such as toxicity). Specific testing will be carried out for any waste with potential to be considered a Dangerous Good, and the waste load will be rejected if it is found to have the concentrations/characteristics that would deem it to be dangerous (refer Section 5.3 of the draft OWMP).

HiQ would review the results of all pre-screening testing to ensure no wastes meeting the definition of a dangerous good (other than Class 8, PG II and III) will not be received at the Facility.

5.3.5.3 Hazardous waste

A Liquid and Hazardous Waste Risk Identification and Minimisation Report (Appendix K) has been prepared, which considers any hazardous waste, its associated risks and measures to manage the risks. Any waste that would constitute a Dangerous Good to be received at the Facility as described above, would also be considered hazardous waste. It is noted that other forms of hazardous waste, that do not constitute a Dangerous Good, are would also be received at the Facility. .

5.3.5.4 Reagents that are dangerous goods

In addition to some waste streams being deemed to be Dangerous Goods some reagents required for use in the treatment of waste would also be deemed to be a Dangerous Good. Caustic Soda and Hydrochloric Acid would be used within the LWTP, both of these reagents are classified as Dangerous Goods Class 8, PG II. The Safety Data Sheets (SDSs) for both of these chemicals suggest that they are incompatible with one another and should be stored separately. As per the SDS, the following storage measures will be put in place for each of the reagents (Table 5-10).

Table 5-10 Caustic Soda and Hydrochloric Acid Storage Requirements

Reagent	Storage Requirements
Caustic Soda	<p>Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers securely sealed. Check regularly for spills and leaks. Keep away from heat and sources of ignition – no smoking. Keep away from foodstuffs and incompatible materials. Must be stored separate from acids.</p> <p>Keep only in original container or corrosive resistant container/container with a resistant inner liner. Do NOT use aluminium, galvanised or tin-plated containers.</p>
Hydrochloric Acid	<p>Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Containers should be labelled and protected from damage. Keep away from heat and sources of ignition – no smoking. Keep away from foodstuffs and incompatible materials. Must be stored separate from caustic soda. Store locked up. If stored indoors, building floors should be acid resistant with drains to a treatment system. Electrical equipment should be flameproof and protected against corrosive action.</p> <p>Keep only in original container or suitable material, i.e. rubber lined steel, PVC/FRP, FRP. Containers should have a safety relief valve – care should be taken to release any internal pressure slowly.</p>

Hydrochloric acid will be stored on its own within a locked safety cabinet within Compartment 1. Appropriate signage will be used on the cabinet to denote it contains Hydrochloric Acid; only suitably authorised personnel will be provided access to the cabinet.

5.3.5.5 Spent treatment materials

Some waste generated within the LWTP from the treatment of liquid waste may be deemed to be hazardous. Further clarification has been sought on the handling of spent treatment materials from the water treatment plant, including granular activated carbon (GAC) and Volcanic Clinoptilolite Zeolite (VCZ) materials.

The spent VCZ and GAC would be stored in self-bunded and labelled Intermediate Bulk Container (IBC) tanks before being transferred to the packaged waste storage area and disposed of at an appropriately licensed landfill or interstate licenced thermal treatment facility. A list of indicative licenced landfill facilities that could accept these materials are provided in Table 7-3 of the Draft OWMP (Appendix H).

5.3.5.6 Management of Dangerous Goods

A hazard identification workshop, Hazard Identification Report (Appendix L) and a Liquid and Hazardous Waste Risk Identification and Minimisation Report (Appendix K) have been completed which assessed the potential risks associated with Dangerous Goods at the Facility. The environmental controls identified by these assessments have been embedded into the design and management procedures for the Facility Management of spent water treatment materials.

The Liquid and Hazardous Waste Risk Identification and Minimisation Report (Appendix K) provides a comprehensive description of the management features (in relation to relevant guidelines and standards, design features and management features) to be utilised at the Facility. In summary, the following environmental controls would be implemented to manage the potential risks associated with the management of Dangerous Goods at the Facility:

- If an unauthorised Class of Dangerous Goods is delivered to the Facility it will be stored in isolation and the customer will be contacted immediately to return and collect the material

- Appropriate use of signage and placards denoting dangerous goods
- Staff training and inductions will be provided for all staff working onsite as outlined in the OEMP
- Mandatory minimum PPE requirements for all staff are prescribed in the Operational Waste Management Plan (OWMP) including eyewear, protective clothing and covered footwear
- The storage of reagents classed as Dangerous Goods (Caustic Soda and Hydrochloric Acid) would be in accordance with the requirements of the Australian Dangerous Good Code and the SDS for each reagent
- The emergency response procedure is detailed in the OEMP
- Staff training and inductions in relation to the management of Dangerous Goods will be provided for all staff working onsite as outlined in the OEMP.

No High (unmanaged or managed) environmental or safety risks were identified in relation to the management of hazardous waste or reagents at the Facility. A total of nine hazards were identified, and were found to constitute two Medium and seven Low Safety risks and zero Medium and nine Low environmental risks with mitigation/management measures in place.

5.3.6 Hazardous waste

Further information was requested by the EPA regarding the upper limit concentrations for hazardous soil and packaged waste that would be received at the Facility. A detailed description of the concentrations and storage limits and arrangements for hazardous waste and packaged waste is provide in Annexure B of the Amended Proposal Description in (Appendix B).

Waste classified as hazardous waste would be received in the form of Soils Table 5-11 provide the upper limit of contaminant concentrations that would be accepted at the Facility.

Table 5-11 Potentially hazardous contaminants to be received at the Facility

Contaminant	Maximum concentration to be received at the Facility
Arsenic	Up to 50,000 mg/kg
Benzene	Up to 50,000 mg/kg
Benzo(a)pyrene ³	Up to 500mg/kg
Beryllium	Up to 50,000 mg/kg
Cadmium	Up to 50,000 mg/kg
Chlorobenzene	Up to 50,000 mg/kg
Chromium (VI) ⁶	Up to 50,000 mg/kg
m-Cresol	Up to 50,000 mg/kg
o-Cresol	Up to 50,000 mg/kg
p-Cresol	Up to 50,000 mg/kg
Cresol(total)	Up to 50,000 mg/kg
Cyanide (amenable) ^{7,8}	Up to 4,000 mg/kg
Cyanide (total) ⁷	Up to 4,000 mg/kg
1,2- Dichloroethane	Up to 50,000 mg/kg
1,1-Dichloroethylene	Up to 50,000 mg/kg

Contaminant	Maximum concentration to be received at the Facility
Ethylbenzene	Up to 50,000 mg/kg
Fluoride	Up to 50,000 mg/kg
Lead	Up to 50,000 mg/kg
Mercury	Up to 50,000 mg/kg
Methyl ethyl ketone	Up to 50,000 mg/kg (note would not be taken in flammable form)
Molybdenum	Up to 50,000 mg/kg
Nickel	Up to 50,000 mg/kg
C6–C9 petroleum hydrocarbons ^{13C}	Up to 50,000 mg/kg TRH w/w for soils
C10–C36 petroleum hydrocarbons ¹³	Up to 50,000 mg/kg
Phenol (non- halogenated)	2,000 mg/kg
Plasticiser compounds ¹⁵	Up to 5% w/w
Polychlorinated biphenyls ¹²	50 mg/kg (as potential co-contaminant in soils)
Polycyclic aromatic hydrocarbons (total) ¹⁶	13,000mg/kg
Scheduled chemicals ¹⁷	Up to 50,000 mg/kg
Styrene (vinyl benzene)	Up to 50,000 mg/kg
Toluene	Up to 50,000 mg/kg
Vinyl chloride	Up to 50,000 mg/kg
Xylenes (total)	Up to 50,000 mg/kg
PFOS + PFHxS	Up to 50,000 mg/kg
PFOA	Up to 50,000 mg/kg
Aluminium	Up to 50,000 mg/kg
Barium	Up to 50,000 mg/kg
Boron	Up to 50,000 mg/kg
Chromium (0 and III oxidation states)	Up to 50,000 mg/kg
Copper	Up to 50,000 mg/kg
Iron	Up to 50,000 mg/kg
Manganese	Up to 50,000 mg/kg
Vanadium	Up to 50,000 mg/kg
Zinc	Up to 50,000 mg/kg

5.3.7 Discharge to sewer contingency

As noted in the Amended Proposal description (Appendix B) it is proposed to discharge up to 60.8 ML/pa of water to sewer under a Trade Waste Agreement to be obtained with Sydney Water. Section 6.5 of the OWMP (Appendix H) outlines the verification testing process that would be carried out to ensure water discharged to sewer would meet the water quality requirements of a Trade Waste Agreement.

HiQ have commenced liaison with Sydney Water regarding their intention to submit a Section 173 Feasibility Assessment. A draft Section 73 feasibility application was prepared and submitted to Sydney Water in July 2024. Sydney Water has requested further information on the operation of the Facility and for discharge volumes to be provided by a hydraulic consultant. This further information is being prepared and will be submitted to Sydney Water October 2024 and finalised following project approval. This process will continue into the detailed design phase of the Proposal, with HiQ committed to working with Sydney Water to consider any recommended design considerations.

Notwithstanding the above, HiQ have identified contingency measures in the event that a Trade Waste Agreement cannot be obtained (either for part or all of the proposed discharge volumes). In the event that not all water can be discharged to sewer, treated liquid waste would be collected within tankers and removed offsite for disposal. Table 113 of the Proposal Description (Appendix B) identifies possible Sewage Treatment Plants (STPs) suitable for disposal of treated wastewater.

Load out of treated water would be carried out during morning or afternoon hours of operation to avoid peak vehicle movement periods. Section 7.4.2 of the draft OWMP (Appendix H) prescribes the procedures for loading of wastewater tankers. The revised Transport Impact Assessment (TIA) submitted as Appendix G to the RtS assessed the potential impact of the Proposal on the surrounding road network. The traffic generation from the Proposal identified in Section 2.1 of the revised TIA considered outbound vehicles from the LWTP (i.e. assessed water being removed offsite by tanker rather than discharged to sewer). Any impacts from tankering treated water offsite rather than discharging to sewer have therefore already been considered, and found to be acceptable.

5.3.8 Separation of incompatible reagents

In response to EPA concerns, HiQ have committed to storing hydrochloric acid (37 wt.%) and caustic soda (30 wt.%) in separate reagent storage areas. Hydrochloric acid will be stored in a locked safety cabinet in Compartment 1, whilst caustic soda will be stored in Compartment 2.

5.3.9 Bioremediation treatment timeframes

In response to the EPA's queries, further clarification has been provided on the timeframes for bioremediation treatment. It is expected that bioremediation would take anywhere between three weeks to three months. This variation in treatment timeframe is the result of several factors including:

- Oxygen availability
- Temperature
- pH
- Microbial population density
- Nutrient balance
- Aeration timing
- Contaminant load
- Moisture
- Soil texture.

The WTF will accept materials that are classified as either 'hazardous' or 'restricted solid waste' under the *Waste Classification Guidelines Part 1: Classifying a Waste* (EPA, 2014). Waste that is accepted under the classification of 'hazardous waste' would have a treatment goal of reaching the classification of 'restricted solid waste' to enable disposal to landfill. Whereas waste initially accepted under the 'restricted solid waste' classification would be treated until it meets the criteria of 'general solid waste'.

Currently, it is assumed that the Facility would treat up to 8,000 tonnes of via bioremediation annually. This calculation has been based on a treatment timeframe of three weeks to provide a worst-case maximum tonnage scenario. In the case that bioremediation takes longer than three weeks, the Facility would manage the acceptance of incoming waste accordingly to ensure the Facility has adequate capacity.

5.3.10 ICHEMS chemicals

PFAS compounds may be considered an industrial chemical under *the Industrial Chemicals Environmental Management (Register) Instrument 2022*, requiring specific controls to be implemented for the use, including relating to disposal and waste management. Section 3.2 of the OWMP provide an overview of the core ICHEMS minimum standards and how they have been addressed.

It is noted that a core principle of the waste management for PFAS, in accordance with the principles of ICHEMS, relates to the proper containment and prevention of contamination for PFAS-containing wastes. A key purpose of the Prestons WTF is to provide a safe, and secure containment for PFAS contaminated soil, liquid waste and packaged waste. Notably, for PFAS contaminated soils, at present if encountered during construction projects (for example) soils are often left in-suit until suitable transport interstate can be authorised, presenting a significant environmental risks (often taking weeks to months for transport approval). Conversely the Prestons WTF incorporate best practice containment for PFAS contaminated waste, including:

- A designated set of Holding Tanks dedicated to PFAS contaminated wastewater.
- Compartment 2 will be bunded for liquid containment in accordance with pertinent Australian Standards and will be lined with epoxy sealer.
- Separate treatment trains within the LWTP with one treatment train is dedicated to PFAS contaminated wastewater and one for non-PFAS contaminated waste water.
- Decontamination of PFAS contaminated bays using Decon 90 or Liquinox
- Other, detailed and comprehensive environmental controls have been incorporated into the design and operational management measures for the Facility, including:
 - Ventilation system to be managed in accordance with the OAQMP during loading and unloading of material
 - Application of water via a hose system for dust suppression during loading and unloading of the material
 - Visual inspection of the storage area on completion of unloading and loading to confirm all material is within the bunded PFAS storage area. Use of brooms or shovels to move the soil within the bunded area if observed outside of the bunded area
- Separate leachate collection system
- PFAS will be stored within designated bays bunded with urethane floor bunding

5.4 Subsequent documentation

The following documentation has since been drafted in response to Agency queries to provide further clarity on the Facility's operations.

5.4.1 Draft operational management plans

In response to EPA queries a series of draft operational management plans have been prepared which outline how the Facility would operate and the relevant environmental controls which would be in place to manage potential risks. The draft operational management plans have been prepared at this stage of the approval process to address the EPA's concerns surrounding the Facility's operation. These draft operational management plans would be finalised during the post approval phase of the Project.

- The Draft OEMP (Appendix F) provides the framework and guidance for Facility activities to be conducted in a manner whereby appropriate control measures are implemented to minimise the potential for adverse impacts on the environment and to meet compliance requirements of the approvals and licences.
- The Draft OAQMP (Appendix G) identifies air quality management issues relating to the operation of the Facility, and provides a means of implementing appropriate air quality mitigation measures.
- The Draft OWMP (Appendix H) describes the acceptance protocol, treatment procedures, storage requirements and environmental controls associated with the Facility's operation.
 - Draft Acid Sulfate Soils Management Plan (ASSMP) describes the procedures in place to treat and manage acid sulfate soils.
 - Draft Bioremediation Management Plan (BMP) describes the procedures in place to treat and manage soils via the process of bioremediation.
- And a Draft OTMP (Appendix I) has been prepared which outlines the movement of vehicles to and from the Facility, as well as providing swept path analyses that demonstrate how vehicles would manoeuvre within the Facility.
- A Liquid and Hazardous Waste Risk and Minimisation Report (Appendix L) has been drafted which identifies the key risks associated with hazardous waste and liquid waste management at the Facility and recommends appropriate environmental controls to manage these risks in accordance with the relevant guidelines.

5.4.2 Hazard and risk assessment

5.4.2.1 Assessment overview

In response to comments from the EPA, a HAZID workshop has been undertaken which assessed 106 risks associated with the Facility's operation. The workshop findings were summarised within a 'Hazard Identification Report' (Sherpa, 2024), which found no High risk (unmanaged) safety or environmental events. However, controls and actions were recorded for each event to reduce the risk rating. The greatest environmental impact possible was associated with a loss of containment of incoming waste in the external receival area of the Facility. HiQ confirmed strict scheduling of waste receival to minimise the volume of waste present externally at any one time, the covering of trucks and recording of unaccepted waste to maintain waste generator accountability, and the bunding of the weighbridge where the trucks would enter directly upon arrival at the facility. The managed environmental risk was reduced to Low.

Within the enclosed Facility, managed environmental consequences were minimised due to the contained nature of the warehouse and the inbuilt leachate retrieval system. HiQ identified that the waste types with the highest environmental and safety risks were those with a high moisture content, specifically sludges and drill muds. The

isolation of these waste types in triple layered underground receival pits with overflow protection demonstrated that the managed safety and environmental risks were reduced so far as reasonably practicable.

Subsequently a 'Hazardous waste risk identification and mitigation report' and 'Liquid waste risk identification and minimisation report' have been drafted and included as appendices to the Draft OWMP. These reports were drafted at the request of the EPA to respond to specific concerns surrounding the management of potentially hazardous materials and liquid waste at the Facility.

5.4.2.2 Environmental controls

As part of the HAZID workshop process several environmental controls were suggested in order to reduce the unmanaged risks associated with the Facilities operation. These environmental controls have been embedded into the design and management procedures for the Facility:

- Updates have been made to the Amended Proposal Description (Appendix B) to provide further detail on proposed environmental controls). Updated and revised design drawings (Appendix E) have been prepared by SMEC which show key design features. These include the leachate collection and water management systems, wheel washes, HVAC and exhaust system, bunding design, fire infrastructure features and traffic control features.
- A draft OEMP (Appendix F -, including an OWMP (Appendix H), an OAQMP (Appendix G) and OTMP (Appendix I) - has been prepared to provide detail around the operational procedures that will be utilised to manage environmental aspects. These documents also provide detail on the specific environmental controls applicable for each activity carried out on site.
- A Hazard Identification Report (Appendix L) has been prepared by Sherpa which identifies environmental and safety risks from the operation of the Facility and outlines the environmental controls which have included within the Facility design and operational plans. The assessment found the environmental controls to be effective in managing risk with no High environmental risk identified for the operation of the Facility
- A Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) has been prepared which provides a detailed description of the Australian Standards, design features and management controls in place to manage risks associated with liquid and hazardous waste.

It is noted that the EPA requested an initial gateway Hazard and Risk assessment primarily to assess the potential risk of storing incompatible waste materials next to each other. The Hazard Identification Report considered the co-location of multiple waste types within Compartment 1. It was noted that due to the solid nature of the waste soils received cross contamination would be highly unlikely due to the low mobility of the waste. It was also noted that there would be no mixing of waste loads at the Facility, further reducing the risks associated with mixing of incompatible waste types.

It should be noted that a full HAZOP assessment will be completed during the post approval phase to further assess the potential risks associated with the Facility's operation.

5.5 Comparison of the Amended Proposal and the Proposal as described in the RtS

Section 1.3 provides an overview of the key changes that have been made to the Proposal since submission of the RtS (as described in the Updated Proposal Description submitted as Appendix B of the RtS), each of which are described in detail in Section 5.1 to Section 5.4 above. A summary of these changes, compared to what was presented in the EIS and/or RtS, is provided in the tables below, as follows:

- Table 5-12 describes the proposed treatment types (RtS compared to Amended Proposal – refer to Section 5.1.1). As a result of the change in treatment types (i.e. removal of chemical oxidation), the types of reagents that would be used and stored at the Facility has also changed – as summarised in Table 5-13
- Table 5-14 compares the throughput for each of the waste streams, providing a breakdown of how the Facility’s annual throughput has reduced from 270,000 tpa as per the RtS, to 210,500 tpa in the Amended Proposal
- Table 5-15 compares the waste codes originally proposed to be received at the Facility (EIS – Appendix C) with those proposed to be received under the Amended Proposal (note there was no change in the waste codes to be received by the Facility between the EIS and RtS)
- Table 5-16 describes the changes in bay allocations between the RtS and Amended Proposal (refer to Section 5.2.1)
- Table 5-17 outlines the change in the maximum volume of recycled content that would be stored onsite at any given time between the RtS and Amended Proposal (refer to Section 5.1.4)
- Table 5-18 summarises the reduction in staff numbers and car parking between the RtS and Amended Proposal (refer to Section 5.1.5 and Section 5.2.3, respectively)

- Table 5-19 summarises the reduction in total vehicle numbers accessing the Facility as a result of the reduced throughput between the RtS and Amended Proposal (refer to Section 6.3)

Red text denotes an aspect of the Proposal that has been removed since the EIS or RtS, **green text** denotes an aspect that has been added between the two phases, and **blue text** denotes an aspect that has changed (black text is an unchanged aspect).

Table 5-12 Treatment types

Treatment types - RtS	Treatment types – this Amendment Report
<ul style="list-style-type: none"> • Physical screening • Chemical separation • Bioremediation • Immobilisation • Chemical oxidation 	<ul style="list-style-type: none"> • Physical screening • Chemical separation • Bioremediation • Immobilisation

Table 5-13 Reagents to be used and stored at the Facility

Material	Tonnes proposed in the RtS	Tonnes per Annum – this Amendment Report
Cement (stored within cement silo)	50 t	50 t
Reagents		
Hydrogen peroxide (Dangerous Goods (DG) Class 5.1)	2 t	-
Potassium permanganate (DG Class 5.1)	1 t	-
Sodium persulphate (DG Class 5.1)	1 t	-
Ferrous sulphate (powdered)	5 t	5 t
Bacteria (stored in liquid form)	1 t	1 t
Urea	5 t	5 t
Super phosphate (powdered)	5 t	5 t
Biodegradable surfactant	2 t	2 t
Polymer (powder or liquid)	2 t	2 t
Finely crushed limestone or ‘aglime’	20 t	20 t
Primary cementitious stabilising agents (Ordinary Portland Cement (OPC), Ground Granulated Blast-furnace Slag (GGBFS), pulverised fuel ash, cement kiln dust)	50 t	50 t
Secondary stabilising agents (Lime, sodium silicate, carbons, organophilic clays, natural pozzolans, bentonites)	50 t	50 t
Aluminium sulphate (28% w/w or powdered)	5 t	5 t
Hydrochloric acid (37% w/w) (DG Class 8)	5 t	5 t
Caustic soda (30% w/w) (DG Class 8)	5 t	0 t
Magnesium oxide (powdered)	5 t	5 t

Material	Tonnes proposed in the RtS	Tonnes per Annum – this Amendment Report
Decon 90	N/A	1 t
Liquinox	N/A	1 t
In addition, the following reagents and volumes would be stored at the LWTP compartment within the bunded chemical dosing area:		
Hydrochloric Acid (37% w/w) (DG Class 8)	2 t	0 t
Caustic soda (30% w/w) (DG Class 8)	2 t	5 t
Aluminium sulfate	2 t	2 t
Polymer	2 t	2 t
Activated Carbon	2 t	2 t
Magnesium Oxide	2 t	2 t
Ferrous sulfate	2 t	2 t

Table 5-14: Waste types proposed for the Site

Type of Waste	Management	Tonnes proposed in the RtS	Tonnes per Annum – this Amendment Report
Packaged waste – Liquid	Contaminated packaged waste: no treatment, only storage	60,000 t	40,000 t
Packaged waste – Solid	Non-contaminated waste: shredding and offtake for disposal		
PFAS contaminated soils	Storage only	<p>Not specifically specified (included in contaminated soils total)</p> <p>Note – the EIS nominated a total of up to 10,000 tpa of PFAS – including soils and liquid</p>	7,500 t
Bulk soils	Various methods:	80,000 t	58,000 t
<i>Contaminated soils</i>	<i>Primarily chemical oxidation</i>	<i>10,000 t</i>	<i>0t</i>
<i>Contaminated soils</i>	<i>Primarily immobilisation</i>	<i>60,000 t</i>	<i>50,000 t</i>
<i>Contaminated soils</i>	<i>Primarily bioremediation</i>	<i>10,000 t</i>	<i>8,000 t</i>
ASS	Acid neutralisation in batches	30,000 t	26,000 t
Drill muds	Dewatering and liquid waste treatment	10,000 t	2,000 t
Sediments and sludges	Dependent on moisture content of sludges – dewatering, liquid waste treatment and soil decontamination	20,000 t	7,000 t
Liquid waste	Treated and validated in 50 kL batches through the LWTP	70 ML	70 ML
Total		270,000	210,500

Table 5-15: Waste codes accepted at the Site

Treatment types - RtS	Treatment types – this Amendment Report
<ul style="list-style-type: none"> • J100 - Mineral Oils • J160 - Waste Tarry Residues • N120 - Soils contaminated with a substance or waste referred to in Parts 1 or 2 of Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2021 • G100 – Ethers • N190 - Filter Cake • G110 – Organic solvents, other than halogenated solvents • D340 – Perchlorates • G160 – Waste from the manufacture, formulation or use of organic solvents • N140 -Fire debris and Wash Waters • G150 – Halogenated organic solvents – Residues from industrial waste treatment or disposal operations • N205 - Residues from industrial waste treatment • M160 – Organo halogen compounds – other than substances referred to in this Table or Table 2, oxidising agents • M100 – Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated naphthalenes, polychlorinated terphenyls and/or polybrominated biphenyls • D130 - Arsenic; arsenic compounds • D170 – Antimony and antimony compounds • D290 - Barium compounds (excluding barium sulphate) • D160 - Beryllium; beryllium compounds • D310 - Boron compounds • D150 - Cadmium; cadmium compounds • D140 - Chromium compounds (hexavalent and trivalent) • D190 - Copper compounds • N150 - Fly Ash • A100 - Waste resulting from surface treatment of metals and plastics • D220 - Lead; lead compounds • D120 - Mercury; mercury compounds • D100 – Metal Carbonyls • D210 - Nickel compounds • D300 - Non-toxic salts • H110 – Organic phosphorous compounds • M250 - Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials • D360 - Phosphorus compounds excluding mineral phosphates 	<ul style="list-style-type: none"> • J100 - Mineral Oils • J160 - Waste Tarry Residues • N120 - Soils contaminated with a substance or waste referred to in Parts 1 or 2 of Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2021 • N190 - Filter Cake • N140 -Fire debris and Wash Waters • N205 - Residues from industrial waste treatment • D130 - Arsenic; arsenic compounds • D290 - Barium compounds (excluding barium sulphate) • D160 - Beryllium; beryllium compounds • D310 - Boron compounds • D150 - Cadmium; cadmium compounds • D140 - Chromium compounds (hexavalent and trivalent) • D190 - Copper compounds • N150 - Fly Ash • A100 - Waste resulting from surface treatment of metals and plastics • D220 - Lead; lead compounds • D120 - Mercury; mercury compounds • D210 - Nickel compounds • D300 - Non-toxic salts • M250 - Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials • D360 - Phosphorus compounds excluding mineral phosphates • H170 - Waste from manufacture, formulation and use of wood preserving chemicals • D270 - Vanadium compounds • D230 - Zinc Compounds • C100 - Basic solutions or bases in solid form • B100 - Acidic solutions or acids in solid form • T100 - Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known • N160 - Encapsulated, chemically-fixed, solidified or polymerised wastes that are referred to in this Part • R120 - Waste pharmaceuticals, drugs and medicines • J120 - Waste oil/water, hydrocarbons/water mixtures or emulsions • M230 - Triethylamine catalysts for setting foundry sands

Treatment types - RtS	Treatment types – this Amendment Report
<ul style="list-style-type: none"> • D240 – Selenium and selenium compounds • D250 – Tellurium and tellurium compounds • D180 – Thallium and thallium compounds • H170 - Waste from manufacture, formulation and use of wood preserving chemicals • D270 - Vanadium compounds • D230 - Zinc Compounds • C100 - Basic solutions or bases in solid form • B100 - Acidic solutions or acids in solid form • T100 - Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known • D350 – Chlorates • N160 - Encapsulated, chemically-fixed, solidified or polymerised wastes that are referred to in this Part • M220 – Isocyanate compounds • R120 - Waste pharmaceuticals, drugs and medicines • J120 - Waste oil/water, hydrocarbons/water mixtures or emulsions • M230 - Triethylamine catalysts for setting foundry sands • E100 – Waste containing peroxides other than hydrogen peroxide • H100 – Waste from manufacture, formulation or use of biocides or phytopharmaceuticals • F100 - Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish • T120 - Waste from the production, formulation and use of photographic chemicals and processing materials • F110 - Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives • R140 - Waste from the production and preparation of pharmaceutical products • A100 - Waste resulting from surface treatment of metals and plastics • A110 - Waste from heat treatment and tempering operations containing cyanides • D110 - Inorganic fluorine compounds excluding calcium fluoride • N100 - Containers and drums that are contaminated with residues of waste referred to in this Table • D200 – Cobalt • D330 - Inorganic sulfides • N230 – Ceramic – based fibres with physico-chemical characteristics similar to those of asbestos • M150 - Phenols, phenol compounds including chlorophenols 	<ul style="list-style-type: none"> • F100 - Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish • T120 - Waste from the production, formulation and use of photographic chemicals and processing materials • F110 - Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives • R140 - Waste from the production and preparation of pharmaceutical products • A100 - Waste resulting from surface treatment of metals and plastics • A110 - Waste from heat treatment and tempering operations containing cyanides • D110 - Inorganic fluorine compounds excluding calcium fluoride • N100 - Containers and drums that are contaminated with residues of waste referred to in this Table • D330 - Inorganic sulfides • M150 - Phenols, phenol compounds including chlorophenols • M270 – Per-and poly fluoroalkyl (PFAS) contaminated materials including waste PFAS containing products and contaminated containers (soils & liquid streams) • A130 - Cyanides (inorganic) • M210 - Cyanides (organic) • M260 - Highly odorous organic chemicals (including mercaptans and acrylates) • M180 - Polychlorinated dibenzo-p-dioxin (any congener) Reactive chemicals

Treatment types - RtS	Treatment types – this Amendment Report
<ul style="list-style-type: none"> M270 – Per-and poly fluoroalkyl (PFAS) contaminated materials including waste PFAS containing products and contaminated containers (soils & liquid streams) A130 - Cyanides (inorganic) M210 - Cyanides (organic) M260 -Highly odorous organic chemicals (including mercaptans and acrylates) M180 - Polychlorinated dibenzo-p-dioxin (any congener) Reactive chemicals 	

Table 5-16 Number and allocation of bays

Waste type	Number of indicatively allocated bays - proposed in the RtS	Number of indicatively allocated bays - Amended Proposal
Bulk soil receipt	4	3
Storage and transfer	-	1
Bioremediation	3	5
Chemical oxidation	5	-
Immobilisation	8	10
ASS		3
PFAS	1	3
Packaged waste	5	3
Recovered recyclable materials		1
Sludges	3	3
Drill mud	3	1

Table 5-17 Volume of recycled material stored onsite

Treatment types - RtS	Treatment types – this Amendment Report
100 m ³	50 m ³

Table 5-18 Employees and car parking

Item	Number - RtS	Number – this Amendment Report
Proposed staff	30	21
Proposed car parking	40	36

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Table 5-19 Summary of heavy vehicle types and movements at the Facility at full operational capacity

Waste Type	Vehicle Type	RtS vehicles per day			Worst case vehicle movements – Amended Proposal		
		Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days) **	Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days)
Bulk Soil and ASS	Tipper truck or Truck and dog	3,929	2,503	21	3,000	3,537*	24
Sludges	Vacuum tanker (various capacity and length)	1,429	2,143	12	500		<2
Drill Muds	Vacuum tanker (various capacity and length)	286	273	<2	58	32	<1
Packaged Waste	Flatbed trucks	3,000	2,143	17	2,000	1,429	13
Liquid Waste	Vacuum tanker or bulk liquid tanker (various capacity and length)	7,000	6,679	45	7,000	6,679	45
PFAS	Tipper truck or Truck and dog	Included within bulk soils			268	268	<2
Peak number of trucks per day				96			84

Note: The total trucks per day in the above and the count identified in the Traffic Impact Assessment prepared by People Trans has a discrepancy of two trucks per day – the TIA combines all trucks incoming and outgoing across all waste streams, whereas the summary above divides it by waste stream. As a result, there is a rounding difference between the two summaries.

*The outgoing truck volumes are inclusive of immobilisation, of which dewatered sediment and sludges would form part of.

** Vehicle numbers in the RtS were presented as daily averages. These have been converted to peak daily vehicle movements

6 Assessment of impacts

The Chapter identifies whether any additional environmental assessments are required as a result of the proposed amendments.

This Chapter also provides clarifications to the air quality assessment completed as part of the EIS as requested by the EPA after submission of the RtS Report.

6.1 Environmental impact screening assessment

The screening assessment, below, considers whether the proposed amendments could change the potential impacts as assessed in the EIS and RtS. Table 6-1 assesses whether additional environmental assessment of the proposed amendments to the Proposal would be required or if the assessment in the EIS and RtS remains applicable.

The review identified no areas requiring further detailed assessment as a result of the amendments as described in Chapter 3.

Table 6-1 Amended environmental screening assessment

Environmental Aspect	Comparison of proposed amendment against Environmental Impact Statement	Further detailed assessment required?
Waste management	Total volume of waste and the number of waste types have both been reduced. The proposed amendments are anticipated to have consistent and/or lesser impacts on waste management to those already assessed in the EIS. As such, further assessment has been deemed to be unnecessary. The procedures for waste treatment and management at the Facility have since been outlined in a Draft OWMP (Appendix H). Associated risks and mitigations from liquid and hazardous waste have been outlined in a Liquid and Hazardous Waste Risk Identification and Minimisation Report (Appendix K) and Hazard Identification Report (Appendix L).	No
Air quality and odour	Minor updates to the air quality and odour assessment carried out as part of the EIS have been provided in Section 6.2, in response to comments from the EPA. The proposed amendments would have no additional air quality and odour impacts to those already assessed.	No
Noise and vibration	The proposed amendments would have no additional noise and vibration impacts to those already assessed in the EIS.	No
Soils and water	The proposed amendments are located within the construction Site footprint assessed in the EIS and therefore the soils and water impacts would be consistent with those described in the EIS. Design refinements have resulted in small changes to the management of leachate within the facility; however the potential impacts to soils and water remain the same and the overarching approach to leachate and stormwater management remain consistent with that described in the EIS and RtS Report.	No
Traffic and transport	The total volume of waste and the number of waste codes to be accepted at the Facility have both been reduced. The proposed amendments would reduce traffic and transport impacts to those already assessed. However, the	No

Environmental Aspect	Comparison of proposed amendment against Environmental Impact Statement	Further detailed assessment required?
	<p>addendum Traffic Impact Assessment (TIA) carried out as part of the RtS remains applicable and presents a conservative assessment of impacts as traffic volumes have since been reduced (see Section 6.3) (OTMP – Appendix I).</p> <p>The facility will accommodate fewer office staff than initially proposed and there is a corresponding reduction in parking spaces (see Section 5.2.3). The change to the number of parking spaces and office staff do not alter the predicted impacts on traffic and transport as assessed in the EIS and clarified in the Addendum TIA included as part of the RtS Report.</p>	
Human health	<p>The proposed amendments would have no additional human health impacts to those already assessed in the EIS. The reduction of waste throughput and the number of waste codes to be accepted by the Facility may reduce potential human health impacts.</p>	No
Hazards and risk	<p>The potential hazards and risks associated with the proposed amendments would be consistent with those assessed in the EIS. The quantities of Dangerous Goods remain below the screening thresholds prescribed in Applying SEPP 33 (DoP, 2011) and the facility would not be considered a potentially hazardous development under the guideline (see Appendix J). Additionally, a HAZID workshop and Hazard Identification Report have been prepared which assessed the potential risks associated with the Facility’s operation and provided appropriate environmental controls to manage these risks.</p>	No
Fire and incident management	<p>The reduction in the total storage volume of recovered, recyclable material from 100m³ to 50m³ means that the facility would no longer meet the definition of a waste facility to which the NSWFR <i>Fire safety guideline: Fire safety in waste facilities</i> applies. Appendix E3 further details the Fire Services Design in accordance with relevant guidelines.</p>	No
Cultural heritage and Aboriginal cultural heritage	<p>The proposed amendments are located within the construction Site footprint assessed in the EIS and therefore the cultural heritage and Aboriginal cultural heritage impacts would be consistent with those described in the EIS.</p>	No
Biodiversity	<p>The proposed amendments are located within the construction Site footprint assessed in the EIS and therefore the biodiversity impacts would be consistent with those described in the EIS.</p>	No
Ecologically sustainable development (ESD)	<p>The proposed amendments would not change the consideration of ESD as described in the EIS.</p>	No

6.2 Clarifications – air quality

The EPA made several comments on the Revised Air Quality Impact Assessment (AQIA), presented in the RtS Report. The comments were as follows:

- a) *Recommendations on revised AQIA – that the applicant:*
 - i. *presents the predicted impact of all toxic pollutants as the highest ground level concentration at and beyond the boundary of the premise (maximum on the grid) as required by the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*
 - ii. *undertake a sensitivity analysis of predicted impacts based on exit velocity*
 - iii. *provide a discussion on any inconsistency in predicted impacts in the AQIA (Golder) and Revised AQIA (Zephyr), particularly where emission rates are inconsistent*
 - iv. *justify the capability of the carbon bed in minimizing toxics to the maximum extent achievable*
- b) *Recommendations on revised discharge modelling – that the applicant:*
 - i. *comment on the model change and justify that it is still valid to refer to the predicted impacts from the AQIA (Golder), particularly for the air pollutants not remodelled*

The following sections sequentially address these comments as raised by the EPA.

6.2.1 Presentation of highest predicted impacts for toxic pollutants

The *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Approved Methods) note that concentrations of individual toxic air pollutants (in this case arsenic and chromium) should be presented as the incremental 1-hour average and as the 99.9th percentile for Level 2 assessments. The Revised AQIA, included in the RtS Report, is a Level 2 assessment and presented the results in contour format as well as in tables for individual sensitive receptors.

Table 6-2 now presents the highest predicted ground level concentrations for both air toxicants at or beyond the boundary of the facility (grid maxima). The maximum for both air toxicants are well below the criterion.

Table 6-2 Predicted 1-hour average (99.9th percentile) concentrations – grid maxima

Toxic air pollutant	Maximum on the grid	Criterion
Arsenic	0.0026 µg/m ³	0.09 µg/m ³
Chromium (as Chromium VI) (Cr(VI))	0.026 µg/m ³	0.09 µg/m ³

6.2.2 Sensitivity analysis of predicted impacts based on exit velocity

The assumed exit velocity of 25 meters per second (m/s) adopted within the Revised AQIA presented in the RtS Report was based on maximum air exchanges through the building ventilation system. While high, this is significantly lower (almost half) of the exit velocity assumed in the previous assessment.

Maximum air exchanges have been assumed since this, by definition, assumes maximum mass emission rates (given that the current modelling approach assumes a maximum concentration of pollutant within the building).

Notwithstanding, a reduction in exit velocity would mean a proportional reduction in emission rates, the ground level concentrations (grid maxima) for Cr(VI) under lower exit velocities (10 m/s, 15 m/s and 20 m/s) are presented

in Table 6-3. These results show that there are no predicted exceedances of the criterion under any of these scenarios.

Table 6-3 Sensitivity analysis – predicted 1-hour average (99.9th percentile) Cr(VI) concentrations

Toxic air pollutant	Assumed exit velocity (m/s)	Equivalent mass emission rate (g/s)	Maximum on the grid ($\mu\text{g}/\text{m}^3$)	Criterion ($\mu\text{g}/\text{m}^3$)
Chromium (as Cr(VI))	10	0.000089	0.040	0.09
	15	0.000133	0.033	
	20	0.000177	0.026	
	25	0.000219	0.026	

6.2.3 Inconsistencies in predicted impacts in Golder AQIA and revised AQIA

There are several differences between the Golder AQIA and the Revised AQIA including the dispersion model used, meteorological year and emission parameters.

The principal reason for the differences in predicted concentrations relate to metals emission rates adopted within the Golder AQIA.

Section 7.8 of the Golder AQIA lists the assumptions adopted which resulted in predicted exceedances of the arsenic and chromium criteria. In summary, the Golder AQIA assumed a constant maximum hourly throughput with the maximum permissible metals content. Given that the metals contents measured at the existing Yatala facility are very low to negligible, these assumptions are very conservative.

The Revised AQIA, presented in the RtS Report, adopts a different approach to provide emission estimates that are conservative, transparent and defensible.

To achieve this, workplace exposure standards for the metals of concern have been adopted as in the maximum metal concentrations possible within the pre-filtered air within the building.

In other words, to comply with workplace health and safety conditions at the facility the air inside the building cannot exceed these concentrations. The combined filter efficiencies for different particle size groups were then applied to the building air to calculate the reduced particulate matter (PM) emissions post-filtration. This filtration is required both as best practice and also to reduce particulates from the carbon beds.

As noted in the Revised AQIA, no arsenic has yet been detected during stack testing at HiQ’s Yatala facility, and any chromium concentrations detected have been significantly lower than those assumed within the modelling. As such, the Revised AQIA assumptions are considered to be conservative and appropriate.

6.2.4 Capability of the carbon bed in minimising toxics

Activated carbon filters are highly effective at scrubbing gaseous Volatile Organic Compounds (VOC) and odour from air prior to release into the atmosphere. As discussed in the Golder AQIA, the manufacturer's specifications indicate at least 98% efficiency for VOCs and emission assumptions in that report are conservative but reasonable.

For the filtration of particulate matter, the PM filter box at the proposed facility will be equipped with a G4-rated, 30/30 Dual 10 high capacity disposable cardboard pre-filter, as well as an F7-rated, Hi-Flo spun glass high-capacity filter. The combined PM removal efficiencies of these two filters were calculated to be 75% for PM_{2.5}, 95% for PM₁₀ and 97.5% for TSP from the pre-filter and main filter specifications as explained in Appendix D of the Golder AQIA. It is also noted that this dual filter system will aim to reduce PM to the maximum extent achievable to ensure these particles do not interfere with the performance of the activated carbon filter.

As the metals are contained in the PM component, it is this filter box that will be used to reduce the metals. Incorporating this dual filtration process enables the PM, and therefore the associated metals, in the emissions to be reduced as far as reasonably practicable.

6.2.5 Model change and validity of predicted impacts from Golder AQIA

The dispersion model used in the Golder AQIA was AERMOD, incorporating the meteorological pre-processor AERMET. The dispersion modelling completed for the Revised AQIA used CALPUFF and the CALMET pre-processor. Both these models are approved for use in NSW and either would be suitable for the subject AQIA.

It is considered valid to refer to predicted impacts from the Golder AQIA for the pollutants not modelled in the revised AQIA. This is since the Golder AQIA emission assumptions are not wrong per se, but rather are so conservative as to be unrealistic. Thus, only where the Golder AQIA presented ground level concentration impacts in excess of their respective air quality criterion have these been re-evaluated within the Revised AQIA. For this reason, only arsenic and chromium have been assessed within the Revised AQIA.

6.3 Updated vehicle movements

As a result of the reduction in waste codes and overall throughput of the Facility, the heavy vehicle movements have also been reduced. The OTMP has been updated to account for the reduced traffic volumes (Appendix I). A summary of the annual incoming and outgoing vehicle movements for each waste stream is provided below in Table 6-4.

The peak daily traffic volumes have been calculated based on a peak day scenario (Mondays are anticipated to be the busiest day, potentially accounting for a maximum of 19% of weekly traffic movements under a peak daily scenario). Based on this assumption, a total of 66 heavy vehicle would be anticipated under a peak day under standard operational conditions (Table 6-4).

Section 5.3.7 outlines contingency measures for the operation of the Facility should it not be possible to discharge treated liquid waste to sewer under a Trade Waste Agreement. Rather than discharge to sewer, it would instead be proposed to tanker treated water offsite for disposal at a nearby Sewerage Treatment Plant. If this contingency option is required, additional outbound vehicles would be needed to remove the treated water from the site. This would be considered to be the 'worst case operational scenario' as shown Table 6-4.

It is noted that, even under the worst-case scenario, daily vehicle movements would be fewer than those identified and assessed in the RtS (refer Section 5.5).

Details for vehicle queuing onsite are provided in the OTMP available in Appendix I. Liquid waste and packaged waste classified as DG Class 8, PG II or PG III and reagents would be transported in accordance with the requirements of the ADG Code. The Addendum Traffic Impact Assessment completed as part of the RtS remains applicable and provides a conservative assessment of impact considering heavy vehicle volumes have since reduced.

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Table 6-4 Summary of heavy vehicle types and movements at the Facility at full operational capacity

Waste Type	Vehicle Type	Standard operational scenario		Worst case operational scenario			
		Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days)	Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days)
Bulk Soil and ASS	Tipper truck or Truck and dog	3,000	3,537*	24	3,000	3,537*	24
Sludges	Vacuum tanker (various capacity and length)	500		<2	500		<2
Drill Muds	Vacuum tanker (various capacity and length)	58	32	<1	58	32	<1
Packaged Waste	Flatbed trucks	2,000	1,429	13	2,000	1,429	13
Liquid Waste	Vacuum tanker or bulk liquid tanker (various capacity and length)	7,000	179	27	7,000	6,679	45

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Waste Type	Vehicle Type	Standard operational scenario		Worst case operational scenario			
		Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days)	Incoming vehicle movements (annual)	Outgoing vehicle movements (annual)	Peak number of vehicles per day (365 days)
PFAS	Tipper truck or Truck and dog	268	268	<2	268	268	<2
Peak number of trucks per day				66	Peak number of trucks per day		84

Note: The total trucks per day in the above and the count identified in the Traffic Impact Assessment has a discrepancy of two trucks per day – the TIA combines all trucks incoming and outgoing across all waste streams, whereas the summary above divides it by waste stream. As a result, there is a rounding difference between the two summaries.

*The outgoing truck volumes are inclusive of immobilisation, of which dewatered sediment and sludges would form part of.

7 Justification of the amended Proposal

This Chapter provides justification for the amendments which includes outcomes of the environmental impact screening assessment and how these compare to key outcomes in the EIS.

7.1 Overview of Proposal amendments

The proposed amendments are described in Section 5 and include clarifications and changes to the Proposal:

- **Changes to Proposal operations:** due to progression of design and in response to stakeholder feedback, the following aspects associated with the Proposal operations have been updated:
 - Chemical oxidation has been excluded from the Proposal as a treatment process onsite for soils and liquid waste. The bays originally allocated to chemical oxidation have been reallocated to immobilisation and ASS
 - The proposed annual throughput of the Facility has been reduced from 270,000 tpa to 210,500 tpa. Additionally, the onsite storage limits for each of the waste streams at any one time have also been reduced
 - Bay sizing and waste type allocations have been updated. There would be a total of 32 bays and / or pits within the facility. Each of the soil bays measure five metres by five metres, segregated by concrete push walls which measure six metres in height. The storage volume for each of the bays is dependent on the characteristics of each individual soil batch (depending on the level of cohesiveness of the soil). Based on the dimensions of the bay it has been estimated that on average 60 cubic metres (m³) of soil material could be contained within each of the bays. The sludge and drill mud pits have been calculated to have a storage capacity of approximately 58 m³ of material based on the slope of the pit measuring 11 degrees
 - The number of waste codes to be accepted onsite has been reduced in response to stakeholder comments and review of the market (refer Annexure A to the Amended Proposal Description)
 - Reduction in the total storage volume of recovered recyclable material to be stored onsite from 100 m³ to 50 m³.
 - HiQ has recently reviewed the number of staff likely to work in the office facilities within the Proposal and have determined that the number of office staff would be limited to 21 people at any one time rather than the maximum total of 30 identified in the EIS.
 - Removal of staging of the Proposal. It had originally been proposed to construct and operate the Facility in two stages (Stage 1 for contaminated soil and packaged waste and Stage 2 for the LWTP). It is now proposed to construct Stage 1 and Stage 2 concurrently. All reference to staging have therefore been removed.
- **Design refinements:** due to progression of design, the following aspects associated with the physical description of the Proposal and the Site layout have been altered:
 - The arrangement of the bays and pits within the Facility have been updated to maximise the potential capacity of the Facility.
 - Water management infrastructure has been updated. The design of the leachate management system has been updated from bunding of blocks of bays to instead utilise the slope of the bays to contain waters. All Per- and polyfluoroalkyl substances (PFAS) bays will remain bunded. The entire building would be bunded with 250 mm bunds provided at each of the entries and exits to the building.
 - The car parking design for the Proposal has been revised to reflect the decrease in staff numbers and provide additional access space around the parking bays. The number of car parking spaces would be reduced from 40 (including one accessible parking space) to 36 (including one accessible parking space), resulting in a reduction of four parking spaces.

- The Fire services design has been updated in accordance with relevant standards and the EIS assessment. The following design elements are included in the designs: site connection, fire hydrant system, fire hose reels, portable fire extinguishers, fire detection systems and spent fire water management.
- The flooring of Compartment 2 would be coated in an epoxy lining to ensure the longevity of the flooring due to its exposure to different contaminants.
- **Clarifications in response to agency comments:** the Proposal description has been updated to clarify the waste types to be accepted on Site (in relation to the waste classification guidelines) and the treatment types that would be subject to the SIAs that would be sought from the NSW Environmental Protection Authority (EPA). Clarifications include:
 - No PFAS contaminated soil will be accepted onsite above the Restricted Solid Waste (RSW) criteria
 - No Polychlorinated biphenyl (PCB) contaminated waste will be accepted onsite above the scheduled chemical waste criteria
 - SIAs sought for the Site would reflect existing immobilisation technologies used in Australia and globally that have demonstrated scientific basis for immobilisation
 - In response to the EPA's comments, further clarification on the waste classification of material to be accepted onsite has been provided.
 - A proportion of the liquid waste and packaged waste accepted at the Facility will meet the classification of Dangerous Goods Class 8, Packing Groups II and III under the Australian Dangerous Goods Code (NTC, 2022). The Facility will only accept wastewater and packaged waste with this classification in volumes of less than 25 tonnes and 50 tonnes, for Class 8 Packing Group II and III respectively. Once accepted onsite, Class 8 Dangerous Goods (DGs) will either be delivered directly to a designated tank within the LWTP or a designated bay within the packaged waste storage area. By-products of the treatment process would either undergo further treatment or would be disposed of at an appropriately licenced landfill, as described in Section 7 of the Draft OWMP (Appendix H). Additionally, two of the reagents to be used within the LWTP are also classified as Dangerous Goods Class 8 Packing Group II. These reagents would be stored separately above the Probable Maximum Flood (PMF) level.
 - HiQ have updated all documentation to recognise that PFAS material accepted onsite may meet the classification of Dangerous Goods Class 9 Packing Group III, in accordance with the Australian Dangerous Goods Code (NTC, 2022)
 - Further clarification has been provided about the contaminant types and levels that would be received at the Facility for waste that is classified as hazardous waste
 - Further clarification has been provided around the management of spent treatment materials from the LWTP, including granular activated carbon (GAC) and volcanic clinoptilolite zeolite (VCZ)
 - HiQ have identified contingency measures in the event that a Trade Waste Agreement cannot be obtained (either for part or all of the proposed discharge volumes). In the event that not all water can be discharged to sewer, treated liquid waste would be collected within tankers and removed offsite for disposal.
 - In response to the EPA's concerns around the co-location of Hydrochloric acid (37 wt.%) and Caustic soda (30 wt.%) within Compartment 2, HiQ have committed to store these separately. Caustic soda will be stored in Compartment 2 whilst the Hydrochloric acid will be stored in a locked safety cabinet in Compartment 1.
 - Clarification has been provided on the approximate timeframe for bioremediation treatment.
 - Clarification has been provided on how and where the proposal documentation addresses the *Industrial Chemicals Environmental Management (Register) Instrument (2022)* (ICHeMS) minimum standards (Section 3.2 of OWMP).

- **Subsequent documentation:** several additional documents have been drafted in response to Agency queries to provide further clarity around the Facility's operation, these documents include:
 - In response to EPA queries a series of draft operational management plans (Appendix F to Appendix I) have been prepared which outline how the Facility would operate and the relevant environmental controls which would be in place to manage potential risks.
 - A Hazard Identification Report (Appendix L) has been completed which considered 106 potential risks associated with the Facility's operation. Environmental controls have been embedded into the design and management procedures for the Facility, in order to minimise the impact of these potential risks.
 - A Liquid and Hazardous Waste Risk and Minimisation Report (Appendix K) has been prepared to provide further detail regarding the proposed safety and environmental controls specific to the management of liquid and hazardous waste and their associated risks (as identified in the Hazard Identification Report (Appendix L).
 - In response to the EPA's comments, a draft Acid Sulfate Soils Management Plan (ASMP) and a draft Bioremediation Management Plan (BMP) have been prepared and included as Appendix F and Appendix G to the OWMP.

The proposed amendments are described further in the Amended Proposal Description provided in Appendix B.

7.2 Need for the amended Proposal

The amendments described in Section 5 of this report are a result of ongoing design development and in response to matters raised during stakeholder engagement since the EIS exhibition and RtS Report submission. The overall need for the Proposal is driven by:

- Current market trends which indicate an increasing need for waste treatment and processing facilities to meet state targets and support industry
- Support of the delivery of subsequent infrastructure projects within Western Sydney including the M12, Western Sydney Airport and the Western Sydney Aerotropolis area.

The proposed amendments do not affect the Proposal's ability to achieve these objectives. The proposed amendments also do not change the Proposal's overall contribution to key NSW and local government strategies.

7.3 Summary of impacts for the amended Proposal

The proposed amendments do not change the type or significance of impacts assessed in the EIS and refined in the RtS Report. There are no changes to the construction or ongoing operational impacts assessed in the EIS associated with the amendments.

The management measures in the RtS Report are adequate to manage the impacts of the proposed amendments. The management measures for the Proposal are included as Appendix C.

7.4 Ecologically sustainable development

Section 17 of the EIS describes the Proposal's alignment with the principles of ecologically sustainable development:

- The precautionary principle
- The principle of intergenerational equity
- Conservation of biological diversity and ecological integrity
- Improved valuation, pricing and incentive mechanisms.

The changes described in this report are minor and do not significantly change the strategic need or the impacts described in the EIS. Accordingly, there is no change to the Proposal's alignment with ecologically sustainable development principles as defined in Clause 6, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (now, clause 193 of the *Environmental Planning and Assessment Regulation 2021*).

7.5 Conclusion

The Proposal as described in Appendix B provides significant benefits in terms of addressing and securing the capacity and capability to treat specific wastes that will be generated in the local, Western Sydney, and Sydney metropolitan area, in addition to enabling efficient, safe and productive use of waste resources. The potential environmental, social and economic impacts of the Proposal have been identified and assessed as part of the EIS in response to the SEARs. The assessment in the EIS and further detailed in the RtS Report, has shown that the Proposal's residual impacts are acceptable and can be effectively managed through implementation of a range of management measures.

Several management plans have been drafted since the RtS Report to further mitigate potential risks. Design progress and stakeholder consultation has identified several opportunities to refine and improve the Proposal. In most cases, the potential environmental impacts of the proposed amendments are consistent with those already assessed in the EIS. The proposed amendments will be managed with the revised management measures as outlined in Appendix C. The amended Proposal remains in alignment with the principles of ESD.

8 References

- Arcadis 2023, Prestons Waste Treatment Facility Response to Submissions Report*
- DPE 2011, Applying SEPP 33, Hazardous and Offensive Industry Development Application Guidelines*
- DPIE 2021, NSW Waste and Sustainable Materials Strategy 2041 Stage 1 plan: 2021–2027*
- DPIE 2022, State Significant Development Guidelines*
- EPA 2014, NSW Waste Avoidance and Resource Recovery Strategy 2014-21*
- EPA 2016, NSW Waste Less, Recycle More Initiative*
- EPA 2023, Towards a Circular Economy: Enhancing the NSW Resource Recovery Framework*
- Golder 2020, Prestons Waste Treatment Facility Scoping Report*
- Golder 2021, Prestons Waste Treatment Facility Environmental Impact Statement*
- Greater Sydney Commission 2018a, Our Greater Sydney 2056: Western City District Plan*
- Greater Sydney Commission 2018b, Our Greater Sydney 2056: Western City District Plan*
- Interstate Technology and Regulatory Council (IRTC) 2011, Development of Performance Specifications for Solidification/Stabilization*
- NSW Fire and Rescue 2020, Fire Safety Guidelines*
- NTC (2022). Australian Dangerous Goods Code, Edition 7.8*
- Peopletrans 2021, Prestons Waste Treatment Facility Transport Impact Assessment*
- Stanbury 2023, Addendum Traffic & Parking Impact Assessment*
- TfNSW 2022, Future Transport Strategy 2056*

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Appendix A Statutory compliance table

Appendix B – Proposal description

Appendix C – Revised environmental mitigation measures

Appendix D – Document Status Table

Appendix E – Design Drawings

E1: Design Drawings Architectural Drawings (Degnan Constructions, 2023a)

E2: Carpark and Stormwater Management Design (SMEC, 2023)

E3: Fire Services Design (Degnan Constructions, 2023b)

E4: Hydraulic Services Design (Degnan Constructions, 2023c)

E5: Structural Design (SMEC, 2023b)

E6: Electrical Services Design (Degnan Constructions, 2023e)

Appendix F – Operational Environmental Management Plan (OEMP)

Appendix G – Operational Air Quality Management Plan (OAQMP)

Appendix H – Operational Waste Management Plan (OWMP)

Appendix I– Operational Transport Management Plan (OTMP)

Appendix J – Hazardous Industry Guidance note (Whamcorp)

Appendix K – Liquid and Hazardous Waste Risk Identification and Minimisation Report

Appendix L – Hazard Identification Report