Construction Environmental Management Plan

Newcastle Stage 3 Development (Ref SSD 7065)

Document details

Rev	Date	Status	Prepared By	Approved By	Signed
0	Jun 18	Updated after Planning comments	C. Fasolino	P. Hayward	0
1	Feb 17	First Issue	C. Fasolino	P. Hayward	1
2	Aug	Stage 3 per construction approval	C. Fasolino	P. Hayward	2

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Glossary

CEMP	Construction Environmental Management Plan
CSMP	Contaminated Site Management Plan
DEC	Former NSW Department of Environment and Conservation
DECC	Former NSW Department of Environment & Climate Change
DP&E	NSW Dept. of Planning & Environment
EIS	Environment Impact Statement
ENM	Excavated Natural Material
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
FHA	Final Hazard Analysis
FRNSW	Fire & Rescue NSW
FSS	Fire Safety Study
HAZOP	Hazard & Operability Study
LEP	Local Environmental Plan
MHF	Major Hazard Facility
MMP	Material Management Plan
MSDS	Material Safety Data Sheet
PHA	Preliminary Hazard Analysis
POEO	Protection of the Environment Operations
PON	Port of Newcastle
SEPP	State Environment Protection Policy
Secretary	Secretary of the Department of Planning and Environment NSW
SHEQ	Safety, Health, Environment & Quality
SHVN	Stolthaven Australia Pty Ltd
SIL	Safety Integrity Level
VENM	Virgin Excavated Natural Material
WH&S	Workplace Health and Safety

1. INTRODUCTION

Stolthaven is a bulk liquids logistics company, which specialises in handling fuels, hazardous bulk liquids and edible oils. Stolthaven has gained a global reputation for excellence in the storage and handling of bulk liquids. Stolthaven, formally operating as Marstel Terminals in Australia and New Zealand between 1987 and 2013, is a leader in the business of bulk liquid storage, with a highly valued customer base, including numerous multinational companies. Stolthaven has been operating at the Facility in Mayfield since late 2013 providing an efficient fuel supply to the Hunter Region particularly the mining industry.

This project is the Stage 3 expansion of the Newcastle Storage Facility on Lot 2 of the Mayfield Bulk Liquids Precinct on property leased from The Port of Newcastle. The site was previously part of a large steelmaking operation in use for an extensive period of time. As a result of the previous land use some areas are designated as “contaminated” and are subject to a Contaminated Site Management Plan (CSMP). All parties are required to comply with the CSMP.

The site is close to the tidal waters of the Hunter River South Arm Channel and adjacent to drainage culverts flowing into the river. Particular care must be directed to activities where potential pollutants resulting from constructing activities may be accidently spilled into these waterways.

This project (Newcastle Stage 3 expansion) involves the addition of 17 new tanks for storing predominately petroleum products. An additional truck loading gantry, wharf pipelines, control room, associated staff parking and fire and safety systems are also proposed.

In December 2016 Stolthaven received planning approval for this project SSD 15_7065).

Condition D1 of the above consent requires Stolthaven to prepare a Construction Environmental Management Plan (CEMP) to the satisfaction of the Secretary.

The proposed Construction Environmental Management Plan needs to contain the following information:

- identify the statutory approvals that apply to the Site;
- outline all environmental management practices and procedures to be followed during construction;
- describe all activities to be undertaken on the Site during construction, including a clear indication of construction stages;
- detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
- describe the roles and responsibilities for all relevant employees involved in construction works; and

- include the following management plans:
  a) a soil and water management plan;
  b) a contaminated materials management plan, prepared in consultation with the Port of Newcastle;
  c) a traffic management plan;
  d) a noise and vibration management plan;
  e) an air quality (dust) management plan;
  f) a utilities and services provision plan; and
  g) a waste management plan.

This report is the Construction Environmental Management Plan referred to above.

2. SHEQ POLICY

Stolthaven has an integrated approach in Safety, Health, Environment and Quality Management Systems with the underlying themes of protecting the environment and safety of all people as well as continual improvement.

The SHEQ Policy is shown below.

Stolthaven Terminals Safety, Health, Environment and Quality Policy

All Stolthaven sites, businesses and functions are required to comply with this policy. Stolthaven (SHVN) operates, maintains and continually improves the company's SHEQ management system to achieve defined objectives and ensure compliance and development of SHEQ requirements.

It's our goal to provide high quality storage and distribution services whilst safeguarding the safety, health, environment and security of our employees, our contractors, our neighbours, the public, customers and their valued products. This requires a culture in which SHEQ is part of everything we do, underpinned by visible leadership.

All employees are to comply with applicable regulations, participate and actively contribute to achieve our goals:

- Work safely, in full compliance with applicable laws, regulations and SHVN SHEQ management system;
- Own and others' safety is not compromised. No work is so urgent that it cannot be done safely;
- Prompt reporting and registration of incidents, unsafe acts, unsafe conditions, near misses and non-conformities;
- Investigate, follow up and share learning's to prevent reoccurrence;
- Initiate improvements contributing to operational excellence of the organization.

SHVN strives to develop an organisation and culture in which:

- We strive not to harm anyone, annoy or alarm our neighbours and minimize impact to the environment;
- We manage risks by systematic control, prevention and elimination of hazards;
- We ensure the elements of process safety management (PSM) and the importance of their interaction to achieve the goal of zero process-related incidents are fully understood, implemented and monitored;
- We have a goal to eliminate all injuries;
- We provide flawless customer service by ensuring delivery of high quality services;
- We protect customer property and consider customer information as confidential;
- We establish a culture in which creativity and innovation is encouraged;
- We provide our employees safe and productive workplaces;
- We initiate regular training to enhance the skills, experience, SHEQ awareness and safety behaviour;

3. Training and Competence

All construction and management activities involved in the Project will be conducted in a competent manner. All personnel will be appropriately trained and implement all reasonable and practicable measures to minimise impacts or risk to the environment.

3.1 Induction

The Contractor's employees and subcontractors are required to attend an induction prior to commencing work on the Project. The induction will include an environmental component to ensure that all personnel are aware of their responsibilities with regard to environmental management.

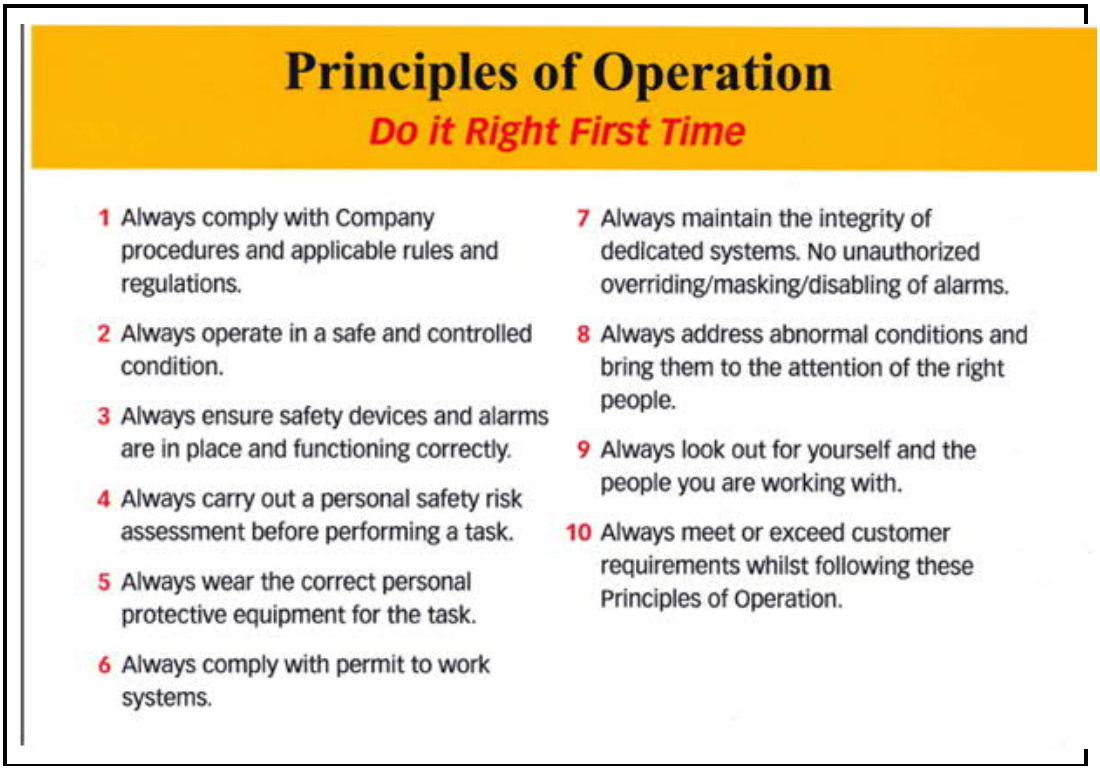
The environmental component of the induction will include:

- An overview of the CEMP, its purpose and content.
- Environmental personnel, their roles and responsibilities and contact details.
- Activities undertaken during the Project that have the potential to impact on the environment.
- Environmental controls to be implemented during the Project.
- Reporting environmental incidents.
- Incident and emergency response procedures.

Records of induction attendance are to be kept by the construction superintendent.

All visitors attending the construction site are to be inducted into the visitor's induction and sign the Visitors Register acknowledging that they have read and understood environmental issues relating to their activity and to ensure their safety. A fully inducted person will accompany visitors at all times whilst on site.

All inducted contractors will also abide by the following principles of operation;



3.2 Pre-Shift Meetings

A meeting is to be held prior to each shift and is to be of approximately 10-15 minutes' duration. The purpose of the meeting is to inform personnel of activities to be undertaken during the shift, as well as to discuss safe work practices, environmental protection practices, hazards and other information that may be relevant.

Records of attendees for each pre-shift meeting are to be kept by the construction superintendent.

3.3 Weekly Toolbox Talks

Toolbox talks are to be undertaken weekly and focus on issues relating to health, safety and the environment in relation to the Project.

Topics covered in toolbox talks are to include works that have the potential to impact on sensitive receivers or environmentally sensitive areas or incidents that have occurred.

Environmental topics covered during toolbox talks may include:

- Soil and water quality management
- Noise and vibration management.
- Waste management.
- Environment incidents.
- Changes to environmental procedures or measures.

Records of toolbox talk topics, dates delivered and attendees are to be kept at the project office.

3.4 Other Identified Training

Any additional environmental training that is identified will be undertaken as required. A record of the training undertaken and attendees is to be kept at the project office.

4. DOCUMENT CONTROL

The CEMP is a controlled document and shall be managed in accordance with Stolthaven's Document Data Control System.

The Project Manager is responsible for keeping the CEMP in good order and incorporating changes as required. All copies of the CEMP sent to other people shall be considered uncontrolled.

The Construction Superintendent is responsible for keeping and maintaining all records required during the construction and referenced in this document.

5. AMENDMENT APPROVAL PROCESS

As the CEMP forms an integral part of the Conditions of Consent for the Development, no amendments to the CEMP shall be issued until the following approvals are obtained:

- Principal's Authorised Person or Superintendent
- Secretary

6. REVIEW

The CEMP shall be reviewed for adequacy by the Project Manager and SHEQ Manager as part of the Internal Audit process.

7. SCOPE OF WORK

The Stage 3 project comprises the following work

- The construction of 17 tanks for the storage of flammable and combustible liquids (mainly petroleum products) of dimensions ranging from 3.3 m to 33 m diameter and maximum 20 m high made of carbon steel material
- A control and administration building that includes all automated control systems, offices and staff amenities as well as staff (light vehicle) parking;
- A truck loading gantry with six truck filling bays and associated six off-road parking spaces for trucks waiting to enter the gantries;
- Pump and pipe systems for the transfer and management of fuels and connection to bulk liquids berth via new 200 & 400mm diameter pipelines;
- Tank bunding, safety and fire systems including water storage tanks and foam dousing equipment;
- Installation and operation of a Vapour Recovery Unit; and
- Stormwater runoff control, capture testing and release systems.

7.1 PROJECT SCHEDULE

The timeline of the project is as follow:

Item	Description	Start (Month)	Finish (Month)
Project Initiation	Site mobilisation following receipt of Project approval and satisfaction of necessary preconstruction. Conditions of Approval.	1	2
Civil Works Mobilisation 1	Modify site drainage; Bund wall sub-base preparation; and Prepare for and construct tank foundation	2	18
Tank Construction	Fabrication and installation of tanks on a progressive compound by compound basis.	6	21
Gantry and firewater equipment installation	Construction and fit out of gantry and installation of fire water tanks and firefighting systems.	8	12
Mechanical Works	Piping Installation.	12	24
Electrical Works	Electrical / Instruments Installation and connection to site electrical and telecommunications (control) systems.	15	27
Commissioning	Progressive testing and commissioning of all tank logistical and safety systems.	18	33
Civil Works – Mobilisation 2	Construct vertical bund walls; Apply asphalt to remaining hardstand areas.	21	30

8. CONDITIONS RELATING TO CONSTRUCTION WORKS

8.1 Approval to Commence Construction

At least one month prior to the commencement of construction of the Development (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Secretary may agree, the Applicant shall prepare and submit for the approval of the Secretary the studies set out under subsections a) to d) (the pre-construction studies).

Construction, other than of preliminary works, shall not commence until approval has been given by the Secretary and, with respect to the Fire Safety Study, approval has also been given by Fire and Rescue NSW (FRNSW).

a) CONSTRUCTION SAFETY STUDY

A Construction Safety Study prepared in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety Study Guidelines'. For developments in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.

b) FIRE SAFETY STUDY

The Applicant's Fire Safety Study (FSS) shall be updated to incorporate any changes due to the Development. This Fire Safety Study shall be prepared with consultation with the FRNSW. This study shall cover the relevant aspects of the Department's Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines' and the New South Wales Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. Any outstanding issues from FRNSW shall be resolved and reported on in the FSS.

c) HAZARD AND OPERABILITY STUDY

A Hazard and Operability Study (HAZOP) for the Development chaired by an independent qualified person approved by the Secretary prior to the commencement of the study. In addition, the following shall be covered in the HAZOP:

- surge issues for the various operating scenarios;
- the ullage (in the tanks) above the high high alarm/emergency shutdown level, taking into account the slow closing time assigned to the emergency shutdown valves by the surge study required under Condition C2 above; and
- the study shall be carried out in accordance with the Department's Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'. The study report must be accompanied by a program for the implementation of all recommendations made in the study. Safety related recommendations must be included in the final design of the Development. If the Applicant intends to defer the implementation of a recommendation, justification must be included.

d) FINAL HAZARD ANALYSIS

A Final Hazard Analysis of the overall Site, consistent with the Department's Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'. The FHA shall report on the implementation of the recommendations of the PHA. The FHA shall:

demonstrate that the tank overfill protection system (for all tanks) reduces the risk so far as reasonably practicable, and it achieves as a minimum safety integrity level (SIL) 2 rating. A SIL allocation and verification report for the Development shall be undertaken and enclosed in the FHA;

re-evaluate and confirm all relevant data and assumptions from the PHA, in particular, the outcomes of the surge analysis that may result in changes in the risk assessment and impact on the overall risk from the facility;

re-evaluate and confirm all control measures proposed for prevention and mitigation of incidents; and

report on implementation of the recommendations of the PHA.

8.2 Construction Hours

All construction works are to be carried out between the following hours:

Monday to Friday 7:00am to 6:00pm, Saturdays 8:00am to 1:00pm and no work on Sundays or Public Holidays.

Works outside these hours will only be undertaken where they would be inaudible at residential receivers.

8.3 Mayfield Concept Plan (Mp09_0096)

The Stolthaven Facility (including this Stage 3 expansion) is also located within the Mayfield Concept Plan (the Concept Plan) area. The Concept Plan (MP09_0096) was approved by the Minister for Planning under Section 75M of the EP&A Act on 16 July 2012. The Concept Plan provided for progressive development in stages to accommodate future trade needs in the area over a 20-25 year timeframe.

This project has demonstrated consistency with the Concept Plan, in particular specific requirements for transport, air quality, noise and hazard and risk. Full details of these particular requirements and the specific conditions are detailed in Development Consent SSD 7065.

8.4 Statutory Approvals

8.4.1 Project Approval

The Project is State Significant Development for the purposes of the EP&A Act under Clause 10(2), Schedule 1 of the State and Regional Development SEPP.

The Project (SSD 7065) was approved by the Minister for Planning under Division 4.1, Part 4 of the EP&A Act on the 15th December 2016. The development consent is included at Appendix 1.

This CEMP has been prepared in response to condition D1 and D2 of the development consent for SSD 7065, which require the preparation of a CEMP for the project, to the satisfaction of the Secretary.

8.4.2 Environmental Protection Licence

The facility operates in accordance with Environmental Protection Licence 20193 (EPL 20193) as the site is a Scheduled Activity in accordance with the *Protection of the Environment Operations Act 1997* (POEO Act). EPL 20193 has been revised to reflect the approved Project.

Under Schedule 1, Clause 9, of the POEO Act, the site is classified as a *Chemical Storage Facility*, with a storage capacity greater than 100,000kL.

8.5 Statutory Guidelines

The following is a list of statutory guidelines to cover environmental aspects for the construction works.

Aspect	Policy / Methodology
Air Quality	
	Protection of the Environment Operations (Clean Air) Regulation 2010
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2016)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2007)
Odour	
	Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW (EPA, 2006)
	Technical Notes: Assessment and Management of Odour from Stationary Sources in NSW (EPA, 2006)
Soil and Water	
Contamination	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC & NHMRC)
	National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC)
	Draft Guidelines for the Assessment & Management if Groundwater Contamination (DECC, 2007)
	State Environmental Planning Policy No. 55 – Remediation of Land
	Contaminated Sites: Sampling Design Guidelines (NSW EPA)
	Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA)
	Managing Land Contamination – Planning Guidelines SEPP 55 – Remediation of Land (DOP & EPA)
Surface Water	National Water Quality Management Strategy: Water quality management – an outline of the policies (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Policies and principles – a reference document (ANZECC/ARMCANZ)

Aspect	Policy / Methodology
	National Water Quality Strategy: Implementation guidelines (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)
	National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)
	Using the ANZECC Guideline and Water Quality Objectives in NSW (EPA)
	State Water Management Outcomes Plan
	NSW Government Water Quality and River Flow Environmental Objectives (OEH)
	Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (EPA, 2004)
	Managing Urban Stormwater: Soils and Construction (OEH)
	Managing Urban Stormwater: Treatment Techniques (OEH)
	Managing Urban Stormwater: Source Control (OEH)
	Bunding and Spill Management (EPA)
	Environmental Guidelines: Use of Effluent by Irrigation (OEH)
Groundwater	National Water Quality Strategy Guidelines for Groundwater Protection in Australia (ANZECC/ARMCANZ)
	NSW State Groundwater Policy Framework Document (DLWC)
	NSW State Groundwater Quality Protection Policy (DLWC)
	NSW State Groundwater Quantity Management Policy (DLWC) Draft
	Guidelines for the Assessment and Management of Groundwater Contamination (DECC, 2007)
Acid Sulfate Soils	Acid Sulfate Soil Manual (ASSMAC)
	Waste classification guidelines Part 4: Acid sulfate soils (EPA, 2014)
Erosion and Sediment	Managing Urban Stormwater: Soils and Construction (Landcom)
	Design Manual for Soil Conservation Works – Technical Handbook No. 5 (Soil Conservation Service of NSW)
	Soil and Landscape Issues in Environmental Impact Assessment (DLWC)
	Wind Erosion – 2nd Edition (DIPNR)
Wastewater	National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)
	National Water Quality Management Strategy – Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)
	National Water Quality Management Strategy – Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (EPHC, NRMMC &AHMC)
Noise and Vibration	
	Noise Policy for Industry (EPA, 2017)
	Interim Construction Noise Guideline (DECC, 2009)
	NSW Road Noise Policy (EPA, 2011)
	Environmental Noise Control Manual (EPA)
	Environmental Noise Management – Assessing Vibration: a technical guide (DEC)
	DIN 4150 Part 3 – Structural Vibration: effects of vibration on structures (ISO, 1999)
	Assessing Vibration – a Technical Guide 2006 (DEC)
Transport and Access	
	Guide to Traffic Generating Development (RTA)
	State Environmental Planning Policy (Infrastructure)
	Road Design Guide (RTA)
Waste	
	Waste Classification Guidelines (EPA, 2014)

9. ROLES AND RESPONSIBILITIES

Key roles and responsibilities relating to the implementation of this CEMP are outlined below.

Person(s) Responsible	Environmental Responsibilities
Project Manager	Acting as the principal contact point in relation to the environmental performance of the project. Ensure all incidents are appropriately investigated. Handle complaints and community liaison.
	Ensuring the implementation of all relevant management plans and monitoring programs outlined in the CEMP. Specifically ensuring EPA waste dockets and soil/landfill virgin quality documents controlled and retained.
	Requiring reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to recommend that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.
	Supporting the Safety and Environmental Manager in managing the environmental performance of the project.
	Overall construction scheduling.
	Ensuring that the construction of the project complies with relevant legislation, approvals, and procedures including this CEMP.
	Ensuring audits are undertaken on the implementation of the requirements of this CEMP.
	Approving the environmental induction training.
	Ensuring all project staff undergo environmental induction training of relevant policies, procedures, management plans, statutory and contract requirements and this CEMP.
	Emergency response, eg. Spills, incidents and complaints.
	Ensuring engineering of the project meets fundamental project design, safety and environmental criteria.
	Ensuring engineering risk assessments identify that all risks including those related to environmental risks are addressed.
	Ensuring that material, equipment and installation specifications include relevant project quality requirements and identify any inspections, testing, review and hold points required.
	Ensuring that subcontract design works is reviewed to verify that all specifications have been complied with.
	Ensuring that all design and engineering documentation is checked, verified and approved.
	Ensure any changes to CEMP during construction are approved by relevant personnel.

Person(s) Responsible	Environmental Responsibilities
Construction Superintendent	Managing construction traffic, including heavy vehicle movements.
	Day to day management of the construction site including all CEMP mitigation measures.
	Maintenance of a master copy of the CEMP containing a record of completed actions, monitoring and reports supplied by construction personnel.
	Maintenance of a register of all inducted and trained personnel.
	Undertaking monitoring and ensuring statutory compliance with government agencies and /or legislation and auditing for compliance with relevant environmental approvals and licences.
	Assisting contractors in fulfilling their environmental responsibilities during construction activities.
	Maintaining environmental records including environmental monitoring data, inspection and auditing checklists, waste management register, complaints register and environmental incident reports plus investigation/follow up records.
Stolthaven Environmental Representative	Considering and advising on matters specified in the CEMP, and any relevant licences and approvals related to the environmental performance and impacts of the project during construction.
	Maintaining and providing assistance in the implementation of this CEMP, eg. land and groundwater contamination; PASS Management Plan; liaise with regulatory stakeholders, eg. EPA.
	Monitoring overall environmental performance via visits, audits and reviewing records.
Site Auditor	Approve CEMP before construction commences and any alterations to the CEMP during the Project construction. The Site Auditor (NAME/ORGANISATION) has approved this CEMP (see document details at the beginning of this CEMP). Site Auditor Approval would be provided under separate cover.
	Confirm that the project is accordance with CSMP and VRA 26025 and the project will be constructed to address risks of harm to human health.
	Decide whether materials from site excavations can be reused or sent offsite for disposal.
Contractor(s)	Undertaking construction activities in accordance with relevant policies, procedures management plans, statutory and contract requirements. Abide by this CEMP.
	Implementing appropriate environmental and safety management measures.
	Reporting of actual and potential environmental incidents to the Construction Superintendent.

10. MANAGEMENT PLANS

10.1 Soil and Water

Source:

During the construction of the Project there is potential for sedimentation and erosion to occur as a result of exposed soils. As the proposed tanks would be located within a confined area, it is expected potential soil erosion can be managed effectively.

The potential for groundwater contamination resulting from construction works is extremely low as groundwater lies at approximately 4m and the estimated depth of excavation is in the order of 2-3m, therefore it is unlikely groundwater would be intersected during the construction phase. The potential groundwater contaminants from construction activities are limited to diesel and paint.

Mitigation Measures:

The following management measures for soil and water during the works are provided in Table 1.

Table 1 Soil and Water management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
In the event groundwater is encountered it will be tested for potential contaminants and disposed of appropriately.	Construction Superintendent	During Construction
Stormwater runoff control measures will be implemented for work areas where the bunding is not complete.	Construction Superintendent	Prior to and During Construction
Any rain water falling on soil disturbed areas will be monitored by the Construction Superintendent for soil erosion and sediment transfer off site.	Construction Superintendent	During Construction
As the proposed tanks will be located within a confined area bounded, it is expected potential soil erosion can be managed effectively blocking any stormwater runoff from the construction areas.	Construction Superintendent	During Construction
Install and maintain suitable erosion and sediment control measures on site in accordance to the latest version of the *Managing Urban Stormwater: Soils and Construction Guideline* (Landcom, 2004) and 'Blue Book' standards as per Condition B25.	Environmental Representative & Construction Supervisor	Prior to and During Construction
Excavated material will be tested and classified to determine its suitability for reuse onsite. All material not suitable for reuse onsite must be disposed of to a licensed facility offsite.	Construction Superintendent	During Construction
Erosion and sediment control measures will not be removed until the works are complete and areas are stabilised.	Construction Superintendent	During Construction
Work areas will be stabilised progressively during the works.	Construction Superintendent	During Construction

Stormwater runoff control measures will be implemented for work areas where the bunding is not complete. Any rain water falling on soil disturbed areas will be monitored by the Construction Superintendent for soil erosion and sediment transfer off site. This is considered very unlikely but if it occurs, appropriate silt removal filters will be installed. As the proposed tanks will be located within a confined area bounded, it is expected potential soil erosion can be managed effectively blocking any stormwater runoff from the construction areas. A site specific sediment and erosion control plan detailing the specific methods of erosion and sediment control on the site at the various stages of construction would be implemented. This plan would include but not be limited to the following information:

- Property boundary;
- North point;
- Site / 'disturbed' area;
- Vehicle access points;
- Location of stockpiles;
- Chemical / contaminated water storage areas;
- Bunds; and
- Location and details of all temporary and permanent soil and water management controls.

A copy of the erosion and sediment control plan detailing controls to be implemented during construction is attached at Appendix 9.

10.2 Contaminated Materials

Source:

Even though the tanks will be on mound foundations to minimise digging into the slag layer some of the existing in-situ capping materials will be unsuitable for foundations.

Mitigation Measures:

As described in *Mayfield Stage 1 Terminal Expansion Works on Remediated Land* (Aurecon, 2017) where existing site remediation items are modified or removed to allow construction, the new construction surfaces and stormwater management systems shall ensure the permeability of water to the underlying soils is minimised and avoided where practicable.

Measures implemented into the design for key areas of the new terminal include:

- For the secondary containment compound:
  - A reinforced concrete perimeter containment wall of average 3m height and nominal thickness of 250mm. All expansion joints will be sealed for water tightness and include stainless steel bellows type waterstops. All construction joints will include swellable waterstops.
  - The compound floor will be lined with a geosynthetic clay liner, Bentomat CL. Bentomat CL is designed specifically for use as a fuel storage secondary containment liner. Bentomat has a tested permeability rate of K= 4 x 10-12 m/s. This significantly exceeds the minimum permeability performance criteria set in the development consent for SSD 7065.

    The Bentomat will be mated to the vertical surfaces of the containment wall and sealed using a benotnite powder.

    A 150mm layer of clean compacted hard fill will be placed on top of the Bentomat to provide cover.

    An emulsion seal will be applied over the hardfill surface to aid drainage and improve pedestrian access.
  - Blind drain sumps will be located at the low points of the compound. Stormwater drainage of the compounds will be pumped. Pump control points will be located on access platforms adjacent to low point sumps to allow trained operators to visually inspect and test the bund water before release, without the need to enter the flooded bund. All stormwater from the compound will be drained through an Aquator T30 treatment system prior to discharge to an open drain at the west boundary of the site.
- For truck pavement drainage:
  - The truck pavement areas will be constructed of 185mm thick high density asphalt on the entrance side and a 210mm thick, 35MPa concrete slab on a grade over the gantry and exit side.
  - All asphalted yard areas will consist of a compacted hardfill subbase with a spray bitumen topping sealant to prevent migration of surface water. Asphalt pavements will be laid over the bitumen sealant. The concrete pavement will either be poured directly on top of the existing site soil or onto a compacted layer of clean hardfill.
  - All construction joints in the concrete pavement will be sealed to prevent water ingress to the joint reinforcement. As such this will also act to prevent ingress of water though the joints to the underlying soils.

  - The truck pavements will fall at 2% to collection sumps. Pavement falls will be designed to prevent ponding of surface water.
  - All drainage from the truck pavements will be collected in sumps and directed to a 70m^3 first flush pit. The first flush pit is sized to capture in excess of the first 20mm of rainfall. Once the first flush pit capacity is reached, the pavement stormwater will be diverted to flow directly to an open drain at the west boundary of the site.
  - Water collected in the first flush pit will be tested before being pumped to the site Aquator treatment system prior to release to the open drain.

- For the east yard roof drainage:
  - Parts of the east yard which are not subject to traffic loads will be finished with a 30mm high density asphaltic concrete surface, laid on compacted clean hardfill with a bitumen spray sealant. Clean water from these surfaces will fall to collection sumps and be drained directly to the open drain on the western site boundary.
  - Clean stormwater from building roofs will be piped directly to the open drain on the western side of the site.

- For the compound access road and surrounding areas:
  - A 6m wide hardfill road will be maintained around the perimeter of the containment compound to provide service and emergency vehicle access. The road will be constructed of an average 150mm layer of compacted hardfill directly above the existing site soil layer. A layer of Bentomat CL will be provided between the hardfill and the underlying soil and sealed against the concrete compound wall. The access road surface will be sealed with a spray bitumen and chip coating.
  - The Bentomat will fall to the outside or centre of the road, depending on whether it is an internal or external fire access road, and generally fall to the west of the site. It is not expected that any significant amount of surface water will permeate to the GCL layer.
  - Surface water from the road will flow to an open channel drain cut into the existing clay capping. The clay open drain will be reinforced using the geogrid mesh reinforcement currently utilised on the clay capping edges. The open channel drain will flow to the western end of the site and discharge into the existing open drain at the boundary.
  - The remaining clay capped areas to the north and south of the expansion stage will be regraded to ensure that all surface water on the remaining clay flows away from the Stolthaven site.

Prior to any construction works, the Project would be analysed by a NSW EPA accredited Contaminated Site Auditor in accordance with the CSMP and Voluntary Remediation Agreement (VRA) No 26025, in relation to the existing capped surfaces. Confirmation would be sought that the Project appropriately deals with the requirements of these plans. Written evidence would be provided to the DP&E confirming the Site Auditor is satisfied with the proposed design prior to any intrusive works commencing. Furthermore, the Site Auditor would confirm that the Project will be constructed to address any risks of harm to human health as a result of construction work.

Management measures for contaminated materials during the works are provided in Table 2.

Table 2 Contaminated materials management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
No incompatible structures will be founded directly above the subterranean barrier wall.	Construction Superintendent	During Construction
Where the existing site remediation items are modified or removed to allow construction, the new construction surfaces and stormwater management systems will ensure the permeability of water to the underlying soils is avoided.	Construction Superintendent	During Construction
The Materials Management Plan (MMP) adapted from the CSMP will be implemented whenever materials beneath the cap are penetrated. This MMP details the requirements for classifying, transporting and reusing materials as follows: – Classification into Levels 1, 2 and 3 is based on visual, olfactory and analytical characteristics; – Implementation of a materials tracking system would be required; – Implementation of processes for the placement under the proposed cap, in-situ retention, isolation or containment, short-term stockpiling or treatment; and – Engagement of a geotechnical expert to review and certify future ground disturbance works.	Construction Superintendent	During Construction
Materials used onsite will be Virgin Excavated Natural Materials (VENM) or otherwise suitable according to waste guidelines. A record will be kept of materials used onsite, noting their sources.	Construction Superintendent	During Construction
Details of excess materials disposed of offsite will be maintained in compliance with the waste tracking requirements of the Protection of the Environment Operations (Waste) Regulation 2005.	Construction Superintendent	During Construction
Any spoil material to be removed from site would be classified in accordance with the NSW EPA Waste Classification Guidelines	Construction Superintendent	During Construction

10.3 Traffic Management

Source:

The traffic generation during the construction is expected to be up to 55 light vehicles and 10 heavy vehicles during peak construction periods. Construction vehicles will use the existing open hard stand areas in and around the facility for parking. This area is designated for port and industrial use so appropriately designed for this purpose. As the land around the facility is currently vacant there will be no cumulative parking impact from construction traffic.

Mitigation Measures:

A construction traffic management plan, including traffic, transport and parking management measures to be implemented during construction is detailed as in Appendix 8; titled Traffic Management Plan.

10.4 Noise and Vibration

Source:

The location of the Project is within an existing operational port dominated by industrial land uses and transport (road and rail) corridors.

Potential construction noise impacts may occur during the construction of the Project over the 30 month construction timeframe. Potential construction noise sources include construction vehicles, earthmoving equipment, cranes, concrete trucks, mixers and hand tools.

Owing to the offset distances to neighbouring sites and no piling or equipment of a very loud noise generation, construction vibration is not expected to result in any measurable impacts to receivers

Mitigation Measures:

Table 3 outlines the recommended measures in regards to managing noise and vibration on site.

Table 3 Noise and Vibration management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
All construction vehicles and machinery fitted with manufacturer supplied noise suppression devices will be operated and maintained in accordance with the manufacturer's guidelines.	Construction Superintendent	Prior to and During Construction
Works will be carried out within the following days and times unless agreed with the Secretary: • Monday – Friday: 7:00am to 6:00pm; and • Saturday 8:00am to 1:00pm. Works outside of these hours will be undertake in the following circumstances: • Works that are inaudible at the nearest sensitive receivers; • Works agreed to in writing by the Secretary; • For the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or • Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.	Construction Superintendent	During Construction
Fit non-tonal reversing alarms on construction equipment where possible.	Construction Superintendent	Prior to and During Construction
A qualitative assessment will be prepared for the works as activities that would generate noisy works will be intermittent and short-term in nature and will not be undertaken consistently over the construction period.	Construction Superintendent	During Construction
All construction activities will achieve the construction noise management levels detailed in the *Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009).	Construction Superintendent	During Construction
All equipment will be maintained and operated in an efficient manner, in accordance with manufacturer's specifications.	Construction Superintendent	Prior to and During Construction
As part of the Communication Strategy, neighbours will be provided with details of the construction works and a phone number to call if they experience noise or vibration impacts.	Construction Superintendent	Prior to and During Construction
Upon receipt of a noise or vibration complaint during construction works, the Project Manager will initiate investigation of the noise or vibration complaint and arrange for work to be stopped or altered.	Construction Superintendent	During Construction

The noise criteria shown below will not be exceed as required under Condition C27: ***Location*** — LAeq (15min) R1, R2, R3, R4, R5, R6, R7, R8 — Mayfield — 53 R9 — Carrington — 54 R10 — Stockton — 57 R11 — Mayfield East Public School — 55	Construction Superintendent	During Construction

10.5 Air Quality

Source:

Construction air quality impacts are primarily related to dust generation and emissions from the use of machinery and equipment. Also incorporates emissions from vehicles.

Mitigation Measures:

The following management measures for air quality impacts during the works are provided in Table 4.

Table 4 Air Quality management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
Disturbance area for the Project will be limited to the Lots 36, 37 and 38 with vehicular access available by sealed access roads.	Construction Superintendent	During Construction
Traffic areas will have a sealed surface of bitumen or concrete to prevent dust generation and kept clean.	Construction Superintendent	During Construction
If wind speeds are excessive such that any generated dust from activities cannot be controlled using watering technique then these activities producing dust will be ceased until conditions are not adverse.	Construction Superintendent	During Construction
Any stockpiled material will be sprayed with water during times of high wind.	Construction Superintendent	During Construction
The site construction superintendent will be responsible for making this decision and monitoring these conditions.	Construction Superintendent	During Construction
Disturbed areas will be: • Minimised during construction at all times; and • Sealed or revegetated after construction to minimise dust generation.	Construction Superintendent	During Construction
Dust levels will be monitored by site construction superintendent and area will be watered down as required.	Construction Superintendent	During Construction
Vehicles, plant and equipment will be maintained and operated in good working condition and will be turned off when not in use to minimise emissions to air.	Construction Superintendent	During Construction
Any trucks carrying soil off site will have sealed covers to prevent dust generation while on public roads.	Construction Superintendent	During Construction
If mud transfer off site appears likely to occur then wash grid areas will be deployed at vehicle egress gates to prevent any mud being deposited onto off site roads.	Construction Superintendent	Prior to and During Construction
The site construction superintendent will be responsible for monitoring contractor compliance and implementing actions.	Construction Superintendent	During Construction

10.6 Waste

Source:

The primary sources of waste during the project construction will be packaging materials from equipment delivery. There is also the possibility of contaminated excavated soil which will need disposal as well.

Mitigating Measures:

Table 5 provides the controls required to manage waste.

Table 5 Waste management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
Scrap metal will be collected by a metal recycler.	Construction Superintendent	During Construction
Waste will be minimised through use of the philosophy: avoidance, reduce, reuse, recycle and disposal.	Construction Superintendent	Prior to and During Construction
A Waste Management Register (Appendix 5) will be maintained for any wastes which are removed from the Project site.	Construction Superintendent	During Construction
Spoil will be stored in bins.	Construction Superintendent	During Construction
Where soil wastes are to be removed from site, they shall be classified for waste disposal purposes in accordance with the NSW EPA Waste Classification Guidelines, 2014 (NSW EPA, 2014), and disposed in accordance with the requirements of the Protection of the Environment Operations (Waste) Regulation 2014.	Construction Superintendent	During Construction
Construction materials will be sourced and ordered in appropriate quantities to avoid the creation of excess waste.	Construction Superintendent	During Construction
Stored wastes will be monitored daily to confirm that protective measures (such as covers) are in place and effective.	Construction Superintendent	During Construction
Disposal of materials shall be undertaken by licensed contractors and materials taken to an approved waste disposal / recycling facilities.	Environmental Representative	During Construction
Wastes will be managed in accordance with existing waste disposal arrangements at the Facility and wastes will be assessed and disposed of in accordance with the NSW EPA Waste Classification Guidelines Part 1: Classifying Waste (NSW EPA, 2014).	Construction Superintendent	During Construction

10.7 Spills

Source:

Any spilt material will be contained immediately and action taken to protect personnel and the environment. A major objective will be to prevent the spilled material reaching the roadways stormwater drainage system or neighbouring properties. There is no natural drainage paths off site as all main construction works areas will be contained.

In addition, the liquid materials during construction are limited to generally diesel, engine oil, hydraulic oil, coolant and paint. There is no diesel or oil storage envisaged on site for construction equipment as equipment will be refilled as necessary by a service arrangement and refilling managed within a containment area. Paint quantity is limited to work activities and planned to be used when storage tanks/equipment are bunded and bund floors sealed. All work activities including diesel refilling will be controlled by work permit procedures.

Mitigation Measures:

Table 6 outlines the measures required to manage spills.

Table 6 Spill management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
Tank fabrication activities will be undertaken within bunded areas as they are developed and if any spills occur these will be stopped, contained and handled as per existing environmental /emergency procedures.	Construction Superintendent	During Construction
Any spills from construction activities outside the bunded areas will be stopped, contained by spill absorption material and recovered for recycle or disposal as per existing environmental /emergency procedures.	Construction Superintendent	During Construction
Any spills that result in materials discharging from site, will be; • Reported to the EPA and Port of Newcastle as soon as possible; • Emergency response to contain and clean up the spill and • Fully investigated using the Stolthaven Incident Reporting system as well as follow up to prevent a similar recurrence in the future.	Construction Superintendent	During Construction
Any spill on site requires site registration and reporting plus investigating under the Stolthaven Incident Reporting system.	Project Manager	During Construction

10.8 Utilities and Services

Source:

The utilities that will be used during construction will be

- Electricity which will be sourced from the existing site and diesel generators,
- Water which will be sourced from the existing site and
- Sewage which will be handled by use of portable toilets/showers.

Mitigation Measures:

Table 7 outlines the measures required to manage onsite utilities and services.

Table 7 Utilities and Services management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
All electricity from the existing site will be connected by approved electricians while portable generators will be inspected before being allowed onsite.	Construction Superintendent	Prior to and During Construction
All portable toilets and showers will be emptied by an approved EPA contractor to ensure correct handling and disposal.	Construction Superintendent	During Construction

10.9 Use of External Material

Table 8 outlines the measures required to manage the use of external materials.

Table 8 External Material Usage management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
Fill and/or foundation materials sourced external to the site will only be used if the material is virgin excavated natural material or excavated natural material as defined under *EPA's Waste Classification Guidelines 2014*.	Project Manager	During Construction
As a required by condition C40 of the SSD 7065 development consent (Appendix 1) only VENM or ENM or other material approved in writing by the EPA or the Site Auditor is used as fill on the site.	Construction Superintendent	During Construction
Accurate records of the volume and type of fill to be on site will be kept and made available to PON and the Secretary upon request.	Project Manager	During Construction

10.10 Lighting

Table 9 outlines the measures required to manage the use of lighting during construction.

Table 9 Lighting management control measures

Environmental Management Control/Mitigation Measures	Responsibility	Timing
Lighting must be positioned as to not cause distraction to vehicle drivers, on internal or external roads, or the occupants of adjoining sites. The construction superintendent is responsible for this step.	Construction Superintendent	During Construction

10.11 Flora and Fauna

There is no impact on any flora or fauna due to the previous history of the site.

11. IMPLEMENTATION AND MANAGEMENT

This CEMP will be implemented and managed as part of the existing site Environmental Management System.

Emergency procedures are covered by the existing Emergency Plan. The relevant procedures are included in the Contractor Induction package for every contractor working on this site. Any emergency incidents will be investigated under a Stolthaven Incident Report.

Any accidents, non-conformances, incident or complaints will require recording on the construction site registration system and a Stolthaven Incident Report to be raised, investigated and addressed as per our incident reporting system. EPA and Port of Newcastle must be notified of any incident with actual or potential significant impacts on people or the environment as soon as practicable. Written details of the incident to the EPA must be provided within seven days plus any requested written information within the timing specified. This is the responsibility of the Newcastle Site Manager.

12. ENVIRONMENTAL PROCEDURES & SAFEGUARDS

The tables in the Appendix Section provide the environmental monitoring and management activity tasks that need to be undertaken during the construction phase of the Project. These stages only refer to actual work being carried out on-site, to which the environmental controls are applied.

The control measures outlined in this report represent measures that have been proven in practice. The aim is to achieve minimal impact and risk to the environment whilst undertaking the works.

All records kept (including CHECKLISTS filled out), shall be kept on-site in an ordered and legible form, and should be produced on demand to any authorised officer of the EPA.

Before any work proceeds, every contractor staff member shall undertake a Site Induction, and sign-off that they have completed it. Records shall be kept at the site office of all inductions, sign-offs on CEMP checklists, Environmental Audit Checklists and Construction Site Incident and Complaints Register. In the event that any significant change is made to environmental controls during the course of the Project, the Site Induction may need to be modified and the induction repeated. Such changes should also be made to the CEMP records and be authorised appropriately.

Appendix 2 covers Pre-construction work; Appendix 3 covers the Construction work, while Appendix 4 covers Post-construction work. Completed tasks should be signed off by the person responsible for the action.

Appendix 5 is the Waste Management Register which requires nomination of the quantity and fate of wastes (or what could be a resource elsewhere) which are removed from the Project site. This will include packaging, sediment or silt collected by the sediment controls, soil and concrete/soil/slurry wastes, but not domestic-type wastes. Licensed waste collection contractors will be used, with the application of a waste docket system to track the wastes. Domestic wastes including food wastes, and domestic recyclables (paper, cardboard, aluminium cans, glass and PET bottles etc) should be placed in appropriate bins with lids and treated accordingly.

13. ENVIRONMENTAL REPORTING REQUIREMENTS

Environmental reporting requirements are detailed in the following table:

Activity	Purpose	Frequency	Responsibility
Project team meeting	Report to project team on upcoming activities, discuss activities that may have an impact on the environment and report on any issues that have arisen or require management.	Weekly	Contractor Construction Manager
Monthly project report	Provides Stolthaven with an overview of performance for the month.	Monthly	Contractor Project Manager / Construction Manager
Internal audit report	Audit of compliance against the conditions of approval, as well as other approvals, licences and consents.	Six-monthly	Contractor HSEQ Manager
Incident report	Record details of all environmental incidents, near misses, exceedances and non-compliance.	As required for all incidents or as requested by the relevant authority	Contractor HSEQ Manager (or delegate) Stolthaven Project Manager

Incident management

The following steps will be undertaken in the event that an incident occurs on site:

- The undertaking of immediate action to minimise the severity of an incident;
- Reporting of the initial incident details, any “quick fixes” undertaken and the longer term actions;
- Initial assessment of the severity of an incident and notification of key personnel including the site General Manager, Operations Manager and Environment and Community Manager;
- Investigation of the incident and development of corrective actions;
- Records of the incident are retained indefinitely.

Incidents will be reviewed on a regular basis by the Dite Management Team and the progress of actions will be monitored to ensure that identified corrective actions are implemented. Any project specific incident management systems developed will be consistent with this document.

As required in condition D10 and D11 of the SSD 7065 development consent (Appendix 1), exceedances of limits or the occurrence of incidents that cause harm to the environment will be immediately notified to the Secretary, PON and the relevant agencies of the incident. A detailed report of the incident will be provided within seven dates to the date of the incident.

Environmental reporting requirements are:

Activity	Purpose	Frequency	Responsibility
Project team meeting	Report to project team on upcoming activities, discuss activities that may have an impact on the environment and report on any issues that have arisen or require management.	Weekly	Contractor Construction Manager
Monthly project report	Provides Stolthaven with an overview of performance for the month.	Monthly	Contractor Project Manager / Construction Manager
Internal audit report	Audit of compliance against the conditions of approval, as well as other approvals, licences and consents.	Six-monthly	Contractor HSEQ Manager
Incident report	Record details of all environmental incidents, near misses, exceedances and non-compliance.	As required for all incidents or as requested by the relevant authority	Contractor HSEQ Manager (or delegate) Stolthaven Project Manager

Monthly project reports prepared by the Contractor are to include, as a minimum, details regarding environmental performance during the reporting period as follows:

- Details of any external influences that may have effected works or monitoring;
- Total numbers of environmental incidents and non-compliances;
- Details of environmental incidents and non-compliances;
- Total number of exceedances to date for the Project;
- Details of actions implemented relating to environmental management including precautionary and corrective measures in response to incidents, complaints and identified risks;
- Details of auditing performed and planned;
- Details of the review and/or update of any management procedures, measures or plans; and
- Issues and concerns with regards to environmental management, risk, monitoring, personnel or equipment.

Records will be kept in the form of hard copy, electronic media and/or other media as appropriate.

14. SITE INSPECTIONS AND AUDIT

Site inspections and audits of environmental issues shall be carried out in conjunction with the regular Health and Safety inspections and audits.

Contractor Supervisors will inspect their scope of work areas on a daily basis and take any corrective action to address any environmentally unsatisfactory situation.

As well as the Checklists covering the pre, initial and post construction phases detailed in Appendices 1-4; there is the regular CEMP Audit Checklist (Appendix 6) covering safeguards that is, done at least weekly while the construction work proceeds. Appendix 7 details a Register of CEMP Audit Actions for follow up management as a means of keeping track of the audits and their outcomes, particularly if there are corrective or preventive actions resulting from the audits. The regular audits may also be carried out at random, outside the weekly schedule, and also by an external party, and if needed could be more frequent than just weekly or during the later and well established stages of the project on a monthly basis providing the risk level is considered minimal. After finishing the post-construction work, a final completion audit should be performed, as part of the project handover.

The Construction Superintendent is responsible for site inspections and auditing. Stolthaven's Newcastle Site Manager may join the site inspections or audits at any time for performance monitoring.

15. COMMUNITY COMPLAINTS HANDLING PROCEDURE

Prior to the commencement of construction, the Construction Superintendent will establish a register for community complaints and enquiries. All complaints and a record of their resolution will be recorded in the register. This will be incorporated into the Construction Site Incident and Complaints Register which will also include accidents and non-conformances. This will be located with the Construction Superintendent at the office.

The register will include the date and time of the complaint; the communication means; details of the complainant or if not known then record a note to that effect; nature of the complaint; likely causes if possible; any action taken to correct or find the cause or reason for no action and any follow up communication with complainant.

Every effort will be made to ensure that concerns are addressed in a manner that results in a mutually acceptable outcome. The Project Manager is responsible for the community liaison.

APPENDIX 1: SSD 7065 DEVELOPMENT CONSENT

Development Consent

Section 89E of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation executed on 16 February 2015, I approve the development application referred to in Schedule A, subject to the conditions in Schedules B to D.

These conditions are required to:
- prevent, minimise and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

Anthea Sargeant
Executive Director
Key Sites & Industry Assessments

Sydney 15 December 2016

SCHEDULE A

Application Number:	SSD 7065
Applicant:	Stolthaven Australia Pty Ltd
Consent Authority:	Minister for Planning
Land:	Steelworks Road, Mayfield including: Lots 1 and 2 on DP 1177466 Lots 36, 37, 38 and 39 on DP 1191723 Part Lot 4 on DP 1184514
Development:	Construction and operation of a bulk fuel storage and distribution terminal, marine loading arm and pipeline

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DEFINITIONS

Term	Definition
Applicant	Stolthaven Australia Pty Ltd (Stolthaven), or its successors in title
BCA	Building Code of Australia
CLM Act	*Contaminated Land Management Act 1997*
Combustible Liquids	Includes diesel and biodiesel, covered by SSD 6664
Construction	Earthworks, civil works, drainage, bund construction, tank foundations, tank fabrication and installation, office construction, gantry and fire water installation, mechanical and electrical works for the expanded terminal, as described in the EIS
Council	City of Newcastle
CSMP	*Contaminated Site Management Plan: Intertrade Industrial Park, Closure Area of Former Steelworks Site Mayfield*, prepared by Hunter Development Corporation, dated February 2014
Day	The period from 7 am to 6 pm on Monday to Saturday, and 8 am to 6 pm on Sundays and Public Holidays
Department	Department of Planning and Environment
Development	The development described in the EIS and RTS involving expansion of the existing bulk fuel storage terminal to receive, store and dispatch flammable and combustible fuels via pipeline from the M7 berth and increase throughput to 3,500 million litres per year
EIS	Environmental Impact Statement titled *Stolthaven Bulk Fuel Terminal – Stage 3, Environmental Impact Statement* prepared by AECOM, dated 19 February 2016
ENM	Excavated Natural Material
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPA	Environment Protection Authority
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6 pm to 10 pm
Feasible	Feasible relates to engineering considerations and what is practical to build
Flammable Liquids	Includes gasoline, ethanol and jet fuel, as described in the EIS
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of limits or criteria in this consent or other statutory licences, permits and/or consents
M4 berth	Mayfield No. 4 Berth, as shown in Appendix 4
M7 berth	Mayfield No. 7 Berth, as shown in Appendix 1
Management and Mitigation Measures	The Management and Mitigation Measures at Appendix 2 of this consent
Marine loading arm	A marine loading arm located adjacent to the M7 berth to transfer fuel from ships to the pipeline and the terminal
Mayfield Concept Plan	Major Project Application MP 09_0096 approved by the Minister on 16 July 2012, as described in the document titled *Environmental Assessment Mayfield Site Port-Related Activities Concept Plan* prepared by AECOM, dated July 2010; *Submissions Report Mayfield Site Port-Related Activities Concept Plan* prepared by AECOM, dated December 2010 and as modified by MP 09_0096 MOD 1 approved by the Minister on 17 March 2014 and MP 09_0096 MOD 2 approved by the Minister on 12 December 2014 (shown in Appendix 3)
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the development
Night	The period from 10 pm to 7 am on Monday to Saturday, and 10 pm to 8 am on Sundays and Public Holidays
NOW	NSW Office of Water within the Department of Primary Industries
OEH	Office of Environment and Heritage
Operation	Import, storage and distribution of flammable and combustible liquids to the expanded terminal from the marine loading arm and pipeline at the M7 berth, as described in the EIS and RTS
PHA	Preliminary Hazard Analysis prepared by Cockshott Consulting Engineers Pty Ltd, Rev 4 dated 31 August 2016
Pipeline	Fuel delivery pipelines from the M7 berth to the terminal, as shown on Figure 1 in Appendix 1
PNSW	Property NSW
POEO Act	*Protection of the Environment Operations Act, 1997*
PON	Port of Newcastle
Public infrastructure	Linear and related infrastructure that provides services to the general public, such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc.
Reasonable	Reasonable relates to the application of judgment in arriving at a decision, taking into account: mitigation benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Remediation	Works carried out in accordance with the CSMP and Remediation Notice

Term	Definition
Remediation Notice	Maintenance of Remediation Notice No. 20142802 issued to PON under Section 28 of the CLM Act dated 20 March 2014
RTS	The Applicant's response to submissions titled *Stolthaven Bulk Fuel Terminal – Stage 3 Response to Submissions Report* prepared by AECOM dated 1 July 2016, *Response to Submissions Addendum*, prepared by AECOM dated 19 September 2016 and Memo titled *Proposed use of Intermediate Bulk Containers*, prepared by AECOM dated 7 October 2016
RMS	NSW Roads and Maritime Services
Secretary	Secretary of the Department of Planning and Environment, or nominee
Sensitive receivers	Residence, education institution (e.g. school, university, TAFE college), health care facility (e.g. nursing home, hospital), religious facility (e.g. church) and children's day care facility
Site	The land referred to in Schedule A and as depicted in Appendix 1. Includes the existing terminal approved under SSD 6664 and the expanded terminal, pipeline and marine loading arm at the M7 berth covered by SSD 7065
Site Air Quality Model	A model developed by PON for the assessment and management of cumulative air emissions from the Mayfield Concept Plan area
Site Auditor	A site auditor accredited by the EPA under the CLM Act
Site Noise Model	A model developed by PON for the assessment and management of cumulative noise from the Mayfield Concept Plan area
SSD 6664	Construction and operation of a bulk fuel storage terminal approved by the then Minister for Planning on 16 April 2015 and as modified by SSD 6664 MOD 1 approved by the Minister on 28 September 2015, and shown in Appendix 4
Terminal	Includes tanks, bunds, truck loading gantries and administration building
Utility	Any infrastructure or service associated with water supply, sewerage, electricity supply, telecommunications or gas supply
VENM	Virgin Excavated Natural Material

SCHEDULE B
GENERAL ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

B1. In addition to meeting the specific performance criteria established under this consent, the Applicant shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the Development.

Terms of Consent

B2. The Applicant shall carry out the Development in accordance with the:
- a) State Significant Development Application SSD 7065;
- b) EIS and RTS;
- c) the plans and drawings at Appendix 1; and
- d) the Management and Mitigation Measures at Appendix 2.

B3. If there is any inconsistency between the plans and documentation referred to in Condition B2 above, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

B4. The Applicant shall comply with any reasonable requirement(s) of the Secretary arising from the Department's assessment of:
- a) any reports, plans or correspondence submitted in accordance with this consent; and
- b) the implementation of any actions or measures contained in these documents.

Limits of Consent

B5. This consent lapses five years after the date from which it operates, unless the Development has physically commenced on the land to which the consent applies before the date on which the consent would otherwise lapse under Section 95 of the EP&A Act.

B6. The Applicant shall not increase the throughput of combustible liquids above 1,300 million litres (ML) per year until SSD 6664 has been surrendered in accordance with Condition B11, and an amended EPL has been issued for the Development. The Applicant shall provide a copy of the amended EPL to the Secretary prior to increasing throughput above 1,300 ML per year.

B7. Following the receipt of an amended EPL for the Development and the surrender of SSD 6664 in accordance with Condition B11, the Applicant shall:
- a) not receive, store and dispatch more than 3,500ML of flammable and combustible liquids on the Site per year; and
- b) ensure the storage capacity at the Site does not exceed 355.7 ML of flammable and combustible liquids at any one time.

B8. The Applicant shall not receive flammable liquids from the M4 berth at any time.

B9. Following the receipt of an amended EPL for the storage of additives on the Site, the Applicant may receive, store and use additives on Site in Intermediate Bulk Containers (IBCs) as described in the RTS, subject to implementation of the following measures, to the satisfaction of the Secretary:
- a) storage of additives in IBCs within a bund constructed in accordance with *Australian Standard 1940-2004: The storage and handling of flammable and combustible liquids*; and
- b) implementation of relevant safety procedures for fire safety and protection of personnel as required by Condition C4b).

Note: If an amended EPL is not required for the storage of additives in IBCs on the Site, the Applicant may store and used additives in IBCs on the Site from the date of this consent, subject to satisfactory implementation of Conditions B9a) and B9b) above.

B10. The Applicant shall not use more than 30,000 litres of additives from IBCs on the Site per year, until the vapour recovery unit is installed and commissioned in accordance with Conditions C15 and C16.

Other Consents and Approvals

B11. Prior to operation of the Development, or as otherwise agreed with the Secretary, the Applicant shall surrender development consent SSD 6664 for the Site in accordance with the EP&A Regulation.

Note: This requirement does not extend to the surrender of construction and occupation certificates for existing and proposed building works under Part 4A of the EP&A Act. Surrender of a consent should not be understood as implying that works legally constructed under a valid consent can no longer be legally maintained or used.

B12. Prior to the commencement of operation, the Applicant shall provide written evidence to the satisfaction of the Secretary, demonstrating the M7 berth has all relevant approvals and licenses to receive flammable and combustible liquids by ship.

B13. Nothing in this consent impacts on the following consents/approvals:
a) PA 12/001 issued under Section 111 of the EP&A Act dated 20 February 2012; and
b) DA 293-08-00 as modified issued under Section 80 of the EP&A Act dated 6 April 2001.

Mayfield Concept Plan

B14. The Applicant shall carry out the Development generally in accordance with the requirements of the Mayfield Concept Plan approval (09_0096), as modified.

B15. Within six months of the commencement of operation, or as otherwise agreed with the PON, the Applicant shall decommission and remove the existing pipeline connection and associated infrastructure between the Site and the M4 berth, to the satisfaction of the PON. The Applicant shall provide a copy of the approval to undertake the demolition works and provide evidence of completion of the works, to the satisfaction of the Secretary.

Statutory Requirements

B16. The Applicant shall ensure that all necessary licences, permits and approvals are obtained and kept up-to-date as required throughout the life of the Development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

Structural Adequacy

B17. The Applicant shall ensure new buildings and structures, and alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

B18. Under Part 4A of the EP&A Act, the Applicant is required to obtain construction and occupation certificates for the proposed building works. Part 8 of the EP&A Regulation sets out the requirements for the certification of the Development.

Protection of Public Infrastructure

B19. The Applicant shall:
a) repair, or pay the full costs associated with repairing public infrastructure that is damaged by the Development; and
b) relocate, or pay the full costs associated with relocating public infrastructure that needs to be relocated as a result of the Development.

Utilities and Services

B20. Utilities, services and other infrastructure potentially affected by the construction and operation of the Development shall be identified prior to construction, to determine requirements for access to, diversion, protection, and/or support. Consultation with the relevant owner and/or provider of services that are likely to be affected by the Development shall be undertaken to make suitable arrangements for access to, diversion, protection, and/or support of the affected infrastructure as required. The cost of any such arrangements shall be borne by the Applicant.

Operation of Plant and Equipment

B21. The Applicant shall ensure plant and equipment used for the Development is:
a) maintained in a proper and efficient condition; and
b) operated in a proper and efficient manner.

Staged Submission of Plans or Programs

B22. With the approval of the Secretary, the Applicant may:
a) submit any strategy, plan or program required by this consent on a progressive basis; and/or
b) combine any strategy, plan or program required by this consent.

Development Contribution

B23. Prior to operation of the Development, the Applicant shall pay Council $228,600 in development contributions.

Note: This contribution is subject to indexation to reflect quarterly variations in the Consumer Price Index All Group Index Number for Sydney, as published by the Australian Bureau of Statistics.

Dispute Resolution

B24. In the event that a dispute arises between the Applicant and Council, PON or a public authority, in relation to a requirement under this consent, or relevant matter relating to the Development, either party may refer the matter to the Secretary for resolution. The Secretary's determination of the dispute shall be final and binding on the parties.

Compliance

B25. The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.

B26. The Applicant shall be responsible for environmental impacts resulting from the actions of all persons that it invites onto the Site, including contractors, sub-contractors and visitors.

SCHEDULE C
SPECIFIC ENVIRONMENTAL CONDITIONS

HAZARDS

C1. The Applicant shall implement:
- a) all control measures proposed in the PHA;
- b) all relevant actions, as listed in Appendix C of the PHA, in response to the recommendations from the Buncefield incident investigation report; and
- c) all recommendations of the PHA.

C2. Prior to completion of detailed design of the Development, or within such further period as the Secretary may agree, the Applicant shall prepare a Surge Study for the Development. The Study shall:
- a) be prepared in consultation with SafeWork NSW;
- b) consider scenarios including, but not limited to, pump trips and operation of the dry break coupling on marine loading arms;
- c) take into account the maximum pumping and tank filling rates when evaluating the pressures that can occur in the pipeline in a surge scenario; and
- d) evaluate the controls such as valve closing times and pressure rating of pipes and related equipment.

The findings of the Surge Study shall be included in the Final Hazard Analysis required under Condition C4d).

C3. Prior to finalising the detailed design of the Development, the Applicant shall consult with SafeWork NSW regarding any requirements under the *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2011*.

Pre-construction

C4. At least one month prior to the commencement of construction of the Development (except for construction of those preliminary works that are outside the scope of the hazard studies), or within such further period as the Secretary may agree, the Applicant shall prepare and submit for the approval of the Secretary the studies set out under subsections a) to d) (the pre-construction studies). Construction, other than of preliminary works, shall not commence until approval has been given by the Secretary and, with respect to the Fire Safety Study, approval has also been given by Fire and Rescue NSW (FRNSW).

a) CONSTRUCTION SAFETY STUDY
A Construction Safety Study prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7, 'Construction Safety Study Guidelines'*. For developments in which the construction period exceeds six (6) months, the commissioning portion of the Construction Safety Study may be submitted two months prior to the commencement of commissioning.

b) FIRE SAFETY STUDY
The Applicant's Fire safety Study (FSS) shall be updated to incorporate any changes due to the Development. This Fire Safety Study shall be prepared with consultation with the FRNSW. This study shall cover the relevant aspects of the Department's *Hazardous Industry Planning Advisory Paper No. 2, 'Fire Safety Study Guidelines'* and the New South Wales Government's *'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'*. Any outstanding issues from FRNSW shall be resolved and reported on in the FSS.

c) HAZARD AND OPERABILITY STUDY
A Hazard and Operability Study (HAZOP) for the Development chaired by an independent qualified person approved by the Secretary prior to the commencement of the study. In addition, the following shall be covered in the HAZOP:
- surge issues for the various operating scenarios;
- the ullage (in the tanks) above the high high alarm/emergency shutdown level, taking into account the slow closing time assigned to the emergency shutdown valves by the surge study required under Condition C2 above; and
- the study shall be carried out in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 8, 'HAZOP Guidelines'*. The study report must be accompanied by a program for the implementation of all recommendations made in the study. Safety related recommendations must be included in the final design of the Development. If the Applicant intends to defer the implementation of a recommendation, justification must be included.

d) FINAL HAZARD ANALYSIS
A Final Hazard Analysis of the overall Site, consistent with the Department's *Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'*. The FHA shall report on the implementation of the recommendations of the PHA. The FHA shall:

- demonstrate that the tank overfill protection system (for all tanks) reduces the risk so far as reasonably practicable, and it achieves as a minimum safety integrity level (SIL) 2 rating. A SIL allocation and verification report for the Development shall be undertaken and enclosed in the FHA;
- re-evaluate and confirm all relevant data and assumptions from the PHA, in particular, the outcomes of the surge analysis that may result in changes in the risk assessment and impact on the overall risk from the facility;
- re-evaluate and confirm all control measures proposed for prevention and mitigation of incidents; and
- report on implementation of the recommendations of the PHA.

Pre-commissioning

C5. The Applicant shall develop and implement the plans and systems set out under subsections a) to c). No later than two months prior to the commencement of commissioning of the Development, or within such further period as the Secretary may agree, the Applicant shall submit, for the approval of the Secretary, documentation describing those plans and systems. Commissioning shall not commence until approval has been given by the Secretary.

a) TRANSPORT OF HAZARDOUS MATERIALS
Arrangements covering the transport of hazardous materials including details of routes to be used for the movement of vehicles carrying hazardous materials to or from the Site. The routes selected shall be consistent with the Department's *Hazardous Industry Planning Advisory Paper No. 11, 'Route Selection'*. Suitable routes identified in the study shall be used except where departures are necessary for local deliveries or emergencies.

b) EMERGENCY PLAN
The Applicant's Emergency Plan and detailed emergency procedures shall be updated to incorporate any changes due to the Development. The plan shall include detailed procedures for the safety of all people outside of the Site who may be at risk from the Site. The plan shall be in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 1, 'Industry Emergency Planning Guidelines'*.

c) SAFETY MANAGEMENT SYSTEM
The Applicant's Safety Management System shall be updated to include any changes due to the Development. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on Site and shall be available for inspection by the Secretary upon request. The Safety Management System shall be developed in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'*.

An inspection, testing and preventive maintenance program should be developed, implemented and maintained to ensure the reliability and availability of the key safety critical equipment is, at a minimum, consistent with the data estimated in the PHA.

Pre-startup Compliance Report

C6. One month prior to the commencement of operation of the Development, the Applicant shall submit to the Secretary, a report detailing compliance with Conditions C4 and C5, including:
a) dates of study/plan/system submission, approval, commencement of construction and commissioning;
b) actions taken or proposed, to implement the recommendations and safety-related control measures in the studies/plans/systems;
c) a pre-startup safety review/checklist; and
d) responses to each requirement imposed by the Secretary under Condition C9 of this Schedule.

Post-startup Compliance Report

C7. Three months after the commencement of operation of the Development, the Applicant shall submit to the Secretary, a report verifying that:
a) the Emergency Plan required under Condition C5b) is effectively in place and that at least one emergency exercise has been conducted; and

b) the Safety Management System required under Condition C5c) has been fully implemented and that records required by the system are being kept.

Ongoing

C8. HAZARD AUDIT

Twelve months after the commencement of operation of the Development and every three years thereafter, or at such intervals as the Secretary may agree, the Applicant shall carry out a comprehensive Hazard Audit of the Site and within one month of each audit submit a report to the Secretary.

The audits shall be carried out at the Applicant's expense by a qualified person or team, independent of the Site, approved by the Secretary prior to commencement of each audit. Hazard Audits shall be consistent with the Department's *Hazardous Industry Planning Advisory Paper No. 5, 'Hazard Audit Guidelines' (HIPAP No. 5)*. The audit reports shall, in addition to the requirements provided in HIPAP No 5:

a) verify implementation of all actions proposed by the Applicant in response to the recommendations from the Buncefield incident investigation report as contained in Appendix C of the PHA;
b) verify that an inspection, testing and preventative maintenance program has been developed, implemented and maintained to ensure the reliability and availability of key safety critical equipment;
c) confirm the throughput and storage quantities of potentially hazardous materials are consistent with the PHA; and
d) verify implementation of any measures arising from the reports submitted in respect of Conditions C1 to C5 of this Schedule.

The audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Applicant intends to defer the implementation of a recommendation, reasons must be documented. This audit report must also be submitted to SafeWork NSW.

Further Requirements

C9. The Applicant shall comply with all reasonable requirements of the Secretary in respect of the implementation of any measures arising from the reports submitted in respect of Conditions C1 to C8, within such time as the Secretary may agree.

C10. The Applicant shall contribute to, in so far as it relates to the Site, preparation of or updates to the following plans and audits for the Mayfield Concept Plan, in consultation with the PON:

a) the *Mayfield Site Precinct Emergency Management Plan*, February 2016 consistent with the Department's *Hazardous Industry Advisory Paper No. 1 – Emergency Planning*;
b) a Safety Management System, consistent with the Department's *Hazardous Industry Advisory Paper No. 9 – Safety Management*; and
c) hazard audits, consistent with the Department's *Hazardous Industry Advisory Paper No. 5 – Hazard Audit Guidelines*.

Notes:

- *The intent of the condition is to ensure any cumulative hazard issues across the Mayfield Concept Plan area are identified and managed; and*
- *The relative contribution by the Applicant and timing shall be determined in consultation with the PON, to the satisfaction of the Secretary.*

AIR QUALITY

Air Quality Limits

C11. The Applicant shall install and operate equipment to ensure the Site complies with all load limits, air quality criteria and air quality monitoring requirements as specified in an EPL for the Site.

Offensive Odour

C12. The Applicant shall not cause or permit the emission of offensive odours beyond the boundary of the Site, as defined under Section 129 of the POEO Act.

Dust Minimisation

C13. The Applicant shall carry out all reasonable and feasible measures to minimise dust generated by the Site.

C14. During construction and operation of the Development, the Applicant shall ensure:

a) all vehicles on Site do not exceed the designated on Site speed limit;
b) all loaded vehicles entering or leaving the Site have their loads covered; and
c) all vehicles leaving the Site are cleaned of dirt, sand and other materials before they leave the Site, to avoid tracking these materials on to public roads.

Vapour Recovery Unit

C15. The Applicant shall install and commission a vapour recovery unit on the six bay truck loading gantry prior to:
a) annual throughput of petroleum products exceeding 1,300 ML; or
b) bulk storage of any Class 3 Flammable Liquid Dangerous Goods, described in the EIS.

C16. The vapour recovery unit shall be designed, constructed and operated in accordance with the requirements of the EPL.

C17. The Applicant shall monitor emissions from the vapour recovery unit stack in accordance with the requirements of the EPL. The monitoring data shall be reported to the PON on a quarterly basis, or in accordance with the monitoring frequency required in the EPL.

C18. If the results of monitoring show any impact greater than that predicted by the air quality modelling in the EIS, the Applicant shall investigate and implement further air quality mitigation measures as directed by the Secretary or the EPA.

Air Quality Management Plan

C19. The Applicant shall update the existing Air Quality Management Plan for the Site to include the Development, to the satisfaction of the Secretary. This plan shall:
a) be approved by the Secretary prior to operation of the Development;
b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this consent and the EPL;
c) describe the air quality monitoring to measure the performance of the Development against the conditions of this consent and the EPL; and
d) demonstrate the air quality measures for the Development are consistent with the PON's *Mayfield Air Quality Monitoring Plan, October 2015*, or its latest version.

Greenhouse Gas

C20. The Applicant shall implement all reasonable and feasible measures to minimise energy use on Site and greenhouse gas emissions produced on Site.

Meteorological Monitoring

C21. The Applicant shall install, operate and maintain a meteorological weather station on the Site that complies with the requirements of an EPL for the Site.

TRAFFIC AND ACCESS

Traffic Movements

C22. The Applicant shall:
a) keep accurate records of truck movements including:
- total hourly truck movements in peak periods;
- total truck movements per day;
- total truck movements per annum;
- the volume of flammable and combustible liquids received, stored and dispatched;

b) report these records in the Annual Review; and
c) provide these records to PON on a bi-monthly basis.

Access and Parking

C23. The Applicant shall ensure:
a) all internal roads and parking (including driveways, grades, lighting, aisle widths, aisle lengths, turning paths, sight distance requirements and parking bay dimensions) associated with the Development are designed and constructed in accordance with the latest versions of the *Australian Standards 2890.1:2004 and 2890.2:2002;*
b) internal roads accessed by heavy vehicles are designed to ensure the swept paths of the longest vehicle and maneuverability through the site is in accordance with *AUSTROADS – Guide to Road Design*; and

c) car, motorbike and bicycle parking spaces are provided on site in accordance with the requirements of the *Newcastle Development Control Plan, 2012*, where relevant.

Operating Conditions

C24. The Applicant shall ensure:
a) all heavy vehicle movements to and from the Site are made in a forward direction; and
b) vehicles associated with the Site do not park or queue on the public road network outside the Mayfield Concept Plan area.

Traffic Management Plan

C25. The Applicant shall update the existing operational Traffic Management Plan for the Site to include the Development. The plan shall:
a) be approved by RMS and the Secretary prior to operation of the Development;
b) be prepared in consultation with PON, PNSW, Council, RMS, adjoining land owners and the local community;
c) detail vehicle routes, access arrangements and coordination with other developments in the Mayfield Concept Plan area;
d) include details of driver training awareness to minimise noise, in particular from reversing alarms and compression braking;
e) detail procedures for assessing the effectiveness of measures to minimise heavy vehicles accessing residential streets;
f) detail procedures for managing operational traffic, including adherence to the *Australian Code for Transport of Dangerous Goods by Road and Rail*, January 1998 or its latest version; and
g) be updated to be consistent with the PON's *Traffic Management Plan, Mayfield Concept Plan, November 2015* or its latest version.

NOISE

Hours of Work

C26. The Applicant shall comply with the hours of work in Table 1.

Table 1: Hours of Work

Activity	***Day***	***Hours***
Construction	Monday – Friday	7am – 6pm
	Saturday	8am – 1pm
	Sunday & Public Holidays	Nil
Operation	Monday – Sunday	24 hours

Construction Noise

C27. The Applicant shall implement all reasonable and feasible management and mitigation measures to ensure noise generated during construction of the Development does not exceed the construction noise goals in Table 2.

Table 2: Construction Noise Goals dB(A)

Location		LAeq(15min)
R1, R2, R3, R4, R5, R6, R7, R8	Mayfield	53
R9	Carrington	54
R10	Stockton	57
R11	Mayfield East Public School	55

Notes:
- *To identify the locations referred to in Table 2, see Appendix 5.*
- *Construction noise generated by the Development is to be measured in accordance with the EPA's Interim Construction Noise Guideline.*

C28. Construction outside of the hours identified in Condition C26 may be undertaken in the following circumstances:
a) works that are inaudible at the nearest sensitive receivers;
b) works agreed to in writing by the Secretary;

c) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
d) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.

Mayfield Concept Plan Site Noise Model

C29. Prior to the commencement of construction of the Development, the Applicant shall provide the *Noise and Vibration Impact Assessment*, prepared by AECOM dated 19 February 2016, including all modelling data, to the PON for the purposes of updating the Site Noise Model.

Operational Noise Limits

C30. The Applicant shall ensure noise from the Site does not exceed the noise limits in Table 3.

Table 3: Noise Limits dB(A)

No.	Location	Day	Evening	Night	Night	Night
		$L_{eq(15min)}$	$L_{eq(15min)}$	$L_{eq(15min)}$	$L_{eq(9hr)}$	$L_{1(1min)}$
R1	1 Arthur Street, Mayfield	35	35	35	N/A	45
R2	52 Arthur Street, Mayfield	35	35	35	N/A	48
R3	2 Crebert Street, Mayfield	41	41	41	35	49
R4	21 Crebert Street, Mayfield	40	40	40	35	47
R5	24 Crebert Street, Mayfield	42	42	42	37	51
R6	30 Crebert Street, Mayfield	41	41	41	35	50
R7	50 Crebert Street, Mayfield	35	35	35	N/A	50
R8	2 McNeil Close, Mayfield	35	35	35	N/A	48

Note:
- *To identify a noise receiver location, refer to the figure in Appendix 5.*
- *Noise generated by the Site is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the EPA's NSW Industrial Noise Policy.*

C31. The Applicant shall ensure fire pumps on the Site are designed and operated so that noise from routine testing or maintenance is not more than $L_{eq(15min)}$ 53 dB(A) at sensitive receivers. Routine testing or maintenance must only occur during the day time.

Mayfield Concept Plan Noise Quota

C32. The Applicant shall:
a) ensure noise from the Site does not exceed the noise quotas provided by the PON in accordance with the Site Noise Model; and
b) comply with the directions of the PON in relation to the management of noise from the Site.

Operating Conditions

C33. The Applicant shall:
a) implement all reasonable and feasible noise management and mitigation measures to prevent and minimise noise from the Site;
b) implement, where possible, a safe system of work so that tonal movement alarms, such as reversing beepers, are not needed on the Site;
c) maintain the effectiveness of any noise suppression equipment or plant at all times and ensure defective plant that may generate offensive noise is not used operationally until fully repaired; and
d) regularly assess noise monitoring data and relocate, modify and/or stop operations to ensure compliance with the relevant conditions of this consent.

Noise Management Plan

C34. The Applicant shall update the existing Noise Management Plan for the Site to include the Development. The plan shall:
a) be prepared by a suitably qualified expert, in accordance with EPA Guidelines;
b) be approved by the Secretary prior to operation of the Development;
c) describe the measures that would be implemented to ensure compliance with the:
i. noise limits in Condition C30; and

ii. noise quotas provided by PON, to maintain compliance with the noise goals in the Mayfield Concept Plan;

d) include a procedure for implementing noise mitigation measures, should the Applicant be directed to by the EPA, PON or the Secretary, or should non-compliances be detected; and

e) include procedures to receive, record and respond to complaints.

Noise Monitoring

C35. The Applicant shall monitor noise from the Site. The monitoring shall:

a) be undertaken annually, or to address genuine noise complaints related to the Site as determined by the Secretary, EPA or the PON;

b) be undertaken in accordance with the *NSW Industrial Noise Policy* and the *Noise Verification Monitoring Plan, October 2015* or its latest version;

c) demonstrate compliance with the noise limits in this consent and the noise quotas provided by PON in accordance with the Mayfield Concept Plan; and

d) be reported annually to the Secretary, EPA and the PON.

Note: The monitoring requirements could be satisfied by the monitoring network required for the Mayfield Concept Plan once established.

CONTAMINATION AND REMEDIATION

Statutory Requirements

C36. The Applicant shall carry out the Development in accordance with the requirements of the:

a) Remediation Notice; and

b) CSMP.

C37. Prior to commencement of construction, the Applicant shall provide written evidence to the Secretary from the Site Auditor confirming that all construction works associated with the Development meet the requirements of the documents listed in Condition C36 above.

C38. Prior to commencement of operation, the Applicant shall provide written evidence to the Secretary from the Site Auditor confirming that all works associated with the Development have been constructed in accordance with the requirements of the documents listed in Condition C36 above.

Human Health Risk

C39. The Applicant shall provide written advice from the Site Auditor confirming that all works associated with the Development would be constructed to address any risk of harm to human health posed by the potential ingress of volatile vapours into buildings and confined spaces.

SOIL AND WATER

Imported Soil

C40. The Applicant shall:

a) ensure that only VENM or ENM or other material approved in writing by the EPA or the Site Auditor is used as fill on the Site;

b) keep accurate records of the volume and type of fill to be used on Site; and

c) make these records available to PON and the Secretary upon request.

Water Licences

C41. The Applicant is required to obtain the necessary water licences for the Development under the *Water Act 1912* and/or the *Water Management Act 2000*.

Note: Licences are required for groundwater bores, excavations that may intercept groundwater, dewatering activities and extraction or interception of surface water.

Discharge Limits

C42. The Applicant shall ensure all water discharges from the Site comply with the requirements specified in an EPL for the Site.

Stormwater and Drainage System

C43. The Applicant shall maintain the stormwater and drainage system for the Site to the satisfaction of PON.

Stormwater and Drainage Management Plan

C44. The Applicant shall update the existing Stormwater and Drainage Management Plan for the Site to include the Development, to the satisfaction of the Secretary. The plan shall:

a) be updated prior to operation of the Development;
b) be prepared in accordance with OEH's *Managing Urban Stormwater* and other relevant guidelines;
c) detail the stormwater infrastructure to be installed for the Development and detail how it integrates with the existing stormwater system on the Site;
d) describe the measures to be implemented to maintain this infrastructure over time;
e) include a program to monitor stormwater quality and quantity; and
f) detail how the stormwater infrastructure integrates and is consistent with the PON's *Concept Stormwater Management Strategy* dated 9 July 2015 or its latest version.

Water Management Plan

C45. The Applicant shall update the existing Water Management Plan for the Site to include the Development, to the satisfaction of the Secretary. The plan shall:

a) be updated prior to operation of the Development;
b) include procedures for the prevention and management of spills and leaks from the Development, including the terminal, M7 berth and pipeline;
c) include a surface water monitoring program to measure the quality and quantity of water discharges from the Site in accordance with an EPL for the Site;
d) include a groundwater monitoring program to evaluate the integrity of the surface capping in minimising groundwater contamination and monitor in accordance with the requirements of an EPL for the Site; and
e) include a surface and groundwater response plan, including remedial actions and procedures to be followed in the event of an incident.

Bunding and Storage of Liquids

C46. The Applicant shall store all chemicals, fuels and oils used on the Site in appropriately bunded areas in accordance with the requirements of all relevant Australian Standards, and/or the EPA's *Storing and Handling of Liquids: Environmental Protection – Participants Handbook*.

C47. The Applicant shall ensure all bunds:

a) have impervious walls and floors;
b) are of sufficient capacity to contain 110% of the volume of the tank (or 110% of the volume of the largest tank where a group of tanks are installed);
c) have floors graded to a collection sump; and
d) do not have a drain valve incorporated in the bund structure, or are constructed and operated in a manner that achieves the same environmental outcome.

Leak Prevention

C48. The Applicant shall:

a) conduct annual integrity testing on the petroleum product pipeline extending between the terminal and the M7 berth;
b) conduct leak testing of the petroleum products pipeline extending between the terminal and the M7 berth prior to each transfer of product;
c) conduct surveillance checks on the pipeline prior to the commencement of and during transfer operations of any petroleum products; and
d) maintain a register for all integrity and pressure tests conducted on the pipeline extending between the terminal and the M7 berth.

UTILITIES AND SERVICES

C49. The Applicant shall update the existing Utilities and Services Plan for the Site to include the Development. The plan must:

a) be updated prior to operation of the Development;
b) be prepared in consultation with relevant utility and service providers and adjacent landowners, where relevant;
c) include an implementation schedule which shows how all essential utilities and services are to be provided to the Site;
d) provide a copy of all necessary consents from relevant utility and service providers showing that access to these utilities and services is available and secured; and
e) include a strategy to integrate all utilities and services with the broader system to be provided by PON for the Mayfield Concept Plan, and be consistent with the *Utilities Infrastructure Plan, July 2015*, or its latest version.

VISUAL AMENITY

Landscaping

C50. The Applicant shall update the existing Landscape Management Plan for the Site to include the Development, to the satisfaction of the Secretary. The Plan must:
- a) be prepared in consultation with PON and in accordance with the relevant requirements of the *Newcastle Development Control Plan, 2012*;
- b) be updated and implemented prior to operation of the Development;
- c) demonstrate the building treatments are of sufficient design quality to minimise the visual impacts of the Site, and include a variety of materials and external finishes;
- d) illustrate the location, species and mature heights of plants to be established on Site;
- e) provide for the maintenance of the landscaping on Site; and
- f) ensure the administration building and landscaping is consistent with the requirements of the PON acknowledging the Site's location at the entrance to the Mayfield Concept Plan area.

Building Materials

C51. Where possible the Applicant shall utilise building materials that minimise the potential visibility of the Development, including non-reflective materials.

Lighting

C52. The Applicant shall ensure any lighting associated with the Site:
- a) complies with the latest version of Australian Standard *AS 4282 (INT)-Control of Obtrusive Effects of Outdoor Lighting*, where relevant; and
- b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Signage

C53. The petroleum product pipeline extending between the terminal and the M7 berth must:
- a) be identified in accordance with Australian Standard AS1345-2008: *Identification of the contents of pipes, conduits and ducts*; and
- b) include pipe markers including the name of the Applicant and emergency contact details.

C54. The Applicant shall not install any advertising signs on the Site without consultation with the PON and the written consent of the Secretary.

SITE SECURITY

C55. The Applicant shall:
- a) install and maintain a perimeter fence and security gates on the Site;
- b) ensure the security gates on Site are locked whenever the Site is unattended; and
- c) consult with the PON with regards to minimum fencing specifications.

WASTE

C56. The Applicant shall ensure any waste generated on the Site is classified in accordance with the EPA's *Waste Classification Guidelines* (DECCW, 2009), or any superseding document and disposed of to a facility that may lawfully accept the waste.

C57. Waste generated outside the Site shall not be received at the Site for storage, treatment, processing, reprocessing, or disposal on the Site, except as expressly permitted by an EPL, if such a licence is required in relation to that waste.

C58. The Applicant shall:
- a) implement all reasonable and feasible measures to minimise waste generated on Site; and
- b) ensure any waste generated on Site is appropriately stored, handled and disposed of.

AVIATION SAFETY

C59. Prior to the commencement of construction, the Applicant shall provide the Secretary with a copy of all necessary approvals from the Air Base Command Post of RAAF Base Williamstown and the Directorate of External Land Planning within the Defence Support Group of the Department of Defence for the erection of all structures that constitute transient/temporary or permanent obstructions

in accordance with the *Operation of cranes and tall structures in the vicinity of Newcastle Airport* (Department of Defence, 2013).

SCHEDULE D
ENVIRONMENTAL MANAGEMENT, REPORTING, AUDITING & COMMUNITY ENGAGEMENT

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

D1. The Applicant shall prepare a Construction Environmental Management Plan (CEMP) for the Development, to the satisfaction of the Secretary. The Plan must:
- a) be approved by the Secretary prior to construction of the Development;
- b) identify the statutory approvals that apply to the Site;
- c) outline all environmental management practices and procedures to be followed during construction;
- d) describe all activities to be undertaken on the Site during construction, including a clear indication of construction stages;
- e) detail how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
- f) describe the roles and responsibilities for all relevant employees involved in construction works; and
- g) include the management plans under Condition D2 of this consent.

D2. As part of the CEMP for the Development, required under Condition D1 of this consent, the Applicant shall include the following:
- a) a soil and water management plan;
- b) a contaminated materials management plan, prepared in consultation with the PON;
- c) a traffic management plan;
- d) a noise and vibration management plan;
- e) an air quality (dust) management plan;
- f) a utilities and services provision plan; and
- g) a waste management plan.

D3. The Applicant shall carry out construction of the Development in accordance with the CEMP approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Environmental Management Strategy

D4. The Applicant shall update the existing Environmental Management Strategy (EMS) for the Site to include the Development, to the satisfaction of the Secretary. The EMS shall:
- a) be submitted to the Secretary for approval prior to operation of the Development;
- b) be prepared by a suitably qualified and experienced expert;
- c) provide the strategic framework for environmental management of the Site;
- d) identify the statutory requirements that apply to the Site;
- e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Site;
- f) describe in general how the environmental performance of the Site would be monitored and managed;
- g) describe the procedures that would be implemented to:
  - keep the local community and relevant agencies informed about the operation and environmental performance of the Site;
  - receive, handle, respond to, and record complaints;
  - resolve any disputes that may arise in relation to operations at the Site;
  - respond to any non-compliance;
  - manage cumulative impacts;
  - respond to emergencies;
- h) include the management plans under Condition D5 of this consent; and
- i) be provided to the PON once approved by the Secretary, including any approved amendments to the EMS.

D5. As part of the EMS for the Site, required under Condition D4 of this consent, the Applicant shall include the following:
- a) air quality;
- b) traffic;
- c) noise;
- d) stormwater and drainage;
- e) water;
- f) utilities and services; and
- g) landscape.

D6. The Applicant shall operate the Site in accordance with the EMS approved by the Secretary (and as revised and approved by the Secretary from time to time), unless otherwise agreed by the Secretary.

Management Plan Requirements

D7. The Applicant shall ensure the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:

a) detailed baseline data;
b) a description of:
   - the relevant statutory requirements (including any relevant consent, licence or lease conditions);
   - any relevant limits or performance measures/criteria; and
   - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the Site or any management measures;
c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
d) a program to monitor and report on the:
   - impacts and environmental performance of the Site; and
   - effectiveness of any management measures (see c) above);
e) a contingency plan to manage any unpredicted impacts and their consequences;
f) a program to investigate and implement ways to improve the environmental performance of the Site over time;
g) a protocol for managing and reporting any:
   - incidents;
   - complaints;
   - non-compliances with statutory requirements; and
   - exceedances of the relevant limits and/or performance measures / criteria; and
h) a protocol for periodic review of the plan.

Revisions to Strategies, Plans and Programs

D8. Within three months of the submission of an:

a) audit submitted under Condition D12;
b) incident report under Conditions D10 and D11;
c) annual review under Condition D9; and/or
d) a modification to this consent,

the Applicant shall review, and if necessary, revise the strategies, plans, and programs required under this consent to the satisfaction of the Secretary.

Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the Site.

REPORTING

Annual Review

D9. By the end of December each year, and annually thereafter, the Applicant shall review the environmental performance of the Site, to the satisfaction of the Secretary. This review must:

a) be prepared in consultation with PON;
b) describe the operations that were carried out in the past year;
c) analyse the monitoring results and complaints records of the Site over the past year, including a comparison of these results against the:
   - relevant statutory requirements, limits or performance measures/criteria;
   - monitoring results of previous years; and
   - predictions in the EIS;
d) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
e) identify any trends in the monitoring data;
f) identify any discrepancies between the impacts predicted in the EIS and the actual impacts of the Site and analyse the potential cause of any significant discrepancies; and
g) describe what measure will be implemented over the next year to improve the environmental performance of the Site.

Incident Reporting

D10. Upon detecting an exceedance of the limits/performance criteria in this consent or the occurrence of an incident that causes (or may cause) material harm to the environment, the Applicant shall immediately (or as soon as practical thereafter) notify the Secretary, PON and any other relevant agencies of the exceedance/incident.

D11. Within seven days of the date of the incident, the Applicant shall provide the Secretary, PON and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.

INDEPENDENT ENVIRONMENTAL AUDIT

D12. Within one year of the date of this consent, and every three years thereafter, unless the Secretary directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the Site. The audit must:

a) be carried out by a suitably qualified, experienced and independent audit team whose appointment has been endorsed by the Secretary;
b) include consultation with PON;
c) assess the environmental performance of the Site, and its effects on the surrounding environment;
d) determine whether the Site is complying with the relevant standards, performance measures and statutory requirements, including the Mayfield Concept Plan;
e) review the adequacy of the EMS for the Site, compliance with this consent, and any other licences and consents; and, if necessary;
f) recommend measures or actions to improve the environmental performance of the Site, and/or any plan/program required under this consent.

D13. Within three months of commissioning the audit, or as otherwise agreed by the Secretary, the Applicant shall submit a copy of the audit report to the Secretary, EPA and PON with a response to all recommendations contained in the audit report.

COMMUNITY CONSULTATION

D14. The Applicant shall contribute to the Community Communication Strategy required for the Mayfield Concept Plan. The level and timing of the contribution by the Applicant shall be determined in consultation with the PON.

ACCESS TO INFORMATION

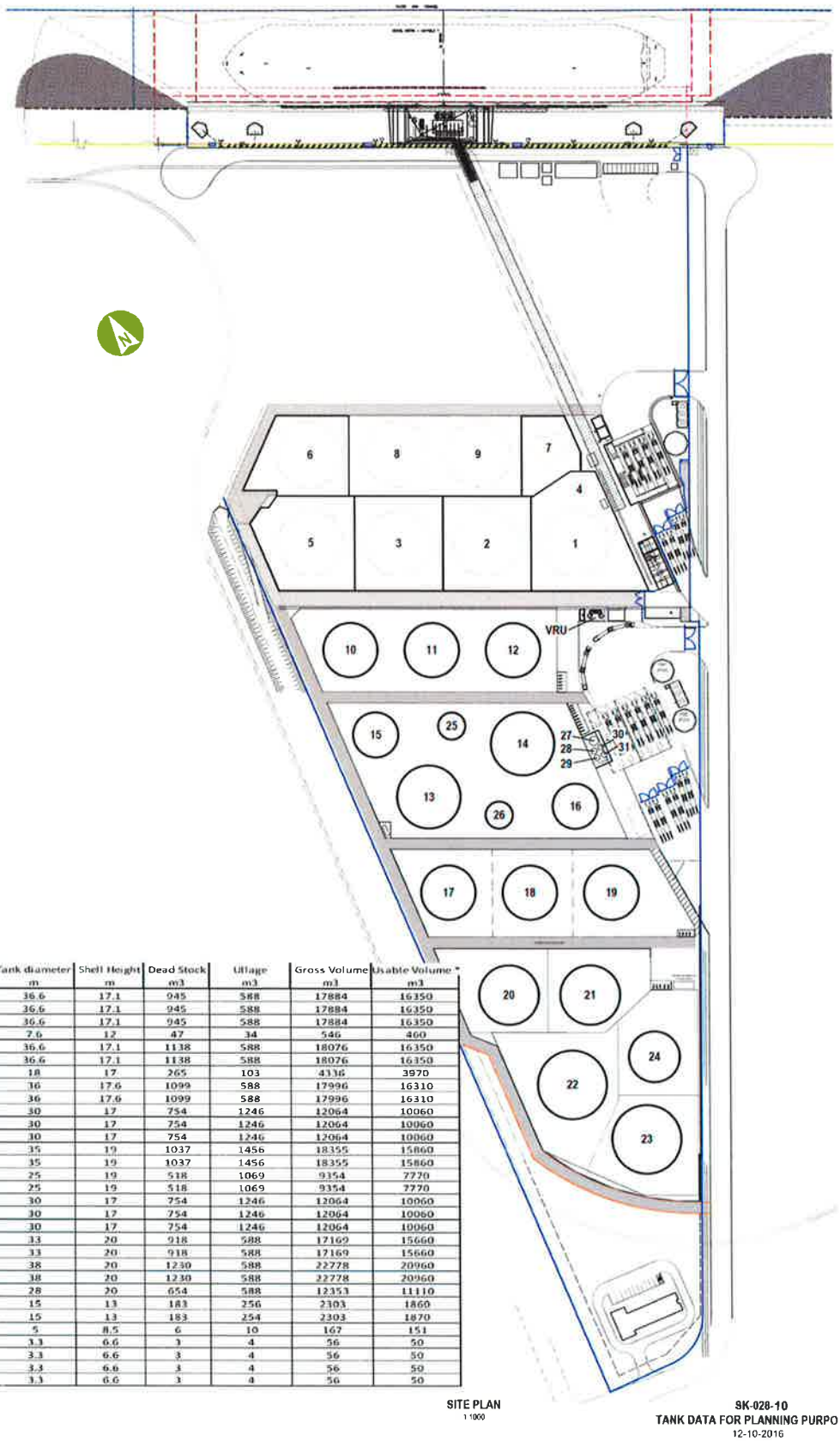
D15. The Applicant shall make the following information publicly available on its website and keep the information up to date:

a) the EIS;
b) current statutory consents for the Site;
c) approved strategies, plans and programs;
d) a summary of all monitoring data for the Site as required under this consent and the Mayfield Concept Plan;
e) a complaints register, updated on an annual basis;
f) Annual Reviews, Independent Environmental Audits and the Applicant's response to the recommendations; and
g) any other matter required by the Secretary.

Note: This condition does not require any confidential information to be made available to the public.

APPENDIX 1
DEVELOPMENT PLANS

***Figure 1**: Stolthaven Fuel Storage Terminal, Marine Loading Arm and Pipeline*



Tank Number	Product	Product SG	Tank diameter m	Shell Height m	Dead Stock m3	Ullage m3	Gross Volume m3	Usable Volume * m3
1	AGO	0.85	36.6	17.1	945	588	17884	16350
2	AGO	0.85	36.6	17.1	945	588	17884	16350
3	AGO	0.85	36.6	17.1	945	588	17884	16350
4	Bio	0.85	7.6	12	47	34	546	460
5	AGO	0.85	36.6	17.1	1138	588	18076	16350
6	AGO	0.85	36.6	17.1	1138	588	18076	16350
7	Bio	0.85	18	17	265	103	4136	3970
8	AGO	0.85	36	17.6	1099	588	17996	16310
9	AGO	0.85	36	17.6	1099	588	17996	16310
10	ULP	0.75	30	17	754	1246	12064	10060
11	ULP	0.75	30	17	754	1246	12064	10060
12	ULP	0.75	30	17	754	1246	12064	10060
13	ULP	0.75	35	19	1037	1456	18355	15860
14	ULP	0.75	35	19	1037	1456	18355	15860
15	ULP	0.75	25	19	518	1069	9354	7770
16	ULP	0.75	25	19	518	1069	9354	7770
17	PULP	0.75	30	17	754	1246	12064	10060
18	ULP	0.75	30	17	754	1246	12064	10060
19	ULP	0.75	30	17	754	1246	12064	10060
20	AGO	0.85	33	20	918	588	17169	15660
21	AGO	0.85	33	20	918	588	17169	15660
22	AGO	0.85	38	20	1230	588	22778	20960
23	AGO	0.85	38	20	1230	588	22778	20960
24	AGO	0.85	28	20	654	588	12353	11110
25	Ethanol	0.79	15	13	183	256	2303	1860
26	Ethanol	0.79	15	13	183	254	2303	1870
27	Biodiesel	0.85	5	8.5	6	10	167	151
28	Additive	0.75	3.3	6.6	3	4	56	50
29	Additive	0.75	3.3	6.6	3	4	56	50
30	Slops	0.75	3.3	6.6	3	4	56	50
31	Slops	0.75	3.3	6.6	3	4	56	50

***Figure 2**: Storage Tank Schedule*

APPENDIX 2
APPLICANT'S MANAGEMENT & MITIGATION MEASURES

Environmental Aspect	Commitments and Mitigations
Management plan	- A Construction Environmental Management Plan will be prepared for the construction of the tanks. The CEMP will be prepared in consultation with DP&E. - Stolthaven will undertake updates to its existing operational environmental management plans in consultation with DP&E.
Hazards and risks	- The site Fire Safety Study will be updated in consultation with Fire and Rescue NSW and necessary measures implemented prior to the operation of any Stage 3 element. - The existing site Emergency Plan will be revised and updated in consultation with PON and to the satisfaction of DP&E prior to the operation of any Stage 3 elements. - Stolthaven will consult with PON regarding the update of the Port Emergency Response Plan. No operation of any Stage 3 elements will occur prior to the Port emergency Response Plan being updated to the satisfaction of PON. - Stolthaven will undertake a Hazard Audit in accordance with the requirements of Schedule 3, Condition 2.28 of the Mayfield Concept Plan Approval.
Air quality	- The CEMP will include measures for the management of dust generation and combustion (vehicle) emissions during the construction phase. - The Facility will be operated in accordance with the existing Air Quality Management Plan as updated to include the Project. This update will be undertaken in consultation with DP&E. - A vapour recovery system will be designed to recover >98 per cent of the hydrocarbon content from the waste vapour stream generated by loading road tankers. - The Project will be undertaken in accordance with the requirements of the air quality model and monitoring program, and meteorological monitoring details in Schedule 3, Conditions 2.11, 2.13 and 2.15 of the Mayfield Concept Plan Approval.
Traffic and transport	- A Construction Traffic Management Plan will be prepared for the Project to manage construction traffic impacts. - The existing Traffic Management Plan will be updated to incorporate the Project in consultation with PON, Newcastle City Council and RMS. - Measures identified to manage potential traffic impacts include: • An induction process for drivers; • Entry and exit conditions; and • Approved operational access and egress routes via Steelworks Road to the Industrial Highway. - The Project will comply with the requirements of the Mayfield Concept Plan Traffic Management Plan and Traffic Monitoring Review Plan prepared in accordance with Schedule 3, Conditions 2.5 and 2.10 of the Mayfield Concept Plan Approval.
Noise and vibration	- Construction noise and vibration impacts will be managed through the implementation of a CEMP which will be prepared to include reasonable and feasible management and mitigation measures to be put in place during the construction period. - The current site Operational Noise Management Plan (ONMP) will be reviewed and updated in accordance with the Project operational approval requirements, including requirements for implementation of management measures, monitoring and auditing of operational noise. The ONMP will also incorporate noise requirements in regards to managing noise as per the Mayfield Concept Plan Approval. - The ONMP will be revised and updated in consultation with PON and DP&E. - The Project will comply with the requirements of the Mayfield Concept Plan Noise

Environmental Aspect	Commitments and Mitigations
	Verification Monitoring Program prepared in accordance with Schedule 3, Condition 2.20 of the Mayfield Concept Plan Approval.
Soil and Water	- The existing Surface Water Management Plan and Groundwater Management Plan prepared for the Facility, will be updated, where relevant and in consultation with DP&E, to incorporate the Project. - Management of soils during construction, including sediment and erosion controls, will be detailed in the CEMP. - The proposed design and work methods will be provided to the EPA Site Auditor for review and comment prior to any construction works. Evidence of consultation with the Site Auditor will be provided to DP&E. - The Project will be undertaken in accordance with the requirements of the Mayfield Concept Plan Stormwater Management Strategy prepared in accordance with Schedule 3, Condition 2.21 of the Mayfield Concept Plan approval.
Visual	- The Facility will be constructed from non-reflective materials and painted white where possible. - Lighting design will be in accordance with the requirements of Australian Standard AS 4282 – Control of Obtrusive Effects and Outdoor Lighting. Lighting will be mounted, screened and directed in such a manner that it does not cause nuisance to surrounding properties or the public road network. - The existing Landscape Management Plan will be updated to incorporate the new tanks, bunding, gantry and building areas and identify appropriate treatment to be incorporated into the Facility.
Greenhouse Gas	- The existing Energy Efficiency Plan will be updated to include all elements of the Project and include measures to reduce and mitigate energy use and greenhouse gas emissions across the entire Project.
Waste	- The waste strategies developed for the existing Facility will be updated to incorporate the Project. This can be summarised as the application of the waste hierarchy where the following will be employed, in order of preference: • *Avoidance* – The generation of wastes from the Facility will be avoided where possible. • *Reduce* – Reduce resource consumption, procure materials with less packaging and implement practices to reduce waste. • *Reuse* – Where feasible, materials will be reused onsite. However, due to the limited waste streams generated onsite, reuse options may be limited. • *Recycling* – Paper, cardboard, glass and plastics will be available for recycling. A bin will be placed adjacent to the office which will be collected by a waste management contractor on a regular basis. • *Disposal* – Disposal of wastes will be minimised where possible. Putrescibles wastes from the office will be sent to landfill, with other wastes generally diverted for recycling. - Waste strategies will be met through the extension of the Facility's existing Waste Management Plan for operations and as part of the CEMP for waste generated during construction.

APPENDIX 3: MAYFIELD CONCEPT PLAN AREA

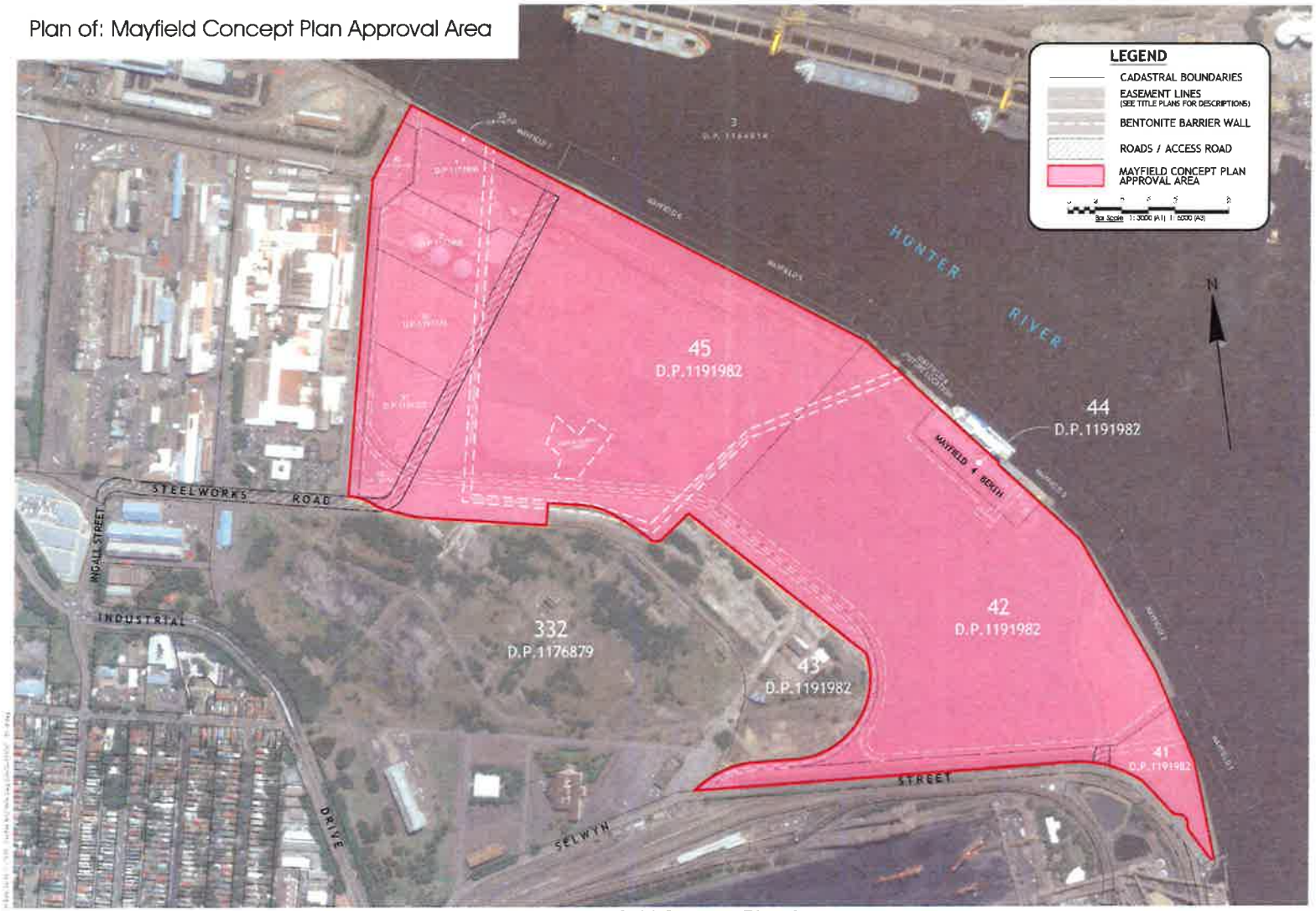


***Figure 2**: Mayfield Concept Plan Area*

APPENDIX 4: M4 BERTH AND PIPELINE (SSD 6664)

***Figure 3**: Location of M4 Berth and Pipeline*

APPENDIX 5: NOISE RECEIVER LOCATIONS

***Figure 4**: Noise receiver locations*

APPENDIX 6: HEAVY VEHICLE ROUTES

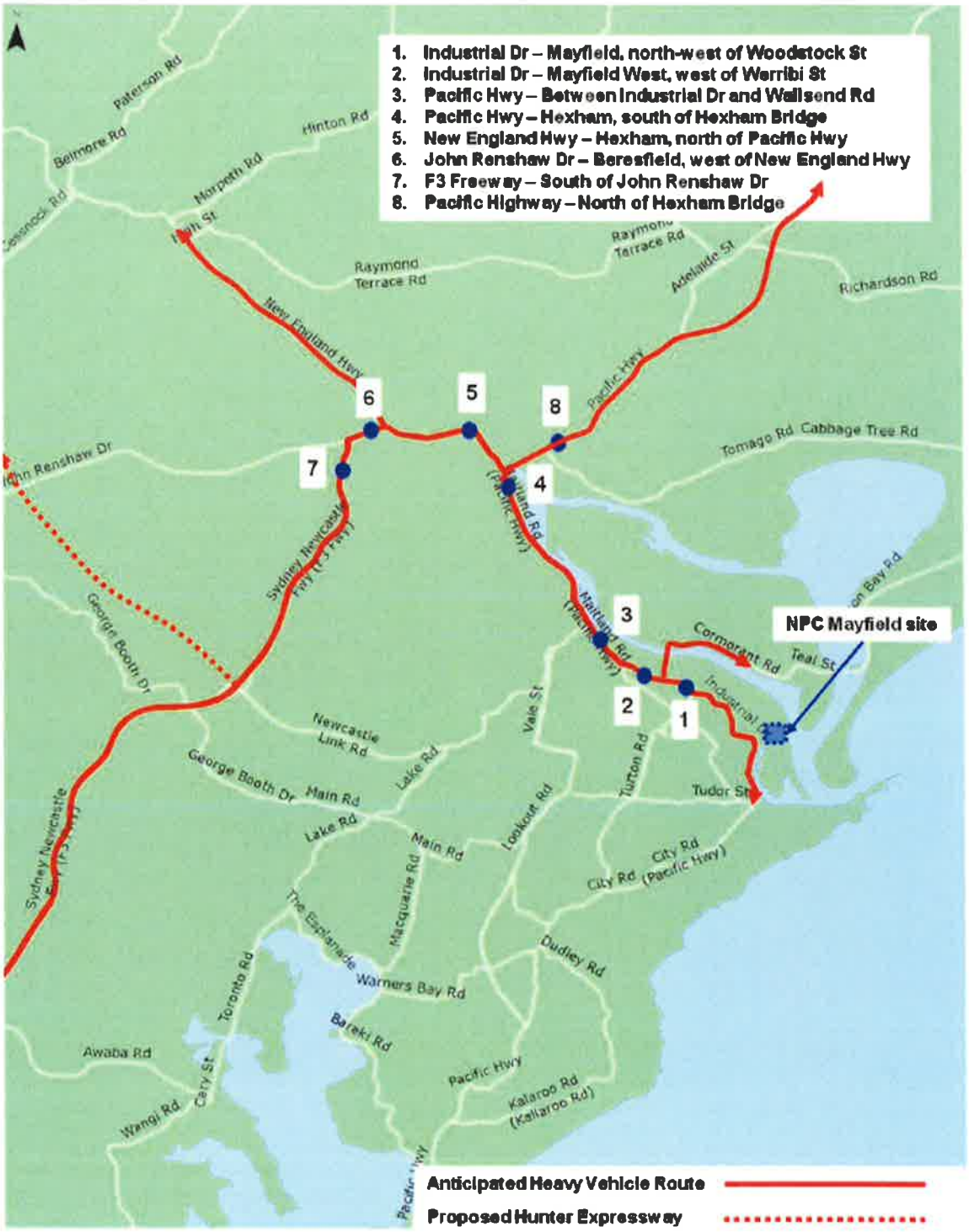


***Figure 5**: Heavy Vehicle Routes*

APPENDIX 2: PRE-CONSTRUCTION WORKS TABLE

Project Aspect	Impact	Environmental Safeguards/Control Measure Task	Action complete Y/N?, and date
Project Environmental Briefing	• Potential breach of CEMP by project and contractor staff	• All project staff and contractors are to be briefed on the potential impacts and the necessary safeguards/control measures to prevent impacts; • No contractor to work on project without up to date site induction; • Responsibilities to be allocated for safeguards; • Display a copy of the CEMP in the Site Office; • Display copies of SHEQ Policy and Site Rules.	
Establishment of Site Office and materials storage areas	• Plant exhaust emissions (air and noise)	• Emission controls to be fitted to all plant and equipment, and to be checked prior to site entry; • All plant and equipment is to be regularly inspected and maintained to manufacturers' specifications.	
	• Pollution from portable toilets (if brought on-site)	• Position amenities so an overflow/spill can't get offsite or into stormwater drains; • Pump out of portable toilets must be undertaken by an EPA-licensed operator.	
	• Erosion and sedimentation control	• Prior to work commencing, a toolbox meeting will take place first. Pending on the work task required in relation to safeguards in section 10.1. Installation of sediment controls will be done before the work task is started and maintain them during the construction period with regular inspections and repairs (especially after rain) to ensure satisfactory operation; • Locate designated spoil or other stockpiles away from any nearby drain lines and install appropriate sediment controls (such as a silt fence as a minimum);	
	• Oils, fuel and chemical spills (associated with the construction work, used by plant and equipment)	• Store all of these materials in a secure bunded area to WorkCover standards and at least 40 metre away from any nearby stormwater drains; • Have current MSDS sheets available at point of storage, and spare copies in the site office. • Locate spill response kits on site for immediate response and disposal of contaminated material and staff know how to use the kits; • Regularly inspect plant and equipment to ensure correct operation and no oil or fuel leaks; • Setup designated refuelling containment area(s) away from stormwater drains.	

Project Aspect	Impact	Environmental Safeguards/Control Measure Task	Action complete Y/N?, and date
Establishment of Site Office and materials storage areas (cont.)	• Trespass onto construction site	• Install project construction signage at entry/exit points detailing no entry for unauthorised persons; • The construction site boundaries should be clearly defined and barricades or other measures installed to control entry to the site.	
	• Potential dust generation	• Provide water carts, spray equipment or other suitable control measures to control dust concentrations where required (Could include a very fine mesh cloth barrier along the boundary fence to prevent possible construction dust impacting on the nearby neighbours, roads, etc; • Setup truck wash down area. • Install shaker pad/grates at site entrance/exit.	
	• Waste disposal	• Install waste bins with secure lids for non-reusable waste, including food waste; • Install recycle bins for 'domestic' recyclables such as paper, cardboard, cans, PET bottles etc; • All staff and contractors are to be advised of all appropriate waste disposal locations prior to work commencement (part of Site Environmental Induction); • Routine site inspections are to be regularly conducted to ensure that domestic rubbish is contained and removed as required.	
	• Traffic Management	• Setup designated routes for heavy vehicle movement.	

Date all Actions Completed: Signed off by:

Name: Position:

(*When the completion date is shown in the table alongside the action, it should also include the initials of the person responsible for the completion*)

APPENDIX 3: CONSTRUCTION WORKS TABLE

Project Aspect	Impact	Environmental Safeguards/Control Measure Task	Action complete Y/N?, and date
Civil, mechanical and electrical construction activities for the project	• Air quality – dust emissions • Air quality – exhaust emissions	• Use water cart or spray equipment or other suitable means to control dust; • Wet work area prior to digging if there is potential for dust generation; • Ensure trucks leaving site have excess mud removed and soil loads covered. • Fitted emission controls to be working properly and maintained; • All plant and equipment is to be regularly inspected and maintained to manufacturers' specifications; • Ensure equipment turned off (including trucks) when not in use.	
	• Water quality and sedimentation controls	• Install and maintain sediment control measures to ensure continued proper operation. They should be inspected on a daily basis, and after heavy rain; • Replace, clean and augment these measures as required, by regular inspection; • Besides sediment control measures along the boundary fence, and around road stormwater drain inlets, it may be useful to install additional sediment collection measures closer to the actual work, so that capture is closer to the source; • Concrete slurry wastes are to be collected in plastic lined bins or other containers to minimise any discharge of the low pH water. It must not be allowed to go to any nearby stormwater drains; • Any refuelling of plant and equipment, or oil changing and similar maintenance work must be carried out with spill collection equipment in place, such as spill trays, and hydrocarbon absorbent material. It must be done in designated contained refuelling areas only; • Any spills of material must be cleaned up promptly, using the spill response kit if needed, and must be reported to the Construction Supervisor, • Any spills that result in discharge offsite must be reported to EPA and Port of Newcastle.	
	• Use of External Materials	• Only virgin fill or approved recycled material to be used onsite.	

Civil, mechanical and electrical construction activities for the project (cont.)	• Noise	• Ensure that where fitted, silencing devices on plant and equipment are maintained and used according to manufacturers' specifications; • Hearing protection to be specified as needed; • Work is to be carried out within specified hours as dictated by the consent authority.	
	• Waste	• Pump out of portable toilets must be undertaken by an EPA-licensed operator; • Other waste should be collected, stored appropriately and removed as necessary; • Any contaminated materials placed in bins or piles for testing before reuse or disposal; • Waste movement should be recorded in the Waste Register; • Collected concrete slurry wastes are to be removed by a licensed contractor; • Chemical or oil wastes from maintenance of plant and equipment (if it is carried out on site) must be contained and collected for disposal by a licensed contractor;	
	• Traffic Management	• Ensure all drivers accessing the site are inducted; • Monitor truck movements to ensure no blockages on surrounding neighbours.	

Date all Actions Completed: Signed off by:

Name: Position:

(*Since many of these actions will be ongoing during the construction phase, they should be tested and recorded by means of the audit checklist, and by notations in a site diary*)

APPENDIX 4: POST-CONSTRUCTION WORKS TABLE

Project Aspect	Impact	Safeguards/Control Measure Task	Action complete Y/N?, and date
Commissioning of pipes, valves and associated equipment	• Water quality – Hydrotesting	• Ensure the equipment and piping is washed, hydotested and emptied before use. Any water generated should be inspected for contamination before being allowed to enter nearby drains. If contaminated contained and disposed of appropriately; • Absorbent material should be used to collect spillage from weld pickling. This material is to be collected, placed in containers and disposed of by an EPA-licensed contractor;	
Remove Site Office, other storage containers, lockers, stockpiles of surplus material etc	• Waste disposal	• Recover all surplus materials for reuse or recycling; • Remove all other non-recyclable wastes to appropriate off-site disposal using a licensed contractor (most likely to an EPA-licensed landfill);	
Removal of silt and sediment controls	• Water quality and biodiversity • Waste	• Prior to removal, inspect the controls and ensure that any trapped silt or sediment that can be collected and removed is done so, and appropriately contained and disposed of. Ensure that this does not allow any of the material to breach the control measures or escape to nearby drains; • The controls themselves (silt blankets or booms etc) must also be contained and disposed of in an appropriate manner; • The same applies to any stockpile sediment control measures – the stockpile must be totally removed and cleaned up before taking the control measures away.	

Date all Actions Completed: Signed off by:

Name: Position:

(*When the completion date is shown in the table alongside the action, it should also include the initials of the person responsible for the completion*)

APPENDIX 5: WASTE MANAGEMENT REGISTER (non-domestic wastes)

(*Either photocopies, or a separate facsimile of this form should be used if the space is insufficient*)

Date	Description of waste	Quantity? (Best estimate)	How and where was it disposed?	Disposal Agent?	Tracking Docket number (if applic.)	Authorised by? (Name, position and signature)

APPENDIX 6: AUDIT CHECKLIST

Date: Audit Reference Number:

Audit by:

Audit Type: Weekly ☐ Random ☐ External ☐

	YES	NO	N/A
Environmental Management:			
Are sign-offs of the CEMP being kept up to date?	☐	☐	☐
Have there been any incidents?	☐	☐	☐
If "yes" to the above, have the incidents been recorded on register; incident report raised and initial incident corrected/acted upon?	☐	☐	☐
Have all staff, contractors and site visitors undertaken Site Environmental Induction training?	☐	☐	☐
Water Quality, Sedimentation and Runoff:			
Are all sedimentation and runoff control measures in place?	☐	☐	☐
Are these control measures in a satisfactory condition?	☐	☐	☐
Are any additional measures required?	☐	☐	☐
Is there silt material that needs to be cleaned out?	☐	☐	☐
Has this been organised or scheduled?	☐	☐	☐
Are all drains clear?	☐	☐	☐
Is there visual evidence that runoff (turbidity, oils/grease) has reached off site?	☐	☐	☐
Soil			
Are trucks / vehicles leaving site with soil on their tyres?	☐	☐	☐
If so, ensure grates or wash down areas are installed & effective.	☐	☐	☐
Air Quality			
Are dusty conditions evident as a result of work at this site or stockpiles?	☐	☐	☐
Is a water cart or other dust suppression means available on site?	☐	☐	☐
Are dust suppression methods being used, as necessary?	☐	☐	☐
Are trucks being covered after loading with dust-creating materials?	☐	☐	☐
Is any plant or equipment emitting excessive exhaust emissions?	☐	☐	☐
Is equipment turned off when not inuse?	☐	☐	☐
If so, is it to be taken out of service or repaired?	☐	☐	☐
Noise			
Are construction operations being restricted to designated working hours?	☐	☐	☐
Are there any adverse noise conditions on site?	☐	☐	☐
Is all plant and equipment being well maintained?	☐	☐	☐
Hazards, Risks and Safety			
Are Emergency Procedures displayed on-site?	☐	☐	☐
Are MSDS sheets available with all hazardous or dangerous goods being used for the construction?	☐	☐	☐
Are the MSDS sheets current?	☐	☐	☐
Are all chemicals, fuels, oil, greases and the like used for the construction equipment processes properly stored in an adequate bunded area(s)?	☐	☐	☐
Are the bunds in good condition?	☐	☐	☐
Is the spill kit fully stocked and readily available for use?	☐	☐	☐
Do the personnel know how to use the spill kit?	☐	☐	☐

	YES	NO	N/A
Waste Disposal and Recycling			
Is the site and surrounding areas free of waste, litter and rubbish?	☐	☐	☐
Has all spoil been placed in the nominated disposal area?	☐	☐	☐
Are concrete slurry and concrete wastes being correctly treated and disposed of?	☐	☐	☐
Is the Waste Register being kept up to date?	☐	☐	☐
Are wastes directed off-site being correctly disposed of?	☐	☐	☐
General			
Have identified nonconformities from previous audits been corrected?	☐	☐	☐
If not, is there action in place to deal with them?	☐	☐	☐

Non-Conformity and Corrective Action:
Nonconformity Detail: Action Required: Action Required By (Date): Person responsible for the action:
Nonconformity Detail: Action Required: Action Required By (Date): Person responsible for the action:
Nonconformity Detail: Action Required: Action Required By (Date): Person responsible for the action:
Some issues may be a potential nonconformity, and can be dealt with as Preventive or Improvement Action

AUDIT COMPLETED BY:

Signed: Date:

APPENDIX 7: REGISTER OF CEMP AUDIT ACTIONS

Date	Reference Number	Action Required?	By Whom?	Status of Action?	Date Action is Complete

APPENDIX 8: TRAFFIC MANAGEMENT PLAN

(provided under separate cover)

APPENDIX 9: EROSION AND SEDIMENT CONTROL PLAN

Erosion and Sediment Control Plan Rev 03

NOTES:

- Plan to be progressively updated as construction work continues

- Site is relatively flat, site runoff to be caught by existing stormwater channel. Pit inlets fitted with sediment traps

- Runoff from adjacent Waterways site to be controlled by Waterways

Drawn by: Alex Massey 13/04/2018
Rev 1 19/06/2018
Rev 2 30/06/2018
Rev 3 26/07/2018

HUNTER RIVER SOUTH ARM CHANNEL

CIV-1101

CIV-1104

CIV-1103

Stormwater Pit Sediment Traps

Stormwater Pit Sediment Traps

Stormwater Pit Sediment Traps

Site grades away from Berth

BERTH ACCESS ROAD

Level 1 Stockpile in future fill area

SUB-SURFACE SHEET PILE ANCHOR WALL INCLUDING TIE RODS BETWEEN BERTH M7 AND THE ANCHOR WALL (UNDER CONSTRUCTION)

Waterways Construction Area

EXISTING CLAY CAPPING SURFACE (TO BE RETAINED)

Drain to be constructed for stormwater detention

EXISTING TWO COAT SEAL SURFACE (TO BE RETAINED)

Runoff from adjacent Waterways site

PROPOSED EXTENSION TO BULK LIQUID PRECINCT LEAD IN ROAD (FUTURE BY OTHERS)

FIRE ACCESS ROAD

PIPE CORRIDOR

EXISTING SUB SURFACE BARRIER WALL

EXISTING BOX CULVERT STORMWATER DRAIN

Waterways Sediment Fence

Clay Stockpile Area

Clay Bund

LV Park up area

Waterways Compound

Daracon Compound

Bund to redirect runoff from cap outside of work area to existing drain

Waterways Runoff bypass to stormwater pit.

Coir logs placed in existing drain

EXISTING FIRE ACCESS ROAD

Level 1 Stockpile Area

Pit Converted to Blind Pit

Pit Inlet Sediment Trap

Drain Lined with GCL liner, revegetated with Topsoil, seed and jute mesh

Bunds in constructed Stormwater drain to retain dirty water

Pit Inlet Sediment Trap

NN6

Temporary Concrete Weir in place in Stormwater Channel - Retaining water from entering box culvert. Release valve shut for stormwater events

Stormwater Detention basin

NOTES

1. FOR GENERAL NOTES REFER DRG. CIV-1004.
2. FOR PAVING/SEALING SETOUT PLANS REFER DRG. CIV-1101 TO CIV-1104.
3. FOR PAVEMENT CONSTRUCTION DETAILS REFER DRG. CIV-1110 AND CIV-1111

LEGEND

- BERTH ACCESS ROAD (TYPE 1) ASPHALTIC CONCRETE PAVEMENT
- NON-TRAFFICABLE AREA (TYPE 2) ASPHALTIC CONCRETE PAVEMENT
- FIRE ACCESS ROAD (TYPE 3) SPRAYED SEAL PAVEMENT
- SPRAYED SEAL PAVEMENT (TYPE 4)
- EXISTING CLAY CAPPING (TO BE RETAINED)
- TOP SOIL (STORM
- EXT

10 0

SCALE 1:1000

Plot Date: 22/2/2018 5:07:33 PM Office: Newcastle Filename: C:\PW_WORK\JOSHUA.TAUFOOU\ANZ_PROD\D0308002\29974-0000-DWG-CIV-1100.DWG

REV	DATE	REVISION DETAILS	APPROVED
0	16.02.18	ISSUED FOR CONSTRUCTION	D.M

SCALE	1:1000
SIZE	A3
DRAWN	M.MCCABE
DESIGNED	N.PENGELLY
CHECKED	D.ANCANS

FOR CONSTRUCTION

APPROVED DATE 16.02.18 D.MARTIN

PROJECT	NEWCASTLE STAGE 3 TERMINAL EXPANSION
TITLE	BERTH CIVIL WORKS GENERAL ARRANGEMENT - PAVEMENT

DRAWING No. 236974 - 0000 - DRG - CIV - 1100 - 0

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