

Environmental Management Strategy

Clyde Terminal

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Register of Amendments					
Date	Page/Form No.	Revision No.	Description of Amendments	Prepared by	Approved by
April 2015		Final Draft V0	Finalised, approved and issued by Viva Energy to DPE for comment	ES	JS
December 2015	Various	V1	Changes to reflect update of EMPs for Construction (i.e. wording and monitoring requirements). Updated organisational chart. Added note on compliance with Heritage Management Plan.	ES	JS
December 2016	Various	V2	Changes to reflect different contractual arrangements for Construction (i.e. contracts with Viva Energy as Principal Contractor, and contracts with Contractor as Principal Contractor)	JS/SL	JS
May 2018	19 - 25	V3	Update to reflect Organisational changes	ES	JS

Date	Revision No.	Distribution
April 2015	V0	Issued to DPE for comment
December 2015	V1	All Viva Energy CTCP personnel
December 2016	V2	DP&E and Viva Energy
May 2018	V3	DP&E and Viva Energy

Contents

1.0 INTRODUCTION	7
1.1 Background – Environmental Approvals	8
1.2 Background – Activities	8
1.3 Site Description	10
1.4 Development Works	11
1.5 Operations	12
1.6 Objectives of the EMS	12
2.0 ENVIRONMENTAL MANAGEMENT	13
2.1 Environmental Management Strategy	13
2.2 Environmental Policy	16
2.3 Construction, Demolition and Operational Hours	16
2.4 Site Access	16
2.5 Approvals and Licensing Requirements	16
3.0 IMPLEMENTATION	19
3.1 Roles and Responsibilities	19
3.2 External Communication	23
3.3 Management of Complaints	24
3.4 Dispute Resolution	24
3.5 Incident and Emergency Management	24
4.0 MONITORING AND REVIEW	25
4.1 Environmental Monitoring	25
4.2 Annual Review	28
4.3 Independent Environmental Audit	28
4.4 Non-compliance and corrective action	29
4.5 EMS Review	29
5.0 REFERENCE DOCUMENTS	30

Appendices

Appendix A Figures

A-1 Site Area, Site Access and Receivers

A-2a Demolition Staging Plan

A-2b Construction Works Area

A-3 Final Site Plan

A-4 Demolition - Sensitive Areas Plan

A-5 Construction – Sensitive Areas Plan

Appendix B Viva Energy Commitment to Health, Safety, Security and Environment

Appendix C References, Standards, Codes and Regulations

Appendix D Environmental Management Plans

D-1 Demolition Work Plan

D-2 Soil and Water Management Plan

D-3 Construction and Demolition Noise and Vibration Management Plan

D-4 Construction and Demolition Air Quality Management Plan

D-5 Traffic Management Plan

D-6 Waste and Resource Recovery Plan

D-7 Biodiversity Management Plan

Abbreviations and Definitions

CEMP	Construction Environmental Management Plan (the EIS refers to this EMS as the CEMP)
Clyde Terminal	Clyde Terminal operating as a finished petroleum products import, storage and distribution terminal
Construction	The carrying out of works including excavation, upgrades to tanks, bunds, drainage and instrumentation, replacement of electrical substations, upgrades to the fire water system and revised pumping and piping works
Contractor(s)	Overall contractor(s) appointed by Viva Energy to undertake Demolition and / or Construction
Council	Parramatta City Council
CTCP	Clyde Terminal Conversion Project
CSU	Commissioning and Start-Up
Demolition	The removal of redundant refinery processing units, tanks and other infrastructure
Development	The development as described in the EIS and RTS, being for the conversion of the existing Clyde Refinery to a finished petroleum products import, storage, product dosing and distribution terminal including demolition of redundant infrastructure
DC	Development Consent SSD 5147 dated 14 January 2015
DP	Deposited Plan
EIS	Environmental Impact Statement
EMM	Environmental Management Manual for Clyde Terminal operations
EMS	Environmental Management Strategy
EPA	Environment Protection Agency
EP&A Act	Environmental Planning and Assessment Act 1979
EPL	Environmental Protection Licence 570
ERP	Emergency Response Plan
GGBF	Green and Golden Bell Frog
HSSE	Health, Safety, Security and Environment
Incident	An incident causing or threatening material harm to the environment, and/or an exceedance of the limits or performance criteria in the DC
ITO	Interim Terminal Operations
ML	Megalitres
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Myosh	Safety Management Software
NOW	NSW Office of Water
NSW	New South Wales
OEH	NSW Office of Environment and Heritage

Operations	The import, storage product dosing and distribution of finished petroleum products
PCC	Parramatta City Council
POEO Act	Protection of the Environment Operations Act 1997
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.
RTS	Response to Submissions Report
SSD	State Significant Development
Secretary	Secretary of the Department of Planning and Environment
Site	The land listed in Table 1-2, and as depicted in Figure 1-1
T	Tonne(s)
Terminal	Clyde Terminal
Vicinity of the Site	Devon Street and Durham Street, Rosehill
WM	Water Management
WMS	Work Method Statement
Works	Demolition and Construction works

1.0 INTRODUCTION

This Environmental Management Strategy (EMS) provides Viva Energy Australia Pty Ltd (Viva Energy) a strategic framework for the environmental management of the Clyde Terminal development (the Development) as required by condition D1 of the Development Consent (DC).

Table 1-1 refers to specific sections of this document that address the requirements of condition D1.

Condition D1 requirement	EMS Section
The Applicant shall prepare and implement an Environmental Management Strategy for the Development to the satisfaction of the Secretary. This strategy must:	
(a) Be submitted to the Secretary for approval within 3 months of the date of this consent;	
(b) Provide the strategic framework for environmental management of the Development;	Section 2
(c) Identify the statutory approvals that apply to the Development;	Section 2.5
(d) Describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the Development;	Section 3.1
(e) describe the procedures that would be implemented to:	
<ul style="list-style-type: none"> keep the local community and relevant agencies informed about the construction, demolition and operation and environmental performance of the Development; 	Section 3.2
<ul style="list-style-type: none"> receive, handle, respond to, and record complaints; 	Section 3.3
<ul style="list-style-type: none"> resolve any disputes that may arise during the course of the development; 	Section 3.4
<ul style="list-style-type: none"> respond to any non-compliance; 	Section 4.4
<ul style="list-style-type: none"> respond to emergencies; and 	Section 3.5
(f) include:	
<ul style="list-style-type: none"> copies of any strategies, plans and programs approved under the conditions of this consent; and 	Appendix D
<ul style="list-style-type: none"> a clear plan depicting all the monitoring required to be carried out under the conditions of this consent 	Environmental Management Manual - EMM (Separate document)

Viva Energy will manage the environmental aspects of the Development and will ensure that controls are properly implemented and regularly monitored and audited to assess their effectiveness. Changes to the controls will be instigated if they are not achieving their objectives.

This EMS is consistent with:

- Development Consent SSD 5147 dated 14 January 2015 (DC);
- Clyde Terminal Conversion Project Environmental Impact Statement (Aecom, 2013);
- Clyde Terminal Conversion Project Response to Submissions (Shell, 2014); and
- Environmental Management Systems – Requirements and Guidance for Use (AS/14001:2004);

- *Guideline for the Preparation of Environmental Management Plans* (NSW Department of Infrastructure, Planning and Natural Resources, 2004).

1.1 Background – Environmental Approvals

Following the closure of the Clyde Refinery at the Clyde Terminal in late 2012, Shell Company of Australia (now Viva Energy) proposed to undertake works at the terminal.

The main objectives of the works are:

- To improve the efficiency of the Clyde Terminal by upgrading existing facilities and structures; and
- To improve environmental and safety performance of the Clyde Terminal while continuing to operate as a viable and efficient finished petroleum product receipt storage and distribution terminal.

An Environmental Impact Statement (EIS), *Clyde Terminal Conversion Project* (Aecom, 2013) and Response to Submissions Report (Shell 2014), were prepared under Part 4 of *Environmental Planning and Assessment Act 1979* (EP&A Act) to support the State Significant Development application for planning approval. The EIS identified and described the environmental impacts associated with the proposed development as well as a suite of mitigation measures to be implemented for reducing and managing these impacts. On 14 January 2015, the Planning Assessment Commission of NSW (as delegate of the Minister for Planning) approved the development application. For Development Consent (DC) refer to <https://majorprojects.affinitylive.com/public/0a0961c16ac6514883e191e4e827ffdc/Signed%20Development%20Consent.pdf>

1.2 Background – Activities

The Development includes a number of activities that are likely to happen concurrently as shown in **Table 1-1**. Refer **Appendix A** for **Figure A-1** showing the overall site area, site access and sensitive receivers; **Figure A-2a** for the Demolition Staging Plan; and, **Figure A-2b** for the Construction Works Plan.

Table 1-1 Development Activities

Activity	Definition in the DC	Description	Covered in this EMS
Operation	<i>The import, storage, product dosing and distribution of finished petroleum products</i>	The Clyde Terminal currently receives finished petroleum products from the Gore Bay pipeline and the Sydney Metropolitan pipeline. After storage at Clyde Terminal, these products are distributed by pipeline from the Clyde Terminal to the adjacent Parramatta Terminal road gantry, to Sydney Airport, to Silverwater terminal and to Newcastle via existing infrastructure. During the works, the current terminal operations will continue and will be subject to the conditions of the DC and the existing Environment Protection Licence (EPL) ¹	Yes, with details on EMM
Demolition	<i>The removal of redundant refinery processing units, tanks and other infrastructure</i>	Undertaken by Liberty Industrial under contract to Viva Energy	Yes
Construction	<i>The carrying out of works including excavation, upgrades to tanks, bunds, drainage and instrumentation, replacement of electrical substations, upgrades to the fire water system and revised pumping and piping works</i>	Undertaken by various specialist construction contractors managed by Viva Energy	Yes

As shown in **Figure A-2a**, demolition works will occur in area 1 and through 22. Demolition works will be undertaken in two phases. Phase 1 will involve the decommissioned assets marked in blue and Phase 2 will involve two tankfarms that are currently operational, marked in yellow.

Figure A-2b depicts the area where construction works will be executed.

¹ Refer to <http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=34184&SYSUID=1&LICID=570> for Environmental Protection License 570 (EPL)

1.3 Site Description

The site is within Clyde Terminal, situated at 9 Devon Street, Rosehill, New South Wales, in the Parramatta Local Government Area. The Terminal covers 86 hectares (ha) and is within the Camellia Industrial Estate and lies at the confluence of Parramatta River and Duck River. **Figure 1-1** illustrates the site boundary (in red) that is covered by the DC. All Development-related works occur within the site boundary.

Table 1-2 provides the relevant Lot and Deposited Plan (DP) numbers and associated ownership information for the site.

Table 1-2 Lot and DP numbers for the Development

Lot and DP details	Ownership information
Lot 1, DP 109739	Viva Energy Australia Ltd
Lot 1, DP 383675	Viva Energy Australia Ltd
Lot 101, DP 809340	Viva Energy Australia Ltd
Lot 2, DP 224288	Viva Energy Australia Ltd

The area surrounding the site is comprised of industrial properties within the Camellia Industrial Estate. Business activities within close proximity to the site include recycling services, building products, waste services, gas supplies and product transport. Several companies including Autonexus, SUEZ, LyondellBasell, and Jemena, currently lease parcels of land owned by Viva Energy within the vicinity of the site. **Figure A-4** and **A-5** in **Appendix A** show the environmentally sensitive areas of the Site and surrounds.

Figure 1-1 The Site Area



1.4 Development Works

The key components of the Development works are:

- **Demolition:** The existing Clyde refinery processing units and other redundant manufacturing infrastructure within the Site Area, such as storage tanks used for manufacturing/refinery operations will be demolished. This will reduce the site storage capacity from 638 ML of refinery feed, rundown and blend storage (including finished product storage) to 264 ML of finished product storage only; and
- **Construction:** Conversion of existing assets to more efficiently receive, store and distribute solely imported finished petroleum products. The works include electrical infrastructure upgrades, works to gasoline system and relocation of Diesel, JetA1 and Firewater systems out of the western area of the site. Works to improve the remnant wetlands to provide better habitat conditions to the Green and Golden Bell frog (GGBF) will also be undertaken.

Demolition

Demolition broadly covers the western section of the Clyde Terminal containing the redundant crude oil processing units, crude oil intermediate product storage tanks, finished petroleum product tanks and associated infrastructure. Refer to **Figure A-2** in **Appendix A** for the Development staging.

Construction

Construction activities will generally upgrade the eastern section of the Clyde Terminal to contain the finished petroleum product tanks required for continuing Clyde Terminal operations. This area currently contains crude oil tanks, intermediate product tanks and finished petroleum product tanks formerly used in the refining operations at the site. Some of these Crude Oil and intermediate product tanks will be converted for use in storing finished petroleum products, replacing finished petroleum product tanks currently located in the western section of the site to suit the requirements of the converted Clyde Terminal. Refer to **Figure A-3** in **Appendix A** for the final Site plan post Construction and Demolition.

The construction works include:

- Geodesic domes will be installed over Jet fuel storage tanks;
- Repair a number of tank bunds and installation of intermediate bund walls;
- Modifications to inlet manifold systems
- Refurbishment of existing tanks to accommodate change of service from manufacturing feed stock to finished product (determination of suitability for refurbishment will occur subsequent to decommissioning, cleaning and inspection)
- Upgrades to terminal instrumentation and terminal control systems to enable remote and automated control;
- Upgrades to the electrical supply and distribution, control and safeguarding systems, including three new substations and works to existing substations;
- Installation of equipment to provide improved product quality segregation;
- Fixed fire system works, including:
 - Installation of a foam delivery reticulation system to nominated tankfarms
 - Installation of a new fire and gas system Remote operation of foam and fire water to tanks and compounds as required;
 - Installation of two new firewater tanks, installation and relocation of fire water pumps;
 - Installation of a new town mains water supply from street mains ; and installation of rim seal fire detection on some tanks
- Revised pumping and piping works including:
 - New distribution pipework to and from operational tanks, including the reuse of existing piping wherever possible;

- Installation of new / relocated pumps and valves wherever existing equipment is identified as unsuitable for the required service;
- Installation of new Jet A1 pipeline pigging facilities; and new piping connection
- Associated works to increase the efficiency and effectiveness of the terminal and to facilitate safe and efficient operations, such as lighting, safety shutdown systems, control room facilities and amenity upgrades.

The Development will also involve minimal excavation activities as follows:

- Grading works and installation of intermediate bund walls within Tankfarms B, B1, B2, E1, E2 and K; and
- Pipe support and equipment foundations.

1.5 Operations

Following the cessation of refining activities in late 2012 and the subsequent decommissioning of the associated processing plants, the Interim Terminal Operation (ITO) was established in March 2013. The ITO uses existing refinery assets to operate as an import terminal facility for the receipt, storage and distribution of finished petroleum products. The ITO will be in place until the completion of construction works relating to the terminal conversion.

The following finished petroleum products are currently stored at the Clyde Terminal:

- Gasoline (Unleaded 91, 95 and 98);
- Diesel (AGO); and,
- Jet fuel

The Clyde Terminal is under the management of the terminal operations staff who oversee the receipt, storage and distribution of fuel products as well as the maintenance and integrity inspections of the assets.

1.6 Objectives of the EMS

The objectives of this EMS are as follows:

- To provide a clear framework for the environmental management of the Development, outlining the processes to be implemented under which all demolition and construction employees and contractors are expected to undertake works in accordance with the requirements and conditions of the DC and the EPL;
- To address and manage environmental risks and issues that may arise during the life of the Development;
- To ensure the compliance with relevant legislative and other requirements including those contained in the DC and any commitments identified in the EIS and RTS;
- To communicate the commitment to Development-specific environmental compliance and environmental management in accordance with legislation and other requirements to all employees;
- To provide a reference document for requirements relating to environmental monitoring, data collection, incident and complaint handling, reporting and auditing.

Viva Energy is responsible for the overarching environmental management of the Development, and it is expected that all employees and contractors are responsible for ensuring the objectives and targets of the associated management plans are met and environmental compliance is achieved.

2.0 ENVIRONMENTAL MANAGEMENT

2.1 Environmental Management Strategy

DC condition D1 requires Viva Energy to have an Environmental Management Strategy for the Development. Conditions relating to the DC and the EPL can be applicable to the Works and/or the Operation. The management plans that are appended to this EMS detail the requirements for the Works whilst a separate Environmental Management Manual (EMM) provides the detail of the applicable requirements to Operations.

The Viva Energy Environmental Management Strategy is depicted in **Figure 2-1**. The strategy ensures that the management plans provide the overall framework for environmental management, and set the requirements for the execution of the Works. The project contracting strategy accommodates two types of contractual arrangements with regard to Principal Contractor accountabilities under the WHS Legislation. These are 1) Viva Energy as Principal Contractor and 2) Contractor appointed as Principal Contractor.

Table 2-1 lists the management plans, their associated requirements and their location in this EMS. The Flood Emergency Response Plan is part of Viva Energy's Emergency Response Plan.

Figure 2-1 – Environmental Management Framework for the Development

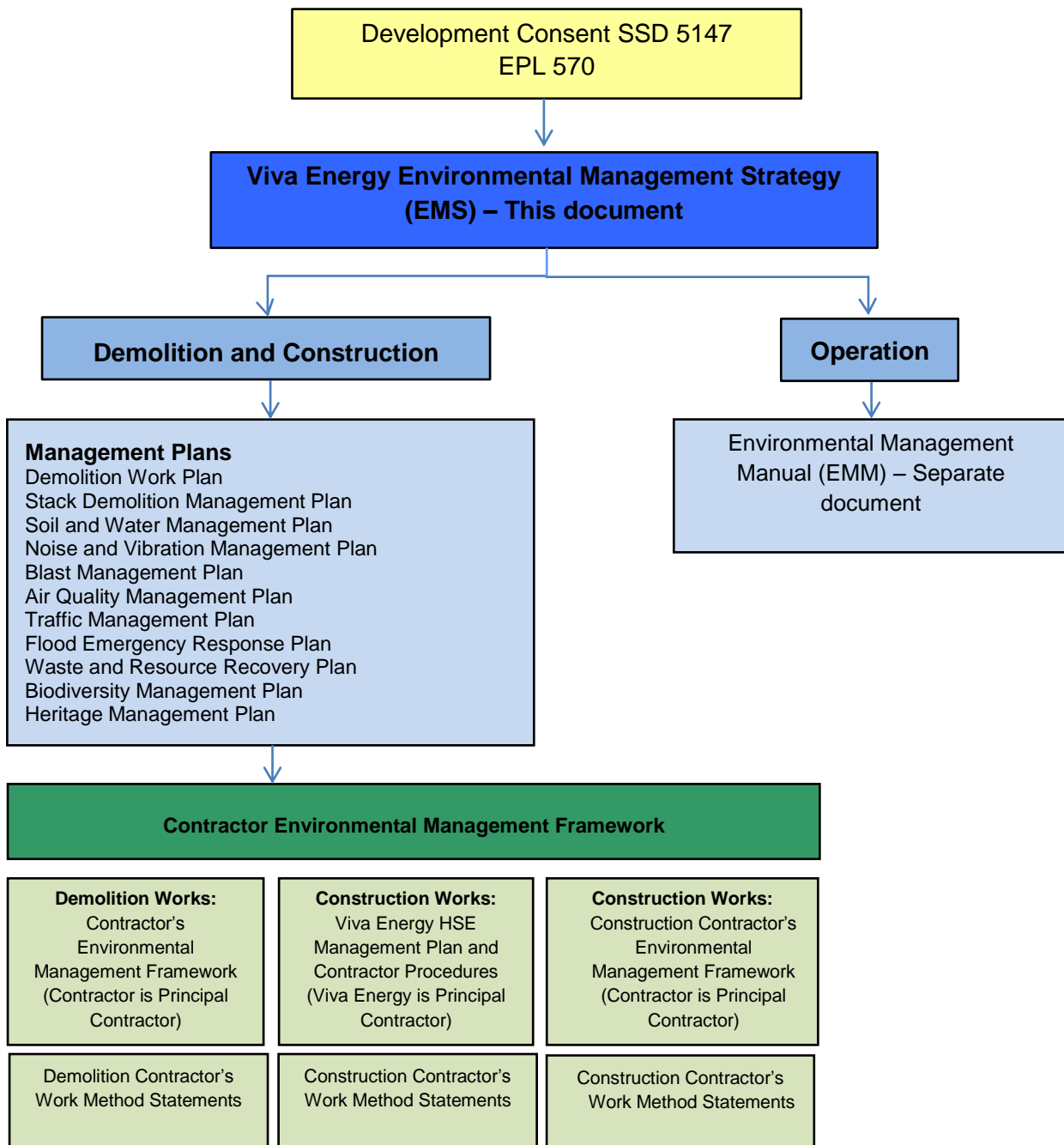


Table 2-1 Management Plans

Plan	Location	To meet the requirements of:	
		DC reference	EIS Mitigation Measure reference
Demolition Management Plan	EMS Appendix D-1	C14 – Demolition Management Plan	No requirements in the EIS
Stack Demolition Management Plan	Separate Document	C15 – Stack Demolition Management Plan	No requirements in the EIS
Soil and Water Management Plan	EMS Appendix D-2	C17 – Contamination Management Plan C20 – Acid Sulphate Soils Management Plan C44 & C45 – Erosion and Sediment Control Plan C50 – Water Management Plan	Under ‘Surface Water, Industrial Water and Flooding’: “A detailed Erosion Sediment Control Plan is to be compiled and included in the CEMP.” “ASS would be managed according to an ASS Management Plan”
Noise and Vibration Management Plan	EMS Appendix D-3	C25 – Construction and Demolition Noise Management Plan, C27 – Blast Management Plan	Under ‘Noise and Vibration’: “Contractors would demonstrate best practicable means and include noise mitigation measures in the CEMP plan.”
Air Quality Management Plan	EMS Appendix D-4	C31 – Construction and Demolition Air Quality Management Plan	Under ‘Air Quality and Odour’: “Potential fugitive dust and odour impacts resulting from demolition and construction works would be managed by the CEMP.”
Traffic Management Plan	EMS Appendix D-5	C36 – Traffic Management Plan	Under ‘Transport’: “A Construction Traffic Management Plan be prepared prior to the works commencing.”
Flood Emergency Response Plan	ERP – ERG29	C42 – Flood Emergency Response Plan	No requirements in the EIS
Waste and Resource Recovery Plan	Appendix D-6	C57 – Waste Management Plan	Under ‘Waste Management’: “The existing Waste Management Plan 2013 would be updated for demolition and construction works, and this would be incorporated in the CEMP.”
Biodiversity Management Plan	Appendix D-7	C58 – Biodiversity Management Plan	Under ‘Ecology’: “A Green and Golden Bell Frog specific mitigation strategy is to be prepared and included as a sub-plan to the CEMP.”

A Heritage Management Plan was required under C60. However, a Historic Archaeological Assessment (HAA) developed by the Australian Museum and submitted to DPE concluded that there are no archaeological resources on Site with research potential. DPE confirmed compliance with C60 in July 2015.

2.2 Environmental Policy

Viva Energy's Commitment to Health, Safety, Security and Environment is provided in **Appendix B**. Contractors are encouraged to also have their own environmental policy which must be consistent with Viva Energy's Commitment to Health, Safety, Security and Environment.

2.3 Construction, Demolition and Operational Hours

Hours of work will be in accordance with DC condition C22 which is described on **Table 2-3**.

Table 2-3 Hours of Work

Activity	Day	Time
Construction and Demolition	Monday – Friday Saturday	7:00am to 6:00pm 8:00am to 5:00pm
Operation	Monday – Sunday	24 hours

Construction and demolition outside of the hours identified in the DC condition C22 may be undertaken in the following circumstances (defined in condition C23):

- (a) works that are inaudible at the nearest sensitive receivers;
- (b) works that are consistent with Viva's existing maintenance procedures and are in accordance with the EPL;
- (c) works agreed to in writing by the EPA or the Secretary;
- (d) for the delivery of materials required outside these hours by the NSW Police Force or other authorities for safety reasons; or
- (e) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.

2.4 Site Access

Site access for construction will be via Gate 4 off Durham Street, Rosehill. Site access for Demolition will be via Gate 6 off Colquhoun Street.

Road access to and within the Clyde Terminal is well-established. Refer to **Figure 1-1**.

2.5 Approvals and Licensing Requirements

Environmental management plans, strategies and programs

In accordance with DC condition D1(a) the EMS will be provided to the Department of Planning and Environment for approval. The environmental management plans will be provided in the following timeframes:

- Demolition and Construction Management Plans: Prior to the commencement of the Works; and
- EMM: Within six months of the date of DC

Table 2-4 outlines the other stakeholders that will be consulted / informed regarding the management plans. Copies of the management plans will be provided to the agencies referenced in **Table 2-4**. The agencies will be provided with a two week review period within which to provide comments on the plans. No comment will be taken as approval.

Table 2-4 Management Plan Consultation / Information Requirements

Management Plan	Government Agency							DC cond.
	EPA	Work Cover	PCC	RMS	NSW Health	NOW	OE H	
Demolition Management Plan	C	C	C	C				C14
Stack Demolition Management Plan	C	C	C	C				C15
Soil and Water Management Plan (including Contamination Management Plan and Water Management Plan)	I					I		C17, C20, 44, C45 and C50
Noise and Vibration Management Plan (including Blast Management Plan)	C							C25 and C27
Operational Air Quality Monitoring Program	C							C30
Air Quality Management Plan	I							C31
Traffic Management Plan			C	C				C36
Flood Emergency Response Plan				C				C42
Waste and Resource Recovery Management Plan	I							C57
Biodiversity Management Plan			C				C	C58

C: Consultation requirement

I: Information requirement (i.e. DC states 'provided to' rather than in 'consultation with')

Other approvals required for Demolition and Construction are discussed in **Table 2-5**.

Table 2-5 Other approvals

Approval	Comment from EIS
<p>A water use approval (section 89), a water management work approval (section 90) or an activity approval (other than an aquifer interference approval) (section 91) of the Water Management Act 2000.</p>	<p>The Site Area falls under the <i>Water Sharing Plan for the Greater Metropolitan Region Groundwater Sources 2011</i> (WSP 2011).</p> <p>Therefore, the provisions of the Water Management (WM) Act apply to the Site Area, and the provisions of the <i>Water Act 1912</i> do not apply to the Site Area.</p> <p>Section 91A of the WM Act provides that it is an offence to use water from a water source governed by the WM Act without holding a relevant water use approval. Viva Energy has commissioned geotechnical investigations of the areas that are likely to be excavated as part of the Development. These investigations found that the Development is highly unlikely to involve the interception of groundwater at the site, although any stormwater entering excavated areas would still require removal. In any event, the EP&A Act does not provide any exemptions for SSD applications in relation to aquifer interference approvals. Notwithstanding, NOW has advised that the need for an aquifer interference has not commenced at this time. In the highly unlikely event that the Development does intercept groundwater, and depending on the timing of commencement of the need for an aquifer interference approval, Viva Energy would liaise with NOW regarding the issue of an appropriate approval(s) to allow dewatering to occur. This is further discussed in Section 17.2 of the EIS.</p>
<p>Environment Protection Licence under Chapter 3 of the Protection of the Environment Operations Act 1997 (POEO Act) (for any of the purposes referred to in section 43)</p>	<p>Clyde Terminal currently operates under Environment Protection Licence (EPL) No. 570.</p> <p>The EPL discharge levels must not be affected by Demolition and Construction Works on the Site. If it is determined at any stage that the Works will affect discharge levels, an amendment to the Works' process (es) will be undertaken and/or Viva Energy will seek a modification to the EPL.</p>

A summary of key environmental legislation is provided in Appendix C. These legislative requirements have also been incorporated into the management plans detailed in **Table2-1**.

Personnel are required to comply with these statutory obligations and requirements. Roles and responsibilities are outlined in Section 3.1 below.

3.0 IMPLEMENTATION

3.1 Roles and Responsibilities

Viva Energy is responsible for the implementation of environmental management plans and mitigation measures contained in this EMS. All employees and contractors will meet the requirements of the DC, EPL and management plans.

Key personnel and the general responsibilities of key personnel in relation to environmental management and compliance for the Development are described in **Table 3-1**. An organisation chart is provided in **Figure 3-1**.

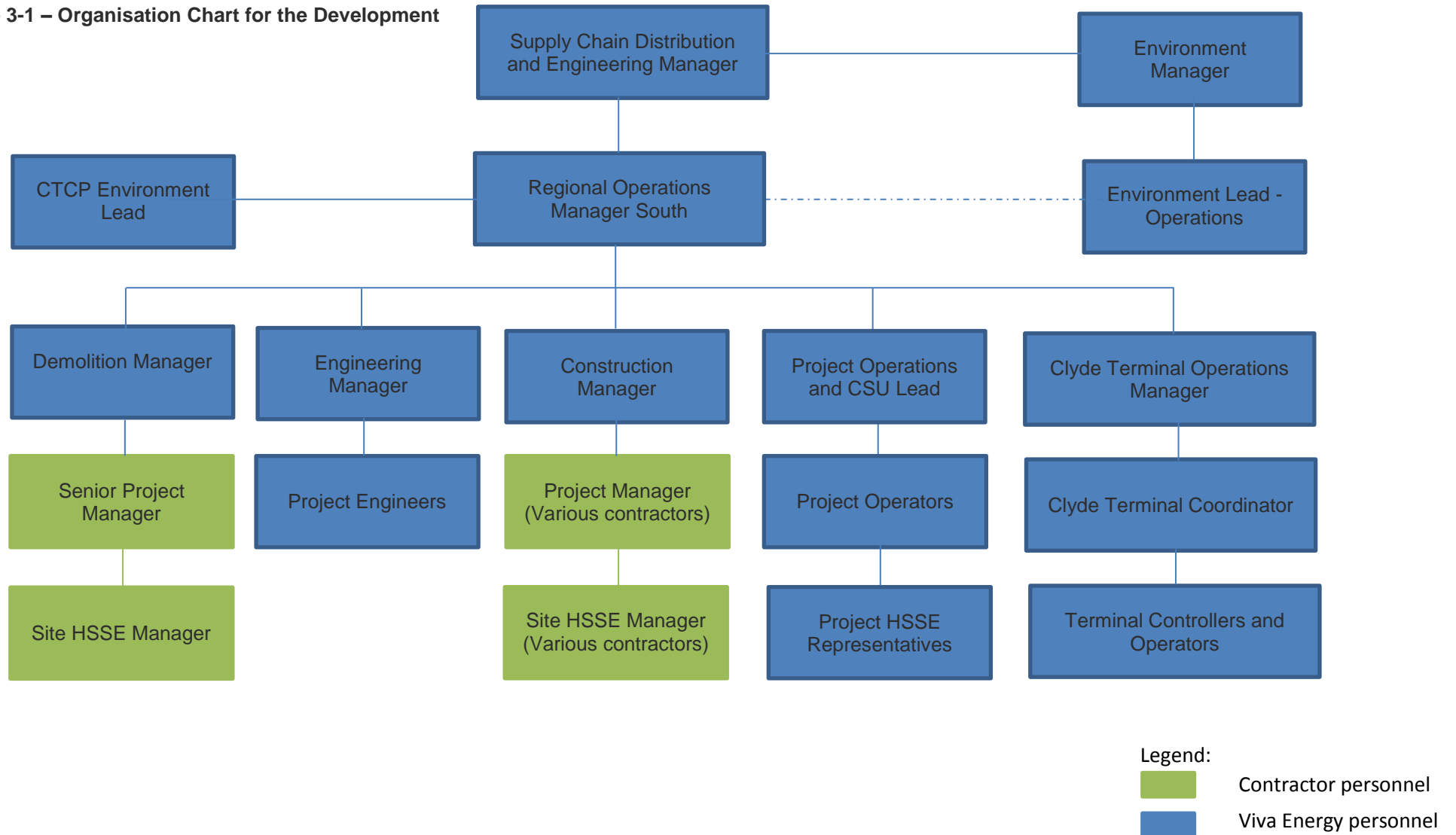
Table 3-1 Personnel and Responsibilities

Role	Responsibility
Supply Chain Distribution & Engineering Manager	<ul style="list-style-type: none"> Overall accountability for the environmental management of the Development
Regional Operations Manager South	<ul style="list-style-type: none"> Implementation of Viva Energy's Commitment to Health, Security, Safety and Environmental with respect to the Development. Overall responsibility for development, implementation, maintenance and compliance with this EMS. Overall responsibility and allocation of resources to Annual Reviews and Independent Environmental Audit. Ensure contracts contain relevant environmental provisions. Review and sign off on this EMS and subsequent revisions.
Clyde Terminal Operations Manager	<ul style="list-style-type: none"> Implementation of the Viva Energy Commitment to Health, Security, Safety and Environmental with respect to the Operations. Overall responsibility for development, implementation, maintenance and compliance with the EMM. Ensure contracts contain relevant environmental provisions. Review and sign off on the EMM and subsequent revisions. Overall responsibility for environmental incident reporting to relevant authorities.
Clyde Terminal Coordinator	<ul style="list-style-type: none"> Accountable for Operations related environmental matters on a day to day basis. Ensure the requirements of the EMM are implemented. Responding to Operations related complaints arising from complaints line.
Project Demolition Manager	<ul style="list-style-type: none"> Accountable for demolition related environmental matters within the scope of the demolition work packages. Ensure the requirements of this EMS are implemented in relation to the demolition work packages. Responding to demolition related complaints (including those arising from complaints line).
Project Engineering Manager	<ul style="list-style-type: none"> Accountable for design related environmental matters within the scope of the design work packages. Ensure the requirements of this EMS and management plans are implemented in relation to the design work packages.
Project Construction Manager	<ul style="list-style-type: none"> Accountable for construction related environmental matters within the scope of the construction work packages.

Role	Responsibility
	<ul style="list-style-type: none"> • Ensure the requirements of this EMS and management plans are implemented in relation to the construction work packages. • Responding to construction related complaints (including those arising from complaints line).
Project Operations and Commissioning and Start-Up (CSU) Lead	<ul style="list-style-type: none"> • Accountable for CSU related environmental matters within the scope of the CSU work packages. • Ensure the requirements of this EMS and management plans are implemented in relation to the CSU work packages. • Responding to CSU related complaints (including those arising from complaints line).
Project Environment Lead	<ul style="list-style-type: none"> • Provision of advice in relation to the environmental performance of the Works. • Audit of the implementation of this EMS and management plans. • Approve or reject “minor amendments” to the EMS and management plans. Consult with the Director General where uncertain as to whether an amendment to the EMS or management plans constitutes a “minor amendment”. • Require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts and failing the effectiveness of such steps, direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur. • Be consulted in responding to the community concerning the environmental performance of the Works where the resolution of points of conflict between Viva Energy and the community is required. • Regularly liaise with the Demolition, Engineering and Construction Managers in order to ensure environmental compliance.
Environment Lead - Operations	<ul style="list-style-type: none"> • Provision of advice in relation to the environmental performance of the Operations. • Audit of the implementation of the EMM. • Approve or reject “minor amendments” to the EMM. Consult with the Director General where uncertain as to whether an amendment to the EMM constitutes a “minor amendment”. • Require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts and failing the effectiveness of such steps, direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur. • Be consulted in responding to the community concerning the environmental performance of the Operations where the resolution of points of conflict between Viva Energy and the community is required. • Regularly liaise with the Operations Manager in order to ensure environmental compliance.
Community Engagement Officer	<ul style="list-style-type: none"> • Regularly liaise with the CTCP Manager and the Clyde Terminal Manager to ensure that the local community is kept informed about the construction, demolition and operation and environmental performance of the Development.
Construction Contractor - Project Manager (Saunders)	<p>For construction contracts executed with Viva Energy acting as Principal Contractor;</p> <ul style="list-style-type: none"> • Ensure compliance with the requirements of the DC, EPL and this EMP • Overall responsibility for the development and implementation of the Contractor's Construction Environmental Management Plan. • Reporting of all environmental incidents as they occur.

Role	Responsibility
Construction Contractor - Project Managers (Various)	<p>For construction contracts executed with Viva Energy acting as Principal Contractor;</p> <ul style="list-style-type: none"> • Overall responsibility for the development and implementation of the Contractor's own specific HSSE Management Plan. • Ensure compliance with the requirements of the CTCP HSSE Plan. • Maintaining a schedule of activities for the purpose of investigating complaints should they arise. • Regularly liaise with the Project Construction Manager to ensure environmental compliance.
All Personnel (Viva Energy and Contractors)	<ul style="list-style-type: none"> • Comply with the requirements of the DC, EPL and Management Plans relevant to their role. • Report all environmental incidents as they occur. • Attend HSSE inductions or any other training as required.

Figure 3-1 – Organisation Chart for the Development



3.2 External Communication

External communication methods include:

- Use of the telephone complaints line;
- The Clyde Terminal website (<http://www.vivaenergy.com.au/operations/clyde>);
- Community leaflets/letters;
- General Community Notice in Parramatta Advertiser;
- Community Information sessions, as required; and,
- Meetings and correspondence with interested parties including the Local Council and EPA

Prior to the commencement of works (where required by DC) and during the works, the following information may be included in the communication, as required and where relevant:

- key details of when the relevant work activities are planned to commence;
- the stages of works planned;
- anticipated traffic, noise, and/or other potential affect to amenity;
- exclusion zones or road closures (where required);
- days and hours of work;
- the nature of the work to be carried out;
- the method of the work to be carried out (where relevant);
- who to contact (phone, postal address, e-mail address to make a complaint, provide feedback or seek information.

The frequency of information will be based on the requirements of the DC and EPL; and the schedule of planned works.

3.3 Management of Complaints

Viva Energy currently manages community complaints in accordance with the requirements of the EPL No. 570 (Condition M5), which include:

- Reporting complaints in the Annual Return;
- Keeping a legible record of all complaints made to Viva Energy and its contractors, including:
 - The date and time of the complaint;
 - The method by which the complaint was made;
 - Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - The nature of the complaint.
 - The action taken by Viva Energy in relation to the complaint, including any follow-up contact with the complainant; and,
 - If no action was taken by Viva Energy, the reasons why no action was taken.
- The complaints record must be produced to any authorised officer of the EPA who asks to see it.
- The complaints record must be kept for at least four years after the complaint was made.
- Viva Energy must operate, during its operating hours, a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- Viva Energy must notify the public of the complaints line telephone number and its purpose so that the impacted communities are informed of the manner in which to make a complaint.

Viva Energy operates its 24-hour hotline telephone number 02 9897 8096 to receive feedback and complaints associated with the Development. The Terminal Controllers will receive and log complaints and communicate to the Terminal Coordinator; the Terminal Coordinator will liaise with the Demolition or Construction Manager for complaints related to the works. Responses to complaints, where reasonably possible, are made within 48 hours of receiving the complaint.

In addition to the 24-hour hotline telephone number, a postal address and an email address to receive general enquiries associated with the works are as follows:

Email: On-line feedback form on www.vivaenergy.com.au/terminals---locations/clyde/community

Postal: External Communications PO BOX 872 K, Melbourne 3001

The Community Engagement Officer monitors the Email and Postal feedback methods and liaises with the Regional Operations Manager South if action is required.

3.4 Dispute Resolution

In accordance with DC conditions B18 and D1(e), in the event that a dispute arises between Viva Energy and Council or a public authority other than the Department of Planning and Environment, in relation to a specification or requirement applicable under this consent, the matter must be referred by either party to the Secretary Department of Planning and Environment.

If not resolved, the matter must be referred by either party to the Minister for Planning, whose determination of the dispute shall be final and binding to all parties. For the purpose of this condition, 'public authority' has the same meaning as provided under Section 4 of the EP&A Act.

3.5 Incident and Emergency Management

All personnel (Viva Energy and Contractors) have the responsibility to report all environmental incidents as they occur.

A comprehensive Emergency Response Plan is currently implemented at the Clyde Terminal. Key personnel are trained to support the implementation of the system. Regular training exercises are carried out by Viva Energy in conjunction with relevant emergency response agencies.

- For incidents **within Viva Energy controlled areas**: Viva Energy will continue to implement the existing incident management procedures, including response to the incident, and subsequent reporting and investigation of incidents. Obligations for incident reporting fall under: the DC, EPL 570 and the POEO Act. The responsibilities for incident reporting lie with the Clyde Terminal Manager and are explained in detail in the EMM.
- For incidents **within Contractor controlled areas**: Contractors may be required to implement their own Emergency Management Plan for their areas of control depending on: number of people involved in the activities and nature of the risks to be managed. This will be communicated to the Contractors during the contract tendering process.

All personnel on site at the Terminal (employees and contractors) will be immediately informed in the event of a site emergency that can include a pollution incident, via the emergency alarm, the public broadcast system and/or via electronic communication.

As the Site is located in proximity to the community and businesses, it is expected that the NSW Emergency Services will allocate an Incident Controller who will co-ordinate any necessary advice to the local community.

4.0 MONITORING AND REVIEW

4.1 Environmental Monitoring

A summary of the monitoring related to the Works is provided in **Table 4-1** and the monitoring related to the Operations is detailed on the EMM.

The summary in Table 4-1 has been extracted from the management plans included in **Appendix D**. Further detail is provided in the plans.

Table 4-1 Overview of Environmental Monitoring

Issue	Monitoring Description	Responsibility	Frequency
Sediment laden water	Visual observations to ensure sediment laden water is managed properly and not discharged off-site.	Viva Energy Clyde Terminal Operations and Project Managers, Liberty Industrial Project Manager, Construction Project Managers, Saunders Project Manager	Ongoing
Pollutants in water for discharge	Monitoring requirements will be fulfilled as required in EPL 570	Viva Energy Clyde Terminal Operations Manager,	As required
Testing of excavated soil	Soils excavated will be tested as detailed in the Soil and Water Management Plan.	Viva Energy Clyde Terminal Project Manager, Saunders Project Manager (as applicable to area of control)	As required
Testing of groundwater and surface water	In accordance with requirements of EPL	Viva Energy Clyde Terminal Operations Manager	As required
Complaints	Complaints register maintained in accordance with Section 3.3.	Viva Energy Clyde Terminal Operations and Manager and Liberty Industrial Project Manager.	Ongoing, as required
Noise monitoring following complaint	Noise monitoring will be undertaken at the sensitive receivers identified in the EIS if a noise complaint is received.	Viva Energy Clyde Terminal Operations Manager, Liberty Industrial Project Manager	Upon receipt of a noise complaint
Noise monitoring for Out of Hours works – if potentially audible at sensitive receivers	Boundary noise monitoring will be undertaken should construction or demolition works be required to be undertaken outside the allowed hours of work.	Viva Energy Clyde Terminal Construction Manager,	As required
Dust	Visual, no record required. May be noted in toolbox talks or daily log.	Liberty Industrial Project Manager, Construction Project Managers, Saunders Project Manager	At all times

Issue	Monitoring Description	Responsibility	Frequency
Demolition and construction waste	Waste tracking system will be implemented in accordance with NSW EPA requirements	Viva Energy Clyde Terminal Operations Managers Liberty Industrial Project Manager Saunders Project Manager (as applicable to area of control)	At all times
Demolition and construction waste	Waste tracking system will be audited quarterly to confirm system is being implemented in accordance with NSW EPA requirements	Viva Energy Clyde Terminal Construction Manager	Quarterly
Asbestos register	Maintain an asbestos register for all asbestos waste generated during demolition and construction.	Liberty Industrial Project Manager	At all times
GGBF	In accordance with the <i>Plan of Management GGBF Clyde</i> (White, October 2013) or updated approved version.	Viva Energy Clyde Terminal Construction Manager	As required by <i>Plan of Management GGBF Clyde</i> (White, October 2013) or updated approved version.

4.2 Annual Review

In accordance with DC condition D4, Viva Energy will review the environmental performance of the Development.

The review will:

- be conducted by the end of July each year, or other timing as may be agreed by the Secretary, the Applicant shall to the satisfaction of the Secretary of the Department of Planning and Environment;
- be undertaken to the satisfaction of the Secretary of the Department of Planning and Environment;
- describe the construction and demolition activities that were carried out in the previous calendar year, and the construction and demolition activities proposed to be carried out over the coming calendar year;
- include a comprehensive review of the monitoring results and complaints records of the Development over the previous calendar year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performance measures/criteria;
 - the monitoring results of previous years; and
 - the relevant predictions in the EIS;
- identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- identify any trends in the monitoring data over the life of the Development;
- identify any discrepancies between the predicted and actual impacts of the Development, and analyse the potential cause of any significant discrepancies; and
- describe what measures will be implemented over the current calendar year to improve the environmental performance of the Development.

4.3 Independent Environmental Audit

In accordance with DC condition D7, Viva Energy will commission and pay the full cost of an Independent Environmental Audit of the Development.

This independent Environmental Audit will:

- be conducted within a year of the date of the Development Consent, and every 3 years thereafter,
- be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Secretary;
- include consultation with the relevant agencies;
- assess the environmental performance of the Development and whether it is complying with the relevant requirements in this consent and any relevant EPL (including any assessment, plan or program required under these approvals);
- review the adequacy of any approved strategy, plan or program required under these approvals; and
- recommend measures or actions to improve the environmental performance of the development, and/or any assessment, plan or program required under these approvals.

Within 3 months of commissioning this audit, or as otherwise agreed by the Secretary of the Department of Planning and Environment, a copy of the audit report will be submitted to the Secretary, together with its response to any recommendations contained in the audit report and a program for implementation.

4.4 Non-compliance and corrective action

Non-compliance with the requirements of the DC, EPL or Management Plans may be identified by:

- monitoring or complaints;
- Viva Energy in the Annual Review (Section 4.2 / DC condition D4);
- Independent Environmental Audit (Section 4.3 / DC condition D7); and/or
- Other external audit by government agency.

Where non-compliance is detected or monitoring results are outside of the expected range:

- the results will be analysed by the Project Manager (or delegate) in more detail to determine possible causes for non-compliance;
- a site inspection will be undertaken by the Project Manager (or delegate);
- relevant personnel will be contacted and advised of the problem;
- an agreed action will be identified; or
- action will be implemented to rectify the problem.

4.5 EMS Review

This EMS shall be formally reviewed by the Viva Energy Project Manager as part of the Annual Review described in **Section 4.2** conducted in accordance with DC condition D4 or when any of the following occur:

- the scope of works significantly changes;
- the Works program significantly changes; or
- opportunities for improvement, or deficiencies in the existing system are identified through Annual Review, Audit Reports, Incident / Non-compliance Reports and / or-site observations.

A summary of changes will be recorded in the revision control chart and the EMS will be distributed to personnel on the control copy distribution list.

The Contractors will be requested to review and update their respective plans within one month of amendments to the EMS, if necessary.

5.0 REFERENCE DOCUMENTS

- Minister for Planning's Development Consent SSD 5147
- Clyde Terminal Conversion Project Environmental Impact Statement (Aecom, 2013)
- Clyde Terminal Conversion Project Response to Submissions (Shell, 2014)
- NSW Department of Infrastructure, Planning and Natural Resources Guideline for the Preparation of Environmental Management Plans (2004).

APPENDIX A FIGURES

Figure A-1 Site Area and Site Access

Figure A-2a Demolition Project Staging Plan

Figure A-2b Construction Project Staging Plan

Figure A-3 Final Site Plan

Figure A-4 Demolition Sensitive Areas Plan

Figure A-5 Construction Sensitive Areas Plan



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CLYDE TERMINAL CONVERSION
ENVIRONMENTAL MANAGEMENT STRATEGY

SITE AREA, SITE ACCESS
AND RECEIVERS

URS

File No. 43177923.007b.mxd

Drawn: SB

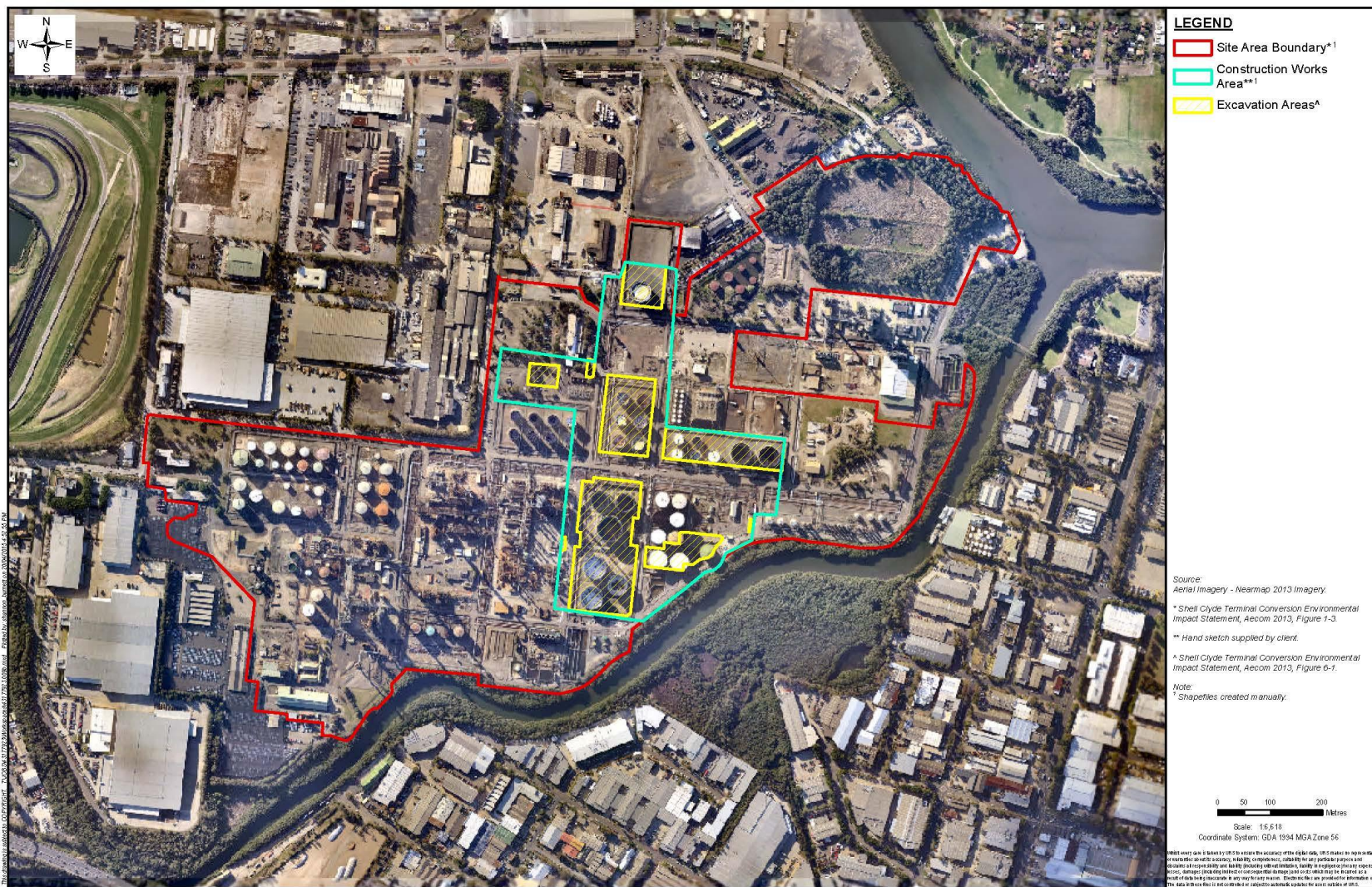
Approved: NB

Date: 20/04/2015

Figure A-1

Rev: 0

A3



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CLYDE TERMINAL CONVERSION
ENVIRONMENTAL MANAGEMENT STRATEGY

CONSTRUCTION
WORKS PLAN

URS

File No.: 43177923.000b.mxd

Drawn: SB

Approved: NB

Date: 20/04/2015

Figure: A-2b

Rev: 0 A3



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CLYDE TERMINAL CONVERSION
ENVIRONMENTAL MANAGEMENT STRATEGY

FINAL SITE PLAN

URS

File No.: 43177923.010b.mxd

Drawn: SB/MR

Approved: NB

Date: 20/04/2015

Figure: A-3

Rev: 0 A3



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CLYDE TERMINAL CONVERSION
ENVIRONMENTAL MANAGEMENT STRATEGY

DEMOLITION - SENSITIVE AREAS PLAN

URS

File No: 43177923.01b.mxd

Drawn: STB

Approved: NB

Date: 21/04/2015

Figure: A-4

Rev: 0 A3



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ENVIRONMENTAL MANAGEMENT STRATEGY

CONSTRUCTION - SENSITIVE AREAS PLAN

URS

File No. 43177923.012b.mxd

Drawn: SB / MR

Approved: NB

Date: 20/04/2015

Figure: A-5

Rev: 0 A3

Appendix B: Viva Energy Commitment to Health, Safety, Security and Environment

OUR COMMITMENT TO HEALTH, SAFETY, SECURITY & ENVIRONMENT

We believe every incident is preventable and are committed to pursuing the goal of no harm to people and protecting the environment.

We call this **Goal Zero**.

To make this commitment we will:

- Demonstrate visible and felt leadership at all levels
- Ensure that our business plans consider associated HSSE risks
- Set goals then measure, assess and report on our performance
- Maintain and audit systems to identify and manage risks and prevent incidents
- Provide appropriate resources, information, instruction, training and supervision
- Comply with our legal obligations and company procedures at all times
- Communicate, support and consult with employees, contractors and stakeholders
- Encourage people to intervene, report unsafe situations and have positive conversations
- Conduct regular reviews and share learning to continuously improve our performance

"You have my full support to stop operations at any time if you are concerned about the safety of yourself or others."



Scott Wyatt — CEO



Viva Energy Australia HSSE Policy, August 2014

APPENDIX C REFERENCES, STANDARDS, CODES AND REGULATIONS

This list is a guide only to documents applicable in the preparation and review of contractor WMS's or general Project relevant regulations and may not include all relevant documents. It is the responsibility of all persons preparing documents to be fully aware of the requirements associated with their work activities. For the latest version of each of the following documents go to the relevant Websites for each e.g. Legislation www.legislation.nsw.gov.au, Australian Standards; www.saiglobal.com, NSW Codes of Practice; www.workcover.nsw.gov.au/ National Codes of Practice; www.safeworkaustralia.gov.au.

NSW Legislation

Key NSW legislation is provided in the following table.

Table B-1 Relevant NSW Legislation

Legislation, Licences, Permits or Consents	Applicability	Responsibility
<i>Protection of Environmental Operations (POEO) Act 1997</i> , under authority of NSW EPA	<ul style="list-style-type: none"> Relevant to all stages of the development. Environment Protection Licence 570 is currently associated with the Terminal operations. Any spills or pollution incidents need to be reported under this Act. Although the EPL does not cover Demolition and Construction Works on the Site, the Works must not contribute to Site non-compliance with the EPL 	Viva Energy Clyde Terminal Manager & CTCP Project Manager
<i>Protection of the Environment Operations (Waste) Regulation 2005</i> , under authority of NSW EPA	<p>This Regulation:</p> <ul style="list-style-type: none"> Exempts certain waste streams from the full waste tracking and recordkeeping requirements. Makes requirements relating to the transport of controlled waste to interstate destinations. Allows the EPA to approve the immobilisation of contaminants in waste. Makes special requirements relating to asbestos waste. Exempts certain occupiers or types of waste from these contributions. Allows rebates to be claimed in relation to certain types of waste. 	Senior Project Manager – Demolition Contractor Construction Manager Clyde Terminal Manager
<i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> ; under authority of NSW EPA	<p>In relation to industry, the Regulation:</p> <ul style="list-style-type: none"> Sets maximum limits on emissions from activities and plant for a number of substances, including chlorine, dioxins, furans, smoke, solid particles and sulphur; Deals with the transport and storage of volatile organic liquids; Restricts the use of high sulphur liquid fuel; Imposes operational requirements for certain afterburners, flares, vapour recovery units and other treatment plant 	Senior Project Manager – Demolition Contractor Construction Manager Clyde Terminal Manager

Legislation, Licences, Permits or Consents	Applicability	Responsibility
<i>Contaminated Land Management Act 1997</i> , under authority of NSW EPA	<ul style="list-style-type: none"> This Act provides for a process to investigate and remediate land that has been contaminated and presents a significant risk of harm to human health. Section 60 of the Act is a “Duty to Report Contamination”. This duty applies to owners of land and persons who become aware their activities have contaminated the land. The Site contains contaminated land and the provisions of this Act must be complied with during the works. 	CTCP Project Manager & Clyde Terminal Manager
<i>Waste Avoidance and Resource Recovery Act 2001</i> , under authority of NSW EPA	<ul style="list-style-type: none"> Relevant to all construction activities. The Project will comply with the objectives of the Act - that is, ensuring resource management conforms to a hierarchy of avoidance, recovery then disposal. Objectives have been integrated into the Construction Waste and Resource Recovery Plan (refer Appendix E-6). It is an offence under the Protection of the Environment Operations Act to willfully or negligently dispose of waste in a manner that harms or is likely to harm the environment. 	Senior Project Manager – Demolition Contractor Construction Manager Clyde Terminal Manager
<i>Work, Health and Safety Regulation 2011</i> , under authority of WorkCover NSW	<ul style="list-style-type: none"> Relevant to all construction activities. Ensure that all dangerous goods or combustible liquids are identified and properly stored to prevent spillage. Maintain Dangerous Goods register and MSDS. Record the results of a risk assessment relating to the storage and handling of dangerous goods. 	Senior Project Manager – Demolition Contractor Construction Manager Clyde Terminal Manager
<i>Heritage Act 1977</i> , under authority of Heritage Council of NSW	<ul style="list-style-type: none"> Is activated upon discovery of a relic. Sections 139 – 145 of the Act prevent excavation of a relic, except in accordance with a gazetted exception or where an excavation permit is issued. Section 146 of the Heritage Act protects unexpected relics discovered across NSW. In the event that unexpected relics are discovered on site, works should cease immediately and Heritage Council consulted. 	Demolition Manager / Construction Manager
<i>National Parks and Wildlife Act 1974</i> , under authority of NSW EPA National Parks and Wildlife Service (NPWS)	<ul style="list-style-type: none"> Upon discovery of an aboriginal object. If aboriginal objects are discovered during construction, works should cease and NPWS consulted. The Site is unlikely to contain any relics or places of archaeological value and it is unlikely that objects will be uncovered, given the nature of the work. 	Demolition Manager / Construction Manager
<i>Noxious Weeds Act 1993</i> , under authority of NSW Department of Industry and Investment (DI&I)	<ul style="list-style-type: none"> Relevant to all Site activities. Noxious weeds must be identified and controlled according to defined control actions, dependent on potential to cause harm to our local environment (defined by Control Classes 1-5). 	CTCP Project Manager & Clyde Terminal Manager
<i>Threatened Species and Conservation Act 1995</i> , under authority of NSW EPA(NPWS)	<ul style="list-style-type: none"> Is relevant if any threatened species, populations, communities and/or critical habitat listed under the Act are potentially affected by the activity or impacted on or off the work site, as a consequence of the activity. 	CTCP Project Manager & Clyde Terminal Manager

Commonwealth Legislation

Key Commonwealth legislation that the Project team should be aware of includes:

- Environment Protection and Biodiversity Conservation Act 1999
- Environment Protection and Biodiversity Conservation Act 1999
- Road Transport Reform (Dangerous Goods) Act 1995
- Aboriginal and Torres Strait Islander Heritage Protection Act 1984
- National Environment Protection Measures (Implementation) Act 1998
- Hazardous Waste (Regulation of Exports and Imports) Act 1989
- National Environment Protection Council Act 1994
- National Environment Protection Measures (Implementation) Act 1998
- National Water Commission Act 2004
- Water Act 2007
- Natural Heritage Trust of Australia Act 1997

Other Requirements

- Development Consent SSD 5147
- Environment Protection Licence 570
- NSW Landcom publication Managing Urban Stormwater - Soils and Construction (4th Edition, March 2004); and Managing Urban Stormwater, EPA 1997
- National Water Quality Management Strategy
- Australian and New Zealand Guidelines for fresh and marine water quality 2000 (ANZECC/ARMCANZ, 2000)
- National Standard for the Storage and Handling of Workplace Dangerous Goods [NOHSC: 1015 (2001)]
- National Code of Practice for the Storage and Handling of Dangerous Goods [NOHSC: 2017 (2001)]
- National Waste Policy: Less Waste, More Resources (EPHC 2009)
- NSW Office of Environment and Heritage (OEH) (formerly DECCW) Waste Classification Guidelines Part 4: Acid Sulphate Soils
- RTA Vehicle Standards Information Sheet No. 5 – Vehicle Dimension Limits
- Acid Sulphate Soils Assessment Guidelines August 1998 (New South Wales Acid Sulphate Soils Management Advisory Committee)

APPENDIX D ENVIRONMENTAL MANAGEMENT PLANS

Appendix D-1 Demolition Work Plan

Appendix D-2 Soil and Water Management Plan

Appendix D-3 Construction and Demolition Noise and Vibration Management Plan

Appendix D-4 Construction and Demolition Air Quality Management Plan

Appendix D-5 Traffic Management Plan

Appendix D-6 Waste and Resource Recovery Plan

Appendix D-7 Biodiversity Management Plan