Government of **Western Australia**
Department of **Environment Regulation**

Your ref	L8879/2015/1
Our ref	DER2015/000344
Enquiries	Fiona Esszig
Phone	9182 2036
Fax	9144 1118
Email	Fiona.Esszig@der.wa.gov.au

Ms Pamela Meers
Caltex Australia Petroleum Pty Ltd
Level 24, 2 Market St
SYDNEY NSW 2000

Dear Ms Meers

***ENVIRONMENTAL PROTECTION ACT 1986*: LICENCE GRANTED**

Premises
Caltex Port Hedland Fuel Terminal
Port Hedland
Licence Number: L8879/2015/1

A licence under the *Environmental Protection Act 1986* (the Act) has been granted for the above premises. The Department of Environment Regulation will advertise the issuing of this licence in the public notices section of *The West Australian* newspaper.

The licence includes attached conditions. Under section 58(1) of the Act, it is an offence to contravene a condition of a licence. This offence carries a penalty of up to $125,000 and a daily penalty of up to $25,000.

In accordance with section 102(1)(c) of the Act, you have 21 days to appeal the conditions of the licence. Under section 102(3)(a) of the Act, any other person may also appeal the conditions of the licence. To lodge an appeal contact the Office of the Appeals Convenor on 6467 5190 or by email at admin@appealsconvenor.wa.gov.au.

Where a licence is issued for more than one year it requires payment of an annual fee and will cease to have effect if the fee is unpaid. It is the occupier's responsibility to lodge a fee application and pay the annual fee in sufficient time to avoid incurring a late payment fee and for processing to be completed before the licence anniversary date.

If you have any queries regarding the above information, please contact Fiona Esszig on 9182 2036.

Yours sincerely

Jonathan Bailes
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Thursday, 5 March 2015

Government of **Western Australia**
Department of **Environment Regulation**

AMENDED LICENCE FOR PRESCRIBED PREMISES
Environmental Protection Act 1986

LICENCE NUMBER: L8879/2015/1 **FILE NUMBER:** DER2015/000344

LICENSEE AND OCCUPIER OF PREMISES
Caltex Australia Petroleum Pty Ltd
Level 24, 2 Market St
SYDNEY NSW 2000
ACN: 000 032 128

NAME AND LOCATION OF PREMISES
Caltex Port Hedland Fuel Terminal
Lot 6098 on Deposited Plan 35618 (Vested in the Port Hedland Port Authority)
PORT HEDLAND WA 6721
(as depicted in Attachment 3)

PRESCRIBED PREMISES CATEGORY
Schedule 1 of the *Environmental Protection Regulations 1987*

CATEGORY	DESCRIPTION	CAPACITY
73	Bulk storage of chemicals etc.	More than 1,000m^3 in aggregate

CONDITIONS OF LICENCE
Subject to the conditions of licence set out in the attached pages.

Officer delegated under Section 20
of the *Environmental Protection Act 1986*

ISSUE DATE: Thursday, 5 March 2015
COMMENCEMENT DATE: Tuesday, 10 March 2015
EXPIRY DATE: Thursday, 9 March 2017

DEFINITIONS

"AS/NZS 5667" means the most recent version and relevant parts of the Australian and New Zealand series of guidance standards AS/NZS 5667 on *Water Quality Sampling* as jointly published by Standards Australia International Ltd, Sydney and Standards New Zealand, Wellington;

"AS 1940:2004" means the most recent version and relevant part of Australian Standard *The storage and handling of flammable and combustible liquids*;

"dangerous goods" has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*;

"CEO" means Chief Executive Officer of the Department of Environment Regulation;

"CEO" for the purpose of correspondence means-

Manager Licensing (Process Industries)
Department of Environment Regulation
Locked Bag 33
CLOISTERS SQUARE WA 6850
Telephone: (08) 9333 7510
Facsimile: (08) 9333 7550
Email: industry.regulation@der.wa.gov.au;

"environmentally hazardous material" means material (either solid or liquid) which if discharged into the environment from or within the premises may cause pollution or environmental harm;

"investigation trigger levels" means trigger levels for groundwater quality contained in the document *Groundwater Monitoring Plan Caltex Port Hedland Terminal, Wilson Road Port Hedland* (2012) authored by Golder Associates;

"mg/L" means milligrams per litre;

"NATA" means National Association of Testing Authorities;

"placard quantity" has the meaning defined in the *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007*; and

"Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF" means the best current practice of American water analysts developed by the American Public Health Association (APHA), the American Water Works Association (AWWA), and the Water Environment Federation (WEF).

GENERAL CONDITIONS

ODOUR EMISSIONS

1. The licensee shall ensure that odour emitted from the premises does not unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person who is not on the premises.

HYDROCARBON MANAGEMENT

2. The licensee shall only store dangerous goods below placard quantities and environmentally hazardous materials not classified as dangerous goods including fuel, oil or other hydrocarbons (where the total volume of each substance stored on the premises exceeds 250 litres) if they are stored within:
   i) low permeability (10^{-9} m/s or less) bunded compounds designed to contain not less than 110% of the volume of the largest storage vessel or inter-connected system, and at least 25% of the total volume of vessels stored in the compound; or
   ii) double-walled tanks complying with AS 1940:2004.

3. The compounds described in condition 2 shall:
   i) be graded or include a sump to allow recovery of liquid;
   ii) be chemically resistant to the substances stored;
   iii) include valves, pumps and meters associated with transfer operations wherever practical. Otherwise the equipment shall be adequately protected (e.g. bollards) and contained in an area designed to permit recovery of spilled chemicals;
   iv) be designed such that jetting from any storage vessel or fitting will be captured within the bunded area [see for example AS 1940:2004 Section 5.8.3 (h); and
   v) be controlled such that the capacity of the bund is properly maintained (e.g. regular inspection and pumping of trapped uncontaminated rainwater).

4. The licensee shall keep a record of any incident that has resulted in the loss of chemicals to the environment, including fuel, oil or other hydrocarbons, and provide a summary of each incident in the Annual Environmental Report.

5. The licensee shall immediately recover, or remove and dispose of spills or leaks of environmentally hazardous chemicals, whether inside or outside its storage vessel.

DUST EMISSIONS

6. The licensee shall employ dust suppression measures on the premises to minimise the creation of dust emissions and prevent visible dust from crossing the boundary of the premises.

COMPLAINTS REGISTER

7. The licensee shall keep a written and accurate record of all complaints received at the premises concerning the environmental impact of the operation and any incidents at the premises. The record shall include but not be limited to:
   (i) date and time of complaint;
   (ii) date and time of alleged incident;
   (iii) alleged source of the incident;

(iv) general description of the alleged incident;
(v) wind direction, wind speed and temperature at time of alleged incident;
(vi) likely source of the alleged incident; and
(vii) actions taken by licensee to address complaint.

8. The licensee shall ensure that the CEO is notified in writing within 24 hours of a complaint being received relating to the environmental impact of the operation and any incidents at the premises.

STORMWATER DISCHARGE CRITERIA

9. The licensee shall ensure that stormwater discharged from the Puraceptor to the stormwater easement (as depicted in Attachment 3) does not exceed the limits stated in Column 2 of Table 1, for the parameters in Column 1 of Table 1.

Table 1: Stormwater quality criteria

Column 1	**Column 2**
Parameter	**Limit**
pH	6 – 9
Biochemical Oxygen Demand – 5 day (BOD)	20 mg/L
Total Suspended Solids (TSS)	50 mg/L
Total Petroleum Hydrocarbons (TPH)	5 mg/L

MONITORING CONDITIONS

GROUNDWATER MONITORING

10. The licensee shall, at the frequencies stated in Column 2 of Table 2, take representative groundwater samples from the monitoring bores listed in Column 1 of Table 2 and shown in Attachment 1, and have them analysed for the parameters stated in Column 3 of Table 2.

Table 2: Groundwater monitoring requirements.

Column 1	**Column 2**	**Column 3**
Monitoring bores	**Sampling Frequency**	**Parameter**
MW01A, MW02A, MW03A, MW04A, MW06A, MW07A, MW08A, MW09B, MW10B, MW11A, MW12B, MW13B, MW14A, MW15B, MW16B, MW18A, MW19A, MW20A, MW21A, and MW22.	Biannually at least 5 months apart.	Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethyl benzene and Xylene (BTEX), Lead (Pb) and Polyaromatic Hydrocarbons (PAH).
	Annually at least 11 months apart.	Dissolved Oxygen, Temperature, Redox Potential, Electrical Conductivity, pH, Nitrates (NO_3), Iron (Fe^{2+}), Sulphates (SO_4) and Methane (CH_4).

STORMWATER MONITORING

11. The licensee shall record the cumulative volume of all stormwater discharged from the Puraceptor to the stormwater easement (as depicted in Attachment 3) and include this data in the Annual Environmental Report in tabular form.

12. The licensee shall collect and have analysed, representative samples of stormwater discharged from the Puraceptor to the stormwater easement (as depicted in Attachment 3) for the parameters listed in Column 1 of Table 3 at the frequency specified in Column 2 of Table 3.

Table 3. Water quality monitoring parameters and frequency

Column 1	**Column 2**
Parameter	**Frequency**
pH	Prior to discharge and on a monthly basis whilst discharging.
Biochemical Oxygen Demand – 5 day (BOD)	
Total Suspended Solids (TSS)	
Total Petroleum Hydrocarbons (TPH)	

13. The licensee shall collect all water samples in accordance with AS/NZS 5667.

14. The licensee shall submit all water samples for analysis to a laboratory with current NATA accreditation for the analysis specified, and ensure analysis is in accordance with the current "Standard Methods for Examination of Water and Wastewater-APHA-AWWA-WEF".

REPORTING CONDITIONS

ANNUAL ENVIRONMENTAL REPORT

15. The licensee shall provide to the CEO, by **31 March** each year, an Annual Environmental Report which covers the reporting period from **1 January** to **31 December** and includes, but not be limited to, the following information:
    (a) a summary of complaints received including the number and nature of complaints, where appropriate cross referenced with prevailing meteorological conditions and action taken;
    (b) monitoring data or other collected data required by any condition of this licence;
    (c) an assessment of the data against any investigation trigger levels, limits set or other environmental guidelines or policies referred to in this licence and data from previous years' monitoring;
    (d) a summary of any data exceeding those investigation trigger levels, limits, guidelines or policies including information on why the exceedance occurred and action(s) taken by the licensee to prevent recurrence of such exceedance;
    (e) a progress update of any investigations or remedial work undertaken by the licensee in relation to groundwater contamination; and
    (f) a list of any monitoring methods used to collect and analyse data required by any condition of this licence to demonstrate they comply with the methods specified in this licence.

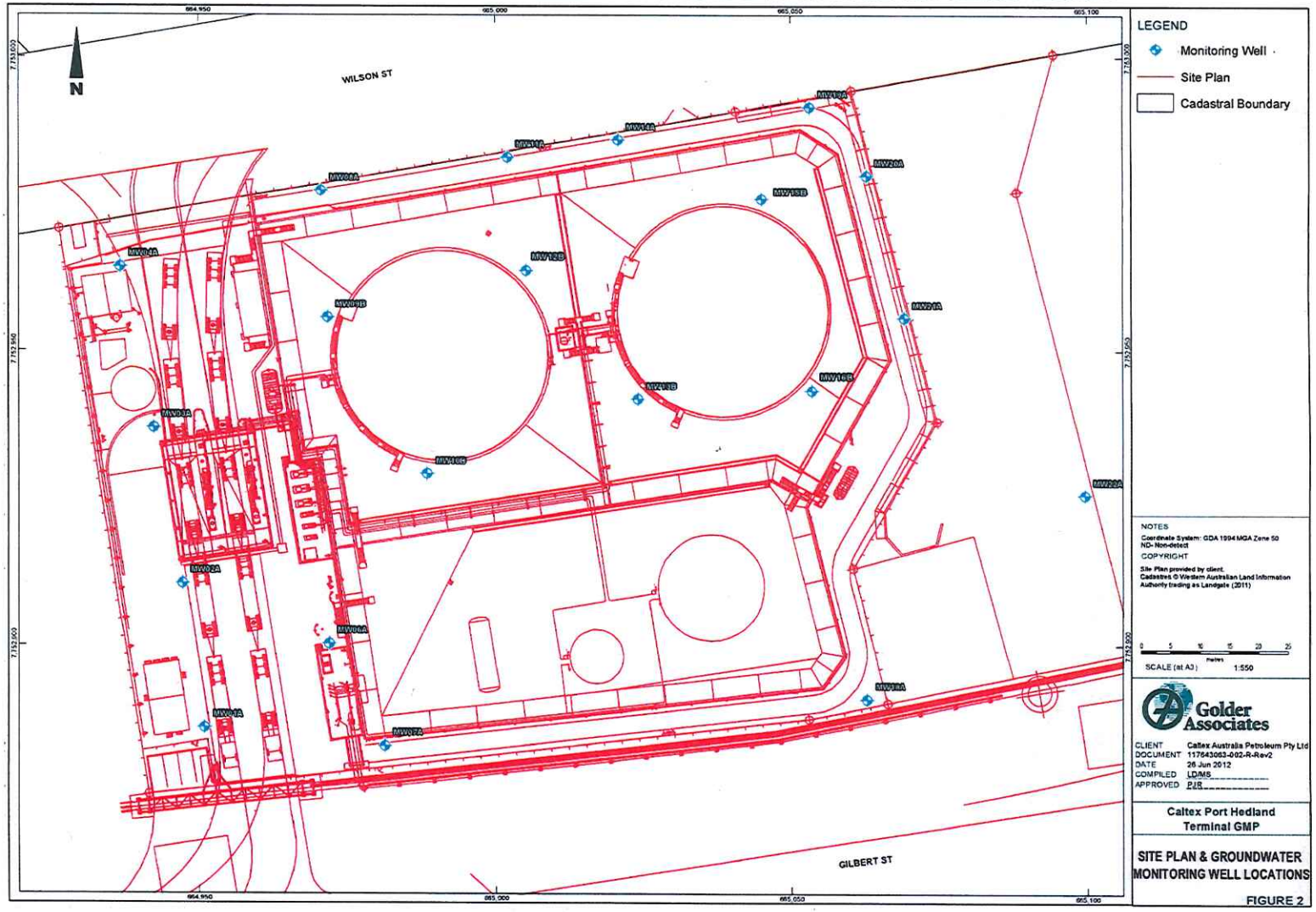
ANNUAL AUDIT COMPLIANCE REPORT

16. The licensee shall by **31 March** in each year, provide to the CEO an Annual Audit Compliance Report in the form in Attachment 2 to this licence, signed and certified in the manner required by Section C of the form, indicating the extent to which the licensee has complied with the conditions of this licence, and any previous licence issued under Part V of the Act for the premises, during the period beginning **1 January** the previous year and ending on **31 December** in that year.

CONDITIONS OF LICENCE
Environmental Protection Act 1986

LICENCE NUMBER: L8879/2015/1 **FILE NUMBER:** DER2015/000344

ATTACHMENT 1: GROUNDWATER MONITORING BORES



ATTACHMENT 2 – ANNUAL AUDIT COMPLIANCE REPORT

SECTION A

LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name: Trading as:	ABN:
Reporting period: _____ to _____	

STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of licence complied with within the reporting period? (please tick the appropriate box)

Yes □ Please proceed to Section C
No □ Please proceed to Section B

Each page must be initialed by the person(s) who signs Section C of this annual audit compliance report

INITIAL:_____

SECTION B - DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each licence condition that was not complied with.

a) Licence condition not complied with?
b) Date(s) when the non compliance occurred, if applicable?
c) Was this non compliance reported to DEC?
☐ Yes ☐ Reported to DEC verbally Date _____ ☐ No ☐ Reported to DEC in writing Date _____
d) Has DEC taken, or finalised any action in relation to the non compliance?
e) Summary of particulars of non compliance, and what was the environmental impact?
f) If relevant, the precise location where the non compliance occurred (attach map or diagram)
g) Cause of non compliance
h) Action taken or that will be taken to mitigate any adverse effects of the non compliance
i) Action taken or that will be taken to prevent recurrence of the non compliance

Each page must be initialed by the person(s) who signs Section C of this annual audit compliance report

INITIAL:_____

SECTION C - SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report may only be signed by a person(s) with legal authority to sign it. The ways in which the Annual Audit Compliance Report must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this Annual Audit Compliance Report is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
an individual	☐	by the individual licence holder, or
	☐	by a person approved in writing by the Chief Executive Officer of the Department of Environment and Conservation to sign on the licensee's behalf.
A firm or other unincorporated company	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A corporation	☐	by affixing the common seal of the licensee in accordance with the Corporations Act 2001; or
	☐	by two directors of the licensee; or
	☐	by a director and a company secretary of the licensee, or
	☐	if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or
	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
A public authority (other than a local government)	☐	by the principal executive officer of the licensee; or
	☐	by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment and Conservation.
a local government	☐	by the chief executive officer of the licensee; or
	☐	by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of $50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: _____ SIGNATURE: _____

NAME: (printed) _____ NAME: (printed) _____

POSITION: _____ POSITION: _____

DATE: _____/_____/_____ DATE: _____/_____/_____

SEAL (if signing under seal)

ATTACHMENT 3

PLAN OF PREMISES – Caltex Port Hedland Fuel Terminal

LEGEND

- Cadastre
- Local Government Authorities
- Road Centrelines

Port Hedland 50cm Orthomosaic - Landgate 2004

N

0 160 m

Scale 1:6030
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

Prepared by: fionae
Prepared for:
Date: 21/05/2010 11:49:55 AM

Government of Western Australia
Department of Environment Regulation

ENVIRONMENTAL ASSESSMENT REPORT

LICENCE NUMBER: L8879/2015/1
FILE NUMBER: DER2015/000344
APPLICATION DATE: 23/02/2015
EXPIRY DATE: 09/03/2017

PREMISES DETAILS

LICENSEE
Caltex Australia Petroleum Pty Ltd
Level 24, 2 Market St
SYDNEY NSW 2000
ACN: 000 032 128

PREMISES
Caltex Port Hedland Fuel Terminal
Lot 6098 on Deposited Plan 35618 (Vested in the Port Hedland Port Authority)
PORT HEDLAND WA 6721

PRESCRIBED PREMISES CATEGORY

Category number*	Category Description*	Category Production or Design Capacity*	Premises Production of Design Capacity#	Premises Fee Component**
73	Bulk storage of chemicals etc.	1,000m^3 in aggregate	41,520m^3 at any one time	N/A

* From Schedule 1 of the *Environmental Protection Regulations 1987*
\# From application
** From Schedule 4 of the *Environmental Protection Regulations 1987*

This Environmental Assessment Report (EAR) has been drafted for the purposes of detailing information on the management and mitigation of emissions and discharges from the prescribed premises. The objective of the EAR is to provide a risk assessment of emissions and discharges, and information on the management of other activities occurring onsite which are not related to the control of emissions and discharges from the prescribed premises activity. This does not restrict the Department of Environment Regulation (DER) to assessing only those emissions and discharges generated from the activities that cause the premises to become prescribed premises.

Basis of Assessment
The Caltex Port Hedland Fuel Terminal has been assessed as "prescribed premises" category number 73, under Schedule 1 of the *Environmental Protection Regulations 1987*.

Bulk storage of chemicals, etc: premises on which acids, alkalis or chemicals that –
(a) contain at least one carbon to carbon bond; and
(b) are liquid at STP (standard temperature and pressure), are stored.

Caltex Australia Petroleum Pty Ltd (Caltex) has upgraded the existing Port Hedland Fuel Terminal. Upgrade works have included the demolition of the existing facilities and construction and operation of the new terminal facilities, which have the capacity to store 41,520 kL of diesel at any one time.

This licence replaces the previous licence (L8604/2011/1). As part of this re-issue, DER has not re-assessed the acceptability or impacts of emissions and discharges from the Premises or re-

visited any existing emission control levels. No changes to the conditions on the previous licence have been made.

1.0 BACKGROUND

1.1 GENERAL COMPANY DESCRIPTION

Caltex is an Australian company operating Australia-wide through its Sydney-based head office. Caltex has operations in every state and territory in Australia supplying products via a network of pipelines, terminals, depots and the company-owned and contracted transport fleet. The current Port Hedland Fuel Terminal has been in operation for over 20 years with Caltex upgrading this facility to increase the total diesel storage capacity.

1.2 LOCATION OF PREMISES

The Port Hedland Fuel Terminal is situated on Lot 6098 on plan 35618 between Wilson St and Gilbert St in Port Hedland, Western Australia (Figure 1). The subject site is depicted under the Port Hedland Port Authority Lease Plan No. P3424.01/01/01 and comprises of lot PO59.

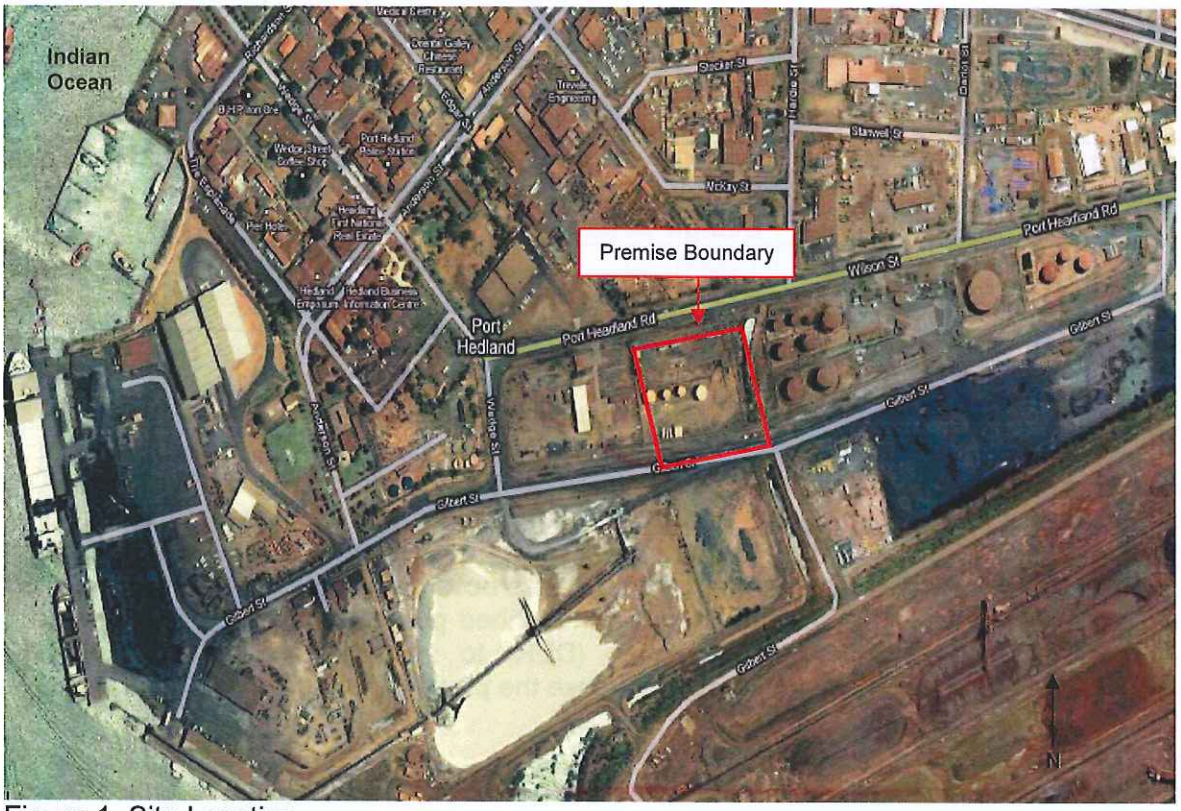


Figure 1. Site Location

1.4.3 LAND USES AND ZONING

Current land uses in the area are generally port-related industrial activities including the Horizon Powers substations and maintenance yard, BP Port Hedland Terminal Facility and Cervan Marine. The main industrial land uses within a 200 metre radius of the site include mining transport depots, raw material stockpiles and mining service support, as well as unoccupied space. Residential areas are featured to the north of the Caltex facility approximately 300 metres away.

1.4.4 SITE DESCRIPTION

The Caltex Port Hedland Fuel Terminal is located on an existing industrial site with no significant environmental features on the premises. The site is situated approximately 500

metres from the Port Hedland Port and the Indian Ocean. No natural vegetation communities are present on the site, however mangrove communities exist approximately 1.5 km to the south and west of the premises.

1.4.5 SOIL AND HYDROGEOLOGY

Past investigations indicated that the Caltex terminal is situated on an area of reclaimed land with variable fill over a thin layer of marine mud, typically overlying calcarenite cap rock which can be up to 4 metres thick.

Groundwater in the area occurs within the Piara-Coastal Saline unconfined aquifer which is generally encountered 0.3 and 0.8 of a metre Australian Height Datum (AHD). The general flow direction is to the north towards the Indian Ocean, however is subject to variability due to suspected tidal influences. Groundwater concentrations for Total Dissolved Solids (TDS) typically range between 1,000 and 4,000 mg/L.

The site is currently registered under the *Contaminated Sites Act 2003* as "Potentially Contaminated – Investigation Required", due to the potential contamination from hydrocarbons. Results from 2007 monitoring indicate concentrations of hydrocarbons, metals and other inorganic compounds.

Site testing was undertaken to determine the risk of Actual Acid Sulphate Soils (AASS) and Potential Acid Sulphate Soils (PASS) on the premises using the soil field pH test method outlined in *Identification and Investigation of Acid Sulfate Soils and Acidic Landscapes (*DER 2009). Results indicate that the risk of PASS or AASS occurring is low given there are few signs indicative of their presence (i.e. the difference between pH_F and pH_{FOX} were, in most cases, less than 1). In all samples tested the pH (pH_F or pH_{FOX}) was between approximately 6 and 9 indicating relatively neutral soils.

1.3 PROPOSAL DESCRIPTION

In 2011, the Port Hedland Fuel Terminal was upgraded to increase the storage capacity for diesel at the site to 41,520 kL. Approximately 280 – 320 ML of diesel fuel is transferred through the facility per annum. The site layout is shown in Figure 2.

The purpose of the facility is the receipt, storage and distribution of diesel products. Fuel is received from the port via the BP dock lines and stored on site for collection by the tanker trucks for distribution to Caltex customers. Two BP dock lines are connected from the port manifold to the terminal manifold for product transfers; one a multi product line carrying both flammable and combustible products and the other carrying only diesel. The off-takes from the BP dock lines to the terminal have manual valves which remain closed unless product is being received or discharged.

Product enters the terminal via the terminal manifold and is directed to dedicated onsite storage tanks. The Caltex Tank Farm consists of two above ground 20,760 kL diesel storage tanks. Each tank has a dedicated inlet pipe for receiving product from outside transfer and a dedicated outlet pipe to provide product to the Tank Truck Loading Rack (TTLR). All tanks are fitted with an Auto Tank Gauge (ATG), pressure transmitter and Multi Spot Temperature (MST) probe to monitor stock levels and density. An "independent" high level probe has also been installed to prevent overspill in the event of ATG failures. A manual tank gauging hatch is located on the roof of each tank as further contingency to prevent overspill. Visual and audible alarms are present on site and are triggered when storage tanks near their maximum capacity.

The storage tanks are situated within a concrete bunded area with a bund wall 3.6 metres high to contain contaminated stormwater and any leaks and/or spills. This "dirty" stormwater is directed to a water treatment facility (T-11) and subsequent wastewater discharged to an

onsite concrete stormwater drain, ultimately flowing in the Port Hedland port. The treatment facility will potentially treat hydrocarbon impacted "dirty" stormwater and product discharged from the tank farm bunds, additive bund, pump bunded area and transfer pumps manifold area. The expected quality of water entering the stormwater easement following water treatment is outlined in Table 2. "Clean" stormwater from outside the bunded area will not require treatment so can be discharged directly into the stormwater drain.

Table 2. Expected wastewater water quality

Parameter	Concentration
Hydrocarbons	5 mg/L
Total Suspended Solids (TSS)	50 mg/L
Biochemical Oxygen Demand (BOD)	20 mg/L
pH	6 - 8 pH units

Tanker Truck Loading Rack

Access to the site is from the north, Wilson St, and tanker trucks exit the site to the south via Gilbert St, which is a one way road. The TTLR includes two tanker truck loading bays. The TTLR communicates with a Programmable Logic Controller (PLC) on the drivers request as they enter the terminal. The PLC, via commands from the TTLR bay operator, automatically operates the terminal equipment required to provide fuel. A Terminal Automation System then, via the TTLR bay operator, controls loading of the truck compartments with fuel and, if required, additives. Fuel is transferred to the TTLR from the storage tanks via the transfer pump manifold.

The TTLR is equipped with spill prevention devices including the Scully overfill protection system and product isolation valves. The Scully overfill protection system requires a physical connection of the Scully to trucks using the TTLR before allowing product to be dispensed. The system communicates with the overfill sensors installed in the trucks which triggers loading to stop immediately if product reaches sensors. Any trucks which do not contain this system will not be able to load at the TTLR. Additional overfill protection includes a Personal Emergency Alarm System (PEAS) which requires the drivers of trucks using the TTLR to push the PEAS button every 90 seconds. Failure to do so after 180 seconds will trigger the system to automatically cease flow.

The TTLR is covered with a roof to minimise stormwater ingress. Each of the loading bays in the TTLR includes a sump for collecting any spills and rainwater. Material collected in the sumps drains into spill containment unit (T-9) for treatment. The transfer pump manifold is contained within a separate curbed area, roofed to prevent stormwater ingress and drains to the T-9 spill unit. Effluent from the T-9 system is directed into the primary containment bund, where it either evaporates or passes through the T-11 system before being discharged into the stormwater drain. The T-9 & T-11 water treatment units are fitted with high oil tank level alarms activated when the capacity reaches 80% to prevent overfilling.

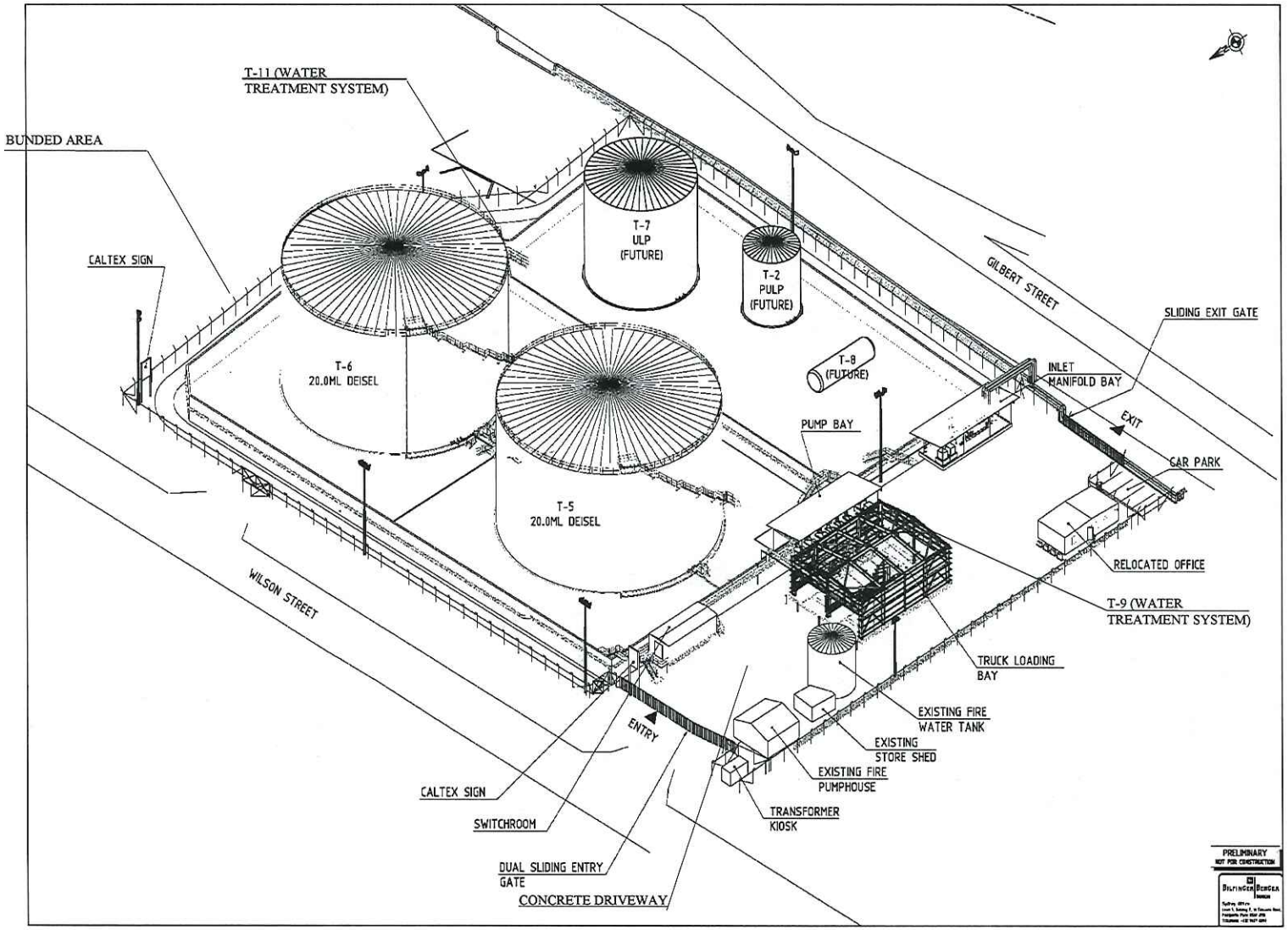


Figure 2. Site layout

1.4 REGULATORY CONTEXT

1.4.1 Part IV *Environmental Protection Act 1986*, Environmental Impact Assessment

The Caltex Port Hedland Fuel Terminal has not been assessed under Part IV of the *Environmental Protection Act 1986*. Caltex has indicated that given the nature of the project and its location within an existing industrial area, a submission under Part IV is not required.

1.4.2 Part V *Environmental Protection Act 1986*, Environmental Management

The Caltex Port Hedland Fuel Terminal has been assessed as a "prescribed premises" under the Environmental Protection Regulations 1987. Works approval W4697/2010/1 was issued in 2010 which allowed construction works to commence for the planned terminal upgrade. Operation of the existing facility will be managed under L8604/2011/1. Caltex previously held a registration for the Caltex Port Hedland Fuel Terminal (R2157/2010/1) which has been superseded by this licence.

State environmental legislation which may apply to the premises includes:

- *Environmental Protection Act 1986;*
- Environmental Protection Regulations 1987;
- Environmental Protection (Unauthorised Discharges) Regulations 2004;
- *Environmental Protection (Noise) Regulations 1997*;
- *Environmental Protection (Controlled Waste) Regulations 2004*;
- *Contaminated Sites Act 2003*; and
- *Contaminated Sites Regulations 2006*.

The site is currently registered under the *Contaminated Sites Act 2003* as "Contaminated – Remediation Required" due to the presence of hydrocarbon contamination in groundwater.

Contaminated Sites Branch (CSB)

The Groundwater Monitoring Plan was also reviewed by DER's CSB in conjunction with previous groundwater monitoring results. It was identified that the investigation trigger level for free phase hydrocarbons of >1mm had already been activated due to existing site contamination and that Caltex should proceed with contingency actions, in accordance with the Groundwater Monitoring Plan, including investigating site remedial options. CSB has also recommended that Caltex engage an independent contaminated sites auditor to review site investigations to determine the off-site extent of groundwater contamination.

1.4.3 Other Decision Making Authorities' Legislation which applies

Department of Mines and Petroleum

The storage of chemicals and dangerous goods on site is covered by the following legislation:

- *Dangerous Goods Safety Act 2004;*
- Dangerous Goods Safety (General) Regulations 2007; and
- Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007.

Caltex currently hold a Dangerous Goods licence for the facility (DGS000190).

Other legislation which may be applicable to this application include the:

- *Occupational Health and Safety Act 1984; and*
- Occupational Health and Safety Regulations.

1.4.4 Local Government Authority

The Caltex Port Hedland Fuel Terminal is located within the Town of Port Hedland.

2.0 STAKEHOLDER AND COMMUNITY CONSULTATION

SUBMISSIONS RECEIVED DURING 21 DAY PUBLIC COMMENT PERIOD

The licence application details for this facility were advertised in the West Australian newspaper on 2 March 2015 as a means of advising stakeholders and to seek public comments. No submissions were received.

3.0 EMISSIONS AND DISCHARGES RISK ASSESSMENT

DER considers that conditions should focus on regulating emissions and discharges of significance. Where appropriate, emissions and discharges which are not significant should be managed and regulated by other legislative tools or management mechanisms.

The following section assesses the environmental risk of potential emissions from the Caltex Port Hedland Fuel Terminal. In order to determine the site's appropriate environmental regulation, an emissions and discharges risk assessment was conducted of the Caltex Port Hedland Fuel Terminal using the environmental risk matrix outlined in Appendix A. The results of this are summarised in Table 3.

Table 3: Risk assessment and regulatory response summary table.

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Air emissions (point source)	**Emission significance – 1** There are two sources of Volatile Organic Carbon (VOC) emissions; fugitive emissions associated with the storage tanks and point source emissions from the TTLR. The terminal has been designed and constructed to store and distribute diesel fuel only which has a very low vapour pressure and subsequently negligible VOC emissions. The diesel storage tanks are fixed roof cone tanks designed and constructed in accordance with Australian Standards. The tanks include top vents which release to the atmosphere as a result of tank breathing. During truck loading diesel vapours displaced from the truck barrel are directed to a closed vapour system and released from a dedicated vent located at the top of the TTLR. The height of both tank vents and the TTLR vent minimise the potential for odours and allow effective dispersion and include flame arrestors. If in the future the facility is upgraded further to allow the storage of petrol which has a higher volatility, then additional VOC mitigation measures would be considered.	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – No conditions.	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions *Dangerous Goods Safety Act 2004* Operational Environmental Management Plan (OEMP)
Dust emissions	**Emission significance – 1** Vehicle movement will be the key contributor of dust emissions during operation, however is not considered to be significant. <u>Management Measures:</u> • During operation the majority of the site will be sealed (including access roads) and unsealed areas will be considered for sealing/landscaping; • Visual daily inspections will take place during construction which will increase during dry windy conditions; and • Regular inspections will be conducted once operating and any visible dust will prompt further investigation.	**Medium to High** - Port Hedland town area is particularly sensitive to dust issues due to other industries and naturally elevated levels contributing significantly to the ambient dust levels. Given the close proximity of residential areas to the site (within 300m) the social concern is considered medium to high.	**D** - EIPs, other management mechanisms/licence conditions (monitoring/reporting)/ other regulatory tools.	LIC – Conditions relating to dust management are included on the licence. Conditions relating to recording and reporting complaints.	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions Environmental Protection (Unauthorised Discharges) Regulations 2004 Operational Environmental Management Plan (OEMP)

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Odour emissions	**Emission significance – 1** Odours may occur during operation from the bulk storage of diesel on site. Additional odours may arise from unforseen leaks, spills and vehicle emissions. Odour from routine operations are considered low risk due to the low volatility of diesel which is the main product to be stored onsite. Management Measure: • All dangerous goods will be managed in accordance with Australian Standards and the *Dangerous Goods Safety Act 2004;* • Vents located on storage tanks have been constructed to ensure adequate dispersion to minimise odour; • Plant, vehicles and equipment will be regularly maintained to reduce emissions; • Visual daily inspections of wastes and site conditions will be conducted; and • Any reported odour issues will be treated immediately.	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – Conditions relating to odour are included on the licence. Conditions relating to recording and reporting complaints.	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions *Dangerous Goods Safety Act 2004* Operational Environmental Management Plan (OEMP) AS1940:2004 – Storage and Handling of Flammable and Combustible Liquids
Noise emissions	**Emission Significance – 1** During operation noise emissions are expected to be minimal. The key contributor of noise during operation is emissions from heavy vehicles entering & exiting the site. Operating hours will be between 0700 and 1600 (Monday to Friday). Management Measures: • All activities will be completed in accordance with the Environmental Protection (Noise) Regulations 1997; • Equipment, vehicles and machinery will be regularly maintained; and • Daily inspections to be carried out by the site inspector and any excessive noise will be investigated immediately.	**Medium to High** - The premise is located within an established industrial area, however given that the nearest residential area is approximately 300m to the north of the site the noise emissions socio-political concerns are considered to be medium to high.	**D** - EIPs, other management mechanisms/licence conditions (monitoring/reporting)/ other regulatory tools.	LIC – Conditions relating to recording and reporting complaints.	N/A	Environmental Protection (Noise Regulations) 1997 AS 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites Operational Environmental Management Plan (OEMP)
Light emissions	**Emission significance – 1** No significant light emissions are expected as activities will occur primarily during daylight hours and the site is located	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – No conditions.	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	in an industrial area that already has significant light overspill. Management Measures: • Lighting after hours will be minimised to essential lighting only (e.g. for security purposes).					Operational Environmental Management Plan (OEMP)
Discharges to water	**Emission significance – 1** There is potential for stormwater contamination on site during operation. "Clean" stormwater occurring outside the bunded area will not require treatment and will be discharged directly to the stormwater easement. Contaminated stormwater from the bunded area and TTLR will be treated onsite prior to discharge to the stormwater drain. The stormwater easement is located on the eastern side of the site. It receives stormwater discharges from a number of neighbouring sites and runs south and then east through BHP Billiton Iron Ore Pty Ltd's (BHP) port boundary, before discharging into the Port Hedland harbour. BHP's Part V environmental licence (L4513/1969/16) contains conditions which set discharge limits for TPH discharged from their premises. As such, DER has set licence targets in the licence for the Caltex Port Hedland Terminal for treated stormwater discharges to ensure a consistent approach. Management Measure: • During operation "dirty" stormwater from bunded areas and the TTLR will be diverted to sumps which is directed to a 'Puraceptor' (T-11) and treated wastewater will be discharged into the onsite stormwater easement; and • Treated wastewater, generated from operating the facility, will be monitored on a monthly basis with minimum testing to include pH, BOD, TSS, hydrocarbons, dissolved oxygen and flow (volume) as per Caltex's *Environmental Standard for Management of Stormwater.*	**Medium** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – The licence includes conditions relating to the monitoring of wastewater discharged from site (this includes limits outlining the maximum allowable concentration of hydrocarbons and other parameters to be discharged from the site).	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions Environmental Protection (Unauthorised Discharge) Regulations 2004 Operational Environmental Management Plan (OEMP) Environmental Standard for Management of Stormwater

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Discharges to land	**Emission significance – 1** The premises is located on a site that is registered as a contaminated site under the *Contaminated Sites Act 2003* due the potential for hydrocarbons, metals and other inorganic compounds to exist in the soil and groundwater. Given the large volume of hydrocarbons stored onsite there is the potential for further contamination. Caltex has committed to implementing sufficient management practices to reduce the risk of soil and groundwater contamination from hydrocarbons. Groundwater is generally encountered at the site between 0.3 and 0.8 m AHD. Caltex is in the process of conducting "baseline" groundwater quality monitoring. The first event took place in September 2011 and the second is planned for March 2012 to account for natural attenuation. Results of the monitoring are to be used in conjunction with relevant guidelines (i.e. DER's Contaminated Sites Series) to develop investigation trigger levels for groundwater quality. These are to be incorporated into the ongoing groundwater monitoring regime and operating licence. Exceedance of the trigger levels will prompt further investigation including: • Secondary analysis and confirmation of exeedance; • Notification of the exeedance to DER; • Local investigation of spills and incident history; • Risk assessment to identify any increase to environment and/or human health risk; and • Remediation activity and/or the development of a remediation action plan. <u>Management Measure:</u> • Storage tanks will be contained within a bunded area directing contaminated stormwater to an oil water separator for treatment; • Spills/leaks in the Tanker Truck Loading Rack (TTLR) will be diverted to a spill containment unit for treatment; and • Monitoring of groundwater will be undertaken in accordance with the *Groundwater Monitoring Plan.*	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – Conditions relating to the monitoring of groundwater has been applied to the licence. Requirements to report against groundwater trigger levels are included in the licence.	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions *Contaminated Sites Act 2003* Environmental Protection (Unauthorised Discharges) Regulations 2004 Environmental Protection (Controlled Waste) Regulations 2004 Operational Environmental Management Plan (OEMP) Guidelines for Routine Groundwater Monitoring

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	Samples will be taken biannually and tested for: Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethyl Benzene, Xylene, Polycyclic Hydrocarbons (PAH's), Dissolved Oxygen, Temperature, Redox Potential, Electrical Conductivity, pH, Nitrates, Iron, Sulfates and Methane.					
Solid / liquid wastes	**Emission significance – 1** Fuel spills and/or leaks may cause contamination of soil, surface and groundwater on site during operation. <u>Management Measures:</u> • Wastes and surplus dangerous goods will be disposed of offsite by a licensed transporter; • Storage tanks will be contained within a bunded area directing contaminated stormwater to an oil water separator for treatment; • Spills/leaks in the TTLR will be diverted to a spill containment unit for treatment; and • Monitoring of groundwater and surface water discharges will occur as per the *Groundwater Monitoring Plan* and *Environmental Standard for Management of Stormwater*.	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC - Conditions relating to the monitoring of groundwater and surface water discharges have been applied to the licence. Requirements to report against groundwater trigger levels are included in the licence.	N/A	Environmental Protection (Controlled Waste) Regulations 2004 Environmental Protection (Unauthorised Discharges) Regulations 2004 AS1940:2004 – Storage and Handling of Flammable and Combustible Liquids Environmental Standard for Management of Stormwater Guidelines for Routine Groundwater Monitoring
Hydrocarbon/ chemical storage	**Emission significance – 1** The two diesel storage tanks will have the capacity to hold 20,760 kL each at any one time. All dangerous goods and associated infrastructure will be designed and managed in accordance with the *Dangerous Goods Safety Act 2004* and Australian Standards. Storage tanks will be contained within bunded areas and the surfaces sealed to prevent contamination of surface and groundwater. <u>Management Measures:</u> • The storage of flammable and combustible liquids such as fuels and oils shall comply with relevant regulations and AS1940:2004; • Storage tanks will be contained within a bunded area directing contaminated stormwater to an oil water separator for treatment;	**Low** – Level of community interest or concern.	**E** – No regulation, other management measures.	LIC – The operating licence includes conditions relating to the storage and management of hydrocarbons on the premise. Conditions relating to the monitoring of groundwater and surface water discharges have been applied to the licence. Requirements to	N/A	General provisions of the *Environmental Protection Act 1986* regarding minimising emissions *Dangerous Goods Safety Act 2004* Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 DMP – Storage and Handling of Dangerous Goods – Code of Practice Operational Environmental Management Plan (OEMP) *Occupational Health and Safety Act*

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
	• HDPE liners have been installed beneath the tank floor along with a dedicated leak detection system which is monitored daily by site personnel; • Spills, leaks and stormwater runoff from the truck loading rack will drain into a water treatment facility; • Fuel storage areas will be inspected regularly to ensure bund stability, integrity and function; • Spill kits will be available for onsite clean up of spills and/or leaks; • Piping has been constructed above ground to allow monitoring, inspection and maintenance of infrastructure; • Daily site inspections will be conducted by site staff to identify infrastructure issues; • Pipelines are visually inspected prior to tank filling and constantly whilst tank filling is occurring; • Pipelines are integrity tested on a six monthly basis; • Tanks are subject to a 5 yearly 'on stream' and 10 yearly 'off stream' integrity inspection program; • The two underground tanks associated with the Puraceptors are both double walled fibre glass tanks with duel leak detection capability. One utilises dye to detect a breach of the inner wall and the other utilises a LAD-10 pressure detector to measure pressures drops between the two tank walls. A local alarm is activated to notify site personnel is a leak is detected; • Overspill protection systems will be installed on storage tanks including "Auto Tank Gauge", manual tank gauging hatch and visual and audible alarms; • The TTLR will include a Scully overspill protection system and Personal Emergency Alarm System which trigger the automatic shut down of fuel during loading; and • The TTLR will also feature audible and visual alarms.			report against groundwater trigger levels are included in the licence.		*1984* AS1940:2004 – Storage and Handling of Flammable and Combustible Liquids
Native vegetation clearing	All proposed activities will be on previously cleared land.	N/A	N/A	N/A	N/A	N/A

Risk factor	Significance of emissions	Socio-Political Context of Each Regulated Emission	Risk Assessment	DER Regulation (EP Act - Part V)	EAR Reference	Other management (legislation, tools, agencies)
Contaminated site identification	The site has been registered under the *Contaminated Sites Act 2003* as "Contaminated – Remediation Required". Ongoing management and remediation of the existing contamination will be regulated by DER's Contaminated Sites Branch. The purpose of the Part V operating licence is to ensure that provisions are in place to prevent and detect any future contamination at the site.	**Low** – Level of community interest or concern.	N/A	LIC – Conditions relating to groundwater monitoring are included in the licence.	N/A	*Contaminated Sites Act 2003*

4.0 GENERAL SUMMARY AND COMMENTS

Caltex has completed a major upgrade the bulk fuel terminal in Port Hedland to increase the diesel storage capacity. The upgrade involved the demolition of the existing infrastructure and construction of two 20,760 kL storage tanks, increasing the storage capacity of the facility from 3,860 kL to 41,520 kL. A works approval was issued granting approval for the planned works. Operation of the facility will be managed under a licence.

The emissions and discharges have been assessed in Table 3. Despite its close proximity to residential areas within the town of Port Hedland, no emissions of significance are expected from this facility due to the nature of the proposal and Caltex's commitments to implement management practices. DER has proposed to include conditions in the licence relating to the monitoring and discharge of contaminated water during operation of the new facility as well as managing dust and hydrocarbon spills. Despite there being a low risk of nuisance noise, odour or dust, DER has implemented conditions on the licence relating to the recording of relevant complaints to monitor any impact on nearby residences.

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APPENDIX A: EMISSIONS AND DISCHARGES RISK ASSESSMENT MATRIX

Table 4: Measures of Significance of Emissions

Emissions as a percentage of the relevant emission or ambient standard		Worst Case Operating Conditions (95th Percentile)			
		>100%	50 – 100%	20 – 50%	<20%*
Normal Operating Conditions (50th Percentile)	>100%	5	N/A	N/A	N/A
	50 – 100%	4	3	N/A	N/A
	20 – 50%	4	3	2	N/A
	<20%*	3	3	2	1

*For reliable technology, this figure could increase to 30%

Table 5: Socio-Political Context of Each Regulated Emission

		Relative proximity of the interested party with regards to the emission				
		Immediately Adjacent	Adjacent	Nearby	Distant	Isolated
Level of Community Interest or Concern*	5	High	High	Medium High	Medium	Low
	4	High	High	Medium High	Medium	Low
	3	Medium High	Medium High	Medium	Low	No
	2	Low	Low	Low	Low	No
	1	No	No	No	No	No

Note: These examples are not exclusive and professional judgement is needed to evaluate each specific case

*This is determined by the DER using the DER "Officer's Guide to Emissions and Discharges Risk Assessment" May 2006.

Table 6: Emissions Risk Reduction Matrix

		Significance of Emissions				
		5	4	3	2	1
Socio-Political Context	High	A	A	B	C	D
	Medium High	A	A	B	C	D
	Medium	A	B	B	D	E
	Low	A	B	C	D	E
	No	B	C	D	E	E

PRIORITY MATRIX ACTION DESCRIPTORS
A = Do not allow (fix)
B = licence condition (setting limits + EMPs - short timeframes)(setting targets optional)
C = licence condition (setting targets + EMPs - longer timeframes)
D= EIPs, other management mechanisms/licence conditions (monitoring/reporting)/other regulatory tools
E = No regulation, other management mechanisms

Note: The above matrix is taken from the DER Officer's Guide to Emissions and Discharges Risk Assessment May 2006.