Government of Western Australia
Department of Environment Regulation

Works Approval

Environmental Protection Act 1986, Part V

Works Approval Holder: Indian Ocean Oil Company Pty Ltd

Works Approval Number: W5975/2016/1

Registered office: 6 Thorogood Street
BURSWOOD WA 6100

ACN: 077 514 642

Premises address: Indian Ocean Oil Company
Murray Road Depot
Murray Road
Being Lots 473 and 476 on Plan 219656, Lot 491 on Plan 193346 as depicted in Schedule 1.

Grant date: Thursday, 1 September 2016

Commencement date: Monday, 5 September 2016

Expiry date: Wednesday, 4 September 2019

The following category/s from the *Environmental Protection Regulations 1987* cause this Premises to be a prescribed premises for the purposes of the *Environmental Protection Act 1986*:

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
39	Chemical or oil recycling: premises on which waste liquid hydrocarbons or chemicals are refined, purified, reformed, separated or processed.	Not applicable	345 tonnes per annual period

Conditions
This Works Approval is subject to the conditions set out in the attached pages.

Date signed: 1 September 2016
.....
Steve Checker
MANAGER LICENSING (WASTE INDUSTRIES)
Officer delegated under section 20
of the *Environmental Protection Act 1986*

Works Approval Conditions

1 General

1.1 Interpretation

1.1.1 In the Works Approval, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 In the Works Approval, unless the contrary intention appears:

'Act' means the *Environmental Protection Act 1986;*

'AS 1940-2004' means 'AS 1940-2004 The storage and handling of flammable and combustible liquids' guidelines;

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

'CEO' for the purpose of correspondence means;

Chief Executive Officer
Department Administering the *Environmental Protection Act 1986*
Locked Bag 33
CLOISTERS SQUARE WA 6850
Email: info@der.wa.gov.au;

'emergency event' means a 1-in-10 year, 72 hour rainfall event;

'hardstand' means a base surface with a permeability of 10^{-9} metres/second or less;

'hazardous waste' means components of the waste stream which by its characteristics poses a threat or risk to public health, safety or the environment (includes substances which are toxic, infectious, mutagenic, carcinogenic, teratogenic, explosive, flammable, corrosive, oxidising and radioactive);

'low permeability' means a surface with a permeability of 10^{-9} metres/second or less;

'non-conforming waste types' means any/ all waste types that are not inert waste type 1 – construction and demolition waste;

'NATA' means the National Association of Testing Authorities, Australia;

'NATA accredited' means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

'Premises' means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Works Approval;

'Schedule 1' means Schedule 1 of this Works Approval unless otherwise stated;

'waste' means section 3(1) of the *Environmental Protection Act 1986* and section 3(1) of the *Waste Avoidance and Resource Recovery Act 2007*;

'waste product' means waste oil and water contaminated with hydrocarbons received to the premises for the purpose of recycling;

'Works Approval' means this Works Approval numbered W5975/2016/1 and issued under the *Act;* and

'Works Approval Holder' means the person or organisation named as the Works Approval Holder on page 1 of the Works Approval.

1.1.3 Any reference to an Australian or other standard in the Works Approval means the relevant parts of the standard in force from time to time during the term of this Works Approval.

1.1.4 Any reference to a guideline or code of practice in the Works Approval means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Works Approval.

1.2 General conditions

1.2.1 The Works Approval Holder must ensure that the Works specified in Column 1 of Table 1.2.1 meet or exceed the specifications in Column 2 of Table 1.2.1 for the infrastructure in each row of Table 1.2.1.

1.2.2 The Works Approval Holder must not depart from the specifications in Column 1 and 2 for the infrastructure in each row of Table 1.2.1 except:

a) where such departure is minor in nature and does not materially change or affect the infrastructure; or

b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment;

and in accordance with all other Conditions in this Works Approval.

Table 1.2.1: Construction specifications

Infrastructure	Specifications (design and construction)
1. Perimeter fencing	(a) 1.8 m high security fence must be installed around the perimeter of the premises with access to the facility through lockable gated entry/ exit points.
2. Signage	(a) Signage must be installed at entry points identifying waste acceptance types and emergency contact phone numbers.
3. Receival and Processing area	(a) Impermeable vessels for the treatment and storage of waste oil and waste water must be installed to the following specifications: (i) 4,228 L prefabricated metal primary separator vessel; (ii) 4,228 L Oil treatment vessel; (iii) 3,433 L Oil test tank; (iv) 4,228 L Water treatment vessel; (v) 4,228 L Shock tank; (vi) 3,433 L Skim tank; (vii) 3,433 L Finished water holding tank; and (viii) 25,000 L Holding tank. (b) Plant equipment (centrifuge and filtration systems) and associated pipework must be located as defined within Schedule 1: Maps; (c) The waste oil/ hydrocarbon contaminated waste water receival point must be designed within a concrete bunded hardstand area for the capture of accidental spills/ discharges; (d) The processing area must have an identified/ designated, enclosed, concrete bunded hardstand area for the storage of waste 'cake' prior to disposal offsite; and (e) The receival and processing area must be compliant with AS 1940-2004.

4. Other treatments	(a) The facility must be designed and constructed to meet the following specifications: (i) The Murray Road Depot treated waste water must be discharged via an enclosed pipeline into the existing stormwater pipeline point at the premises; and (ii) The Murray Road discharge point must be identified by signage notifying treated wastewater is discharged into the stormwater pipeline. (b) The treated water discharged must be able to meet the following criteria: (i) pH between 6.5 to 8 units; and (ii) Total Recoverable Hydrocarbons of less than 10 mg/L.

1.2.3 If departures from the specifications in Table 1.2.1 under Condition 1.2.2 apply, then the Licensee must provide the CEO with a list of departures which are certified as complying with Condition 2.1.3 at the same time as the certifications under Condition 2.1.2.

2 Information

2.1 Reporting

2.1.1 The Works Approval Holder shall submit a construction compliance document to the CEO, within one month following the construction of the works and prior to operating the new works at the premises.

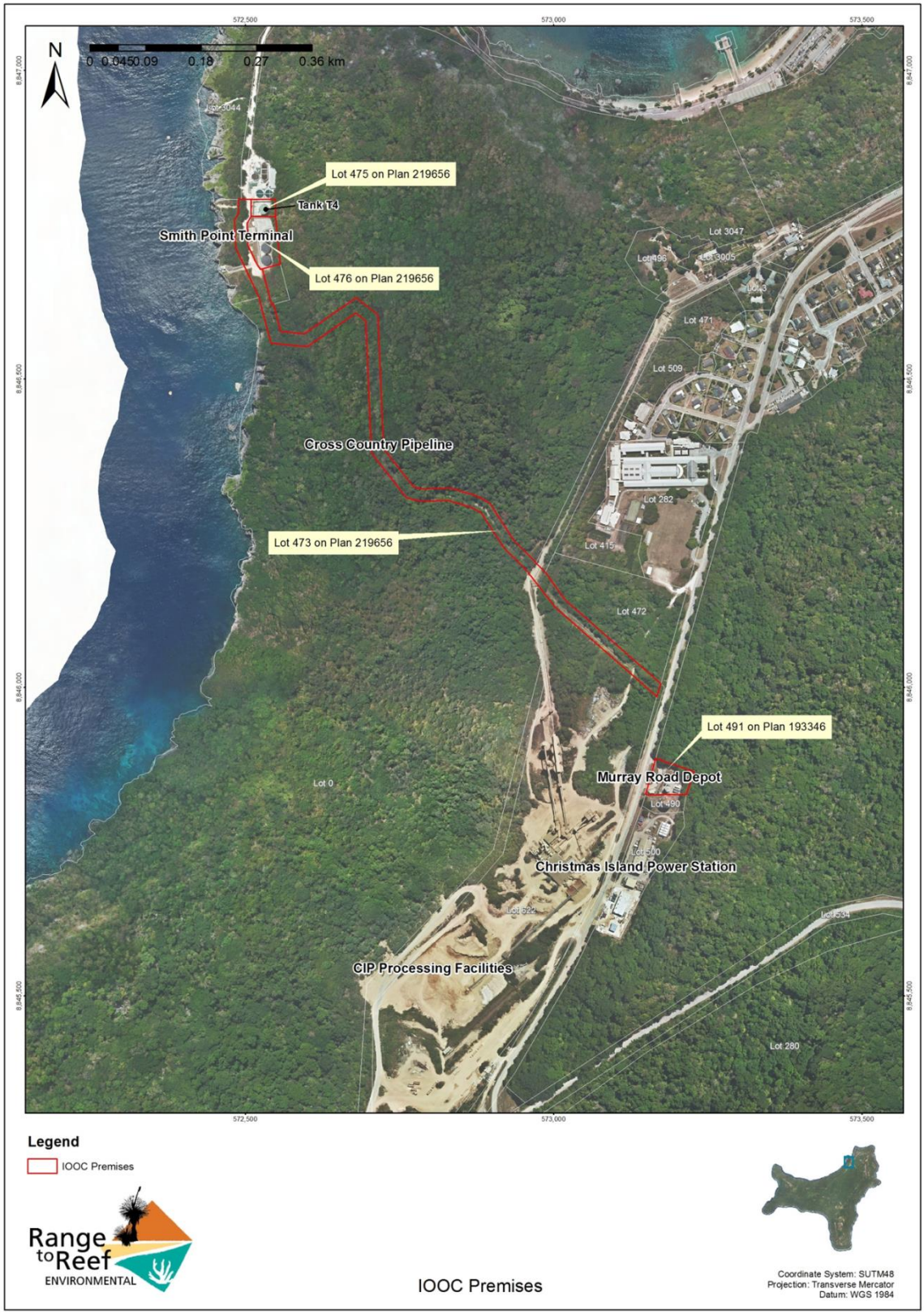
2.1.2 The Licensee must ensure the construction compliance document:
(a) is certified by a suitably qualified professional engineer or builder that each item of infrastructure specified in Conditions 1.2.1 and 1.2.2 has been constructed in accordance with the Conditions of the Licence with no material defects; and
(b) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

2.1.3 The Works Approval Holder shall, where departures from the specifications in Table 1.2.1 under Condition 1.2.2. apply, provide the CEO with a list of departures which are certified as complying with Condition 1.2.2 at the same time and from the same professional as the certifications submitted in accordance with Conditions 2.1.1 and 2.1.2.

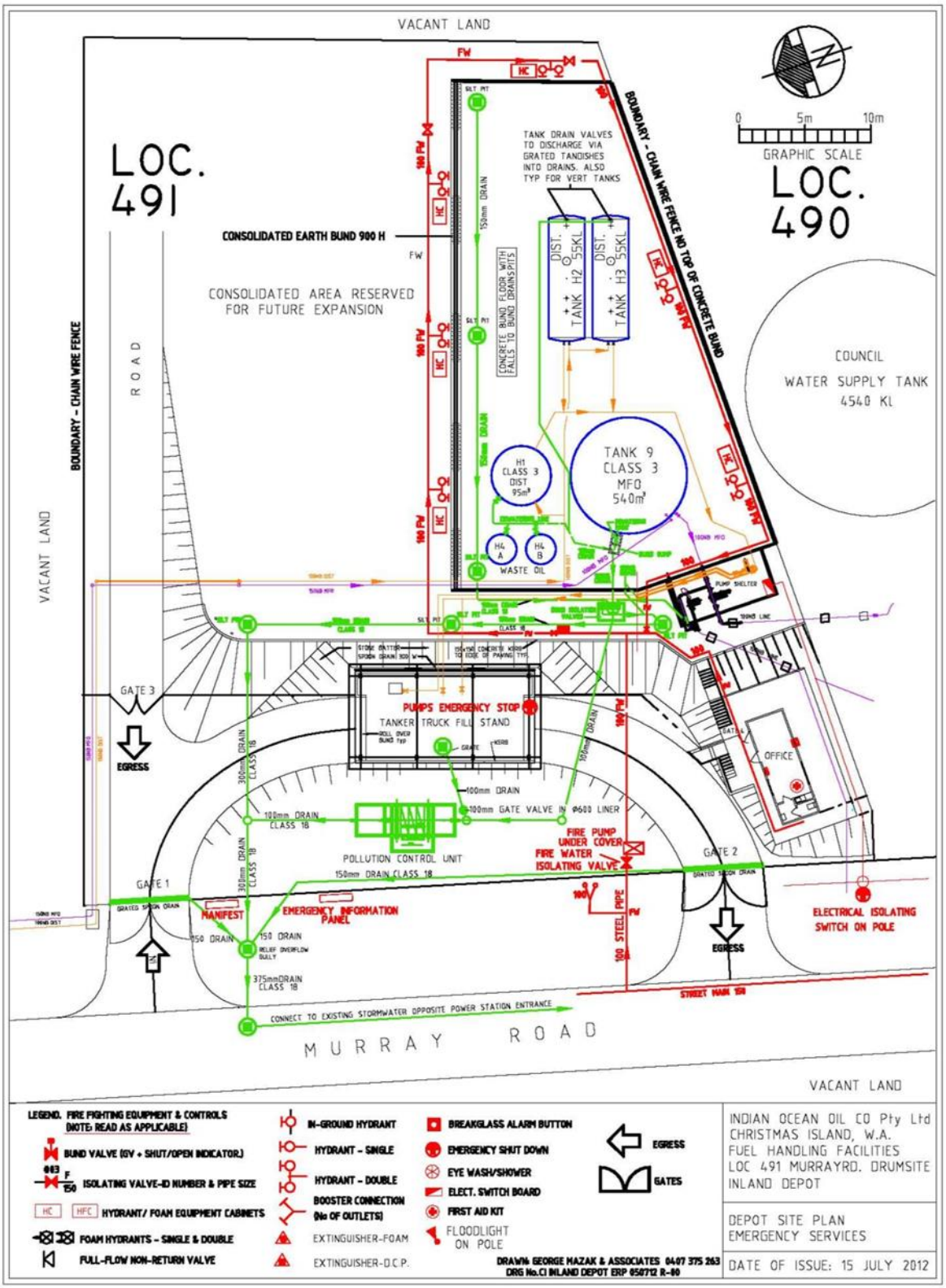
Schedule 1: Maps

Premises map

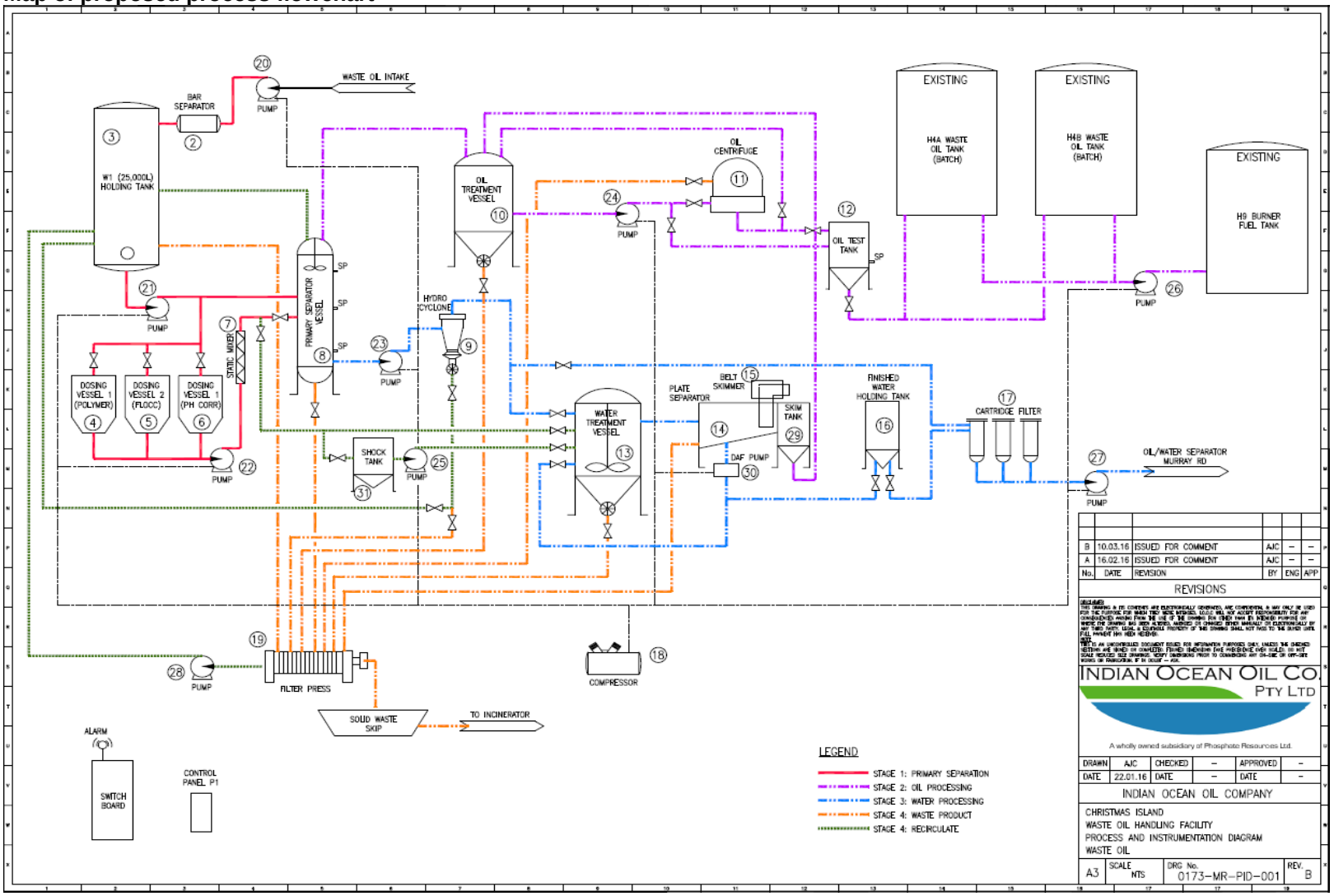
The Premises is shown in the maps below. The red line depicts the Premises boundary.



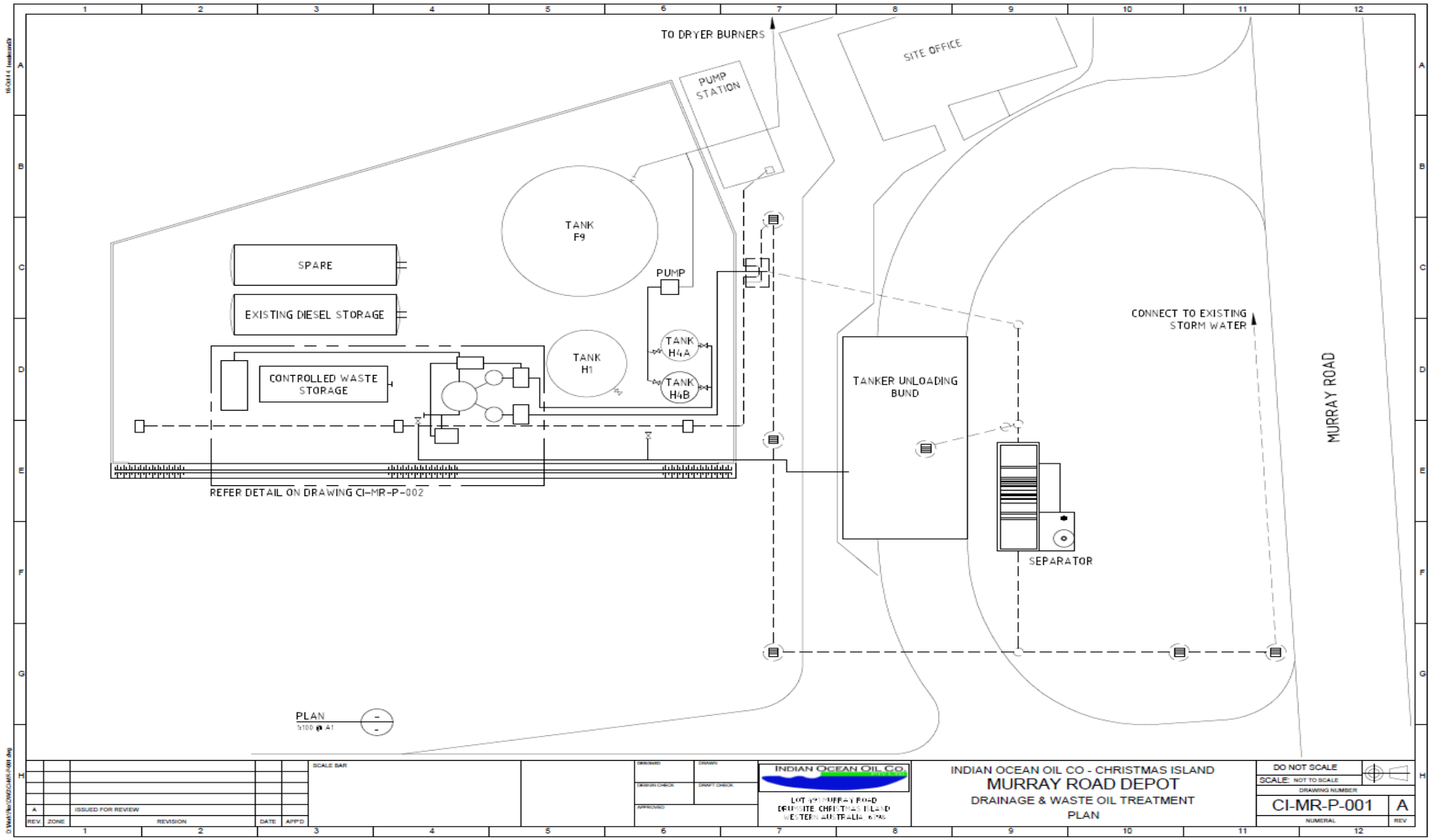
Map of premises layout – Murray Road Depot



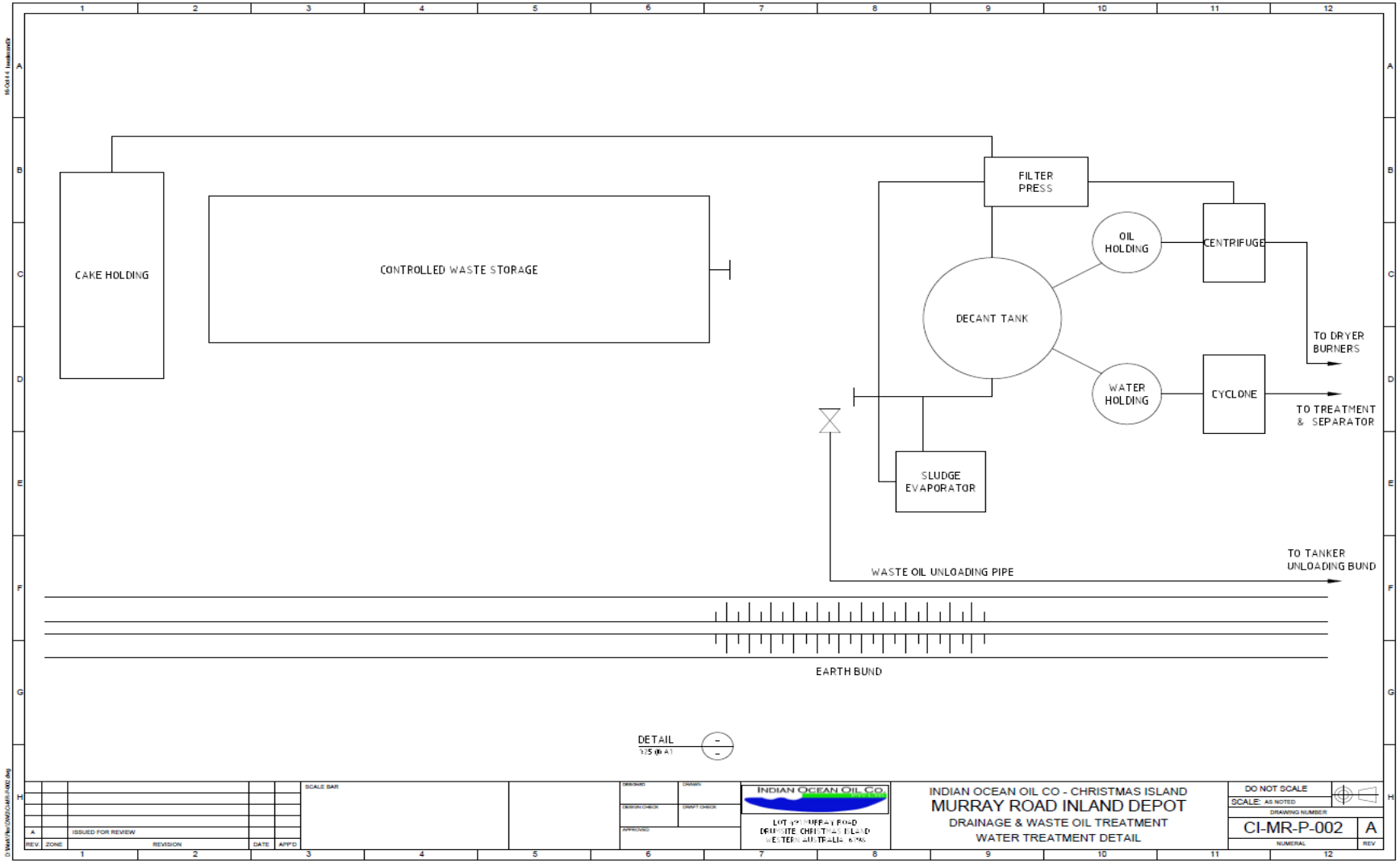
Map of proposed process flowchart



Map of Proposed Waste Oil Treatment process



Map of Proposed Water Treatment process



Government of Western Australia
Department of Environment Regulation

Decision Document

Environmental Protection Act 1986, Part V

Proponent: Indian Ocean Oil Company Pty Ltd

Works Approval: W5975/2016/1

Registered office:	6 Thorogood Street BURSWOOD WA 6100
ACN:	077 514 642
Premises address:	Indian Ocean Oil Company Murray Road Depot Murray Road Being Lots 473 and 476 on Plan 219656, Lot 491 on Plan 193346
Grant date:	Thursday, 1 September 2016
Commencement date:	Monday, 5 September 2016
Expiry date:	Wednesday, 4 September 2019

Decision

Based on the assessment detailed in this document, the Delegated Officer has decided to issue a works approval. The Delegated Officer considers that in reaching this decision, all relevant considerations have been taken into account.

Decision Document prepared by:	Caroline Conway-Physick Licensing Officer
Decision Document authorised by:	Steve Checker Delegated Officer

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1 Purpose of this Document

This decision document explains how DER has assessed and determined the application and provides a record of DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to DER's assessment and decision making under Part V of the *Environmental Protection Act 1986.* Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.

2 Administrative summary

Administrative details		
Application type	Works Approval ☒ New Licence ☐ Licence amendment ☐ Works Approval amendment ☐	
Activities that cause the premises to become prescribed premises	**Category number(s)**	**Assessed design capacity**
	Category 39 – Chemical or oil recycling	375 tonnes per annual period
Application verified Application fee paid	Date: 1/06/2016 Date: N/A (IOT premises do not pay fees as per agreement with the Commonwealth.)	
Works Approval has been complied with Compliance Certificate received	Yes☐ No☐ N/A☒ Yes☐ No☐ N/A☒	
Commercial-in-confidence claim	Yes☐ No☒	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes☐ No☒	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the *Environmental Protection Act 1986*?	Yes☐ No☒	Referral decision No: Managed under Part V☐ Assessed under Part IV☐
Is the proposal subject to Ministerial Conditions?	Yes☐ No☒	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the *Environmental Protection Act 1986*)?	Yes☐ No☒ Department of Water consulted Yes ☐ No ☐	
Is the Premises within an Environmental Protection Policy (EPP) Area: Yes☐ No☒		
Is the Premises subject to any EPP requirements? Yes☐ No☒		

3 Executive summary of proposal and assessment

Location and siting
Indian Ocean Oil Company Pty Ltd., trading as Indian Ocean Oil Company, has applied for a Works Approval to construct prescribed premises in accordance with the *Environmental Protection Act 1986,* under Category 39 – chemical or oil recycling . The Premises is located at Murray Road, Christmas Island. The proponent is currently operating the premises as a registered prescribed premises (R2391/2014/1) for a Category 73 – Bulk storage of chemicals etc. The premises currently receives hydrocarbons via pipeline from the Smith Point Terminal to the Murray Road Depot (premises) for storage, distribution and use to two different distribution operations via a road loading gantry or piped to the Christmas Island Phosphate Mine (L8846/2014/1) drying kilns.

The Murray Road Depot currently receives automotive diesel fuel stored in a vertical Category 5 tank and two horizontal Type 100 tanks. Waste lube oil is stored in two type 15 vertical tanks and waste fuel oil is stored in a single Category 5 vertical tank. The larger vertical tanks appear to have been constructed on consolidated chalk substrate and do not have under-floor leak detection. The tanks are located within a common bund system with a concrete wall on one side and compacted earth bund on the northern side. The base of the bund is concrete and a bund drain system and an American Petroleum Institute (API) oil water separator is in place to treat contaminated water from the bund area prior to discharge to a stormwater drain, which then discharges to the Indian Ocean.

The premises is located on unallocated crown land and surrounded by unallocated crown land and mining tenure. The Christmas Island National Park is approximately 335 m south east and the closest residential receptor has been identified approximately 541 m north. The closest sensitive receptor is the Christmas Island school which is approximately 295 m north of the premises. The Indian Ocean is approximately 740 m west of the premises.

Christmas Island geology is dominated by karstic landforms and cave systems with soils considered as highly permeable with little runoff or erosion. Depth to groundwater is considered to be 50-100 mBGL.

Proposed works
The proposal is for the facility to accept waste oil, to a maximum production capacity of 345,000 litres per annual period (100 tonnes of oil/ water per hour), from businesses throughout Christmas Island for recycling and reuse. The premises will accept waste oil or hydrocarbon contaminated water from the following sources for the filtering and separation process:

Waste oil -
- Engine/gearbox oils from equipment (cars, heavy machinery, conveyers, gearboxes etc.);
- Fuel oils that are ‘dirty’ and considered unacceptable for their primary use (e.g. Power Station);
- Oil sludge and sediment (e.g. from tank clean outs).

Water contaminated with hydrocarbons -
- dewatering of fuel tanks;
- cleaning of hydrocarbon hoses.

The waste oil/ water contaminated with hydrocarbons (waste products) will undergo the following process:
- coarse filtering to remove large physical items;
- dewatering;
- centrifugal separation to remove finer contaminants/ particulates;
- dosing (if necessary) with flocculants and/or pH adjusters to expedite sedimentation and decontamination of the waste oils;
- settling tanks (with agitators);

- fines filtering to remove small particulates;
- batch testing to assess parameters for use in Christmas Island Phosphate Mine (CIP) (L8846/2014/1), kilns/ dryers;
- pressing of solid contaminants (including metals, carbon, sediments, gums and resins) into a waste 'cake'.

The proposed design of the facility will enable recycled product collected in the 'batch tanks' to be passed back through the various stages of treatment should it not meet required quality standards.

As a result of the filtering and separation process, additional wastes generated from the recycled waste product process will include bulk contaminants (paper, plastics, metals), fine metallic fractions (engine/gearbox wear), carbon (from vehicle combustion processes) and fuel resins, gums, and high amounts of soil sediment/phosphate. The filtering and separation process will not involve any heating, distillation or other forms of refining of the waste products.

The premises currently consists of:

- Bunded, concrete hardstand area designed in accordance with Department of Mines and Petroleum, Dangerous Goods legislation requirements with a permeability of 10^{-9} metres per second or less and able to contain 110% of the largest vessel/ interconnected system or 25% of the total volume;
- Batch tanks for the storage of hydrocarbons;
- Transfer (cross country) pipelines;
- Buildings with perimeter fence which is locked/ secure when unmanned.

The proponent proposes to construct:

- 1 x Primary separator vessel (4,228 L), 1 x Oil treatment vessel (4,228 L), 1 x Oil test tank (3,433 L), 1 x Water treatment vessel (4,228 L), 1 x Shock tank (4,228 L), 1 x Skim tank (3,433 L), 1 x Finished water holding tank (3,433 L); 1 x Holding tank (25,000 litres) (to be brought on to the island via ship);
- Plant and equipment including centrifuge, filters, diaphragm pumps and associated pipework.

This equipment will be placed at the premises and will be installed, connected and mounted on fabricated pipeline frames. The tanks and oil receptacles will also undergo some fabrication and welding for the particular requirements and process flows of the facility. The recycling facility and process will take place completely within the (currently existing) concrete bunded hardstand area at Murray Road Depot, where only minimal civil works will be required.

Potential emissions

The premises will generate approximately 160,000 litres of recycled oil annually for batch tank storage and reuse within the CIP dryers. The proponent proposes to discharge approximately 185,000 litres per year of treated waste water via the Murray Road enclosed stormwater pipeline (after sampling has been conducted and being sent through an additional oil/ water separator), to the Indian Ocean.

All solid cake waste from the filtering and separation process generated from the press (approximately 21 m^3), is proposed for incineration within the proposed CIP incinerator. It is expected that the cake will comprise of phosphate dust, soil and trace levels of lead, cadmium, arsenic, dioxins, benzene and polycyclic aromatics. The quantity and constituents of the cake is dependent on the quality of the waste oil returned. Analysis on the cake is to be conducted when the premises initiates operations. As the CIP incinerator has not been installed and the characteristics of the cake are not presently known, assessment of the suitability of the incinerator to dispose of the cake will be conducted under licence L8846/2014/1 on application. Should the cake be found to be not be suitable for disposal via the CIP incinerator, it will be stored onsite and transported to the mainland for appropriate disposal.

No vegetation clearing is required for the construction and development of the premises.

The premises will operate from 7:30am to 4:30pm Monday to Friday only. The premises would not be in operation during public holidays on Christmas Island.

No discharge of emissions to land, air, surface water or groundwater is proposed during construction of the premises. The primary emissions expected from the construction of the premises is noise (short term). Primary emission during operation includes discharge of treated wastewater to surface water (Indian Ocean) via stormwater pipeline. Treated wastewater will be held in a holding tank and will only be discharged following testing to ensure suitable quality.

Occupation and planning approval
The Shire of Christmas Island identified, in interim correspondence received from Colin Wheadon on 20 May 2016, that the proposal is broadly accepted with considerations/ exceptions relating to emissions to air. The Shire of Christmas Island confirmed via email on 26 August 2016 that no planning approval is required for the improvements proposed to the current facility.

The proponent has identified that under the current lease arrangement, IOOC are to obtain Commonwealth approval for any improvements and plant additions to the site, and have committed to requesting approval from Commonwealth Australia for the proposed upgrade at the premises.

4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987* and DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	**Condition number** **W = Works Approval** **L= Licence (TBD)**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
Interpretation	W1.1.1 – W1.1.4 L	**Construction** Conditions 1.1.1 – 1.1.4 require that terminology used within the Works Approval is referenced to the appropriate definitions where applicable and that any reference to a standard or guideline is to the most current version of that standard or guideline. **Operation** Operation is subject to the general provisions of the *Environmental Protection Act 1986*. Category 39 activities fall under Schedule 1 Part 1 of the *Environmental Protection Regulation 1987* and may be subject to Licence. An application for a licence under Section 57 of the *Environmental Protection Act 1986* has not been received with the Works Approval and will be required on receipt of the works approval compliance documentation.	General provisions of the *Environmental Protection Act, 1986*.
General conditions	W1.2.1 - W1.2.3	**Construction** No emissions to land, air, surface or groundwater is expected from the construction phase of the premises. The construction phase is expected to cause short term/ low impact noise with the installation of equipment (tanks, centrifuge, and filtration systems). The equipment and the associated pipes, valves and flanges will be installed, connected and mounted on fabricated pipeline frames. The tanks (delivered via ship to the island) and oil receptacles will also undergo some fabrication and welding for the particular requirements and process flows of the facility. The recycling facility and	Application supporting documentation. General provisions of the *Environmental Protection Act 1986.*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence (TBD)**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
	L	process will take place completely within the (currently existing) concrete bunded hardstand area at Murray Road, where only minimal civil works will be required. The premises was originally designed to comply with Department of Mines and Petroleum, Dangerous Goods legislation requirements with a permeability of 10^{-9} metres per second or less and able to contain 110% of the largest vessel/ interconnected system or 25% of the total volume. The Management of Environmental Risks submission within the supporting documentation (Attachment 6, May 2016) identifies that "the largest acute volumes of contained hydrocarbons that could potentially be lost on land from the waste oil recycling process is from the holding tank. However, this spillage/leakage would be contained within the bunded area which is adequate as per Dangerous Goods Legislation requirements (permeability of 10-9 meters per second or less and able to contain 110% of the largest vessel/interconnected system or 25% of the total volume)." Condition 1.2.1 stipulates construction is to be undertaken in accordance with specifications within Table 1.2.1 of the Works Approval, and requires the proponent to ensure that construction meets or exceeds the standards defined within Table 1.2.1. Condition 1.2.2 relates to potential deviations/ departures from the proposed construction requirements (defined within Table 1.2.1), and how these should be addressed. Additional requirements have been placed within the works approval and defined within Condition 1.2.2, Table 1.2.1: • 'Infrastructure – 3) Receival and processing area'. The proponent is required to ensure that an adequate storage area is defined within the premises for the waste 'cake' prior to it going for incineration or disposal off site. This is to ensure that all waste product is stored appropriately prior to disposal offsite. • 'Infrastructure – 4) Other treatments'. Requirements have been included, as assessed within the supporting documentation, to define the discharge channel and monitoring parameters limits.	*Environmental Protection (Unauthorised Discharges) Regulations, 2004.* Landfill Waste Classification and Waste Definitions 1996. Contaminated Sites Management Series, Assessment of soil, sediment and water 2010.

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence (TBD)**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Condition 1.2.3 outlines the documentation submitted to DER which defines the approved works (construction) for the premises. See Appendix A within the Decision Document for further risk assessment information relating to operation of the premises and emissions to surface water including monitoring.	
Point source emissions to surface water including monitoring		**Operation** See Appendix A within the Decision Document for further risk assessment information relating to operation of the premises and emissions to surface water including monitoring.	General provisions of the *Environmental Protection Act 1986.* Australian and New Zealand guidelines for fresh and marine water quality – *2000* (ANZECC, 2000).
Noise	W1.2.1 W1.2.2	**Construction and operation** <u>Emission Description</u> *Emission:* Noise from heavy vehicle movement and equipment installation and operation (centrifuge and pumps) at the premises. *Impact:* Interference with the health, welfare, convenience, comfort or amenity of sensitive residential receptors approximately 540 m north and the Christmas Island School approximately 295 m north, from noise impacts from trucks or equipment construction/ installation. *Controls:* The construction period at the premises is expected to be short term,	Application supporting documentation. General provisions of the *Environmental Protection Act, 1986.*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence (TBD)**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
	L	intermittent and low impact with minimal construction required to make the site operational (construction and installation of centrifuge, storage/ holding tanks and filtration system). Construction and operation will only occur during Monday-Friday, 7am to 5pm. The premises is expected to operate for approximately 25 hours/ week with the centrifuge (noise: 75 dBA) and pumps operating intermittently within that period. Technical advice sought from DER Environmental Sciences confirmed that the centrifuge is not expected to cause any significant noise issues from the premises under the proposed operation. The premises is located amongst other industries (two); with low staff numbers/ occupancy) and surrounded by dense native vegetation to the rear of the premises. Transfer of noise emissions generated from the construction phase or operation is expected to be minimal. Operational noise is expected to be minimal as the facility will use centrifugal and filtration separation processes with assistance of intermittent diaphragm pumps. <u>Risk Assessment</u> *Consequence:* Insignificant *Likelihood*: Possible *Risk Rating:* Low <u>Regulatory Controls</u> The premises is expected to comply with the provisions of *the Environmental Protection (Noise) Regulations 1997* which will be sufficient to regulate any noise emissions during construction or operation period.	*Environmental Protection (Noise) Regulations 1997.*

DECISION TABLE			
Works Approval / Licence section	**Condition number W = Works Approval L= Licence (TBD)**	**Justification (including risk description & decision methodology where relevant)**	**Reference documents**
		Residual Risk *Consequence*: Insignificant *Likelihood:* Possible *Residual Risk Rating:* Low	
Information	W2.1.1 – W2.1.3 L	**Construction** Conditions 2.1.1 to 2.1.2 require the submission of a compliance document on completion of the construction phase and prior to operation of the premises. This will ensure that works are certified as having been constructed in accordance with works approval requirements. Condition 2.1.3 requires upgrades or minor departures from the defined construction requirements to be listed and submitted through to DER within the construction compliance document, stated within condition 1.2.2. This ensures that departures from the approved works can be assessed and actioned as required. **Operation** The Licence will contain conditions requiring the recording and reporting of processes, production volumes, exceedences of any stipulated limits and operational requirements.	
Works Approval Duration	N/A	The Works Approval duration is proposed for a period of three years which is considered sufficient time to complete the works required (construction and installation of the centrifuge, pumps, pre-fabricated holding/ storage tanks and filtration systems) and for any potential delays in construction. The Licence duration will be determined and in accordance with 'DER guidance statement, Licence duration, May 2015' on completion of the works in accordance with the Works Approval, and once submission of a Licence application by the proponent has been received.	N/A

5 Advertisement and consultation table

Date	Event	Comments received/Notes	How comments were taken into consideration
13/06/2016	Application advertised in West Australian (or other relevant newspaper).	Application advertised in '*The Islander'*.	Nil comments received.
Various 18/5/2016	Application sent to interested parties Shire of Christmas Island	Interim comment received via email from Colin Wheadon, Shire of Christmas Island (Manager Planning Building and Health) on 20 May 2016. The Shire has supplied interim comments to DER due to conflict of interest of some parties within the Shire Council. Council have made application to the Commonwealth Minister and will submit final comments once a response from the Minister has been received. Key points noted: 1. Council supports the recycling initiative broadly, however would not support the application if there is any risk of impact to health and well-being of its citizens (air emissions from the incineration process). 2. Colin Wheadon requested that incinerated wastes are only those sourced within Christmas Island and not imported. 3. Council are interested in feedback on the application from National Parks	'Range to Reef Environmental' consultants were forwarded a copy of the correspondence and are to respond directly to the Shire on issues of concern, on behalf of the proponent. The management of waste types to the proposed incinerator will be addressed through a Licence amendment process to Christmas Island Phosphate Mine (CIP) Licence L8846/2014/1. A meeting with the proponents to discuss the potential additional condition requirements to the CIP Licence for contributory emissions was held on 8 June 2016.

Date	Event	Comments received/Notes	How comments were taken into consideration
		Australia and Water Corporation once Council submit their final comments; 4. Concerns regarding odour. 5. Air emissions to be monitored and maintained below relevant thresholds for contaminants.	
26/08/2016		Email received from Shire of Christmas Island, Colin Wheadon (Manager Planning, Building & Health) confirming the following: "The current understanding regards the improvements at IOOC is that these are simply that – (improvements) to existing processes contained within and upon an allotment already zoned for that purpose and with bunded walls etc. as required existing. Based upon this the works can also proceed."	No further limitations inhibit the granting of the Works Approval for the proposed construction at IOOC.
19/05/2016	Contaminated Sites Branch – DER Environmental Services	Recommendation received 2 June 2016 identified that the premises Licence should incorporate limits within the Licence as defined within Contaminated Sites Series, 'Assessment and management of contaminated sites' (DER 2014) guideline levels for marine waters.	The proposed Licence will incorporate limits as defined within Contaminated Sites Series, 'Assessment and management of contaminated sites' (DER 2014) guideline levels for marine waters, Appendix D, Table 7.
24/05/2016	'Range to Reef Environmental' consultants (on behalf of Indian Ocean Oil Company).	DER notified the consultant with a recommendation to consult with the Commonwealth on the proposed application as part of the project was identified as being under 'Commonwealth Heritage Places' map layer managed under the *EPBC Act 1999*	The proponent has identified that the risk from emissions to the Indian Ocean through the proposed activity is not significant, and has therefore not undertaken any consultation with or referred the application to the Commonwealth.
25/05/2016	Noise Branch – DER Environmental Services	Noise assessment undertaken by Jonathan	No further action required. Low risk noise emissions will be adequately addressed

Date	Event	Comments received/Notes	How comments were taken into consideration
		Button (31 May 2016) confirmed that the operation of the centrifuge is not expected to cause any significant issues relating to noise emissions from the premises.	under the *Environmental Protection (Noise) Regulations 1997*.
17/06/2016	National Parks Australia (Scott Suridge)	'Range to Reef' consultants submitted the application to National Parks Australia (Commonwealth) via email for review/ comment, on behalf of Phosphate Resources Ltd/ Indian Ocean Oil Company.	'Range to Reef' consultant, Roget Bibby, forwarded the following comment from Scott Suridge, on 26 July 2016, of Christmas Island National Parks (CINP) who confirmed that "CINP support reuse/recycling of materials and consider this proposal consistent with sustainable use principles."
18/07/2016	Proponent sent a copy of draft instrument	Comment received from Roget Bibby (Range to Reef Environmental) via email on 21 July 2016, with no comments for changes to the works approval except for concern over the planning approval requirement.	DER requires confirmation of planning approval from the Shire. Should IOOC have exemption to require planning approval or any other agreement or process within Christmas Island relating to planning approval then this needs to be submitted. Planning approval is considered necessary as per section 4.5 of the DER application form completed, or reason as to why it has not been obtained or considered not necessary. The Shire of Christmas Island confirmed via email on 26 August 2016 that no planning approval is required for the works proposed to the current facility.

6 Risk Assessment

Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management

Table 1: Emissions Risk Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High

Appendix A

Point source emissions to surface water including monitoring

The proponent has proposed discharge of treated waste water to the Indian Ocean via stormwater pipeline from the Murray Road Depot (premises). The premises proposes to undertake the filtration and separation of waste oil/ hydrocarbon contaminated water for reuse, with approximately 185,000 litres of treated wastewater to be discharged to the Indian Ocean (average of 507 ltr/ day).

The waste oil recycling process comprises filtering and separating, and will be undertaken as follows:

1. Used oil enters the 25 KL holding tank
2. The oil then goes through dosing vessels to enable settling and filtration and to adjust pH if required;
3. The oil passes through a static mixer to effectively combine the oil;
4. The oil enters a primary separator vessel to separate oil, solids and water;
5. The oil enters an oil treatment vessel to promote drop out of water and heavy sludge contamination;
6. The oil enters a centrifuge to further separate the oil;
7. The oil then enters an oil test tank to permit analysis of processed oil quality;
8. The cleaned and usable oil goes to oil batch tanks and the CIP burner fuel tank;
9. Oily water goes through a hydro cyclone to further separate the oil from the water;
10. The water then goes through a series of filters and separators to be clarified;
11. The water is then pumped to the finished water holding tank for testing/ sampling;
12. On verification of sampling the treated water is released to the final oil water separator and discharged to the stormwater pipeline;
13. After primary separation (and possible centrifuging) – the solids go to a filter press to create a 'cake' of impurities (dust, metals, carbon).

The tanks and equipment for use within the process are as follows:

Equipment	Size	Use/ Type
Holding tank	25,000 L	To accommodate waste oil for initial (primary processing) and subsequent recirculation of product into the system.
Primary separator vessel	4,228 L	To circulate vessel for primary separation of oil, solids and water.
Shock Tank	4,228 L	To allow rapid mixing of flocculants into the water treatment vessel
Oil treatment vessel	4,228 L	A holding and circulation vessel to promote drop out of water and heavy sludge contamination. Also recycling of oil from centrifuge if required
Oil test tank	3,433 L	A buffer tank to permit analysis of processed oil quality.
Water treatment vessel	4,228 L	Clarifies water.
Skim tank	3,433 L	Collects oil from belt separator and allows time for emulsion breakdown before passing to oil treatment vessel.
Finished water holding tank	3,433 L	A buffer tank to permit monitoring of water quality.
Oil Centrifuge	-	Operate intermittently. Model: Alfa Laval centrifuge 25mm 2000l/hr. Noise emission – 75dBA.
Diaphragm pumps	-	Operate intermittently.

Other	-	All pipelines, tanks and filtration plant and equipment will not be housed or covered, but racked and securely constructed with metal mounting plates on steel frames, as per Australian standards.

The discharge of treated wastewater from the recycling process is proposed for discharge to the Indian Ocean via stormwater pipeline. The wastewater will be tested from the final holding tank and prior to discharge via a final oily/ water separator to the stormwater pipeline to ocean. The stormwater drain traverses west along Murray Road after which it enters the state forest (Christmas Island National Park) and enters the sea via an outfall on the rocky cliffs.

The treated discharge wastewater flows through the stormwater pipeline into the Indian Ocean, west of Flying Fish Cove, away from any recreational or commercial areas on the island. The nearest beach is Flying Fish Cove which is 2 km north east of Murray Road along the coastline.

Emission Risk Assessment – Operations

Emission Description

Emission: Discharge of 185,000 litres per annum (average of 507 ltr/ day) of treated wastewater from the recycling of waste oil/ hydrocarbon contaminated water at the premises to via stormwater pipeline.
Impact: Potential contamination of surface water (Indian Ocean) from the release of particulates from the filtering and separation process such as: metals, flocculants, pH adjusters, lead, cadmium, arsenic, dioxins, Total Recoverable Hydrocarbons (TRH).
Controls: The proponent proposes that once the wastewater has been processed/ recycled (filtration/ separation), the water will be further treated in the plant through settling tanks and filtration before being stored in the finished water holding tank. The treated waste water will then be stored in the finished water holding tank to undergo testing to meet the required limits for Total Recoverable Hydrocarbons, then pumped to the final oil/ water separator before being ultimately released to the environment (Indian Ocean) via the Murray Road Depot discharge channel (enclosed pipeline).

The bund size is in accordance with Dangerous Goods Legislation requirements with a permeability of 10^{-9} meters per second or less and able to contain 110% of the largest vessel/interconnected system or 25% of the total volume.

The additional holding tank for waste oil recycling is 25 kL. The capacity of the bund is estimated to be 2800 MT.

The proponent has developed an Environmental Management Plan (EMP) which identifies management of hydrocarbons and protection of the marine environment. It includes an 'Emergency Response Plan' in the event of failure of the premises operation. The EMP has identified key governance and regulatory instruments defining its structure as the *Environmental Protection Act 1986 (WA)(CI)*, *Environmental Protection (Controlled Waste) Regulations 2001 (WA)(CI), Environmental Protection (Uncontrolled Discharge) Regulations 2004 (WA)(CI)* and *Dangerous Goods Safety Act 2004,* incorporating 'AS/NZS 4360:2004 Risk Management' approach.

The proponent will ensure that solid waste generated from the recycling process (waste 'cake') is disposed of to an appropriate facility or to a licenced landfill able to dispose of hydrocarbon contaminated waste. The proposed disposal of waste cake is proposed for incineration. The incinerator is proposed for location at Christmas Island Phosphate Mine premises and will be addressed under a Licence amendment (L8846/2014/1) as a contributory emission once application is received from the Licensee.

Risk Assessment

Consequence: Moderate
Likelihood: Possible

Risk Rating: Moderate

Regulatory Controls

Conditions will be incorporated into the Licence that stipulates monitoring of emissions to surface water parameters with relevant limits for all relevant parameters, and testing of all potential contaminants (e.g. metals, flocculants, pH adjusters, lead, cadmium, arsenic, dioxins, Total Recoverable Hydrocarbons) within the final water storage tank prior to release to the final oil/ water separator.

The Works Approval application was submitted to DER Environmental Sciences - Contaminated Sites Branch for technical advice to determine appropriate parameters for monitoring, potential limits for parameters and relevant standards/ guidelines for implementation within the pending Licence. Recommendations included:

1. Use of Contaminates Sites Series, 'Assessment and management of contaminated sites' (DER 2014) guideline levels for marine waters. Limits will therefore be incorporated into the Licence in accordance with Appendix D, Table 7 of the guidelines (sourced from ANZECC, 2000) to ensure adequate protection of marine waters.
2. Speciation of hydrocarbons in the effluent should be carried out to ensure concentrations of specific compounds such as aromatic hydrocarbons, phenols and other potential comtaminants do not exceed the assessment levels cited in 'Assessment and management of contaminated sites (DER, 2014).

Recommendation 1 above, received from DER Environmental Sciences - Contaminated Sites Branch, has been identified within condition 1.2.2, Table 1.2.1, '4. Other treatments (b)' of the Works Approval, and will be incorporated within the proposed Licence for the premises. Recommendation 2 above has been incorporated within condition 1.2.4 of the works approval to be carried during the works approval process.

The testing of the treated wastewater stored in the final holding tank will ensure that limits specified within the licence can be complied with prior to discharge to the marine environment.

The Licence will include conditions which specify what wastes may be received and how these should be managed in accordance with relevant DER guidelines. In addition, emissions to surface water will be detailed within the Licence with monitoring of parameters and potential limits for reporting. An assessment of the waste cake may be stipulated within the Licence prior to disposal in order to determine the exact suite of parameters required for monitoring. Proposed parameters and limits for the pending Licence will include, but not limited to, the following:

Point source emission limits to surface water			
Emission point reference	**Parameter**	**Limit[1] (including units)**	**Averaging period**
Holding tank (prior to discharge to stormwater drain)	Arsenic	-	Quarterly/ spot sample
	Total Aluminium	-	
	Cadmium	0.0007 mg/L	
	Chromium (III)	0.027 mg/L	
	Chromium (VI)	0.0044 mg/L	
	Copper	0.0013 mg/L	
	Total Iron	0.0003 mg/L	
	Lead	0.0044 mg/L	
	Total Mercury	0.0001 mg/L	
	Nickel	0.007 mg/L	
	Vanadium	0.1 mg/L	
	Zinc	0.0001 mg/L	
	Benzene	0.0005 mg/L	

	Naphthalene	0.0005 mg/L	
	Phenol	0.4 mg/L	
	Total Recoverable Hydrocarbons (TRH)	<10 mg/L	
	pH	8.0-8.4	
	Total Phosphorus	-	
	Total Nitrogen	-	
Oily Water Separator (discharge of tested/ treated wastewater from the holding tank and discharge of potentially contaminated stormwater from the bund area)	Total Recoverable Hydrocarbons (TRH)	<10 mg/L	Monthly/ Spot sample
	pH	8.0-8.4	

Note 1: Limits as defined within Contaminates Sites Series, 'Assessment and management of contaminated sites' (DER 2014) guideline levels for marine waters (sourced from ANZECC, 2000 guidelines).

Residual Risk
Consequence: Insignificant
Likelihood: Possible
Residual Risk Rating: Low

Additional control measures
The proponent has identified the following additional standards by which the premises will be managed for potential risk (Works Approval Application, Attachment 6 – Public Health and Environmental Risk, Management of Environmental Risks):

External management controls - Standards
The management of hazardous products is prescribed in a number of Acts and standards that specifies the proper labelling, storage, handling and disposal of hazardous substances to ensure that safety and environmental risks are minimised. These include:

- Dangerous Goods Safety Act 2004;
- Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007;
- Dangerous Goods Safety (Road and Rail Transport of Non-Explosives) Regulations 2007;
- Dangerous Goods Safety (General) Regulations 2007;
- Mines and Safety Inspection Act 1994 (WA) (CI);
- Environmental Inspection Act 1996 (WA) (CI);
- Australian Standard AS1940 – The Storage and Handling of Flammable and Combustible Liquids.

The bulk product tanks, tank foundations and secondary containment compounds are designed and constructed to comply with applicable Australian and International Standards. The applicable standards include, but are not limited to, the following:

- AS 1345 Identification of the contents of pipes, conduits and ducts.
- AS 1530.4 Methods for fire tests on building materials, components and structures - Fire-resistance test of elements of construction.
- AS 1692 Steel tanks for flammable and combustible liquids.
- AS 1657 Fixed platforms, walkways, stairways and ladders – Design, construction and installation.
- AS 1940 The storage and handling of flammable and combustible liquids.

- AS/NZS 2106 Methods for the determination of the flashpoint of flammable liquids (closed cup).
- AS 2118 Automatic fire sprinkler systems.
- AS 2441 Installation of fire hose reels.
- AS 2885 Pipelines - Gas and liquid petroleum (all parts).
- AS 3846 The handling and transport of dangerous cargoes in port areas.
- AS 3873 Pressure equipment - Operation and maintenance.
- AS 3978 Non-destructive testing - visual inspection of metal products and components.
- AS 4041 Pressure piping.
- AS 4971 Inspection and integrity monitoring of large steel vertical petroleum storage tanks.
- AS 4977 Petroleum products - Pipelines, road tanker compartment and underground tank identification.
- AS 4979 Flammable and combustible liquids - Precautions against electrostatic ignition during tank vehicle loading.
- API 620 Design and construction of large, welded, low-pressure storage tanks.
- API 650 Welded steel tanks for oil storage.
- API 652 Lining of aboveground petroleum storage tank bottoms.
- API 653 Tank inspection, repair, alteration and reconstruction.
- SP001 Standard for the inspection of aboveground storage tanks.
- R931 Double-walled steel aboveground storage tanks for installations instructions.
- UL 142 Standard for steel aboveground tanks for flammable and combustible liquids.

Internal management controls proposed by the proponent include:

- Safety and construction standards and procedures;
- Inspection, testing and maintenance the plant and equipment as per inspection and audit schedule;
- IOOC staff training and competency in waste oil handling and processing operations;
- Inspection, testing and maintenance of Smith Point shore side pipework as per inspection and audit schedule;
- Ensure API water separators are properly functional with appropriate working parts;
- Undertake quarterly monitoring of treated API separator water (currently being routinely undertaken);
- Regular maintenance and integrity inspections of vehicles and tanks that transport and store used to transport waste oil off the island for recycling;
- Disposal of all wastes in an environmentally acceptable manner in accordance with statutory requirements;
- Utilisation of a pollution control record covering all terrestrial site activities;
- Utilisation of an appropriate site for emergency storage of polluted water and soil (in the event of a pollution event) to store the contaminated materials safely until further treatment;
- Maintenance of a comprehensive register of all substances used onsite with readily available MSDSs for any hazardous substances;
- Quarterly internal auditing and reporting conducted on hydrocarbon management and incident preparedness to highlight inadequacies to trigger appropriate actions;
- Post-earthquake inspections on susceptible infrastructure conducted after the presence of an earthquake at Christmas Island; and
- Utilise the waste management hierarchy to reduce the volume of waste generated across the operations and the minimise the effects of waste generation upon the terrestrial environment.