POLLUTION INCIDENT RESPONSE MANAGEMENT PLAN
VOPAK SYDNEY TERMINAL SITE B, B4A AND B5
GATE B47, 20 FRIENDSHIP ROAD
(NEAREST INTERSECTION: SIMBLIST ROAD)
PORT BOTANY NSW 2036

EPL NO: 6007

MHF NO: 10075

https://www.vopak.com/terminals/asia/vopak-terminal-sydney-site-b

TELEPHONE:
BUSINESS HOURS (0900 – 1700): 02 9666 4455
AFTER HOURS: 02 8336 1952

POLLUTION INCIDENT EMERGENCY CONTACTS

Trent Martin –Terminal Manager – 0428 877 700 – 24hrs
trent.martin@vopak.com

Stephen Duffy – Operations Manager – 0421 381 289 – 24 hrs
stephen.duffy@vopak.com

Site Control Room – 02 8336 1952 – 24 hrs

Vopak Terminal Site B Website address

REVISION

Rev	Date	Page	Description of Revision	Prepared	Reviewed	Approved
1	May 2020	ALL	Complete PIRMP Revision to be in line with 2020 ERP and 20p2148 EPA template	R. Genuttis	P. Kohli	M. Bhimani
2	March 2021	All	Update as per Audit requirements	N. Sequeira	p. Kohli	M. Bhimani
3	June 2023	All	Update contact details, Schedule 15 chemicals, and other minor formatting	U. Chibuzor	A. Biswas	T. Martin

1 Contents

2 INTRODUCTION

Vopak Terminals Australia holds an Environment Protection Licence EPL 6007, with the NSW Environment Protection Authority (EPA) for:

- Site B - Gate B47, 20 Friendship Road, Port Botany, New South Wales.
- Site B5 – B33, 49 Friendship Road, Port Botany, New South Wales.
- Site B4A – 37 Friendship Road, Port Botany, New South Wales.

The Pollution Incident Response Management Plan (PIRMP) has been prepared for Vopak Terminals Site B, B5 and B4A to set out specific requirements for achieving compliance with the relevant requirements introduced in the 153A of the Protection of the Environment Operations Act 1997 (POEO Act).

3 SCOPE

This Plan has been prepared for the Vopak Terminals Australia Site B, B5 and B4APort Botany Terminal for hazardous and non-hazardous goods storage and handling, located at

- Site B - Gate B47, 20 Friendship Road, Port Botany, New South Wales.
- Site B5 – B33, 49 Friendship Road, Port Botany, New South Wales.
- Site B4A - 37 Friendship Road, Port Botany, New South Wales

The Plan is intended to cover all emergencies that may occur at this site, including:

- The area within the perimeter of the Terminal facility;
- The Vopak Terminals Australia manifold and pipelines at the NSW Ports - Port Botany Bulk Liquid Berths Complex (BLB1 & BLB2);
- The Pipeline Corridor between the Vopak Terminals Australia Site B and both Bulk Liquid Berths;
- The pipeline corridor between the BLB1 wharf up to the Jet Fuel pipeline connections in Bumborah Point Road and the Caltex Transfer Pipeline (CTP) up to the Caltex Banksmeadow Terminal.
- The pipeline connections from Site B to Site B4A.

For emergencies at the Vopak Terminals Australia site which may impact on or involve neighbouring sites, or the community, or emergencies at neighbouring sites which may impact on or involve the Vopak Terminals Australia Terminal, the Port Botany Emergency Plan is applicable.

Site B is a designated Major Hazard Facility (MHF) and OPS09_1B Emergency Response Plan has been developed to comply with the Clause 43 of the NSW Work Health Safety Regulation 2017.

4 PURPOSE

The purpose of this Pollution Incident Response Management Plan (PIRMP) along with the Emergency Response Plan (ERP) is to:

- Identify risks of a pollution event and the actions to be taken to mitigate those risks
- Minimise the risk of a pollution incident occurring as a result of licensed activities
- Control and limit the effect that an emergency, or potential emergency, may have on the site, on our neighbours, and on the environment
- Facilitate emergency response and to effectively utilise the Company's resources to provide assistance on the site which is appropriate to the occasion
- Ensure prompt and concise communication of all vital information to emergency services and neighbouring facilities
- Ensure that a high level of preparedness is maintained by providing adequate training in the plan
- Provide a basis for reviewing and updating emergency procedures.

This Plan will be activated and implemented when an emergency situation arises at the Terminal that cannot be controlled by routine operating procedures, as laid down in the Corporate/Terminal Policies & Procedures Manual or standing orders.

5 GLOSSARY OF ABBREVIATIONS

BLB1	Bulk Liquids Berth 1
BLB2	Bulk Liquids Berth 2
ERP	Emergency Response Plan
EPA	Environmental Protection Authority
ESD	Emergency Shutdown
MHF	Major Hazard Facility
NSW Ports	NSW Ports acts as the Landlord of the site
SDS	Safety Data Sheet
PBER & AS	Port Botany Emergency Radio and Alarm System

NSW Ports	New South Wales Ports
VTA	Vopak Terminals Australia
IC	Incident Commander
MyDocs	Document Management System
SMS	Safety Management System

6 GLOSSARY OF DEFINITIONS

ACT: Protection of the Environment Operations Act 1997 (POEO Act)

EMERGENCY: Any hazardous situation where there is a danger or a potential danger to personnel and/or property, or where the impact of such a situation has the potential to result in environmental consequences.

OUTSIDE NORMAL BUSINESS HOURS: The period where no Terminal Management personnel is on site. Note that there is always 24/7-hour Operations personnel onsite.

INTERNAL ALERT: An emergency situation which threatens life, the environment or property, and which can be handled by on-site resources.

EXTERNAL ALERT: An emergency situation where the effects may spread beyond the site boundary affecting people, the environment and property; or which cannot be contained by on-site resources.

POLLUTION INCIDENT: An Incident or set of circumstances during or as a consequence of which there is or is likely be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

MATERIAL HARM: Material harm is defined in section 147 of the POEO Act as:

(a) Harm to the environment is material if:

(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or

(ii) it results in actual or potential loss or property damage of an amount, or amounts in, exceeding $10,000 (or such other amount as is prescribed by the regulations), and

(b) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.'

7 GENERAL DESCRIPTION OF TERMINAL

7.1 GENERAL OVERVIEW

The Vopak Terminal Site B is located at Gate B47, 20 Friendship Road, Port Botany, and is served by the Bulk Liquids Berth on the north-eastern area of Botany Bay. Across the road to Site B is the Site B4A which houses 3 diesel storage tanks.

Figure. 1 Shows the Terminal locality in the Port Botany Area and the neighbouring facilities.

It occupies an area of approximately 9 hectares on the northern side of Friendship Road. The Terminal receives, internally transfers, stores and loads, a variety of liquid petroleum and associated products owned by various Vopak clients. The products are delivered to the Terminal in bulk predominantly by petroleum parcel tanker ships and the balance by road tanker vehicles.

Products can be transferred to the Terminal through pipelines from the Bulk Liquids Berth Complex from BLB1 or BLB2 or through the Caltex Transfer Pipeline (CTP) from the Caltex Banksmeadow Terminal. Products are then directed to selected tanks by interconnections made at the Manifold. Products can be transferred from the Terminal to a ship at BLB2. Jet Fuel can also be transferred to the JUHI Facility at Sydney Airport by pipeline transfer from Site B via a dedicated pipeline which connects to the Caltex JUHI Pipeline in Bumborah Point Road. The CTP Pipeline can transfer petrol and/or diesel from Site B to the Mobil Terminal at Silverwater via Caltex Banksmeadow.

The complex is divided into several areas:- Road Tanker vehicle loading and access ways (Central section of the Terminal), Control Room building at the eastern end and the remainder of the site is taken up with the storage tank areas with a fire access road around the perimeters. Site B4A consists of 3 diesel storage tanks on the eastern side of Friendship Road.

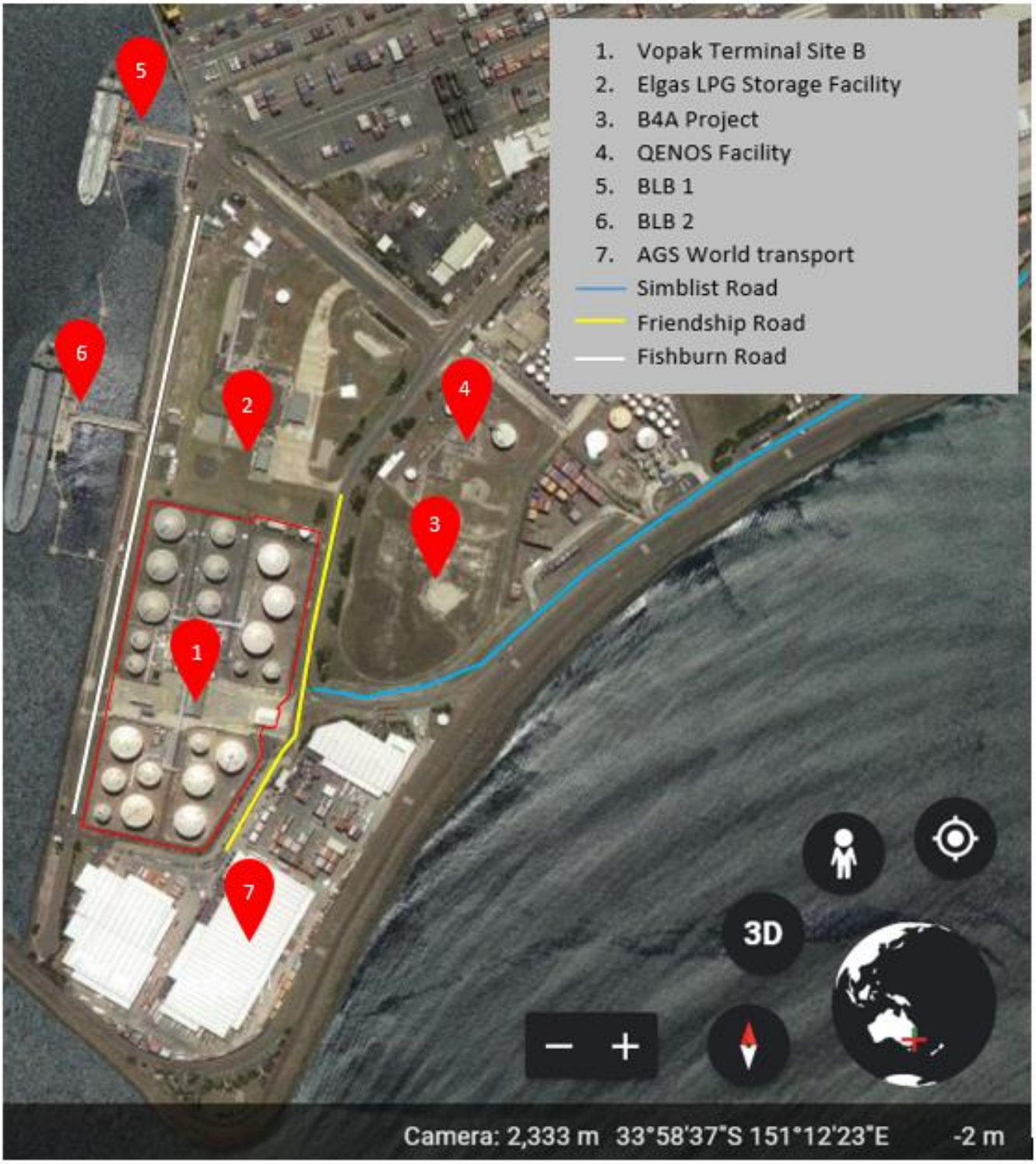
Vopak Bitumen Facility is situated at 49 Friendship Road, Gate B33 in Port Botany and is approximately 13 km south of the Sydney CBD. NSW Ports is the landowner of the proposed site. The site was previously occupied by an LPG Storage and Distribution Facility (JORTL). The site covers approximately 4 hectares. The Bitumen Facility comprises of storage and heating facilities for three different bitumen grades in 3 x 7,700 m 3 tanks, ship receipt facilities, including a dedicated electrically traced pipeline to Bulk Liquids Berth No.1 (BLB1), vapour combustion unit (used during ship import and road tanker loading when high odour levels are expected), gantry facilities for loading bitumen road tankers ..

7.2 SURROUNDING LAND USE

Site B is bounded by Fishburn Road and the NSW Ports pipeline corridor to the west, Qenos along Friendship road to the east, Elgas to the north and Austate Logistics to the south. Site B is located in the same vicinity as nearby major hazard facilities (MHFs) operated by Elgas, Qenos and Origin. See Figure. 1.

The nearest residential area is located at Phillip Bay approximately 1.5 km to the south-east of the site across Yarra Bay. Other residential areas, slightly further away (approximately 2 kilometres), are Matraville/Chifley to the north-east, Little Bay to the east, La Perouse to the south-east and Botany to the north-west. Botany cemetery is located about 800 metres to the east. Vopak Terminal is, therefore, substantially within an industrial environment and is well removed from residential or sensitive populations.

Figure 1: Area Surrounding Site B including Neighbouring MHFs



8 HAZARDOUS MATERIAL & ENVIRONMENT HAZARDS

The layout of the Terminal B enables it to be logically divided into three major areas, i.e. road tanker loading, services buildings and the storage tank area. Bunding within the storage tank areas creates sub-divided areas. (**Refer Appendix – A1** Site Plan Layout (Site B), **Appendix – A2** Site Plan Layout (Site B4A) **Appendix – B1** Site Manifest (Site B) and Appendix - B2 Site Manifest (Site B4A))

The storage tank area at Site B has a total of 26 bulk storage tanks and 9 Utility tanks in 9 bunded areas. All storage tanks are designed for Dangerous Goods Class 3 and are provided with intermediate floating roofs to reduce the risk of fire or explosion by eliminating vapour from the ullage space above the liquid. Site B4A has 3 fixed roof storage tanks of total 105,000 m3 for diesel (or other combustibles) storage in bunded areas.

The hazardous materials below are typical of those that may be stored at this site. However, as the actual products and quantities stored at any one time will vary, reference must be made to the Emergency Manifest (Product Storage Analysis Sheets - Daily) and Safety Data Sheets located in the Emergency Information Panels positioned at the Control Room and at the Fire Pump house. Additionally, information regarding the hazardous materials stored on site may be obtained from the WorkCover Authority Stored Chemical Information Database System (SCID) available to Emergency Services.

Table 1: Common Hazardous Materials

Product	Un No.	Dangerous Goods Class (+ Sub-Risk If Applicable)	Packaging Group	Hazchem
DYE - PETROLEUM	N/C	3	N/C	3YE
ETHANOL (FUEL GRADE)	1170	3	II	2YE
JET FUEL (KEROSENE)	1223	3	III	3YE
NITROGEN, REFRIGERATED LIQUID	1977	2.2	N/C	2T
PETROLEUM – ADDITIVES VARIOUS	1993	3	III	3Y
PETROLEUM DISTILLATES, N.O.S.*	1268	3	III	3Y
PETROLEUM - UNLEADED VARIOUS GRADES	1203	3	II	3YE

8.1 INVENTORY OF POLLUTANTS

Vopak Terminal stores, handles and distributes a large number of fuel products and fuel additives, and has a comprehensive Safety Management System (SMS) for the safe storage and handling of such materials on site. Vopak uses various procedures, process and systems including and not limited to -

- Dangerous Goods and Hazardous Substances Manifest and Notification Procedure
- Safety Data Sheets of chemicals stored on site
- MOC process for the approval of new chemicals on site and product changes in tanks
- Procedures for safe storage and use of these materials
- Training and competency of staff
- Engineering Design and Standards

In addition, to meet the requirements of Acts other than the environmental legislation, updates of the Dangerous Goods and Hazardous Substance Manifest and List are undertaken and provided to NSW WorkCover Authority.

A list of Hazardous Chemicals is listed in **Table. 2** of the PIRMP.

Table 2: Location of Schedule 15 material and other stored products

Tank #	Stored Product	Capacity (m^3)	Schedule Material? Yes or no
101	Jet A1	17,819.883	Yes
102	Jet A1	17,783.145	Yes
103	98 RON	17,797.747	Yes
104	Jet A1	5,431.203	Yes
105	95 RON	5,426.245	Yes
206	95 PULP	10,737.517	Yes
207	95 PULP	10,726.878	Yes
208	98 RON	10,717.657	Yes
309	98 RON	1,940.968	Yes
310	95 PULP	1,927.648	Yes
311	98 RON	1,926.783	Yes
312	95 PULP	1,940.756	Yes
418	HiTec 4691C	8,673 Litres	No
419	FD00032A	12,054 Litres	No
420	FG00040M	12,054 Litres	No
421	HiTec 6590C	8,673 Litres	No
621	Diesel	24,535.036	No
622	Diesel	24,399.985	No
623	91 ULP	24,627.486	Yes
624	Diesel	6,628.382	No
625	Ethanol	2,972.000	Yes
726	98 RON	26,165.844	Yes
727	91 ULP	13,351.971	Yes
728	91 ULP	13,276.600	Yes
729	91 ULP	26,222.181	Yes
730	98 RON	4,868.987	Yes
940	91 ULP	22,601.669	Yes
941	98 RON	7,282.578	Yes
942	91 ULP	23,750.598	Yes
943	91 ULP	23,728.286	Yes
4 Pails	Red Dye	80 Litres	No
1101	Diesel	34,357.882	No
1102	Diesel	34,347.196	No
1103	Diesel	34,331.727	No
V51001	Stadis 450	1110 Litres	Yes
881	HiTec 4694R	1500 L	Yes
882	OGA 72090	1500 L	Yes
413	Flammable Liquid NOS	30000 L	Yes
414	Flammable Liquid NOS	30000 L	Yes

415	Flammable Liquid NOS	200000L	Yes
416	Flammable Liquid NOS	200000L	Yes
836	Flammable Liquid NOS	200000L	Yes
837	Flammable Liquid NOS	200000L	Yes

8.2 POLLUTION INCIDENTS

The products being stored and handled at this site which are considered to be hazardous are all those Class 3 products due to their flammability.

The types of events which may be encountered at this Terminal or the bulk liquids berth leading to a pollution incident may arise from:

Type of Emergency	Description
Fire	Fires or flash fires which result from product spillages, gas leakage, hose rupture or a lightning strike. **Note:** This is the most serious emergency situation as a small fire could escalate into a major disaster if not handled promptly.
Explosion	Explosions including UCVE which may involve bulk liquid storage tanks, pressure vessels, road tankers or pipelines.
Spill or leak	Spills or leaks of hazardous or non-hazardous materials which may range from a minor spill or leak to medium or significant leak.
Toxic Fumes	Toxic Fumes may result from fires engulfing toxic materials or by the reaction of another substance, or as a by-product of combustion in a fire.
Tanker at Berth	Tanker at berth refers to a bulk ocean-going vessel moored at the Bulk Liquids Berth which may be involved in an emergency.
Vapour Clouds	Vapour Clouds of flammable and or toxic vapour releases caused by spillages or leaks.
Natural Phenomena	Natural Phenomena includes high wind, electrical storms and earthquake, the secondary events of which may result in product spillages or leaks, fire or explosion.
Overpressure	Over pressure of bulk liquid storage tanks, pipelines or pressure vessels.

To identify the likelihood of any such hazards occurring, including details of any conditions or events that could, or would, increase that likelihood please see the **Site B Vopak Environmental Risk Register** (attached as Appendix E).

9 ENVIRONMENTAL SYSTEMS

9.1 SPILL CONTAINMENT

All tanks are in bunded areas which provide 110% containment of the largest tank volume plus an allowance for firewater containment in accordance with the requirements of AS1940. The bund materials and construction differ between the B1/B2 and B3 areas as they were constructed at different times. B1/B2 tanks are gravel bunds with a liner. B3A tanks are also within a gravel bund with a liner and the B3B area tanks are within a concrete floored bund. B4A bunds are gravel bunds with a liner.

Bunds are equipped with level detection and high level alarms.

Spills, wash down water and rain water in road tanker loading bays collect in a drainage system which is manually pumped out to the slops tanks. Pump bays are located in curbed and covered areas with a sump and a pneumatic diaphragm pump which transfers liquid from the sump to the slops tanks. (Refer to **Appendix – C1** Stormwater Drainage Plan Site B, Appendix C2 Stormwater Drainage Plan Site B4A,Appendix **– D1** Drainage Process Flow Diagram Site B and Appendix **– D1** Drainage Process Flow Diagram Site B4A)

9.2 SLOPS SYSTEM

Storage tanks and operational handling areas are provided with spillage collection facilities in the event of a minor or major spill, or for normal operations practices.

These facilities are bunded or sloped drainage areas with either an open sump or an underground collection tank.

The facilities with spillage collection include the following areas:

- Storage tank compounds
- Slops Tanks/Additives Tanks compound (B1 and B3A areas)
- Transfer Manifold area (B1 and B3A areas)
- Tanker loading bay
- Pump manifolds (B1, B2 and B3 areas)
- Waste Water Treatment Plant (B1 and B3 areas)
- Vapour Recovery Unit

To reduce the risks from exposure and/or fire/explosion or overflow, these areas are regularly emptied by transferring to the appropriate waste disposal (slops tank for subsequent off-site disposal) or waste water treatment system.

9.3 STORMWATER SYSTEM

Stormwater from paved road ways either flows naturally from the site (low use areas, such as site perimeter roadways) or is collected in the site stormwater system (high use areas, such as terminal forecourt area or internals roadways) and is gravity transferred into the site interceptor pit. Each of Site B, B5 and B4A have their own interceptor pits. And oily water separators.

Stormwater collected in bunded areas is first visually inspected by an Operator and then is pumped through a stormwater piping system to the stormwater interceptor pit via an oil water separator which separates any oil/hydrocarbon from water. After sampling as per EPL and site operating procedure requirements, water is manually (operator initiated) released from the interceptor pit to Botany Bay.

There is one stormwater discharge point from the Site B. The discharge point is near the south-western corner of the Terminal (on the Fishburn road side) which discharges directly to Botany Bay. It is fitted with an electrically operated isolation valve (on the outlet from the interceptor pit) to isolate the final discharge from Botany Bay to prevent egress off site in the event of spillages. B5 and B4A have their own stormwater discharge points. Sampling and testing requirements and procedures are stipulated in the relevant storm water procedures.

To prevent the spillage of hazardous substances in areas outside of spillage collection areas, the following operational restrictions apply to areas outside of spillage collection areas:

- No storage, filling, emptying of slops tanks, drums, intermediate bulk containers or buckets.
- No handling of open containers.
- No flexible hoses to be in use. and
- No loading/unloading of road tankers or waste disposal trucks.

9.4 VAPOUR RECOVERY UNIT

A vapour recovery unit (VRU) recovers vapours from the tanker loading bay (via connection of the vapour return hose to the trucks), reducing emissions to atmosphere and also preventing the accumulation of flammable vapours in the vicinity of the loading bays. The VRU vacuum strips hydrocarbon vapours, absorbs them into a gasoline flow and these are collected and returned to a gasoline bulk storage tank.

9.5 BITUMEN VAPOUR CONTROL AND ODOUR MANAGEMENT

A Vapour Combustor is located at Bitumen Facility near the Utilities Building for treating storage tank vapours during ship unloading operations, truck loading operations and at scheduled times to mitigate high odour levels.

Bitumen shipping, storage and loading activities have the potential to generate “odours”. The purpose of this procedure Bitumen Odour Management Procedure OPS0001E, is the management and control of odours from the Bitumen Terminals. The procedure covers the equipment, operations and procedures in routine operations and in response to offensive odours detected or complaints from the community and regulators. All odour complaints are captured in Enablon and investigated.

10 LICENSED DISCHARGE POINTS

Details of discharge points for Site B, B4A and B5 can be found in EPL License. Following license discharge points are important from the standpoint of monitoring and reporting:

EPL Identification	Type of Monitoring Point	Type of Discharge Point	Location Description
Point 1	Discharge to air Air emission monitoring	Discharge to air Air emission monitoring	Vapour Recovery Unit serving all road tanker loading bays
Point 2	Discharge to waters Effluent quality monitoring	Discharge to waters Effluent quality monitoring	Discharge from the Stormwater Interceptor located at the south west of the Site B
Point 10	Surface Water Discharge Point	Surface Water Discharge Point	Stormwater discharge from the Final Stormwater Pit Discharge at the B4A terminal
Point 16	Surface Water Discharge Point	Surface Water Discharge Point	Stormwater discharge from Surface Drain Discharge at the B4A terminal

Point 3 to Point 7 and Point 11 to Point 15 are ground water quality monitoring points at various locations. Point 8 and Point 9 refers to the vapour combustion unit on Site B5

11 INCIDENT NOTIFICATION

Notification is required if a pollution incident causes or threatens to cause 'material harm to the environment'. Notification is required even where 'harm to the environment is caused only in the premises where the pollution incident occurs', as specified in section 147(2).

Section 148 of the POEO Act sets out additional pollution incident notification requirements. Only those incidents which occur in the course of an activity so that material harm to the environment is caused or threatened are to be reported.

11.1 NOTIFICATION TO AUTHORITIES

The SHECQ Manager or his delegate has primary responsibility for statutory notification and reporting of a pollution incident immediately to the -

- EPA
- NSW Police
- NSW Department of Health
- Fire and Rescue NSW
- SafeWork NSW
- Local Council - Randwick
- NSW Ports

- Internal stakeholders and
- VTA Management Team
- Vopak Division and Global in accordance with Vopak's incident notification process

Following the initial notification by the SHECQ representative, the Terminal Manager (TM) is responsible for consultation and coordination of the response with the Emergency Services, Support Agencies, external authorities and neighbouring premises in matters pertaining to this plan.

11.2 NOTIFICATION TO NEIGHBOURING PREMISES

The Incident Commander or his delegate has primary responsibility for notification and reporting of a pollution incident immediately to the neighbouring premises if harm to the environment is material.

Section 148 of the POEO Act - (2) Duty of person carrying on activity to notify A person carrying on the activity must, immediately after the person becomes aware of the incident, notify each relevant authority of the incident and all relevant information about it.

The following are the neighbouring sites to be contacted, numbers are included in contact list 9.4 of this document.

- Terminals Site A
- Terminals Site C
- Qenos Hydrocarbons
- Elgas PLG Cavern
- DP World
- AGS World Transport
- ACFS
- TYNE

Notification may be sent through Port Botany Emergency Radio System (PBERS).

11.3 NOTIFICATION OF INCIDENT

The relevant information to be given according to section 150 of the POEO Act (1997) when notifying the incident to the regulatory authorities is as follows:

- Time, date, nature, duration and location of the incident;
- Location of the place where pollution is occurring or is likely to occur;
- The nature, the estimated quantity or volume and the concentration of any pollutants involved;
- The circumstances in which the incident occurred;
- Action taken or proposed to be taken to deal with the incident, and any resulting pollution or threatened pollution;

11.4 CONTACT LIST

Notification of relevant authorities	
Fire & Rescue NSW	First Notification: 000 Alexandria: 9318-4320 Matraville: 9694-1146 Botany: 9666-5440 Mascot: 9667-3837
NSW Police	Local Area Commander – Botany Bay Maroubra: 9349-9299 Mascot: 8338-7399 Police Assistance Line (24hrs) – 131-444
EPA	131 555 Manager, Dangerous Goods (02) 9995 5555
SafeWork NSW	131 050 Major Hazards Facilities Team (02) 8281 6303
NSW Health	Officer in Charge, Disaster Planning (02) 9391 9249
State Emergency Service	Division Executive Officer (02) 9793 3099
Sydney Ports Corporation	NSW Ports Port Emergency (02) 9296-4000
Sydney Ports Bulk Liquid Berth Complex	(02) 9666-4906
Department of Planning	Leader, Major Hazards Policy Unit (02 9228 6111)
Neighbouring Sites	
Terminals Site A	(02) 9316-1900
Terminals Site C	(02) 9316-1933
Qenos Hydrocarbons	(02) 9666-4028
Elgas PLG Cavern	(02) 8336-4200
Origin P/L	(02) 9316-3800
DP World	(02) 9394-0901
AGS World Transport	(02) 9666-4555
ACFS	(02) 8484 6200
TYNE	

12 SAFETY & EMERGENCY EQUIPMENT

Spill management equipment available for use in emergency situations is listed in Table 2 below:

Description	Make/Type	Location	Quantity (Minimum)
Emergency Spill Kits	Spill Max 6 Kits each kit contains	Near Truck Loading Bay 6	6 Sets
	Floor Sweep 10Kg X 3		18 pcs
	Mini Boom 1.2 m X 75mm X 3		18 pcs
	Mini Boom 3m X 100mm X 2		12 pcs
	Absorbent Pillow X 1		1 pcs
	Absorbent Pad X 50		300 pcs
	Absorbent Wipes X 10		60 pcs
	Nitrile Gloves X 2		10 pcs
	Contaminated Waste Bag X 3		18 pcs
Rapid Pipeline Clamps	Various Sizes	Storage Shed	
2 Pack Rapid Putty	pack	Storage Shed	
Air Driven Diaphragm pump	Associated hoses and connectors	Storage Shed	
Rags	100 Kg	Storage Shed	100 Kg
Gloves	Protector All safe	Control Room	50 sets
Mops		Storage Shed	5
Squeegees		Storage Shed	5
Floating Skimmer	Associated pump and hoses	Storage Shed	1

Pollution response equipment must be checked for functionality and the inventory validated every six months.

13 TRAINING, DRILLS & REVISION OF PIRMP

13.1 TRAINING

All employees who are employed at Vopak are required to be initially trained, and retrained routinely as per the Job competency Profile in the Emergency Response Plan and the PIRMP, in particular equipment, and tasks applicable to their role in the Emergency. The Terminal Manager (TM) or his delegate is responsible for ensuring that all site personnel are properly trained in their roles and responsibilities with respect to execution and maintenance of this PIRMP.

13.2 DRILLS

The SHEQ Advisor is responsible for the annual emergency response drill planning with a list of emergency scenarios for the month. Emergency exercise drills are carried out each month including one scenario annually involving external stakeholders. Emergency Exercise drill are to include at least one pollution response exercise every Year. Scenarios will be selected to ensure all possible emergencies are tested during the year.

During emergency drills (scenarios) observers are to be appointed to watch and record events during the simulated emergency. After the simulated emergency a debriefing is to be held by the Incident Commander (IC), the Site controller, observers and all other personnel involved in the Emergency response Exercise.

A report must be prepared by the IC, in conjunction with the SHE Coordinator, stating the emergency, the participants, actions taken, gaps encountered, and recommendations to improve emergency response. The testing of the PIRMP must be captured in Enablon and any identified issues captured in Enablon and actioned. The ERP and shall be reviewed and updated accordingly.

13.3 REVISION OF PIRMP

The plan must be reviewed annually and within one month of any significant pollution incident. The TM must ensure that the information included in the plan is accurate and up-to-date and the effective in managing any credible pollution event.

13.4 PIRMP TO BE LOCATED

This PIRMP will be available in Electronic format on the Vopak Website and in MyDocs. This PIRMP will be included as an Appendix to the ERP and hard copies of the Plan will be retained at the Terminal at -

- Site B Control Room
- Site B5 Control Room
- Terminal Managers Office

14 EMERGENCY RESPONSE PLAN

Vopak Terminals Australia has in place a comprehensive Emergency Response Plan (ERP) OPS09_1B. The purpose of the ERP is to:-

- Describe the method of evacuating the site
  Refer to section 6.1.1, 6.1.2 and 6.1.3 on in the December 2022 version of the Emergency Response Plan
- Control and limit the harm that an emergency, or potential emergency, may have on the site, our people, on our neighbours, and on the environment;
  Predetermined Scenario Specific Emergencies and the method of response can be found within section 6.2 of the December 2022 version of the Emergency Response Plan
- Facilitate emergency response and to effectively utilise the Company's resources to provide assistance on the site which is appropriate to the occasion;
  Predetermined Scenario Specific Emergencies and the method of response can be found within section 6.2 of the December 2022 version of the Emergency Response Plan
- Ensure prompt and concise communication of all vital information to emergency services;
  Emergency Communication Systems are defined within Section 10 of December 2022 version of the Emergency Response Plan
- Facilitate the re-organisation and reconstruction activities to enable normal operations to be resumed;
  Termination of an Emergency is defined in section 12 of the December 2022 version of the Emergency Response Plan
- Ensure that a high level of preparedness is maintained by providing adequate training in the plan; and (refer to training as part of SMS)
  Training, Drills and Equipment Testing is detailed within section 8 of the December 2022 version of the Emergency Response Plan
- Provide a basis for reviewing and updating emergency procedures.
  Review and Revision Of Emergency Procedures is defined within section 9 of the December 2022 version of the Emergency Response Plan

15 REFERENCE DOCUMENTS

- Vopak - Incident Investigation and Reporting - SHE004C
- Vopak - Pollution Complaint Log – FOPS022C
- Vopak – Emergency Response Plan – OPS09_1B
- Vopak – Bitumen Odour Management System – OPS001E
- Vopak – Stormwater Management – OPS11-02D
- Vopak – Vopak – Environmental Protection System – SHE07B
- Emergency Response Specific Scenarios
- Vopak – Environmental Aspects and Impacts Register
- NSW Port - Port Botany Emergency Response Plan
- EPA – Pollution Incident Response Management Plans

Appendix A1 – Site Plan Layout Site B

Figure 2: Site B Plan Layout

B1 + B2 + B3 = 348,588 m3

COLOUR LEGEND

98		ADD	
JET		ULP	
ETHANOL		95/PULP	
		BIODIESEL	

B1

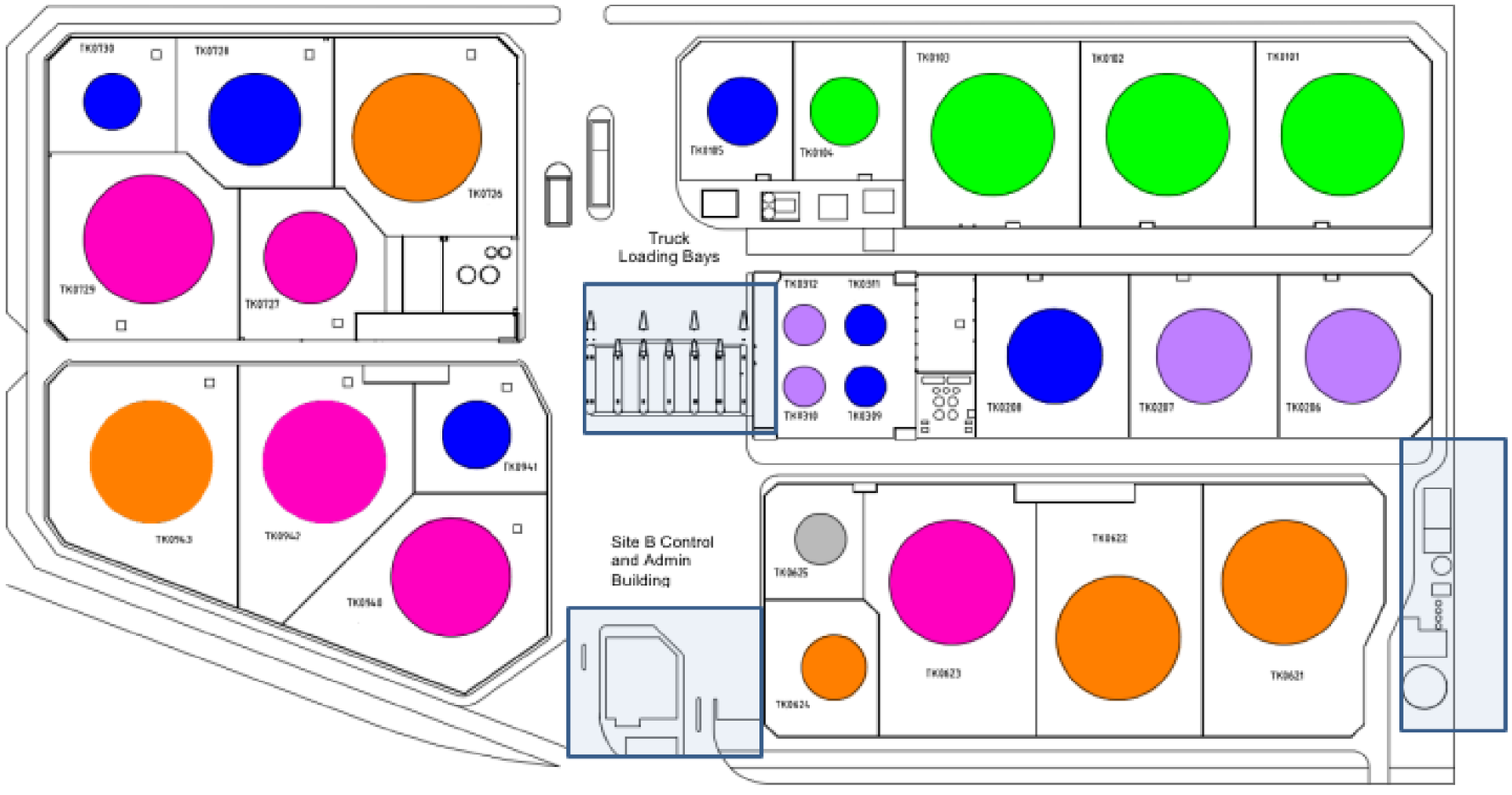
TANK No.	TANK DIA (m)	TANK HEIGHT (m)	VOLUME AT PFL (m3)
101	36.000	18.006	17,819.883
102	36.000	18.022	17,783.145
103	35.999	18.005	17,797.747
104	20.000	18.004	5,431.203
105	20.000	18.007	5,426.245
206	28.000	18.014	10,737.517
207	28.030	17.967	10,726.878
208	28.000	18.001	10,717.657
		TOTAL	96,440.275

B2

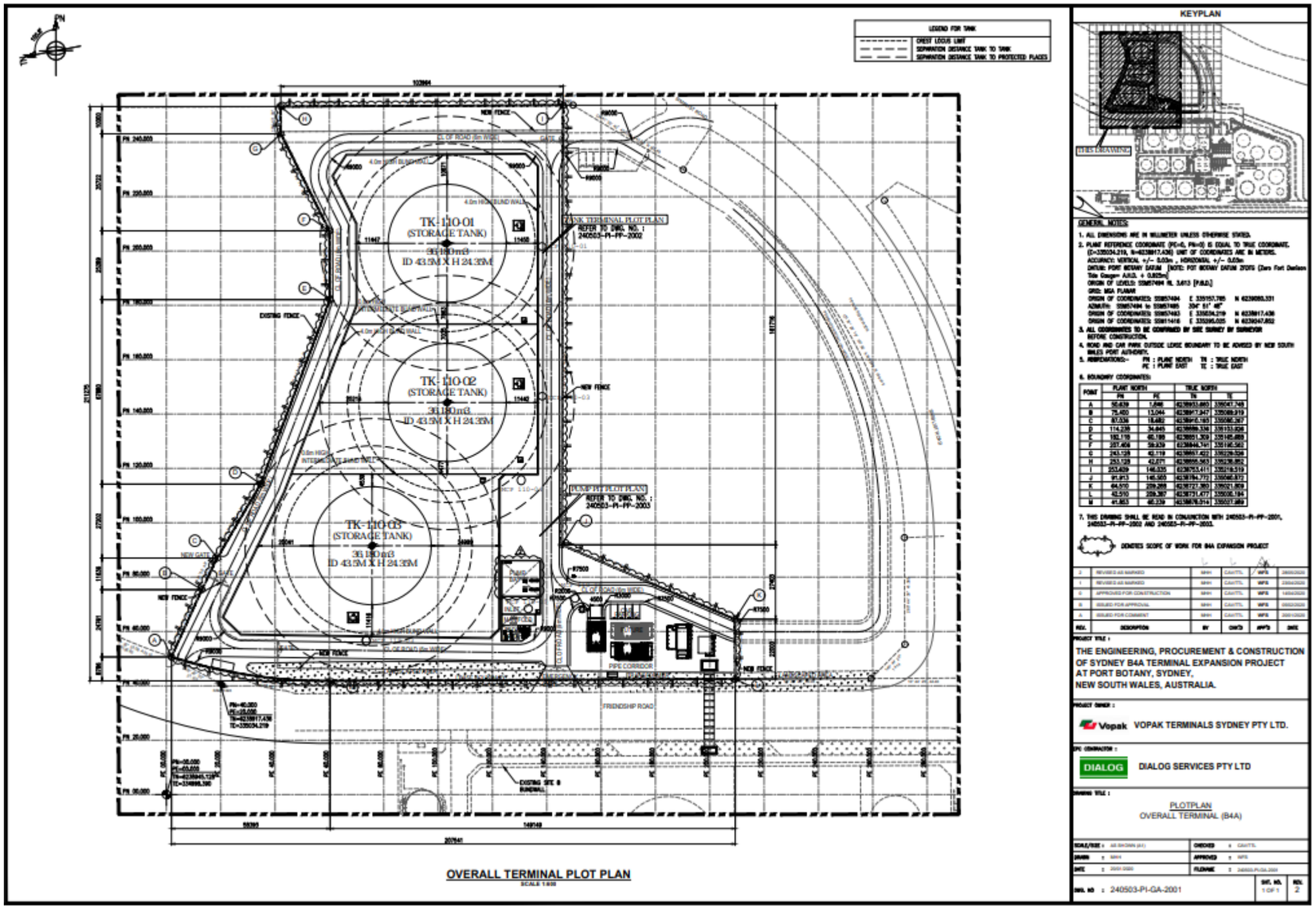
TANK No.	TANK DIA (m)	TANK HEIGHT (m)	VOLUME AT PFL (m3)
309	12.000	17.897	1,941
310	12.000	17.898	1,928
311	12.000	17.893	1,927
312	12.000	17.882	1,941
621	36.610	24.000	24,535
622	36.607	23.995	24,400
623	36.600	23.930	24,627
624	19.114	23.982	6,628
625	15.000	17.994	2,972
		Total	90,899

B3

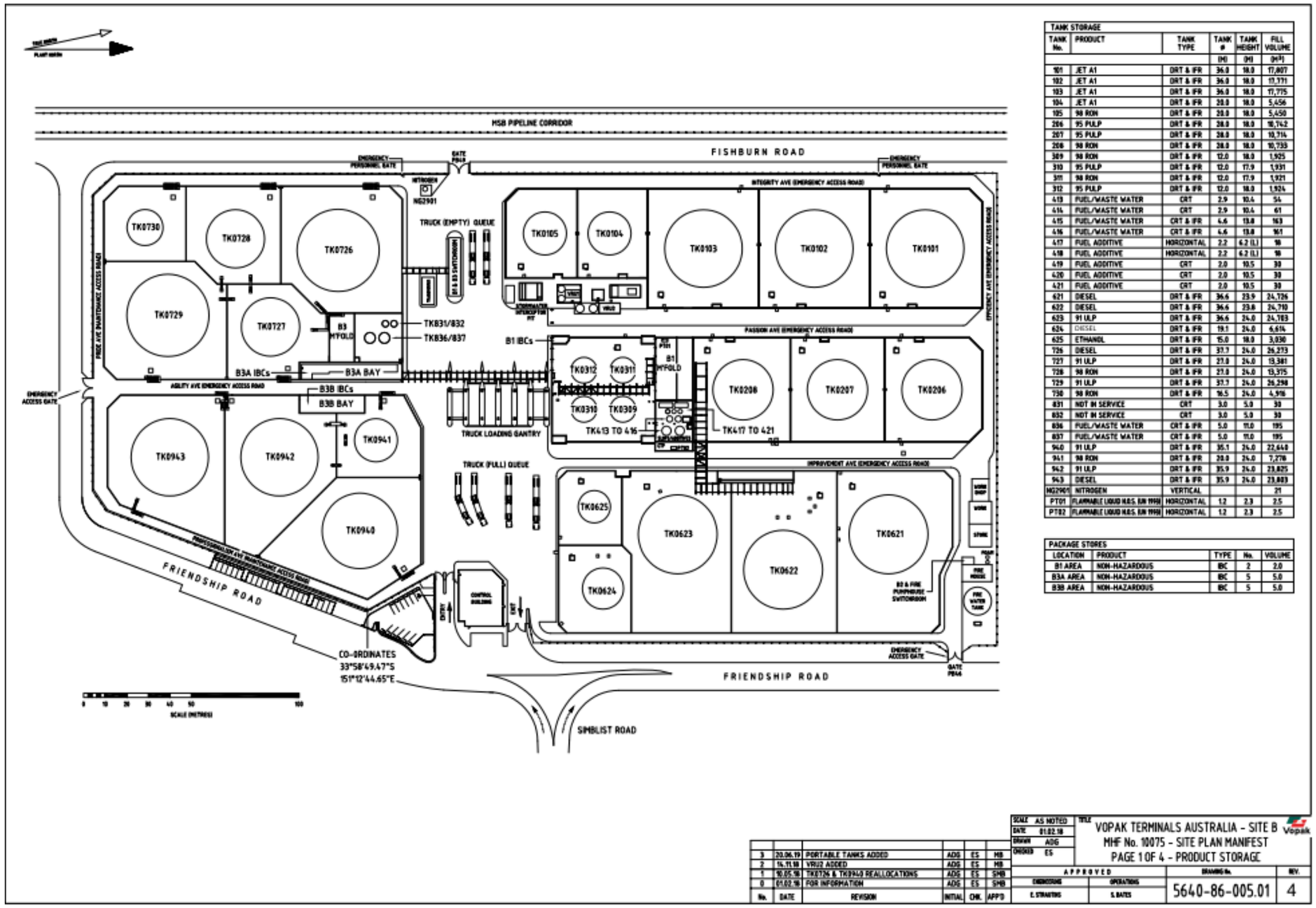
TANK No.	TANK DIA (m)	TANK HEIGHT (m)	VOLUME AT PFL (m3)
726	37.771	23.995	26,166
727	27.021	23.997	13,352
728	26.984	23.994	13,277
729	37.748	23.992	26,222
730	16.516	23.983	4,869
940	35.051	24.000	22,602
941	20.000	24.000	7,283
942	35.900	24.000	23,751
943	35.900	24.000	23,728
			161,249



Appendix A1 – Site Plan Layout Site B4A



Appendix B1 - Vopak Site B Site Plan Manifest



TANK STORAGE					
TANK No.	PRODUCT	TANK TYPE	TANK Ø	TANK HEIGHT	FILL VOLUME
			(M)	(M)	(M³)
101	JET A1	CRT & IFR	36.0	18.0	17,807
102	JET A1	CRT & IFR	36.0	18.0	17,771
103	JET A1	CRT & IFR	36.0	18.0	17,775
104	JET A1	CRT & IFR	28.0	18.0	5,456
105	98 RON	CRT & IFR	28.0	18.0	5,450
206	95 PULP	CRT & IFR	28.0	18.0	10,742
207	95 PULP	CRT & IFR	28.0	18.0	10,714
208	98 RON	CRT & IFR	28.0	18.0	10,733
309	98 RON	CRT & IFR	12.0	18.0	1,925
310	95 PULP	CRT & IFR	12.0	17.9	1,931
311	98 RON	CRT & IFR	12.0	17.9	1,921
312	95 PULP	CRT & IFR	12.0	18.0	1,924
413	FUEL/WASTE WATER	CRT	2.9	10.4	54
414	FUEL/WASTE WATER	CRT	2.9	10.4	61
415	FUEL/WASTE WATER	CRT & IFR	4.6	13.8	163
416	FUEL/WASTE WATER	CRT & IFR	4.6	13.8	161
417	FUEL ADDITIVE	HORIZONTAL	2.2	6.2 (L)	18
418	FUEL ADDITIVE	HORIZONTAL	2.2	6.2 (L)	18
419	FUEL ADDITIVE	CRT	2.0	10.5	30
420	FUEL ADDITIVE	CRT	2.0	10.5	30
421	FUEL ADDITIVE	CRT	2.0	10.5	30
621	DIESEL	CRT & IFR	36.6	23.9	24,726
622	DIESEL	CRT & IFR	36.6	23.8	24,710
623	91 ULP	CRT & IFR	36.6	24.0	24,783
624	DIESEL	CRT & IFR	19.1	24.0	6,614
625	ETHANOL	CRT & IFR	15.0	18.0	3,030
726	DIESEL	CRT & IFR	31.7	24.0	26,273
727	91 ULP	CRT & IFR	27.8	24.0	13,381
728	98 RON	CRT & IFR	27.8	24.0	13,375
729	91 ULP	CRT & IFR	31.7	24.0	26,298
730	98 RON	CRT & IFR	16.5	24.0	4,918
831	NOT IN SERVICE	CRT	3.0	5.0	30
832	NOT IN SERVICE	CRT	3.0	5.0	30
836	FUEL/WASTE WATER	CRT & IFR	5.0	11.0	195
837	FUEL/WASTE WATER	CRT & IFR	5.0	11.0	195
940	91 ULP	CRT & IFR	35.1	24.0	22,648
941	98 RON	CRT & IFR	28.0	24.0	7,278
942	91 ULP	CRT & IFR	35.9	24.0	23,825
943	DIESEL	CRT & IFR	35.9	24.0	23,883
MG2901	NITROGEN	VERTICAL			21
PT01	FLAMMABLE LIQUID N.O.S. (UN 1993)	HORIZONTAL	1.2	2.3	2.5
PT02	FLAMMABLE LIQUID N.O.S. (UN 1993)	HORIZONTAL	1.2	2.3	2.5

PACKAGE STORES				
LOCATION	PRODUCT	TYPE	No.	VOLUME
B1 AREA	NON-HAZARDOUS	IBC	2	2.0
B3A AREA	NON-HAZARDOUS	IBC	5	5.0
B3B AREA	NON-HAZARDOUS	IBC	5	5.0

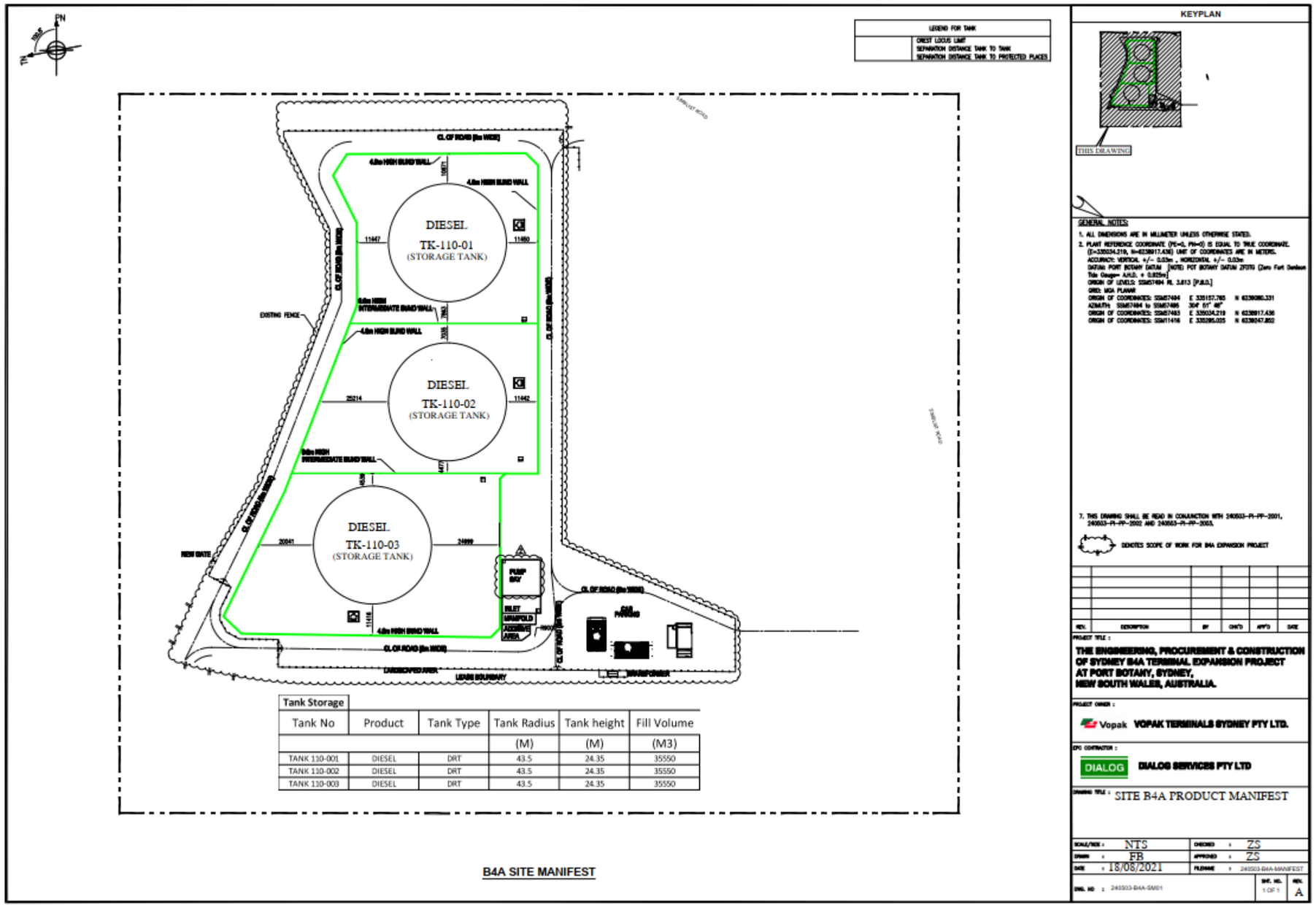
No.	DATE	REVISION	INITIAL	CHK.	APP'D
3	20.06.19	PORTABLE TANKS ADDED	ADG	ES	MB
2	14.11.18	VRU2 ADDED	ADG	ES	MB
1	10.05.18	TK0726 & TK0940 REALLOCATIONS	ADG	ES	SMB
0	01.02.18	FOR INFORMATION	ADG	ES	SMB

SCALE AS NOTED
DATE 01.02.18
DRAWN ADG
CHECKED ES

TITLE
VOPAK TERMINALS AUSTRALIA - SITE B
MHF No. 10075 - SITE PLAN MANIFEST
PAGE 1 OF 4 - PRODUCT STORAGE

APPROVED		DRAWING No.	REV.
ENGINEERING	OPERATIONS	5640-86-005.01	4
E. STRATTON	S. BATES		

Appendix B2 - Vopak Site B4A Site Plan Manifest

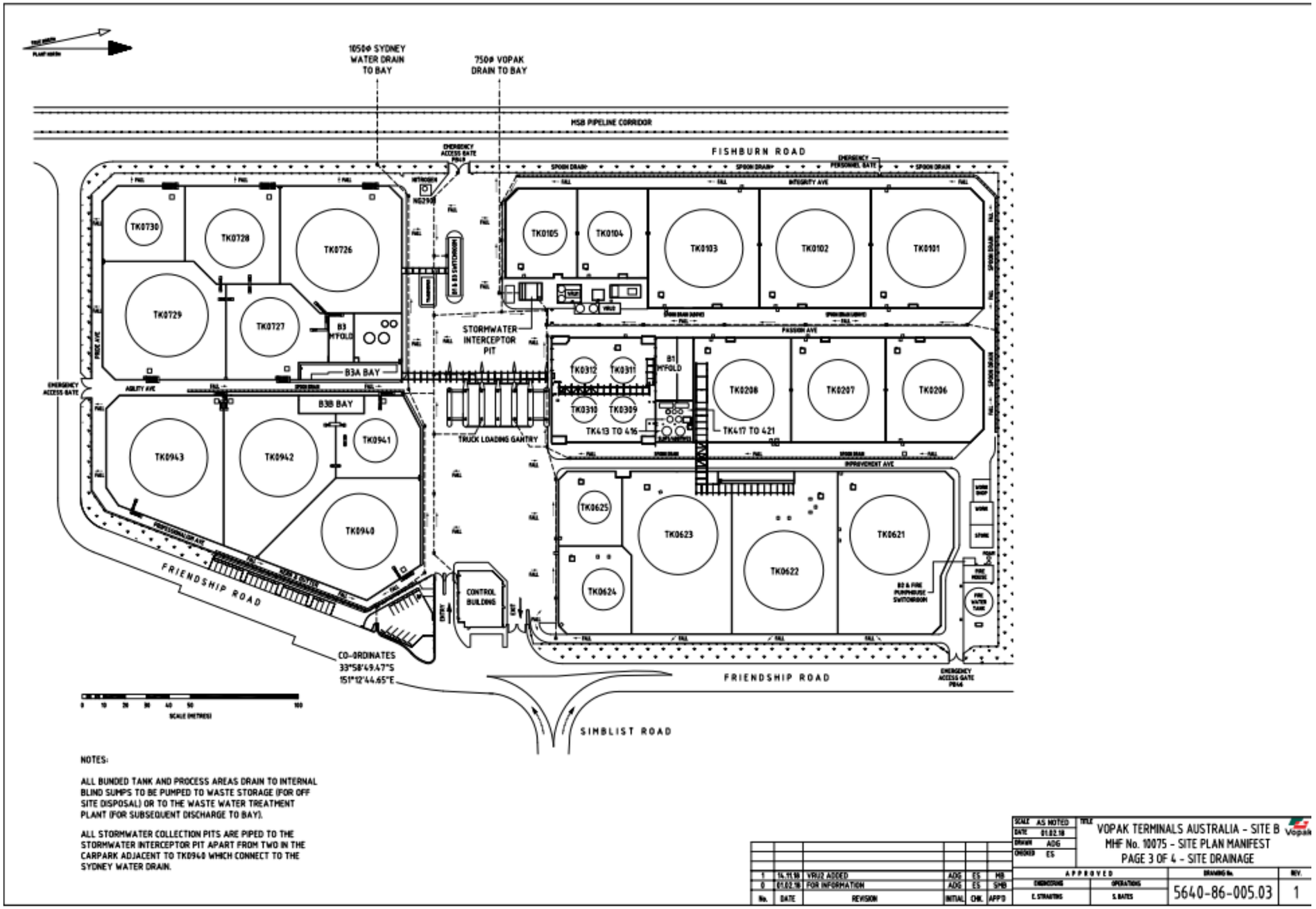


Tank Storage

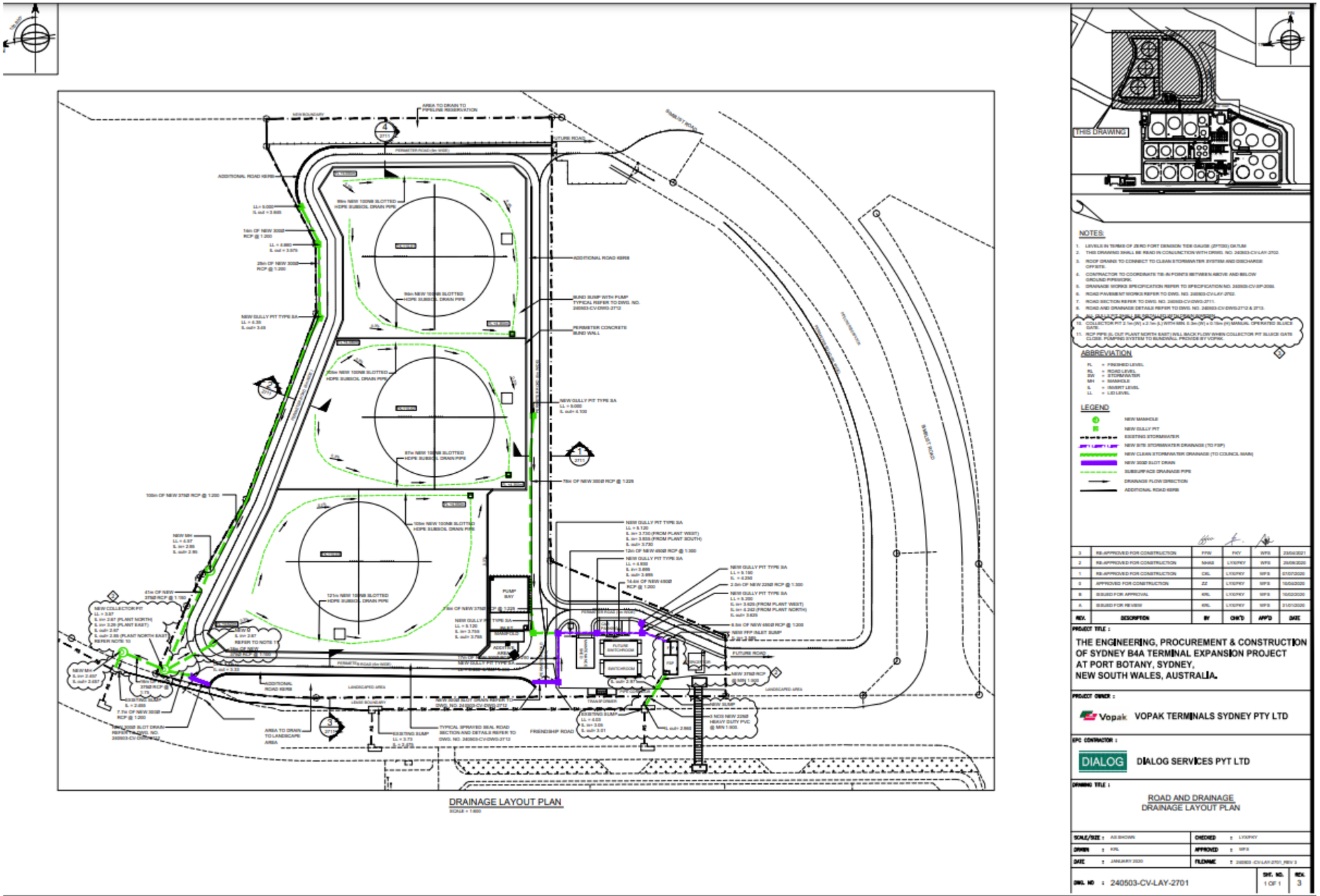
Tank No	Product	Tank Type	Tank Radius	Tank height	Fill Volume
			(M)	(M)	(M3)
TANK 110-001	DIESEL	DRT	43.5	24.35	35550
TANK 110-002	DIESEL	DRT	43.5	24.35	35550
TANK 110-003	DIESEL	DRT	43.5	24.35	35550

B4A SITE MANIFEST

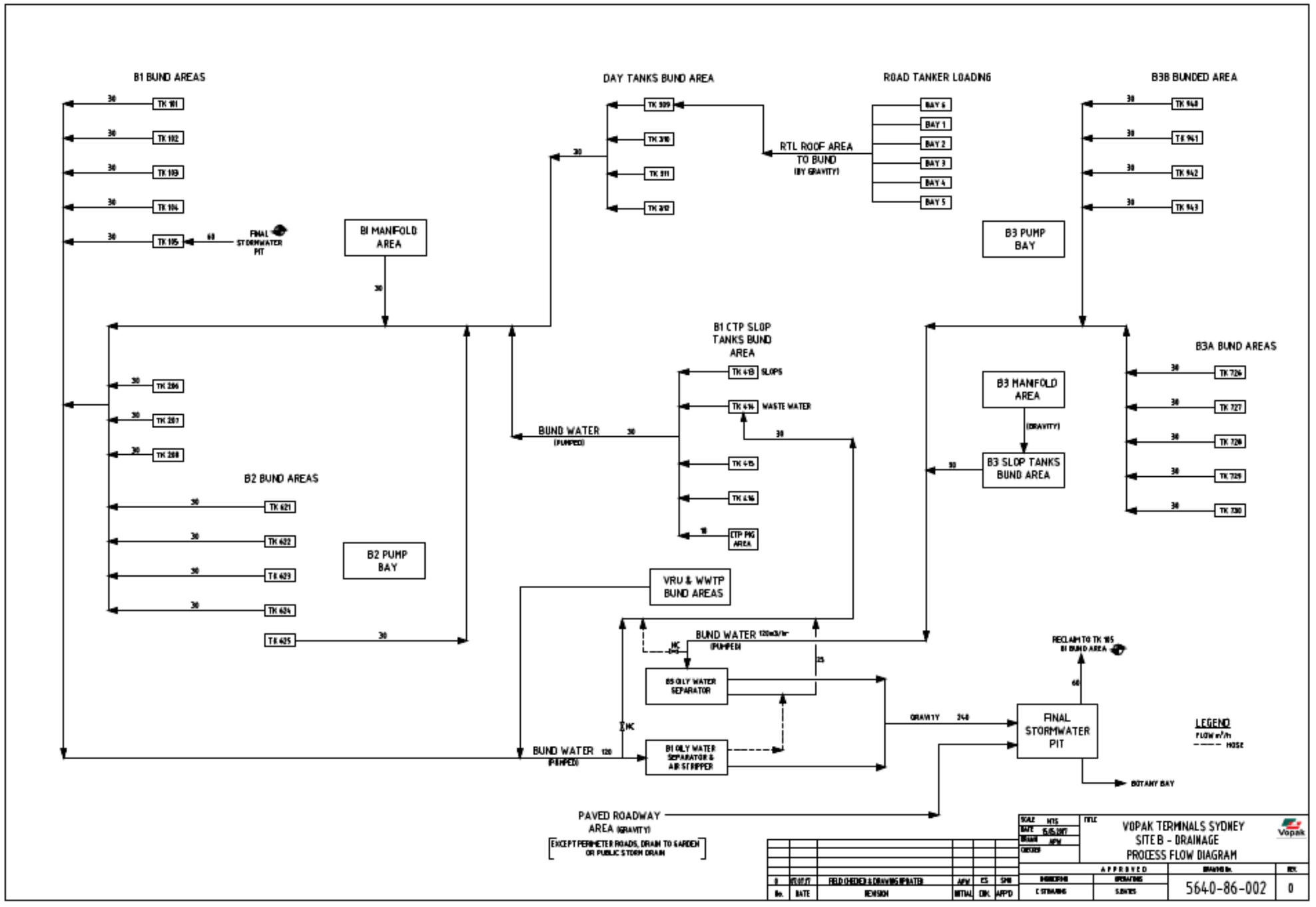
Appendix C1 - Vopak Site B Storm Water Drainage Plan



Appendix C2 - Vopak Site B4A Storm Water Drainage Plan

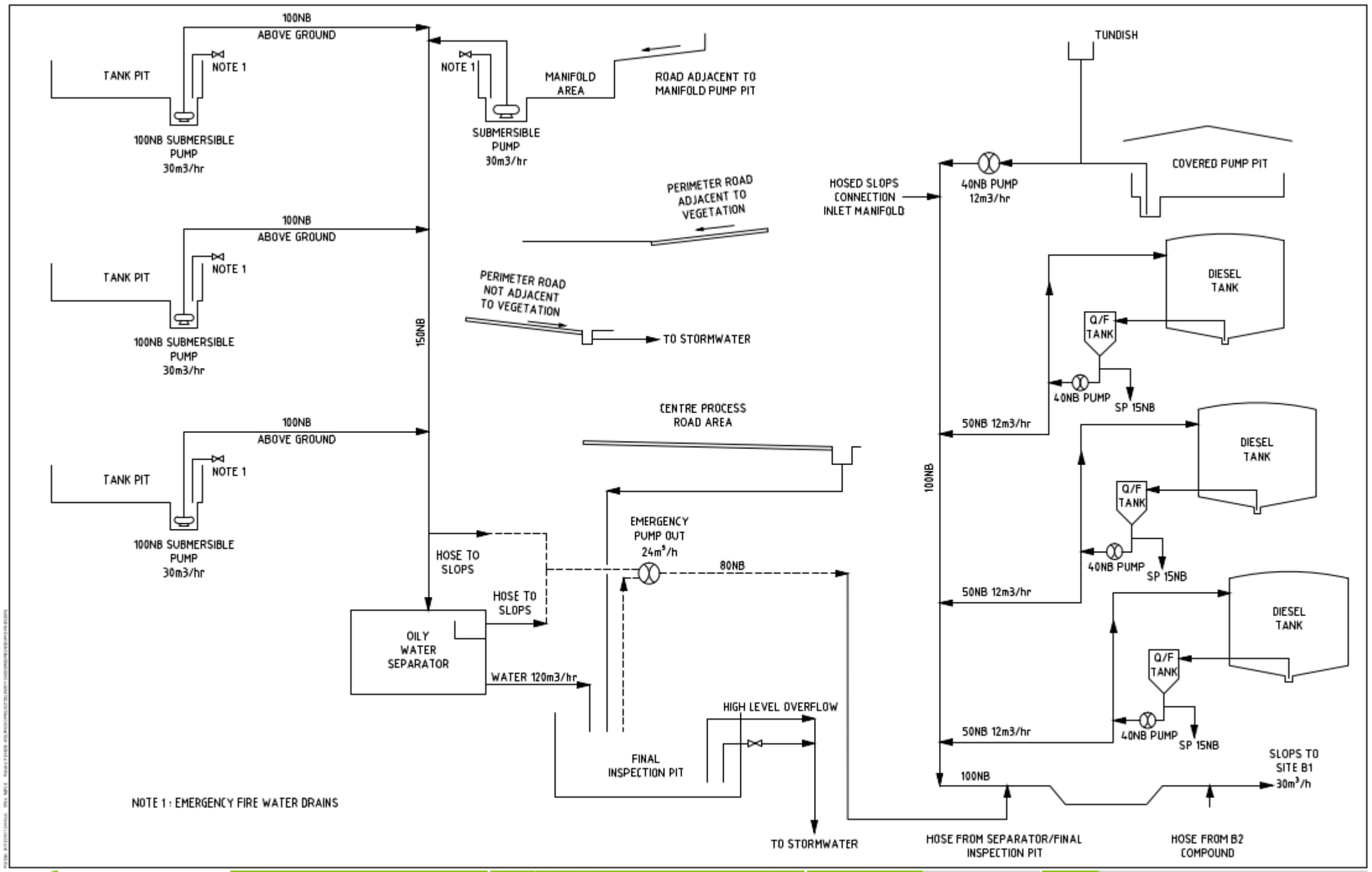


APPENDIX D1 – Drainage Process Flow Drawing Site B



Drainage PFD

APPENDIX D1 – Drainage Process Flow Drawing Site B4A



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Vopak

REV	DATE	REVISION DETAILS	APPROVED
A	19.02.13	ISSUED FOR REVIEW	
B	14.04.15	ISSUED FOR REVIEW (240350-PFD-PR-001-REV B)	
C	23.04.15	INITIAL PROJECT NUMBER AND REV HISTORY REINSTATED WHERE NOTED	
D	27.08.15	REVISED WITH VOPAK COMMENTS	
E	28.09.15	ISSUED FOR DEFINE STAGE REVIEW	
F	16.10.15	ISSUED FOR HAZOP	PGH
G	13.11.15	ISSUED FOR TENDER	P.HARWARD
H	23.11.15	ISSUED FOR TENDER	P.HARWARD

SCALE	N.T.S.
SIZE	A1
DRAWN	C.FOURIE
DESIGNED	P.HARWARD
CHECKED	B. CONWAY
APPROVED	P.G.H
	PHILIP HARWARD

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT: VOPAK TERMINALS SYDNEY PTY LTD
SITE B PETROLEUM - STAGE B4A

TITLE: DRAINAGE & SLOPS PROCESS FLOW DIAGRAM

DRAWING No.: 240503 – 0000 – PFD – PR – 005 – H

APPENDIX E

Environmental Risk Register

Likelihood	Consequence Severity			
	Insignificant	Minor	Moderate	Major
Almost Certain	Significant	Significant	Extreme	Extreme
Likely	Moderate	Moderate	Significant	Significant
Possible	Low	Low	Moderate	Significant
Unlikely	Low	Low	Low	Moderate

1. Context / Scope				2. Hazard/Aspect Identification				3. Inherent Risk Assessment			
a	b	c	d	a	c	d	Extreme	a	b	c	d
Terminal Location	Role Affected	Sub-Area / Item	SHEQ Category	Description of Activity/Process, Plant/Equipment or Product/Material	Hazard/Aspect Classification	Incident (Actual or Potential)	Impact	Uncontrolled Consequence Rating	Uncontrolled Likelihood Rating	Uncontrolled Risk Level	Uncontrolled Priority (Extreme or Significant)
Site B Roadway		Loading Gantry	Environment	Loading Tankers with Fuel	General Environmental	Fuel spill outside of bunded gantry	Soil and Groundwater contamination	Moderate	Likely	Significant	Yes
BLB	Operator	Wharf delivery line	Environment	Wharf Lines failing or corroding, incorrect coupling of lines, or communication failure between receiving party and ship	Marine Flora & Fauna	Fuel spill to open ocean	Water pollution	Major	Possible	Significant	Yes
ALL SITE	Operator		Environment	Stormwater release before appropriate testing has ensured it is environmentally safe	Marine Flora & Fauna	Contaminated Stormwater reaching Botany Bay	Water pollution	Moderate	Likely	Significant	Yes
ALL SITE	Supervisory		Environment	Tank or Line Leak due to failure in equipment or structures	General Environmental	Fuel Leak to Ground	Soil and Groundwater contamination	Major	Unlikely	Moderate	No
ALL SITE	General		Environment	Explosion or severe fire destroying a fuel tank and threatening other fuel tanks	General Environmental	Fuel Spill over large area in large volumes	Water pollution	Catastrophic	Unlikely	Significant	Yes
ALL SITE	General		Environment	Fugitive Greenhouse Gas Emissions including VOC gases	Air Emissions (including dust and odour)	Fugitive emissions contributing to Greenhouse Effect	Air pollution	Major	Almost Certain	Extreme	Yes
ALL SITE	General	Wharf Lines	Environment	Physical damage to Wharf Lines	General Environmental	Fuel leaking to open ocean or to ground outside of Vopak property	Water pollution and Ground Contamination	Major	Unlikely	Moderate	No
BLB	Operator / Maintainer	Marine Loading Arms	Environment	Failure of Marine Loading Arm	Marine Flora & Fauna	Fuel spill to open ocean	Water pollution	Major	Possible	Significant	Yes
TANK FARM	Operator / Maintainer	Tanks	Environment	Overfilling of Tanks	General Environmental	Fuel spill to ground	Soil and Groundwater contamination	Major	Unlikely	Moderate	No
ALL SITE	Operator / Maintainer		Environment	Waste Disposal	General Environmental	Incorrect hazardous waste disposal (e.g. tank sludge)	Adverse publicity due to Poor Environmental Performance	Moderate	Likely	Significant	Yes

ALL SITE	Drivers		Environment	Loading Tankers with Fuel	General Environmental	Rupture of a vehicle tank whilst at Vopak Terminal	Hazardous materials escaping to ground and or water	Major	Unlikely	Moderate	No
TANK FARM	Operator / Maintainer	Oily Water Separator	Environment	Failure of Oily water separator or drainage systems	Marine Flora & Fauna	Oily water entering the clean water drainage system	Water pollution	Moderate	Possible	Moderate	No
ALL SITE	Operator / Maintainer	Loading Gantry	Environment	Loading Tankers with Fuel	General Environmental	Pipe failure at loading gantry	Hazardous materials escaping to ground	Major	Possible	Significant	Yes
ALL SITE	General		Environment	Final stormwater interceptor pit		Failure	Oil contamination of marine waters	Catastrophic	Unlikely	Significant	Yes
TANK FARM	General		Environment	Bund sump		Cracked wall	Hazardous materials escaping to ground and or water	Moderate	Unlikely	Low	No
ALL SITE	General		Environment	Surge protector		Switch Room fire	Air pollution	Minor	Unlikely	Low	No
ALL SITE	General		Environment	PLC SCADA		Control system failure	Overfill / Loss of Containment	Major	Possible	Significant	Yes
BLB			Environment	Marine Loading Arm Drainage Pump		Pump Seal Failure	Water pollution	Moderate	Possible	Significant	Yes
TANK FARM	General	Pump bays	Environment			Motor failure	0	Minor	Unlikely	Low	No
TANK FARM	General	Pump bays	Environment			Pump failure	0	Minor	Possible	Low	No
TANK FARM	General	Pump bays	Environment	Emergency Shutdown		ESD failure	0	Minor	Possible	Low	No
TANK FARM	General	Pump bays	Environment								

TANK FARM	General	Utilities	Environment	Air System		Air receiver failure resulting in drainage pumps not working	Soil and Groundwater contamination	Minor	Possible	Low	No
TANK FARM	General	Tanks	Environment	Nitrogen tank for blanketing		Vessel rupture or nitrogen low level	Air pollution	Major	Possible	Significant	Yes
TANK FARM	General		Environment	Fire System		Fire water pump failure	Air pollution	Catastrophic	Almost Certain	Extreme	Yes
TANK FARM	General		Environment			Fire water jockey pump		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment			Foam concentrate pump (electric & Diesel)	Air pollution	Catastrophic	Almost Certain	Extreme	Yes

TANK FARM	General		Environment			Fire water tank	Air pollution	Catastrophic	Almost Certain	Extreme	Yes
TANK FARM	General		Environment			Pressure switch	Air pollution	Catastrophic	Almost Certain	Extreme	Yes
TANK FARM	General		Environment			Site fire alarm		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment			FIP Direct brigade alarm		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment			Flame detection	Air pollution	Catastrophic	Almost Certain	Extreme	Yes
TANK FARM	General		Environment			FIP panel	Air pollution	Catastrophic	Almost Certain	Extreme	Yes
TANK FARM	General		Environment			Fire extinguisher	Air pollution	Minor	Unlikely	Low	Yes
TANK FARM	General	Tank	Environment	Schedule 8 Material Tanks		Foam pourer	Air pollution	Catastrophic	Possible	Significant	Yes
TANK FARM	General		Environment	Schedule 8 Material Tanks		Water deluge rings	Air pollution	Catastrophic	Likely	Extreme	Yes
TANK FARM	General		Environment	Schedule 8 Material Tanks		Tank Hi Hi Level switch	Soil and Groundwater contamination	Major	Possible	Significant	Yes
TANK FARM	General		Environment			IFR Vent failure		Moderate	Unlikely	Low	No
TANK FARM	General		Environment			IFR failure		Moderate	Unlikely	Low	No
TANK FARM	General		Environment			Floor leak (internal)		Moderate	Unlikely	Low	No
TANK FARM	General		Environment			Shell to floor weld (critical zone)	Soil loss and sedimentation of marine waters	Moderate	Unlikely	Low	No
TANK FARM	General		Environment			External shell corrosion	Soil contamination	Moderate	Unlikely	Low	No

TANK FARM	General		Environment			Dome roof leaking		Minor	Possible	Low	No
BLB	General	Wharf	Environment	Marine loading arm		Joint and flange leak	Water pollution	Catastrophic	Possible	Significant	Yes
BLB	General		Environment			Breakaway coupling	Water pollution	Major	Possible	Significant	Yes
BLB	General		Environment			Pipe corrosion	Water pollution	Major	Possible	Significant	Yes
PIPELINE CORRIDOR	General	Pipelines and manifolds	Environment	Wharf Pipelines		Thermal relief valve		Moderate	Possible	Moderate	No
PIPELINE CORRIDOR	General		Environment			Pipe corrosion		Moderate	Possible	Moderate	No
TANK FARM	General	Pump bays	Environment	Coalescing filter		Blockage - filters		Moderate	Almost Certain	Extreme	Yes
TANK FARM	General		Environment	Product transfer pump		Low flow switch		Moderate	Possible	Moderate	No
TANK FARM	General		Environment	Additive pump		Mechanical seal		Minor	Possible	Low	No
TANK FARM	General		Environment	Additive unloading pump		Mechanical seal		Minor	Possible	Low	No
TANK FARM	General		Environment	RTL Tundish Pumps		Failure		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment	Flush tank return pump		Failure		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment	Dewatering pump		Failure		Minor	Almost Certain	Significant	Yes
TANK FARM	General		Environment	Bund sump drainage pump		Diaphragm Pump Failure		Minor	Possible	Low	No
TANK FARM	General		Environment	Road tanker E100 unloading pump		Mechanical seal		Minor	Possible	Low	No
ALL SITE	General		Environment	Hazardous area electrics		Junction box		Minor	Possible	Low	No
Site B Roadway	General	RTL	Environment	Loading bays - loading arms		Safety showers		Minor	Likely	Moderate	No
Site B Roadway	General	RTL	Environment			Additive Injection system		Moderate	Possible	Moderate	No
Site B Roadway	General	RTL	Environment			Overfill protection (Scully)	Groundwater contamination	Minor	Likely	Moderate	No
Site B Roadway	General	RTL	Environment			Deadman system		Moderate	Possible	Moderate	No
Site B Roadway	General	RTL	Environment			Flowmeter		Moderate	Possible	Moderate	No
Site B Roadway	General	RTL	Environment			Drop hoses		Moderate	Almost Certain	Extreme	Yes

Catastrophic
Extreme
Extreme
Significant
Significant

4. Risk Control & Residual Risk													5. Records Management			
									b	c	d	e	a	b	c	d

Controls - Structures	Controls - Monitoring Instruments / Alarms	Controls - Monitoring Process Systems / Recording	Controls - Machinery & Equipment	Controls - Administration	Controls - Training	Controls - Inspections	Controls - Future Proposals	Controls - Ops Servicing, Mech & Elec Maintenance	Controlled Consequence Rating	Controlled Likelihood Rating	Residual Risk Level	Residual Priority	Date Entered	People Involved	Date Reviewed	Comments
(Bund) Drains				Procedures	Inductions	Operator Routine Patrols			Minor	Possible	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Hi / Lo level alarms	Maintenance Log Book/MAINPAC	Relief Valves	Procedures	Training	Tests and inspections		Shipping Operations, MLA Inspections and Pipeline Patrols	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Separators	Monitoring Instruments	First Flush Sampling	Safety Valves	OPS 11.2B	Training	In-house test routine before release and quarterly laboratory testing as per OPS11.2B		Main Pac	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Hi / Lo level alarms	Groundwater Monitoring				Tests and inspections		Monthly Routines	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
(Bund) Drains	Alarms	MAINPAC	Safety Valves/Fire Deluge/Foam/ IFR	Procedures	Training	Tests and inspections			Catastrophic	Rare	0	No		GD, JK, NB, DK	1/09/2011	
Internal Floating Rooves on Tanks	Monitoring Instruments	NPI reporting	Vapour Recovery Unit	OPS 11.5B					Insignificant	Possible	Low	No		GD, JK, NB, DK	1/09/2011	
Fences	Hi / Lo Pressure alarms	MAINPAC		MSIC Security Restricted Area - OPS05.1B	Training	Tests and inspections	Emergency shut-off valves installed between sections of the delivery line	Monthly Routines	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Hi / Lo level alarms	MAINPAC	Overflow systems		Internal Courses	Tests and inspections		Daily Routines	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Hi / Lo level alarm - HiHi Level Alarm and ESD	SCADA System	Safety Valves	Procedures	Training				Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
			Use of Licensed Contractors	Procedures	Training	Audits		Monthly Routines	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
(Bund) Drains	Alarms		Safety Valves	Procedures	Inductions	Audits (internal/extern al)			Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
		MAINPAC		Interceptor Pit normally Closed Water testing prior to release					Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Hi / Lo level alarms	MAINPAC							Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	

	Monitoring Instruments	MAINPAC	Use of Licensed Contractors	In-house test routine before release and quarterly laboratory testing as per OPS11.2B	Training	Area Routine		PMs	Major	Unlikely	Moderate	Yes		GD, JK, NB, DK	1/09/2011	
		MAINPAC		Daily Housekeeping Inspections / Pre-Pump out water content inspections	Training	Tests and inspections		Daily Inspections	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
		MAINPAC	Use of Licensed Contractors	Work Orders	Training	Tests and inspections		Monthly Routines	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
	Alarms	MAINPAC	Use of Licensed Contractors		Training	Tests and inspections		Monthly Routines	Major	Unlikely	Moderate	No		GD, JK, NB, DK	1/09/2011	
Under Wharf collection Tank	CCTV	MAINPAC	Manned operation of pump	Marine Loading Arm Operation - OPS05.03	Training	Tests and inspections		PMs	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Monitoring Instruments	Maintenance Log Book/MAINPAC		Work Orders	Inductions	Tests and inspections		Weekly Routines	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Monitoring Instruments	Maintenance Log Book/MAINPAC		Work Orders	Inductions	Tests and inspections		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
	Alarms	MAINPAC		Work Orders	Inductions	Tests and inspections		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
														GD, JK, NB, DK	1/09/2011	
	Hi / Lo Pressure alarms	MAINPAC	Use of Licensed Contractors	Work Orders		Tests and inspections		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bollards around nitrogen tank	Hi / Lo Pressure alarms	MAINPAC	Use of Licensed Contractors	Work Orders		Tests and inspections		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Fire pump house	Hi / Lo Pressure alarms	MAINPAC	Use of Licensed Contractors		Training	Tests and inspections		Internal weekly fire pump test /External pump maintenance (monthly)	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
	Alarms	Maintenance Log Book/MAINPAC	Use of Licensed Contractors		Training	Tests and inspections		Monthly Routines	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
	Alarms	MAINPAC	Use of Licensed Contractors		Training	Tests and inspections		Internal weekly fire pump test /External pump maintenance (monthly)	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
	Hi / Lo level alarms	MAINPAC	Use of Licensed Contractors		Training	Weekly fire pump test / monthly external maintenance inspection		10 yearly tank inspection programme in accordance with AS 1940	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
		MAINPAC	Use of Licensed Contractors	FOPS127B /Site B Weekly Fire System Test Record	Training	Tests and inspections		PMs	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
	Monitoring Instruments	MAINPAC	Use of Licensed Contractors		Training	Tests and inspections		Weekly fire alarm test / monthly external maintenance inspection	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
	Monitoring Instruments	MAINPAC	Use of Licensed Contractors	Work Orders	Training	Tests and inspections		Weekly FIP test / monthly external maintenance inspection	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	

	Monitoring Instruments	MAINPAC	Use of Licensed Contractors	Work Orders	External Courses	Tests and inspections		Routine PMs	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
	Monitoring Instruments	MAINPAC	Use of Licensed Contractors		External Courses	Tests and inspections		Weekly FIP test / monthly external maintenance inspection	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
		MAINPAC	Use of Licensed Contractors		External Courses	Tests and inspections		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	Annual Foam Testing	MAINPAC	Use of Licensed Contractors		External Courses	Tests and inspections		PMs	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
Bunds	Monthly Deluge Testing/Monthly Tank Inspection Programme	MAINPAC	Use of Licensed Contractors		External Courses	Tests and inspections		Monthly Routines	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
Bunds	SCADA System	MAINPAC	Use of Licensed Contractors		Vopak Standard/ Transfer of Product	Tests and inspections		PMs	Major	Unlikely	Moderate	No		GD, JK, NB, DK	1/09/2011	
Bunds		MAINPAC		Work Orders	Training	Tests and inspections		Monthly Tank Inspections/10 Yearly Out of Service Inspections in accordance with AS 1940	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds		Maintenance Log Book/MAINPAC		Work Orders	Training	Tests and inspections		Monthly Tank Inspections/10 Yearly Out of Service Inspections in accordance with AS 1940	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
(Bund) Drains	Monitoring Instruments	MAINPAC		Work Orders	Training	Tests and inspections		Monthly Tank Inspections/10 Yearly Out of Service Inspections in accordance with AS 1940	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds		MAINPAC		Work Orders	Training	10 yearly Tank Inspections in accordance with AS 1940		PMs	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds		MAINPAC			Training	Tests and inspections		Monthly Tank Inspections/10 Yearly Out of Service Inspections in accordance with AS 1940	Moderate	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds		MAINPAC		STIs	Training	Tests and inspections		Monthly Routines	Minor	Possible	Low	No		GD, JK, NB, DK	1/09/2011	
Bunds	CCTV	MAINPAC	Use of Licensed Contractors	OPS05.1B	Training	Tests and inspections		PMs	Catastrophic	Unlikely	Significant	Yes		GD, JK, NB, DK	1/09/2011	
	CCTV	MAINPAC		Work Orders	Training	6 Mthly		Monthly Routines	Major	Unlikely	Moderate	No		GD, JK, NB, DK	1/09/2011	
	CCTV	MAINPAC		Work Orders	Training	2 Yearly Hydro Test		PMs	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	
		MAINPAC		Work Orders	Training	Tests and inspections		5 yearly out of service pressure testing of PRV's	Minor	Unlikely	Low	No		GD, JK, NB, DK	1/09/2011	