Compliance Tracking Report 5 – Bulk Liquids Berth 2 at Port Botany

November 2013

NSW Ports

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1. Introduction

1.1 Purpose of this Document

This is the fifth Compliance Tracking Report for the Bulk Liquids Berth No. 2 (BLB2) and covers the period from 25 May 2012 to 15 November 2013. This report has been prepared by NSW Ports in accordance with the Minister's Condition of Approval (CoA) 4.1b as stated below:

*The Proponent shall develop and implement a **Compliance Tracking Program** to track compliance with the requirements of this approval. The Program shall be submitted to the Director-General for approval prior to the commencement of construction. The Program shall relate to both construction and operational stages of the project and shall include, but not necessarily be limited to:*

a) provisions for periodic review of the compliance status of the project against the requirements of this approval;
b) provisions for periodic reporting of compliance status to the Director-General;
c) provisions for specific reporting requirements as required by conditions 4.2 and 4.3;
d) a program for independent environmental auditing at least annually, or as otherwise agreed by the Director-General, in accordance with ISO 19011:2002 - Guidelines for Quality and/ or Environmental Management Systems Auditing; and
e) mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance.

Details of NSW Ports' Compliance Tracking Program (CTP) and information on how NSW Ports complies with CoA 4.1 are contained in Section 2.

Appendix A of this report lists each of the Minister's Conditions of Approval. For each CoA the following information is provided:

- the project phase to which the condition is applicable (construction, operation, etc.)
- the status of the Condition (open; in progress; in progress non-compliant; completed compliant; completed non-compliant; reviewed closed or reviewed closed non-compliant);
- the Condition's requirements from the Project Approval;
- the responsibility for carrying out the requirements of the Condition (Sydney Ports / PBOPL, Contractor, User); and
- the evidence of compliance including a record of all Approvals issued to date by the Director-General of the Department of Planning and Infrastructure (DP&I), now the Department of Planning and Infrastructure (DP&I).

The evidence of compliance contains a summary of how and when each condition is being, or has been, complied with.

1.2 Background

As at 31 May 2013, NSW Ports became the new land owner at Port Botany, responsible for landside port management including the BLB2 facility.

The development of the BLB2 will ensure New South Wales has adequate berth capacity to satisfy existing and future forecast demands for the import and export of bulk liquids including chemical, petroleum and gas products. The construction of the BLB2 will also reduce demurrage costs for ships delivering or receiving the products.

Project Approval of BLB2 was determined by the NSW Minister for Planning on 20 March 2008 (Major Projects Application 07_0061). The Conditions of Approval have been modified and amended as follows:

a) By letter from the Director-General, dated 22/12/10 (your reference: S07/00205);
b) By letter from the Director-General, dated 24/12/10 (your reference: S07/00205);
c) By letter from the Director-General, dated 14/4/11 (your reference: 11/03374-1);
d) under section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act) on 28 April 2011 (07_0061 MOD 1);

Details of the modifications and amendments are either included within the condition requirements of the relevant CoAs or included as new compliance issues that clearly reference the source of the additional compliance requirements (Appendix A of this report).

1.3 Project Description

The construction and operation of the BLB2 consists of the following key relevant components:

- A central working platform and working area, with berthing face (including bollards and fenders) and pipe manifold / marine loading arm arrangements;
- Adjacent berthing dolphins on each side of the working platform designed to accommodate the maximum design length vessel;
- Two mooring dolphins on each side of the working platform (four in total);
- Walkways (catwalks) connecting the dolphins and working platform;
- An access bridge structure connecting the working platform with the shore, providing vehicle access and pipeline support structures;
- Support infrastructure including fire control facilities (pumps, foam/water monitors and associated tanks), amenities buildings and services such as water, sewer, electrical and communications;
- Berth fit out, including fire fighting monitors and operator shelter; and
- Pipelines to user facilities including support and access structures such as pipe racks and culverts.

1.4 Location

The BLB2 has been constructed adjacent to the existing Bulk Liquids Berth 1, at the south western end of Brotherson Dock and to the west of Fishburn Road, adjacent to Vopak and the Elgas Cavern. The site's location is shown in Figure 1.

Figure 1: Location of BLB2 infrastructure

On 31 May 2013, NSW Ports purchased the 99 year lease rights for Port Botany from the NSW Government. The BLB2 development has been constructed and will operate over land owned by the NSW Government (i.e. Port Botany Lessor Pty Limited and the NSW Roads and Maritime Services). The BLB2 development occupies the following allotments:

- Part of Lot 52 DP 1182618 (formally part of Lot 7 DP 1126332).
- Part Lot 456 DP 1137279.

1.5 Project Update

1.5.1 Consultants and Advisers

During the reporting period (May 2013 to November 2013), NSW Ports retained the following advisers, consultants and contractors to provide services for the project:

- Main Construction Contractor – John Holland Pty Ltd;
- Contract Management – SMEC Australia Pty Ltd;
- Designer and Technical Advisory Consultant – WorleyParsons Services Pty Ltd;
- Gangway Tower Technical Advisor – Haskoning Australia Pty Ltd;
- Consulting Surveyor – Hard & Forester Pty Ltd;
- Quantity Surveying Services – Rider Levett Bucknall NSW Pty Ltd;
- Project Management Services – McLachlan Lister Pty Ltd;
- BCA Compliance Consultant – BCA Logic Pty Ltd;
- Steel Work – Silo Developments Australia Pty Ltd;
- Environmental Audit – Dickson Environmental Consulting and Audit Pty Ltd; and
- Access Control Provider – SNP Security.

1.5.2 Main Construction Update

Practical completion of the main berth construction works was achieved on 12 April 2013. The Contractor retained possession of site until early June 2013 for the rectification of minor defects. During this period, construction of the following items were undertaken:

- Working Platform additional steelwork; and
- Fire control deluge system.

1.5.3 Berth Users' Construction Phase

Two bulk liquids berth users, namely Vopak Terminals Australia (Vopak) and Terminals Pty Ltd (Terminals), have commenced installation of their infrastructure for unloading vessels of product.

It is currently anticipated that Terminals construction works will reach practical completion by the end of November 2013, while Vopak's construction works will be completed late December 2013.

BLB2 is expected to become operational at the start of December 2013 for Terminals' operations.

2. Compliance Tracking Program

Sydney Ports developed a Compliance Tracking Program (CTP) to track compliance with the condition of the Project Approval, in accordance with CoA 4.1. The CTP was submitted to the DP&I on 23 May 2011 with Sydney Ports being notified of its approval in a letter from DP&I, dated 14 June 2011. NSW Ports has retained the CTP and continues to track compliance with the conditions of the Project Approval, in accordance with CoA 4.1 and the approved CTP.

The CTP includes:

- Provisions for periodic review of the compliance status of the project against the conditions of the Project Approval.

- Provisions for periodic reporting of compliance status to the Director-General, including a compliance tracking report within three months of the commencement of construction and then every six months during construction, annual independent environmental audits with the initial report submitted after the first six months of construction and a compliance tracking report and an independent environmental audit in the first year of operations.

- A noise audit of the facility within 90 days of commencement of operations and a comprehensive hazard audit of the project 12 months after the commencement of operations (or within such period otherwise agreed by the Director-General), with subsequent hazard audits conducted every three years or as determined by the Director-General.

- Provisions for specific reporting requirements, including a Pre-Startup Compliance Report one month prior to the commencement of operations and a Post-Startup Compliance Report three months after the commencement of operations.

- Mechanisms for rectifying any non-compliance identified during environmental auditing or reviews of compliance.

2.1 Compliance Reporting

In accordance with the approved CTP and CoA 4.1(b), the first Compliance Tracking Report was submitted to DP&I on 21 November 2011. Notification was subsequently provided by DP&I that the Report was considered to satisfy the requirements of the condition. The second Compliance Tracking Report was submitted to DP&I on 29 May 2012 and notification was subsequently provided by DP&I that the Report was considered to satisfy the requirements of the condition (18 July 2012). The third Compliance Tracking Report was submitted to DP&I on 15 November 2012 and DP&I subsequently

noted that it considered that the project is generally being undertaken in accordance with the approval (25 January 2013). The fourth Compliance Tracking Report was submitted to DP&I on 28 May 2013 and DP&I subsequently noted that it considered that the project is generally being undertaken in accordance with the approval (17 June 2013).

2.2 Environmental Auditing

In accordance with the approved CTP and CoA 4.1(d), the first independent environmental audit was conducted on 27-29 June 2012 and submitted to DP&I on 23 August 2012 (see Compliance Tracking Report 4 for details). All identified Non-compliances and Issues of Concern were addressed and closed out. Further information requested by DP&I on 26 October 2012 and 7 February 2013 was provided on 19 November 2012 and 13 February 2013, respectively. DP&I provided its summary response to the Environmental Audit Report and subsequent correspondence on 22 February 2013.

The second independent environmental audit was undertaken on 7 August 2013 and the Environmental Audit Report submitted to DP&I on 26 September 2013.

The audit found no Non-compliances, one Issue of Concern and four Opportunities for Improvement. As a result of the audit findings, the Issue of Concern and four Opportunities for Improvement were addressed and therefore closed out for the purposes of the final Environmental Audit Report.

The audit also followed up on the Opportunities for Improvement identified in the first environmental audit and outlined that the items have since been closed out.

2.3 Pre-Start Up Compliance Reporting

Under condition 2.1 and 2.2 there were a number of safety studies that were required to be submitted to the Director-General for approval. These documents were submitted between July and October 2013 and have subsequently been approved. The Director-General's approval was conditional based on the studies being implemented. Confirmation that these studies are being implemented was provided in the Pre-Start Up Compliance Report which was submitted to DP&I on 16 October 2013. The report outlined that the second user (Vopak) were yet to commence their construction works and therefore were unable to demonstrate that all pre-construction and construction conditions had been satisfied and would be implemented in regards to the HAZOP Report and the Construction Safety Study (CSS).

Vopak works have commenced and the actions and recommendations from these reports are being implemented in accordance with the approval. Appendix B demonstrates that Vopak have incorporated all the HAZOP and CSS actions within their development. The matters raised in the Director-General's letter dated 29 July 2013 regarding the CSS are addressed below:

(1) Implementing measures to ensure that all hot works construction activities cease during ship transfers of Dangerous Goods Class 3 from BLB1 to Site B

The Vopak Site B SHEQ Co-ordinator is managing the daily work permit issue for the BLB2 project. An Operations Notice has been issued that sets out the requirement for Operations Planning/Operations personnel to ensure that all hot works construction activities cease during ship transfers of Dangerous Goods Class 3 from BLB1 to Site B. An attached copy of the notice that is currently utilised is provided in Appendix B.

(2) Implementing and maintaining the safeguards listed in the CSS

The Site B SHEQ Co-ordinator is managing the day-to-day oversight of the construction activities of the BLB2 project. Regular inspections and reviews are carried out. A summary of a recent audit is attached in Appendix B that verifies that the CSS safeguards are implemented and maintained.

(3) Implementing safeguards to ensure that construction work on common areas is undertaken by one User at a time.

There are a number of safeguards being implemented to ensure that construction works in common areas are only being undertaken by one user at a time. This includes:

- submission of user construction schedules to NSW Ports
- development of a coordinated works program
- weekly user coordination meetings to discuss compliance with the works program
- alternate working areas and timeframes for each user
- separate site establishment areas for each user

The Director-General's letter also requested a separate CSS for Vopak covering commissioning activities. Vopak are currently drafting a BLB2 Commissioning Plan that will address CSS matters for commissioning activities which will be submitted to the Director-General for approval.

3. Appendix A – Conditions of Approval

The Ministers Conditions of Approval are included below, including a summary of how and when each condition is being complied with.

ID	Condition of Approval Title	Condition Requirements	Evidence of Compliance	Project Phase	Status	Responsibility
6800	1.1 - Terms of Approval	The Proponent shall carry out the project generally in accordance with the: a) Major Projects Application 07_0061; b) Bulk Liquids Berth No. 2 – Port Botany: Environmental Assessment dated November 2007 and prepared by Sinclair Knight Merz Pty Ltd; c) additional information provided by Sinclair Knight Merz Pty Ltd to the Department titled Failure Frequency of the Port Botany Bulk Liquids Berth 2 Marine Loading Arms (letter dated 18 December 2007); d) Response to Submissions Report prepared by Sinclair Knight Merz Pty Ltd and dated 26 February 2008; and e) the conditions of this approval	The project is progressing towards the start of commission in accordance with the required documents.	5 - General	2. In Progress	NSW Ports / Contractor
6801	1.2 - Terms of Approval	In the event of an inconsistency between: a) the conditions of this approval and any document listed from condition 1.1a) to 1.1d) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and b) any document listed from condition 1.1a) to 1.1d) inclusive, and any other document listed from condition 1.1a) to 1.1d) inclusive, the most recent document shall prevail to the extent of the inconsistency.	This is noted.	5 - General	2. In Progress	NSW Ports / Contractor
6802	1.3 - Terms of Approval	The Proponent shall comply with any reasonable requirement(s) of the Director-General arising from the Department's assessment of: a) any reports, plans or correspondence that are submitted in accordance with this approval; and b) the implementation of any actions or measures contained in these reports, plans or correspondence	This is noted. Requirements of the Director-General provided in the following documents have been added into the Compliance Tracking System to ensure they are complied with. - Letter to Marika Calfas from NSW Planning, dated 22/12/10 (ref: S07/00205) - Letter to Marika Calfas from NSW Planning, dated 24/12/10 (ref: S07/00205) - Letter to Ryan Bennett from NSW Planning & Infrastructure, dated 14/4/11 (ref: 11/03374-1) - Letter to Ryan Bennett from DP&I, dated 30/05/11 (ref: 11/03374-1) In accordance with the request from DP&I (letter dated 7/12/11), Sydney Ports has placed the CEMP and the associated Environmental Control Plans on the Sydney Ports Corporation website. In accordance with the request from DP&I (letter dated	5 - General	2. In Progress	NSW Ports / Contractor

			18/07/12), Sydney Ports provided the Environmental Audit Report to the Department (23/08/12) and uploaded the Compliance Tracking Program and Compliance Tracking Reports onto the Sydney Ports website. DP&I requested clarification on a non-compliance noted in the Environmental Audit (email dated 26/10/12). Sydney Ports provided the requested clarification to DP&I on 19/11/12. Requirements based on the Hazard and Safety Studies were issued to NSW Ports in the letters dated 14/11/2011 and 29/07/13. These issues were addressed and compliance demonstrated in the Pre-Start Up Compliance Report submitted to DP&I on 16/10/13 required under CoA 4.2.			
6807	1.4 - Limits of Approval - approval time period	This approval shall lapse five years after the date on which it is granted, unless the works the subject of this approval are physically commenced on or before that time.	The works were commenced in September 2011.	5 - General	8. Reviewed - Closed	NSW Ports
6808	1.5 - Limits of Approval - LPG	The export of Liquefied Petroleum Gas (LPG) is permitted, provided that a report detailing the reverse flow prevention arrangements for LPG export is firstly submitted to the satisfaction of the Director-General.	Following telephone discussion on 21/12/2012, email response provided to DP&I on 07/01/2013 noting that a report has not been developed because no tenants/operators are currently committed to the import and export of LPG.	5 - General	2. In Progress	NSW Ports
6809	1.6 - Statutory Requirements	The Proponent shall ensure that all licences, permits and approvals are obtained and kept up-to-date as required throughout the life of the development. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the project.	DECCW confirmed in an email to Christa Sams of Sydney Ports that they will licence the BLB2 operators and NOT Sydney Ports (Scheduled Development Work and Shipping in Bulk EPLs) - 3 June 2010. Harbour Master approval in accordance with clause 67 of the 'Management of Waters and Waterside Lands Regulations' was obtained on 6 May 2011. Approval is valid May 2011 - June 2013. The Contractor has applied to Sydney Airport Corporation for approval of the crane heights during BLB2 construction. Permit dated 18/08/2011 received from SACL detailing the conditions imposed while operating a crane in the vicinity of the airfield. The NSW Office of Water confirmed in an email to John Holland (1/09/2011) that a dewatering licence is not required for dewatering associated with culvert works and a product pipeline. Appropriate licences will be obtained by the users.	5 - General	2. In Progress	NSW Ports / Contractor
6803	1.7 - Compliance	The Proponent shall ensure that employees, contractors and sub-contractors are aware of, and	Compliance requirements that implicate or will be the responsibility of the construction contractor have been	5 - General	2. In	NSW Ports / Contractor

		comply with, the conditions of this approval relevant to their respective activities.	detailed and provided in the tender documentation. A compliance tracking system has been set up and is being actively managed by Sydney Ports' staff to help ensure compliance with conditions of approval. The construction contractor is aware of and required to satisfy relevant conditions of approval and commitments. A Compliance Tracking Program has been prepared and approved by the D-G, which outlines how compliance issues will be managed and by whom. Compliance matters are routinely reviewed by Sydney Ports with Compliance Tracking Reports generated for submission to DP&I in accordance with CoA 4.1(b).		Progress	
6804	1.8 - Compliance	The Proponent shall be responsible for environmental impacts resulting from the actions of all persons on site, including contractors, sub-contractors and visitors.	This is noted.	5 - General	2. In Progress	NSW Ports / Contractor
6810	1.9 - Utilities and Services	Prior to the commencement of construction, the Proponent shall identify (including, but not limited to the position and level of service) all public utility services on the site, roadway, footpath, public reserve or any public areas that are associated with, and/or adjacent to the site, and/or likely to be affected by the construction and operation of the project.	The following utiltiy and service providers were contacted to determine the location of services and utilities prior to construction commencing: -Energy Australia (Ausgrid); Jemena; Optus; Savcor; Sydney Water; Telstra	4 - Pre-construction	5. Completed - compliant	Contractor
6805	1.10 - Utilities and Services	The Proponent shall consult with the relevant utility provider(s) for those services identified under condition 1.9 and make arrangements to adjust and/or relocate services as required. The Proponent shall bear the full cost associated with providing utilities and services to the site, and restoring any public utilities that may be damaged during the proposed works.	Consultation occurred with Ausgrid and arrangements made to relocate 2 light poles as required. Work carried out by Ausgrid to relocate and remove light poles and cable near culvert on 28/08/2011. Further consultation occurred with Ausgrid regarding disconnection of light poles in the vicinity of the temporary crane pad during piling, and these light poles were disconnected. Consultation ongoing in relation to future works. Meeting held with Ausgrid at BLB1 site on 13/12/2011 to discuss the inspection of the new 11kV cable installation and connection. Ausgrid was present during the installation of conduits bypassing the eastern culvert section on 19/12/2011. Ausgrid inspected the HV conduit installation and substation base in Jan 2012. Temporary light poles in the vicinity of BLB1 removed on 31/01/2012. Ausgrid inspected the HV cable installation and jointing and kiosk installation in Feb	4 - Pre-construction	5. Completed - compliant	Contractor

			2012. The Contractor prepared a Watermain Connection Application for submission to Sydney Water and submitted the Major Works Deed to Sydney Ports for execution. Sydney Ports executed the Deed in April 2012 and the Contractor submitted it to Sydney Water for the work to be tendered. The Contractor liaised with Sydney Water regarding the BLB2 sewer connection. The Ausgrid kiosk was energised on 14/09/2012. The Plan of Easement was lodged with LPI on 18/09/2012 and confirmation of registration on 19/10/2012 has been received. Sydney Water provided conditional approval of the Wastewater Connection Application on 25/10/2012 and Sydney Ports executed the Customer Agreement - Pump to sewer service on 01/11/2012. Sydney Water approved the Water Connection Application on 05/11/2012.			
6806	1.11 - Utilities and Services	Prior to the commencement of construction works that may affect services/utilities, the Proponent shall provide documentary evidence to the Director-General that the requirements of the relevant utility provider(s) have been met.	Documentary evidence supplied to DP&I (23 August 2011) indicating that the requirements of Ausgrid have been met. Letter from DP&I (19/9/11) received confirming that the Department is satisfied that the requirements of CoA 1.11 have been met in relation to the temporary removal of the light poles. Removed light poles have been re-instated following completion of main construction works. Users to comply should their works impact any utilities.	4 - Pre-construction	5. Completed - compliant	Contractor / NSW Ports
6811	2.1 (a) - Hazards and Risk - Fire Safety Study	One month prior to the commencement of construction of the project (except for preliminary works as described in CoA 2.1), a Fire Safety Study shall be prepared and submitted for the approval of the Director-General, covering the relevant aspects of the Department of Planning's 'Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Study Guidelines' and the NSW Government's 'Best Practice Guidelines for Contaminated Water Retention and Treatment Systems'. In addition to approval from the Director General, approval for this study shall also be obtained from the Commissioner of the NSW Fire Brigades.	Letter to submit the FSS for DG Approval sent 14/02/11. The DG has approved the FSS as per the letter dated 14/04/11. Response received from the Commissioner of FRNSW on 28 April requesting amendments to the FSS. Amended FSS provided 23 May. Approval letter received from FRNSW (10 June 2011). Revised FSS received 31/08/2011 relating to foam tank change from bladder to atmospheric. Revised FSS with further updates received 31/10/2011 and submitted to DP&I and FRNSW on 21/11/2011. Response received from FRNSW (25/01/12) indicating that they consider this condition remains satisfied following review of revised FSS. Response received from DP&I (27/01/12) indicating that they do not have any further comments based on the amended FSS. Refer to issue 8079 for updates during the Users' construction phase.	4 - Pre-construction	5. Completed - compliant	NSW Ports

8079	DoP Letter - 14/04/11 - Hazard & Risk Studies (CoA 2.1)	The Users' designers are to review the Fire Safety Study (re CoA 2.1 a) as part of the design process and amend it based on the proposed gas and liquid transfer and infrastructure installed. The updated FSS shall then be submitted to Sydney Ports for review prior to the finalisation of the detailed design works for the berth. The Users are to confirm that the recommended safety features have been incorporated for the Marine Loading Arms during design of the pipeline facilities. The updated FSS is to be submitted to the DG for approval.	Users' review will commence when required as per the project schedule. The FSS is being updated to include bitumen handling by Terminals. Users have reviewed and adopted the FSS. Reviewed and updated Fire Safety Study submitted to DP&I 31/5/13. Approval received 29/6/13. Vopak will need to seek an amendment to the approval to accommodate the method of connection proposed (quick connect /disconnect couplings instead of bolted connections) between MLA and ship's manifolds.	4 - Pre-construction	2. In Progress	NSW Ports / Users
6812	2.1 (b)-Hazards and Risk-Hazard and Operability Study	One month prior to the commencement of construction of the project (except for preliminary works as described in CoA 2.1), a Hazard and Operability Study, chaired by an independent and qualified person approved by the Director-General prior to the commencement of the study, shall be carried out in accordance with Department of Planning's Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines. The study report shall be accompanied by a program for the implementation of all recommendations made in the report. If the Proponent proposes to defer the implementation of a recommendation, full justification must be included.	HAZOP Study submitted on 14/02/11. The DG has approved the HAZOP Study as per the letter dated 14/04/11. A program for the implementation of the HAZOP is to be submitted to the DG by 20/05/11 (extension granted by DP&I from 14/05 to 20/05 as per email from Ingrid Ilias, dated 10/05/11). This letter also requires that: - all actions arising from the study are required to be implemented in a timely manner. If Sydney Ports intends to defer the implementation of recommendations made, then full justification must be provided to the Department. - the study is required to take into consideration the final piling methodology and associated environmental management, as relevant. Program for the implementation of the HAZOP submitted to DP&I 23 May 2011. Email sent to DP&I, dated 8 June 2011, indicating that the HAZOP Studies are not the relevant medium to consider the final piling methodology and associated environmental management. Letter received from DP&I, dated 16 June 2011, approving the HAZOP implementation program (submitted 23/05/11) and indicating that they are satisfied that the final piling methodology and associated environmental management has been adequately addressed in other studies and reports. As a result of the fire fighting foam system design change from foam bladder storage to an atmospheric tank, a HAZOP Study was conducted on 15/06/2011 and a Foam Fire Fighting System HAZOP Report received for review on 27/06/2011. Final Foam Fire Fighting System HAZOP Report received on 12/12/2011. Both Users (i.e. Vopak and Terminals) have completed their HAZOPs	4 - Pre-construction	5. Completed - compliant	NSW Ports / Users

			and these reports will be issued to DP&I in accordance with this condition. Reports submitted to DP&I on May 2013. Approval received 29 July 2013. Evidence of compliance with the HAZOP is provided in the Pre-Start Up Compliance Report required under CoA 4.2 submitted to the DP&I 16/10/13.			
6813	2.1 (c) - Hazard and Risk - Final Hazard Analysis	One month prior to the commencement of construction of the project (except for preliminary works as described in CoA 2.1), a Final Hazard Analysis shall be prepared in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis.	Letter drafted to seek the Agreement of DG for submission of the FHA 1 month prior to the BLB2 User's commencement of construction. Letter noted above sent 14/02/11. The DG has agreed to the submission of the FHA at least one month prior to the Users' commencement of construction as per the letter dated 14/04/11. The FHA was completed in May 2013 and the report is to be finalised for submission to DP&I. Report submitted to DP&I on 31/05/13 and approval was received on 29/7/13. Compliance with the FHA is detailed in the Pre-Start Up Compliance Report required under CoA 4.2 which was submitted to DP&I on 16/10/13.	4 - Pre-construction	5. Completed - compliant	NSW Ports / Users
6814	2.1 (d) - Hazard and Risk - Construction Safety Study	One month prior to the commencement of construction of the project (except for preliminary works as described in CoA 2.1), a Construction Safety Study shall be prepared in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines. Because the construction period exceeds six months, the "commissioning" portion of the study may be submitted two months prior to the commencement of commissioning.	Letter drafted to seek the Agreement of DG for submission of the Construction Safety Study 1 month prior to the BLB2 User's commencement of construction. Letter noted above sent 14/02/11. The DG has agreed to the submission of the CSS at least one month prior to the Users' commencement of construction as per the letter dated 14/04/11. Both Users (i.e. Vopak and Terminals) have prepared a CSS to be submitted to DP&I following review by Sydney Ports. CSS's were submitted to DP&I on 31/05/13 and approval received 29/7/13. Compliance with Terminals CSS was provided in the Pre-Start Up Compliance Report submitted to DP&I 16/10/13 required under CoA 4.2. Compliance with Vopak CSS to be provided in the November 2013 Compliance Tracking Report. As per the DP&I letter (29/7/13) user Vopak are required to submit to the D-G a separate CSS for commissioning activities no later than one month prior to commissioning of their infrastructure. The Commissioning Report is currently being drafted by Vopak.	4 - Pre-construction	2. In Progress	NSW Ports / Users

6815	2.2 (a) - Emergency Plan	Two months prior to the commencement of project commissioning, or within such period otherwise agreed by the Director-General, the Proponent shall develop and implement a comprehensive Emergency Plan and detailed emergency procedures for the project prepared in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines, and submit them for the approval of the Director-General.	NSW Ports will coordinate submission. Emergency Plan developed by NSW Ports and submitted to DP&I on 26/9/13. Approval from DP&I received 16/10/13.	2 - Pre-operational	5. Completed - compliant	NSW Ports
6816	2.2 (b) - Safety Management System	Two months prior to the commencement of project commissioning, or within such period otherwise agreed by the Director-General, the Proponent shall develop and implement a comprehensive Safety Management System covering all on-site operations and associated transport activities involving hazardous materials. The document shall clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records shall be kept on-site and shall be available for inspection by the Director-General upon request. The Safety Management System shall be developed in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No. 9 - Safety Management.	NSW Ports will prepare and maintain safety management procedures. A SMS for BLB2 was developed in August 2013 for implementation from 1 November 2013. The SMS is available for inspection by the D-G upon request. The SMS was submitted to DP&I for approval 30/10/13. Comments on the SMS were received from DP&I by email on 6/11/13. A revised SMS was submitted to DP&I on 7/11/13. Awaiting final DP&I approval.	2 - Pre-operational	2. In Progress	NSW Ports
6817	2.3 - Odour	The Proponent shall not permit any offensive odour, as defined under section 129 of the Protection of the Environment Operations Act 1997, to be emitted beyond the boundary of the site unless as otherwise permitted by an Environment Protection Licence	This is noted.	5 - General	2. In Progress	Contractor / Users
6818	2.4 - Dust Emissions	The Proponent shall undertake the project in a manner that minimises or prevents dust emissions from the site, including wind-blown and traffic-generated dust. Should visible dust emissions occur at any time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of	This is noted. Addressed in Contractor's CEMP and associated Environmental Control Plans (see Issue 6845). Dust suppression undertaken by lightly hosing the affected area and using a road sweeper. Vopak query received 04/12/2012 regarding dust during road works, however by the time the call was received the activities had ceased.	3 - Construction	2. In Progress	Contractor

		relevant works, as appropriate, such that emissions of visible dust cease.				
6819	2.5 - Construction Noise Impacts	To mitigate construction noise impacts associated with the project, the Proponent shall only undertake construction activities that are audible at any residential receptor during the hours listed below: a) all works undertaken on Mondays to Fridays shall only be carried out between 7:00 am to 6.00 pm; b) all works undertaken on Saturdays shall only be carried out between 8:00 am and 1.00 pm; and c) no construction works shall occur on Sundays or public holidays. This condition does not apply in the event of a direction from police or other relevant authority for safety or emergency reasons. Note: 'safety or emergency reasons' refers to emergency works which may need to be undertaken to avoid loss of life, property loss and/or to prevent environmental harm.	This is noted.	3 - Construction	2. In Progress	Contractor
6820	2.6 - Construction Noise Impacts	The hours of construction activities specified under condition 2.5 of this approval may be varied with the prior written approval of the Director-General. Any request to alter the hours of construction specified under condition 2.5 shall be: a) considered on a case-by-case basis; b) accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and c) accompanied by sufficient information for the Director-General to reasonably determine that activities undertaken during the varied construction hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site.	This is noted.	3 - Construction	2. In Progress	Contractor
6821	2.7 - Construction Noise Impacts	Notwithstanding condition 2.5, no audible piling activities are permitted to occur on the weekend or public holidays.	CoA 2.7 has been deleted pursuant to Modification of Minister's Approval 07_0061 MOD 1, dated 28 April 2011, allowing pile driving activities on Saturdays in accordance with CoA 2.5.	3 - Construction	8. Reviewed - Closed	Contractor
6822	2.8 - Construction Noise Impacts	No driven piles are permitted for the construction of wharf structures unless otherwise agreed by the Director-General.	A letter to the Department of Planning regarding piling issues was sent 24 Nov 2010. DoP responded with a letter, dated 22 Dec 2010, allowing pile driving but placing additional time restrictions on the activity. A	3 - Construction	8. Reviewed - Closed	Contractor

			subsequent letter was sent to DoP (23 Dec 2010) seeking reconsideration of its position on construction hours and respite periods. DoP responded (24 Dec 2010) agreeing that piling activities may be carried out as per CoA 2.5 subject to the provisions of CoA 2.7 (see Issue 7448).			
7448	2.8 - Driven Piles-Construction Noise Impacts (DG letter 24/12/10)	The use of driven piles is permitted during the construction hours prescribed in CoA 2.5 and in accordance with CoA 2.7 and 6.2d.	Refer to Issue Response under 6822 for background information. Piling for the project was commenced on 2 December 2011 and completed on 26 April 2012.	3 - Construction	8. Reviewed - Closed	Contractor
6823	2.9 - Operation Noise Impacts	The Proponent shall minimise noise emissions from plant and equipment operated on the site by installing and maintaining, wherever practicable, efficient silencers and low-noise mufflers (residential standard).		1 - Operational	1. Open	NSW Ports / Users
6824	2.10 - Operation Noise Impacts	The Proponent shall design, operate and maintain the project to ensure that the noise contributions from the project do not exceed the maximum allowable noise contributions specified in Table 1 (see Project Approval document), at those locations and during those periods indicated. The maximum allowable noise contributions apply under: a) meteorological condition of wind speeds up to 3 ms-1 (measured at 10 metres above ground level); or b) temperature inversion conditions up to 3oC per 100 metres and wind speeds up to 2ms-1 (measured at 10 metres above ground level).		1 - Operational	1. Open	NSW Ports / Users
6825	2.11 - Operation Noise Impacts	For the purpose of assessment of noise contributions specified under condition 2.10 of this approval, noise from the project shall be: a) Measured at the most affected point on or within the residential boundary to determine compliance with the LAeq(15 minute) and LAeq(night) noise limits outlined in condition 2.10; and b) subject to the modification factors provided in Section 4 of the New South Wales Industrial Noise Policy (EPA, 2000), where applicable. Notwithstanding, should direct measurement of noise from the premises be impractical, the Proponent may employ an alternative noise assessment method deemed		1 - Operational	1. Open	NSW Ports / Users

		acceptable by the DECC (refer to Section 11 of the New South Wales Industrial Noise Policy (EPA, 2000)). Details of such an alternative noise assessment method accepted by the DECC shall be submitted to the Director-General prior to the implementation of the assessment method.				
6832	2.12 - Soil and Water Impacts	The Proponent shall ensure that all stormwater on the working platform is directed to a stormwater treatment unit/pollutant trap capable of removing gross pollutants, oil, grease and sediments, prior to it being discharged to Botany Bay.	Addressed in design.	1 - Operational	2. In Progress	NSW Ports / Contractor
6833	2.13 - Soil and Water Impacts	The Proponent shall ensure that all oil and grease or other pollutants in the wastewater storage tank and the stormwater treatment unit is regularly collected and disposed of off-site at a waste management facility lawfully permitted to accept this waste.		1 - Operational	1. Open	NSW Ports
6834	3.1 - Noise Audit	Within 90 days of commencement of operations associated with the project and during a period in which the project is operating under normal operating conditions, the Proponent shall undertake a noise audit to detail the noise emission performance of the facility. This audit shall meet the requirements of the DECC, and shall include, but not necessarily be limited to: a) noise monitoring, consistent with the guidelines provided in New South Wales Industrial Noise Policy (EPA, 2000) to assess compliance with the criteria specified in Table 1 of this approval; b) methodologies for noise monitoring; c) location(s) of noise monitoring; d) frequency of noise monitoring; e) identification of monitoring sites at which pre-and post-project levels can be ascertained; and f) provision of details of any complaints received relating to noise generated by the project, and action taken to respond to those complaints.		1 - Operational	1. Open	NSW Ports
6835	3.2 - Noise Audit	Within 28 days of conducting the noise audit referred to under condition 3.1 of this approval, the Proponent shall provide the Director-General		1 - Operational	1. Open	NSW Ports

		and DECC with a copy of the report. If the noise audit identifies any non-compliance with the noise limits imposed under this approval, the Proponent shall detail what additional measures would be implemented to ensure compliance, clearly indicating who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General.				
6836	3.3 - Hazard Audit	Twelve months after the commencement of operations of the project or within such period otherwise agreed by the Director-General, the Proponent shall carry out a comprehensive Hazard Audit of the project and within one month of its completion submit the audit report to the Director General. The audit shall be carried out at the Proponent's expense by a duly qualified independent person or team approved by the Director General prior to commencement of the audit. Further audits shall be carried out every three years or as determined by the Director General and a report of each audit shall be submitted to the Director General within one month of each audit completion date. All hazard audits shall be carried out in accordance with the Department of Planning's Hazardous Industry Planning Advisory Paper No.5 - Hazard Audit Guidelines. Each audit shall include a review of the site Safety Management System and a review of all entries made in the incident register since the previous audit. Each audit report must be accompanied by a program for the implementation of all recommendations made in the audit report. If the Proponent intends to defer the implementation of a recommendation, justification must be included.		1 - Operational	1. Open	NSW Ports
6837	4.1 - Compliance Tracking Program	The Proponent shall develop and implement a Compliance Tracking Program to track compliance with the requirements of this approval. The Program shall be submitted to the Director-General for approval prior to the commencement	A Compliance Tracking System has been implemented to track compliance across all phases of the project. It allows for satisfaction of the requirements listed in a) to e). A Compliance Tracking Program (CTP) was submitted for DG approval 23 May 2011. DG approval	4 - Pre-construction	5. Completed - compliant	NSW Ports / Contractor

		of construction. The Program shall relate to both construction and operational stages of the project and shall include, but not necessarily be limited to: a) provisions for periodic review of the compliance status of the project against the requirements of this approval; b) provisions for periodic reporting of compliance status to the Director-General; c) provisions for specific reporting requirements as required by conditions 4.2 and 4.3; d) a program for independent environmental auditing at least annually, or as otherwise agreed by the Director-General, in accordance with ISO 19011:2002 - Guidelines for Quality and/ or Environmental Management Systems Auditing; and e) mechanisms for rectifying any non-compliance identified during environmental auditing or review of compliance.	of the CTP provided 14 June 2011. A Compliance Tracking Report (CTR) was submitted to the DoP on 21/11/2011 in accordance with the CTP. Approval of the Report was obtained from the DoP on 7/12/2011. A CTR was submitted to DP&I on 29/05/2012. Approval of the Report was obtained from DP&I on 18/07/2012. The first Environmental Audit Report was submitted to DP&I on 23/08/2012. Sydney Ports followed up the DP&I query received 26/10/2012 seeking clarification of non-compliances relating to the disposal of waste and provided a response to DP&I on 19/11/2012. DP&I raised further questions by phone (Feb 2013), which were responded to by email from SPC on 13/02/13. A response letter from DP&I accepting the SPC response was received, dated 22/02/13. A CTR (#3) was submitted to DP&I on 15/11/2012 for the period from May - November 2012. It was approved by DP&I 25/01/2013. A CTR (#4) was submitted to DP&I on 28/5/13 for the period November 2012-May 2013. It was approved by DP&I 17/6/13. The second Environmental Audit Report was provided to DP&I on 26/09/13. It was approved by DP&I 8/10/13.			
6838	4.2 - Compliance Tracking Program	One month prior to the commencement of project operations, the Proponent shall submit to the Director-General a Pre-Startup Compliance Report detailing compliance with conditions 2.1 and 2.2, including: a) dates of study/plan/system submission, approval, commencement of construction and commissioning; b) actions taken or proposed to implement recommendations made in the studies/plans/systems; and c) response to any requirements imposed by the Director-General under condition 1.3.	The Pre-Start Up Compliance Report was prepared by NSW Ports and submitted to DP&I on 16/10/13. The report contained details of NSW Ports and Terminals compliance with the safety and hazard documentation in CoA 2.1 and 2.2. The report noted that Vopak were yet to commence construction so evidence of compliance with their HAZOPs and CSS were not able to be provided. Details of this compliance are provided in the November Compliance Tracking Report required under CoA 4.1.	1 - Operational	2. In Progress	NSW Ports / Contractor
6840	4.3 - Compliance Tracking Program	Three months after the commencement of project operations, the Proponent shall submit to the Director-General, a Post-Startup Compliance Report verifying that: a) the Emergency Plan required under condition 2.2a) is in place and effective and that at least one emergency exercise has been conducted; and b) the Safety Management System required under condition 2.2b) has been fully implemented and that		1 - Operational	1. Open	NSW Ports / Users

		records required by that system are being kept on site.				
6841	5.1 - Community Information, Consultation and Involvement	Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request.	The EA is publicly available on SydneyPorts.com.au. Project contacts are available on this website (as follows): Telephone: +61 2 9296 4999 Fax +61 2 9296 4742 E-mail: blb2.project@sydneyports.com.au Media inquiries: Please contact the Media Manager on +61 2 9296 4995. The website also includes a form for submission of queries, feedback and complaints. Requests by the public for any documents required under the Approval will be forwarded to Oliver Smith and Ryan Bennett and will be provided as required (subject to confidentiality). In accordance with the request from DP&I (letter dated 7/12/11), Sydney Ports has placed the CEMP and the associated Environmental Control Plans on the Sydney Ports Corporation website. In accordance with the request from DP&I (letter dated 18/07/12), Sydney Ports uploaded the Compliance Tracking Program and Compliance Tracking Reports onto the Sydney Ports website. In accordance with the request from DP&I (letter dated 27/02/13), Sydney Ports uploaded the Environmental Audit Report onto the Sydney Ports website. As at 31 May 2013, BLB2 documentation transferred to NSW Ports website (www.nswportsbotany.com.au). The contractors CEMPs have been uploaded to the website. The second BLB2 audit undertaken on 7/8/13 reviewed the content of the website to ensure all relevant documentation was available. The second BLB2 environmental audit report has been uploaded to the website.	5 - General	2. In Progress	NSW Ports / Contractor
6842	5.2 - Complaints Procedure	Prior to the commencement of construction of the project, the Proponent shall ensure that the following are available for community complaints for the life of the project (including construction and operation): a) a telephone number on which complaints about construction and operational activities at the site may be registered; b) a postal address to which written complaints may be sent; and c) an email address to which electronic complaints may be transmitted. The telephone number, the postal address and the email address shall be displayed on a sign near	Two signs with the relevant information have been installed by the construction contractor on site gates and the entrance to the site offices. Updated signage with the NSW Ports logo and contact details have been installed compliant with this condition.	4 - Pre-construction	5. Completed - compliant	NSW Ports / Contractor

		the entrance to the site, in a position that is clearly visible to the public, and which clearly indicates the purposes of the sign.				
6844	5.3 - Complaints Procedure	The Proponent shall record details of all complaints received through the means listed under condition 5.2 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to: a) the date and time, where relevant, of the complaint; b) the means by which the complaint was made (telephone, mail or email); c) details of the complainant that were provided, or if no details were provided, a note to that effect; d) the nature of the complaint; e) any action(s) taken by the Proponent in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken. The Complaints Register shall be made available for inspection by the Director-General upon request.	A Complaints, Incidents and Non-Conformance Register has been created. One complaint received from ACFS on 14/02/2012 regarding wheel marks in the grass verge outside their compound. This complaint was investigated and although it could not be confirmed to be attributed to the BLB2 project, as a gesture of goodwill the Contractor repaired the wheel marks on 15/02/2012.	5 - General	2. In Progress	NSW Ports / Contractor
6845	6.1 - Construction Environmental Management Plan	Prior to the commencement of construction of the project, the Proponent shall prepare and implement a Construction Environmental Management Plan to outline environmental management practices and procedures to be followed during the construction of the project. The Plan shall be prepared in accordance with Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).	Contractor's CEMP prepared and submitted to Sydney Ports on 30/06/11. Revised CEMP submitted on 26/07/11, 12/08/11 and 17/08/11 and Sydney Ports' review comments closed. Revised CEMP, with marine mammals procedure, submitted on 26/08/2011 and approved by Sydney Ports on 1/09/2011. CEMP being implemented as required and verified by Sydney Ports' contract management providers and staff. Users works - Terminals CEMP submitted 31/5/13. Revised CEMP with NSW Ports comments provided 5/7/13 and approved 11/7/13. Vopak preliminary CEMP submitted 5/7/13. Terminals CEMP updated and finalised (3/9/2013) in line with comments and actions from the Environmental Audit. Vopak associated CEMP documentation (as per Condition 2) submitted on 23/10/13 and 25/10/13.	4 - Pre-construction	5. Completed - compliant	Contractor
6846	6.2 (a) - Construction Traffic Management	As part of the CEMP for the project, the Proponent shall prepare and implement a Construction Traffic Management Protocol to detail how vehicle movements associated with the	Contractor's CTMP prepared and submitted to Sydney Ports on 30/06/11. Revised CTMP submitted on 26/07/2011. Further revised CTMP submitted on 12/08/11 and Sydney Ports' review comments closed	4 - Pre-construction	5. Completed - compliant	Contractor

	Protocol	project will be managed during construction. The Protocol shall specifically address the movement of heavy and/or oversize loads to and from the site, the management of construction traffic and any restrictions to the hours of heavy vehicle movements to avoid road use conflicts with other port users. The Protocol shall detail the expected routes to the site for construction traffic with the intention that all residential areas are avoided	on 15/08/11. Updated CTMP submitted on 26/10/2011 and approved by Sydney Ports on 2/11/2011. CTMP being implemented as required and verified by Sydney Ports' contract management providers and staff. Users works - CEMPs to include CTMP. Terminals CEMP approved 11/7/13. Vopak submitted Traffic Management Plan 23/10/13. Revised TMP was submitted 5/11/13 following NSW Ports review. NSW Ports approved Vopak TMP 7/11/13.			
6876	6.2 (b) - Construction Water Management Protocol	As part of the CEMP for the project, the Proponent shall prepare and implement a Construction Water Management Protocol to outline specific mitigation measures that would be implemented as part of the project to minimise the impact of construction on water quality including piling activities and the handling of chemicals, fuels and concrete. The Protocol shall include the use of appropriate stormwater controls, in accordance with Managing Urban Stormwater: Soils and Construction (Landcom, 2004) and shall outline specific measures that will be implemented at the site to avoid sediment-laden stormwater from entering Botany Bay.	Contractor's CEMP prepared and submitted on 30/06/2011. Revised CEMP and associated Water Quality ECP submitted on 26/07/11. Further revised Water Quality ECP submitted on 12/08/11 and approved by Sydney Ports on 1/09/11 as part of the CEMP (see Issue 6845). Subsequent comments incorporated into amended Water Quality ECP submitted on 20/10/2011. Updated Water Quality ECP received on 18/06/2012. Water Quality ECP being implemented as required and verified by Sydney Ports' contract management providers and staff. Users works - Requirements included in users CEMPs. Terminals CEMP approved 11/7/13. Vopak Water Management Plan was submitted to NSW Ports on 24/10/13 and approved 25/10/13.	4 - Pre-construction	5. Completed - compliant	Contractor
6877	6.2 (c) - Acid Sulfate Soil Management Plan	As part of the CEMP for the project, and where surface excavation is required below 1 metre or where soil testing prior to the commencement of construction identifies the presence of acid sulfate soils, the Proponent shall prepare and implement an Acid Sulfate Soil Management Plan prepared in accordance with guidance provided in Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998).	Contractor's CEMP prepared and submitted on 30/06/2011. Revised CEMP and associated Acid Sulphate Soil ECP submitted on 26/07/11. Further revised Acid Sulphate Soil ECP submitted on 12/08/11 and approved by Sydney Ports on 1/09/11 as part of the CEMP (see Issue 6845). In accordance with the ECP, excavation material from the culvert works tested and no ASS present. Two soil samples recovered from the drainage trenches were sent for ASS analysis and verification on 20/12/2011. Users works - Requirements included in user works CEMP. Terminals approved 11/7/13 - no excavation identified as being required. Vopak CEMP identified some excavation as required - An ASS management plan was submitted to NSW Ports 23/10/13 and approved 25/10/13.	4 - Pre-construction	5. Completed - compliant	Contractor
6878	6.2 (d) - Construction	As part of the CEMP for the project, the Proponent shall prepare and implement a	A Construction Noise Environmental Control Plan (Noise ECP) has been prepared and submitted to the DP&I on	4 - Pre-construction	5. Completed -	Contractor

	Noise Management Plan	Construction Noise Management Plan to outline construction noise mitigation, monitoring and management measures to be implemented to minimise noise impacts during construction of the project. The Plan shall include, but not necessarily be limited to: i) details of construction activities and a schedule for construction works; ii) identification of construction activities that have the potential to generate noise and/ or vibration impacts on surrounding land uses, particularly residential areas; iii) where the relevant construction noise goals contained in the Noise Management Guideline – Construction Noise (formerly published as Chapter 171 of the Environmental Noise Control Manual) are predicted to be exceeded at sensitive receivers, provision for the application of all practicable and reasonable noise mitigation measures to seek to achieve the relevant construction noise goals; iv) procedures for notifying residents of construction activities that are likely to effect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints; and v) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, if any non-compliance is detected.	19 August 2011. The Noise ECP fulfills the requirements of CoA 6.2(d) as well as the requirements of the letter from DP&I to Sydney Ports (24/12/10). The Noise ECP has been incorporated into the project's CEMP. A letter from DP&I (14/10/11) confirms that the Noise ECP meets the requirements of CoA 6.2d and that it has been incorporated into the project's CEMP as required. The Contractor commenced noise surveys on 24/10/2011 in accordance with the ECP. Piling commenced on 2/12/2011. Sound level monitoring carried out in accordance with the ECP indicates piling works were inaudible at all four monitoring receptors and dominant noise was external environmental. The ECP was updated (dated 27/03/12) to reflect the current noise management levels and the updated version was provided to DP&I for their records on 17/04/12. Piling installation completed on 26/04/2012. Users works - Requirements to be included in users CEMP. Terminals approved 11/7/13. Vopak Noise Management Plan submitted 23/10/13. Revised NMP submitted 5/11/13. NSW Ports approved 7/11/13.		compliant	
6879	6.3 - Operation Environmental Management Plan	Prior to the commencement of operation of the project, the Proponent shall prepare and submit for the approval of the Director-General an Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during the operation of the project. The Plan shall be consistent with the Department's Guideline for the Preparation of Environmental Management Plans (DIPNR 2004), and shall include, but not necessarily be limited to: a) a description of all activities to be undertaken on the site during operation of the project; b) statutory and other obligations that the Proponent is required to fulfil	NSW Ports prepared an OEMP and submitted to DP&I for approval on 13/09/13. DP&I requested amendments to the documents as per the email received on 2/10/13. The OEMP was also provided to Randwick City Council and EPA on 25/09/13. EPA requested that the final OEMP be provided for their records. OEMP sent to EPA on 7/11/13. Randwick City Council sent a letter response 17/10/13 outlining their requirements. The letter was forwarded to Ingrid Illias of DP&I and included justification that the revised OEMP adequately addressed Council's requirements. The revised OEMP was submitted to DP&I 16/10/13 and approval from DPI&I was received 25/10/13. The OEMP has been uploaded to the NSW Ports website.	2 - Pre-operational	5. Completed - compliant	NSW Ports / Users

		during operation, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies; c) specific consideration of measures to address any requirements of Council and the DECC during operation; d) details of how the environmental performance of operations will be monitored, and what actions will be taken to address identified adverse environmental impacts; e) a description of the roles and responsibilities for all relevant employees involved in the operation of the project and a program for how these employees will be trained in responsibilities identified in the plan; and f) complaints handling procedures to be applied during operation of the project (conditions 5.2 and condition 5.3 of this approval).				
6880	7.1 - Incident Reporting	The Proponent shall notify the Director-General of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of becoming aware of the incident. The Proponent shall provide full written details of the incident to the Director-General within 24 hours of any incident or potential incident occurring. A further detailed report shall be prepared and submitted following investigations of the causes and identification of necessary additional preventive measures. The detailed report is to be submitted to the Director-General no later than 14 days after the incident or potential incident.	An incident register has been created and the requirements of this condition are noted.	5 - General	2. In Progress	NSW Ports / Contractor
7449	DoP Letter - 22/12/10 - Pile Vibration Management Plan	A Pile Vibration Management Plan is to be prepared and implemented as a requirement of the Director General agreeing to the use of driven piles. The Plan is to be approved by the Director - General prior to piling works and will be incorporated into the CEMP (CoA 6.1). The changes in construction methodology shall also be considered, as appropriate, within the Hazard and Risk studies prepared under CoA 2.1. The Plan shall be prepared in consultation with Elgas and include management measures to control	Pile Vibration Management Plan (PVMP) submitted to the DG 28/03/2011. DoP subsequently queried whether the duration of piling was considered in the preparation of the PVMP and asked for the resolution of the geophones. This information was submitted to Lilia Donkova (NSW Planning & Infrastructure) in an email dated 3/5/11. An email response from Ingrid Ilias of DP&I on 4 May 2011 requested additional information with regard to the PVMP. Letter with additional information provided to DP&I 19 May 2011. As requested by DP&I in an email dated 24 May 2011, the	4 - Pre-construction	8. Reviewed - Closed	NSW Ports / Contractor

		vibration to acceptable limits and to protect surrounding port infrastructure (including the integrity of the Elgas LPG Cavern). This shall include the identification of vibration level criteria and a Pile Vibration Monitoring System.	GHD Report "BLB2 Piling and Vopak Terminal Sydney, Pile Vibration Analyses and Assessments, May 2011" was supplied on 27 May 2011. DP&I approval for the PVMP granted via a letter, dated 30 May 2011. Letter received from DP&I, dated 16 June 2011, indicating that they are satisfied that the final piling methodology and associated environmental management has been adequately addressed in other studies and reports and does not need to be further considered in the Hazard and Risk studies under CoA 2.1. The PVMP has been incorporated into the CEMP. Installation of the Vibration Monitoring System is complete and background vibration monitoring commenced in June 2011 (see Issue 8167). Vibration monitoring has been ongoing during piling and there have been no exceedances of the prescribed set levels. Piling installation completed 26/04/2012.			
7591	DoP Letter - 24/12/10 - Construction Noise Management Plan	The Construction Noise Management Plan (re CoA 6.2d) must include clear commitments in relation to the duration of driven piling activities, the provision of respite periods, and mitigation measures in response to noise criteria exceedances. The CNMP must be submitted to the Department of Planning prior to the commencement of works.	A Construction Noise Environmental Control Plan (Noise ECP) has been prepared and submitted to the DP&I on 19 August 2011 (prior to commencement of works). The Noise ECP fulfills the requirements of CoA 6.2(d) as well as the requirements of the letter from DP&I to Sydney Ports (24/12/10). The Noise ECP has been incorporated into the project's CEMP. A letter from DP&I (14/10/11) confirms that the Noise ECP meets the requirements of CoA 6.2d and that it has been incorporated into the project's CEMP as required.	4 - Pre-construction	8. Reviewed - Closed	NSW Ports / Contractor
8167	DP&I Letter - 30/5/11 - Pile Vibration Management Plan approval	Pile driving activities are to be done in accordance with the management measures outlined in the Pile Vibration Management Plan. Pile vibrations are to be monitored in accordance with the Pile Vibration Monitoring System and an additional probe is to be used to monitor vibrations at the adjacent Vopak storage tanks. A survey of the current condition of the Vopak storage tanks shall be undertaken prior to the commencement of piling works.	Pile Vibration Monitoring System has been installed and commenced recording background data in June 2011. Surveys of the Vopak tanks commenced in June 2011. Baseline surveys completed in September 2011. Vibration monitoring during piling is ongoing and there have been no exceedances of the prescribed set levels. The Vopak tanks levels are being surveyed regularly and there has been no exceedance of the maximum settlement criteria. Piling installation completed on 26/04/2012.	3 - Construction	8. Reviewed - Closed	NSW Ports / Contractor

4. Appendix B – Vopak Compliance Documentation

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

PROJECT:	**Vopak Terminal Sydney, BLB2 Wharflines**	**TEAM MEMBERS:**	**WP: Steven Cowgill, Les Cohen Vopak: Declan Kearney, Keyhan Nouriafshar, Eric Strautins, Andrew Skeet, Trent Gearside, Syed Atiquddin Qadri, Steve Bates SPC: Jim Pullin**	**DATE: 03/04/13 REV: G 6/11/2013**	
SYSTEM:	**Marine Loading Arms to Manifold**	**LEADER:**	**Dean Shewring**		
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
1.	General Discussion				Include in the Operational procedure the need to nitrogen leak test the MLA prior to transfer (i.e. the QCDC connection to the ship). Check with the MLA supplier if a torqueing device is necessary / available (this may negate the need for a nitrogen leak test) QCDC is mechanically operated – no torqueing of flange bolting required – Nitrogen pressure test MANDATORY to ensure proper seal	SB	DONE DONE
2.	General Discussion				The following nodes are not included in the HAZOP study: - Product to product pigging - Hose connection for ship import/export bypassing MLA in case of MLA failure - Resting the line in product as this is not allowable by the current SPC conditions - B3-B1 transfers including drainage of that system	Note	

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

PROJECT:	**Vopak Terminal Sydney, BLB2 Wharflines**	**TEAM MEMBERS:**	**WP: Steven Cowgill, Les Cohen Vopak: Declan Kearney, Keyhan Nouriafshar, Eric Strautins, Andrew Skeet, Trent Gearside, Syed Atiquddin Qadri, Steve Bates SPC: Jim Pullin**	**DATE: 03/04/13 REV: G 6/11/2013**
SYSTEM:	**Marine Loading Arms to Manifold**	**LEADER:**	**Dean Shewring**	
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
3.	General Discussion				Mark up the P&ID to show the details of the MLA vendor package (e.g. high point vacuum break)	LC	DONE
4.	General Discussion				Valves V8127 and V8157 are for future connection for the ship transfer hose should the MLA fail. This mode of operation will require a formal risk assessment prior to its use.	SB	DONE
5.	General Discussion				Show LO on valves V2265 and V2268 and ensure this requirement is provided for all other TSV isolation valves	LC	DONE
6.	General Discussion				If the low point drain valve V2260 is not required for pipeline draining following a layout and needs review, then delete it (it is another potential leak point and V402 can be used instead)	LC	DONE
7.	High Flow / High Level	MLA high point vacuum break failure	Loss of containment of product at height. Potential environmental impact and fire if ignited		Pipe the outlet from the MLA vacuum breaker to grade (cap and position the outlet within the contained area)	TG	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

PROJECT:	**Vopak Terminal Sydney, BLB2 Wharflines**	**TEAM MEMBERS:**	**WP: Steven Cowgill, Les Cohen Vopak: Declan Kearney, Keyhan Nouriafshar, Eric Strautins, Andrew Skeet, Trent Gearside, Syed Atiquddin Qadri, Steve Bates SPC: Jim Pullin**	**DATE: 03/04/13 REV: G 6/11/2013**	
SYSTEM:	**Marine Loading Arms to Manifold**	**LEADER:**	**Dean Shewring**		
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
8.	High Flow / High Level	V8111 passing or left open and pig trap door not fully closed. This can also occur at the terminal pig receiver	Loss of containment of product from pig trap. Potential for fire if ignited	Emergency response and operating procedures, containment, berth high pressure detection, CCTV, ESV, ship radio	Perform an assessment on the adequacy of the safeguards for this scenario	SB	DONE
9.	High Flow / High Level	Leaks from the sample points, drains and vents	Loss of containment and fire if ignited		Finalise the requirement for capping of vent/drain valves and sample points	ES	DONE
10.	High Flow / High Level	Closure of XV8105, manual valves in the wharf lines or the motorised valves at inlet manifold and ESD's activated with the tank valves closing	Potential for hammer leading to loss of containment from the wharfline and fire if ignited	Surge analysis to be performed, NRV installed to prevent phase separation Note that the surge analysis is to be done for export as well.	No further action required	LC	DONE
11.	High Flow / High Level	Loss of containment from other berth users when wharf lines 4 and 5 are resting in nitrogen	Potential for damage to wharf lines 4 and 5 (e.g. loss of containment of ethylene could cause low temperature embrittlement of the carbon steel pipelines)		VOPAK-SPC to coordinate to ensure the risks from other berth users are acceptable	TG/Neil Trillo	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
12.	Reverse Flow	Both wharf line NRV bypass valves left open	Potential to drain the tank back to the ship. Potential for phase separation to be collapsed by reverse flow and hence pipe damage	Bypass valves to be locked closed.	VOPAK to review the locked closed valve philosophy. Should a sealed valve be used instead of a lock due to the risk of corrosion causing the locks to be difficult to open Need to change handle type	SB	DONE
13.	Reverse Flow	When pumping from B1 to B3 manifold and V2272 is passing or left open	Product reverse flow into the offline BLB2 wharf line and hence contamination of the next product when initially transferring from BLB2	Procedural - V2272 closed when not transferring from BLB2, surveyor checks on the initial transfer, initial quantity sent to slops tank, B1-B3 inlet manifolds drained prior to ship transfers, the offline wharflines rest under nitrogen pressure	VOPAK to assess the adequacy of these existing safeguards	SB	DONE
14.	High Pressure	Valve in the wharf line isolated (e.g. V8118)	When the trapped product is heated by the sun, potential for thermal overpressure and loss of containment	Procedures to drain when isolating product	Review the need for thermal relief for all isolation valves in the wharflines	ES	DONE

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No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
15.	High Pressure	Potential for ships to deliver flow at 10-12 bar g pressure	Potential to exceed the existing design pressure of the wharf lines		Review the wharf line design pressure (taking into consideration the pipeline surge study results)	LC	DONE
16.	High Pressure	V2264 will be closed when pigging the line	Given the high pressure drop through the pig receiver, TRV 2267 may open		Review the pressure differential set point for the thermal relief valve V2267 – should it be higher than 50 kPa? Also, the thermal relief valves are to be consistent with the existing design and suitable for service (i.e. non-leaking to atmosphere type)	LC	DONE
17.	Impurities	Residual product left in low points, dead legs, pig traps	Potential to put product out of specification (e.g. jet fuel)		Review the current piping layout design to ensure that all low points and dead legs are minimised and can be drained. Also, identify the appropriate low drain points for transfer from BLB2 to BLB1 and vice versa	ES	DONE
18.	Impurities	Air connected from another berth user to wharf lines 4 and 5	Explosion hazard due to air fuel mixture		Confirm dissimilar couplings and colour coded lines for air and nitrogen systems at the berth	TG/Neil Trillo	DONE
19.	Change in Composition or Concentration / Two-Phase Flow / Reactions	Potential to put product off specification if product pigging is used in the future			Review if product to product pigging is required. If so, review the design and develop appropriate procedures Not required	AS	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
20.	Testing	Nitrogen leak testing of the MLA	If higher than required pressure is supplied there is a higher potential for damage and hence leakage. If lower than required pressure, there is the potential for inadequate leakage testing		Review the nitrogen supply pressure for leak testing and whether pressure reduction on the utility supply line is required. Install a lockable isolation valve on the nitrogen supply piping on the valve pit to meet SPC requirements (e.g. to prevent nitrogen being released at the berth and being an asphyxiation hazard)	ES LC	DONE DONE
21.	Plant Items				Confirm that each MLA can be individually isolated for maintenance	TG	DONE
22.	Plant Items				Change the spacer in the wharflines at the MLAs to a spectacle plate for ease of swinging. The spectacle plate should be stainless steel given the potential for corrosion from the marine environment	LC	DONE
23.	Electrical	Nitrogen hose connected to the MLA drain valve	Potential for static accumulation after the insulation joints on any non-earthed components	All nitrogen hoses at the berth are electrically conductive	Note: If the MLA shipside low point drain is used for draining back to shore then insulate the hoses to electrically isolate the berth equipment from the ship and the hoses are to ne electrically conductive to shore	SB	DONE

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DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev E**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
24.	Electrical	Static accumulation	Potential source of ignition	Initial flow to be restricted to less than 1m/s until the internal floating roof (IFR) is floating. Sample bottle filling should also be less than 1 m/s	No further action required	SB	DONE
25.	Electrical	Lightning	Potential hazard to personnel, equipment damage and source of ignition	Use of storm tracker professional software, all equipment to be bonded and earthed	Update the shipping procedure to include actions to take when lightning is approaching. Ensure there is adequate surge protection on the MLA and other electronics	SB TG	DONE DONE
26.	Instruments	ESD at BLB1 /BLB 2 or vice versa			Perform a review of the emergency shutdown requirements when there is an emergency at one BLB - should the other BLB be shut down as well?	SB	DONE
27.	Instruments	Consistency of maintenance and operational use of the pig signal			VOPAK to supply the preferred pig signal type	ES	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

PROJECT:	**Vopak Terminal Sydney, BLB2 Wharflines**	**TEAM MEMBERS:**	**WP: Les Cohen** **Vopak: Keyhan Nouriafshar, Eric Strautins, Andrew Skeet, Trent Gearside, Steve Bates**	**DATE: 26/02/13** REV: G 6/11/2013
SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
28.	General Discussion				All pigging following an export is preferentially from the berth to terminal to avoid nitrogen blow-through to the ship and to prevent additional use of hoses when pumping the liquid in the MLA to the ship. Pigging activities, whether be it from the terminal to the berth or vice versa, are to be identical	Note	
29.	General Discussion				On PI 8107, provide means to vent (e.g. for depressurising the pig trap so that a pig can be inserted). Note: Apply any common actions in this section (such as this action) to both pig traps	LC	DONE
30.	General Discussion				On the pig launcher and receiver, provide a PI and sampling valve at the rear end of the barrel (for the operator to confirm the trap is depressurised prior to opening). Preference is to the install separate vent PI arrangement as per Darwin. Further review required	LC	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	REV: G 6/11/2013	
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
31.	General Discussion				On the pig launcher and receiver, ensure that a vent and drain are provided at either end of the trap	SB	DONE
32.	General Discussion				Currently pig trap 8104 barrel drain is shown hard piped to the berth drainage pump. This arrangement may not provide the operators with positive proof that the trap is empty. Further review is required to confirm that the trap is empty prior to opening the door (e.g. low point drain)	SB	DONE
33.	General Discussion				SPC require a manual and lockable isolation valve at the shore manifold on the nitrogen supply	LC	DONE
34.	General Discussion				V2264 is to be minimum distance to the barred Tee to avoid a dead leak which requires draining or can lead to product contamination. This applies to V8118 at the berth as well	LC	DONE
35.	High Flow / High Level	Corrosion of the nitrogen supply pipe in a culvert	Release of nitrogen into a confined space (i.e. asphyxiation hazard)	Pipe lies above the water level, painted pipe, fully welded, routine testing and inspection, CSE risk assessment / procedures	Include in the existing confined space risk register the new culverts including the need for signage	DK	DONE

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	REV: G 6/11/2013	
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
36.	High Flow / High Level	PCV8115 fails open	Pig colliding against the door with high velocity at the receiver end. Potential for nitrogen to bypass the pig and blow through to the tanks and causing IFR damage	Operator monitoring pressure at either end of the pipeline, maintenance program	Confirm that the pig trap door is adequately designed to withstand a pig impact with 7 bar upstream pressure. For export pigging to the berth, provide means to prevent reverse flow into the nitrogen supply system and to limit the pressure to 4 bar or less. This could be via a temporary connection	TG LC	DONE DONE
37.	High Flow / High Level	Nitrogen flows to the pig trap when the operator opens the door	Asphyxiation hazard	Procedures require nitrogen to be disconnected when not launching a pig	No further action required	SB	N/A-
38.	High Flow / High Level	Kicker valve passes / fails	Potential for product entering the pig trap during import / export	Very small liquid volume	Operating procedures to require draining of the barrel prior to flowing nitrogen into the barrel	SB	N/A
39.	High Flow / High Level	V8111 and V8117 open during ship discharge	Potential to launch the pig which may block the pig receiver barred tee and hence dead head the ship's pumps (i.e. potential for hammer)	Supervisory checks on the valving arrangements prior to discharge	Further review of this scenario required to determine if the existing safeguards are adequate. This applies to export pigging as well	SB	Add to procedures –how kicker valve works

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	REV: G 6/11/2013
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
40.	High Flow / High Level	Pig chamber bypass valve V2264 open. V8118 open	Nitrogen flow to tank causing damage to the IFR from import pigging For export pigging, potential for nitrogen inflow to the ship	Procedural and supervisory checks	Review the need for further safeguards for this scenario, e.g. Castell keys on valves V2252 and V2264. As the ship vapour control system is unknown, the consequences of this event are to be determined when the system design is finalised	SB	DONE NO ACTION
41.	High Flow / High Level	Pig not inserted into the launching chamber	During import, nitrogen flow to the tank causing damage to the IFR. During export, nitrogen flow to ship causing damage / emissions	Procedural, pig signal	Ensure that the pigging procedure highlights the need for this step and supervisory checks are included LINE HAS BEEN ADDED TO DISCHARGE LEG TO CHECK FOR THIS	SB	DONE
42.	High Flow / High Level	Door not adequately sealed	Loss of containment during import / pigging	Operator monitoring process, nitrogen pressure test during line up for terminal trap	Include in the export procedure the need for a nitrogen leak test of the traps	SB	DONE
43.	High Flow / High Level	Product entering the depressurising chamber	Overflow out of depressurising chamber, i.e. fire hazard	Depressurising chamber in a bunded area	Review the safeguards for this design further (e.g. provide level measurement for the depressurising chamber or the ability to self-drain) NEED TO ADD MAGNETIC LEVEL GAUGE TO THE TANKS	SB	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**

DATE: 26/02/13

REV: G
6/11/2013

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
44.	Zero Flow / Empty	Stuck pig	IFR damage. When using hydraulic clearing there is a potential for the pig to damage the trap door due to high momentum		Further review is required for the following pig clearing options: 1. Revise the existing Site B procedure to mitigate the high volumes flows of nitrogen to IFR's. For export, this can result in high nitrogen flows to the ship and hence emissions/damage as above. 2. Confirm that the new pig trap will be sufficiently sized to hold two pigs and the section between the two pigs can be depressurised in the trap. Further review is required as to whether the second pig can be stalled by the first pig (e.g. at the upstream receiver valve and hence the operator will be unable to open/close the valve) 3. Hydraulic clearing does not include a second pig (i.e. venting of nitrogen is possible). Also, review if hydraulic clearing poses any greater risk due to the changes in the pig chamber design. For hydraulic clearing, review the need for PSV V2267 to become hydraulic overpressure protection as well. Export pigging requires a bi-directional pig (again preference if to always pig to the terminal as above)	1. SB 2. TG 3. TG	DONE DONE DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	REV: G 6/11/2013	
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
45.	Reverse Flow	V8117 passing during product transfer	Pig will get pushed back against the trap door and hence maybe difficult to launch or get damaged		Perform a design review of the pig trap to ensure the pig can be launched for this scenario (e.g. connect the nitrogen to the door immediately behind the pig or use a spacer as per the Darwin design)	TG	DONE
46.	High Pressure	Fire. Pig trap hydraulically full and isolated and heated by the sun	Potential for overpressure of an isolated pig trap		Review the need for overpressure protection for the pig traps as per code requirements	ES	DONE
47.	Low Temperature	Failure of the nitrogen vapourising circuit	Potential for liquid nitrogen to flow into the carbon steel supply line and hence cause low temperature embrittlement		Confirm that the nitrogen supply skid will include low outlet temperature protection	ES	DONE
48.	Plant Items				Provide means to depressurise the nitrogen hose at the pig launcher (as per standard VOPAK design). Apply this action to all nitrogen utility points	LC	DONE
49.	Electrical				Confirm that the product velocity through the perforated area within the pig trap is within the 7m/s VOPAK requirements	TG	DONE

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SYSTEM:	**Pigging of the Wharflines**	**LEADER:**	**Dean Shewring**	
DRAWING:	**401015-00126-PR-PID-001 and 002 Rev D**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
50.	Instruments				Install a flow meter on the nitrogen supply line for accounting purposes unless an alternate means can be provided. For export pigging, the nitrogen quantity will not be monitored as it is sourced from terminal systems. An estimate of the quantity will be required for this scenario	TG	DONE
51.	Instruments				Review the need for an additional pig signal at the isolation valve pit to confirm that a pig has travelled passed this point and become stuck to allow VOPAK to clear the berth	SB	DONE
52.	Instruments				Confirm the reason why 1m/s is the design requirement for pigging as high velocity is preferred by Operations. Review the need for using a strap-on flow meter adjacent to the pig receiver isolation valve which is to be used for controlling the flow	ES	DONE
53.	Instruments				To monitor flow locally during export pigging, change FT8113 to FIT8113	LC	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM:	**Export**	**LEADER:**	**Dean Shewring**	
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev D**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
54.	General Discussion	SPC requirement for vapour control when exporting odorous liquids			Review means to prevent emission of odorous liquids from the ship when exporting	SB	DONE
55.	General Discussion				Confirm that all shutdown valves in the wharf lines are rated for tight shut off in bi-directional service	LC	DONE
56.	High Flow / High Level	For diesel, there is a potential to run 3 tank transfer pumps to the ship	Greater surge when XV8105 shuts. Potential to exceed 7m/s through the NRV bypass valves		VOPAK to confirm the maximum export rate and include this scenario in the surge study. Confirm that the velocities in the NRV bypasses are limited to a maximum of 7m/s	ES	DONE
57.	Zero Flow / Empty	Ship moves away from berth and ERC activated or ship closes valve	Potential for hammer in the wharf line MLA	Design velocity when exporting from one pump is 1.5 m/s	Include this scenario in the surge study	LC	DONE
58.	Zero Flow / Empty	Operator chooses any valve in the transfer line to isolate ship	Potential for surge / phase separation		Include in the export procedure the isolation valves that are required to be shut to terminate export, i.e. the valves that do not cause hammer / phase separation when closed	SB	DONE

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SYSTEM:	**Export**	**LEADER:**	**Dean Shewring**	REV G 6/11/2013	
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
59.	Reverse Flow	No reverse flow protection in the wharf line during export	If liquid level in the ship is higher than that in the tank, potential for reverse flow. When XV8105 closed, potential for phase separation downstream	NRV installed after the tank transfer pumps. XV8105 slow closing. Surge analysis	Review whether the ship has its own NRV or whether NRV's are required in the export bypass valves V8108 and V2263	SB	NO ACTION-NOT FEASIBLE
60.	High Pressure	Initially, export can be done by siphoning from a tank with high level to a ship	Potential for hammer when XV 8105 is closed when siphoning		Include this scenario in the surge analysis	LC	DONE
61.	Change in Composition or Concentration / Two-Phase Flow / Reactions	Exporting ethanol or bio-diesel	Potential to cause equipment damage to seals in the MLA		Confirm that all materials of construction are compatible with ethanol and bio diesel	TG	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM: **MLA Product Stripping Pump**	**LEADER:**	**Dean Shewring**	REV G 6/11/2013
DRAWING: **401015-00126-PR-PID-001 Rev D**	**MINUTES BY:**	**Shree Pawar**	

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
62.	General Discussion				Include means to indicate when the pump is running dry (e.g. illuminated sight glass) to allow the operator to stop the pump	ES	DONE
63.	General Discussion	Redundant lines			Delete the lines to valve V8132, V8134 and V8143	LC	DONE
64.	High Flow / High Level	Pump running too long	Potential to damage pump seals		Include a 5 min stop/start function	LC	DONE
65.	Reverse Flow	Following export, V8138 open and NRV V8150 fails	Potential for loss of containment out the MLA high point vent and hence environmental impact and fines		Ensure there are adequate means to prevent this scenario	ES	DONE
66.	High Pressure	Pump dead head	Potential to exceed the pipeline design pressure		PSV V8174 is to be sized for pump dead head conditions if possible, otherwise install separate dead head over pressure protection as well REMOVED IN REV F	ES	DONE
67.	High Temperature			5 min timer prevents overheating of pump, operator attendance	Provide means to indicate that the pump is running at the berth	LC	DONE
68.	Impurities				Install a strainer immediately upstream of the pump to prevent solids from the ship damaging the pump	LC	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

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SYSTEM:	**Culvert Sump Pump**	**LEADER:**	**Dean Shewring**	REV G 6/11/2013	
DRAWING:	**401015-00126-PR-PID-002 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
69.	General Discussion				Reduce rainwater ingress into the culvert by installing covers and delete the existing pump and facilities from the drawing. The culvert is to be pumped out manually (e.g. via sucker truck). Provide inspection facilities for the operators to view the pipes inside the culvert. No further HAZOP of this area is therefore required	LC	DONE

PINNACLE RISK MANAGEMENT - HAZOP RECORD SHEET

PROJECT:	**Vopak Terminal Sydney, BLB2 Wharflines**	**TEAM MEMBERS:**	**WP: Les Cohen Vopak: Keyhan Nouriafshar, Eric Strautins, Andrew Skeet, Trent Gearside, Steve Bates**	**DATE: 26/2/13** REV G 6/11/2013	
SYSTEM:	**Overview**	**LEADER:**	**Dean Shewring**		
DRAWING:	**401015-00126-PR-PID-001, 002 and 003 Rev D**	**MINUTES BY:**	**Shree Pawar**		

No.	GUIDE WORDS	POSSIBLE CAUSES	CONSEQUENCES	EXISTING SAFEGUARDS	ACTION RECOMMENDED	BY	DONE
70.	Commissioning				Review the need for installing flange guards and/or spiral wound gaskets to minimise the risk of a leak spraying into the water and hence causing environmental impact SPIRAL WOUND GASKETS	ES	DONE
71.	Breakdown				Provide a 2 inch connection after the drainage pump for a temporary pump connection to be used should the installed pump fail	LC	DONE
72.	Fire / Explosion				Confirm the number and location of safety showers at the berth	TG	DONE

Guide Words Used in this Study:

Line-by-line guide words:

- High Level / High Flow
- Low Level / Low Flow
- Zero Flow / Empty
- Reverse Flow
- High Pressure - Venting, relief
- Low Pressure - Venting, relief
- High Temperature
- Low Temperature
- Impurities - Gaseous, liquid, solid
- Change in Concentration or Composition / Two Phase Flow / Reactions
- Testing - Equipment / product
- Plant Items - Operable / maintainable
- Electrical
- Instruments

Overview Guide Words

- Toxicity
- Commissioning
- Startup
- Shutdown (isolation, purging)
- Breakdown (including services failure)
- Effluent
- Fire and Explosion
- Noise / Vibration
- Materials of Construction

Vopak

ISSUED: 3-11-2013 **Prepared By: D.KEARNEY** **DOCNO: NOPB1334**

DISTRIBUTION: **OPERATIONS NOTICEBOARDS - SYDNEY SITE B**

OPERATIONS NOTICE

Hot Work during BLB2 Construction

Please ensure the following instruction is read and understood:

Please note that the Following restrictions during Hot work

- No hot works during Class 3 transfers from BLB1 to Site B.
- No hot work in TK726 Bund during transfers to Tk 726
- No Hot work in B3 slops area during transfers to TK 836 and 837
- No Hot work in B3 Manifold area during transfers

NOTE: Any aggressive hot work to be conducted in B3 manifold must be upon approval of the Terminal Manager

During construction of BLB2, Transfield will be required to conduct Hot Work inside TK 726 Bund wall, during this time TK 726 should not be selected as the return Tank for the VRU if possible. When selecting another VRU return Tank, please ensure Tank is on spec, and has suitable Ullage to receive VRU returns.

Note: If TK 726 needs to be used, please communicate to Superintendent to ensure this message is passed onto Transfield.

Regards

Declan Kearney

Ben Stokes	Kevin Pace	Mitchell Morris	Mick Wright	Phill Pace
Paul Wilson	Justin Saliba	Matt McWhinney	Steve Ryan	Luke Bell
Troy Mc Kenna	David Childs	Ed K		

Audit Report

Audit Report No:	**Quarter Period: 3**	**Page 1 of 2**

Auditor(s): Declan Kearney

Persons Contacted: BLB2 Project Team, Transfield, Site B Operations

Process Activity to Audit:

Audit of construction safety study to ensure key elements have been incorporated into daily work permits/practices

Previous Audit Results: N/A

QOL Corrective Action Reports issued: as per report

Summary of Audit:

Area 1 – Bulk Liquid Berth (BLB2) wharf – minors quantities of paint equipment onsite – routine housekeeping and basic fire fighting equipment to be provided.

Very minor quantities of paint stored correctly, adequate fire extinguishers strategically located across site.

Area 2 – Pipeline corridor

Site Permit to work system – Transfield work under Vopak Permit to work system- all permit all JSA's and permits are reviewed and signed on by Vopak operation team

No work within corridor adjacent to pipes during product transfer without risk assessment and terminal manager approval – No work being conducted for any flammable product during pipeline corridor as per Operation Notice (see attached)

Emergency procedure – emergency procedure created for work on construction site and work within Vopak terminal, this has been reviewed by Vopak personnel.

Control and auditing of construction safety by Vopak personnel – Vopak have appointed a Construction supervisor and safety supervisor, there primary roles are to supervise and ensure safe and controlled work at all times during construction. Vopak Operation also conduct Safety Observation Rounds on the construction site

Spill response - spill response sighted in containers – Transfield major spill scenario is filling site generator (diesel)

Emergency isolation valves -

Fire fighting systems – any hot work conducted on site has adequate fire fighting capabilities based on risk assessment of tasks conducted. Any work on Vopak site will utilise4 Vopak fire fighting systems.

Inductions – All Transfield personnel are required to complete BLB2 Induction, Transfield Induction and Vopak induction to work on site, Transfield, have induction register to verify compliance

Training - Transfield have training register to ensure all staff are competent in tasks they are required to conduct including confined space entry, Vopak conduct site specific training for Hot work.

Audit Report

Area 5 - No work within tank Bunds whilst product is being transferred to tanks with that bund without risk assessment and Terminal manager approval – no work confirmed as per Operation notice (see attached)

Follow up Action Items/Recommendation for Improvement:

Ongoing audits and safety observation rounds to be completed

AUDIT REPORT APPROVALS

1. Auditor: Declan K Signature: …… Date: .3/11/13.....
2. Process Owner: Signature: …….... Date: .....

After obtaining Process Owners approval, please submit completed reports to the Audit Coordinator

3. SHEQ Manager: Signature: …….... Date: .....