

# Green Port Checklist

Environmental Aspect	Objective	Measures	Yes/No
1. Sustainable Environmental Management          <b>PLEASE COMPLETE SECTION</b>	Implement and promote a triple bottom line approach to sustainability	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		A written policy committed to managing negative environmental, social and economic impacts	Yes
		Identified and reportable sustainability targets for the project/development	Yes
		Public notification of sustainability commitments, policies and targets	Yes
		Preparation or incorporation of an Environmental Management System (EMS) compliant with ISO 14001	No
		Certification of the EMS to ISO 14001	Yes
		A stakeholder engagement strategy to proactively engage stakeholders and encourage feedback regarding the project	Yes
		A formal public complaints procedure	Yes
		If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)	
	2. Materials Selection          <b>PLEASE COMPLETE SECTION</b>	Decrease the carbon footprint of the development and the ongoing maintenance/replacement of materials/equipment	<b>To achieve this objective, the following measures will be included in the project/development:</b>
Set targets to reduce material use (such as % of recycled materials used)			No
Reuse of the existing building/facility components			No
A green procurement policy, including purchasing re-used or recycled furniture and other items			No
Low maintenance and durable materials			Yes
A Life Cycle Assessment of materials to be used			Yes
Specification and procurement of locally sourced materials			Yes
Replacement of Portland cement with supplementary cementitious material			Yes
Low-emission and low-irritant materials, including low-TVOC paints, carpets and sealants/adhesives and low formaldehyde wall and floor coverings			Yes
Refrigerants and/or insulants with an Ozone Depleting Potential (ODP) of zero and/or a Global Warming Potential (GWP) of 10 or less		Yes	
If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)			
3. Waste Management          <b>PLEASE COMPLETE SECTION</b>	Reduce total operational waste consumption	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		A waste management plan which identifies opportunities to reduce the amount of waste sent to landfill	Yes
		A policy to instruct contractors and suppliers to select materials with less packaging	Yes
		Adequate storage areas for recycling of all materials, including likely future increases	Yes
		Monitoring of the quantity (volume and weight) of waste disposal and recovery	Yes
	If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)		
4. Water Use and Quality	Reduce total operational water consumption and minimise the impact on local water quality	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		Water efficient fixtures, fittings and appliances (AAA rating system and above)	Yes

PLEASE COMPLETE SECTION		Water sub-meters for all major uses, such as cooling towers, irrigation, hot water systems and for separate tenancies.	Yes
		Onsite rainwater and or recycled water for landscaping and other uses	No
		A water efficient irrigation system, including subsoil drip systems and automatic timers	No
		A rainwater harvesting system, e.g. Rainwater tanks	No
		Greywater collection and treatment system for water reuse	No
		Blackwater collection and treatment system for water reuse	No
		Water sensitive urban design measures such as permeable surfaces, swales and wetlands	No
		Best practice stormwater drainage and treatment systems including first flush, oil separators and a water quality monitoring system	Yes
		A flood risk and/or potential water table risk assessment and implementation of recommendations	Yes
		If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)	
5. Energy Use and Greenhouse Gas Emissions  PLEASE COMPLETE SECTION	Minimise the total amount of greenhouse gas emissions of the development	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		Low energy and energy efficient terminal and operational equipment (such as retrofits for diesel oxidation catalysts)	Yes
		Low energy and energy efficient lighting on timers for non-critical areas	Yes
		Low energy and energy efficient appliances	Yes
		Separate electrical and gas sub-meters for energy uses (such as car parks, lifts, common area lighting) and for separate tenancies	Yes
		Renewable energy generated onsite and excess returned to the grid (such as solar power or gas-fired co and tri generation)	No
		Purchase of renewable or green energy such as 100% accredited GreenPower	No
		Alternative cleaner and less greenhouse intensive fuels for operations	No
		Ship to shore power connection options	No
			If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)
6. Green Buildings and Indoor Environments  SECTION NOT APPLICABLE	Improve the quality of the indoor environment and the environmental performance of buildings	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		Minimum 4 Star Green Rating (or the equivalent) for Buildings	
		Certification of the Green Star Rating for Buildings	
		A facilities or building guide and training for occupants/management team on minimising environmental impacts	
		Passive solar and microclimate design through orientation, shading, natural lighting, ventilation and insulation	
		Outside air inflow rates in excess of the requirements of AS 1668.2-1991 for mechanical ventilation	
		Natural ventilation in accordance with AS1668.2-2002	
		Options for external green walls (e.g. Facade planting/landscaping)	
		Maximisation of natural lighting through the design and location of windows, glazed doors and skylights, and blinds/screens	
		Refridgerant and/or vapour leak detection and recovery systems	

		Cyclist paths and facilities including secure storage, showers and change facilities	
		A Hazardous Materials Survey including asbestos, lead and polychlorinated biphenyles (PCBs) identification, and removal where possible	
	If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)		
7. Outdoor environment  <b>PLEASE COMPLETE SECTION</b>	Enhance the visual and ecological amenity of the Port	<b>To achieve this objective, the following measures will be included in the project/development:</b>	
		Preparation and implementation of a Landscape Management Plan	Yes
		Local provenance native species used in the landscaping areas	Yes
		Ecological offsets and/or biobanking to offset the impact of the development	No
		Incorporation of existing vegetation into the development	No
		Removal and control any noxious weeds on site	Yes
		Non-chemical/poison control measures for weeds and pests	Yes
	If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)		
	8. Amenity  <b>PLEASE COMPLETE SECTION</b>	Minimise the impact of the development on sensitive receivers and other Port users	<b>To achieve this objective, the following measures will be included in the project/development:</b>
Isolation of noisy equipment/systems with insulation and/or sound absorbing materials			Yes
Emission stacks and outlets located away from sensitive receivers and other port users			Yes
Air pollution control measures such as scrubbers			No
No reversing beepers on vehicles, plant and equipment (owned and leased)			Yes
Turning off vehicles/plant/equipment when not in use			Yes
Installation of noise walls			No
The location of activities, plant and equipment should optimise attenuation effects through measures such as topography, natural and purpose built barriers.			Yes
Enclosed light fittings and positioning to reduce light spill		Yes	
If none of the suggested measures apply, how will the project/development achieve this objective? (include any innovation measures)			

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## **Port Botany Development Code 2013 Checklist**

### **Vopak Site B**

### **B4 Project**

**Application Number : SSD 7000**

**August 9<sup>th</sup> 2015**

**Rev 1**

### Port Botany Development Code 2013 Checklist

This checklist is a summarised version of the Development Code and is to be completed as part of any environmental assessment for development proposed in Port Botany. Please refer to Development Code for further information and detail.

Section 2	Visual Amenity	Compliance / Comment
Criteria 1	The maximum height of all building structures and tanks is not to exceed the maximum building heights illustrated at Figure 1. The maximum height is measured to the highest point of a building from Zero Fort Denison Tide Gauge (ZFDTG). Height includes plant and lift overruns, but excludes communication devices, antennae, satellite dishes, flagpoles and the like.	COMPLIES for all development on the site EXCEPT for Tank Heights. NSW Ports has no objection to the increase of 1.54m above PBDC set height. B4 Tank Heights will be :-  34.0m ZFDTG (33.1m AHD)
Criteria 2	The maximum heights at Figure 1 do not apply to port terminal operating equipment such as cranes. These elements may be any height to achieve efficient operational capability, subject to obtaining relevant approvals including approvals under the Commonwealth <i>Airports Act 1996</i> and <i>Civil Aviation Act 1988</i> .	NOTED
Criteria 3	Container stacks are not to exceed a height of 6 containers.	NOT APPLICABLE
Criteria 4	Air-conditioning units, telecommunications equipment or mechanical plant are to be concealed within screened enclosures or positioned behind the roofline to minimise their visibility from main port road frontages.	COMPLIES Friendship Road and Simblist Road Entranceways will comply with Code requirements. All Plant will be behind Landscaping on Friendship Rd..
Criteria 5	Buildings shall be oriented towards the primary street frontage. The office component of a building is to address the street so as to provide an attractive frontage, easily identifiable building entry and the potential for surveillance of the street.	NOT APPLICABLE  No Office Buildings on the B4 site. Minor Plant, Equipment, Switchroom and Maintenance Shed will be behind Landscaping on Friendship Rd as per Criteria 4.
Criteria 6	Buildings should be designed so as to mitigate the perception of bulk and scale from main port road frontages by: <ul style="list-style-type: none"> <li>■ the articulation of building facades where buildings front a main port road frontage,</li> <li>■ varying façade alignments and height,</li> <li>■ breaking up of facades with windows and the use of decorative features, cantilevered elements and the like, and</li> <li>■ varying materials and colours used.</li> </ul>	NOT APPLICABLE  No Office Buildings on the B4 site. Minor Plant/Buildings minor in scale, see above.

Criteria 7	The development incorporates the indicative palette of colours for building structures shown at Figure 2.	COMPLIES  No Buildings on the B4 site except minor Plant Buildings above which will incorporate Figure 2 palettes.
Criteria 8	Buildings, in particular large buildings, are to comprise external materials incorporating muted recessive colours with material and / or tonal colour variation used to break the mass of buildings and walls. Lighter shades should be used for larger wall areas and structures, with darker shades used as highlights. Highlight colours (i.e. red, yellow and orange tones) may be used to articulate architectural features and the like.	NOT APPLICABLE  No Large Buildings on the B4 site.
Criteria 9	Materials and colours for buildings and roofs are to be non-reflective. All glazing is to have a reflectivity coefficient of less than 20%.	COMPLIES  No Buildings on the B4 site except minor Plant Buildings above which will comply.
Criteria 10	Lighter colours on light poles should be avoided in favour of darker, less reflective colours.	COMPLIES  New light poles will be required on the B4 Site intended to be non-reflective grey galvanised.
Criteria 11	All tanks are to be painted white or light grey.	COMPLIES.  Tank colour will be White identical to existing Vopak Site B tanks
Criteria 12	The visibility of mobile elements such as cranes and rail mounted gantries is to be reinforced through colour. The colour selected by the terminal operator is to be submitted as part of the application for development.	NOT APPLICABLE  No such equipment to be installed on the B4 Site.
Section 3	Sustainable Development	Compliance / Comments
Criteria 1	All development should incorporate as many of the suggested measures contained in Sydney Ports' <i>Green Port Guidelines</i> as practicable. As a minimum, all development proposals are to be accompanied by a completed <i>Green Port Guidelines</i> checklist.	COMPLIES  A Green Port Guidelines Checklist forms an attachment to the Application and contains the existing and proposed measures
Criteria 2	All buildings to achieve a minimum 4 Star Green Rating (or the equivalent) for the latest applicable version. This applies to buildings where Green Star rating tools are applicable.	NOT APPLICABLE  Other than minor Plant, no Buildings on the B4 site.

Criteria 3	Buildings (including sheds and workshops) are to be designed and constructed to maximise the use of natural ventilation and natural lighting, and to minimise energy consumption associated with heating, cooling and lighting.	COMPLIES Maintenance shed will have garage door opening and other ventilation.
Criteria 4	Development is to collect sufficient rainwater for irrigation of landscaping and preferably for use in container wash down facilities and the like, grey water flushing of sanitary fixtures and irrigation of landscaping.	COMPLIES A rainwater tank will be installed onto the plant buildings (Maintenance Workshop, Electrical Switchroom) with provisions for landscape irrigation. Note there is no firewater tank to be installed on B4 (existing Site B fire system to be used).
Criteria 5	Low maintenance and robust materials are to be used.	COMPLIES
Criteria 6	All sites are to provide a dedicated storage area for the separation, collection and recycling of waste with adequate access for waste collection.	NOT APPLICABLE  No personnel are stationed on this site and solid waste generation is insignificant. Solid and liquid wastes will be transferred to existing Site B for Separation, Storage, Recycling or collection by licensed waste vehicles.
Criteria 7	A climate change risk assessment is to be provided as part of an application for all new developments.	COMPLIES  The NSW Climate Change Guidelines have been reviewed and a Climate Change Risk Assessment has been carried out and is documented in the EIS.
Criteria 8	All development is to incorporate measures to minimise greenhouse gas emissions.	COMPLIES A Green Port Guidelines Checklist forms an attachment to the Application and contains the existing and proposed measures. An air quality study and GHG report will be documented in the EIS.
Section 4	Access, Parking and Loading	Compliance / Comments
Criteria 1	All development proposals are to assess both on and off-site traffic impacts and are to be accompanied by a Traffic Management Plan.	COMPLIES A Traffic Impact Study has been carried out and is included in the EIS.

Criteria 2	All site vehicular access points are to be located and designed to avoid conflicts between pedestrians, light vehicles and truck movements.	COMPLIES.  Friendship Road/Simblist Road accessways properly designed by Road Engineering Consultancy
Criteria 3	Container facilities are to provide separate access points to an adjoining roadway for light vehicles and trucks.	Not Applicable
Criteria 4	Designated pedestrian paths should have surfaces which clearly delineate pedestrian paths from vehicular roads and parking surfaces, with a perceivable change in material or colour.	COMPLIES Pedestrian traffic is minimal but paths will be marked.
Criteria 5	All employee and visitor parking is to be accommodated within the leased area. Car parking areas (i.e., parking bays and loading areas) are to: <ul style="list-style-type: none"> <li>▪ be designed in accordance with Australian Standard AS 1428:1-4 Design for Access and Mobility, Australian Standard AS 2890.1 Car Parking Facilities and Australian Standard AS 2890.2 Commercial Vehicle Facilities,</li> <li>▪ provide a minimum rate of one (1) parking space per staff member or contractor plus 10% (calculation to be based on the maximum number of staff members and / or contractors on site at any one time).</li> <li>▪ provide for at least one (1) mobility impaired parking space, to be located adjacent to building entries and clearly delineated,</li> <li>▪ be paved with concrete or bituminous surfacing designed and drained to the approved stormwater drainage system, and</li> <li>▪ incorporate landscaping to provide visual screening to reduce the visual impact particularly from external roadways (Figure 4).</li> </ul>	COMPLIES  The site will be unmanned except for Operator visits from existing Site B as well as maintenance contractor and chemical surveyor visits. 8 parking places are included onsite with ample additional parallel parking onsite if required.  NOTE: There are no additional employees based at this site; all are accommodated at Site B.
Criteria 6	For sites with less than 20 car spaces, screen planting to the perimeter of the car park is to be provided. For sites with more than 20 car spaces, additional tree bays (1.2 x 3m minimum) are to be incorporated at a rate of rate of one (1) bay for every 10 spaces, except where bays abut rear or side walls of buildings (Figure 5).	DOES NOTCOMPLY  Tree bays are not appropriate within this site. Landscaping along the fence line of Friendship Road will be provided.
Criteria 7	All vehicles being loaded and/or unloaded (or awaiting loading and/or unloading) shall stand entirely within the leased area to avoid queuing of vehicles outside of leased areas.	COMPLIES

Criteria 8	Garbage bins and waste recycling areas shall be accommodated on site, appropriately screened and accessible to the users of the building and service vehicles.	NOT APPLICABLE  See above. Waste is not to be stored onsite.
Criteria 9	Bicycle parking should be provided at a rate of at least two (2) bicycle parking spaces plus 5% of the total number of required car parking spaces. Bicycle parking facilities should be located in highly visible, illuminated areas and securely anchored to the site surface to prevent removal and shall be of sufficient strength to resist vandalism and theft.	COMPLIES  Two (2) bicycle parking spaces will be provided on the B4 site in the car parking area.
Section 5	Security	Compliance / Comments
Criteria 1	All leased areas are to be appropriately fenced for security purposes. All fencing is to be chain wire fencing with optional 3 strand barbed wire along the top portion of the fence (Figure 6). The maximum fence height permitted is 3.5m (inclusive of the barbed wire portion).	COMPLIES  B4 Site will have approved security fencing.
Criteria 2	All chain wire fencing, posts and rails and gates that are visible from the water and main port roads (excluding roads within leased areas) are required to be black in colour (ie black PVC, powder coated or the like). Fencing in other locations may comprise a metallic finish.	COMPLIES
Criteria 3	All access points to leased areas are to be secured with durable gates, and checkpoint facilities, where appropriate. Gates are to comprise either chain wire fencing set within a framed rim (with optional 3 strand barbed wire on top), or palisade slide gates (with optional spikes or barbed wire on top) - (Figure 6).	COMPLIES
Criteria 4	Truck entry to a site must be set back as a minimum 65m from the lease boundary for container facilities and 30m for non-container facilities (Figure 7).	COMPLIES  Only required for Maintenance/ Operators vehicles. Manual Entry gates are set back from the lease boundary. Manual Exit Gates are also set back from the lease boundary.  <ul style="list-style-type: none"> <li>An Emergency gate is also to be provided on Friendship Road (previous QENOS demolition access gate)</li> </ul>

Section 6	Landscaping	Compliance / Comments
General Criteria		
Criteria 1	Landscaping is to be provided in front of fences that face roads external to the lease area and to non-active waterfronts.	<p>COMPLIES – noting:            Complying landscaping will be provided on Friendship Rd boundary.</p> <p>No landscaping will be provided on the Simblist Rd side as the lease abuts the Pipeline Corridor not “roads external.”</p>
Criteria 2	Landscaped areas are to be planted to achieve a minimum of 75% planting density once fully matured.	COMPLIES
Criteria 3	<p>Only suitable native plant species are to be used and, where possible and practical, locally sourced provenance stock should be used. The minimum plant container sizes are to be as follows:</p> <p>Trees – 25 litres, Accents            – 5 litres, and            Groundcovers – 100mm.</p>	COMPLIES
Criteria 4	All landscaping, in particular within car parks and along pedestrian paths, is to take into account the need to maintain passive surveillance.	COMPLIES

Criteria 5	Where landscaping is provided within internal boundaries, the trunks of trees on internal boundaries must not be closer than 2.5m to the perimeter fence and no part of the tree is to overhang the adjoining premises.	NOT APPLICABLE
Criteria 6	All development proposals are to be accompanied by a Landscape Management Plan which outlines the species and planting densities, methods for vegetation establishment and an ongoing maintenance program.	COMPLIES  A Landscape Management Plan will be provided to NSW Ports prior to Works commencing. Species and densities will conform with the PBDC.
Criteria 7	Mown grassed verges, adjoining landscaping strips or otherwise, are to comply with the requirements at Appendix A.	COMPLIES  A Landscape Management Plan will be provided to NSW Ports prior to Works commencing.
Specific Criteria	Road Reserve Landscape Areas	Compliance / Comments
Criteria 8	Establish a 5m landscaped buffer strip within the lease area, facing the external roadway. The buffer strip is to have flush timber edging with the security fencing located behind the landscaping (Figure 8).	NOT APPLICABLE  As above, Vopak will provide these 8-12 on the Friendship Rd side.
Criteria 9	Develop and maintain a consistent pattern of selected native planting including: <ul style="list-style-type: none"> <li>▪ layered and banded ground stratum planting (up to 0.5 - 0.7m high),</li> <li>▪ accent planting with large perennials (up to 1.4m high),</li> <li>▪ clustered and individual small to medium tree planting up to 8-12m in height, and</li> <li>▪ clusters to have a maximum spacing of 15m between groups.</li> </ul>	NOT APPLICABLE

Criteria 10	<p>Ensure a high level of security and passive surveillance:</p> <ul style="list-style-type: none"> <li>▪ no dense, mid-stratum shrub planting (ie. up to 3m in height),</li> <li>▪ no tree planting within 2.5m of fence line, and</li> <li>▪ underprune trees to minimum 2.5m above ground level and maintain adequate branch clearance from the security fencing.</li> </ul>	NOT APPLICABLE
Criteria 11	Existing landscape areas that do not comply with the above controls should be removed and replaced with landscaping that complies with the above controls.	NOT APPLICABLE
Criteria 12	The suggested planting palette for this area is set out at Appendix A.	NOT APPLICABLE
Specific Criteria	Potential Fire Risk Landscape Areas / Non-active Water Front Landscaped Areas	Compliance / Comments
Criteria 13	Establish a 5m landscaped buffer strip within the lease area, facing the roadway external to the lease area / non-active water front. The buffer strip is to have flush timber edging with the security fencing located behind the landscaping (Figure 9).	COMPLIES on Friendship Rd noted above.
Criteria 14	<p>Continue repetition of form, texture and colour to create a strong multi-layered, rhythmic pattern in the landscape as follows:</p> <ul style="list-style-type: none"> <li>▪ layered and banded ground stratum planting (0.4 – 0.7m high), and</li> <li>▪ introduce highlights within the landscape buffer strip using grouped accent planting with large perennials (up to 1.4m high).</li> </ul>	COMPLIES
Criteria 15	Develop layered bedding pattern with a progression from smaller species at the front edge to larger species at the back (near the fence line).	COMPLIES
Criteria 16	Existing landscape areas that do not comply with the above controls should be removed and replaced with landscaping that complies with the above controls.	COMPLIES Existing QENOS landscaping to be removed
Criteria 17	Use hardy native or indigenous plant species suited to site-specific environmental conditions with a low fire risk (ie. low combustion or fire retardant properties). The suggested planting palette for this area is set out at Appendix A.	COMPLIES

Section 7	Signage	Compliance / Comment
Criteria 1	All directional signage outside or on the lease area fence (Figure 10) and public notice signage (i.e. a sign which contains warning, safety, security or instructive information that is only erectable by a public authority), excluding RTA street signage:	COMPLIES Minimal Site signage is proposed as part of this application.
	<ul style="list-style-type: none"> <li>■ is to be located in a prominent position and clearly visible,</li> <li>■ is not to be located above a roadway,</li> <li>■ is to be of a size and location so as to not obscure vehicle sightlines,</li> <li>■ is to be positioned where it does not obstruct walkways and pathways,</li> <li>■ is to consist of similar colours to that of the Sydney Ports Corporation colour scheme comprising dark blue, orange, red, white, black and grey, or is to be consistent with colours of typical safety / warning signage (ie. to comply with applicable Australian Standards),</li> <li>■ may incorporate the lessee logo where it is located for directional purposes at the entrance to a leased area. The colours of the logo are to be lessee corporate colours, and</li> <li>■ for car parking areas, loading and delivery areas and the like, is to be located close to the main access of a site.</li> </ul>	
Criteria 2	No advertising signs shall be erected within the port estate upon the buildings, structures or tanks other than business identification signage.	COMPLIES Minimal Site signage is proposed as part of this application
Criteria 3	<p>Business identification signage (Figure 11):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> is to be located outside the lease area fence and located on Sydney Ports" standard Blade Sign,</li> <li><input type="checkbox"/> should not obscure vehicle sightlines or control signs,</li> <li><input type="checkbox"/> is permitted on one elevation of the primary building, except where a site has two main road frontages or where there are multiple occupants within a building,</li> <li><input type="checkbox"/> may comprise text, illustrations, and/or both, to ensure clear identification of the sign and its intent,</li> <li><input type="checkbox"/> is not to be illuminated or comprise any form of moving or flashing signage,</li> <li><input type="checkbox"/> is not to occupy more than 10% of any facade or elevation of a building, and</li> <li><input type="checkbox"/> is to identify visitor entrance points to lease</li> </ul>	<p>COMPLIES</p> <p>Minimal Site signage is proposed as part of this application as only periodic Operations/Maintenance access is required. NSW Ports Blade Signs are not required.</p> <p>Figure 11 Tank business identifications may be included.</p>

Criteria 4	Business identification signage on the side of tanks is limited to 1 sign per leased area or site (in the case of multiple lease areas being operated as a single site). The sign should be subordinate to the elevation of the tank.	COMPLIES
Section 8	Lighting	Compliance / Comments
Criteria 1	Lighting levels are to be provided in a manner just sufficient to meet operational requirements and to the relevant Australian Standards.	COMPLIES
Criteria 2	All lighting is to meet Civil Aviation Safety Authority (CASA) / Air Services Australia (ASA) requirements. Note: Refer to CASA Manual of Standards Part 139 – Aerodromes	COMPLIES
Criteria 3	Appropriate lighting should be provided at key locations such as pedestrian paths, driveways, parking areas and building entries, so as to identify and provide safe access routes for both employees and visitors.	COMPLIES
Criteria 4	Lighting is to be positioned so as to not cause distraction to vehicle drivers on internal or external roads or the occupants of adjoining sites.	COMPLIES
Criteria 5	Light spill outside the site boundary and sky lighting is to be avoided through the adoption of measures such as: <ul style="list-style-type: none"> <li>▪ Focussing lights downwards,</li> <li>▪ Installing cut-offs or shields on lights,</li> <li>▪ Minimising the light mast height, and</li> <li>▪ Using low mounting height poles to light non terminal operational areas, including access / egress routes.</li> </ul>	COMPLIES High mast lighting similar to existing Site B is planned.
Specific Criteria	Lighting for areas adjacent to Penrhyn Estuary	Compliance / Comments
Criteria 6	No fixed light is to spill into Penrhyn Estuary or the Estuary flushing channel (Figure 16).	NOT APPLICABLE
Criteria 7	Low mounting height poles are to be used adjacent to the Estuary.	NOT APPLICABLE
Criteria 8	Moving lights, such as vehicle headlights, so they do not shine into Penrhyn Estuary.	NOT APPLICABLE
Criteria 9	High level lighting on operational equipment is not to shine into Penrhyn Estuary.	NOT APPLICABLE

Section 9	Heritage	Compliance / Comments
Criteria 1	<p>The Revetment Wall along Prince of Wales Drive and the Old Government Wharf Remains are listed as heritage items on Sydney Ports" Section 170 Heritage and Conservation Register (see Figure 12). Any development proposal which has the potential to impact on these items or their heritage significance is to be accompanied by a heritage impact statement.</p>	<p>COMPLIES</p> <p>Refer Section 19.3 of the EIS</p>
Criteria 2	<p>Development in the vicinity of a heritage item is to be designed to respect and complement the heritage item.</p>	<p>NOT APPLICABLE</p>

Section 10	Safety and Hazard Management	Compliance / Comments
Criteria	10.2 General (including non-hazardous Facilities)	Compliance / Comments
Criteria 1	<p>All new development in Port Botany is required to undergo a risk assessment to demonstrate the development:-</p> <ul style="list-style-type: none"> <li>- Will not contribute to any increase in cumulative risk as shown in Figure 2 of the <i>Port Botany Land Use Safety Study Overview Report 1996</i>).</li> <li>- Will not result in any propagation of risks to neighbouring facilities</li> <li>- Will not result in significant increase in the number of people (including both construction and operational staff) exposed to risk inside the residential contour as shown in Figure 2 of the Overview Report., and</li> <li>- Will identify and implement risk reduction and safety management measures as required.</li> </ul>	<p>COMPLIES</p> <p>A Quantatative Risk Assessment (QRA) and a HAZOP is provided with the application and assesses these issues and criteria.</p> <p>The residual contour exceeds those modelled in the PBLUSS Overview Report (Figure 2) by some minor extensions onto the adjacent roadways, however, the Risk Assessment demonstrates that there is no additional impact on residences.</p>

Criteria	10.3 Hazardous Facilities	Compliance / Comments
Specific Criteria	10.3 Hazardous Facilities	Compliance / Comments
Criteria 2	<p>All proposals for new or expanded potentially hazardous developments are required to undergo a Risk Assessment. The Risk Assessment is to be submitted as part of the application for development and is to include the implementation, operation and maintenance phases. The assessment is to demonstrate:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> that all foreseeable hazards that may arise from a development, that have a potential to harm the health and safety of any person, the environment, or impact the safety of buildings, equipment, plant and facilities have been clearly identified,</li> <li><input type="checkbox"/> that potential for propagation of hazardous incidents to the neighbouring facilities is identified and is , in accordance with the “As Low As Reasonably Practicable” (ALARP) principle,</li> <li><input type="checkbox"/> that the risks associated with the identified hazards at the development have been appropriately analysed and assessed,</li> <li><input type="checkbox"/> that the proposed development will not contribute to any increase in the cumulative risk (individual &amp; societal risk) beyond the levels shown in Figures 2 and 9 of the <i>Port Botany Land Use Safety Study Overview Report 1996</i>,</li> <li><input type="checkbox"/> that the assessed risks comply with the relevant risk criteria published by the regulatory authorities,</li> <li><input type="checkbox"/> that all identified risks will be controlled and minimised by protection and mitigation, and</li> <li><input type="checkbox"/> that incidents at hazardous facilities will not impact on the use or operation of adjacent land, including NSW Ports’ common areas (e.g. roadways). The Risk Assessment for the proposed development is to include the quantitative analysis of incident impacts relating to consequence severity and risk. The impacts are not to exceed acceptable published risk criteria.</li> </ul>	<p>COMPLIES</p> <p>A Quantitative Risk Assessment (QRA) is provided with the application and assesses these issues and criteria.</p> <p>The residual contour exceeds those modelled in the PBLUSS Overview Report (Figure 2), however there is no additional impact on residences.</p> <p>The contours also overlap parts of the adjacent roadways. The B4 PHA has addressed this issue by stating:-  <i>Given that the boundary risk target is <math>50 \times 10^{-6}</math> per year for each source of risk individually, it is not possible to also apply this target cumulatively outside the site boundaries. There is no permanent population on the road and no fixed facilities between Site B and B4, hence this risk is regarded as acceptable.</i></p>
Criteria 3	Minimum separation distances required to „protected places” under the relevant Australian Standard must be complied with.	<p>COMPLIES</p> <p>Complies with AS1940 separation distances for Protected Places. Note that public roadways (Simblist and Friendship Rds) are not such “protected places.”</p>

Criteria 4	The industrial premises risk contour for the development (including existing site development) must remain within the lease boundary.	COMPLIES The Industrial Risk Contour remains within the lease boundary.
Specific Criteria	Bulk Liquid Storage Facilities	Compliance / Comments
Criteria 5	Separation distances within and between bulk liquid storage hazardous facilities (i.e. separation distances between facilities on the subject site or adjoining sites) is to be provided in accordance with the relevant Australian Standard(s) or the criteria listed in this section of the Code, whichever is the greater.	COMPLIES
Criteria 6	<p>A perimeter roadway is to be provided around all bulk liquid storage areas. A bulk liquid storage area consists of bulk liquid tanks contained within a bunded area. Figure 14 shows the minimum acceptable roadway layout around a bulk liquids storage area. The perimeter roadway is to be provided with the following:</p> <ul style="list-style-type: none"> <li>▪ 6m clear road width,</li> <li>▪ Corners designed to accommodate the turning of emergency vehicles / trucks,</li> <li>▪ Connected to the main roadway at the front of the site, either directly or by an internal site road no less than 6m wide, and</li> <li>▪ Unobstructed access along the full length of the road.</li> </ul>	COMPLIES Latest drawing confirms
Criteria 7	Where a bulk liquid storage facility operates a road tanker filling area, the road tanker filling area shall be located wholly off any access road that passes the filling area. Figure 14 provides an example of a bulk liquids tanker filling area located adjacent to an access road. The filling area shall be located so that no part of a truck in the filling bay extends into the access road.	NOT APPLICABLE

Specific Criteria	Pipelines	Compliance / Comments
<p>Criteria 8</p>	<p>All pipelines proposed within the Port Botany Port precinct are to be located in the following manner:</p> <ul style="list-style-type: none"> <li>▪ Pipelines required to be installed external to the leased area are to be located within a Port Botany pipeline corridor (Figure 15),</li> <li>▪ Exposed above ground level or in an open culvert lined with impermeable material so as to prevent the percolation of any spilled materials through the paving into the underlying sand. The paving and any jointing materials to be used shall be resistant both to heat and the corrosive effects of the range of the products to be transported in the pipeline,</li> <li>▪ Underground pipelines are to be avoided unless absolutely necessary,</li> <li>▪ Where underground pipelines are used they are to be installed with a leak detection system (e.g. differential flow device, inventory measurement, etc.),</li> </ul> <p>Underground pipelines are to be suitably protected against corrosion, considering (but not limited to) the following:</p> <ul style="list-style-type: none"> <li>▪ expected lifetime of the pipeline,</li> <li>▪ soil conditions,</li> <li>▪ potential acid sulfate soils, and</li> <li>▪ water table level.</li> </ul> <p>Details of the leak detection system and corrosion protection are to be provided in the risk assessment documentation.</p>	<p>COMPLIES</p> <p>All product pipelines are aboveground (noting including for Friendship Road Culvert connecting B4 site to existing Site B). All pipelines will be located within Vopak B4/Site B Leases except for at the Friendship Road Culvert.</p>
<p>Criteria 9</p>	<p>Any new valves at the Bulk Liquids Berth must include remote operated emergency shutdown valves with such valves to be located at the shore manifold. The locations of activation points for the remote operated valves must , as a minimum, be able to be activated from the operator's emergency shutdown system during ship discharges as well as from the Bulk Liquids Berth Office.</p>	<p>NOT APPLICABLE</p>
<p>Criteria 10</p>	<p>All above ground bolted flanged joints, associated with the pipeline outside the main storage bund area, are to be provided with the following:</p> <ul style="list-style-type: none"> <li>▪ A bunded pit to retain any product leaks,</li> </ul>	<p>COMPLIES</p> <p>All aboveground product pipework (outside containment areas) is fully welded without flanged joints.        Flanged joints (bolted) are only</p>

	<ul style="list-style-type: none"> <li>■ Protection to prevent leaks from flanges and joints spraying beyond the confines of the pit, and</li> <li>■ Leak detection within the pit and an alarm system to notify of potential flange/joint leaks.</li> </ul> <p>It is noted that the pit may require a cover to prevent the ingress of rain water causing false leak detection alarms.</p>	located at the pump & transfer manifolds – which have spill containment and level detection.
10.4 Criteria	Areas where petroleum, petroleum products, petro-chemicals and other liquid chemicals are handled or stored	
Criteria 11	Areas where Petroleum, Petroleum Products, Petro-Chemicals and other Liquid Chemicals are handled or stored are required to be bunded in accordance with the relevant standards. Where pipeline or hose connections are made or broken for operational activities, these areas are also required to be bunded.	<p>COMPLIES</p> <p>The proposal meets all legislative requirements including AS1940 compliance and OEH Bunding Guidelines. All flanged piping is in containment as above.</p>
Criteria 12	The area within all bunded enclosures is to be impervious so as to prevent the percolation of any spilled materials through the paving into the underlying sand. The paving and any jointing materials to be used shall be resistant both to heat and the corrosive effects of the range of the products to be handled or stored.	COMPLIES
Criteria 13	The surface of the paving in bunded areas shall be graded so as to permit the flow of surface water to a suitable drainage system. This surface shall be maintained to prevent ponding.	COMPLIES
Criteria 14	All stormwater from bunded areas shall be directed through a separator system located outside the bunded area.	COMPLIES
Criteria 15	Areas used for loading of road tankers, refuelling or other handling operations are to have “roll-over” bunding and impervious paving so as to prevent the percolation of any spilled materials through the paving into the underlying sand. The paving and any jointing materials to be used shall be resistant both to heat and the corrosive effects of the range of the products to be handled. All drainage from these areas is to be directed to a drainage system via a treatment system.	NOT APPLICABLE

Section 11	Water Quality and Stormwater	Compliance / Comments
Criteria 1	The 1 in 20 year storm event (i.e. 5% Annual Exceedance Probability (AEP)) is to be accommodated within a piped stormwater system. Where the site does not drain directly to an adjacent waterway, the one in 100 year storm event is to be retained on site.	COMPLIES
Criteria 2	The design and layout of leased areas, including the siting of buildings and the positioning of bunded areas and container stacks, is to take into consideration the need to provide unobstructed stormwater overland flow paths.	COMPLIES
Criteria 3	The first flush from impervious areas is to be captured and treated to prevent pollutants from entering Botany Bay. Pollutants to be removed must include but not limited to sediments, litter, rubbish, oils, greases and other chemicals used/stored.	<p>COMPLIES</p> <p>5 separate systems of stormwater will be used:</p> <ol style="list-style-type: none"> <li>1. Clean perimeter roads (“emergency vehicle accesses”) on East and South will drain to infiltration in accordance with the RCC Private Stormwater Code (Mar’13);</li> <li>2. Clean perimeter road (“emergency vehicle accesses”) on North (Qenos boundary) will drain directly to Friendship Rd storm drains;</li> <li>3. Central roadway will drain via a final stormwater collection pit c/w oil/solids removal weirs;</li> <li>4. Tank and valve bund areas (as above) will be drained via Separators to the final stormwater collection pit;</li> <li>5. Slops or Process areas under roofs will be pumped to Slops Tanks at existing Site B.</li> </ol>
Criteria 4	Stormwater leaving the site is not to create erosion within Penrhyn Estuary (Figure 16).	<p>NOT APPLICABLE</p> <p>The proposal will apply the current Site B Stormwater Management practices to the subject area and will not discharge to Penrhyn Estuary</p>

Criteria 5	Measures to contain spills and prevent them from discharging through the stormwater system are to be identified and spill response procedures documented.	COMPLIES The proposal will apply the current Site B Stormwater Management practices to the subject area. Also see above.
Criteria 6	Emergency spill kits are to be available on-site and staff are to be trained in how to use them.	COMPLIES Absorbent Emergency Spill Kits are already located near operational areas. Training in Emergency Procedures will continue with existing Staff.
Section 12	Air Quality	Compliance / Comments
Criteria 1	Site areas which are trafficked by vehicles and trucks are, as a minimum, to be sealed to minimise dust generation.	COMPLIES All areas used by vehicles are fully sealed
Criteria 2	Information regarding the products to be stored and/or handled on the premises is to be provided as well as the proposed storage area for such products. Products handled on site which have an offensive odour are to be handled in a closed circuit or sealed system.	COMPLIES The emission from the storage and handling of Fuels will be controlled.
Criteria 3	Vehicles, plant and equipment are to be maintained and operated in good working condition and are to be turned off when not in use to minimise emissions to air.	COMPLIES All Site Equipment is maintained appropriately to minimise both air emissions and energy consumption
Criteria 4	Building materials that may potentially contribute to poor internal air quality are to be avoided.	COMPLIES No such materials will be used in the construction
Criteria 5	Air filters are to be installed in all ventilation systems to remove particulate contamination.	NOT APPLICABLE
Criteria 6	All development is to incorporate measures to minimise emissions that adversely impact on local air quality.	COMPLIES Site B OEMP will be updated to include B4. Refer Section 13.3 EIS
Criteria 7	Any emissions of smoke, dust, particulate matter, steam or gas must meet Civil Aviation Safety Authority (CASA) / Air Services Australia (ASA) requirements.	COMPLIES

Section 13	Bird Management	Compliance / Comments
Criteria 1	An assessment of aspects of the proposed development which could attract bird species that may pose a hazard to airport operations is to be provided as part of the application for development. The assessment is to include any mitigation measures to be implemented. Aspects to be considered include potential for roosting on roofs, lights poles, site areas having low levels of activity, areas where water may pond ,potential feeding areas for birds such as sediments, or rubbish collection areas, etc.	<p>COMPLIES</p> <p>Existing measures for Bird Management will be applied to the proposal, where applicable.</p> <p>Measures such as :- Keep site free from litter Prevent ponding Bird deterrents ( sirens,bunting, etc)</p>
Criteria 2	Height restrictions in Figure 1 are required to be complied with unless a shorebird impact assessment is undertaken which confirms that there is no adverse impact on shorebird access or use of Penrhyn Estuary.	NOT APPLICABLE
Criteria 3	No port operations (except for road access / egress) are permitted within 20m of the western edge of Penrhyn Estuary.	<p>COMPLIES</p> <p>Proposal is greater than 300 m from Penrhyn Estuary</p>
Criteria 4	Container stacks, buildings and tanks are to be set back at least 100m from the western edge of Penrhyn Estuary and 64m from the southern edge of Penrhyn Estuary.	NOT APPLICABLE
Section 14	Noise and Vibration	Compliance / Comments
Criteria 1	<p>For all new developments, proponents are to identify:</p> <ul style="list-style-type: none"> <li>▪ relevant noise criteria based on the EPA guidelines,</li> <li>▪ all sources of noise,</li> <li>▪ noise emission levels, and</li> <li>▪ proposed mitigation measures.</li> </ul>	<p>COMPLIES</p> <p>The proposal will comply with the relevant guidelines.</p>
Criteria 2	All buildings, equipment and operational processes are to be selected or designed to minimise the emission of noise.	<p>COMPLIES</p> <p>The proposal will meet all operational noise targets.</p>
Criteria 3	Noise reduction measures for mobile equipment, trucks, other vehicles and machinery are to be implemented, such as through insulation, and „engine off“ policies. Audible movement alarms must not be used unless a safety risk assessment has been undertaken to recommend	<p>COMPLIES</p> <p>The proposal will meet all operational noise targets through on –site management of machinery and vehicles</p>

Criteria 4	Noisy plant and equipment should be located as far as possible from noise sensitive areas, optimising attenuation effects from topography, natural and purpose built barriers.	COMPLIES  The proposal will meet all operational noise targets and no mitigation measures were deemed necessary
Criteria 5	Vibration transmitted outside the site during operations must be within acceptable limits based on EPA guidelines.	NOT APPLICABLE
Section 15	Contamination and Acid Sulfate Soils	Compliance / Comments
Criteria 1	For all development a soil and groundwater contamination assessment is to be undertaken as part of the application for development. Where a contamination hazard is deemed possible, approved mitigation / remediation measures are to be undertaken. This is to be generally in accordance with the EPA's Guidelines made or approval under the Contaminated Lands Management Act 1997.	COMPLIES Documentation will be included in the EIS and CEMP.
Criteria 2	For all development an assessment of potential acid sulfate soils is to be undertaken as part of the application for development. Where acid sulfate soils could be encountered, mitigation measures are to be undertaken.	COMPLIES  Documentation will be included in the EIS and CEMP.
Section 16	Groundwater Management Zone (Elgas Deed)	Compliance / Comments
Criteria 1	The Groundwater Management Zone (GMZ) associated with the Elgas LPG Storage Cavern is illustrated at Figure 17. Any development within the area marked „GMZ(B)“ is required to comply with the „ <i>Groundwater Management Zone Deed</i> “ between the Water Administration Ministerial Corporation, Sydney Port Corporation (vested to Port Botany Operations Pty Limited), Elgas Limited and the Marine Ministerial Holding Corporation (NSW Roads and Maritime Services). A copy of the Deed is available on request from NSW Ports. Specifically, any development proposed in the “GMZ” is required to specify the proposed construction methods ; assess the likely impact on the water table; and assess the likely impact on the Elgas LPG Storage Development.	COMPLIES  The site is located in GMZ(B) Excavation is limited to less than 1.0m approx. except for the Friendship Rd Culvert (approx. 3m deep). Groundwater levels are known to be of the order of 3+m below site levels and hence will not be impacted.  Standard Industry Construction Methods will be utilised (identical to those used in earlier Vopak developments (B1, B2, B3 and Bitumen)). Except note, as used in the Vopak Bitumen project Vibro-compaction of the B4 tank foundations will be required ( as per Bitumen) and is a proven technology of localised surface impact with no water table effects.



		<p>Traffic Management Plans will be enacted to ensure Elgas LPG vehicles have unrestricted access to their site during construction of B4.</p> <p>No impacts on the Elgas LPG Storage Development are expected as a result of the construction and/or operation of the Vopak B4 development</p>
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