Checklist For Copper and Nickel Shiploading by Rotabox

1. PURPOSE

To ensure the community and the environment are protected from emissions of dust, odour and noise from shiploading Nickel and Copper Concentrates via a Rotating Container System at the Port of Esperance.

2. OPERATIONS

SPE holds an Operating Licence for multi-user Berth 2 that is used by different stevedores and must communicate its requirements to all users.

Export of nickel and copper concentrates is conducted by Qube stevedores using a Rotabox loading system to empty containers into the ship's hold. The nickel and copper sulphide concentrates are trucked from Independence Group's (IGO) Nova Nickel Mine (approximately 120 km east of Norseman) in sealed, half height shipping containers to a storage facility at SPE. Shuttle trucks will each carry two containers with a maximum capacity of 38 tonnes for each sealed container.

Containers used to transport the nickel and copper concentrate from Nova Nickel Mine will be free of leaks and structurally fit for purpose. Containers will be stored in designated hardstand areas either at Berth 2 or Berth 1 (formerly Black Swan Shed Pad (BSSP)) prior to ship loading.

The containers attached to the Rotabox will be lowered into the ship's hold using the Port's container crane. Four misting fans will be operational in each corner of the hold. Once inside the hold, the lid will be automatically lifted and the container rotated to slide out the concentrates. The concentrates are treated with lime to reduce the potential for odour and self-heating, and are sufficiently moist to reduce dust. The container lid will be secured within the ship's hold and the empty container will be returned to the berth, inspected and cleaned of any loose nickel prior to transport back to an adjacent bunded storage facility.

3. RELATED RECORDS

- Environment Management Plan: Shipments of Nickel and Copper Concentrates via a Rotating Container System at the Port of Esperance (D17/8494)
- SPE Environmental Licence L5099/1974/14

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Please note the following:

1. If there is unacceptable spillage remaining in the opinion of SPE, the Stevedore is required to contract the cleaning contractor for as long as required.
2. If the stevedore is unable to participate in any of the required inspections, the opinion of SPE is final and SPE may audit any of the steps below;
3. Within business hours the Environment Team will represent SPE, out of business hours the Terminal Supervisor will nominate a representative;
4. Cost of storage and disposal of all excess washwaters generated during operations must be accepted by the stevedore.
5. Wash waters in Berth 2 rainwater tanks accumulated during the unloading operations must be managed by the stevedore
6. A minimum of 4 hours is allocated for berth clean-up.
7. Failure to complete many of the steps below will result in a legal non-compliance to the operating Licence and is required to be reported to DWER

Vessel Name:		**Loading dates:**		**Stevedore Supervisor:**	

Pre Start-up Checks		
Task	**Confirm Completion (initial)**	**Responsibility**
Complete the dust plans for day and night shift (Refer to Figure 1)		Stevedore
East end of Berth 2: Cleaning Contractor to ensure Berth outlet valve for stormwater is shut (valve shown in closed position in Figure 2. If open, close using a large adjustable spanner.		SP/ES
East end of Berth 2: Vacuum dry seaward rainwater tank and liaise with Environmental Team on reuse or disposal of water		
East end of Berth 2: Valves 1 to 4 in position to divert Berth 2 run-off to the empty seaward wastewater tank (refer to Figures 3 and 4). If tank becomes full arrange for transfer of waters to treatment facility east of Shed 5.		
All service lids in operating area where there is potential spillage are sealed watertight		
Water from all stormwater pits within the catchment of stored containers or the operations (refer to Figure 6) are emptied and treated at the facility east of Shed 5		
Check integrity of containers and external contamination **if any containers cannot comply, they should not be used**		Stevedore
A spare set of container trailers will be available so a set of trailers can be removed from service for cleaning at any time during the shiploading operation		

During Operation Checks		
Task	**Confirm Completion (initial)**	**Responsibility**
Check integrity of containers and external contamination during handling		Stevedore
Ensure four misting fans in each corner are operational in the hold at all times during loading		
In the event of dust being observed in the upper half of the hold implement additional controls including extra fans or enforcement of a wind loading arc (loading only in offshore winds)		
In the event of a text message being received from one of the Esamplers around Berth 2 (refer to Figure 7) warning of high dust levels measured, visually assess dust levels in the hold to determine if additional controls including extra fans are required		
If dust leaves the hold at any time, loading operations are stopped immediately		
In the event of stronger than usual odour being detected at the hold, notify the SPE Environmental Team immediately to assess if the odour is leaving the boundary towards the community		
Empty containers to be cleaned prior to being stacked in empty container stack and cleaning area then to be cleaned regularly. Cleaning of emptied containers not to be completed within one meter of the stormwater grate		
Loose material on leading edge corners of empty containers are recovered (vacuuming preferred method) as far as practical, contained and returned to the mine		
Visible spillage in the operating area is recovered and contained as soon as practical and at least before rainfall, during every hold or shift change		
Any oil or fuel spills to be cleaned up using the yellow spill kits on the berth		
Report all incidents and near misses		

Post Vessel Unloading Checks		
Task	**Confirm Completion (initial)**	**Responsibility**
Stevedore's representative **MUST BE PRESENT** until clean-up is complete		Stevedore
Wet sweep the berth in the area enclosed by yellow line in Figure 5 and all clean-up wash waters and those recovered from the stormwater pits within the catchment of containers or the operations (refer to Figure 6) are to be taken by controlled waste carrier to the licenced receiving facility at Myrup.		
Provide copy of controlled waste docket to the Environment Team		
In the event of rain during loading, all run-off waters collected from the rainwater tanks on the east end of the berth are to be treated at the facility east of Shed 5.		

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Dust Day Shift Plan for Rotabox Operations for Nickel and Copper Concentrates

Name of Product:

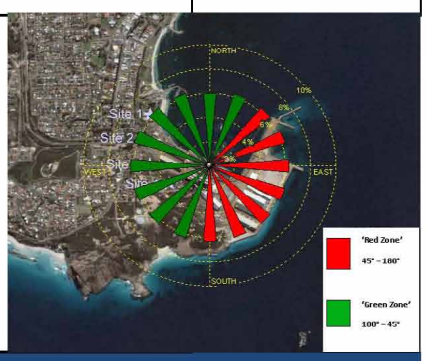
DATE	SHIFT PLAN			
	Are foggers working effectively? Y/N*	Is product moisture higher than DEM#? Y/N*	Is wind forecast >10 kts in red zone during loading? If so, are misting fans installed and working effectively before loading commences? Y/N*	Are there other activities occurring onsite that may increase dust at B2? N/Y**
06:30 - 09:00				
09:00 - 12:00				
12:00 - 15:00				
15:00 - 18:30				

*Note: If the answer is no to above questions do not commence loading - contact the PoE Environment Department

**Note: If the answer is Yes contact the Environment Department as dust notifications may need to be ignored

#DEM for Copper is 1.9%; DEM for Nickel is 2.4%

Wind Forecasts: http://www.bom.gov.au/places/wa/esperance/forecast/detailed/



Stevedore Signature on completion:
Date:

	SHIFT SUMMARY			
	Were the foggers adjusted to control dust during loading?	If visible dust left the hold, was loading stopped?	Did the onsite wind measurements show wind >10kts in the red zone? If so were misting fans installed and working effectively during loading?	Were dust notifications received, investigated and actioned?
06:30 - 09:00				
09:00 - 12:00				
12:00 - 15:00				
15:00 - 18:30				
Wind Confirmation:	http://epsl.com.au/NickelWindMonitor.asp			

On completion please send to: port.environment@southernports.com

Dust Night Shift Plan for Rotabox Operations for Nickel and Copper Concentrates

Name of Product:

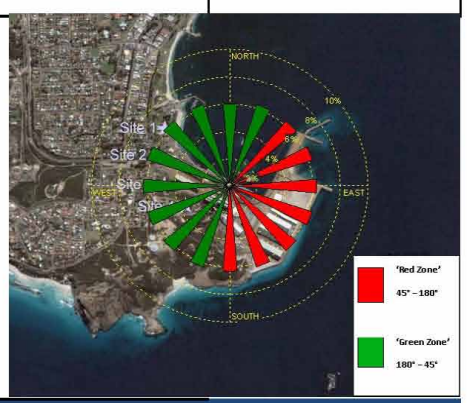
DATE	SHIFT PLAN			
	Are foggers working effectively? Y/N*	Is product moisture higher than DEM#? Y/N*	Is wind forecast >10 kts in red zone during loading? If so, are misting fans installed and working effectively before loading commences? Y/N*	Are there other activities occurring onsite that may increase dust at B2? N/Y**
18:30 - 21:30				
21:30 - 00:30				
00:30 - 03:30				
03:30 - 06:30				

*Note: If the answer is no to above questions do not commence loading - contact the PoE Environment Department

**Note: If the answer is Yes contact the Environment Department as dust notifications may need to be ignored

#DEM for Copper is 1.9%; DEM for Nickel is 2.4%

Wind Forecasts: http://www.bom.gov.au/places/wa/esperance/forecast/detailed/



Stevedore Signature on completion:
Date:

	SHIFT SUMMARY			
	Were the foggers adjusted to control dust during loading?	If visible dust left the hold, was loading stopped?	Did the onsite wind measurements show wind >10kts in the red zone? If so were misting fans installed and working effectively during loading?	Were dust notifications received, investigated and actioned?
18:30 - 21:30				
21:30 - 00:30				
00:30 - 03:30				
03:30 - 06:30				
Wind Confirmation:	http://epsl.com.au/NickelWindMonitor.asp			

On completion please send to: port.environment@southernports.com

Figure 1:Dust Plans and Summaries for Day Stevedore Shift

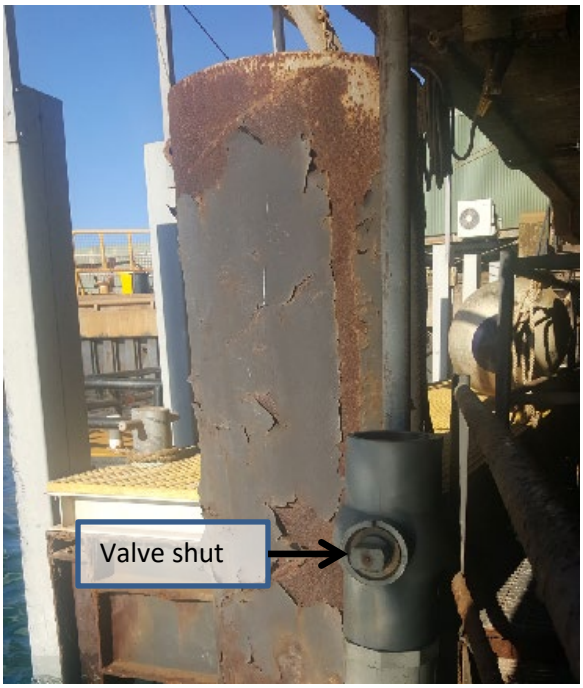


Figure 2 Berth outlet valve shown in closed position to divert water to tanks

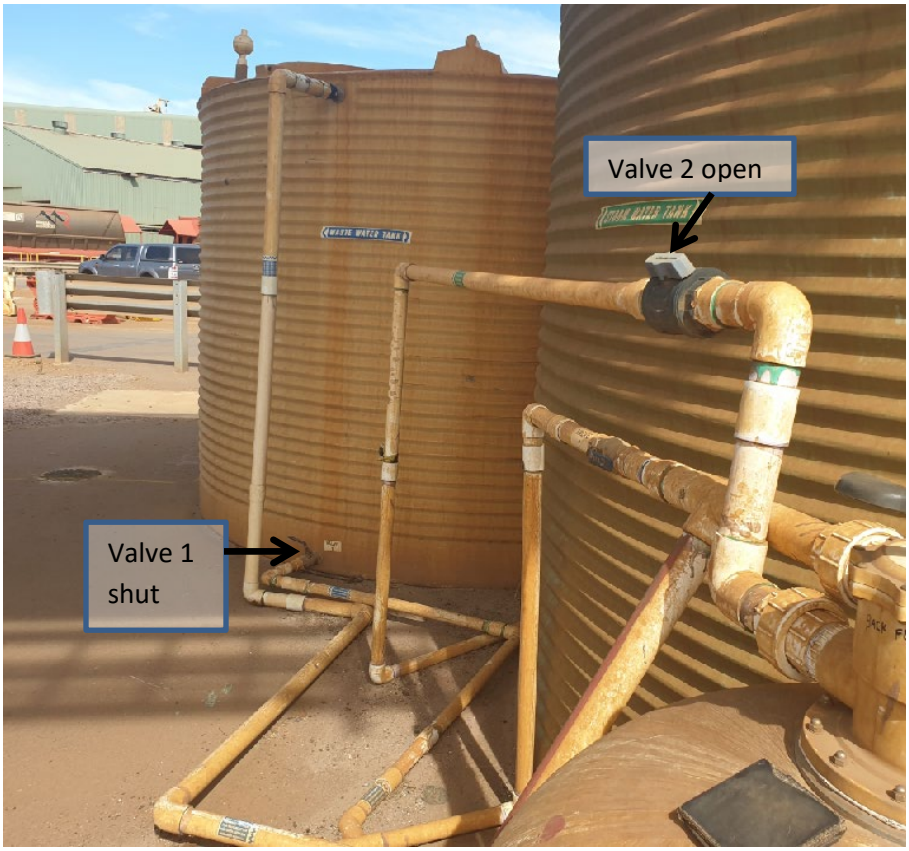


Figure 3 Valves 1 and 2 in position to divert Berth 2 run-off to the empty wastewater tank (seaward tank)

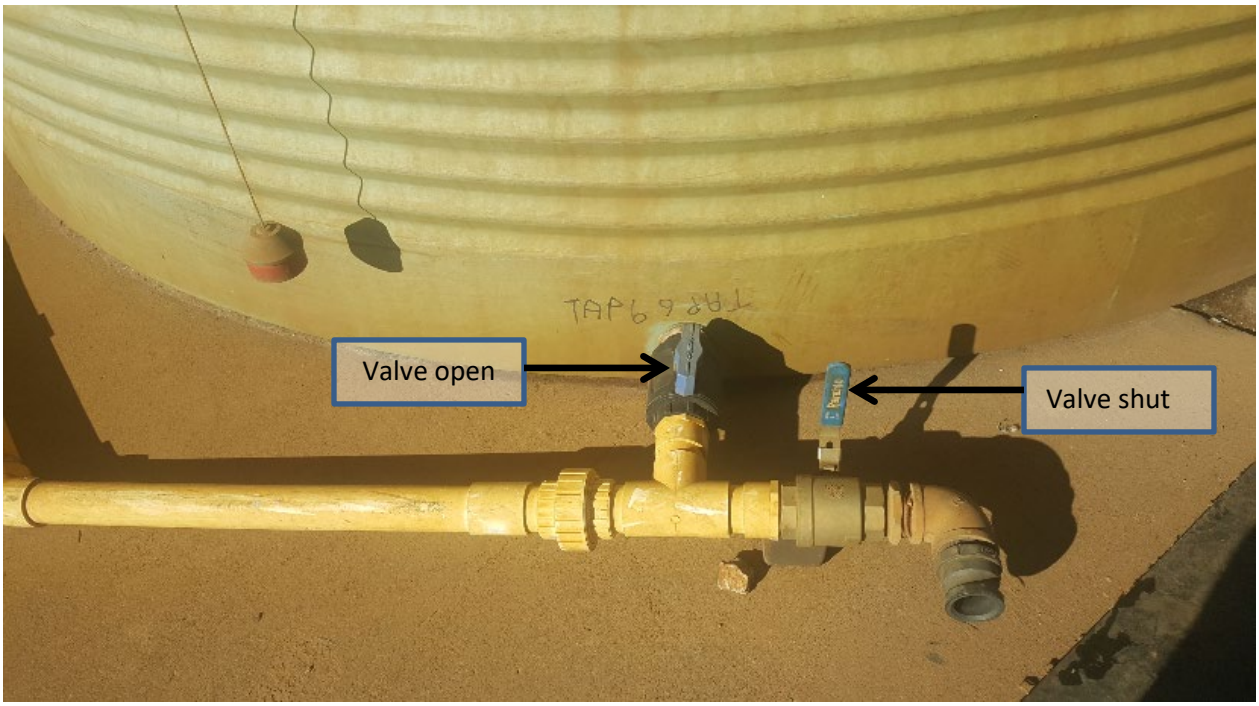


Figure 4 Valves in position on landward tank to accept overflow from wastewater tank

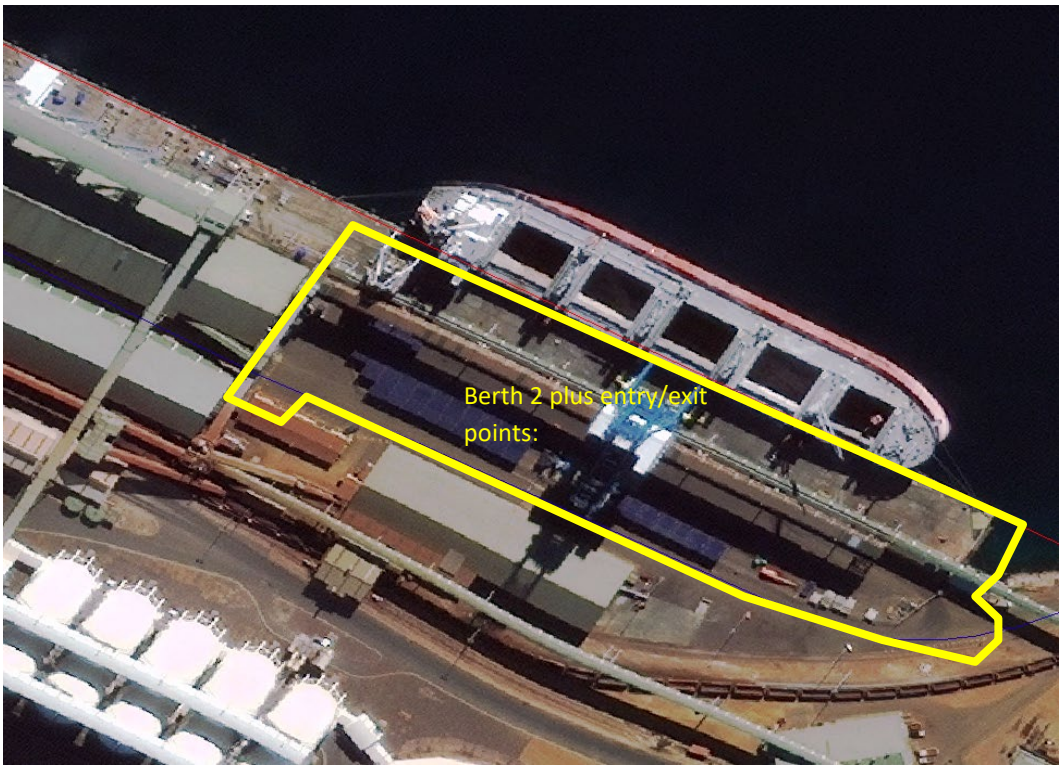


Figure 5. Area to be swept on Berth 2.

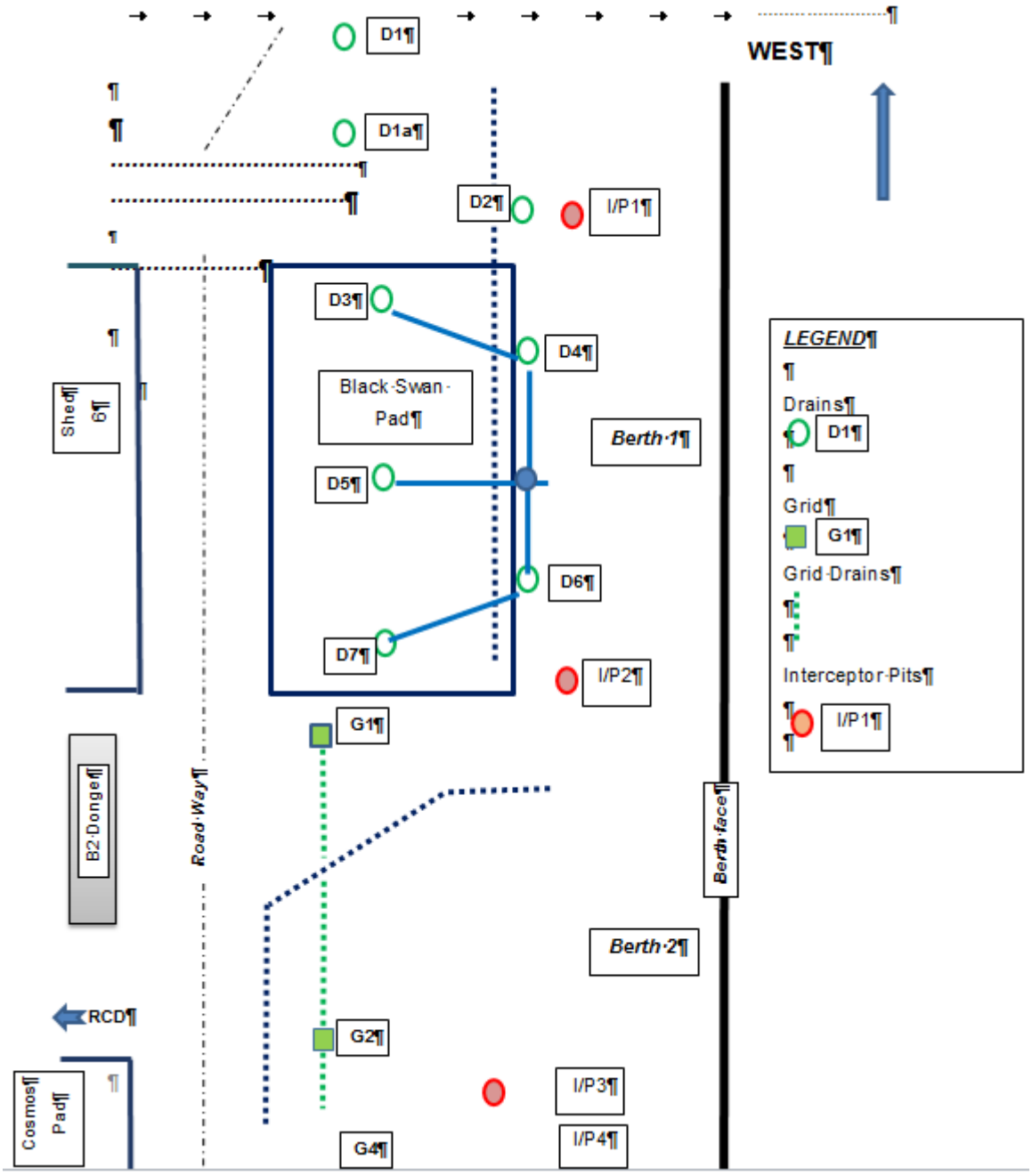


Figure 6 Map of stormwater interceptor pits on Berths 1 and 2 that may receive drainage from areas used for storage of copper and nickel containers

Figure·7·Esampler·positions·around·Berth·2¶