

Transnet Port Terminal - Bulk Terminal Saldanha:

**Draft Environmental Management Programme for
Air Quality Permit Amendment Application**

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Annexure A: Bulk Terminal of Saldanha Environmental Charter

Annexure B: Ballast Water Management Plan for the Port of Saldanha

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1. Introduction

Transnet currently handles between 32 and 45 million tonnes per annum (MTPA) of iron ore at the Iron Ore Handling Facility, Bulk Terminal Saldanha (BTS). Transnet is proposing to increase the throughput of iron ore at the BTS to 60 MTPA by operating the existing infrastructure more efficiently, without the need for construction of any additional infrastructure. The companies supplying iron ore to the IOHF are currently in the process of developing new iron ore mines in the Northern Cape, which are expected to increase the supply of iron ore to the Port to 60 MTPA.

Increasing the throughput of iron ore at the BTS requires an amendment of Transnet's current air quality permit issued in terms of the Atmospheric Pollution and Prevention Act 45 of 1965 (APPA) for the BTS, which allows for the handling of 47 MTPA. A Basic Assessment (BA) was undertaken to investigate and assess the potential impacts resulting from the increase in throughput, to inform the authorisation of the increase in throughput and the associated amendment to the emissions license and to identify management and mitigation measures to prevent or reduce any potential environmental impacts.

The National Environmental Management Act (NEMA) (Act 107 of 1998), as amended, requires that an Environmental Management Programme (EMP) be submitted along with the Basic Assessment Report (BAR) to demonstrate how environmental management and mitigation measures will be implemented. This draft EMP has been compiled by Transnet¹, based largely on the existing environmental management procedures implemented at the BTS as part of the Environmental Management System (EMS) for the facility. This draft EMP aims to ensure that the mitigation measures identified through the BA process are implemented effectively at the BTS to mitigate the environmental potential impacts.

This EMP aims to be consistent with the requirements in terms of NEMA the aims laid out the Transnet SHERQ policy and the BTS Environmental Charter (see Annexure A), which also includes a commitment to continual improvement in the environmental

¹ This EMP was compiled by Msimelelo Silomntu, Environmental Manager at BTS, with input from SRK Consulting.

performance of the operations at the BTS. In this light, this EMP will be regularly reviewed and revised.

This draft EMP will be released for public comment along with the draft BAR, and will be submitted to the Department of Water and Environmental Affairs (DWEA) for approval along with the final BAR.

2. Scope of this EMP

This EMP is applicable to BTS operations, from train offloading activities at the tipplers to the loading of vessels at the ship loading area, and touches on aspects related to the traffic of iron ore vessels in Saldanha Bay. The EMP relates specifically to the proposed increase in throughput of iron ore at the BTS to 60 MTPA.

As required in terms of NEMA, the EMP must provide information on the proposed management, mitigation, protection or remedial measures that will be undertaken to address the environmental impacts that have been identified in the BAR in respect of all relevant phases of the project life cycle, including:

- Planning and design;
- Pre-construction and construction activities;
- Operation or undertaking of the activity in question;
- Rehabilitation of the environment; and
- Closure, if applicable.

For each of the relevant phases of the project, the EMP is required to:

- Provide a description of the aspects of the activity that are covered by the environmental management programme;
- Identify the applicable management measures, allocating roles and responsibilities to various parties for the implementation of the relevant management requirements;
- Where appropriate, specify timeframes within which environmental management requirements would need to be implemented; and
- Propose mechanisms for monitoring and reporting compliance with the EMP; and
- Provide a description of the manner in which it intends to remedy causes of pollution.

As the proposed increase in throughput of iron ore at the BTS does not involve the installation of any additional infrastructure, no design and construction phases are associated with the activity investigated in this BA.

The minimum anticipated life span of the IOHF and all associated infrastructure is 25 to 50 years. As such, decommissioning and rehabilitation have not been investigated in the BA and would require a separate Basic Assessment in terms of the Environmental Impact Regulations GN R386 (listed activity 23).

This document thus deals only with environmental management during the **operational phase** of the proposed project.

This EMP needs to be integrated into the EMS of the BTS that provides the framework for all environmental and related procedures concerning the operations of the BTS.

3. Abbreviations

BA:	Basic Assessment.
BAR:	Basic Assessment Report.
BTS:	Bulk Terminal of Saldanha.
EMS:	Environmental Management System.
EMP:	Environmental Management Programme.
EXCO:	Executive Committee.
IOHF:	Iron Ore Handling Facility.
NEMA:	National Environmental Management Act 107 of 1998, as amended.
NEM:AQA	National Environmental Management: Air Quality Act 39 of 2004.
SHERQ:	Safety Health Environment Risk and Quality.
TPT:	Transnet Port Terminal.
TSP:	Total Suspended Particles.

4. Description of the project and potential impacts

4.1 Brief project description

The ore arrives by train from the mines in the Northern Cape, The number of trains, each carrying approximately 30 780 tonnes of iron ore, is expected to increase from 1 462 per year for a throughput of 45 MTPA to 1 949 per year for 60 MTPA. The trains will be broken up into three rakes (sections) of 114 wagons each at the Salkor Yard, located approximately 5 km north of the port. The individual rakes are then moved on to the tipplers.

The ore is offloaded at two tipplers located at the entrance of the BTS area. The tipplers are housed in a building that is equipped with an extraction system for the dust generated during the tipping of wagons and offloading of ore. The extracted dust is caught in filters and stored in bags for removal from the site. Some residual emissions are released through two stacks from plant.

From the tipplers, the ore is transported via conveyor belts to the stockyards. The conveyor belts are largely covered to prevent the generation of wind-blown dust during the transport of ore on the belt. The transfer points, where the ore is dropped from one conveyor onto the next, are covered and equipped with water sprinklers to moisten the ore and minimize dust generation.

Stacker / reclaimers are used to transfer the ore from the conveyors onto the stockpiles for temporary storage. The ore is stockpiled based on its grade. The stockyards are equipped with water cannons, which are used to moisten the ore and minimize the generation of dust, especially under dry and high wind conditions.

Once an iron ore carrier arrives at the port, ore of the required grade is transferred by the stacker / reclaimers from the stockpiles onto conveyors leading towards the quay. The ore is then transported by conveyor via a sampling plant, where the ore is tested for moisture content and size grading, to the ship loaders at the quay. The ship loaders load the ore from the conveyors into the holds of the iron ore bulk carriers. During loading, the vessels discharge their ballast water to compensate for the weight of the iron ore that is taken on board. The number of ships, each exporting on average

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156 000 tonnes of iron ore, is expected to increase from 288 per year for an export of 45 MTPA to 385 per year for 60 MTPA.

The iron ore handling process described above is also laid out graphically in Figure 1 below.

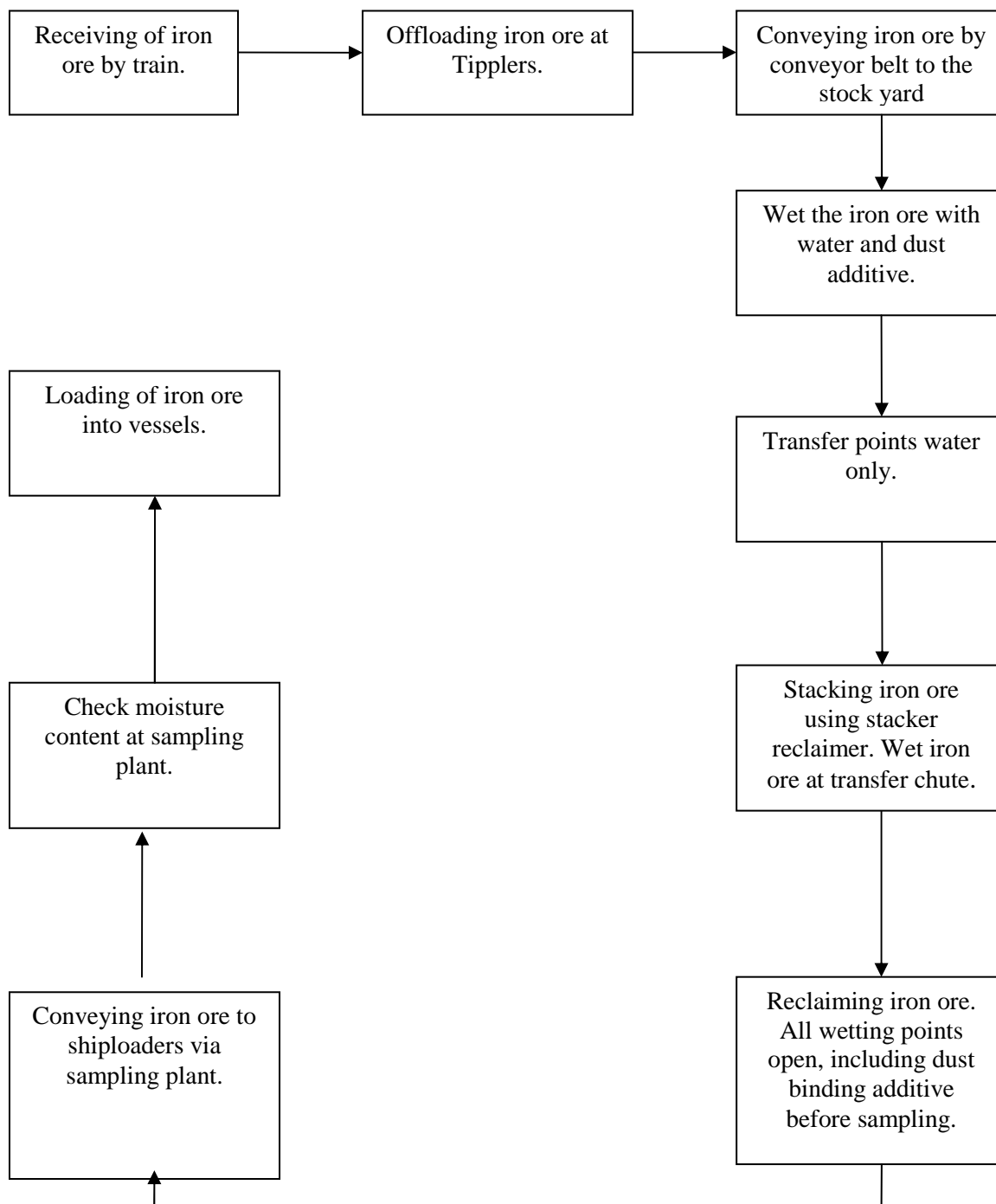


Figure 1: Iron ore handling process at the BTS

4.2 Roles and Responsibilities.

The main roles and responsibilities of *key BTS personnel* with regards to environmental management and the key organisational structure are briefly described and shown below.

BTS Business Unit Executive

The BTS Business Executive oversees all operations at the BTS and is ultimately responsible for the effective implementation of environmental procedures at the facility, including:

- Being accountable for the implementation of all environmental management strategies;
- Defining structures for the implementation of environmental impact management;
- Setting objective and targets for environmental management, and put relevant implementation plans in place;
- Ensuring an effective Environmental Management Plan is in place; and
- Being informed of any legal violation and taking action as required.

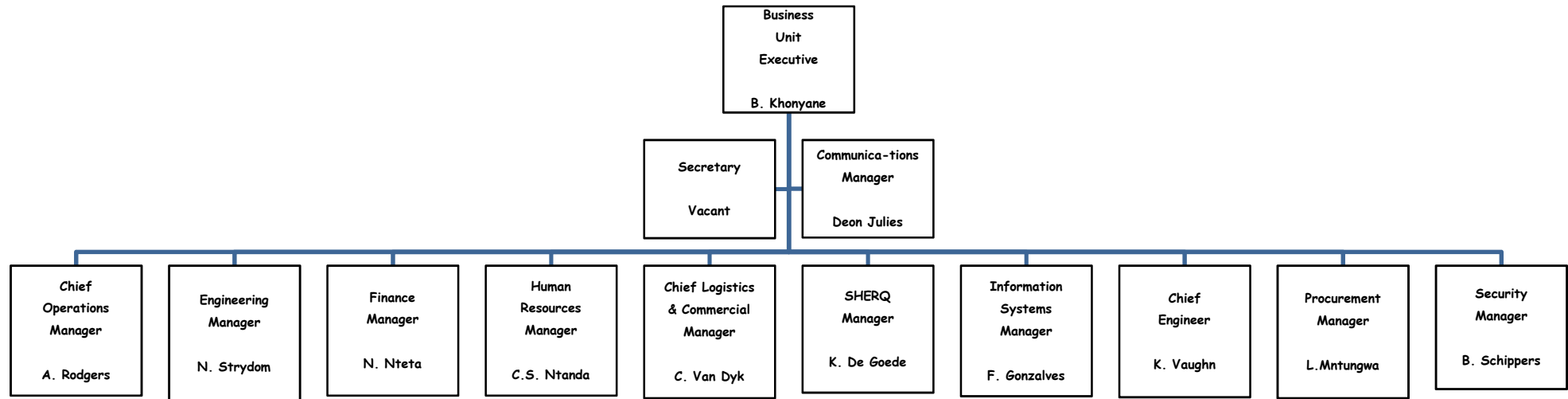


Figure 2: BTS Executive Committee organisational structure

SHERQ Manager

The Safety, Health, Environment, Risk and Quality (SHERQ) Department, headed by the SHERQ Manager who is assisted by the Environmental Manager, is directly responsible for the drafting, review and supervision of environmental procedures at the BTS. The SHERQ Manager shall:

- Ensure that the Environmental Manager has access to all resource required to enable the execution of the Environmental Management function; and
- Be accountable to the BUE for all Environmental Management Activities at BTS.

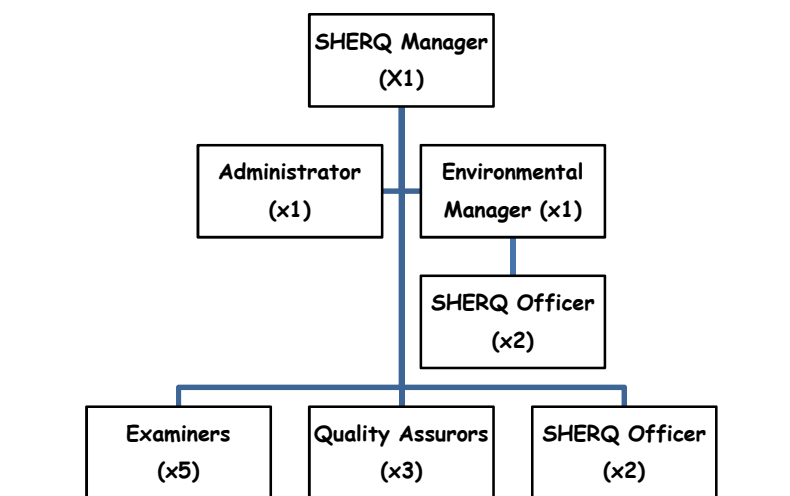


Figure 3: SHERQ Department organisational structure

Environmental Manager

The Environmental Manager is responsible for all environmental management activities on site. Specific responsibilities of the Environmental Manager include:

- Guiding the BTS management team with respect to legal requirements of Operational Activities;
- Monitoring implementation of the EMP and associated mitigation measures and procedures;
- Conducting audits to ensure legal compliance;
- Representing BTS in all Environmental forums in the West Coast region;
- Communicating with the Authorities regarding Environmental Performance at BTS; and

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- Training of personnel and ensuring awareness of Environmental Management requirements.

Chief Operations Manager

The Operations Department, headed by the Chief Operations Manager, is directly responsible for the day-to-day operations at the BTS. As such, this department is central to the effective implementation of environmental procedures during the handling of iron ore at the BTS. The Chief Operations Manager shall:

- Ensure that all Operations Managers have the resources (including training and financial resources) required to implement the relevant environmental management and mitigation requirements.

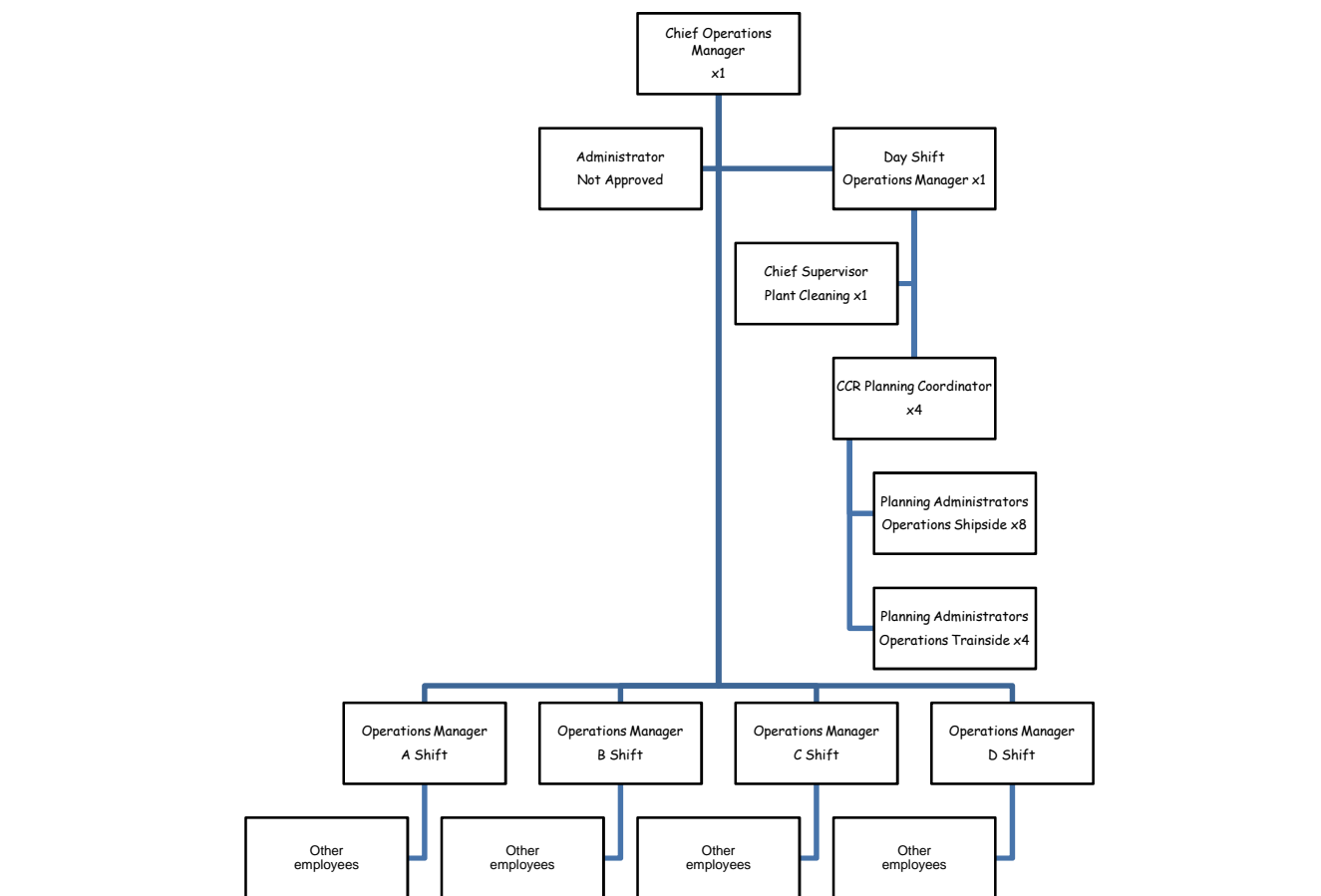


Figure 4: Operations Department organisational structure

Operations Supervisor

The Operational Supervisor shall:

- Ensure that the operation procedures are followed at all times; and
- Give guidance to Operations personnel during the execution of Environmental Impact mitigation e.g. dust suppression, operations of brake wagons, plant cleaning etc.

Temporary Waste Storage Site Manager

The Manager of the temporary waste storage site will be responsible for:

- Managing all waste handling activities, including receiving and temporary storage of waste from the plant, as well as removal of waste from the temporary storage site, for disposal;
- Keeping the waste inventory up to date; and
- Keeping all waste storage and disposal records.

External Contractors

A number of important functions relating to environmental management at the BTS are being performed by *contractors*, including:

- Domestic cleaning contractor
- Scrap paper removal contractor
- Scrap conveyor belt removal contractor
- Scrap metal removal contractor
- Used oil removal contractor
- Hazardous waste removal contractor
- Medical waste removal contractor

A matrix laying out roles and responsibilities pertaining to the general aspects of the Environmental Management System of the BTS is contained in the BTS SHERS Accountabilities, Responsibilities and Management Plan (BTS PRO 004) and not presented here.

4.3 Potential impacts

Although the operational procedures at the BTS would remain the same, a summary of the predicted impacts directly associated with the proposed increase in throughput is presented in Table 1 below. Additional details on the nature of these impacts are provided in the BAR (SRK Consulting Report No: 399449/1; November 2009: *Saldanha Iron Ore Handling Facility: Air Quality Permit Amendment. Draft Basic Assessment Report*).

Table 1: Potential Impacts during the Operations Phase

Potential Impact	Impact significance after mitigation
Dust fallout from the IOHF in surrounding communities	Low (-ve)
Possible health effects on surrounding residents through potential exposure to PM ₁₀ ¹ from the IOHF	Low (-ve)
More frequent noise in surrounding residential areas through more frequent use of equipment at the IOHF	Low (-ve)
Increased interference of iron ore carriers with other shipping traffic in the Bay	Very low (-ve)
Increased <i>risk</i> of oil spills in Saldanha Bay associated with more iron ore carriers	Low (-ve)
Disturbance of Saldanha Bay's marine ecosystem from increased ballast water discharge from iron ore carriers	Very low (-ve)
Additional generation of wealth for South Africa	High (+ve)

These impacts, as well as a number of other aspects of the operations that are mentioned in the BAR and will require the implementation of specific mitigation measures and ongoing management to reduce potential effects on the environment, are dealt with in this EMP.

5. Operational environmental management requirements

BTS has a number of environmental management procedures that will be implemented during the handling of iron ore and which are laid out in detail below. Note that these management procedures have been based on the existing management procedures implemented at BTS, but have been updated to reflect additional mitigation measures or management requirements identified through the BA process.

¹ Particulate matter with an aerodynamic diameter of 10 microns or less that can be inhaled into the lungs.



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As laid out in Section 2 of this draft EMP, the management procedures listed below identify the applicable management measures, allocate roles and responsibilities to various parties for the implementation of the relevant management requirements, propose mechanisms for monitoring and reporting compliance with the EMP and, where applicable, provide a description of the manner in which causes of pollution are intended to be remedied.

5.1 Air quality management

5.1.1 Dust suppression

Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
General	D1	<ul style="list-style-type: none"> Inform the BTS EXCO Team of any changes to the dust suppression procedure and/or BTS Dust Management Policy. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Review official communication between departments periodically. Monthly Environmental Committee reviews on BTS performance on dust management 	<ul style="list-style-type: none"> Correct Dust Suppression Procedure is being implemented
	D2	<ul style="list-style-type: none"> Conduct a full investigation of any dust generation incident during operations. 	<ul style="list-style-type: none"> Operations manager and Environmental Manager 	<ul style="list-style-type: none"> Review investigation process in the event of an incident 	<ul style="list-style-type: none"> Established causes of and reduced dust incidents
	D3	<ul style="list-style-type: none"> Conduct biannual performance audits on staff that have been appointed to manage the various dust control and mitigation systems. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Maintain record of audits and present to Environmental Committee 	

¹ Unless otherwise noted, these are to be implemented by the Environmental Officer.

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
Ore handling	D4	<ul style="list-style-type: none"> • Ensure that the watering points and, if necessary, application system for dust binding chemicals along the conveyors are fully operational at all times² during the conveying of ore on the route used: <ul style="list-style-type: none"> – Check that the chemical dosing plant outside the tippler (if ore is conveyed from the tippler to the stockpile) or outside the sampling plant (if ore is conveyed from the stockpile to the ship loader) is functional before conveyors are being used; – Check that the sprayers at the stackers and conveyor transfer points have been switched on and are working as soon as ore is being transported on the conveyor. Switch them on if necessary; – Ensure that the mist sprayers at transfer points on an operational route are fully functional during the conveying of ore on that route; and – Activate the use of the emergency wetting points at point J should there be any dust visible at the ship loaders. 	<ul style="list-style-type: none"> • Operations supervisor 	<ul style="list-style-type: none"> • Daily visual inspection of the conveyor lines and dust suppression measures during the conveying of ore 	<ul style="list-style-type: none"> • No visible dust from anywhere on the transport line
	D5	<ul style="list-style-type: none"> • For fine ore types (NF and AF), only switch on the watering points on the conveyors if the ore is unusually dry and creating dust. 	<ul style="list-style-type: none"> • Operations supervisor 	<ul style="list-style-type: none"> • Daily visual inspection of the conveyor lines and dust suppression measures during the conveying of ore 	<ul style="list-style-type: none"> • No visible dust from anywhere on the transport line
	D6	<ul style="list-style-type: none"> • Maintain a minimum iron ore moisture content of 1.2%, as measured at the sampling plant. 	<ul style="list-style-type: none"> • Operations supervisor 	<ul style="list-style-type: none"> • Daily review of records from the sampling plant 	

² Fine ore is high in moisture and additional water application might not be required.

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
	D7	<ul style="list-style-type: none"> Conduct at least monthly measurements of iron ore moisture at other points of the handling chain, including: <ul style="list-style-type: none"> The conveyor belt leaving the tippler; and At the ship loaders to ensure that the iron ore moisture is at least 1.2%. 	<ul style="list-style-type: none"> Operations Manager 	<ul style="list-style-type: none"> Review records of additional sampling 	<ul style="list-style-type: none"> No iron ore moisture levels below 1.2% pass the sampling plant
	D8	<ul style="list-style-type: none"> Conduct quarterly audits of the water sprayers and systems to ensure that they are in good working condition. 	<ul style="list-style-type: none"> Environmental officer 	<ul style="list-style-type: none"> Maintain record of audit 	<ul style="list-style-type: none"> Water sprayers in working order at all times
	D9	<ul style="list-style-type: none"> Report any damage to covers on conveyor belt or transfer points to the Maintenance Department immediately. 	<ul style="list-style-type: none"> BTS employees on duty 	<ul style="list-style-type: none"> Weekly visual inspection of conveyor and transfer point covers 	<ul style="list-style-type: none"> Covers on operational conveyors and transfer points are in good condition
	D10	<ul style="list-style-type: none"> Repair any damage to covers on conveyor belt or transfer points as soon as possible and do not use the belt / transfer point until the damage has been repaired. 	<ul style="list-style-type: none"> Maintenance department Operations supervisor 	<ul style="list-style-type: none"> Weekly visual inspection of conveyor and transfer point covers 	<ul style="list-style-type: none"> Covers on operational conveyors and transfer points are in good condition
	D11	<ul style="list-style-type: none"> Re-install conveyor covers and wind shields after conveyor maintenance. 	<ul style="list-style-type: none"> Conveyor belts maintenance manager 	<ul style="list-style-type: none"> Weekly visual inspection of conveyor and transfer point covers 	<ul style="list-style-type: none"> Covers on operational conveyors and transfer points are in good condition
	D12	<ul style="list-style-type: none"> Consult the Kumba and Assmang before completing the wetting plan for the stockpiles. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> Audit wetting plan 	

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
	D13	<ul style="list-style-type: none"> Submit the completed copies of the wetting plan to the SHERQ department. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> Audit wetting plan 	<ul style="list-style-type: none"> Wetting plan implemented as per Estimated Time of Arrival (ETA) of vessels No dust generated from reclaiming activities
	D14	<ul style="list-style-type: none"> Incorporate the stockpile wetting plan into the operational work plan. 	<ul style="list-style-type: none"> Operations Department 	<ul style="list-style-type: none"> Wetting of the stockpiles done according to the ETA of vessels 	<ul style="list-style-type: none"> All stockpiles wet before reclaiming (except fine ore stockpile) No dust generated
	D15	<ul style="list-style-type: none"> Inform Environmental Manager of any changes in the operational planning that might affect the dust suppression process, such as: <ul style="list-style-type: none"> Anticipated change in ore delivery or export volumes; and Change in equipment used to stock, reclaim or transport ore. 	<ul style="list-style-type: none"> Operations Manager 	<ul style="list-style-type: none"> Review official communication between departments periodically 	
	D16	<ul style="list-style-type: none"> Commence wetting of stockpiled lumpy ore at least 24 hours prior to reclaiming if the ore has been stockpiled in dry weather for more than 8 hours. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> Visually inspect stockpiles from which ore will be reclaimed within the next 8 hours to check that wetting is taking place 	
	D17	<ul style="list-style-type: none"> Apply moisture to stockpiled ore for at least 5 min or longer, depending on ore type and weather conditions, to ensure sufficient penetration of moisture. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> Note start time of wetting and ore / weather conditions 	

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
	D18	<ul style="list-style-type: none"> Apply all necessary dust suppression techniques when ore is transported by front-end loaders, bobcat or tipper trucks. These include: <ul style="list-style-type: none"> Wetting the road along the travel route before the truck passes; Using the sweeper truck immediately should the transportation of ore result in spillages; and Applying dust additive to the wetting truck to ensure prolonged dust suppression. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> Observe ore transport by front-end loaders, bobcat or tipper trucks 	<ul style="list-style-type: none"> No dust resulting from transporting of ore
Corrective actions	D19	<ul style="list-style-type: none"> Immediately inform Operations control when any dust generated by ore handling activities has been noted or reported. 	<ul style="list-style-type: none"> Environmental Officer, operations supervisors, ship loader and stacker / reclaimer operators 	<ul style="list-style-type: none"> Keep record of actions taken during a dust incident 	
	D20	<ul style="list-style-type: none"> In the case of dust generation incidents, advise the Operations manager on actions to minimise dust. These include: <ul style="list-style-type: none"> Identifying the source of the dust emission; and Reinstating effective dust mitigation immediately; or Temporarily shutting down the relevant operation (e.g. the affected conveyor, transfer point etc) until mitigation can be reinstated / the dust emission eliminated. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Keep record of actions taken during a dust incident 	<ul style="list-style-type: none"> Reduction in dust emission within an hour of a dust incident being noted.
	D21	<ul style="list-style-type: none"> In the case of dust generation incidents, immediately implement actions to minimise dust as advised by the Environmental Manager. 	<ul style="list-style-type: none"> Operations manager 	<ul style="list-style-type: none"> Review actions taken by operations manager and their effectiveness in reducing / eliminating dust 	<ul style="list-style-type: none"> Reduction in dust emission within an hour of a dust incident being noted.
BTS housekeeping	D22	<ul style="list-style-type: none"> Sweep / clean all paved surfaces within the BTS daily. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Weekly check of cleaning activity records 	<ul style="list-style-type: none"> Surfaces are clear of dust and spilled ore.



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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
	D23	<ul style="list-style-type: none"> Have cleaning teams on standby at all times. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Weekly check of cleaning activity records 	
	D24	<ul style="list-style-type: none"> Use the vacuum truck in areas of the BTS: <ul style="list-style-type: none"> That are not easily accessible; Where there is an accumulation of dust (such as transfer points, tippler vault and dust plant areas); and That form part of the quay. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Weekly visual inspection of vacuum truck use 	<ul style="list-style-type: none"> Relevant areas are kept clear of dust and spilled ore.
	D25	<ul style="list-style-type: none"> Immediately collect the swept up material and move to the spilled ore temporary storage site it so that it cannot generate dust. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> At least weekly visual inspection of swept areas 	<ul style="list-style-type: none"> Relevant areas are kept clear of dust and spilled ore.
	D26	<ul style="list-style-type: none"> Ensure that no dust is generated during the emptying of the vacuum truck. This includes not emptying the truck during high wind conditions, and taking advantage of calm conditions to empty the truck even if not full. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Occasional visual inspection of truck being emptied 	
	D27	<ul style="list-style-type: none"> Remove iron ore spillages within 24 hours and take the material to the spilled ore temporary storage site. Remove spillages at the quay first and ensure that no ore reaches the sea. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Daily visual inspection of BTS for spillages Record spillages that have not been removed Regularly report to BTS management on the efficiency of cleaning 	
	D28	<ul style="list-style-type: none"> Ensure that fogging sprays at the belt turnover points are operational at all times. 	<ul style="list-style-type: none"> Operations supervisor 	<ul style="list-style-type: none"> At least weekly visual inspection of sprays 	
	D29	<ul style="list-style-type: none"> Remove the slag underneath the belt turnover points every 5 days to allow ore to dry. 	<ul style="list-style-type: none"> Operations plant cleaning team 	<ul style="list-style-type: none"> Weekly visual inspection of slabs 	

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ¹	Performance Indicators
	D30	<ul style="list-style-type: none"> Service the vacuum and sweeper trucks every 4 weeks. Immediately repair any damages to avoid down time of the vehicles. 	<ul style="list-style-type: none"> Maintenance department 	<ul style="list-style-type: none"> Check of maintenance record 	
	D31	<ul style="list-style-type: none"> If either the sweeper or vacuum trucks are not operational, continue the daily plant cleaning with the other available vehicle or hire a suitable replacement vehicle. 	<ul style="list-style-type: none"> Operations department 		<ul style="list-style-type: none"> Suitable sweeper and vacuum trucks/vehicles on site at all times.
	D32	<ul style="list-style-type: none"> Assign a person to undertake daily inspections of housekeeping practices, to identify potential sources of dust and spills that need to be cleaned up and to ensure cleanup. 	<ul style="list-style-type: none"> Environmental officer 	<ul style="list-style-type: none"> Maintain daily record of site inspection 	
Dust extraction plant at tippers	D33	<ul style="list-style-type: none"> Ensure that the dust extraction plant at the tippers is working at all times as per the conditions of the operations permit (limiting stack emissions to 25 mg/Nm³). 	<ul style="list-style-type: none"> Maintenance department 	<ul style="list-style-type: none"> Perform weekly checks of tippler emissions and record these 	<ul style="list-style-type: none"> Stack emissions at tippers do not exceed 25 mg/Nm³
	D34	<ul style="list-style-type: none"> Aim to operate the dust extraction plant at the tippers to its design specifications, with emissions of approximately 10 mg/Nm³. 	<ul style="list-style-type: none"> Maintenance department 	<ul style="list-style-type: none"> Perform weekly checks of tippler emissions and record these 	<ul style="list-style-type: none"> Reduction in stack emissions at tippers, below the required levels of 25 mg/Nm³
	D35	<ul style="list-style-type: none"> Remove dust from the silo into dust bags, and move dust bags from the dust extraction plant to the dust temporary storage site. 	<ul style="list-style-type: none"> Operations department 	<ul style="list-style-type: none"> Keep record of dust bagging and removal 	
	D36	<ul style="list-style-type: none"> Inform the Procurement Manager when the dust temporary storage site reaches capacity to notify the designated buyer of the iron ore dust to collect the material. 	<ul style="list-style-type: none"> Environmental department 	<ul style="list-style-type: none"> Keep record of dust bagging and removal 	
	D37	<ul style="list-style-type: none"> If tippler dust extraction system is not functional, wet all lumpy ore at the wagons prior to tipping, as per the Iron Ore Channel Work Instruction on Iron Ore Handling IOC WI 004. 	<ul style="list-style-type: none"> Operations Supervisor 	<ul style="list-style-type: none"> Perform checks of tippler dust extraction system or alternative sprinklers before tipping 	

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5.1.2 Air quality monitoring

Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ³	Performance Indicators
Audits of Air Quality Monitoring System	A1	<ul style="list-style-type: none"> Appoint independent auditors to conduct biannual audits of the air quality monitoring systems and implementation of operational management plans to ensure that the system is being maintained properly and that the outputs of the monitoring system are providing suitable data for support in decision making. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Keep records of audits and outcomes Report to Environmental Steering Committee and Environmental Management Committee on Dust Monitoring 	<ul style="list-style-type: none"> Records of audits
	A2	<ul style="list-style-type: none"> Implement recommendations of the auditors within the timeframes specified in the audit report. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Conduct internal audit on implementation of audit recommendations 	<ul style="list-style-type: none"> Documented responses to non-compliances identified in the audits
Dust and PM₁₀ monitoring	A3	<ul style="list-style-type: none"> Appoint a dust monitoring service supplier to monitor and analyse dust and air quality as stipulated below. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Regularly review that contracts with dust monitoring service supplier have been renewed 	<ul style="list-style-type: none"> A dust monitoring service supplier is appointed at all times Records of dust monitoring outputs at the agreed frequency
	A4	<ul style="list-style-type: none"> Conduct continuous monitoring of the following: <ul style="list-style-type: none"> Blue Water Bay – dust fallout, PM₁₀ and Total Suspended Particles (TSP); Vredenburg – dust fallout, PM₁₀ and TSP; Langebaan – dust fallout, PM₁₀ and TSP; NPA building – dust fallout and PM₁₀; and Port Jetty – dust fallout and PM₁₀. 	<ul style="list-style-type: none"> Dust monitoring service supplier 	<ul style="list-style-type: none"> Record monitoring results and check daily for completeness 	<ul style="list-style-type: none"> Relevant records of dust monitoring outputs at each of the monitoring stations

³ Unless otherwise noted, these are to be implemented by the Environmental Officer.

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ³	Performance Indicators
	A5	<ul style="list-style-type: none"> Use PM₁₀ monitoring units that transmit the results electronically to a logging computer accessible to the BTS Environmental department. Use flux type monitors that monitor the TSP. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Confirm units in use comply with requirements 	
	A6	<ul style="list-style-type: none"> Review air quality monitoring protocol quarterly, in consultation with air quality monitoring specialists, to determine whether the location of the air quality monitors is suitable to monitor the emissions from the BTS and their contribution to air quality in the communities. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Record reviews in the quarterly Dust Monitoring Reports 	
	A7	<ul style="list-style-type: none"> Conduct weekly monitoring of the tippler dust extraction plant stack emissions. 	<ul style="list-style-type: none"> Dust monitoring service supplier 	<ul style="list-style-type: none"> Record monitoring results and check for completeness 	<ul style="list-style-type: none"> Monitoring reports filed, and resulting actions documented
	A8	<ul style="list-style-type: none"> Compile quarterly and annual Dust Monitoring Reports and submit these to the Environmental Manager. 	<ul style="list-style-type: none"> Dust monitoring service supplier 	<ul style="list-style-type: none"> Check reports and identify problems so that actions can be taken. 	<ul style="list-style-type: none"> Quarterly and annual reports filed, and resulting actions documented.
	A9	<ul style="list-style-type: none"> Analyse the dust monitoring data immediately upon receipt to determine whether any guidelines have been exceeded. In the case of an exceedance, fill in an Incident / Condition Logging Form as defined in Annexure 5, BTSE SHEQ PRO 016. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Record outcomes of the analysis and file together with the reports 	<ul style="list-style-type: none"> Monitoring reports filed, and resulting actions documented
	A10	<ul style="list-style-type: none"> Submit a copy of the quarterly and annual Dust Monitoring Reports to the local authority. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Maintain record of submissions 	
	A11	<ul style="list-style-type: none"> Advise the dust monitoring service supplier of any changes to the DWEA guideline limits regarding air quality. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> In the case of changes, keep record of communication with the service provider 	<ul style="list-style-type: none"> Monitoring and reporting are done against the correct guidelines

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ³	Performance Indicators
	A12	<ul style="list-style-type: none"> Aim to comply with the air quality targets of the SANS 1929: 2004 guideline. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Check monitoring results daily and determine if / where improvements are required 	
	A13	<ul style="list-style-type: none"> Report to the Environmental Steering Committee Meeting and the Environmental Management Committee on Dust Monitoring on a monthly basis. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Maintain record of submissions 	
	A14	<ul style="list-style-type: none"> Monitor in real time the PM₁₀ concentrations measured by the air quality monitoring units. Programme stations to send an automatic alert if levels exceed certain thresholds that are linked to the results from the air quality modelling and indicate that mitigation may not be working effectively at the Port, e.g. if: <ul style="list-style-type: none"> The maximum daily PM₁₀ level exceeds 75 µg/m³ at the community monitoring units⁴. 	<ul style="list-style-type: none"> Environmental officer 	<ul style="list-style-type: none"> Check monitoring results daily and determine if any alerts were missed 	
	A15	<ul style="list-style-type: none"> Aim to identify additional or improve on existing dust suppression measures to further reduce dust emissions from the BTS. 	<ul style="list-style-type: none"> Environmental officer 		
Corrective action	A16	<ul style="list-style-type: none"> If the above thresholds are reached, or the daily guideline limit for PM₁₀ in terms of NEM:AQA (currently 180 µg/m³) is exceeded at any of the community receptors (Blue Water Bay, Vredenburg or Langebaan) on any particular day⁵, evaluate immediately if the source could be due to an activity at the BTS and fill in an Incident / Condition Logging Form as defined in Annexure 5, BTSE SHEQ PRO 016. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Keep record of forms together with monitoring results 	

⁴ This is the maximum daily limit in terms of SANS 1929:2004, which is expected to become the legal limit in terms of NEM:AQA.

⁵ Note that only three exceedances are allowed per year.

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ³	Performance Indicators
	A17	<ul style="list-style-type: none"> If the evaluation shows that BTS is the possible source of the high dust / PM₁₀ concentration, take immediate actions to minimise dust / PM₁₀ levels. These include: <ul style="list-style-type: none"> Identifying the source within BTS of the dust emission; and Reinstating effective dust mitigation immediately; or Temporarily shutting down the relevant operation (e.g. the conveyor, transfer point etc) until mitigation can be reinstated / the dust emission eliminated. 	<ul style="list-style-type: none"> Environmental officer / Operations manager 	<ul style="list-style-type: none"> In the case of an incident, keep a record of corrective actions taken and effect thereof on measured dust and PM₁₀ concentrations 	
Maintenance of dust monitoring equipment	A18	<ul style="list-style-type: none"> Ensure that stack monitoring units are fully functional at all times by inspecting them weekly. 	<ul style="list-style-type: none"> Maintenance department (Electronics) 	<ul style="list-style-type: none"> Check inspection records monthly 	
	A19	<ul style="list-style-type: none"> Report any faults to the stack monitoring units to the Environmental Manager. Initiate repairs to the units as soon as possible. 	<ul style="list-style-type: none"> Maintenance department (Electronics) 	<ul style="list-style-type: none"> Maintain record of faults and repairs 	
	A20	<ul style="list-style-type: none"> Ensure that the monitoring stations remain in good working order and record at least 80% of the data. Physically check the monitors twice a week to ensure they are functioning properly. Notify the Maintenance department immediately if any fault is detected or suspected. 	<ul style="list-style-type: none"> Dust monitoring service supplier 	<ul style="list-style-type: none"> Report in the quarterly Dust Monitoring Reports what % of data was recorded 	<ul style="list-style-type: none"> Valid data recorded for a minimum of 80% of the time
	A21	<ul style="list-style-type: none"> Check the computer receiving the monitoring data daily to make sure all data are correctly recorded. Notify the Maintenance department immediately if any fault is detected or suspected. 	<ul style="list-style-type: none"> Environmental officer 		
	A22	<ul style="list-style-type: none"> Repair and / or (temporarily) replace units that have failed within 48 hours to minimise the loss of data. 	<ul style="list-style-type: none"> Maintenance department 	<ul style="list-style-type: none"> Keep record of repairs to and replacement of units 	

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Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods ³	Performance Indicators
	A23	<ul style="list-style-type: none"> Aim to capture 95% of the data by regularly checking and immediately repairing and / or (temporarily) replacing units that have failed. 	<ul style="list-style-type: none"> Environmental officer 	<ul style="list-style-type: none"> Report in the quarterly Dust Monitoring Reports what % of data was recorded 	<ul style="list-style-type: none"> Valid data recorded for more than the minimum of 80% of the time
	A24	<ul style="list-style-type: none"> Calibrate monitors once a year. 	<ul style="list-style-type: none"> Environmental officer 	<ul style="list-style-type: none"> File and audit calibration certificates 	

5.2 Stormwater management

Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods	Performance Indicators
Stormwater management	S1	<ul style="list-style-type: none"> Ensure all stormwater from the site is directed towards the evaporation ponds. 	<ul style="list-style-type: none"> Civil Engineering Department 	<ul style="list-style-type: none"> Visually monitor any stormwater ponding on site, or flowing into the sea. 	<ul style="list-style-type: none"> No stormwater ponding on site, or flowing into the sea.
	S2	<ul style="list-style-type: none"> Monitor sedimentation formed on the surface of the evaporation ponds, using stormwater feeding platform as the indicator of the sedimentation level. Sedimentation should not be higher than the storm water feeding platform. 	<ul style="list-style-type: none"> Civil Engineering Department 	<ul style="list-style-type: none"> Check the sedimentation height in relation to the storm water feeding platform 	<ul style="list-style-type: none"> Sedimentation level below stormwater feeding platform
	S3	<ul style="list-style-type: none"> Where sedimentation has accumulated and has exceeded the height of the stormwater feeding platform, remove sediments when the evaporation pond is dry and dispose of sediments at the hazardous waste dump. 	<ul style="list-style-type: none"> Stormwater pond maintenance Contractor 	<ul style="list-style-type: none"> Keep proof of disposal on file 	<ul style="list-style-type: none"> Keep records of cleaning and disposal invoices on file

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5.3 Noise management

Management Aspect	ID	Mitigation measure / Procedure	Responsible	Monitoring Methods	Performance Indicators
Noise Management	N1	<ul style="list-style-type: none"> Ensure that brake wagons are coupled to the train after the first 22 wagons have been tipped. 	<ul style="list-style-type: none"> Operations Supervisor 	<ul style="list-style-type: none"> Physically check proper coupling of brake wagons to the train. Maintain checklist to ensure no deviation to the work instruction 	<ul style="list-style-type: none"> Use of brake wagons as required
	N2	<ul style="list-style-type: none"> Allow the train to be offloaded with brake wagons braking system on until the whole train has been offloaded and parked. The braking system will be taken off when the train is returned to the return point. 	<ul style="list-style-type: none"> Operations Supervisor 	<ul style="list-style-type: none"> Shunting check list on the uncoupling process 	<ul style="list-style-type: none"> Use of braking system as required Number of incidents on railway safety regarding coupling and uncoupling of wagons
	N3	<ul style="list-style-type: none"> Ensure that maintenance plans are in place, and implemented for all brake wagons. 	<ul style="list-style-type: none"> Maintenance Manager 	<ul style="list-style-type: none"> Planned Maintenance Schedule 	<ul style="list-style-type: none"> Limited down time of brake wagons
	N4	<ul style="list-style-type: none"> Test & monitor the effectiveness of the brake wagon noise abatement system at BTS and in the neighbouring community. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Noise Monitoring Schedule 	<ul style="list-style-type: none"> Annual Noise Report
	N5	<ul style="list-style-type: none"> Investigate and implement alternative noise mitigation measures if brake wagons to not reduce noise in surrounding communities to acceptable levels. 	<ul style="list-style-type: none"> Environmental Manager 	<ul style="list-style-type: none"> Noising monitoring Schedule 	<ul style="list-style-type: none"> Complaints regarding noise from surrounding communities.

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5.4 Waste management

Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
General	W1	<ul style="list-style-type: none"> Inform cleaning contractors of their responsibilities in terms of the EMP. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Contractors sign that they have received induction and OEMP. Regularly audit that all contractors have signed induction register. 	
	W2	<ul style="list-style-type: none"> Notify Procurement Department and the relevant waste removal contractor when waste has to be removed from temporary storage sites within the BTS. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites 	<ul style="list-style-type: none"> Waste removed before site capacity is exceeded
	W3	<ul style="list-style-type: none"> Ensure that all waste removal contractors comply with the Waste Act of 2008. 	<ul style="list-style-type: none"> Environmental Officer and Procurement Department 	<ul style="list-style-type: none"> Check truck licences Annual inspection of landfill permit Annual inspection of permit for transportation of waste 	<ul style="list-style-type: none"> All waste is collected by licensed contractors and disposed of at licensed disposal sites / recycling facilities
	W4	<ul style="list-style-type: none"> Issue safe disposal certificates for the waste removed from the BTS. 	<ul style="list-style-type: none"> Waste removal contractors 	<ul style="list-style-type: none"> Quarterly audit of certificates 	<ul style="list-style-type: none"> All removed waste is accounted for by safe disposal certificates
	W5	<ul style="list-style-type: none"> Retain safe disposal certificates and Waste Removal and Process Information Forms from contractors for the life time of the BTS operation. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Quarterly audit of certificates 	
Scrap paper and cardboard	W6	<ul style="list-style-type: none"> Collect waste paper generated by all departments and facilities in scrap paper bins. 	<ul style="list-style-type: none"> Person generating the waste 		<ul style="list-style-type: none"> No visible paper litter No paper in general waste bins

⁶ Unless otherwise noted, these are to be implemented by the Environmental Officer.



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Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
	W7	<ul style="list-style-type: none"> Provide each facility with scrap paper bins. 	<ul style="list-style-type: none"> Domestic Cleaning Contractor 		
	W8	<ul style="list-style-type: none"> Check paper bins on a daily basis. Remove paper from bins to the scrap paper temporary storage area. 	<ul style="list-style-type: none"> Domestic Cleaning Contractor 	<ul style="list-style-type: none"> Checklist of contractor supervisor 	
	W9	<ul style="list-style-type: none"> Notify the waste paper removal contractor when the temporary scrap paper storage area reaches capacity, for removal of the scrap paper to a recycling facility. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites 	<ul style="list-style-type: none"> Waste removed before site capacity is exceeded
Scrap conveyor belt rubber	W10	<ul style="list-style-type: none"> Collect and remove all conveyor belt waste generated during the splicing process to the scrap conveyor temporary storage site. 	<ul style="list-style-type: none"> Waste removal contractors 	<ul style="list-style-type: none"> Visual inspection of areas around conveyors 	<ul style="list-style-type: none"> All conveyor belt waste stored in designated area
	W11	<ul style="list-style-type: none"> Notify the scrap conveyor belt removal contractor to collect the scrap conveyor belt rubber for recycling when the temporary storage site reaches capacity. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites Obtain proof of delivery to a recycling facility 	<ul style="list-style-type: none"> Waste removed before site capacity is exceeded All removed waste is accounted for by recycling facility certificate
Scrap metal	W12	<ul style="list-style-type: none"> Separate all ferrous and non-ferrous scrap metal at source and place them in labelled and colour coded skips if they can be handled by personnel. This includes empty workshop holding bins. Only use designated waste skips. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of work areas Weekly inspection of scrap metal temporary storage site 	<ul style="list-style-type: none"> No scrap metal is lying around No scrap metal is in general waste bins
	W13	<ul style="list-style-type: none"> Move all workshop holding bins to the temporary storage site. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of work areas 	
	W14	<ul style="list-style-type: none"> Remove larger and more difficult pieces of scrap metal by truck and crane. 	<ul style="list-style-type: none"> Scrap metal contractor 	<ul style="list-style-type: none"> Supervision of removal of large pieces 	



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Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
	W15	<ul style="list-style-type: none"> Notify the scrap metal removal contractor to collect the scrap metal for recycling when the temporary storage site reaches capacity or when large pieces need to be collected 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites Obtain proof of delivery to a recycling facility 	<ul style="list-style-type: none"> Waste removed before site capacity is exceeded All removed waste is accounted for by recycling facility certificate
Used oil	W16	<ul style="list-style-type: none"> Store all used oil in sealed and labelled containers at the designated stations. 	<ul style="list-style-type: none"> Person generating the waste 	<ul style="list-style-type: none"> Weekly inspection of designated stations 	
	W17	<ul style="list-style-type: none"> Transport all used oil containers to the temporary storage site weekly. 	<ul style="list-style-type: none"> Maintenance department 	<ul style="list-style-type: none"> Weekly inspection of designated stations 	
	W18	<ul style="list-style-type: none"> Notify contractor to remove used oil containers as soon as the site has reached capacity or at least on a monthly basis. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste site Record dates of arrival and removal of used oil at temporary storage site 	
	W19	<ul style="list-style-type: none"> Ensure that all equipment and facilities required for the collection, containment, control and disposal of oil complies with current environmental legislation. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste site and work areas External audit 	
	W20	<ul style="list-style-type: none"> Report oil spills at the BTS according to the Incident Reporting Procedure BTSE SHEQ PRO 016. 	<ul style="list-style-type: none"> First person at the scene of the spill 	<ul style="list-style-type: none"> Following an incident, check that correct procedure was followed 	<ul style="list-style-type: none"> No evidence of unmitigated oil spills on site
	W21	<ul style="list-style-type: none"> Initiate clean-up of the spilled oil. 	<ul style="list-style-type: none"> Relevant line manager 	<ul style="list-style-type: none"> Following an incident, inspect clean-up operation and result 	<ul style="list-style-type: none"> No evidence of unmitigated oil spills on site



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Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
Conventional / domestic waste	W22	<ul style="list-style-type: none"> Place all general / domestic waste in refuse bins. 	<ul style="list-style-type: none"> Person generating the waste 		
	W23	<ul style="list-style-type: none"> Provide each facility with refuse bags. 	<ul style="list-style-type: none"> Domestic Cleaning Contractor 		
	W24	<ul style="list-style-type: none"> Collect refuse bags at each facility on a daily basis and transport collected refuse bags to the domestic waste temporary storage site. 	<ul style="list-style-type: none"> Domestic Cleaning Contractor 	<ul style="list-style-type: none"> Checklist of contractor supervisor 	
	W25	<ul style="list-style-type: none"> Ensure that the Municipality collects domestic waste from the temporary storage site three times per week, as per the Transnet Service Level Agreement with the Municipality. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Check removal records. Weekly inspection of storage site. 	
Hazardous waste	W26	<ul style="list-style-type: none"> Correctly package and label hazardous waste. 	<ul style="list-style-type: none"> Person generating the waste 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	
	W27	<ul style="list-style-type: none"> Ensure that all hazardous waste storage sites, bins and bags are painted yellow and labelled. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	
	W28	<ul style="list-style-type: none"> Ensure that all persons handling hazardous waste are equipped with and use Personal Protective Equipment. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of storage site. 	<ul style="list-style-type: none"> No reports of incidents involving hazardous waste
	W29	<ul style="list-style-type: none"> Develop a hazardous waste inventory. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Quarterly audit of inventory 	
	W30	<ul style="list-style-type: none"> Maintain waste removal record with date, waste type, removal company, volume or mass and name of driver with signatures 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Quarterly inspection of record 	
	W31	<ul style="list-style-type: none"> Ensure that the hazardous waste temporary storage site has concreted floors with bund walls to prevent the pollution of soil and groundwater. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	
	W32	<ul style="list-style-type: none"> Store different <i>chemical</i> wastes separately from each other. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	



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Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
	W33	<ul style="list-style-type: none"> Cover asbestos waste in double layer impermeable material sealed with tape to avoid fibres from breaking off before transporting it to the hazardous waste temporary storage site. Place sealed asbestos chunks in labelled drums. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	
	W34	<ul style="list-style-type: none"> Store waste <i>batteries</i> in sealed and clearly labelled drums separately from other chemicals to prevent possible chemical reactions, fires or toxic fumes. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of storage sites. 	
	W35	<ul style="list-style-type: none"> Return car battery acid to the supplier in the original containers. 	<ul style="list-style-type: none"> Electrical maintenance manager and Procurement 	<ul style="list-style-type: none"> Quarterly inspection of storage site records. 	
	W36	<ul style="list-style-type: none"> Notify the hazardous waste removal contractor to collect the hazardous waste for disposal when the temporary storage site reaches capacity. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites Obtain proof of delivery to a licensed hazardous waste disposal facility 	<ul style="list-style-type: none"> Waste removed before site capacity is exceeded All removed waste is accounted for by hazardous disposal facility certificate
	W37	<ul style="list-style-type: none"> Ensure that the hazardous waste removal contractor issues BTS with a certificate of disposal. 	<ul style="list-style-type: none"> Environmental Officer 	<ul style="list-style-type: none"> Quarterly inspection of records. 	
Medical waste	W38	<ul style="list-style-type: none"> Ensure that all first aid kits are fitted with containers for medical waste. 	<ul style="list-style-type: none"> All BTS supervisors 	<ul style="list-style-type: none"> Monthly inspection of first aid kits 	
	W39	<ul style="list-style-type: none"> Send container with medical waste together with the injured person to the hospital for proper disposal. 	<ul style="list-style-type: none"> Medical practitioner attending to the injuries 	<ul style="list-style-type: none"> Following an incident, check that correct procedure was followed 	<ul style="list-style-type: none"> No medical waste in domestic waste bins or any other water storage areas/facilities on site

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Management Aspect	ID	Mitigation measure / Procedure	Responsible Party	Monitoring Methods ⁶	Performance Indicators
	W40	<ul style="list-style-type: none"> Treat all medical waste as hazardous waste. 	<ul style="list-style-type: none"> Medical practitioner at TPT 	<ul style="list-style-type: none"> Check disposal records of medical waste 	
Management of temporary waste storage sites	W41	<ul style="list-style-type: none"> Ensure management of temporary waste storage sites is in line with BTS procedures and legal requirements. 	<ul style="list-style-type: none"> Temporary storage site supervisor 	<ul style="list-style-type: none"> Weekly inspection of temporary waste sites Quarterly inspection of temporary waste site records 	
	W42	<ul style="list-style-type: none"> Register and monitor waste volumes at the temporary waste storage sites in line with BTS WI 007: Waste and Scrap Monitoring Working and Instruction. 	<ul style="list-style-type: none"> Environmental Officer 		<ul style="list-style-type: none"> Records of waste removed at BTS documented Waste Removal file with date , waste type , company , volumes or mass and the name of the drive with signatures
	W43	<ul style="list-style-type: none"> Oversee the physical removal of the waste from the temporary waste storage sites 	<ul style="list-style-type: none"> Environmental Officer and Temporary storage site supervisor 	<ul style="list-style-type: none"> Check list with the type of waste requested to be removed and the amounts Waste removal and transportation permit from the driver 	<ul style="list-style-type: none"> Waste removed on time
	W44	<ul style="list-style-type: none"> Complete the Waste Removal and Process Information Form contained in BTSE WI 007 when waste is removed. 	<ul style="list-style-type: none"> Waste Removal Contractor 	<ul style="list-style-type: none"> Audit by Environmental Officer 	<ul style="list-style-type: none"> Forms completed and filed for each waste removal

5.5 Ballast water management

Ballast water is managed by the Port of Saldanha rather than the BTS. The Port is currently implementing a Ballast Water Management Plan that requires ships to comply with requirements of the International Maritime Organisation (IMO) on ballast water exchange to minimize the risk of introduction of harmful organisms into the Saldanha Bay. The Ballast Water Management Plan is attached in Annexure B.

5.6 Oil spill management

BTS is responsible for the management of oil spills that may occur during to operation of the BTS (e.g. oil leaking from machinery or vehicles). The procedures to be followed in such instances are laid out in the BTS Oil Contingency Plan (BTSE WI 009).

Any oil spill from iron ore carriers in the bay is managed by DWEA and Oil Pollution Control South Africa (OPCSA), with Transnet National Ports Authority, as custodian and operator of the Port, also bearing a responsibility for the prevention, minimization, monitoring and cleaning up of an oil spill. To ensure a rapid response to any oil spill at the Port of Saldanha, an Oil Spill Contingency Plan is in place. The plan is attached in Annexure C.

6. Communication and investigation procedures

BTS has a number of general communication procedures that relate to the reporting of (environmental) incidents and the effective notification of staff with regards to environmental procedures at the BTS. Some of these are listed in Table 2 below but are not laid out in detail in this Draft EMP.

Table 2: BTS general communication and investigation procedures

Procedure	Purpose	Procedure Number
BTS SHEQ Incident and Accident Investigation	To define the requirements for reporting and investigation of accidents, injuries, occupational diseases, railway safety and of any SHEA incidents/occurrences at BTS in order to be consistent with TPT BTS Environmental Policy, BTS objectives and targets and to meet all the Legal Requirements.	BTSE SHEQ PRO 016
BTS Communications Procedure	To describe the process, responsibilities and methodologies/mediums to ensure effective communication of pertinent SHE information to all employees and interested and affected parties at BTS.	BTS PRO 005

7. Monitoring and corrective action procedures

BTS has a number of general monitoring and corrective action procedures, which aim to ensure that the management procedures at the BTS are effectively implemented and monitored and that non-compliances are investigated and corrected, Some of these are listed in Table 3 below but are not laid out in detail in this Draft EMP.

Table 3: BTS monitoring and corrective action procedures

Procedure	Purpose	Procedure Number
BTS SHE Management Self Audit	To describe the process, responsibilities and actions to perform an effective Safety, Health and Environmental Management System Audit in order to comply with the applicable legislation other requirement.	BTS PRO 008
SHE Legal Compliance Audit Procedure	To describe a process to be followed when auditing BTS's compliance to applicable legal and other requirements.	BTS PRO 017
BTS SHEQ Management Review Procedure	To describe the responsibilities and process to complete during the review of the SHE Management Systems, looking at its effectiveness. This shall include assessing opportunities for improvement and the need for changes to the Environmental and Railway Safety Management System, including the SHERQ Policy and objectives and Targets.	BTSE SHEQ PRO 013
Medical Monitoring Guideline	To provide guidelines for Medical monitoring at BTS in order to ensure compliance with applicable legislation.	BTSR GDL 001
BTS SHEQ Monitoring and Measuring Procedure	This procedure describes how inspection and measuring devices are controlled calibrated and maintained.	BTSE SHEQ WI 015
SHE Corrective Action System Management Work Instruction	To identify and correct environmental non-conformances by describing the activities that needs to be carried out during recording, reporting, mitigating negative environmental impacts and closeout of an Incident/Condition that warrants a Corrective Action.	BTS WI 002

**Annexure A:
Bulk Terminal of Saldanha
Environmental Charter**

**Annexure B:
Ballast Water Management Plan
for the Port of Saldanha**

Annexure C: Port of Saldanha Oil Spill Contingency Plan