TRANSNET

REQUEST FOR PROPOSALS FOR

INDUSTRIAL EFFLUENT, SURFACE WATER, GROUND WATER AND PORTABLE WATER QUALITY MONITORING AND MANAGEMENT AT TRANSNET ENGINEERING

AUGUST 2022

T.A

M.P

BPM

1. BACKGROUND

Transnet Engineering (TE) operations generate a considerable amount of effluent which, before discharge goes through a treatment process using different techniques including, among others, rope skimmers, oil separators, settlement tanks, ultra-spin systems, etc. The biggest contributors of effluent water are Locomotives, Ports, Wagon factories, Coaches' businesses, and their associated maintenance depots. Sludge and other suspended solids from these treatment systems or facilities are handled through TE Waste Management Contracts on each site.

From the health point of view, TE takes the responsibility of sampling and analyzing domestic drinking water to ensure the safety and wellbeing of its employees. It must also be kept in mind that certain depots are making use of borehole/wells water and water tanks that need to be monitored on a regular/Adhoc basis.

From a compliance point of view, TE has few areas which have licenses or require licensing that require monitoring of surface and groundwater within its jurisdictions. TE there must periodically sample its boreholes and monitor the groundwater as required by the permits/licences.

Based on the above information, TE invites proposals from experienced and qualified Service Providers for industrial effluent and stormwater, groundwater, and paid potable / drinking) water quality monitoring and analysis at its operational businesses across the country to ensure legal compliance and the wellbeing of its employees.

2. THE NEED

TE as an organization has a legal obligation to comply with local, national, and international environmental legislation applicable to its activities. These include the National Water Act (Act 36 of 1998), the Water Services Act (Act 108 of 1997), the National Environmental Management Act (Act 107 of 1998), as well as various standards and municipal bylaws regulating the discharge and

T.A
M.P
BPM

management of industrial effluent and stormwater from industries. These legislations have a direct or indirect influence on the need for various industries to treat, manage and discharge industrial effluent of specific minimum standards into different receiving points.

With most industrial effluent treatment facilities within TE operational areas discharging directly onto the Effluent discharge point system, it is therefore required that a Service Provider be appointed to conduct industrial wastewater monitoring for various operational activities within TE countrywide effluent samples should be analyzed against relevant local municipal standards where available. Where no local standard exists or the parameters measured are not included in the local standards, the National Standard shall apply.

3. OBJECTIVE

3.1. The main objective is to appoint a Service Provider to conduct periodic and event-based monitoring of:

- Effluent.
- Drinking water.
- Groundwater.
- Stormwater; and
- Surface-water

3.2. The Service Provider is required to advise TE on maintenance of sufficient control of effluent treatment plant operations to prevent violation of permit specifications (where permits are available).

3.3. The appointed Service Provider will also be required to sample drinking water on scheduled and as and when required and take samples during emergencies for analysis purposes.

4. SCOPE OF WORK /TERMS OF REFERENCE

4.1. The service provides shall:

T.A
M.P
BPM

4.1.1. Conduct industrial effluent, groundwater, stormwater, and potable/ drinking) water monitoring and analysis

a. The successful Service Provider will be expected to sample and analyse industrial effluent, groundwater, stormwater, and potable / drinking) water for all sampling points listed in Annexure A attached on Page 12 of 28 below monthly/quarterly/bi-annually/Annually or as specified in permit conditions or Annexure A.

b. The Service Provider will be required to conduct groundwater level assessment and monitoring

c. Groundwater monitoring shall be conducted during the wet and dry seasons.

d. Parameters to be analysed shall include, but are not limited to the following:

i. Parameters to be measured may differ from municipality to municipality or per permit requirement.

ii. In cases where parameters compliance limits are not stipulated in the municipality Effluent Discharge Permit/by-laws, the national standards shall be applicable and where national standards are not available, other international standards shall be applicable and

iii. Any other parameters as indicated on the site or depot-specific discharge permits or licenses or as in the current monitoring programs within each depot.

iv. Portable(drinking) water shall be tested against **SANS 241 standard**

v. Groundwater shall be measured against **General authorizations where applicable, Dutch Intervention Values and Environmental Protection Agency (EPA) standards**

e. All laboratory analysis shall be conducted using **SANAS-approved methodologies by SANAS accredited laboratory.**

f. In case of additional monitoring points or additional samples, the successful Service Provider shall get permission in writing from Transnet Engineering, Safety, Health, and Environment Department:

g. The Service Provider shall inform the Safety, Health, and Environment Department immediately of any irregularities observed onsite during sampling including any spillages, plant malfunctions, raw (substandard) effluent discharges and/or uncontrolled discharges.

h. The Service Provider shall take flow meter readings monthly. The reading must be documented in a tabular format and a meter reading picture for each monthly reading. The readings shall include amongst other things the flow per day and estimated flow per month, volumes discharged etc.

i. The Service Provider shall give recommendations on how to address the parameters that exceed the required limits.

j. TE shall advise the Service Provider in writing for any need to discontinue monitoring of certain points or depots which could be because of discontinuation of operations of business or effluent plant or sampling point deemed to be out of TE influence.

k. Access to the sampling point will be granted by TE.

l. The Service Provider shall notify TE in writing, two (2) weeks before visiting the site for sampling arrangements.

m. Should the legislative requirements on any site change, the Service Provider is expected to adjust monitoring accordingly.

4.1.2. Conduct ad-hoc monitoring

a. The successful Service Provider shall conduct sampling of drinking water "as and when" required at any TE main Centre/depot and analyse against the SANS 241 drinking water standards

b. The successful Service Provider will be required to conduct other ad-hoc sampling in case of environmental incidents, investigations, and requests from Authorities (e.g., when there are

T-A
M-P
BPM

spillages that reached water resources/stormwater drains, soil, uncontrolled discharges, substandard effluent because of malfunctions, etc.).

a. A The successful Service Provider will be required to conduct sampling to assess the effectiveness of mitigation measures when required (after incidents).

b. In the case of ad-hoc monitoring, the Service Provider will be required to provide the report within **5 working days**.

4.2. Contract Meetings

The successful Service Provider will be required to attend quarterly meetings with TE to provide feedback on the progress of the scope of work. Any other meetings will be set as and when required.

5. DELIVERABLES

The successful Service Provider is expected to provide TE with the following:

5.1. Monthly Reports

A comprehensive monthly report (broken down **per Region, Depot, and Business Unit**) including, but not limited to the, following:

a. Laboratory analytical results with comparison to the relevant legal discharge requirements, showing all parameters with clear identification of parameters that are above the minimum requirements, indicating the possible causes of non-compliances (if any) and ways to improve the situation (clear and sound recommendations).
b. Records of field parameters measured, and the sampling sheets signed by the relevant businesses.
c. Sample preservation or quality control measures.

T.A
M.P
BPM

d. Details on the condition of the sampling point during monitoring (site visit information including photos (with dates/time where applicable), sample details indicating the Depot Name, Sample Point, Coordinates, Date & time of sampling, sample preservation method, chain of custody, Calibration Certificates (of all equipment used for analysis), contact details of the sampler.
e. Incidents/spillages or malfunctions identified during sampling; and
f. Recommendations on how to correct parameters which were out of specification.

5.2. **Annual Report**

The Successful Service Provider shall submit to TE a comprehensive annual report showing all the annual trends of parameters of concern, and all non-conformances. The annual report shall be submitted at the period agreed with, by the successful Service Provider.

6. REQUIREMENTS

6.1. **Specific Requirements**

Prospective Service Providers should:

a. Submit a company profile including a list of previous projects in this type of service or work, preferably years' experience in a similar field of practice and reference letters from previous clients on completed projects
b. Indicate sample turnaround time from the time of sampling/receiving samples to the time of analysis.
c. Be SANAS accredited for physical, chemical, and microbiological analyses, Proof of Accreditation and accreditation Schedules must be attached
d. Submit proof of Public and professional liability insurance.
e. Indicate the company's location footprint within South Africa.
f. Demonstrate capacity for delivering the effluent and water quality monitoring services; by providing
    i. Company Organogram

M·P TA
BPM

N.B. ***The Service Provider is required to consider the magnitude of the TE scope and footprint when dedicating resources to this project.***

ii. CVs, Qualifications and Training records of technical staff (both lab and field workers), lab services (in-house or outsourced).

N.B. In the case of restructuring, the Service Provider shall submit CVs, Qualifications and Training Records of new resources introduced.

g. Provide methods /procedures for sampling of effluent, surface water, taps and groundwater/wells

h. Provide a Letter of Good Standing with the Compensation Commissioner.

i. Submit a detailed cost breakdown of all the billable items using **Appendix B: Effluent and Water Quality Monitoring Pricing List**

N.B Price to include all disbursements associated with completing the activities

j. TE reserves the right to visit the Service Provider's premises and facilities to verify information provided forthwith of tender.

k. Adhere to the requirements of Transnet SHE Specification and legislative requirements.

6.2. **General Requirements:**

Bidders are required to ensure that electronic bid submissions are done at least a day before the closing date to prevent issues which they may encounter due to their internet speed, bandwidth, or the size of the number of uploads they are submitting. Transnet will not be held liable for any challenges experienced by bidders because of the technical challenges. Please do not wait for the last hour to submit. A Bidder can upload 30MB per upload and multiple uploads are permitted. **Indicate the probable cost and time elements of their proposal**. The costs should be broken down per each sampling point/business/Centre or depot/region including travelling cost, cost of laboratory analysis, equipment to be used, consumables, and contingency sampling among others. The successful Service Provider will arrange and pay for their accommodation and meals while busy with the monitoring.

Prospective Service Providers should:

a. Be able to commence work at short notice if successful.

b. Service Providers are advised to visit the sites in question, should they wish to confirm working conditions. No claims in this regard will be considered.

c. Successful Service Provider shall be obliged to comply with all Transnet Safety, Health, and Environmental (SHE) Requirements and site rules, this includes the submission of a contractor compliance file.

d. The successful Service Provider shall adhere to all security measures as enforced by Transnet.

e. The successful Service Provider shall be required to attend a mandatory safety induction before conducting any work within Transnet premises, SHE induction may be done as per requirement by each Depot or Centre.

f. Successful Service Provider will be responsible for the supply of all Personal Protective Equipment (PPE) required including steel capped shoes, ear protection, and safety vests smothers her.

g. Successful Service providers will be required to provide their sampling and test equipment.

h. The successful Service Provider will be required to submit a Safety File in line with Transnet SHE Specification (Contract Management). This should not be costed; the details of the Contractor Compliance file will be shared with the successful Service Provider.

i. The successful Service Provider shall be required to notify TE Depots for intended site visits to carry out the scope of work one (1) week beforehand for arrangements.

j. All verbal agreements or arrangements shall be confirmed in writing.

7. ADJUDICATION PROCESS

7.1. TE reserves the right to:

a. Adjudicate proposals in terms of Transnet procurement policies and procedures.

b. Cancel this project at any time.

c. Decide to call for a second round of specific and detailed submissions should it deem appropriate;

d. Not accept any proposal in part or in full.

7.2. From the technical point of view, the received proposals shall be adjudicated on the following criteria:

a. Approach and Methodology

b. Experience

c. Capacity (including national footprint)

d. Lead time for commencing and reports submissions.

8. ACCEPTANCE OF PROPOSALS

TE does not bind itself to accept the lowest cost proposal, nor will it furnish any details or enter any communication relating to the non-acceptance of any or all proposals.

9. AGREEMENT

A formal agreement will be concluded with the successful Service Provider as soon as the procurement processes have been completed.

10. PENALTIES

Penalties for the late completion of the work will be raised by TE's Service Agreement, which will be concluded with the successful Service Provider.

Compiled by

Tshidiso Mahlatji

Environmental Specialist, Environmental Management

Date: 10/08/2022

Supported by

Mmalaka Phejane

Senior Manager: Environment, CRA

Date: 10/08/2022

Approved by

Bongi Mpongwana

Executive Manager: Safety, Health, Environment, Risk and Quality

Date: 2022/08/11

Annexure A: List of TE Industrial Effluent Monitoring Points

Keys to the Tables:

√√: Permit Available and Valid X -: Permit Not Available but in Process with authority

X: Permit not Available √X: Permit expired

X?: Permit not available, may not be required/ need assessment

*Effluent plant currently not operational but may function in the future.

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Koedoespoort Centre bay E49	Koedoespoort	25° 43.539'S 28° 16.978'E	√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
Koedoespoort PEMM, Workshop	Koedoespoort		√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
*Koedoespoort Bay 7a	Koedoespoort		√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
*Koedoespoort PEMM, Bay 7	Koedoespoort		√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
Koedoespoort Centre bay E23	Koedoespoort	25° 43.418'S 28° 16.860'E	√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
Koedoespoort Centre Effluent Dams	Koedoespoort	25° 43.053'S 28° 16.406'E	√√	City of Tshwane	Storm/surface water	Stormwater system	3	Quarterly
Koedoespoort Centre	Koedoespoort		N/A	City of Tshwane	Portable Water	Water Tap	4	quarterly

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Koedoespoort Centre (Site 5)	Koedoespoort		N/A	City of Tshwane	Groundwater	WellPoint	3	Annually
Koedoespoort Diesel Depot	Koedoespoort	25°27.774'S 30° 58.024'E	√√	City of Tshwane	Effluent	Effluent discharge Point	1	Monthly
					Groundwater	WellPoint	3	Annually
			N/A		Portable Water	Water Tap	1	Quarterly
Capital Park loco & Wagon Depot	Koedoespoort	25° 43.310'S 28° 11.906'E	N/A	City of Tshwane	Portable Water	Water Tap	1	Quarterly
Pyramid South Diesel/Electrical Depot	Koedoespoort	26° 39.933'S 27° 53.760'E	X	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable Water	Water Tap	2	Quarterly
Salvo-kop Blue Train	Koedoespoort	25°42.10'S 28° 25.49'E	√√	City of Tshwane	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable Water	Water Tap	1	Quarterly.

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Germiston Centre	Germiston	26° 12.238'S 28° 10.261'E	√√	Ekurhuleni Municipality	Effluent	Effluent discharge point	1	Monthly
			N/A		Groundwater	Wellpoint	6	Annually
			N/A		Potable water	Tap	2	Adhoc
Germiston Diesel Depot	Germiston Germiston	26° 12.126'S 28° 10.311'E	√√	Ekurhuleni Municipality	Effluent	Effluent discharge Point	1	Monthly
			N/A		Groundwater	Wellpoint	3	Adhoc
			N/A		Potable water	Tap	2	Adhoc
Germiston Wagon Depot	Germiston	26° 12.528'S 28° 10.641'E	**N/A**	Ekurhuleni	Potable water	Tap	2	Adhoc
Mill site	Germiston	26.12071 27.73993	N/A	Ekurhuleni Municipality	Effluent	Effluent discharge point	1	
			N/A		Potable water	Tap	2	Adhoc
Sentrarand	Germiston	26° 05.095'S	**N/A**	Ekurhuleni	Potable	Tap	2	Bi-Annual

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Electrical Depot		28° 28.418'E		Municipality	water			
Sentrarand Wagon Depot	Germiston	26° 05.095'S 28° 28.418'E	**N/A**	Ekurhuleni	Potable water	Tap	2	Bi-Annual
Barrel tasting	Germiston	None	**X**	Ekurhuleni Municipality	Stormwater	Stormwater system	3	Bi-Annually
Springs Diesel Depot	Germiston	26° 14.565'S 28° 26.145'E	**X-**	Ekurhuleni Municipality	Effluent	Effluent discharge point	1	Monthly
			N/A		Potable water	Tap	2	Bi-Annual
			N/A		Groundwater	Well		Adhoc
Millsite Diesel Depot	Germiston	26° 07.269'S 27° 44.416'E	**√X**	Mogale City	Effluent	Effluent discharge point	1	Monthly
			N/A		Potable water	Tap	2	Adhoc
Leeuhof Diesel Depot	Germiston	26° 39.933'S 27° 53.760'E	**X?**	Emfuleni Municipality	Effluent	Effluent discharge point	1	Monthly
Leeuhof Wagons Depot	Germiston	26°39.836'S	**N/A**	Emfuleni Municipality	Potable water	Tap	2	Adhoc

TA
MP
BPM

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
		27° 53.828'E						
Bijlkor Wagon Depot	Germiston	26°39.836'S 27° 53.828'E	**N/A**	Emfuleni Municipality	Potable water	Tap	1	Adhoc
Waterval Wagon Depot	Germiston	26°7.269'S 27°44.416'E	**N/A**	Mogale City	Potable water	Tap	1	Adhoc
Kaserne Wagon Depot	Germiston	26° 12.987'S 28° 4.079'E	**N/A**		Potable water	Tap	1	Adhoc
Kaserne Diesel Depot			**N/A**			Tap	1	Adhoc
City Deep Ports Depot	Germiston	26°13.664'S 28°5.809'E	**N/A**	City of Johannesburg	Potable water	Tap	2	Adhoc
City Deep Electrical Depot	Germiston	26°13.664'S 28°5.809'E	**N/A**	City of Johannesburg	Potable water	Tap	2	Adhoc
Polokwane Diesel Depot	Koedoespoort	To be confirmed	√√	Polokwane	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable Water	Water Tap	1	Biannually

M:P BPM TA

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Polokwane wagon	Koedoespoort	To be confirmed	X?	Polokwane Municipality				
			N/A		Portable Water	Water Tap	1	Biannually
Thabazimbi Diesel Depot	Koedoespoort	24° 35.849'S 27° 23.634'E	√√	Thabazimbi Municipality	Effluent	Effluent discharge point	1	Monthly
					Portable Water	Water Tap	1	Quarterly
Thabazimbi Wagons Depot	Koedoespoort		N/A	Thabazimbi Municipality	Portable Water	Water Tap	1	Biannually
Phalaborwa	Koedoespoort	N/A	N/A	Ba-Phalaborwa Municipality	Portable Water	Water Tap	1	Biannually
Musina loco &wagons	Koedoespoort	N/A	N/A		Portable Water	Water Tap	2	Annually
Tzaneen Loco	Koedoespoort	None	X	Greater Tzaneen Local Municipality	Effluent	Effluent discharge point	1	Monthly
				Greater Tzaneen Local Municipality	Portable Water	Water Tap	1	Biannually

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Nelspruit Diesel Depot	Koedoespoort	25° 27.774'S 30° 58.024'E	√√	Mbombela	Effluent	Effluent discharge point	1	Monthly
	Koedoespoort		X	Mbombela	Stormwater	Stormwater	1	Biannually
	Koedoespoort		N/A	Mbombela	Portable Water	Water Tap	1	Biannually
Komatipoort Loco and Wagons	Koedoespoort	N/A		Mbombela	Portable	tap	2	Biannually
Lydenburg Diesel Depot	Koedoespoort	25° 05.901'S 30° 28.754'E	√√	Thabachueu	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable water	Tap Water	1	Annual
Witbank Diesel Depot	Koedoespoort	25° 52.602'S 29° 12.381'E	X-	Emalahleni Municipality	Effluent	Effluent discharge point	1	Monthly
Witbank Port	Koedoespoort	25,87757S 29,20567E	N/A	Emalahleni Municipality	Groundwater	Wellpoint	1	Bi-annually
Ermelo Diesel Depot	Koedoespoort	26° 33.609'S 30° 00.785'E	X-	Msugalikwa Municipality	Effluent	Effluent discharge point	1	Monthly
			N/A		Groundwater	WellPoint	2	Bi-annually
			N/A		Portable Water	Water Tap	1	Quarterly

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Ermelo Wagons				Msugalikwa Municipality	Portable Water	Water Tap	1	Biannually
Rustenburg Diesel Depot	Germiston & Koedoespoort	25° 40.280'S 27° 15.377'E	X	Rustenburg Municipality	Effluent	Effluent discharge point	1	Monthly
Rustenburg Diesel Depot	Koedoespoort			Rustenburg Municipality	Portable Water	Water Tap	1	Biannually
Rustenburg Port Depot	Koedoespoort			Rustenburg Municipality	Portable Water	Water Tap	1	Biannually
Klerksdorp Diesel Depot	Germiston	26° 52.461'S 26° 40.154'E	X-	Matlosana Municipality	Effluent	Effluent discharge point	1	Monthly
Klerksdorp Wagon Depot	Germiston	Station Road, Klerksdorp	N/A	Matlosana Municipality	Potable water	Tap	1	Adhoc
Coligny Diesel Depot	Germiston	26° 19.796'S 26° 18.882'E	√X	Ditsobotla Municipality	Effluent	Effluent discharge point	1	Monthly
			N/A		Groundwater	Wellpoint	1	Annually
			N/A		Potable water	Tap	1	adhoc
Coligny Wagon	Germiston	25°27.774'S	N/A	Ditsobotla	Potable	Tap	2	adhoc

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Depot		30°58.024'E		Municipality	water			
Mafikeng Diesel Locomotive Depot	Germiston	None	X	Mahikeng Municipality				
			N/A		Potable water	Tap	1	adhoc
Mafikeng Wagon Depot	Germiston	25°51'55.61"S 25°38'18.59"E	N/A	Mafikeng Municipality	Potable water	Tap	1	adhoc
Lichtenburg Wagon Depot	Germiston	26° 9'49.73"S 26°11'23.87"E	N/A	Lichtenburg Municipality	Potable water	Tap	1	adhoc
Bloemfontein Centre (RFR)	Bloemfontein	29° 06.322'S 26° 15.085'E	√√	Mangaung	Effluent	Effluent discharge point	1	Monthly
Bloemfontein Centre (Bay 25)			√√				1	
Bloemfontein Centre (Bay41)			√√				1	
Bloemfontein Diesel Locomotive Depot			√√		Effluent	Effluent discharge point	1	
Bloemfontein RSE			N/A		Groundwater	Wellpoint	3	Biannually
Bloemfontein Diesel Locomotive			N/A				2	

T.A M.P Mda

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Depot								
Liquid Inlet and Outlet			**N/A**		Stormwater	Stormwater system outside the plant	1	adhoc
Outside Main Centre SOE	Bloemfontein	29°06'50.8"S 26°15'23.9"E	**N/A**	Mangaung	Potable water	Drinking taps	1	Annually
Bloemfontein Wagon Maintenance	Bloemfontein	29°06'23.5"S 26°14'34.1"E	**N/A**	Mangaung	Potable water	Drinking taps	2	Annually
Bloemfontein Diesel Locomotive Depot	Bloemfontein	29°06'49.2"S 26°14'18.5"E	**N/A**	Mangaung	Potable water	Drinking taps	2	Annually
Bloemfontein Centre	Bloemfontein	29°06'19.6"S 26°15'01.4"E	**N/A**	Mangaung	Potable water	Drinking taps	4	Biannually
Bethlehem locomotives in-service depot	Bloemfontein	28°13'01.9"S 28°18'06.5"E	**N/A**	Dihlabeng Local Municipality	Potable water	Drinking taps	1	Annually
Bethlehem locomotives in-service depot	Bloemfontein	28°13'01.9"S 28°18'06.5"E	**N/A**	Dihlabeng Local Municipality	Groundwater	Wellpoint		

BPM TA MP

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Liquid Inlet and Outlet	Bloemfontein	29° 06.322'S 26° 15.085'E	**N/A**	Mangaung	Stormwater	Stormwater system outside the plant	1	adhoc
Kroonstad diesel Depot	Germiston	27,22741S 27,65652E	N/A	Moqhaka Local Municipality	Groundwater	Wellpoint	2	Annually
					Effluent	Effluent Discharge Point	1	Monthly
Kroonstad Electrical Depot	Germiston	27°39.320'S 27°13.606'E	**N/A**	Moqhaka Local Municipality	Potable water	Tap		adhoc
Kroonstad Wagons Depot	Germiston	27°39.320'S 27°13.606'E	**N/A**	Moqhaka Local Municipality	Potable water	Tap	2	Adhoc
Postmasburg	Bloemfontein	28°18'34.8"S 23°03'10.8"E	**N/A**	Tsantsabane	Potable water	Drinking taps	2	Annually
Kimberly Wagon maintenance	Bloemfontein	28°46'20.1"S 24°46'01.2"E	**N/A**	Sol Plaatje	Potable water	Drinking taps	2	Biannually
Kimberley Diesel Depot		29° 06.322'S 26° 15.085'E	√√	Sol Plaatje	Effluent	Effluent discharge point	1	Monthly
Kimberly diesel and in-service	Bloemfontein	28°46'06.7"S 24°46'12.3"E	**N/A**	Sol Plaatje	Potable water	Drinking taps	3	Biannually
Vryheid loco & Wagons	Durban/Koedo espoort	N/A	√√	Abaqulusi Municipality	Portable Water	Taps	2	Bi-Annual
			N/A		Effluent	Effluent discharge point	1	Monthly

BPM M.P TA

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Effluent Plant - Bay 3)								
Durban Centre (Edwin Swales) Depot Waterblast			√√				1	Monthly
Durban Centre (Edwin Swales) Bay 23			√√				1	Monthly
Durban Centre (Edwin Swales) PEMM			√√				1	Monthly
Durban Centre (Edwin Swales) Depot			N/A		Portable water	Taps	3	Bi-annually
Kings Rest Wagons Washout Depot	Durban	29° 54.233'S 31° 00.868'E	√√	eThekwini	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable Water	Taps	1	Annually
Wagons Kingsrest Depot	Durban	29° 54.319'S 30° 59.698'E	√√	eThekwini	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable water	Taps	1	Annually
Umbilo CEW Depot	Durban	29° 53.814'S 30° 59.407'E	√√	eThekwini	Effluent	Effluent discharge point	1	Monthly
			N/A		Portable Water	Taps	2	Annually

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Umbilo ELD	Durban	29° 53.814'S 30° 59.407'E	√√	eThekwini	Effluent	Effluent discharge point	1	Monthly
Wentworth Depot	Durban	29° 55.085'S 30° 59.709'E	√√	eThekwini	Effluent	Effluent discharge point	1	Monthly
	Durban		N/A		Portable water	Taps	1	Annually
Richards bay Diesel Locomotive Depot	Durban	28° 42.795'S 32° 01.083'E	X-	Umhlathuze LM	Effluent	Effluent discharge point	1	Monthly
Richard's bay (Insezi locomotives) Depot	Durban	28° 43.790'S 32° 00.750'E	X-	Umhlathuze LM	Effluent	Effluent discharge point	1	Monthly
			N/A		Groundwater	Wellpoint	2	Quarterly
South Dunes Depot	Durban	28° 49.827'S 32° 03.571'E	X-	Umhlathuze LM	Effluent	Effluent discharge point	2	Monthly
			N/A		Groundwater	Wellpoint	1	Quarterly
Container Depot (Edwin Swales) Washing Machine	Durban	29° 54.319'S 30° 59.698'E	√√	Ethekwini	Effluent	Effluent discharge point	1	Monthly
Newcastle Wagons Depot	Durban			Newcastle Municipality	Effluent	Effluent discharge point	1	Monthly

T.A
M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Salt river Plant Coaches De-Anodising plant	Salt River Plant	33° 55.458'S 18° 27.796'E	√√	City of Cape Town	Effluent	Effluent discharge point	1	Monthly
Salt River Plant Stormwater Discharge	Salt River Plant		N/A	DEFF	Stormwater	Stormwater system	1	Biannually
Salt River Plant	Salt River Plant		N/A	DEFF	Groundwater	Monitoring well	9	Biannually
Salt River Plant	Salt River Plant		N/A	City of Cape Town	Portable water	Tap	2	Biannually
Bellville, Locomotives Effluent Plant	Cape Corridor, Bellville, Locomotives Maintenance	33° 54.970'S 18° 37.263'E	√√	City of Cape Town	Effluent	Effluent Plant	1	Monthly
Bellville, Locomotives Maintenance	Cape Corridor, Bellville, Locomotives Maintenance		N/A	DWS	Groundwater	Monitoring well	5	Biannually
Bellville, Locomotives Maintenance	Cape Corridor, Bellville, Locomotives Maintenance		N/A	City of Cape Town	Portable water	Taps	2	Biannually
Saldanha Locomotives Maintenance	Iron Ore Corridor, Saldanha Locomotives	32055.916" E 018003.734' S	√√	Saldanha Bay Municipality	Effluent	Effluent discharge point	1	Monthly

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Final Exit Point	Maintenance							
Saldanha Diesel Locomotives Diesel Workshop Effluent Plant	Iron Ore Corridor, Saldanha Locomotives Maintenance	32057.169" E 018002.701' S	**N/A**	Saldanha Bay Municipality	Effluent	Effluent discharge point	1	Monthly
Saldanha Electrical Locomotives Effluent Plant	Iron Ore Corridor, Saldanha Locomotives Maintenance	32°57.636" E 018°02.471' S	**N/A**	Saldanha Bay Municipality	Effluent	Effluent discharge point	1	Monthly
Iron Ore Corridor, Saldanha	Iron Ore Corridor, Saldanha		**N/A**	DWS	Groundwater	Monitoring well	3	Biannually
Iron Ore Corridor, Saldanha	Iron Ore Corridor, Saldanha		**N/A**	Saldanha Bay Municipality	Portable water	Taps	2	Biannually
Worcester Wagons & Locomotives In-Service Depot	Cape Corridor, Worcester	019°28.652'S 38°37.710" E	**N/A**	Breede Valley Municipality	Portable water	Taps	2	Annually

T.A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
Beaufort West Wagons & Locomotives In-Service Depot	Cape Corridor, Beaufort West	29° 55.150'S 30° 59.597'E	**N/A**	Beaufort West Local Municipality	Portable water	Taps	2	Annually
Klawer Wagons & Locomotives In-Service Depot	Cape Corridor, Klawer	31046.053" E 081037.24' S	**N/A**	Matzikama municipality	Portable water	Taps	2	Annually
Caledon Locomotives In-Service Depot	Cape Corridor, Caledon	34° 14' 15.8" S 19° 25' 48.3" E	N/A	Theewaterskloof Local Municipality	Portable water	Taps	1	Annually
Uitenhage Centre	Uitenhage	33°47'13.579"S 25°26' 56.458"E	√√	Nelson Mandela Bay	Effluent	Effluent discharge point	5	Monthly
Uitenhage Centre dam	Uitenhage	33° 47.523'S 25° 27.197'E	√√	Nelson Mandela Bay	Effluent	Effluent discharge point	1	Monthly
Uitenhage Centre	Uitenhage	33° 47.523'S 25° 27.197'E	√√	Nelson Mandela Bay	Portable Water	Tap/Drinking Water	1	Bi-Annual
Swartkops	Uitenhage	32° 58.078'S 27° 53.824'E	√√	Nelson Mandela Bay	Effluent	Effluent discharge point	2	Monthly
Swartkops (Loco's & Wagons)	Uitenhage	32° 58.078'S 27° 53.824'E	√√	Nelson Mandela Bay	Portable Water	Tap/Drinking Water	2	Bi-Annual

I A M.P

Monitoring Point Name	TE Region	GPS Location of Operational Area	Discharge Permit Status	Responsible Authority	Type of Monitoring	Sampling Point	Number of Sampling Points	Monitoring frequency
East London Cambridge	Uitenhage	32° 58.078'S 27° 53.824'E	√√	Buffalo City	Effluent	Effluent discharge point	3	Monthly
East London Cambridge (Wagons & Loco's)	Uitenhage	32° 58.078'S 27° 53.824'E	√√	Buffalo City	Portable Water	Tap/Drinking Water	2	Bi-Annual
Swartkops	Uitenhage	32° 58.078'S 27° 53.824'E	X?	Nelson Mandela Bay	Effluent	Effluent discharge point	1	Monthly
Uitenhage Stormwater Outlet	Uitenhage	33°47'13.579"S 25°26'56.458"E	√√	Nelson Mandela Bay	Effluent	Effluent discharge point	1	Monthly
De – Aar Wagons and Loco	Uitenhage		N/A	Emthanjeni Municipality	Portable	Tap/Drinking Water	2	Adhoc