Document Title:
WORKS INFORMATION

Project Title:
SPRINGFIELD GAS PIPELINE SERVITUDE REHABILITATION

REVISION: 02

FINAL

DOCUMENT PREPARATION

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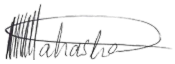
Approved by	Tebogo Mahasha	Acting Principal Engineer: Civil		24/10/2025

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1. INTRODUCTION

Transnet Pipelines (TPL), a division of Transnet SOC Ltd, provides strategic pipeline infrastructure, with associated world class pipeline logistics, for the petroleum and gas industries of South Africa. This is done in partnership with our customers and stakeholders thereby assuring the African sustainable development imperative. Established in 1965, TPL owns, maintains and operates a network of 3 114 km of high-pressure petroleum and gas pipelines. TPL transports an average of 15 billion litres of fuel per annum amid Covid-19. This includes diesel, unleaded petrol, aviation turbine fuel and crude oil.

The pipeline network and the liquid fuels network depots traverses five provinces, KwaZulu-Natal, Free State, Gauteng, North West and Mpumalanga with only three available intakes stations at Durban, Sasolburg and Secunda. The pipeline is laid within the servitudes which traverse through many properties (private, state owned, local authorities) and the pump stations and delivery depots located in rural, industrial and suburban areas along the pipeline routes.

The pipelines range from 6” (150mm) to 24” (600mm) in diameter. All the pipelines have been constructed in accordance with the American Code ASME B31.4. Pressure in the pipeline network is monitored 24 hours a day, 365 days a year in the control centre in TPLs’ National Operating Centre (NOC).

TPL offers fully integrated supply chain solutions from source to destination with no independent injection point into the pipeline network and one active independent distribution point at Tarlton, strategically positioned to facilitate regional integration from mainly pipeline to road and rail.

2. BACKGROUND

Transnet gas pipeline in Springfield Park, Durban, along Dhulam Road, near eThekwini Municipality Landfill site (29°48'48.87"S, 30°58'59.40"E) was damaged by a TLB (tractor loader backhoe) on the afternoon of 30 March 2023. The TLB was deployed by Landfill management team for eThekwini Municipality to clean up the illegal dumping. Due to a progressive rubble removal, Municipality ended-up removing the Gas-Pipeline soil cover and eventual hitting the gas-pipeline.

This incident led to more than 30 hours total shutdown as Transnet Pipelines Team had to isolate the damaged section by shutting-off block valve 3 and 4 and to drain-out residual product on the dead section before the installation and welding of the sleeve on the broken section.

The temporal remedial work was inclusive of pipe wrapping, backfilling with river sand around gas-pipeline, backfilling with in-situ material up-to natural ground level and it was concluded on the 31st of March 2023 however this temporal measure does not mitigate the risk of damaging the pipe in future. Figure 1 shows the Springfield site overview and the location of the gas pipeline.

3. PURPOSE

The purpose of this document is to outline the scope of work that must be undertaken by the appointed service provider to rehabilitate the gas pipeline servitude in Springfield Park. The scope of work will be undertaken in accordance with the design drawing.

4. SCOPE DESCRIPTION

The works information should include:

4.1. Site Preparation

4.1.1. Perform clearing and grubbing of the designated working area to remove vegetation, debris, and other obstructions.

4.2. Surveying

4.2.1. Conduct topographical surveys and level pick-ups of the working area to ensure accurate earthworks and installations, aligned with design specifications.

4.3. Excavation and Bedding Preparation

4.3.1. Excavate around the pipeline and prepare the in-situ subgrade.

4.3.2. Where necessary, provide temporary sandbag supports to stabilize the pipeline during the preparation of bedding for the concrete base slab.

4.4. Pre-Cast Concrete Works

4.4.1. Install a pre-cast concrete base slab, ensuring correct bedding and levelling using sandbags.

4.4.2. Install a pre-cast concrete portal culvert, per the design drawing. All joints and inspection points must be sealed to prevent fines migration during backfill operations.

4.5. Geotextile Installation

4.5.1. Install a layer of Grade A4 non-woven geotextile over the concrete culvert to minimize movement of fines and enhance structural stability.

4.6. Sand and Granular Backfilling

4.6.1. Sequentially backfill the culvert using plaster sand or washed Umgeni river sand.

4.6.2. Continue with selected G5 granular material backfilling in 200 mm lifts, compacting each layer to 93% Mod AASHTO density. This applies to areas above the culvert and adjacent to the gas pipeline using plate compactors or equivalent equipment.

4.7. Gabion Wall Construction

4.7.1. Excavate for gabion foundation to 0.7 m below natural ground level (NGL).

4.7.2. Compact subgrade to 90% Mod AASHTO, then place and compact a 0.2 m thick G5 bedding layer to 93% Mod AASHTO.

4.7.3. Apply Grade A4 geotextile behind, beneath, and in front of the gabion structure.

4.7.4. Assemble and install galvanised gabion boxes (hexagonally woven mesh) using durable, clean, angular and rounded gabion stones (100-250 mm). Ensure no stone passes through the mesh.

4.7.5. Provide and use appropriate lacing and bracing wire (2.2 mm diameter) of the same specification as the mesh.

4.8. Gabion Backfill and Profiling

4.8.1. Backfill behind and in front of the gabion wall using G5 material in 200 mm lifts.

4.8.2. Compact to design specifications and match existing upstream profile to ensure hydraulic and aesthetic continuity.

4.9. Geocell Installation

4.9.1. Supply and install Geocell (60 m long x 4 m wide) filled with G5 material along Dhulam Road to mitigate oil erosion risks.

4.10. Bedding Material Requirements.

4.10.1. The bedding material shall be fine sand or non-cohesive soil, free from stone, gravel, lumps and which does not take or form lumps when drying out. The pH value of tested sand shall not be less than 5.5 and PI (Plasticity Index) shall not exceed 6. The sieve analysis cumulative percentage passing shall be at least 95% at 2mm sieve size.

5. REQUIREMENTS

5.1. Toilet facilities, storage facilities and office facilities will be provided by contractor for the project duration.

5.2. The Contractor shall conduct a site visit to verify all measurements prior to commencing installation works.

5.3. Security will be provided by the contractor to protect site during construction, a minimum of two (2) armed guards per for the duration of construction.

5.4. Local stakeholder engagement is the responsibility of the Contractor. The Contractor is responsible to ensure that all labour force is medically fit for duty.

5.5. The Contractor is required to make provision for the appointment of a Community Liaison Officer (CLO).

6. HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT

6.1 Health and Safety Standard

The awarded Principal Contractor shall comply with the requirements of the Occupational Health and Safety Act 85 of 1993 and its promulgated Regulations, Requirements for Safe Entry and the following Transnet procedures: Transnet Contractor Management Procedure (TIMS-GRP-PROC-014) and Transnet Contractor Health and Safety Specification Guideline

(TRN-IMS-GRP-GDL-014.3), as applicable to the scope of services. and any laws applicable in the terms of Health and Safety

6.2 Contractor's General Requirements for Health and Safety

The Principal Contractor is solely responsible for carrying out the work under the Contract having the highest regard for the health and safety of its employees, Transnet's employees, and persons at or in the vicinity of the Site, the Works, temporary work, materials, the property of third parties and any purpose relating to the Principal Contractor carrying out its obligations under this Contract. Adequate provisions must be made available for health and safety.

6.2.1 As part of commitment to safety, the Contractor must comply with OHS Act 85 of 1993, the Construction Regulations and any other occupational health and safety regulations as amended. The Contractor will be required to submit a SHE Compliance File upon award. Site access will only be granted once the SHE Compliance File has been reviewed and approved by Transnet Pipelines. The Contractor will be subjected to the Transnet Pipelines permit-to-work process related to the on-site risks identified as well as changing conditions. The successful bidder will be subjected to a Servitude-specific SHE Induction.

6.2.2 The Principal Contractor is required to develop and implement a Health and Safety Plan in accordance with the Contractor Health and Safety Specification Guideline (TRN-IMS-GRP-GDL-014.3). This plan must encompass all sites where work will be conducted. If different teams are deployed, each site must have its own site-specific Health, Safety, and Environment (HSE) Plan. The contractor to ensure that their Health & Safety Management plan as well as their Baseline Risk Assessment includes the management of communicable diseases.

6.2.3 The Principal Contractor shall appoint a full-time Health and Safety Officer for the site, commensurate with the project's size and associated risks, encompassing all activities including overtime and weekend work. The Safety Officer must possess a National Diploma in Safety Management, Environmental Health, or an equivalent qualification, and be registered with the SACPCMP as a Construction Health and Safety Officer.

6.2.4 The Principal Contractor shall appoint a full-time construction manager who will oversee the project and ensure that all health and safety requirements are met. He/She must have relevant experience related to the project. The appointed CM must be registered with the South African Council for the Project and Construction Management Professions, (SACPCMP) as a Construction Manager.

6.2.5 The Principal Contractor shall ensure that a competent Supervisor is appointed for the project. Constant supervision is required on site during execution of works. Relevant trainings to be conducted for Supervisory staff i.e. Any relevant Supervisory course, Incident Investigation, Legal Liability and HIRA (Hazard Identification and Risk Assessments).

6.2.6 The Principal Contractor shall ensure that all incidents are reported to the relevant Transnet Pipelines Depot Manager and investigated by the principal contractor in conjunction with the client's safety representative. Occurrences shall be reported immediately or before the end of the shift followed by a written report within 24 hours.

6.2.7 The Principal Contractor is required to supply employees with protective clothing and equipment in accordance with the Occupational Health and Safety Act 85 of 1993 (OHSA). The personal protective equipment shall be appropriate for the potential hazard. This shall include but not limited to overalls, gloves, safety shoes, respirator, face shield and goggles. The Principal Contractor shall conform to the Transnet Pipelines Standard Operating Procedure for Personal Protective Equipment (009-TPL-OPS-SHEQ-2096).

6.2.8 Prior to commencing operations or accessing any Transnet site, the Principal Contractor must submit a Safety, Health, and Environmental Compliance file for review and approval by Transnet Pipelines. The submission requirements will be aligned with the contractor's scope of services.

6.3 Contractor compliance File Requirements (Minimum Requirement)

- A valid Letter of Good Standing with the Workman's Compensation.
- Proof of relevant insurances to carry out work.
- Contractor Health & Safety Plan correlating with Transnet Contractor Management Procedure (TRN-IMS-GRP-PROC-014) submitted and approved.
- Copies of TPL & Contractor's health, Safety & Environmental Policies
- Mandatory agreement as per section 37.2 of the OSHACT. Act 85 of 1993 and CR 5.1(K) appointment
- Legal appointments as per the Occupational Health and Safety Act
- Risk Assessments, Method statements and Safe Working Procedures
- Employee Induction packs shall include the following documents:
- Employee scope of work.

- Proof of site-specific induction (Contractor).
- Copy of ID Document.
- Abbreviated CV for the management and Legal appointees.
- Proof of competence
- Valid entry medical certificate of fitness done by an Occupational Health Practitioner aligned with job roles and responsibilities (e.g. work at height, in confined spaces etc.).
- Project Specific Risk Assessment indicating the full scope of work and risk profile.
- Project specific Organogram of reporting structure including contact details.
- Copy of nominated responsible person to conduct inspections and proof of their competency.
- Copy of equipment registers to be used with copy of each item's inspection checklist
- The Contractor shall furnish the client with Periodic medicals every twelve months, as well as the Exit Medicals done by an Occupational Health Practitioner at the end of the contract.

7. ENVIRONMENTAL MANAGEMENT

The Contractor shall comply with the regulations of the National Water Act 36 of 1998, the National Environmental Management Act 107 of 1998, and Hazardous Substances Act 15 of 1973 inexecution of all Project Activities.

8. APPLICABLE TECHNICAL STANDARDS

The Contractor must comply with the following standards:

- South African National Standard (SANS 10400G) – Excavations
- South African National Standard (SANS 10400H) – Foundations
- South African National Standard (SANS 10400P) – Drainage
- South African National Standard (SANS 10400R) – Stormwater Disposal
- South African National Standard (SANS 986) – Precast reinforced concrete culverts
- South African National Standard (SANS 1580) – Hexagonal Steel wire mesh gabions and revet mattresses
- Construction Regulations, 2014
- All Gabion material shall heavily galvanized and exceed BS 443

All other applicable Standards and Specifications that is not mentioned above should be applied during execution of project activities.