Document Title:

WORKS INFORMATION

Project Title:

SPRINGFIELD GAS PIPELINE SERVITUDE REHABILITATION FOR DURATION OF THREE MONTHS

REVISION: 02

FINAL

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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.

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. Clearing and Grubbing
4.2. Provide surveying services to pick-up the levels
4.3. Excavation and preparation of in-situ materials
4.4. Use sandbags for temporal support to the pipeline where necessary for a proper pre-cast concrete base slab installation
4.5. Install pre-cast concrete base slab & prepare the bedding
4.6. Install pre-cast concrete portal culvert (Refer to drawing) & seal all joints and eye-points to prevent migration of fines during backfilling
4.7. Use Grade A4 Geotextile bedim to cover the installed pre-cast concrete portal culvert
4.8. Backfill with selected granular material (G5) in layers not exceeding 200 mm per lift
4.9. Compact G5 Layers to 93% Mod AASHTO on top of the culvert and either side of Gas Pipeline, using plate compactor or similar equipment
4.10. Prepare Gabion foundation 0.7 m below NGL, compact the in-situ material to 90% Mod AASHTO, Lay G5 bedding of 0.2 m and compact to 93% Mod AASHTO
4.11. Install Grade A4 Non-woven geotextile to prevent migration of fines from the back, underneath and to the face of gabion structure
4.12. Install galvanised gabion boxes (hexagonally woven mesh) with Clean, hard, dense, durable, rounded & angular shaped gabion stones between 100mm - 250mm. No-rock should pass through the mesh. Sufficient lacing and bracing wire of the same type of the mesh wire must be supplied with the gabion cages. The diameter of the lacing and bracing wire shall be 2.2mm

4.13. Backfill the backside and the face of gabion wall with (G5) granular material in layers not exceeding 200mm per lift and the surface finishing must match the existing profiling on the upstream

4.14. Install Geocell of 60m long x 4m width and fill with G5 material along Dhulam Road to alleviate soil erosion

5. REQUIREMENTS

5.1. Attending a site briefing prior to submission of quotation to Transnet Pipelines by the contractor is mandatory.

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

5.3. Security will be provided by the contractor to protect site during construction, two (2) armed guards day shift and two (2) armed guards night shift 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 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

6. SAFETY PLAN

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

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.