

**Project Name : The Provision of Maintenance and Repair of all Komati Water Scheme Steel Pipeline for a period of five (5) years, on an as when required basis.**

| Item No.         | Description                       | Unit   | Qty | Rate | Total      |
|------------------|-----------------------------------|--------|-----|------|------------|
| A                | <b>Preliminaries and Generals</b> |        |     |      |            |
|                  | Medicals for site team            | Annual | 5   |      |            |
|                  | PPE for site team                 | Annual | 5   |      |            |
|                  | Safety File                       | Annual | 5   |      |            |
| <b>Sub total</b> |                                   |        |     |      | <b>R -</b> |

**SCOPE OF WORK FOR THE REPAIR OF VJ COUPLING A**

| Description   | Unit         | Qty   | Unit Price | Total |
|---|--------------|-------|------------|-------|
| Site establishment and De- establishment  | Every Repair | 2     |            |       |
| 25 Ton Truck Mounted Crane  | Every Repair | 2     |            |       |
| Accommodation   | Every Repair | 2     |            |       |
| Travelling / Transport - Truck Mounted Crane  | km           | 5800  |            |       |
| Travelling / Transport - Kombi for transporting employees   | km           | 13800 |            |       |
| Travelling / Transport - Truck for tools  | km           | 13800 |            |       |
| Use attached drawings( Bosloop to Wintershoek pipeline VJ Coupling pipeline repair), ( Bosloop to Wintershoek pipeline coupling) as reference to produce final and approved drawings and designs for the pipe leak repair.  | Every Repair | 2     |            |       |
| Before any work can commence on site, the design for the temporary supports to be placed at points A and T ( on attached drawing) will be Accepted by Eskom. At point A and point T the temporary supports must be able to support the weight of the existing once it is cut For quotation purposes, the existing pipes dimensions are 1200NB X 16meters long X 15mm thick with 20mm mortar lining      | Every Repair | 2     |            |       |
| The Existing pipe must be cut at point B, before the existing support C. At point S the existing pipe must be cut 100mm after the existing support R  | Every Repair | 2     |            |       |
| Fabricate four pipe sections as indicated on drawing points D, F, O, and Q. The pipe should be mortar lined.  | Every Repair | 2     |            |       |
| Supply 2X Klamflex couplings for points E and P. refer to "Bosloop to Wintershoek pipeline coupling" drawings Consider ambient temperature while fitting clamps to ensure correct setting gap.  | Every Repair | 2     |            |       |
| 3 X permanent supports to be cast for point G, J and N as per approved plinth design compiled by contractor and approved by Eskom   | Every Repair | 2     |            |       |
| Supply 1200NB pipe , 15mm thick for quotation purposes, 2x6m long with 2X lifting lugs at points I and L. The pipe should be mortar lined   | Every Repair | 2     |            |       |
| Prepare pipes and fillet , weld inside and outside at point B, H, M and S on site. Allow an extra 4 welds in case of unplanned conditions on site   | Every Repair | 2     |            |       |
| All welds shall comply with the API1104 standard. (8mm fillet weld).  | Every Repair | 2     |            |       |
| All pipe sections to be coated with "2 pack Epoxy" externally with a minimum 250µm dry film thickness plus recoatable polyurethane brilliant green H10 40µm topcoat   | Every Repair | 2     |            |       |
| Include 3rd party for welding test MPI and to use a test report   | Every Repair | 2     |            |       |
| Supply 4 X 1200NB smart seals( for quotation purposes, final sizes to be confirmed on site) 2 complete with stainless steel compression rings from Delmon Mining and Civils   | Every Repair | 2     |            |       |
| Supply 8 X 500ml EPIDERMIX 365 clear from ABE   | Every Repair | 2     |            |       |
| For the duration of the project on site, the contractor will be responsible for the following: -<br>-The supply of the mobile generator suitable for cutting and welding on site<br>-Welding and cutting machines<br>-Lifting machines and lifting tackle in line with "Driven Machinery Regulation"<br>-Drinking water, portable toilets, tools and consumables<br>-Work would be done at an open veld | Every Repair | 2     |            |       |

Estimate for Truck Mounted Crane for 8 days on site  
Estimated 28 days for 10 people - VJ Coupling  
Estimated 1300 return trip plus 1600 site travelling for 8 days  
Estimated 1300 return trip plus 5600 site travelling for 28 days  
Estimated 1300 return trip plus 5600 site travelling for 28 days

**TOTAL COSTS FOR DESIGNS FABRICATION AND INSTALLATION OF THE VJ COUPLING**

**SCOPE OF WORK FOR THE REPAIRS OF THE SCOUR VALVE (B)**

| Description   | Unit         | Qty  | Unit Price | Total |
|---|--------------|------|------------|-------|
| 25 Ton Truck Mounted Crane  | Every Repair | 2    |            |       |
| Accommodation   | Every Repair | 2    |            |       |
| Travelling / Transport - Truck Mounted Crane  | km           | 4600 |            |       |
| Travelling / Transport - Kombi for transporting employees   | km           | 4600 |            |       |
| Refer to the paragraph in 3.1 for repairs to scour pipe. Point A- In order to expose undamaged section of the pipe, cut concrete 1500mm X 1500mm X 200mm depth from the surface of the slab   | Every Repair | 2    |            |       |
| Point B- Cut pipe 10mm from the remaining concrete surface<br>Weld 200NB, 15mm thick pipe, 400mm long pipe to extend the pipe concrete surface  | Every Repair | 2    |            |       |
| Point C- Weld 200NB, 15mm thick, 90° long radius elbow pipe to extended pipe  | Every Repair | 2    |            |       |
| Point D- Weld a flange with a drilling table matching the existing valve. (for quotation purposes, consider it to be BS4504 of 1989 PN40 drilling table)<br>Fabricated pipe sections should be corrosion protected to DWS9900 specifications  | Every Repair | 2    |            |       |
| All pipe lining sections to be 400µm minimum and to be coated with "2 pack Epoxy" externally with a minimum 250µm dry film thickness plus recoatable polyurethane Brilliant green H10 40µm topcoat  | Every Repair | 2    |            |       |
| Include 3rd party for welding test MPI and to issue a test report   | Every Repair | 2    |            |       |
| For the duration of the project on site, the contractor will be responsible for the following: -<br>-The supply of the mobile generator suitable for cutting and welding on site<br>-Welding and cutting machines<br>-Lifting machines and lifting tackle in line with "Driven Machinery Regulation"<br>-Drinking water, portable toilets, tools and consumables<br>-Work would be done at an open veld | Every Repair | 2    |            |       |

Estimate for Truck Mounted Crane for 5 days on site  
Estimated 5 days for 5 people - Scour Valve  
Estimated 1300 return trip plus 1000 site travelling for 5 days  
Estimated 1300 return trip plus 1000 site travelling for 5 days

**TOTAL COSTS FOR THE FABRICATION AND INSTALLATION OF THE SCOUR PIPE**

**SCOPE OF WORK FOR THE REPAIRS OF STEEL PIPE SECTION (C)**

| Description  | Unit         | Qty  | Unit Price | Total |
|--|--------------|------|------------|-------|
| 25 Ton Truck Mounted Crane   | Every Repair | 2    |            |       |
| Accommodation  | Every Repair | 2    |            |       |
| Travelling / Transport - Truck Mounted Crane   | km           | 6600 |            |       |
| Travelling / Transport - Kombi for transporting employees  | km           | 6600 |            |       |
| Fabricate steel pipe section making attached drawings as reference, once final sizes are confirmed on site | Every Repair | 2    |            |       |

Estimate for Truck Mounted Crane for 10 days on site  
Estimated 10 days for 10 people  
Estimated 1300 return trip plus 2000 site travelling for 10 days  
Estimated 1300 return trip plus 2000 site travelling for 10 days

|  |   |              |            |             |              |
|--|---|--------------|------------|-------------|--------------|
| E  | Internal corrosion protect pipe with cement mortar lining 20mm thickness and allow for mortar lining repairs on site after welding  | Every Repair | 2          |             |              |
|  | Apply bitumen primer on pipe external only  | Every Repair | 2          |             |              |
|  | All welds shall comply with the API1104 standard. (8mm fillet weld).  | Every Repair | 2          |             |              |
|  | Include 3rd party for welding test MPI and to issue a test report   | Every Repair | 2          |             |              |
|  | For the duration of the project on site, the contractor will be responsible for the following: -<br>-The supply of the mobile generator suitable for cutting and welding on site<br>-Welding and cutting machines<br>-Lifting machines and lifting tackle in line with "Driven Machinery Regulation"<br>-Drinking water, portable toilets, tools and consumables<br>-Work would be done at an open veld | Every Repair | 2          |             |              |
|  | Cut and remove pipe section on site to accommodate fabricated pipe section. <b>Note that existing pipe is mortar lined and access point is about 200m from the leaking area</b>   | Every Repair | 2          |             |              |
|  | Prepare pipe ends and fit new pipe section  | Every Repair | 2          |             |              |
|  | Weld pipe in position inside and outside, use 150NB stub for cables and pipes   | Every Repair | 2          |             |              |
|  | Include 3rd party for welding test MPI and to use a test report   | Every Repair | 2          |             |              |
|  | Repair mortar lining and cover welded areas   | Every Repair | 2          |             |              |
| <b>TOTAL COSTS FOR FABRICATION AND INSTALLATION ON SITE</b>                        |   |              |            |             |              |
| <b>SCOPE OF WORK WORK FOR REPLACING PRE-CAST CONCRETE PIPE WITH STEEL PIPE (D)</b> |   |              |            |             |              |
|  | <b>Description</b>  | <b>Unit</b>  | <b>Qty</b> | <b>Rate</b> | <b>Total</b> |
|  | 25 Ton Truck Mounted Crane  | Every Repair | 2          |             |              |
|  | Accommodation   | Every Repair | 2          |             |              |
|  | Travelling / Transport - Truck Mounted Crane  | km           | 6600       |             |              |
|  | Travelling / Transport - Kombi for transporting employees   | km           | 6600       |             |              |
|  | Fabricate four concrete to steel pipe adaptor as per Eskom drawing number 0.80/6135 Rev.1   | Every Repair | 2          |             |              |
| F  | Inspection and release for coating. Note: the face to be welded on site shall have antirust material  | Every Repair | 2          |             |              |
|  | Corrosion protection to DWS 9900. Solvent free epoxy  | Every Repair | 2          |             |              |
|  | Inspect and release for site work   | Every Repair | 2          |             |              |
|  | Cut four sides( allowing for pieces if there are gaps on site) of 1100 nominal bore 15mm thick pipe and prepare for welding   | Every Repair | 2          |             |              |
|  | Provide two lifting lugs and weld them on the pipe  | Every Repair | 2          |             |              |
|  | supply 4 X 1200NB smart seals( for quotation purposes, final sizes to be confirmed on site) each complete with 2 stainless steel compression rings from from Delmon   | Every Repair | 2          |             |              |
|  | Supply 8 X 500ml EPIDERMIX 365 clear from ABE   | Every Repair | 2          |             |              |
|  | Supply 4 X 20mm round bar rolled to 1180 OD steel grade 300WA   | Every Repair | 2          |             |              |
|  | Fit two concrete to steel pipe adaptor on both concrete pipes prepared on site  | Every Repair | 2          |             |              |
|  | Position steel pipe between adaptors and align for welding  | Every Repair | 2          |             |              |
|  | 150mm stubs on the adaptor will be used for cable during welding, mobile welding and generator shall be provided by contractor  | Every Repair | 2          |             |              |
|  | Weld both sides of the pipe inside and outside to adaptors (Note: confined space work)  | Every Repair | 2          |             |              |
|  | For the duration of the project on site, the contractor will be responsible for the following: -<br>-The supply of the mobile generator suitable for cutting and welding on site<br>-Welding and cutting machines<br>-Lifting machines and lifting tackle in line with "Driven Machinery Regulation"<br>-Drinking water, portable toilets, tools and consumables<br>-Work would be done at an open veld | Every Repair | 2          |             |              |
| Include 3rd party for welding test MPI and to use a test report                    | Every Repair  | 2            |            |             |              |
| Include lifting machine and tackles for site work                                  | Every Repair  | 2            |            |             |              |
| <b>TOTAL COSTS FOR FABRICATION AND INSTALLATION ON SITE</b>                        |   |              |            |             |              |
| <b>TOTAL COST FOR ONE YEAR</b>   |   |              |            |             |              |

Estimate for Truck Mounted Crane for 10 days on site  
Estimated 10 days for 10 people  
Estimated 1300 return trip plus 2000 site travelling for 10 days  
Estimated 1300 return trip plus 2000 site travelling for 10 days