



## **Part 4**

# **BID DWS 02-0516 WTE**

# **TECHNICAL SPECIFICATION AND REQUIREMENTS**

**Diving Contract for the Work of Mechanical / Electrical and  
Civil Engineering Underwater Plant**

**Maintenance installations and equipment associated with the Department of Water and Sanitation in Northern, Southern,  
Eastern and Central Operations**



## 1. VALVES

All valves to be supplied, repaired or refurbished under this contract shall be in accordance with DWS 2510. It is the responsibility of the Contractor to assure that the supplier / sub Contractor is in possession of the necessary documentation in order to render the required service in accordance with the specification.

## 2. CORROSION PROTECTION

- 2.1. The contractor shall be responsible for ensuring that he is fully conversant with the requirements of the standard corrosion protection specification DWS 9900 and the relevant coating systems.
- 2.2. All equipment to be repaired or refurbished shall be coated in accordance with the above specification.

## 3. QUALITY CONTROL

- 3.1. The contractor or approved sub contractor shall adhere to the departmental specification DWS 2020.
- 3.2. The contractor's quality management system shall be in accordance with SANS ISO 9001: 2000.
- 3.3. The contractor shall implement a comprehensive quality control programme and accept full responsibility for the quality of his workmanship and the material used, irrespective of any quality surveillance that may be carried out by the engineer or his appointed representative.
- 3.4. In keeping with the principles contained in the above-mentioned code of practice, the contractor or any nominated and approved sub-contractor(s) shall -
  - (a) be responsible for compliance with all the clauses of this specification in every respect;
  - (b) carry out all inspections and tests called for in the specification in the presence of the Engineer or his appointed representative. The cost of these inspections and tests shall be included in the price; and
  - (c) Draft a quality control plan for manufacture and compliance with the Departmental quality plan for corrosion protection of all components indicating all the intended stages of testing during manufacture, cleaning, preparation and application as well as hold points for independent quality surveillance.
- 3.5. The quality control plans shall not be compromised once it has been agreed upon and shall be adhered to at all times.



## 4. WORKSHOP ASSEMBLY

- 4.1. To minimise actual on-site time and to assist in the erection and installation activities to be performed on site, all components, equipment and sub-assemblies shall be assembled at the contractor's workshop.
- 4.2. Individual components, units etc. of which the prior installation / assembly is not feasible or advisable, shall be clearly marked in such a manner that the actual installation / assembly thereof on site can be completed in the minimum time with a minimum of fitting and adjusting required.
- 4.3. Equipment should be delivered to site in the largest sub-assemblies that are practical and advisable.
- 4.4. For the purpose of performing factory tests as required in terms of this Specification and where considered practical according to the discretion of the Engineer, complete assemblies will be required.

## 5. STANDARDS

- 5.1. Unless otherwise specified all materials must comply with SANS specifications. The general applicable standards specifications for work carried out in accordance with this specification shall be:

DWS 2510	:	Standard specification for the supply of valves
DWS 9900	:	Standard specification for Corrosion Protection
DWS 2020	:	Standard specification for Quality Control
SANS 10142	:	All Electrical Specifications plus DWA Specifications
SANS 10142-2	:	Medium Voltage equipment
SANS 10064	:	Preparation of steel surfaces for coatings.
SANS 150	:	PVC-insulated cables.
SANS 152	:	Triple-pole on-load isolators.
SANS 156	:	Magnetic circuit breakers.
SANS 177	:	HV Insulators (Class B).
SANS 178	:	HV Non-Current Carrying Accessories.
SANS 182	:	Conductors for Overhead Electrical Transmission Lines
SANS 221	:	Steel cross-arms.
SANS 555	:	Transformer oil.
SANS 121	:	Hot-dip Galvanising.
SANS 767	:	Earth leakage Relays.
SANS 780	:	Transformers.
SANS 784, 1195	:	Solid drawn high conductivity copper.
SANS 808	:	Glands for PVC-insulated cables.
SANS 890, 891	:	Ballast's for tubular fluorescent lamp luminaries.
SANS 1041	:	Fluorescent lamps.
SANS 1091	:	National colour standards for paints.
SANS 1119	:	Tubular fluorescent lamp luminaries.
SANS 1130	:	Glass fibre-reinforcing material for pipe wrapping.



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SANS 1136	:	Cold-applied bitumen primer for steel pipeline protection.
SANS 1137	:	Hot applied bitumen for steel pipeline protection.
SANS 1178	:	The production of lined and coated steel pipes using bitumen or coal tar enamel.
SANS 1180	:	Flush mounted distribution boards.
SANS 1217	:	The production of painted and powder coated steel pipes.
SANS 1250	:	Capacitors for tubular fluorescent lamp luminaries.
SANS 1274	:	Coatings applied by the Powder-coating process.
SANS 1344	:	Medium duty solvent detergent.
SANS 5770	:	Cleanliness of blast-cleaned steel surfaces for painting (freedom of soluble salts).
SANS 5772	:	profile blast –cleaned steel surfaces for painting (profile gauge)
SANS 5769	:	cleanliness of blast cleaned steel surfaces for painting (freedom from dust and debris).
SANS ISO 1461	:	Hot dip galvanised coatings on fabricated iron and steel articles.
SANS ISO 2063	:	Metallic and other inorganic coatings – thermal spaying.
SANS ISO 2808	:	Determination of film thickness.
SANS ISO 8501-1	:	Preparation of steel substrates before application of paints and related Products - Visual assessment of surface cleanliness – Part 1 Rust grades and preparation grades of steel substrates after overall removal of previous coatings.
SANS ISO 8504-2	:	Preparation of steel substrates before application of paints and related Products – Surface preparation methods – Part 2 Abrasive blast cleaning.
SANS ISO 8503	:	preparation of steel substrates before application of paints and related products – Surface roughness characteristics of blast cleaned steel substrates.
SANS ISO 14713	:	protection against corrosion of iron and steel in structures – guidelines.
ISO 752	:	Zinc ingots.
BS 37	:	kWh meters.
BS 89	:	Indicating instruments.
BS 5493	:	Protective coating for steel structures against corrosion.
BS 3938	:	
IEC 185	:	Current transformers.
IEC 51	:	Running hour meters.
IEC 99-1	:	Surge Arrestors.
EN 1179	:	Zinc and Zinc alloy – primary zinc.

5.2. Where no applicable SANS Specification exists all materials must comply with the equivalent DIN, IEC, IP or BSS specifications or be of the quality as specified.



## 6. PRICE SCHEDULES

### 6.1 STAFF

The diving contractor shall complete the table below:

	CLASSES OF DIVING	DIVING DEPTH	PART OF STAFF (YES/NO)
1.	Class I Saturation diver(s)	at least 100 metres	
2.	Class II Surface Supplied mixed gas diver(s)	not exceeding 70 metres	
3.	Class II Surface Supplied air diver(s)	not exceeding 50 metres	
4.	Class III Surface Supplied nitrox diver(s)	not exceeding 30 metres	

\* Failure to complete the above table may render you bid non-responsive.

\*\* Summarised Curriculum Vitae of the divers that form part of your staff (core team) shall be attached to your bid.

#### Pre-qualification for saturation diving (75 meters and deeper)

If indicated Yes (on the above table) for "Class I Saturation diver(s)" provide your Track Record & Experience (schedule of similar work and value), with contactable references. In addition, reference letter from at least three (3) previous clients of major projects should be attached.

List the numbers (quantity) of staff in the following categories presently available within your own organisation:

Project Management : \_\_\_\_\_  
 General Machinery Regulations 2(1) Appointee : \_\_\_\_\_  
 Class I saturation diver : \_\_\_\_\_  
 Class II surface-supplied mixed gas diver : \_\_\_\_\_  
 Class II surface-supplied air diver : \_\_\_\_\_  
 Class III surface supplied nitrox diver : \_\_\_\_\_  
 Diving Supervisor : \_\_\_\_\_  
 Dive Systems Technician : \_\_\_\_\_  
 Boat Skipper : \_\_\_\_\_  
 Driver (EHMV - Extra Heavy Motor Vehicle) : \_\_\_\_\_  
 Driver Operator (Extra Heavy Motor Vehicle with crane) : \_\_\_\_\_  
 Semi Skilled : \_\_\_\_\_  
 General Workers : \_\_\_\_\_  
 Administrators : \_\_\_\_\_

Other:

\_\_\_\_\_ : \_\_\_\_\_  
 \_\_\_\_\_ : \_\_\_\_\_



It is an expressed condition that the Contractor shall execute the contract under the supervision of a person appointed under General Machinery Regulations 2(1).

Who is the person appointed under the Act? \_\_\_\_\_

Is the certified copy of the letter of appointment herewith attached? (Y/N) \_\_\_\_\_

**6.2 LABOUR COSTS**

The following labour costs per appropriate skill level is required (per hour, unless otherwise specified). All prices given must **exclude** VAT. The labour costs herewith will be used during the Contract period to evaluate quotations submitted by the appointed.

LEVEL	NORMAL TIME	OVERTIME	TRAVELLING TIME	DAILY LIVING OUT ALLOWANCE
Project Manager				
Class I saturation diver				
Class II surface-supplied mixed gas diver				
Class II surface-supplied air diver				
Class III surface supplied nitrox diver				
Diving Supervisor				
Dive Systems Technician				
Boat Skipper				
Driver (EHMV)				
Driver Operator				
Semi-Skilled				
General Worker				
Administration				
Other:				



**Working Hours:**

The contractor shall work 9 hours per day. Time shall be in accordance with DWS regulations or as agreed between the Contractor and DWS

**Overtime:**

The Contractor shall request to the Department in writing approval prior to working overtime. The contractor shall indicate the benefit of the overtime to the Department, before this approval is granted. Emergency repairs will be exempted from the above prior approval process. Overtime shall be in accordance with the Basic Conditions of the Employment Act.

**Travelling time:**

The travelling time shall be the rates charged for personnel while travelling to and from site in order to execute the required tasks. Only 70% of the labour rate may be claimed for travelling.

**Living Out Allowance:**

The living out allowance shall include all food costs as well as any other costs that might arise when staying out, excluding accommodation.

**Accommodation:**

The Cost containment circular as updated from National Treasury shall apply.

1. Contractors Mobile Accommodation (*furnish full rates and/or unit costs for these*). Failure to do so shall render this option none-available for the duration of contract.
2. Approved Establishments (Hotel, Guesthouses etc.) A maximum of **R1,300.00** per person per night including dinner, bed, breakfast and parking shall be claimed. Approved establishments invoices shall be attached during invoicing of diving operations.



### 6.3 TRANSPORT COSTS

Tariff is in cents per kilometre (exclusive of VAT) as from the dates below: No back charge of tariffs will be made before the under-mentioned dates for invoices already processed.

These rates are updated on a monthly basis by the Department of Transport.

#### Petrol

Engine swept volume CC	Sedan/station wagon	Light delivery vehicle (LDV) 4x2	Light delivery vehicle (LDV) 4x4	Mini bus/MPV
	A	B	C	D
	From Jan 2016	From Jan 2016	From Jan 2016	From Jan 2016
Up to 1250	241.7	213.4	350.5	326.6
1251 to 1550	303.2	272.1		353.1
1551 to 1750	<b>332.4</b>	280.2		
1751 to 1950	390.7	334.9	398.6	408.6
1951 to 2150	401.8	370.7		478.9
2151 to 2500	476.1	<b>385.4</b>	458.8	599.7
2501 to 3500	589.5	402.5	524.1	670.8
Over 3500	671.2	469.5		

#### Diesel

Engine swept volume CC	Sedan/station wagon	Light delivery vehicle (LDV) 4x2	Light delivery vehicle (LDV) 4x4	Mini bus/MPV
	A	B	C	D
	From Jan 2016	From Jan 2016	From Jan 2016	From Jan 2016
Up to 1250	221.2	236.0	347.8	429.7
1251 to 1550	286.8	291.5		
1551 to 1750	<b>308.3</b>	296.7		
1751 to 1950	322.7	335.7	416.5	538.1
1951 to 2150	367.9	339.7		
2151 to 2500	431.4	<b>372.9</b>	466.0	573.9
2501 to 3500	555.7	382.1	526.8	655.0
Over 3500		511.0		

The maximum permissible vehicle rates to be claimed during the execution of this assignment are written in **bolded** above, hence they are:

SEDAN/SUV/MPV : 1600cc (petrol or diesel)  
LDV 4x2/4x4 : 2500cc (petrol or diesel)



### 6.3.1 GREATER CAPACITY VEHICLES

The utilization of vehicles with greater engine capacity than above shall be requested in writing, where again, the Contractor shall indicate the benefit for to the Department for consideration.

### 6.3.2 HEAVY & EXTRA HEAVY MOTOR VEHICLES

#### Heavy and Extra Heavy Motor Vehicles (Diesel)

Load Capacity in (Tonne)	Rate per Kilometre (Rand/km)
5 to 8 Tonne (drop-side)	
5 to 8 Tonne (with crane)	
10 to 14 Tonne (drop-side)	
10 to 14 Tonne (with crane)	
20 to 30 Tonne (flat-deck)	

**RATE PER KILOMETRE (Rand/km)** = this rate does not include the driver/operator and is expressed in rand/km.

**NOTE:**

- Rates for all vehicles not listed above must be supplied by the bidder for approval.
- There is no provision for an additional rate for towing a trailer.
- Bidders are encouraged to furnish hourly rates or kilometre rates of plant applicable to the execution of this contract.



## **7. SCOPE OF WORK**

**ITEM A. GRASSRIDGE DAM (Eastern Cape Province)****1. SCOPE OF WORK****1.1. Grassridge Dam Scope of Work - : Diving Services required(Background information)**

- 1.1.1. Grassridge Dam was built on the Great Brak River, 30km south west of Hofmeyer in the Eastern Cape in 1924, by the Great Fish River Irrigation Board. Its primary purpose is irrigation. Since the early seventies, it is also used as a balancing dam for the water from the Orange River which supplies water to the Fish and Sundays River Valleys as well as the Municipalities of Cradock, Grahamstown and Nelson Mandela Metro.
- 1.1.2. Rehabilitation works are required to the earth dam wall, concrete spillways and outlet works to upgrade the dam to meet dam safety requirements. The Contractor shall take note that the Department of Water and Sanitation Construction Division is established on site until approximately December 2013 to execute the civil contract as well as a Mechanical and Electrical (M&E) Contractor to rehabilitate M&E components. The necessary coordination needs to be established between the three Contactors.
- 1.1.3. The right bank outlet works comprise an outlet tower about 30m from the bank connected to a 3.0m diameter concrete tunnel discharging into a stilling basin with a Crump measuring weir, downstream. The tower is reached by a pedestrian bridge spanning 30m and supported in the middle by a concrete pier. The tower has a vertical central intake with four square intakes radially arranged below the water.
- 1.1.4. The left bank outlet works comprises two radial gates 3.5m by 2,43m. One of these gates as well as the service gate in the form of a stop block needs to be refurbished.

**1.2. Detailed statement of scope of work:**

- 1.2.1. Due to construction works at the new outlet structure the old inlet tower at the dam was put into operation as not to interrupt the supply to users. Upon attempting to close the wall sluices in the old outlet tower it was found that they do not seal/close satisfactory. These sluices have to be removed and replaced with new wall sluices. This needs to be completed before any refurbishment works can be done in the tower and the civil works in the tunnel is also dependent on sealing off effectively any inflows to the tower.
- 1.2.2. The cylindrical valve inside the tower will be in the closed position ensuring no flow conditions to create a safe environment for the divers to work.
- 1.2.3. Before any refurbishment can commence, divers will need to remove an unknown number of sandbags that was lowered down in front of one or more wall sluices. The sandbags were an attempt to seal off leaks at the wall sluices.
- 1.2.4. Currently the silt level in the dam is higher than the invert of the sluice gates. A certain amount of dredging will have to be done in front of all the wall sluices in order to position a caisson against the tower wall. This caisson will act as a "coffer dam" and is required to enable the M&E Contractor to replace the existing wall sluices in the dry.

- 1.2.5. Divers will also be required to position, install and if need be, seal off any leaks between the caisson and the tower wall. The caisson must be fitted on and removed from the tower at all four wall sluices, on four different occasions.
- 1.2.6. The M&E Contractor requires dry conditions at the radial gate when refurbishment is to be done. The service gate upstream of the radial gate is supposed to provide the required conditions. It was tested and it does not seal properly. The leaks will have to be sealed prior to the commencement of the refurbishment and the seal will have to be effective to last for a period of four weeks.
- 1.2.7. Once the radial gate has been refurbished, the service gate will be removed in order to fit new seals to the gate. An inspection dive will be required to establish the condition of the guide rails of the radial gate. If it is not in an acceptable condition, these rails will have to be removed and replaced by refurbished or new rails fitted

### **1.3. Proposed sequence of activities:**

#### **1.3.1. The Old Outlet Works**

- 1.3.1.1. Divers to do an inspection dive to ascertain the extent of sandbag removal as well as the extent of dredging to be done.
- 1.3.1.2. Divers to remove sandbags and any other obstructions in front of the wall sluices.
- 1.3.1.3. After removal of sandbags a safe working area need to be cleared in front of all four wall sluices by means of de-silting. Silt must be deposited at a location far enough from the working area not to influence the work and must be to the satisfaction of the Engineer.
- 1.3.1.4. After completion of the de-silting, divers to install a caisson in front of first wall sluice. This operation must be completed on three more occasions at approx three week intervals. A final programme will be drawn up together with the M&E Contractor.
- 1.3.1.5. The caisson will be supplied by others.
- 1.3.1.6. Divers to remain on standby until caisson is emptied and then to seal of any leaks effectively that may still occur. These seals must stay secure and in place for at least three weeks.
- 1.3.1.7. The seals to the service gate at upstream of the radial gate will require a separate mobilisation and de-mobilisation, because it might not be possible to synchronise this work with the work at the old tower.
- 1.3.1.8. Removal of cassion.

#### **1.3.2. The Radial Gate Outlet Works:**

- 1.3.2.1. Divers to do an inspection to familiarise them with conditions at hand.
- 1.3.2.2. Divers to seal of any leaking joints present in order for refurbishment works to commence on radial gate.
- 1.3.2.3. After works are completed on radial gate, the service gate will be removed by the M&E Contractor for refurbishment.
- 1.3.2.4. With the service gate removed and the radial gate in a closed position, the divers must remove the service gate guides for refurbishment and re-install them (or new ones) as soon as works are completed on the guides.
- 1.3.2.5. **Note:** The programming of work at the old tower and at the radial gate will have to be done jointly with the Client and the M&E Contractor.

**1.4. Additional information**

- 1.4.1. Access to the dam is via a dirt road.
- 1.4.2. Visibility is poor to zero.
- 1.4.3. Accommodation: Various guesthouses in and around Cradock.
- 1.4.4. Estimated time to complete the project is 600 hours.
- 1.4.5. Diving company must also allow for 7 mobilisation and demobilisation occasions for unforeseen circumstances i.e. weather, sourcing of other equipment, etc. This must be clearly indicated in the pricing.
- 1.4.6. Diving company must be completely self sufficient in all areas of completing the project. Any assistance must be discussed with the engineer timeously and it must be understood that in some cases it might not be possible.
- 1.4.7. A suitable barge must also be allowed for and the availability of one from the employer can be discussed but its availability must not be taken for granted.
- 1.4.8. Diving company to supply all diving equipment as well as equipment and consumables to complete the project safely.
- 1.4.9. Diving company must also supply own boat/rubber duck for transport to and from the barge.
- 1.4.10. Dive team must ensure that a broco cutting set is available should it be needed as in some cases a hydraulic grinder will prove to be unwieldy and not as effective.

**1.5. Report on diving services rendered**

## 1.5.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

## 2.1. Time rate basis for bidding purposes only.

- 2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

DESCRIPTION	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Grassridge Dam	Diving services (10.1)	Approximately 40 days expected normal diving time, but could be 73 days.
	Reports (8)	Compile reports = 4 days
Duration	All work	Approximately four months

## 2.2. Actual contract values

- 2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.
- 2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for diving operations (73 days Diving Operations)

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (Eight)	Grassridge dam	To be confirmed with Area Office
1.(b)	Site establishment (Eight)	Grassridge dam	To be confirmed with Area Office.
2.	2.1 Inspection dive 2.2 Remove sandbags 2.3 Dredge 2.4 Install caisson. M&E Contractor to dewater. 2.5 Seal any leaks. 2.6 Detach and remove caisson Repeat 2.4 to 2.6 for three other gates.	Grassridge dam	As soon as site establishment is completed
3.	3.1 Inspection Dive and seal service gate upstream of Radial gate. 3.2 Remove service gate guide rails 3.3 Re-install guide rails.	Grassridge dam	To be confirmed by M&E Contractor
4.	Detailed Technical Report on diving operations (4 days)  Report to be supplied within 5 days of respective dives.	Grassridge dam	4.1 Initial report to be handed over on site after the investigation dive. 4.2 Final report within five days after the completion of the diving works after testing the system.
1.(c)	Demobilisation (Eight)	Grassridge dam	To be completed within two days after completion of Item 2.

### 4. LOCATION OF SITE:

#### 4.1. Grassridge dam

- 4.1.1. The dam is situated approx 45km outside Cradock in the Eastern Cape Province.  
4.1.2. Coordinates: S31° 46' 10.2" E25° 28' 11.5"

#### 4.2. Road map

- 4.2.1. See any commercially available road map.

## 5. Depth of dive

### 5.1. Grassridge dam

- 5.1.1. F.S.L. = 1057.8 m Full Supply Level (metres above sea-level)  
 P.L. = 1055 m Present level (m) on date 01 September 2011  
 L.L. = 1042.8 m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 15 m

P.L. – L.L. = 13 m

- 5.1.2. **Remarks:** The successful bidder should confirm the actual value of the Present Level (P.L) from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (5m <sup>3</sup> / day) (stated)	YES	YES	
8	HP COMPRESSOR (Desilting)	YES	YES	
9	LP COMPRESSOR			
10	UNDERWATER CUTTING SYSTEM (BROCO)	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

- 6.2. **Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

## 7. PLANT AND EQUIPMENT HIRE for the estimated 73 days

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 73 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	7	Dredge pump (Sm <sup>3</sup> / day)		
7.4	8	HP Compressor		
7.5	10	Cutting Equipment (Broco)		
7.6	14	Rubber boat		
7.7	13	Barge		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate.

7.1. If not included in the diving rates. Actual Proof of expenditures must be submitted.

## 8. DETAILED REPORT(S) ON DIVING SERVICES

8.1. Time estimated 4 (days) Rate per day R \_\_\_\_\_ Rate for 4 days R \_\_\_\_\_

8.2. Provide final report with colour pictures.

## 9. TRANSPORT RATES

9.1. TRANSPORT COSTS: Only for transport from and to site during the 73 days diving operation

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
TOTAL AMOUNT					R

9.2. Transport costs (from and to site during the 73 days diving operation)

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate.

9.3. Market related fuel tariffs are applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

## 10. PRICE SCHEDULES

## Note:

- Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 73 days.
- This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- Adjudication of this bid will be evaluated in a 73 days diving operation.
- This price schedule must be completed for your bid to be considered.
- Note: All items must be completed by the Bidder

## 10.1. Diving rates (9 hours per day) for a seventy-three days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 73 days(number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ (day rate)  
R \_\_\_\_\_ (73 days rate)

## 10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (once)  
R \_\_\_\_\_ (eight times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.3. Demobilisation (including transport costs from site to home basis)  
R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (eight times)

## 10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (73 days rate)

## 10.4 SUMMARY TOTAL COST FOR ITEM A:

## 10.4.1. Diving Operations for 73 days

ITEM	DESCRIPTION for 73 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (73 days)	R
8	REPORTS ON DIVING SERVICES (4 days)	R
9	TRANSPORT RATES (73 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (73 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (EIGHT)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (73 days)	
<b>TOTAL COST FOR ITEM A(EXCL. VAT)</b>		R

10.4.2. Note: All items must be completed by the Bidder.

**ITEM B. FLORISKRAAL DAM (Eastern Cape Province)****1. SCOPE OF WORK****1.1. Floriskraal Dam Scope of Work - : Diving Services required (Background information)**

- 1.1.1. Floriskraal Dam is a dam on the Buffels River, near Laingsburg, Western Cape, South Africa. It was established in 1957.
- 1.1.2. The radial gates at Floriskraal dam were last refurbished in the late 1980's. These radial gates have not been refurbished for more than 20 years. It was decided that an inspection on the upstream side of the gates should be carried out to inspect the condition of the gates. The intake to these radial gates however has more than 5m of sludge and need to be cleared by scouring and dredging before installing a service gate.
- 1.1.3. The scope of work will involve airlifting in front of radial gate number one (1) and assist with installing and removal of a service gate for inspection of the radial gates.

**1.2. Detailed statement of Scope of Work:**

- 1.2.1. Divers will also be required to position, install and if need be, seal off any leaks between the caisson and the tower wall. The caisson must be fitted on and removed from the tower at all four wall sluices, on four different occasions.
- 1.2.2. The M&E Contractor requires dry conditions at the radial gate when doing the inspection. The service gate upstream of the radial gate is supposed to provide the required conditions. If the service gate is tested and found not seal properly the leaks will have to be sealed prior to the commencement of the inspection and the seal will have to be effective to last for a period of four weeks.
- 1.2.3. Once the radial gate has been inspected, the service gate will be removed. An inspection dive will be required to establish the condition of the guide rails of the radial gate. If it is not in an acceptable condition, these rails will have to be removed and replaced by refurbished or new rails fitted

**1.3. Proposed sequence of activities:**

- 1.3.1. Duration is estimated to be 20 Days.
- 1.3.2. Scour by fully opening the Radial Gate.
- 1.3.3. Close the Radial Gate after completing the scouring exercise.
- 1.3.4. Desilt in front of the radial gate and ensure access for the stoplogs.
- 1.3.5. Install stoplogs upon completion of desilting process.
- 1.3.6. Seal of all possible leaks on stoplogs.
- 1.3.7. Divers can then demobilise upon completion sealing of leaks process.
- 1.3.8. Inspection on the Radial gate no 1 will then be conducted.

**1.4. Additional Provisions**

- 1.4.1. Divers should be prepared for another 2 mobilisation if required. This would mean another 15 days on site if requested by the Department.

**1.5. Report on diving services rendered**

## 1.5.1. Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

## 2.1. Time rate basis for bidding purposes only.

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

DESCRIPTION	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Floriskraal Dam	Diving services (10.1)	Approximately 40 days expected normal diving time, but could be 73 days.
	Reports (8)	Compile reports = 2 days
Duration	All work	Approximately four months

## 2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates. (Refer to Annexure Part 4 ).

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for the 73 days diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (Eight)	Floriskraal dam	To be confirmed with Area Office
1.(b)	Site establishment (Eight)	Floriskraal dam	To be confirmed with Area Office.
2.	2.1 Inspection dive 2.2 Remove sandbags 2.3 Dredge 2.4 Install caisson. M&E Contractor to dewater. 2.5 Seal any leaks. 2.6 Detach and remove caisson Repeat 2.4 to 2.6 for three other gates.	Floriskraal dam	As soon as site establishment is completed
3.	3.1 Inspection Dive and seal service gate upstream of Radial gate. 3.2 Remove service gate guide rails 3.3 Re-install guide rails.	Floriskraal dam	To be confirmed by M&E Contractor
4.	Detailed Technical Report on diving operations  Report to be supplied within 5 days of respective dives.	Floriskraal dam	4.1 Initial report to be handed over on site after the investigation dive. 4.2 Final report within five days after the completion of the diving works after testing the system.
1.(c)	Demobilisation (Eight)	Floriskraal dam	To be completed within two days after completion of Item 2.

#### 4. LOCATION OF SITE:

##### 4.1. Floriskraal Dam

4.1.1. The dam's physical address is  $\pm$  13 km outside Laingsburg on the R323, turn left for another 8 km. Western Cape Province.

4.1.2. Coordinates: Not available

##### 4.2. Road map

4.2.1. See any commercially available road map.

## 5. Depth of dive

### 5.1. Floriskraal Dam

- 5.1.1. F.S.L. =1050 m Full Supply Level (metres above sea-level)  
 P.L. =1045 m Present level (m) on date  
 L.L. =1030 m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

- F.S.L. – L.L. = 20m  
 P.L. – L.L. = 15m

- 5.1.2. **Remarks:** The successful bidder should confirm the actual value of the Present Level (P.L) from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO			
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR (Desilting)	YES	YES	
9	LP COMPRESSOR			
10	UNDERWATER CUTTING SYSTEM	N/A	N/A	
11	UNDERWATER WELDING SYSTEM	N/A	N/A	
12	WELDING RODS (60 RODS/BOX)	N/A	N/A	
13	BARGE / FLOATING PLATFORM	N/A	N/A	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS			
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	N/A	N/A	
18	TIRFORS	N/A	N/A	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

- 6.2. **Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

**7. PLANT AND EQUIPMENT HIRE for the estimated 73 days**

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 73 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	6	Photographic equipment		
7.4	7	Dredge pump (5m <sup>3</sup> / day)		
7.5	8	HP Compressor		
7.6	14	Rubber Boat		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate

7.1. If not included in the diving rates. Actual Proof of expenditure must be submitted.

**8. DETAILED REPORT(S) ON DIVING SERVICES**

8.1. Time estimated 2 (days) Rate per day R \_\_\_\_\_ Rate for 2 days R \_\_\_\_\_

8.2. Provide final report with colour pictures

**9. TRANSPORT RATES**

9.1. TRANSPORT COSTS: Only for transport from and to site during the 73 days diving operation

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				<b>TOTAL AMOUNT</b>	R

9.2. Transport costs (from and to site during the 73 days diving operation)

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

**10. PRICE SCHEDULES (Note: All items must be completed by the Bidder.)****Note:**

- a) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 73 days.
- b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- c) Adjudication of this bid will be evaluated in a 73 days diving operation.
- d) This price schedule must be completed for your bid to be considered.

**10.1. Diving rates (9 hours per day) for a seventy-three days diving operation****10.1.1. Day rates for diving team on site if not diving**

Day rate R \_\_\_\_\_

**10.1.2. Number of divers \_\_\_\_\_ Normal day.**

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 73 days (number of divers \_\_\_\_\_)

- i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

**10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 73 days****10.2. Mobilisation, site establishment and demobilisation**

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (once)  
R \_\_\_\_\_ (eight times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.3. Demobilisation (including transport costs from site to home basis)  
R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (eight times)

**10.3. Project Management**

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (73 days rate)

**10.4 SUMMARY TOTAL COST FOR ITEM B:****10.4.1. Diving Operations for 73 days**

<b>ITEM</b>	<b>DESCRIPTION for 73 days diving operations</b>	<b>BID PRICE (EXCL. VAT)</b>
<b>7</b>	<b>PLANT AND EQUIPMENT HIRE RATES (73 days)</b>	<b>R</b>
<b>8</b>	<b>REPORTS ON DIVING SERVICES (2 days)</b>	<b>R</b>
<b>9</b>	<b>TRANSPORT RATES (73 days)</b>	<b>R</b>
<b>10.1</b>	<b>DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 &amp; 10.1.3) (73 days)</b>	<b>R</b>
<b>10.1.1</b>	<b>DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)</b>	<b>R</b>
<b>10.2</b>	<b>MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (EIGHT)</b>	<b>R</b>
<b>10.3.1</b>	<b>DIVING PROJECT MANAGER'S RATE (73 days)</b>	
<b>TOTAL COST FOR ITEM B(EXCL. VAT)</b>		<b>R</b>

**ITEM C. VOELVLEI DAM (Western Cape)****1. SCOPE OF WORK****1.1. Voelvlei Dam Scope of Work - : Diving Services required (Background information)**

- 1.1.1. The In/Outlet Tower left (south) intake is blocked due to landslide. The intake needs to be completely cleared by displacing the debris to a position far north of In/Outlet Tower. Once the debris is completely removed a rock face shall appear on the southward embankment. The area in front of the intakes; and especially the southern inclined embankment need to be cleared to prevent choking of the water inflow to the intakes.
- 1.1.2. **Conditions & Access:** The dam is located about 100m above sea level with a maximum diving depth of approximately 18m. The current depth is 16m, but due to high silt deposits and underwater land slide the dive is expected to start at a depth of 12m. Zero visibility is to be expected.
- 1.1.3. Due to site access constraints the Contractor shall be responsible to carry out preliminary assessment of site lay-out and conditions to compiling on-site procedures (equipment to be used for the removal of debris). The In/Outlet Tower can be reached by foot via an access bridge with a usable width of 1,7m. The Contractor shall facilitate access for dredging and the removal of debris.
- 1.1.4. The Dam Wall is accessible with vehicles. It is possible to reach the water edge by foot, but the area is not easily accessible due to boulders and rocks. The In/Outlet Tower can be reached by launching a boat at "Voelvlei Yacht Club". A four wheel drive vehicle shall be required for the diving and dredging operation.
- 1.1.5. Quantity Surveyor: Affective and efficient work performance is required and to be maintained by the Contractor. A survey shall be carried out by the Department -or appointed third party to measure the quantity settlement to be displaced at the affected intake area. Part-payments of the diving company may also be certified by the Quantity Surveyor.
- 1.1.6. Dredging material: Dredging material expected in front of the inlets would be granular, including sand, occasionally larger stone and possibly branches (less likely). Some of material may be removed by hand and baskets.

**1.2. Detailed statement of scope of work**

- 1.2.1. Situation and hazards to remove debris.
- 1.2.2. No underwater visibility.
- 1.2.3. Although large trees stumps are not expected, various sizes of branches and rocks may be expected on the bottom.
- 1.2.4. The outlet works will be shut-off only when dredging work is carried out within 5m radius of Inlet number 2. Discharge of water from Inlet number 2 shall be on a continuous basis if possible. Safety procedure shall be in place to prevent diver(s) from entering within this designated 5m radius area during dredging. The diver must be aware of his positioning and water movement at all times. A grid shall be provided by DWS to be installed in front of inlet number 2, to make provision for secondary safety precautions. The Contractor may be required to assist with underwater installations for fastening of grids to the existing anchors imbedded in concrete).
- 1.2.5. The left embankment area (South from IN/Outlet Tower) is steep and unstable (especially upstream of In/Outlet Tower at Inlet number 1). This materials caused inlet number 1 to be covered with debris and out of operation. Underwater landslide must be stabilised as far as possible.
- 1.2.6. A Lock-Out Safety Procedure shall be agreed on and established between the Departmental Operations Staff and the Contractor Site Supervisor (Safety Officer) for the operation of Outlet Works. A Permanent Lock-Out procedure of Outlet number 1 shall be maintained during the dredging operation. Operation of Outlet number 2 shall mutually be agreed between the diving company and DWS to ensure safe working condition for the divers.
- 1.2.7. Site establishment and de-establishment, equipment, tools and consumables.
- 1.2.8. All equipments which are not specifically mentioned will be supplied by the contractor and shall be included in the bid price.
- 1.2.9. The Contractor shall ensure that his equipment are serviceable as required by the Safety Act. The contractor shall ensure that his procedures are in place to comply to efficient execution of the site establishment procedures and establish the most sufficient and effective settlement displacement method of the debris. Down time due to neglect of in-proper maintenance procedures and faulty equipment shall be for the Contractor's account.
- 1.2.10. The dredge pump shall be equipped with minimum of 200 mm diameter in- and outlet pipes. The silt requires to be displaced at a minimum of 50 meters from the affected area, towards the North. Other dredging equipment to be offered for use during this tender shall be considered for approval by the Department. However, considerations for the most effective bulk displacement of material shall be for the Contractor's advantage in evaluating of this tender. Refer to Annexure 'B' Similar Work Undertaken and Annexure 'C' List of Sub-Contractors/ Equipment Hiring.

- 1.2.11. The Department shall arrange for a survey services and/or third party to determine the progress and the quantity of debris removed.
- 1.2.12. A daily reporting defining the progress, reasons for delays and estimated volume displacement, etc. of the affected area due to dredging shall be documented. The daily report shall include necessary sketches (if required) to assist in the clarification. After completion of the Contract, the Contractor shall provide all relevant reports complete with an index for easy reference. Sketches and other information documented on site shall also be filled in an acceptable manner for future references and use by the Department. All this documentations shall be handed over to the Department no later than 7 working days after completion of the Contract.
- 1.2.13. **Detail of the intake works.**
  - 1.2.13.1. An emergency gate of 1.985 m x 1.985 m with a mass of approximately 2200 kg is installed at the left intake opening number 1. Two Ø1600 x 1600 mm inlets are situated approximately 22 m below the Deck level of In/Outlet Tower floor. The inlets are placed next to each other, with a 3.05 m wall separating them. This wall extends at a length of 6.1 m away from tower. The dividing wall has caused Inlet number 2 not be affected by the land slide and it is possible that it might be clear of the debris.
  - 1.2.13.2. The emergency gate is stuck in front of Inlet number 1 and is covered with approximately 5.5 m of silt, leaving Inlet number 1 totally out of use. There are no trash racks in front of the two inlets that may prevent access. However, remains of old steel trash racks (manufactured of channel profile and round bar) may still be found, as most of the rusted trash racks were removed to the best of the Departmental knowledge.

### 1.3. Proposed sequence of activities

- 1.3.1. Assist the Department to install temporary trash rack at Inlet number 2 and to be removed after completion of dredging project.
- 1.3.2. Dredge and clear left (south) embankment.
- 1.3.3. Re-instate stability of stone barrier in front of Inlet number 1 and 2. Determine the material bulk to be removed upstream of barrier.
- 1.3.4. Dredge and clear debris in front of Intake number 1 and 2. (Remove also the remains of old trash racks).
- 1.3.5. Recovering of sluice gate in front of Outlet number 1. All debris requires to be removed from the wheels of the emergency gate, to allow obstruction and free movement along vertical rails.
- 1.3.6. Dredge and clear in front of intakes and on left inclined embankment to prevent future land slides occurring.

1.3.7. Inspect and Report condition and stability of the stone retainer wall (5.5 m high) in front of inlets.

1.3.8. Facilitate site establishment and clear site on completion of the contract.

**1.4. Additional information**

The following services will be supplied by the Department:

1.4.1. (In/Outlet Tower): 380V, 50Hz power point.

1.4.2. (In/Outlet Tower): 220V single-phase 50 Hz point.

1.4.3. (In/Outlet Tower): Electric Overhead Crane (16 ton): An Operating certificate shall be required by Contractor operator and be available on site at all times.

**1.5. Report on diving services rendered**

1.5.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

**2.1 Time rate basis for bidding purposes only.**

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Voelvlei Dam	Diving services (10.1)	Approximately 40 days expected normal diving time, but could be 80 days.
	Reports (8)	Compile reports = 3 days
Duration	All work	Approximately four months

**2.2. Actual contract values**

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates. (Refer to Annexure Part 4 ).

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1 Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (Six)	Voelvlei Dam	To be confirmed with Area Office
1.(b)	Site establishment (Six)	Voelvlei Dam	To be confirmed with Area Office.
2.	2.1 Inspection dive 2.2 Dredge and clear in front of inlet number 1 and 2. 2.3 Install temporary grid at inlet number 2 and remove the grid on completion of dredging. 2.4 Locate emergency gate for the outlet number 1 and remove all mud and debris from the wheels. Inspect condition of the emergency gate and wheels after the cleaning process and report to the Departmental Engineer on site.	Voelvlei Dam	As soon as site establishment is completed
3.	Detailed Technical Report on diving operations  Report to be supplied within 5 days of respective dive.	Voelvlei Dam	4.1 Initial report to be handed over on site after the investigation dive. 4.2 Final report within five days after the completion of the diving works after testing the system.
1.(c)	Demobilisation (Six)	Voelvlei Dam	To be completed within two days after completion of Item 2.

#### 4. LOCATION OF SITE:

##### 4.1. Voelvlei Dam

4.1.1. Voelvlei Dam is situated about 45km from Paarl following the R44, which is situated 60km from Cape Town.

##### 4.2. Road map

4.2.1. See any commercially available road map.

## 5. Depth of dive

### 5.1. Voelvlei Dam

- 5.1.1. F.S.L. = 287 m Full Supply Level (metres above sea-level)  
 R.L. = 286,25 m  
 P.L. = 286,25 m Present level (m)  
 L.L. = 269,5 m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

- F.S.L. – L.L. = 17, 5 m  
 P.L. – L.L. = 16, 75 m

- 5.1.2. **Remarks:** The successful bidder should confirm the actual value of the Present Level (P.L) from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR (Desilting)	YES	YES	
9	LP COMPRESSOR			
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	YES	YES	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS			
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder. Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.

**7. PLANT AND EQUIPMENT HIRE** for the estimated 80 days

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 80 days
7.1	4	Diving cage (certified)		
7.2	6	Photographic equipment – still		
7.3	7	Dredge pump (5m <sup>3</sup> / day)		
7.4	8	HP Compressor		
7.5	10	Cutting equipment (broco)		
7.6	12	Welding rods (60 rods / box)		
7.7	13	Barge		

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 80 days rate.

7.1. If not included in the diving rates. Actual Proof of expenditures must be submitted.

**8. DETAILED REPORT(S) ON DIVING SERVICES**

8.1. Time estimated 3 days Rate per day R \_\_\_\_\_ Rate for 3 days R \_\_\_\_\_

8.2. Provide final report with colour pictures

**9. TRANSPORT RATES**

9.1. TRANSPORT COSTS: Only for transport from and to site during the **80 days** diving operation

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
TOTAL AMOUNT					R

9.2. Transport costs (from and to site during the 80 days diving operation)

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 80 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

**10. PRICE SCHEDULES****Note:**

- a) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 80 days.
- b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- c) Adjudication of this bid will be evaluated in a 80 days diving operation.
- d) This price schedule must be completed for your bid to be considered.

## 10.1. Diving rates (9 hours per day) for a eighty- days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 80 days(number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3 Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 80 days

## 10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (six )

R \_\_\_\_\_ (six times)

10.2.2. Site establishment R \_\_\_\_\_ (six ) R \_\_\_\_\_ ( six times)

10.2.3. Demobilisation (including transport costs from site to home basis)

R \_\_\_\_\_ (six times) R \_\_\_\_\_ ( six times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (six times)

## 10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (80 days rate)

## 10.4 SUMMARY TOTAL COST FOR ITEM C:

## 10.4.1. Diving Operations for 80 days

ITEM	DESCRIPTION for 80 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (80 days)	R
8	REPORTS ON DIVING SERVICES (3 days)	R
9	TRANSPORT RATES (80 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (80 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (SIX)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (80 days)	
<b>TOTAL COST FOR ITEM F(EXCL. VAT)</b>		R

10.4.2. Note: All items must be completed by the Bidder.

**ITEM D. CHUENIESPOORT DAM (Limpopo Province)****1. SCOPE OF WORK****1.1. Chueniespoort Dam Scope of Work - : Diving Services required (Background information)**

- 1.1.1. The existing outlet works release un-purified water for domestic and industrial use to the purification plant downstream of the dam and consists of a dry and wet partition in the control tower on the dam wall. The tower links to a concrete pipe that traverse underneath the spillway section of the dam, with a control valve at the purification plant.
- 1.1.2. There is three dam intake steel pipes with isolation valves located in the dry portion of the inlet tower. The bottom two pipes are covered with silt and the isolation valve of the top pipe has been removed and this caused the dry part of the tower being flooded. The first phase will be to fit a new valve and a coupling on the top pipe in the dry part of the tower (this dry compartment is now filled with water).
- 1.1.3. The second phase will be the fitment of an isolation mechanism (plug) on the inlet of the top pipe to enable the use of the Departmental CCTV camera equipment to inspect the inside of the top pipe.

**1.2. Detailed statement of scope of work:**

- 1.2.1. The following tasks by the Divers will have to be performed to assist the Mechanical Contractor to do essential rehabilitation work:
  - 1.2.1.1. Inspection dive to investigate the condition of the inlet pipes, screens and take measurements for the design of a plug.
  - 1.2.1.2. Divers must install the valve that will isolate the outlet, to allow for the installation of the scour valve at the outlet pipework. Alternatively Divers must install a blank flange followed with the installation of a plug and the valve.
  - 1.2.1.3. If there is silt covering the inlet it must be removed by desilting.
  - 1.2.1.4. The top pipe must be scoured properly for suitable conditions for the CCTV camera investigation.
  - 1.2.1.5. Divers must determine the level of silt on middle pipe by also inspecting the inlet conditions of the middle pipe.
  - 1.2.1.6. The intake tower must be emptied by making use of a submersible pump.
  - 1.2.1.7. The divers must drill holes in the concrete screen intakes and secure brackets for the inlet screens that is situated under water.

1.2.2. Tasks to be performed by the Mechanical Contractor:

1.2.2.1. The mechanical contractor will work together with the diver's during the diving operations.

1.2.2.2. The mechanical contractor must provide and operate a standby pump system to supply water to the purification plant during the diving operations.

1.3. **Report on diving services rendered**

1.3.1 Method statement

2. **OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

2.1. Time rate basis for bidding purposes only.

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Chueniespoort Dam	Diving services (10.1)	20 days normal diving time
	Reports (8)	Compile reports = 5 days
Duration	All work	Approximately two months

2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates. (Refer to Annexure Part 4 ).

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for diving operations (20 days)

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (Five)	Chueniespoort dam	To be confirmed with Area Office
1.(b)	Site establishment (Five)	Chueniespoort dam	To be confirmed with Area Office.
2.	2.1. Inspection dive 2.2. Install valve or blank flange and plug. 2.3. Scour inlet and outlet pipes(by mechanical contractor). 2.4. CCTV camera investigation of inlet and outlet pipes 2.5. Inspect inlet condition of the middle pipe 2.6. Desilt 2.7. Drill holes in the concrete screens intakes and secure brackets for the screens.	Chueniespoort dam	As soon as site establishment is completed
3.	3.1.Detailed Technical Report on diving operations 3.2.Report to be supplied within 5 days of respective dive.	Chueniespoort dam	
1.(c)	Demobilisation (Five)	Chueniespoort dam	To be completed within two days after completion of Item 2.

### 4. LOCATION OF SITE:

#### 4.1. Chueniespoort dam

4.1.1. Situated approximately 16.6 km from the town of Lebowakgomo in the Limpopo province (For further information contact DWS Area Manager).

4.1.2. Coordinates: S24° 12' 08.55" E29° 29' 33.51"

#### 4.2. Road map

4.2.1. See any commercially available road map.

**5. Depth of dive****5.1. Chueniespoort dam**

- 5.1.1. F.S.L. = m Full Supply Level (metres above sea-level)  
R.L. = ± 550 m Deck level (metres above sea-level)  
P.L. = m Present level (m) on date  
L.L. = m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
P.L. – L.L. = Actual depth of dive (uncorrected) (m)

- F.S.L. – L.L. = 19 m  
P.L. – L.L. = 19 m

- 5.1.2. **Remarks:** The successful bidder should confirm the actual value of the Present Level (P.L) from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

## 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT – VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR (Desilting)	YES	YES	
9	LP COMPRESSOR			
10	UNDERWATER CUTTING SYSTEM	N/A	N/A	
11	UNDERWATER WELDING SYSTEM	N/A	N/A	
12	WELDING RODS (60 RODS/BOX)	N/A	N/A	
13	BARGE / FLOATING PLATFORM	N/A	N/A	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	N/A	N/A	
18	TIRFORS	N/A	N/A	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

- 6.2. Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.

## 7. PLANT AND EQUIPMENT HIRE for the estimated 20 days

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 20 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	6	Photographic equipment - still		
7.4	7	Dredge pump (5m <sup>3</sup> / day)		
7.5	8	HP Compressor		
7.6	14	Rubber Boat		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 20 days rate.

7.1. If not included in the diving rates. Actual Proof of expenditures must be submitted.

## 8. DETAILED REPORT(S) ON DIVING SERVICES

8.1. Time estimated 5 (days) Rate per day R \_\_\_\_\_ Rate for 5 days R \_\_\_\_\_

8.2. Provide final report with colour pictures

## 9. TRANSPORT RATES

9.1. TRANSPORT COSTS: Only for transport from and to site during the 20 days diving operation

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				TOTAL AMOUNT	R

9.2. Transport costs (from and to site during the 20 days diving operation)  
Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 20 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

## 10. PRICE SCHEDULES (All items must completed by the Bidder.)

Note:

- Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 20 days.
- This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- Adjudication of this bid will be evaluated in a 20 days diving operation.
- This price schedule must be completed for your bid to be considered.
- Note: All items must be completed by the Bidder

10.1. Diving rates (9 hours per day) for a twenty days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 20 days(number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 20 days

10.2. Mobilisation, site establishment and demobilisation

10.2.1 Mobilisation (including transport costs from home basis to site)R \_\_\_\_\_ (once)

R \_\_\_\_\_ (five times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ (five times)

10.2.3. Demobilisation (including transport costs from site to home basis)

R \_\_\_\_\_ (once) R \_\_\_\_\_ (five times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (five times)

10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (20 days rate)

10.4 SUMMARY TOTAL COST FOR ITEM D:

10.4.1. Diving Operations for 20 days

ITEM	DESCRIPTION for 20 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (20 days)	R
8	REPORTS ON DIVING SERVICES (5 days)	R
9	TRANSPORT RATES (20 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (20 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FIVE)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (20 days)	
TOTAL COST FOR ITEM D(EXCL. VAT)		R

10.4.2. Note: All items must be completed by the Bidder.

**ITEM E. ACORNHOEK DAM (Mpumalanga Province)****1. SCOPE OF WORK****1.1. Acornhoek Dam- Scope of Work - : Diving Services required**

**Note:** The Mechanical Term Contractor will assist the Department with the mechanical work and is part of the diving operation.

- 1.1.1. Site establishment
- 1.1.2. Desilting intake
- 1.1.3. Install plugs
- 1.1.4. Removal of plugs
- 1.1.5. Install stainless steel screens
- 1.1.6. Provide final report with pictures
- 1.1.7. Site de-establishment

**1.2. Report on diving services rendered**

- 1.2.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.****2.1 Time rate basis for bidding purposes only.**

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

<b>SITE</b>	<b>ITEM NUMBER</b>	<b>TIME ESTIMATE FOR ITEM</b>
Acornhoek Dam	Diving services <b>(10.1)</b>	5 days (Plus 5 more days for extra work if necessary)
	Reports <b>(8)</b>	Compile a report = 1 day
Duration	All work	Approximately ten days

**2.2 Actual contract values**

2.2.1. The final invoice and payment will be based on the actual diving time rates and operations at the quoted rates. (vide Annexure to Part 4 ).

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for diving operations (10 days)

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (two)	Acornhoek Dam	To be confirmed with Area Office
1.(b)	Site establishment (two)	Acornhoek Dam	To be confirmed with Area Office.
2.	2.1 Desilting dive and dive to install plugs 2.2 Remove plugs 2.3 Install screens.	Acornhoek Dam	As soon as site establishment is completed
3.	Report on diving operations  Reports to be supplied within 5 days of respective dive.	Acornhoek Dam	3.1 Initial report to be handed over on site after the completion of inspection and diving. 3.2 Final report after installing screen within five days after the completion of the diving works.
1.(c)	Demobilisation (two)	Acornhoek Dam	To be completed within two days after completion of Item 2.

### 4. LOCATION OF SITE:

#### 4.1. Acornhoek dam

4.1.1. Situated  $\pm 60$  km from the town of Bushbuck Ridge in Mpumalanga Province (For further information contact DWS Area Manager).

#### 4.2. Road map

4.2.1. See any commercially available road map.

### 5. Depth of dive

#### 5.1. Acornhoek dam

5.1.1. F.S.L. = 113, 621m Full Supply Level (metres above sea-level)  
 R.L. = 113, 621m m Deck level (metres above sea-level) .  
 P.L. = 113, 621m m Present level (m) on date 21 April.2010  
 L.L. = 100 m Bottom level (m)

#### Then:

F.S.L. – L.L. = 13. 621m Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = 13. 621m Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 13. 621m

P.L. – L.L. = 13. 621m

5.1.2. **Remarks:** The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. QUESTIONNAIRE

## 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRE D YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATU RE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	DIVING CAGE (CERTIFIED)	NO	NO	
3	PHOTOGRAPHIC EQUIPMENT –VIDEO	N/A	N/A	
4	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
5	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
6	BROCO UNDERWATER CUTTING SYSTEM	NO	NO	
7	BROCO UNDERWATER WELDING SYSTEM	NO	NO	
8	BARGE / FLOATING PLATFORM	NO	NO	
9	RUBBER BOAT	YES	YES	
10	JACK HAMMERS	NO	NO	
11	HAND TOOLS	YES	YES	
12	CHAINBLOCKS (Certified ) (stated)	NO	NO	
13	TIRFORS	NO	NO	
14	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
15	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
16	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. **Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

7. **Plant and equipment hire (10 days)**

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for ten days
7.1	4	Photographic equipment - still		
7.2	6	Underwater cutting system (broco)		
7.3	7	Underwater welding system (broco)		
7.4	8	Barge		
7.5	14	Diving lights for underwater use		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ ten days.

7.1. If not included in the diving rates. Actual proof of expenditure must be submitted.

**8. REPORT(S) ON DIVING SERVICES**

- 8.1. Time estimated 1 (day) Rate per day R \_\_\_\_\_ Rate for 1 day R \_\_\_\_\_  
 8.2. Provide final report with colour pictures.

**9. TRANSPORT RATES**

- 9.1. TRANSPORT COSTS: Only for transport from and to site during the diving operation (Ten days)

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
<b>TOTAL AMOUNT</b>					R

- 9.2. Transport cost (from and to site during the diving operation)  
 Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 10 days rate.
- 9.3. Market related fuel tariffs is applicable.
- 9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

**10. PRICE SCHEDULES****Note:**

- (a) Rate for diving equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of ten days.
- (b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- (c) Adjudication of this bid will be evaluated in a ten days diving operation.
- (d) This price schedule must be completed for your bid to be considered.
- (e) Note: All items must be completed by the Bidder

- 10.1. Diving rates (9 hours per day) for a ten days diving operation

10.1.1. Day rates for diving team on site if not diving  
 Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.  
 Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ ten days (number of divers \_\_\_\_\_)

- i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ ten days

## 10.2 Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site) R\_\_\_\_\_ (once)  
R\_\_\_\_\_ (two)

10.2.2. Site establishment R\_\_\_\_\_ (once) R\_\_\_\_\_ (two)

10.2.3. Demobilisation (including transport costs from site to home basis) R\_\_\_\_\_ (once)  
R\_\_\_\_\_ (two)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R\_\_\_\_\_

## 10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R\_\_\_\_\_ R\_\_\_\_\_ (10 days rate)

## 10.4 SUMMARY TOTAL COST FOR ITEM E:

## 10.4.1. Diving Operations for 10 days

ITEM	DESCRIPTION for 10 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (10 days)	R
8	REPORTS ON DIVING SERVICES (1 day)	R
9	TRANSPORT RATES (10 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (10 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (TWO)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (10 days)	
<b>TOTAL COST FOR ITEM E(EXCL. VAT)</b>		R

10.3.2. Note: All items must be completed by the Bidder.

**ITEM F. BOSPOORT DAM (North West Province)****1. SCOPE OF WORK****1.1. Macro Scope of Work - : Diving Services required**

- 1.1.1. Inspection diving to install five butterfly valves
- 1.1.2. Provide a report/recommendation to DWS to rectify/lower the butterfly valves
- 1.1.3. Make use of special equipment (Jip-crane) to lower the butterfly valves

**1.2. Detailed statement of scope of work:**

- 1.2.1. Five butterfly valves are installed at full capacity level of the dam
- 1.2.2. Remove all hydraulic pipes and flanges from three pipes
- 1.2.3. Make use of certified Jip-crane to lower new butterfly valves and also install them
- 1.2.4. Make use of certified equipment to install new hydraulic pipes

**1.3. Report on diving services rendered**

## 1.3.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

## 2.1 Time rate basis for bidding purposes only.

- 2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Bospoort Dam	Diving Services (10.1)	5 days but can be 25 days
	Reports (8)	Compile a report = 3 days
Duration	All work	Approximately two months

## 2.2. Actual contract values

- 2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates. (vide Annexure to Part 4 ).
- 2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (five)	Bospoort dam	To be confirmed with Area Office
1.(b)	Site establishment (Five)	Bospoort dam	To be confirmed with Area Office.
2.	2.1 Inspection diving 2.2 Diving to remove and install butterfly valves as well as hydraulic pipes	Bospoort dam	As soon as site establishment is completed
3.	Report on diving operations	Bospoort dam	3.1 Initial report to be handed in on site after the completion of inspection and diving. 3.2 Final report after removal and installation of butterfly valves and hydraulic pipes within five days after the completion of the diving works.
1.(c)	Demobilisation (Five)	Bospoort dam	To be completed within two days after completion of Item 2.

### 4. LOCATION OF SITE:

#### 4.1. Bospoort dam

4.1.1. Situated 16,2 Km from the town of Rustenburg in North West Province (For further information contact DWS Area Manager).

#### 4.2. Road map

4.2.1. See any commercially available road map.

## 5. Depth of dive

### 5.1 Bospoort dam

5.1.1. F.S.L. = 1549m Full Supply Level (metres above sea-level)

R.L. = 1527m Relative level (metres above sea-level) .

P.L. = 1549m Present level (m) on date 18 March 2010

L.L. = 1522m Lowest level (m)

**Then:**

F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)

P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 1549m – 1522m = 27m

P.L. – L.L. = 1549m – 1522m = 27m

5.1.2. **Remarks: The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.**

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	NO	NO	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	NO	NO	
8	HP COMPRESSOR	NO	NO	
9	LP COMPRESSOR			
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	NO	NO	
12	WELDING RODS (60 RODS/BOX)			
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	NO	NO	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS		YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	NO	NO	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. **Take Note that the blocks ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

7. **PLANT AND EQUIPMENT HIRE for the estimated two days**

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 25 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	7	Dredge pump (5m <sup>3</sup> / day)		
7.4	8	HP Compressor		
7.5	10	Underwater cutting system (broco)		
7.6	14	Rubber boat		
7.7	13	Barge		
		Total		

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 25 days rate

7.1. If not included in the diving rates. Actual proof of expenditures must be submitted.

8. **DETAILED REPORT(S) ON DIVING SERVICES**

8.1. Time estimated 3 (days) Rate per day R \_\_\_\_\_ Rate for 3 days R \_\_\_\_\_  
 8.2. **Provide final report with colour pictures.**

9. **TRANSPORT RATES**

9.1. **TRANSPORT COSTS: Only for transport from and to site during the 25 days diving operation**

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
TOTAL AMOUNT					R

9.2. Transport costs (from and to site during the 25 days diving operation)  
 Rate per day R \_\_\_\_\_ R \_\_\_\_\_ rate for 25 days

9.3. **Market related fuel tariffs is applicable.**

9.4. **Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.**

10. **PRICE SCHEDULES**

**Note:**

- (a) Rate for diving equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 25 days.
- (b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- (c) Adjudication of this bid will be evaluated in a 25 days diving operation.
- (d) This price schedule must be completed for your bid to be considered.
- (e) **Note: All items must be completed by the Bidder.**

10.1. Diving rates (9 hours per day) for a two days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 25 days

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 25 days

10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (Five)

10.2.2. Site establishment R \_\_\_\_\_ (Five)

10.2.3. Demobilisation (including transport costs from site to home basis)  
R \_\_\_\_\_ (Five)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (Five times)

10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (25 days rate)

10.4 SUMMARY TOTAL COST FOR ITEM F:

10.4.1. Diving Operations for 25 days

ITEM	DESCRIPTION for 25 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (25 days)	R
8	REPORTS ON DIVING SERVICES (3 days)	R
9	TRANSPORT RATES (25 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (25 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FIVE)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (25 days)	
<b>TOTAL COST FOR ITEM F (EXCL. VAT)</b>		R

10.3.2. Note: All items must be completed by the Bidder.

**ITEM G. BLYDEPOORT DAM (Mpumalanga Province)****1. SCOPE OF WORK****1.1. Blydepoort Dam- Scope of Work - : Diving Services required**

**Note:** The Mechanical Term will assist the Department with the mechanical work and is part of the diving operation.

1.1.1. Inspection diving to investigate if the existing plug is still in position and secure with the crane cables at the inlet chamber.

1.1.2. Provide a report/recommendation to DWS to indicate the condition of the operational mechanical components/plug/cables at the inlet bell mouth.

1.1.3. The divers must inspect the inlet for leakages and if find temporary seal it off from the outside area of the mouth.

1.1.4. Provide a report/recommendation to DWS for removal of the plug after the installation of the refurbished butterfly valve.

1.1.5. Inspection diving to investigate if the new guides and service gate will fit in their respective positions.

1.1.6. Installed the guides and service gate with all his respective mechanical components.

1.1.7. Inspection of the service gate after installation for any leakages at the rubber seals and check the operating of the service gate.

1.1.8. Provide a final report.

**1.2. Detailed statement of scope of work:**

1.2.1. **Sealed off the leakage at the inlet pipe. The mechanical contractor must complete the corrosion protection of the inlet pipe work and install the refurbished butterfly valve.**

1.2.2. **The mechanical contractor can now proceed with the corrosion protection of the pipe work down stream of the butterfly valve.**

1.2.3. The divers must now measured the outside of the bell mouth area with specialised measure equipment for the manufacturing of service gate and guides installation to operate the service gate at the bell mouth position.

1.2.4. The divers must now installed the guides for the service gate and all other new mechanical designed equipment.

**1.3. Report on diving services rendered****1.3.1 Method statement**

## 2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.

### 2.1 Time rate basis for bidding purposes only.

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Blydepoort Dam	Diving services (10.1)	Approximately 20 days expected normal diving time, but could be 73 days.
	Reports (8)	Compile a report = 5 days
Duration	All work	Approximately four months

### 2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditure prior to final payments by DWS.**

## 3. SCHEDULED DATES OF CONTRACT

### 3.1. Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation	Blydepoort dam	To be confirmed with Area Office
1.(b)	Site establishment (three)	Blydepoort dam	To be confirmed with Area Office.
2.	2.1 Inspection diving 2.2 Diving to seal of leakages 2.3	Blydepoort dam	As soon as site establishment is completed
3.	Report on diving operations	Blydepoort dam	3.1 Initial report to be handed in on site after the completion of inspection and diving. 3.2 Final report after releasing the plug within five days after the completion of the diving works.
1.(c)	Demobilisation	Blydepoort dam	To be completed within two days after completion of Item 2.

**4. LOCATION OF SITE:****4.1. Blydepoort dam**

4.1.1. The Dam is situated ±14 km from the town of Hoedspruit in Mpumalanga Province (For further information contact DWS Area Manager).

**4.2. Road map**

4.2.1. See any commercially available road map.

**5. Depth of dive****5.1. Blydepoort dam**

5.1.1. F.S.L. = 1452m Full Supply Level (metres above sea-level)  
 P.L. = 1452m Present level (m) on date 03 Feb.2010  
 L.L. = 1430m Lowest level (m)

**Then:**

F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 22m

P.L. – L.L. = 22m

5.1.2. **Remarks: The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.**

**6. Questionnaire****6.1. QUESTIONNAIRE OF EQUIPMENT OF EQUIPMENT AND PLANT**

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	DIVING CAGE (CERTIFIED)	YES	YES	
3	PHOTOGRAPHIC EQUIPMENT –VIDEO	NO	NO	
4	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
5	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	NO	NO	
6	BROCO UNDERWATER CUTTING SYSTEM			
7	BROCO UNDERWATER WELDING SYSTEM			
8	BARGE / FLOATING PLATFORM			
9	RUBBER BOAT	YES	YES	
10	JACK HAMMERS			
11	HAND TOOLS			
12	CHAINBLOCKS (Certified ) (stated)			
13	TIRFORS			
14	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
15	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)			
16	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.

7. **PLANT AND EQUIPMENT HIRE** for the estimated 73 days (Please list on a separate sheet if necessary)

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 73 days
7.1	2	Diving cage (certified)		
7.2	5	Dredge pump (5m <sup>3</sup> / day)		
7.3	6	Underwater cutting (broco)		
7.4	8	Barge		
7.5	9	Rubber Boat		
		Total		

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate.

### 8. DETAILED REPORT(S) ON DIVING SERVICES

8.1. Time estimated 5 (days) Rate per day R \_\_\_\_\_ Rate for 5 days R \_\_\_\_\_

8.2. Provide final report with colour pictures.

### 9. TRANSPORT RATES

9.1. **TRANSPORT COSTS:** Only for transport from and to site during the 73 days diving operation.

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				TOTAL AMOUNT	R

9.2. Transport costs (from and to site during the 73 days diving operation)  
Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 73 days rate

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval.

### 10. PRICE SCHEDULES

**Note:**

- a) Rate for diving equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 73 days.
- b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- c) Adjudication of this bid will be evaluated in a 73 days diving operation.
- d) This price schedule must be completed for your bid to be considered.

10.1. Diving rates (9 hours per day) for a 73 days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 73 days( number of divers \_\_\_\_\_ )

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ day rate R \_\_\_\_\_  
73 days rate R \_\_\_\_\_

10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site)

R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.3. Demobilisation (including transport costs from site to home basis)

R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ ( five times)

10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (73 days rate)

10.4 SUMMARY TOTAL COST FOR ITEM G:

10.4.1. Diving Operations for 73 days

ITEM	DESCRIPTION for 73 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (73 days)	R
8	REPORTS ON DIVING SERVICES (5 days)	R
9	TRANSPORT RATES (73 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (73 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FIVE)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (73 days)	
<b>TOTAL COST FOR ITEM G(EXCL. VAT)</b>		R

10.3.2. Note: All items must be completed by the Bidder.

**ITEM H. VAAL DAM (Gauteng/Free-State Province)****1. SCOPE OF WORK****1.1. Vaal Dam Scope of Work - : Diving Services required**

- 1.1.1. Determine the possible damage to the guide rails of the lower stoplog on the inlet of the Rand Water Board Outlet Tower.
- 1.1.2. Provide a dive report/recommendation to DWS of condition of the guide rails.
- 1.1.3. Take measurements and confirm the dimensions with the existing DWS drawings using certified measuring equipment.
- 1.1.4. Inspection diving to investigate if the modified or new guides rails, stoplog and grapel will fit in their respective positions and take all the required measurements for the design engineer.
- 1.1.5. Install modified guide rails to suit the stoplog and grapel operation with all its mechanical components.
- 1.1.6. Inspection of the guide rails, stoplog and grapel after installation of modified guide rails.
- 1.1.7. The Mechanical Term Contractor will assist the Department with the mechanical work and is part of the diving operation.
- 1.1.8. Provide final report

**1.2. Report on diving services rendered**

- 1.2.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.****2.1. Time rate basis for bidding purposes only.**

- 2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

<b>SITE</b>	<b>ITEM NUMBER</b>	<b>TIME ESTIMATE FOR ITEM</b>
Vaal Dam	Diving services (10.1)	Approximately 10 days expected normal diving time, but could be 20 days.
	Reports (8)	Compile reports = 4 days
Duration	All work	Approximately two months

## 2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prio to final payments by DWS**

## 3. SCHEDULED DATES OF CONTRACT

## 3.1. Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (two)	Vaal Dam	To be confirmed with Area Office
1.(b)	Site establishment (two)	Vaal Dam	To be confirmed with Area Office.
2.	2.1. Inspection dive 2.2. Dive to determine possible damage to the guide rails of the lower stoplog on the inlet of the Rand Water Board Outlet Tower 2.3 Dive to install modified/new guide rails	Vaal Dam	As soon as site establishment is completed
3.	Report on diving operations  Reports to be supplied within 10 days of respective dive.	Vaal Dam	3.1 Initial report to be handed over on site after the completion of inspection dive. 3.2 Final report after determining the possible damage to the guide rails of the lower stoplog on the inlet of the Rand Water Board Outlet Tower within five days after the completion of the diving operation.
1.(c)	Demobilisation (two)	Vaal Dam	To be completed within two days after completion of paragraph 2.

## 4. LOCATION OF SITE:

## 4.1. Vaal Dam

4.1.1. Situated  $\pm 4$  km from the town of Deneysville in Free State Province (For further information contact DWS Area Manager).

## 4.2. Road map

4.2.1. See any commercially available road map.

## 5. Depth of dive.

### 5.1. Vaal Dam

- 5.1.1. F.S.L. = 1488 m Full Supply Level (metres above sea-level)  
 R.L. = 1489 m Deck level (metres above sea-level) .  
 P.L. = 1488m Present level (m) on date 18 June 2010  
 L.L. = 1465m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

- F.S.L. – L.L. = 23m  
 P.L. – L.L. = 23m

5.1.2. **Remarks:**The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)	YES	YES	
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	NO	NO	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR	YES	YES	
9	LP COMPRESSOR	N/A	N/A	
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	NO	NO	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. **Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

**7. PLANT AND EQUIPMENT HIRE for the estimated 20 days**

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 20 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	6	Photographic Equipment - Still		
7.4	7	Dredge pump (5m <sup>3</sup> / day)		
7.5	8	HP Compressor		
7.6	10	Underwater cutting system (broco)		
7.7	14	Rubber boat		
7.8	13	Barge		
		Total		

**8. DETAILED REPORT(S) ON DIVING SERVICES**

8.1. Time estimated 4 (days)      Rate per day R\_\_\_\_\_      Rate for 4 days R\_\_\_\_\_

8.2. **Provide final report with colour pictures.**

**9. TRANSPORT RATES**

9.3. **TRANSPORT COSTS: Only for transport from and to site during the 20 days diving operation**

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				TOTAL AMOUNT	R

9.2. Transport costs (from and to site during the 20 days diving operation)  
Rate per day R\_\_\_\_\_      R\_\_\_\_\_ 20 days rate

9.3. **Market related fuel tariffs is applicable.**

9.4. **Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.**

**10. PRICE SCHEDULES**

**Note:**

- (a) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 20 days.
- (b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- (c) Adjudication of this bid will be evaluated in a 20 days diving operation.
- (d) This price schedule must be completed for your bid to be considered.

**10.1. Diving rates (9 hours per day) for a ten days diving operation**

10.1.1. Day rates for diving team on site if not diving  
Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.  
Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 20 days (number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 20 days

**10.2. Mobilisation, site establishment and demobilisation**

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (four)

10.2.2. Site establishment R \_\_\_\_\_ (four)

10.2.3 Demobilisation (including transport costs from site to home basis) R \_\_\_\_\_ (four)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_

**10.3. Project Management**

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (20 days rate)

**10.4 SUMMARY TOTAL COST FOR ITEM H:****10.4.1. Diving Operations for 20 days**

<b>ITEM</b>	<b>DESCRIPTION for 20 days diving operations</b>	<b>BID PRICE (EXCL. VAT)</b>
<b>7</b>	<b>PLANT AND EQUIPMENT HIRE RATES (20 days)</b>	<b>R</b>
<b>8</b>	<b>REPORTS ON DIVING SERVICES (4 days)</b>	<b>R</b>
<b>9</b>	<b>TRANSPORT RATES (20 days)</b>	<b>R</b>
<b>10.1</b>	<b>DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 &amp; 10.1.3) (20 days)</b>	<b>R</b>
<b>10.1.1</b>	<b>DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)</b>	<b>R</b>
<b>10.2</b>	<b>MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FOUR)</b>	<b>R</b>
<b>10.3.1</b>	<b>DIVING PROJECT MANAGER'S RATE (20 days)</b>	
<b>TOTAL COST FOR ITEM H(EXCL. VAT)</b>		<b>R</b>

**10.4.2. Note: All items must be completed by the Bidder.**

**ITEM I. WENTZEL DAM (North West Province)****1. SCOPE OF WORK****1.2. Wentzel Dam Scope of Work - : Diving Services required (Background information)**

- 1.1.1. Wentzel Dam is the highest on the Harts River and relies totally on natural flow from the river. The only existing abstraction from the dam is to satisfy the demand of the town of Schweizer-Reneke, estimated at about 1 Mm<sup>3</sup>/a in 2006.
- 1.1.2. Rehabilitation works are required to the earth dam inlet and outlet works.
- 1.1.3. The Mechanical Term Contractor will assist the Diving contractor when required.

**1.3. Detailed statement of scope of work:**

- 1.3.1. The lining of the outlet pipe on the dam needs to be inspected for acceptance by Dam Safety.
- 1.3.2. The silt level in the dam is higher than the intakes of the wall sluice gates.
- 1.3.3. A radius of 5m around the bottom intake of the wall sluice need to be de-silted and cleared of obstacles (rocks, etc.) and the silt must be deposited 15-20m or more away from the outlet tower.
- 1.3.4. Currently the water is abstracted with pumps on a float. The water supply must not be interrupted.
- 1.3.5. The bottom gate valve inside the tower and the wall sluice shall be in the closed position during de-silting of the intake area.
- 1.3.6. The Divers must test the operation of the wall sluice and seal off any leaks from defective seals.
- 1.3.7. The area around the outlet works on the outlet side of the dam wall, must be cleaned and made suitable for the outlet water to flow away from the area.
- 1.3.8. The Department Water and Sanitation requires dry conditions in the outlet tower when the CCTV Camera inspections been done.
- 1.3.9. All leaks must be sealed of prior to the CCTV Camera inspection.
- 1.3.10. The Engineer on behalf of the Department will attend the CCTV Camera inspection.
- 1.3.11. The divers will assist in the removal and re-installation of the equipment on the outlet tower.
- 1.3.12. Additional de-silting will be required periodically when requested.

**1.3. Proposed sequence of activities:****1.3.1. Phase 1 (10 days) at Outlet pipe inspection**

- 1.3.1.1. All the wall sluices and gate valve should be closed to ensure a safe working environment for the divers.
- 1.3.1.2. The Diving Company will do all relevant measurement and confirm the dimensions of the inlet tower.
- 1.3.1.3. Casual labour will be required to clear and rehabilitate the area around the outlet of the outlet pipe.
- 1.3.1.4. The outlet wall sluice will be opened to assess the condition of the outlet pipe in order to determine if the pipe is suitable for the CCTV Camera inspection.
- 1.3.1.5. If found that the condition of the outlet pipe is not acceptable for the CCTV Camera inspection, the divers must then scour the outlet pipe to an acceptable condition for the CCTV Camera inspection.
- 1.3.1.6. Divers must de-silt an area with a radius of 5m around the intake of the outlet tower. Silt must be deposited at a location far enough from the working area not to influence

the work and must be to the satisfaction of the Engineer. The distance must be at least 15-20m away from the working area.

- 1.3.1.7. After completing the de-silting, the divers must test the functionality and sealing of the wall sluice gates and gate valve and flush the outlet pipe.
- 1.3.1.8. If the sealing of the sluice gates is not satisfactory, the inlets should be sealed off.
- 1.3.1.9. The outlet pipe must be free of silt, rocks, water etc. before the CCTV Camera investigation may commence.
- 1.3.1.10. The Diving contractor will submit a detailed report on the work.
- 1.3.1.11. The Department Water and Sanitation will conduct the CCTV Camera inspections and submit the report to the Engineer.

**1.3.2. Phase 2 (5 days) for removal of equipment**

- 1.3.2.1. The Department Water and Sanitation will instruct the diving contractor to remove the existing equipment for replacement or refurbishment.
- 1.3.2.2. The wall sluice, brackets, spindels, head stock and gate valve will be removed.
- 1.3.2.3. **Note: The gate valve and wall sluices can not be removed during the same operation.**

**1.3.3. Phase 3 (15days) for installation of equipment**

- 1.3.3.1. Installation of the refurbished or new equipment.

**1.3.4. Phase 4 (5days) for De-silting**

- 1.3.4.1. Divers remove silt in front of the outlet tower.

**1.3.5. Phase 5 (3 X 5days) for Additional de-silting**

- 1.3.5.1. Additional diving will be optional for more de-silting work, periodically or when required.

**1.3.6. Phase 6 (20days) for additional time (if required)**

**2.1. Additional information**

- 1.4.1. Access to the dam is via a dirt road.
- 1.4.2. Visibility is poor to none.
- 1.4.3. Accommodation: Various guesthouses in and around Swiezer Reineke.
- 1.4.4. Diving company must also allow for 8 mobilisation and demobilisation occasions for unforeseen circumstances i.e. weather, sourcing of other equipment, etc. This must be clearly indicated in the pricing.
- 1.4.5. Diving company must be completely self sufficient in all areas of completing the project. Any assistance must be discussed with the engineer timeously and it must be understood that in some cases it might not be possible.
- 1.4.6. Diving company to supply all diving equipment as well as equipment and consumables to complete the project safely.
- 1.4.7. Diving company must also supply his own boat/rubber duck.
- 1.4.8. Diving team must ensure that a Broco cutting set is available should it be needed as in some cases a hydraulic grinder will prove to be unwieldy and not as effective.

**1.5. Report on diving services rendered**

1.5.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

2.1. Time rate basis for bidding purposes only.

2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

DESCRIPTION	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Wentzel Dam	Diving services <b>(10.1)</b>	Approximately 50 days expected normal diving time, but could be 70 days.
	Reports <b>(8)</b>	Compile reports = 5 Days
Duration	All work	Approximately One Year

2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 7.2.1 . Scheduled commencement dates for diving operations (70 days diving operation)

Item No.	Brief description of item	Site	Scheduled dates	Time Alocated
1.(a)	Mobilisation (eight)	Wentzel dam	To be confirmed with Area Office	
1.(b)	Site establishment (eight)	Wentzel dam	To be confirmed with Area Office.	
2.	2.1 Day labour clear around outlet pipe (Refer to 1.3.1) 2.2 Drain the outlet tower 2.3 Divers inspect the outlet pipe prior the CCTV camera inspection 2.4 CCTV camera inspection on outlet pipe 2.5 Inspection dive 2.6 Dredge 2.7 Scour the outlet pipe 2.8 Test sluice gates 2.9 Seal any leaks. 2.10 Report to be supplied within 5 days of respective dives.	Wentzel dam	During site establishment  As soon as outlet pipe is acceptable for inspection.	10 days
3.	Removal of mechanical equipment (Refer to 1.3.2)	Wentzel dam	According to Consulting Engineer's recommendations	5 days
4.	Installation of mechanical equipment (Refer to 1.3.3)		According to Consulting Engineer's recommendations	15 days
5.	Dredging (Refer to 1.3.4)	Wentzel dam	To be confirmed by DWS	5 days
6.	Additional dredging (Refer to 1.3.5)	Wentzel dam	To be confirmed by DWS	15 days
7.	Additional time (Refer to 1.3.6.)	Wentzel dam	To be confirmed by DWS	20 days
1.(c)	Demobilisation (eight)	Wentzel dam	To be completed within two days after completion of Item 2.	

#### 4. LOCATION OF SITE:

##### 4.1. Wentzel dam

- 4.1.1. The dam is situated next to the town of Schweizer Reneke in the North-West Province.  
4.1.2. Coordinates: S27° 10' 35.0" E25° 20' 13.0"

##### 4.2. Road map

- 4.2.1. See any commercially available road map.

## 5. Depth of dive

### 5.1. Wentzel dam

- 5.1.1. F.S.L. = 1301 m Full Supply Level (metres above sea-level)  
 P.L. = 1301 m Present level (m) on date 01 September 2011  
 L.L. = 1295 m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 6 m

P.L. – L.L. = 6 m

- 5.1.2. **Remarks: The successful bidder should confirm the actual value of the Present Level (P.L) from the Scheme manager/Area Engineer just prior to commencing with diving operations.**

## 6. Questionnaire

### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)			
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (5m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR (Desilting) with a 50m hose	YES	YES	
9	LP COMPRESSOR	N/A	N/A	
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (5m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	
24	SUBMERSABLE PUMP WITH GENERATOR	YES	YES	

**6.2. Take Note:**

- 6.2.1. The blocks ticked are the sole responsibility of the person applicable and no disputes will be allowed.
- 6.2.2. The HP Compressor hose length required is  $\pm$  50m.
- 6.2.3. The only access to the dam wall is by concrete steps.

**7. PLANT AND EQUIPMENT HIRE** for the estimated 70 days (Please list on a separate sheet if necessary)

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 70 days
7.1	2	VOICE COMMUNICATION		
7.2	3	DIVING GAS AND/ OR AIR		
7.3	6	PHOTOGRAPHIC EQUIPMENT – STILL		
7.4	7	DREDGE PUMP (5m <sup>3</sup> / hour) (stated)		
7.5	8	HP COMPRESSOR (Desilting) with a 50m hose		
7.6	10	UNDERWATER CUTTING SYSTEM		
7.7	14	RUBBER BOAT		
7.8	16	HAND TOOLS		
7.9	17	CHAINBLOCKS (Certified ) (stated)		
7.10	19	DRILLS AND BITS		
7.11	20	DIVING LIGHTS FOR UNDERWATER USE		
7.12	21	AIR LIFTING (OF SILT)EQUIPMENT (5m <sup>3</sup> / hour) (stated)		
7.13	22	FIRST AID AND MEDICAL EQUIPMENT		
7.14	23	SPECIALIZED MEASURING EQUIPMENT		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 70 days rate.

- 7.1. If not included in diving rates. Actual proof of expenditures must be submitted.

**8. DETAILED REPORT(S) ON DIVING SERVICES**

- 8.1. Time estimated 5 (days) Rate per day R \_\_\_\_\_ Rate for 5 days R \_\_\_\_\_
- 8.2. Provide final report with colour pictures.

**9. TRANSPORT RATES**

- 9.1. TRANSPORT COSTS: Only for transport from and to site during the 70 days diving operation.

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				TOTAL AMOUNT	R

- 9.2. Transport costs (from and to site during the 70 days diving operation)  
Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 70 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

## 10. PRICE SCHEDULES

### Note:

- a) Complete all section in full. Incomplete information/bid prices may be declared by the Department as non-compliance to the specifications.
- b) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 70 days.
- c) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- d) Adjudication of this bid will be evaluated in a 70 days diving operation.
- e) This price schedule must be completed for your bid to be considered.

10.1. Diving rates (9 hours per day) for a seventy-three days diving operation

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 70 days (number of divers \_\_\_\_\_)

- i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3 Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 70 days

## 10.2. MOBILISATION, SITE ESTABLICHMENT AND DE-MOBILISATION

10.2.1. Mobilisation (including transport costs from home basis to site)

R \_\_\_\_\_ (once) R \_\_\_\_\_ (eight times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.3. Demobilisation (including transport costs from site to home basis)

R \_\_\_\_\_ (once) R \_\_\_\_\_ ( eight times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (eight times)

## 10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (70 days rate)

**10.4 SUMMARY TOTAL COST FOR ITEM I:****10.4.1. Diving Operations for 70 days**

<b>ITEM</b>	<b>DESCRIPTION for 70 days diving operations</b>	<b>BID PRICE (EXCL. VAT)</b>
7	PLANT AND EQUIPMENT HIRE RATES (70 days)	R
8	REPORTS ON DIVING SERVICES (5 days)	R
9	TRANSPORT RATES (70 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (70 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (EIGHT)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (70 days)	
<b>TOTAL COST FOR ITEM I(EXCL. VAT)</b>		R

**ITEM J. TSOJANA DAM (Eastern Cape Province)****1. SCOPE OF WORK****1.1. Tsojana Dam Scope of Work - : Diving Services required**

1.1.1. All fulton gates on the outlet tower of Tsojana Dam need to be replaced and the bottom outlet sealed. The client will supply the Diving Company with steel caissons to be installed on the outside of the tower, over the positions of the existing fulton gates, one at a time, in order to create a dry working area for the Mechanical Contractor to remove the old gates and to install the new gates.

**2.1.1. Detailed statement of scope of work:**

1.2.1. Lower the caissons into position and orientate them correctly for sealing.

1.2.2. Pump the water from the caisson in order to create a pressure difference and for the seals to start to function. This will ensure a dry working area for the Mechanical Contractor. Should there be any leaks after the water has been pumped from the caisson, the divers will have to seal off the leaks to secure a reliable seal that will last for the duration of the operation.

1.2.3. After installation of the any gate, the divers must detach the caisson and move it to the next gate that has to be replaced and ensure a watertight seal.

1.2.4. The above mentioned operations will be repeated three times as there are three gates to be replaced.

1.2.5. After the third gate has been installed, the caisson must be detached and taken out of the dam.

1.2.6. The fourth intake to be abandoned and sealed off by means of a blank flange against the bell-mouth. The cavity between the old wall sluice and the blank flange to be grouted up.

**1.3. Report on diving services rendered**

1.3.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.****2.1. Time rate basis for bidding purposes only.**

2.1.1. The time indicated for diving time is a conservative estimate and is probably substantially higher than what is required for the particular project at hand. Allowance is made for any and all unforeseen situations/circumstances. Bidders must keep in mind that the actual diving time, as well as the number of Mobilisations; Site establishments; and Demobilisations might be lower as indicated. Therefore the final contract amount, may be considerable lower than the tendered amount.

2.1.2. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER	TIME ESTIMATE FOR ITEM
Tsojana Dam	Diving services (10.1)	15 days estimated normal diving time, but could be 40 days.
	Reports (8)	Compile reports = 4 days
Duration	All work	Approximately two months

2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

3. SCHEDULED DATES OF CONTRACT

3.1. Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (eight)	Tsojana dam	To be confirmed with Area Office
1.(b)	Site establishment (eight)	Tsojana dam	To be confirmed with Area Office.
2.	2.1 Inspection dive 2.2 Lower caissons and position for sealing 2.3 Pump water from caissons 2.4 Detach and install caissons 2.5 Install blank flange on fourth intake and grout cavity between old wall sluice and blank flange.	Tsojana dam	As soon as site establishment is completed
3.	Report on diving operations  Report to be supplied within 5 days of respective dive.	Tsojana dam	3.1 Initial report to be handed over on site after the investigation dive. 3.2 Final report within five days after the completion of the diving works after grouting cavity between old wall sluice and blank flange.
1.(c)	Demobilisation (eight)	Tsojana dam	To be completed within two days after completion of Item 2.

#### 4. LOCATION OF SITE:

##### 4.1. Tsojana dam

4.1.1. Situated approximately 80 km from the town of Queenstown near a small town Cofimvaba in Eastern Cape province (For further information contact DWS Area Manager).

##### 4.2. Road map

4.2.1. See any commercially available road map.

#### 5. Depth of dive

##### 5.1. Tsojana dam

5.1.1. F.S.L. = 1090 m Full Supply Level (metres above sea-level)  
 P.L. = 1090m Present level (m) on date  
 L.L. = 1070m Bottom level (m)

##### Then:

F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = ±20 m

P.L. – L.L. = ±20 m

5.1.2. **Remarks: The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.**

#### 6. Questionnaire

##### 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)	YES	YES	
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR	YES	YES	
9	LP COMPRESSOR	N/A	N/A	
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.

7. **PLANT AND EQUIPMENT HIRE** for the estimated 40 days (Please list on a separate sheet if necessary)

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 40 days
7.1	3	Diving gas and / or air		
7.2	4	Diving cage (certified)		
7.3	6	Photographic Equipment - Still		
7.3	7	Dredge pump (5m <sup>3</sup> / day)		
7.4	8	HP Compressor		
7.5	10	Underwater cutting system (broco)		
7.6	14	Rubber boat		
7.7	13	Barge		
Total				

8. **DETAILED REPORT(S) ON DIVING SERVICES**

8.1. Time estimated 4 (days) Rate per day R \_\_\_\_\_ Rate for 4 days R \_\_\_\_\_

8.2. Provide final report with colour pictures.

9. **TRANSPORT RATES**

9.1. **TRANSPORT COSTS:** Only for transport from and to site during the 40 days diving operation

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
TOTAL AMOUNT					R

9.2. Transport costs (from and to site during the 40 days diving operation)  
Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 40 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

10. **PRICE SCHEDULES**

Note:

- a) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 40 days.
- b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- c) Adjudication of this bid will be evaluated in a 40 days diving operation.
- d) This price schedule must be completed for your bid to be considered.

10.1. Diving rates (9 hours per day) for a 40 days diving operation

10.1.1. Day rates for diving team on site if not diving  
Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.  
Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 40 days( number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 40 days

10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site)R \_\_\_\_\_ (once)  
R \_\_\_\_\_ (eight times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ (eight times)

10.2.3. Demobilisation (including transport costs from site to home basis)  
R \_\_\_\_\_ (once) R \_\_\_\_\_ (eight times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (eight times)

10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (40 days rate)

10.4 SUMMARY TOTAL COST FOR ITEM J:

10.4.1. Diving Operations for 40 days

ITEM	DESCRIPTION for 40 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (40 days)	R
8	REPORTS ON DIVING SERVICES (4 days)	R
9	TRANSPORT RATES (40 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (40 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (EIGHT)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (40 days)	
<b>TOTAL COST FOR ITEM J (EXCL. VAT)</b>		R

10.3.2. Note: All items must be completed by the Bidder.

**1. SCOPE OF WORK**

**1.1. Glen Brock Dam Scope of Work - : Diving Services required**

- 1.1.1. The existing outlet works to release water to the users downstream consists of an underwater concrete structure that links to a steel pipe that traverse underneath the dam wall, with a control valve at the downstream side of the dam. This arrangement is prone to blockages due to siltation and it is unsafe. Therefore it is the intension to create an upstream control point by attaching a flexible pipe to the underwater structure and to suspend it from a barge, to keep it clear from the silt. The linkage to the underwater structure would be via a standpipe that needs to be installed at the underwater inlet structure and that reaches above the current silt level. A flexible pipe will then connect the standpipe with the floating inlet.
- 1.1.2. The following tasks by the Divers will have to be completed before final installation of the floating inlet can take place:
  - 1.1.2.1. Divers must allow for an inspection dive to ascertain conditions as well as equipment needed.
  - 1.1.2.2. A safe working area must be cleared around the existing concrete underwater structure (desilting).
  - 1.1.2.3. A portion of the concrete and/or remaining steel works of the underwater structure must be removed/broken down in order to establish conditions suitable to adapt the underwater structure to accommodate the standpipe.
  - 1.1.2.4. The standpipe must be attached to an inlet manifold. This manifold must be inserted into the inlet portal of the existing underwater structure. A drawing of the underwater structure and the manifold is attached.
  - 1.1.2.5. Once the manifold has been installed, the standpipe must be connected to the manifold.
  - 1.1.2.6. The manifold and standpipe arrangement must be stabilised in one way or the other. Currently there are two option, namely to pack bags loosely filled with a sand and cement mix around and tight to the structure, or to create some sort of a cofferdam or formwork around the structure and to pour concrete to encase the underwater structure.
  - 1.1.2.7. If the latter option is the preferred one, then the divers will have to assist the concrete supplier with pumping concrete to the correct position and quantity.
  - 1.1.2.8. The position of the structure is approx 100m from the dam wall and could be as deep as 19m, depending on the water level in the dam.
  - 1.1.2.9. Installation of the standpipe.
  - 1.1.2.10. Connecting of standpipe to floating inlet via a flexible pipe.
  - 1.1.2.11. Testing of system to ensure no leaks and that the system is functioning properly.

**1.2. Detailed statement of scope of work:**

- 1.2.1. The outlet manifold will be supplied by others.
- 1.2.2. There is a steel plate in front of the opening of the outlet to be removed. Any other steel protruding must also be trimmed in order to slide the manifold in place.
- 1.2.3. Divers must lower the manifold and position and anchor the manifold such that the placing of the concrete will not influence the positioning of the manifold.
- 1.2.4. After placing of the manifold in position, any gaps and/or places where there is not a proper seal, must be sealed by suitable means to prevent ingress of concrete into the downstream pipe work. This seal must be such that it will last for at least two weeks and will not be dislodged by the placing of the concrete. The sealant to be used will be decided upon jointly by Engineer and Divers.
- 1.2.5. The formwork for the placing of the concrete will in all likelihood be sandbags packed around the structure. Divers may suggest an alternative to the satisfaction of the Engineer.
- 1.2.6. Divers must then ensure the correct placing of the concrete as it is pumped into the formwork.
- 1.2.7. After a satisfactory curing period for the concrete, the flexible pipe must be attached to the standpipe and the barge.
- 1.2.8. The launching and anchoring of the barge will be done by others.

**1.3. Report on diving services rendered**

## 1.3.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

## 2.1 Time rate basis for bidding purposes only.

- 2.1.1. The time indicated for diving time is a conservative estimate and is probably substantially higher than what is required for the particular project at hand. Allowance is made for any and all unforeseen situations/circumstances. Bidders must keep in mind that the actual diving time, as well as the number of Mobilisations; Site establishments; and Demobilisations might be lower as indicated. Therefore the final contract amount, may be considerable lower than the tendered amount.
- 2.1.2. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER 1	TIME ESTIMATE FOR ITEM
Glen Brock Dam	Diving services (10.1)	21 days expected normal diving time, but could be 56 days.
	Reports (8)	Compile reports = 4 days
Duration	All work	Approximately six months

## 2.2. Actual contract values

- 2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.
- 2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

### 3. SCHEDULED DATES OF CONTRACT

#### 3.1. Scheduled commencement dates for diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (Five)	Glen Brock dam	To be confirmed with Area Office
1.(b)	Site establishment (Five)	Glen Brock dam	To be confirmed with Area Office.
2.	2.1 Inspection dive 2.2 Desilt 2.3 Install manifold and stand pipe. 2.4 Test system	Glen Brock dam	As soon as site establishment is completed
3.	Report on diving operations  Report to be supplied within 5 days of respective dive.	Glen Brock dam	3.1 Initial report to be handed over on site after the investigation dive. 3.2 Final report within five days after the completion of the diving works after testing the system.
1.(c)	Demobilisation (Five)	Glen Brock dam	To be completed within two days after completion of Item 2.

### 4. LOCATION OF SITE:

#### 4.1. Glen Brock dam

4.1.1. Situated approximately 50 km from the town of Queenstown in the Eastern Cape province (For further information contact DWS Area Manager).

4.1.2. GPS Coordinates: S 32° 03' 28.8" E 26° 31' 03.3"

#### 4.2. Road map

4.2.1. See any commercially available road map.

### 5. Depth of dive

#### 5.1. Glen Brock dam

5.1.1. F.S.L. = 1336 m Full Supply Level (metres above sea-level)

P.L. = 1336m Present level (m) on date

L.L. = ±1317 m Bottom level (m)

**Then:**

F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)

P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. = 19 m

P.L. – L.L. = 19 m

5.1.2. **Remarks:**The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

## 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)	YES	YES	
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT -VIDEO	N/A	N/A	
6	PHOTOGRAPHIC EQUIPMENT - STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR	YES	YES	
9	LP COMPRESSOR	N/A	N/A	
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

6.2. Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.

## 7. Plant and equipment hire for the estimated 56 days

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 56 days
7.1	2	VOICE COMMUNICATION		
7.2	3	DIVING GAS AND/ OR AIR		
7.3	6	PHOTOGRAPHIC EQUIPMENT - STILL		
7.4	7	DREDGE PUMP (5m <sup>3</sup> / hour) (stated)		
7.5	8	HP COMPRESSOR (Desilting) with a 50m hose		
7.6	10	UNDERWATER CUTTING SYSTEM		
7.7	14	RUBBER BOAT		
7.8	16	HAND TOOLS		
7.9	17	CHAINBLOCKS (Certified ) (stated)		
7.10	19	DRILLS AND BITS		
7.11	20	DIVING LIGHTS FOR UNDERWATER USE		
7.12	21	AIR LIFTING (OF SILT)EQUIPMENT (5m <sup>3</sup> / hour) (stated)		
7.13	22	FIRST AID AND MEDICAL EQUIPMENT		
7.14	23	SPECIALIZED MEASURING EQUIPMENT		
Total				

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 56 days rate.

7.1. If not included in the diving rates. Actual Proof of expenditures must be submitted.

**8. DETAILED REPORT(S) ON DIVING SERVICES**

- 8.1. Time estimated 4 (days) Rate per day R \_\_\_\_\_ Rate for 4 days R \_\_\_\_\_  
 8.2. Provide final report with colour pictures.

**9. TRANSPORT RATES**

**9.1. TRANSPORT COSTS: Only for transport from and to site during the diving operation**

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				<b>TOTAL AMOUNT</b>	R

- 9.2. Transport costs (from and to site during the 56 days diving operation)  
 Rate per day R \_\_\_\_\_ R \_\_\_\_\_ rate for 56 days  
 9.3. Market related fuel tariffs is applicable.  
 9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

**10. PRICE SCHEDULES**

**Note:**

- Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of 56 days.
- This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- Adjudication of this bid will be evaluated in a 56 days diving operation.
- This price schedule must be completed for your bid to be considered.

**10.1. Diving rates (9 hours per day) for a 56 days diving operation**

10.1.1. Day rates for diving team on site if not diving  
 Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.  
 Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 56 days( number of divers \_\_\_\_\_)

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 56 days

## 10.2. Mobilisation, site establishment and demobilisation

10.2.1. Mobilisation (including transport costs from home basis to site) R \_\_\_\_\_ (once)  
R \_\_\_\_\_ (five times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ (five times)

10.2.3. Demobilisation (including transport costs from site to home basis)  
R \_\_\_\_\_ (once) R \_\_\_\_\_ (five times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ (five times)

## 10.3. Project Management

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (56 days rate)

## 10.4 SUMMARY TOTAL COST FOR ITEM K:

## 10.4.1. Diving Operations for 56 days

ITEM	DESCRIPTION for 56 days diving operations	BID PRICE (EXCL. VAT)
7	PLANT AND EQUIPMENT HIRE RATES (56 days)	R
8	REPORTS ON DIVING SERVICES (4 days)	R
9	TRANSPORT RATES (56 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (56 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FIVE)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (56 days)	
<b>TOTAL COST FOR ITEM K(EXCL. VAT)</b>		R

10.4.2. Note: All items must be completed by the Bidder.

**ITEM L. BRONKHORSTPRUIT DAM (Gauteng Province)**

**1. SCOPE OF WORK**

**1.1. Bronkhorstspuit Dam Scope of Work - : Diving Services required**

- 1.1.1. Inspect condition of 2×bellmouth (with sleeve valves) and 4×bellmouth (with blank flanges) and gather all necessary dimensions such that a suitable plug and/or service gate can be designed.
- 1.1.2. Remove screen (approximately 100kg in weight) at live intake and reinstall screen when completed.
- 1.1.3. Inspect condition of 4×rails and ensure that existing rails are parallel, pay special attention to any docking mechanism that may be present on the existing rails, with a view of drawing a detailed technical drawing of such mechanism.
- 1.1.4. Install plug or service gate.
- 1.1.5. Once sleeve valve has been refurbished, remove plug and install on next inlet.
- 1.1.6. Once sleeve valve has been refurbished, remove plug and install on blanked off inlet.
- 1.1.7. Once 4×blank flanges have been manufactured and 1×blank flange installed, remove plug and install on next blanked off inlet.
- 1.1.8. Once blank has been installed, remove plug and install on next blanked off inlet.
- 1.1.9. Once blank has been installed, remove plug and install on next blanked off inlet.
- 1.1.10. Once blank has been installed, remove plug

**1.2. Detailed statement of scope of work:**

- 1.2.1. Sleeve valve No. 2 is stuck in the closed position. Sleeve valve No. 1 is operating with great difficulty. Both valves need to be refurbished as soon as possible. With no suitable isolating valve and service gate, these valves can not be refurbished. Should both sleeve valves become inoperable, then there won't be any drinking water to the whole Kungwini and Western Highveld area.

**1.3. Report on diving services rendered**

1.3.1 Method statement

**2. OFFERS FOR ITEMS WHICH CAN NOT BE QUANTIFIED AT TIME OF BIDDING.**

2.1. Time rate basis for bidding purposes only.

- 2.1.1. The Bidders shall submit a price on the following basis for bid evaluation only, as the actual diving operation can not be quantified exactly. Bidders are requested to bid for these items on the estimates as stated below:

SITE	ITEM NUMBER 1	TIME ESTIMATE FOR ITEM
Bronkhorstspuit Dam	Diving services (10.1)	10 days estimated normal diving time
	Reports (8)	Compile reports = 1 day
Duration	All work	Approximately one month

## 2.2. Actual contract values

2.2.1. The final invoice and payment will be based on the actual diving times and operations at the quoted rates.

2.2.2. **Note: The divers must attach their transport log sheet, time sheet, accommodation costs, etc to their invoices as proof of all their expenditures prior to final payments by DWS.**

## 3. SCHEDULED DATES OF CONTRACT

## 3.1. Scheduled commencement dates for the 10 days diving operations

Item No.	Brief description of item	Site	Scheduled dates
1.(a)	Mobilisation (five times)	Bronkhorstspuit dam	To be confirmed with Area Office
1.(b)	Site establishment (five times)	Bronkhorstspuit dam	To be confirmed with Area Office.
2.	2.1 Refer to section 1.1 of the Scope of Work (page 14).	Bronkhorstspuit dam	As soon as site establishment is completed
3.	Report on diving operations Report to be supplied within 5 days of respective dive.	Bronkhorstspuit dam	3.1 Initial report to be handed over on site after the investigation dive (measure inlet for plug). 3.2 Second report after installation of plug 3.3 Third report after removal of plug 3.2 Final report within five days after the completion of the diving works; after installing plug on the second inlet
1.(c)	Demobilisation (five times)	Bronkhorstspuit dam	To be completed within two days after completion of Item 2.

## 4. LOCATION OF SITE:

## 4.1. Bronkhorstspuit dam

4.1.1. Situated approximately 40 km from the town of Bronkhorstspuit in Gauteng province (For further information contact DWS Area Manager).

## 4.2. Road map

4.2.1. See any commercially available road map.

## 5. Depth of dive

## 5.1. Bronkhorstpruit dam

- 5.1.1. F.S.L. =  $\pm$  1430 m Full Supply Level (metres above sea-level)  
 P.L. = 1430 m Present level (m) on date  
 L.L. = 1403m Bottom level (m)

**Then:**

- F.S.L. – L.L. = Maximum possible depth of dive (uncorrected)  
 P.L. – L.L. = Actual depth of dive (uncorrected) (m)

F.S.L. – L.L. =  $\pm$  27 m

P.L. – L.L. =  $\pm$  27 m

- 5.2. **Remarks:** The successful bidder should confirm the actual value of the P.L. from the Scheme manager/Area Engineer just prior to commencing with diving operations.

## 6. Questionnaire

## 6.1. QUESTIONNAIRE OF EQUIPMENT AND PLANT LIST

NO.	TYPE OF EQUIPMENT	REQUIRED YES / NO	SUPPLIED BY BIDDER YES / NO	SIGNATURE BY BIDDER
1	DECOMPRESSION CHAMBER(IF REQUIRED)	YES	YES	
2	VOICE COMMUNICATION	YES	YES	
3	DIVING GAS AND/ OR AIR	YES	YES	
4	DIVING CAGE (CERTIFIED)	YES	YES	
5	PHOTOGRAPHIC EQUIPMENT –VIDEO	YES	YES	
6	PHOTOGRAPHIC EQUIPMENT – STILL	YES	YES	
7	DREDGE PUMP (m <sup>3</sup> / hour) (stated)	YES	YES	
8	HP COMPRESSOR	YES	YES	
9	LP COMPRESSOR	N/A	N/A	
10	UNDERWATER CUTTING SYSTEM	YES	YES	
11	UNDERWATER WELDING SYSTEM	YES	YES	
12	WELDING RODS (60 RODS/BOX)	YES	YES	
13	BARGE / FLOATING PLATFORM	YES	YES	
14	RUBBER BOAT	YES	YES	
15	JACK HAMMERS	N/A	N/A	
16	HAND TOOLS	YES	YES	
17	CHAINBLOCKS (Certified ) (stated)	YES	YES	
18	TIRFORS	YES	YES	
19	DRILLS AND BITS	YES	YES	
20	DIVING LIGHTS FOR UNDERWATER USE	YES	YES	
21	AIR LIFTING (OF SILT)EQUIPMENT (m <sup>3</sup> / hour) (stated)	YES	YES	
22	FIRST AID AND MEDICAL EQUIPMENT	YES	YES	
23	SPECIALIZED MEASURING EQUIPMENT	YES	YES	

The above table must be completed by the bidder.

- 6.2. **Take Note that the block ticked are the sole responsibility of the person applicable and no disputes will be allowed.**

## 7. PLANT AND EQUIPMENT HIRE for the estimated 10 days

Paragraph	Questionnaire Item	Type of equipment	Rand/day	Total for 10 days
7.1	2	VOICE COMMUNICATION		
7.2	3	DIVING GAS AND/ OR AIR		
7.3	6	PHOTOGRAPHIC EQUIPMENT – STILL		
7.4	7	DREDGE PUMP (5m <sup>3</sup> / hour) (stated)		
7.5	8	HP COMPRESSOR (Desilting) with a 50m hose		
7.6	10	UNDERWATER CUTTING SYSTEM		
7.7	14	RUBBER BOAT		
7.8	16	HAND TOOLS		
7.9	17	CHAINBLOCKS (Certified ) (stated)		
7.10	19	DRILLS AND BITS		
7.11	20	DIVING LIGHTS FOR UNDERWATER USE		
7.12	21	AIR LIFTING (OF SILT)EQUIPMENT (5m <sup>3</sup> / hour) (stated)		
7.13	22	FIRST AID AND MEDICAL EQUIPMENT		
7.14	23	SPECIALIZED MEASURING EQUIPMENT		
		Total		

Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 10 days rate.

7.1. If not included in the diving rates. Actual Proof of expenditures must be submitted.

## 8. REPORT(S) ON DIVING SERVICES

8.1. Time estimated 1 (day) Rate per day R \_\_\_\_\_ Rate for 1 day R \_\_\_\_\_

8.2. Provide final report with colour pictures.

## 9. TRANSPORT RATES

9.1. **TRANSPORT COSTS: Only for transport from and to site during the 10 days diving operation**

TYPE OF TRANSPORT	ENGINE SIZE	RATE /km	ESTIMATED TOTAL DISTANCE (km / day)	NUMBER OF VEHICLES	TOTAL AMOUNT
LDV 4 x 2		R			R
LDV 4 X 4		R			R
SEDAN		R			R
TRUCK HIRE		R			R
				TOTAL AMOUNT	R

9.2. Transport costs (from and to site during the 10 days diving operation)  
Rate per day R \_\_\_\_\_ R \_\_\_\_\_ 10 days rate.

9.3. Market related fuel tariffs is applicable.

9.4. Rates for all vehicles not listed above must be supplied by the bidder for approval by DWS.

**10. PRICE SCHEDULES**

**Note:**

- a) Rate for diving, equipment, mobilisation, site establishment, demobilisation costs etc. for an estimated period of ten days.
- b) This is not a fixed price quotation and may increase or decrease according to changes of the scope of work during the diving operation on site.
- c) Adjudication of this bid will be evaluated in a ten days diving operation.
- d) This price schedule must be completed for your bid to be considered.

**10.1. Diving rates (9 hours per day) for a ten days diving operation**

10.1.1. Day rates for diving team on site if not diving

Day rate R \_\_\_\_\_

10.1.2. Number of divers \_\_\_\_\_ Normal day.

Rates per hour R \_\_\_\_\_ R \_\_\_\_\_ 10 days ( number of divers \_\_\_\_\_ )

i. State which classes of divers will be used for this diving operation and state how many divers per class : \_\_\_\_\_

10.1.3. Diving supervisor rates: Rate per hour R \_\_\_\_\_ R \_\_\_\_\_ 10 days

**10.2. Mobilisation, site establishment and demobilisation**

10.2.1. Mobilisation (including transport costs from home basis to site)

R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.2. Site establishment R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.3. Demobilisation (including transport costs from site to home basis)

R \_\_\_\_\_ (once) R \_\_\_\_\_ ( five times)

10.2.4. Total for paragraph 10.2.1, 10.2.2, 10.2.3 R \_\_\_\_\_ ( five times)

**10.3. Project Management**

10.3.1. Diving Project Manager's Rate per hour: R \_\_\_\_\_ R \_\_\_\_\_ (10 days rate)

**10.4 SUMMARY TOTAL COST FOR ITEM L:****10.4.1. Diving Operations for 10 days**

<b>ITEM</b>	<b>DESCRIPTION for 10 days diving operations</b>	<b>BID PRICE (EXCL. VAT)</b>
7	PLANT AND EQUIPMENT HIRE RATES (10 days)	R
8	REPORTS ON DIVING SERVICES (1 day)	R
9	TRANSPORT RATES (10 days)	R
10.1	DIVING RATES (divers + supervisors for duration of diving services) (10.1.2 & 10.1.3) (10 days)	R
10.1.1	DIVING RATE FOR DIVING TEAM ON SITE IF NOT DIVING (only day rate)	R
10.2	MOBILISATION, SITE ESTABLISHMENT AND DEMOBILISATION (FIVE)	R
10.3.1	DIVING PROJECT MANAGER'S RATE (10 days)	
<b>TOTAL COST FOR ITEM L(EXCL. VAT)</b>		<b>R</b>

## ITEM M. ACCOMMODATION RATES

ACCOMMODATION RATES					
ITEM NUMBER	SITE	NUMBER OF DAYS	NUMBER OF DIVING STAFF	DAILY ACCOMMODATION RATE (Including meals and Allowances)	TOTAL (Excl. VAT) (Number of diving staff x Daily Accommodation)
A	Grassridge Dam	73			R
B	Floriskraal Dam	73			R
C	Voelvlei Dam	80			R
D	Chueniespoort Dam	20			R
E	Acornhoek Dam	10			R
F	Bospoort Dam	25			R
G	Blydepoort Dam	73			R
H	Vaal Dam	20			R
I	Wentzel Dam	70			R
J	Tsojana Dam	40			R
K	Glen Brock Dam	56			R
L	Bronkhortspruit Dam	10			R
<b>SUB TOTAL FOR ITEM M (Excl. VAT)</b>					<b>R</b>

**NOTE:**

All open spaces must be completed in full.



## ITEM O. SCHEDULE : GENERAL

## VAT EXCLUDED IN BID PRICE

SCHEDULE NO.	PAYMENT REF.	DESCRIPTION	UNIT	QUANT.	RATE	AMOUNT
<b>1.1</b>	<b>8.5</b>	<b>SUMS STATED PROVISIONALLY BY THE ENGINEER</b>				
1.1.1	8.5(a)	Provisional Sums For work to be executed (upon specific instruction of the Engineer) by the Contractor and valued in terms of the "valuation of variations" clause in the conditions of contract.	Sum	R300 000	-	R 300 000
1.1.2	8.5b1	For work to be executed by a Nominated Subcontractor.	Sum	R200 000	-	R200 000
1.1.3	8.5b2	Overheads, charges and profit on item 1.1.2	%	R200 000	10%	R20 000
1.1.4	8.5b2	Training, co-ordinating and supervision of a Nominated Emerging Sub-Contractor which is to be employed under this programme.	%	R50 000	10%	R5000
<b>1.2</b>	<b>8.6</b>	<b>PRIME COSTS ITEMS</b>				
1.2.1	8.6a	Prime cost of goods or materials to be supplied to the site of the Works upon specific instruction of the Engineer.	PC Sum	R200 000	-	R200 000
1.2.2	8.6b	Overheads, charges and profit on item 1.2.1	%	R200 000	10%	R20 000
1.2.3	PSA12.5	Specialist Contractors/Engineer	PC Sum	R200 000	-	R200 000
1.2.4	PSA12.5	Overheads, charges and profit on item 1.2.3	%	R100 000	10 %	R10 000
1.2.5		Percentage mark-up as items approved by the client or his representative with attached invoices for material used.	%	R100 000	10 %	R10 000
<b>TOTAL SCHEDULE ITEM N CARRIED FORWARD TO SUMMARY</b>					<b>R</b>	<b>965 000</b>
Is offer strictly to specification			Yes/No			
If not to specification, state deviation.			_____			
<b>Bidder name</b>			_____			
Company Name			_____			
Note: BID price must exclude value added tax.			_____			

## ITEM P. PRICE SUMMARY

ITEM NO.	SITE	SUMMARY TOTAL COST (excl. VAT)	ACCOMMODATION (ITEM M) (excl. VAT)	TOTAL (SUMMARY TOTAL COST + ACCOMMODATION) (excl. VAT)
A	Grassridge Dam	R	R	R
B	Floriskraal Dam	R	R	R
C	Voelvlei Dam	R	R	R
D	Chueniespoort Dam	R	R	R
E	Acomhoek Dam	R	R	R
F	Bospoort Dam	R	R	R
G	Blydepoort Dam	R	R	R
H	Vaal Dam	R	R	R
I	Wentzel Dam	R	R	R
J	Tsojana Dam	R	R	R
K	Glen Brock Dam	R	R	R
L	Bronkhortspruit Dam	R	R	R
N	Other rates (Total, excl. VAT)			R
O	<b>GENERAL</b>			<b>R 965 000</b>
			<b>TOTAL (excl. VAT)</b>	<b>R</b>

Name of Bidder \_\_\_\_\_

Company Name \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Date \_\_\_\_\_