



Project No: ORTDM SCMU 24-20/21

**OR TAMBO DISTRICT MUNICIPALITY
MQANDULI SECONDARY BULK WATER SCHEME PHASE 2 – CONTRACT 2**

29 January 2021

ADDENDUM No. 1

NOTICE TO TENDERERS

**Tenderers for the abovementioned Contract are hereby notified as follows:
PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM AS FOLLOWS:**

1. Complete the attached acknowledgement of receipt and submit the completed form with your tender as part of the returnables (Section T2.2, Form CC).
2. No Addendums will be issued within (5) working days on the close of Tender.

Failure to acknowledge receipt of this Addendum by attaching it to the returnables may prejudice your Tender.

**THIS ACKNOWLEDGEMENT OF RECEIPT OF
ADDENDUM MUST BE SUBMITTED TOGETHER WITH
THE TENDER DOCUMENT**

OR Tambo District Municipality
OR Tambo House
Nelson Mandela Drive
Myezo Park
Mthatha
5100

Sir/Madam

Project No: ORTDM SCMU 24-20/21

MQANDULI SECONDARY BULK WATER SCHEME PHASE 2 – CONTRACT 2

ADDENDUM No. 1 (ONE)

I/We herewith acknowledge receipt of Addendum No 1 (One) for the above-mentioned Tender.

.....

SIGNATURE

.....

COMPANY

.....

DATE

ADDENDUM NO. 1

1. **BILL OF QUANTITIES**

Attached is the **revised** Bill of Quantities which supersedes the Bill of Quantities in the Tender Document.

The attached Bill of Quantities must be completed and submitted with the Tender.

2. **DRAWINGS**

Attached is the **revised** drawing (**DRG No.: ZCE063/FT/WA/C2/311 - Rev 1**) which supersedes the drawing (DRG No.: ZCE063/FT/WA/C2/311 - Rev 0) included in the Tender Document

SECTION 1 : SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.1	8.3	FIXED-CHARGE AND VALUE RELATED ITEMS				
1.1.1	8.3.1	Contractual Requirements	Sum	1		
	8.3.2	Establishment of Facilities on the Site				
	8.3.2.1	Facilities for Engineer				
1.1.2	PSAB 3.2	a) Furnished offices (1No.)	Sum	1		
1.1.3		b) Telephone	Sum	1		
1.1.4		c) Nameboards (2 No.)	Sum	1		
	8.3.2.2	Facilities for Contractor				
1.1.5		a) Offices and storage sheds	Sum	1		
1.1.6		b) Workshops	Sum	1		
1.1.7		c) Laboratories	Sum	1		
1.1.8		d) Living accommodation	Sum	1		
1.1.9		e) Ablution and latrine facilities	Sum	1		
1.1.10		f) Tools and equipment	Sum	1		
1.1.11		g) Water supplies, electric power and communications	Sum	1		
1.1.12		h) Dealing with water (see 5.5)	Sum	1		
1.1.13		i) Access (see 5.8)	Sum	1		
1.1.14		j) Plant	Sum	1		
1.1.15	8.3.3	Other Fixed-charge Obligations	Sum	1		
1.1.16	8.3.4	Removal of Site Establishment	Sum	1		
1.1.17	PSA 8.3.5	Provision of a Materials Guarantee	Sum	1		
	PSA 8.4.6	Compliance with the OHS Act (1993, as amended), the Construction Regulations (2014) and the Particular Safety Specification:				
1.1.18	PSHSS 6.1.2; CR 5 (1)(l)	i) Preparation of the Contractor's site specific Health and Safety Plan	Sum	1		
1.1.19	CR 7(1)(b)	ii) Principal Contractor's initial obligations in respect of the Occupational Health and Safety Act and Construction Regulations	Sum	1		
	GSR 2; PSHSS 7.7	iii) Provision of SABS Personal Protective Equipment				
1.1.20		(a) Hard Hats	No	30		
1.1.21		(b) Reflective vests	No	30		
1.1.22		(c) Protective foot wear	No	30		
1.1.23		(d) Corded Earplugs	No	0		
1.1.24		(e) Dust masks FFP2	No	200		
1.1.25		(g) Gloves	No	50		
1.1.26		(h) Goggles	No	50		
CARRIED FORWARD						

SECTION 1 : SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	CR 7(1)(g);	iv) Cost of medical certificates and medical surveillance				
1.1.27	PSHSS 7.2	(a) Initial (baseline) medical examinations	No	30		
1.1.28		(b) Exit medical examinations	No	30		
	PSHSS 7.14	v) Fall Protection				
1.1.29		a) Lifeline & anchorage	No	2		
1.1.30		b) Safety Harnesses	No	5		
1.1.31		c) Rescue Kit	No	1		
		vi) Occupational Hygiene Survey				
1.1.32	NIHL 6; PSHSS 7.3	(a) Establishment of noise zones (plant)	Sum	1		
1.1.33		(b) Compliance with Amendment of the Occupational Exposure Control Limit for Silica in Table 1 of the Hazardous Chemical Substances including air sampling and analysis	Sum	1		
1.1.34	PSA 8.4.7	Compliance with EMP and EMPr	Sum	1		
1.2	8.4	TIME-RELATED ITEMS				
1.2.1	8.4.1	Contractual Requirements		1		
	8.4.2	Operation and Maintenance of Facilities on Site, for Duration of Construction, except where otherwise stated				
	8.4.2.1	Facilities for Engineer				
1.2.2		a) Furnished offices (1No.)		1		
1.2.3	PSAB 8.4.1	b) Telephone	Sum	1		
1.2.4		c) Nameboards (2 No.)	Sum	1		
1.2.5		d) Survey assistants and materials	Sum	1		
	8.4.2.2	Facilities for Contractor				
1.2.6		a) Offices and storage sheds	Sum	1		
1.2.7		b) Workshops	Sum	1		
1.2.8		c) Laboratories	Sum	1		
1.2.9		d) Living accommodation	Sum	1		
1.2.10		e) Ablution and latrine facilities	Sum	1		
1.2.11		f) Tools and equipment	Sum	1		
1.2.12		g) Water supplies, electric power and communications	Sum	1		
1.2.13		h) Dealing with water (see 5.5)	Sum	1		
1.2.14		i) Access (see 5.8)	Sum	1		
1.2.15		j) Plant	Sum	1		
1.2.16	8.4.3	Supervision for Duration of Construction	Sum	1		
CARRIED FORWARD						

SECTION 1 : SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
1.2.17	8.4.5	Other Time-related Obligations	Sum	1		
	PSA 8.4.6	Compliance with the OHS Act (1993, as amended), the Construction Regulations (2014) and the Particular Safety Specification:				
1.2.18	CR 5(1)(g)	i) Principal Contractor's time related obligations in respect of the Occupational Health and Safety Act and Construction Regulations	month	12		
1.2.19	CR 8(5); PSHSS 6.1.5	ii) Provision of a full- time SACPCMP registered Construction Health and Safety Officer	month	12		
1.2.20		iii) Provision of a part-time assistant SACPCMP Candidate Construction Health and Safety Officer for Subcontractor Management & Assistance	month	12		
		iv) OH&S Legal Compliance Training - SAQA UNIT STANDARD				
1.2.21	GSR 3(5); PSHSS 7.5	a) First Aid	No	1		
1.2.22	PSHSS 6.1.7	b) H&S Representative	No	1		
1.2.23	PSHSS 7.14	c) Working at height & rescue operations	No	20		
1.2.24	CR 29(h)	d) Basic Fire Fighting	No	1		
1.2.25	PSHSS 6.1.3/4	e) Safety for Supervisors	No	2		
1.2.26	PSHSS 7.13	f) Temporary Works Training	No	20		
1.2.27	SANS 10085; PSHSS 7.13	g) Scaffolding	No	5		
1.2.28	PSHSS 7.10	h) Plant Operators	No	5		
1.2.29	PSHSS 6.1.6	i) Temporary Roadworks Signage	Sum	1		
1.2.30	PSHSS 7.17	j) Excavation Safety - Supervisors	No	12		
1.2.31		k) Other	Sum	1		
1.2.32	GSR 3; PSHSS 7.5	v) Provision of First Aid Boxes to GSR requirements	No	3		
1.2.33	GMR 18; PSHSS 7.13	vi) Lifting Equipment Inspection by AIA	Sum	1		
1.2.34	PSHSS 7.13	vii) Temporary Works Designs, Inspections and Approval	Sum	1		
1.2.35	CR 7(1)(c) (e)	viii) Submission of a Health and Safety File	Sum	1		
1.2.36	PSA 8.4.7	Compliance with EMP and EMPr	Sum	1		
1.2.37	PSA 8.4.8	Supervision of Subcontractor	Sum	1		
CARRIED FORWARD						

SECTION 1 : SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.3	8.5	BROUGHT FORWARD SUMS STATED PROVISIONALLY BY ENGINEER (Subclause 8.1.2.1 (d))				
1.3.1		Community Liason Officer	Prov. Sum	1	60 000.00	60 000.00
1.3.2		Overheads, charges and profit on 1.3.1 above	%	60000		
1.3.3		Additional Tests required by Engineer	Prov. Sum	1	100 000.00	100 000.00
1.3.4		Overheads, charges and profit on 1.3.3 above	%	100000		
1.3.5		Allowance for additional survey	Prov. Sum	1	100 000.00	100 000.00
1.3.6		Overheads, charges and profit on 1.3.5 above	%	100000		
1.3.7		Allowance for relocation of existing services	Prov. Sum	1	100 000.00	100 000.00
1.3.8		Overheads, charges and profit on 1.3.7 above	%	100000		
1.3.9		Allowance for connections to existing infrastructure	Prov. Sum	1	50 000.00	50 000.00
1.3.10		Overheads, charges and profit on 1.3.9 above	%	50000		
1.3.11		Allowance for River Crossings	Prov. Sum	1	75 000.00	75 000.00
1.3.12		Overheads, charges and profit on 1.3.11 above	%	75000		
1.3.13		Allowance for lightning protection at Reservoir	Prov. Sum	1	50 000.00	50 000.00
1.3.14		Overheads, charges and profit on 1.3.13 above	%	50000		
1.3.15		Allowance for HIV awareness and training	Prov. Sum	1	10 000.00	10 000.00
1.3.16		Overheads, charges and profit on 1.3.15 above	%	10000		
		Expanded Public Works Programme (EPWP)				
1.3.17		Allowance for training on targeted labour	Prov. Sum	1	100 000.00	100 000.00
1.3.18		Overheads, charges and profit on 1.3.17 above	%	100000		
1.3.19		Transportation and accomodation of workers for training where it is not possible to undertake in close proximity	Prov. Sum	1	10 000.00	10 000.00
1.3.20		Overheads, charges and profit on 1.3.19 above	%	10000		
CARRIED FORWARD						

SECTION 1 : SABS 1200 A - GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.3.21		BROUGHT FORWARD Allowance for the supply of safety apparel (safety boots, reflectors, vests, orange overalls bearing the EPWP logo and large EPWP logo on the back and safety gloves for all targeted labour)	Prov. Sum	1	20 000.00	20 000.00
1.3.22		Overheads, charges and profit on 1.3.21 above	%	20000		
1.3.23		Equipment for the Engineer	Prov. Sum	1	125 000.00	125 000.00
1.3.24		Overheads, Charges and Profit on item 1.3.23 above	%	125000		
1.3.25		Allowance for Civil Engineering Student / Trainee	Prov. Sum	1	96 000.00	96 000.00
1.3.26		Overheads, Charges and Profit on item 1.3.25 above	%	96000		
1.3.27		Training of SMME Contractors	Prov. Sum	1	200 000.00	200 000.00
1.3.28		Overheads, Charges and Profit on item 1.3.27 above	%	200000		
1.3.29		Transportation for the Engineer for the duration of the contract (R30000 pm).	Prov. Sum	1	360 000.00	360 000.00
1.3.30		Overheads, Charges and Profit on item 1.3.29 above	%	360000		
1.3.31		Cellphone allowance for the Engineer for the duration of the contract (R5000 pm).	Prov. Sum	1	60 000.00	60 000.00
1.3.32		Overheads, Charges and Profit on item 1.3.31 above	%	60000		
1.3.33	PSA 8.7	DAYWORK (See 8.1.2.1 (d)) a) Labour	Prov. Sum	1	75 000.00	75 000.00
1.3.34		Overheads, charges and profit on item 1.3.33 above	%	75000		
1.3.35		b) Materials	Prov. Sum	1	75 000.00	75 000.00
1.3.36		Overheads, charges and profit on item 1.3.35 above	%	75000		
1.3.37		c) Plant	Prov. Sum	1	75 000.00	75 000.00
1.3.38		Overheads, charges and profit on item 1.3.38 above	%	75000		
1.4	8.8	TEMPORARY WORKS (See 8.1.2.1 (d))				
1.4.1	8.8.1	Main Access Road to Works (construct and maintain)	Sum	1		
1.4.2	PSA 8.8.2	Dealing with traffic	Sum	1		
1.4.3	PSA 8.8.7	Contractor to provide "Construction Record" Information	Sum	1		
TOTAL FOR SECTION 1 CARRIED FORWARD TO SUMMARY						

SECTION 2 : SABS 1200 C - SITE CLEARANCE (PIPE ROUTE)

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.1	8.2.1	Clear and grub (i) Pipeline route (10m wide strip)	m	6270		
2.2	8.2.2	Remove and grub large trees and tree stumps of girth a) over 1 m and up to 2 m	No.	5		
2.3		b) over 2 m and up to 3 m	No.	5		
2.4	8.2.3	Remove and grub all trees and tree stumps regardless of girth	ha	0.25		
2.5	8.2.4	Reclear surfaces (only on instructions from Engineer)	m	150		
2.6	PSC 8.2.5	Take down existing fences	km	1		
	8.2.6	Clear hedge or fence or both where not scheduled separately				
2.7		(i) Hedges up to 2m high	m	100		
2.8		(ii) Reinstate Hedge	m	100		
TOTAL FOR SECTION 2 CARRIED FORWARD TO SUMMARY						

SECTION 3 : SABS 1200 D - EARTHWORKS (PIPE ROUTE)

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
	8.3.8	Existing Services				
3.1	8.3.8.1	Location c) Excavate by hand in soft material to expose water / telkom / electrical service (LI)	m³	100		
3.2	8.3.10	Topsoiling (i) Pipeline Route	m²	31350		
3.3	8.3.11	Grassing or Vegetation Cover (i) Pipeline Route	m²	31350		
3.4	PSD 8.3.13	Erosion Control Berms	m²	100		
3.5	PSD 8.3.14	Sandbag Protection to pipe trench	No.	100		
3.6	PSD 8.3.15	Extra-over Sandbag Protection for Stabilization	No.	100		
TOTAL FOR SECTION 3 CARRIED FORWARD TO SUMMARY						

SECTION 4 : SABS 1200 DB - PIPE TRENCHES

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
	8.3.1	Site Clearance and (if specified) Removal of Topsoil				
	PSDB 8.3.1.C	c) Remove Topsoil				
4.1		(i) 150mm up to 5m wide stripe	m ²	31350		
4.2		(ii) 300mm (within canelands)	m ²	11440		
	8.3.2	Excavation				
		a) Excavate in all materials for trenches, backfill, compact, and dispose of surplus material				
		For pipes:				
		Up to and including 400mm diam. for total trench depth:				
4.3		Over 0 and up to 1m (LI)	m	20		
4.4		Over 1m and up to 2m	m	6270		
4.5		Over 2m and up to 3m	m	120		
		b) Extra-over item (a) above for:				
4.6		2) Hard rock excavation	m ³	290		
4.7		3) Hard rock excavation near residential buildings (Mounted hydraulic breaker where directed by the Engineer)	m ³	77		
4.8		c) Excavate and dispose of unsuitable material from trench bottom (provisional)	m ³	360		
4.9	8.3.2(b)	Excavate and dispose of unsuitable material from trench bottom within a 1km radius freehaul (Provisional)	m ³	90		
	8.3.3	Excavation Ancillaries				
	8.3.3.1	Make up deficiency in backfill material (provisional)				
4.10		a) from other necessary excavations on site	m ³	270		
4.11		c) by importation from commercial or off site sources selected by the Contractor	m ³	270		
4.12	PSDB 8.3.3.1	d) stabilised backfill	m ³	100		
4.13	PSDB 8.3.3.4	Overhaul				
4.14		a) Limited Overhaul (provisional)	m ³	500		
4.15		b) Long Overhaul (provisional)	m ³ .km	500		
	8.3.4	Particular Items				
		a) Shore trench opposite structure or service				
4.16		(i) Existing houses and toilet structures	m	100		
	8.3.5	Existing Services that Intersect or Adjoin a Pipe Trench				
CARRIED FORWARD						

SECTION 4 : SABS 1200 DB - PIPE TRENCHES

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
		a) Services that intersect a trench				
4.17		i) Concrete pipe up to 1000 mm dia.	No.	5		
4.18		ii) Water pipe up to 400 mm dia.	No.	7		
4.19		iii) Electrical Cables	No.	7		
		b) Services that adjoin a trench				
4.20		i) Water pipe up to 400 mm dia.	m	100		
4.21		ii) Telkom Cables	m	20		
4.22		ii) Electrical Cables	m	20		
	8.3.6	Finishing				
	8.3.6.1	Reinstate road surfaces complete with all courses				
4.23		a) Gravel on shoulders and wearing course	m ²	40		
TOTAL FOR SECTION 4 CARRIED FORWARD TO SUMMARY						

SECTION 5 : SABS 1200 DK - GABIONS AND PITCHING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
5.1	8.2.1	Surface preparation for bedding of gabions a) Cavities filled with approved excavated or rock (LI)	m ²	20		
5.2		b) Cavities filled with grade 15 concrete (provisional)	m ²	10		
	8.2.2	Gabions				
		Gabions (PVC Coated)				
5.3		1.0 m x 1.0 m x 1.0 m	m ³	4		
5.4		1.0 m x 1.0 m x 4.0 m				
		Foundation Mattresses (PVC Coated)				
5.5		0.23 m x 2.0 m x 6.0 m	m ³	6		
5.6	8.2.3	Extra-over item 8.2.2 for packing selected stone for exposed face	m ²	20		
	8.2.4	Geotextile (or geomembrane) - Type A2				
5.7		(i) For gabions	m ²	60		
5.8		(ii) For crushed stone bedding and sub-soil drains	m ²	10		
	8.2.5	Pitching				
5.9		Grouted stone pitching	m ²	15		
TOTAL FOR SECTION 5 CARRIED FORWARD TO SUMMARY						

SECTION 6 : SABS 1200 L - MEDIUM-PRESSURE PIPELINES

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
6.1	8.2.1	Supply, Lay and Bed Pipes Complete with Couplings 250 Diameter Pipes (i) 250mm diam. mPVC CL16 to SABS 966-2	m	4865		
6.2		(ii) 50mm diam HDPE to SABS 533	m	570		
6.3	8.2.2	Extra-over 8.2.1 for the Supplying, Laying and Bedding of Specials Complete with Couplings mPVC Double Socketed Bends CL16 250 Diameter Pipe Bends (i) 250 mm Ø 11¼° bend	No.	6		
6.4		(ii) 250 mm Ø 22½° bend	No.	1		
6.5		Fittings CL16 (i) 250 x 200 Ø Reducing Tee	No.	1		
6.6		(ii) 250 x 75 Ø reducer	No.	1		
6.7		(iii) 250 x 50 Ø Reducing Tee	No.	1		
6.8	8.2.3	Extra-over 8.2.1 for the Supplying, Fixing, and Bedding of Valves Isolating Valve assembly complete as per detail on drawing no. ZCE063/FT/WA/C2-304 i) 250 mm Ø ND, PN16	No.	4		
6.9		Scour Valve assembly complete as per detail on drawing no. ZCE063/FT/WA/C2-307 (i) 80 mm Ø ND off 250 mm Ø OD mPVC pipe, PN 16	No.	5		
6.10		Air Valve assembly complete as per detail on drawing no. ZCE063/FT/WA/C2-306 (i) 25 mm Ø ND off 250 mm Ø OD mPVC pipe, PN 16	No.	7		
6.11		Off-Take chamber assembly complete as per drawing no. ZCE063/FT/WA/C2-311	No.	1		
6.12	8.2.11	Anchor / Thrust Blocks and Pedestals as per drawing no. ZCE063/FT/WA/C2-301 a) Dimensions stated on Drawing mentioned above	Sum	1		
6.13	8.2.13	Valves and Hydrant Chambers etc Isolating Valve Chamber complete as per detail on drawing no. ZCE063/FT/WA/C2-304	No.	4		
6.14		Scour Valve Chambers complete as per detail on drawing no. ZCE063/FT/WA/C2-307	No.	5		
CARRIED FORWARD						

SECTION 6 : SABS 1200 L - MEDIUM-PRESSURE PIPELINES

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
6.15		BROUGHT FORWARD Air Valve Chambers complete as per detail on drawing no. ZCE063/FT/WA/C2-306	No.	7		
6.16	PSL 8.2.18	Off-Take chamber complete as per drawing no. ZCE063/FT/WA/C2-311	No.	1		
6.17	PSL 8.2.16	Supply and install pipeline markers as per detail on drawing no. ZCE063/FT/WA/C2-303	No.	118		
6.18	PSL 8.2.17	Supply and install valve markers as per detail on drawing no. ZCE063/FT/WA/C2-303	No.	16		
		Sundry Items				
		Supply, lay, bed and install concrete pipe sleeves for road crossings, inclusive of all items (viz. skids etc) necessary for pipe support through sleeve as per drawing No... Class 100D, Spigot and Socket type as per drawing no. ZCE063/FT/WA/C2-309 for:				
6.19		(i) 600 mm ND Concrete Sleeve for 400 mm ND mPVC pipe	m	10		
6.20		(ii) 600 mm ND Concrete Sleeve for 215 mm ND mPVC pipe	m	10		
6.21		(iii) 600 mm ND Concrete Sleeve for 200 mm ND mPVC pipe	m	10		
6.22	PSL 8.2.18	Tie in to existing pipelines, chambers & reservoirs	Sum	1		
TOTAL FOR SECTION 6 CARRIED FORWARD TO SUMMARY						

SECTION 7 : SABS 1200 LB - BEDDING: (PIPES)

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
	8.2.1	Supply only of Bedding from Trench Excavation within 0.5km				
7.1		a) Selected granular material	m ³	402		
7.2		b) Selected fill material	m ³	228		
	8.2.2	Supply only of Bedding by Importation				
	8.2.2.3	From commercial sources (Provisional)				
7.3		a) Selected granular material	m ³	1334		
7.4		b) Selected fill material	m ³	660		
7.5		c) 19mm graded crushed stone	m ³	5		
7.6	8.2.3	Concrete Bedding Cradle	m ³	10		
	8.2.4	Encasing of Pipes in Concrete				
7.7		(i) Grade 25 MPa / 19 mm concrete	m ³	15		
7.8	8.2.5	Overhaul of Material for Bedding Cradle and Selected Fill Blanket	m ³ .km	3000		
TOTAL FOR SECTION 7 CARRIED FORWARD TO SUMMARY						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.1	SANS 1200D	EARTHWORKS				
		Site Clearance and Removal of Topsoil				
8.1.1	8.3.1	Prepare Reservoir Site	ha	0.2		
8.1.2	8.3.1.2	Remove topsoil to nominal depth of 150 mm and stockpile or dispose	m ²	1250		
8.1.3	SANS 1200C 8.2.9 PSC3.1 PSD 8.3.6	Transport and dispose of materials to suitable dumping site	m ³ .km	1000		
8.2	SANS 1200D	EXCAVATION				
8.2.1	8.3.2	Bulk Excavation				
8.2.1.1	8.3.2(a) PSD 8.3.2	Excavate in all materials to bulk excavation line (that is about 100mm above the Final Excavation Level), stockpile and maintain for backfill and dispose of remainder to approved spoil site (including shaping to be free-draining and with embankment slopes shallower than 1:3 and compacting)	m ³	2500		
	8.3.2(b)	Extra-over Item 3.2.1.1 for excavation in :				
8.2.1.2		1) Intermediate material	m ³	450		
8.2.1.3		2) Hard rock material (blasting)	m ³	750		
8.2.1.4		3) Hard rock excavation near residential buildings (Mounted hydraulic breaker where directed by the Engineer)	m ³	100		
8.2.1.5		4) Boulder material class A	m ³	175		
8.2.1.6		5) Boulder material class B	m ³	175		
8.2.2	8.3.4	Importing of Materials				
8.2.2.1	8.3.4(a)	Import approved topsoil from commercial source (provisional)	m ³	30		
8.2.2.2		Import approved 25 mm stone chips (reflective quartzite) from commercial source, stockpile and place by hand on reservoir roof	m ³	30		
	8.3.4(a)	Layer works To backfill over-excavation of unsuitable material:				
8.2.2.3		Supply G2 crusher run, place and compact in max 150mm layers under reservoir (Prov) compacted to 100% mod AASHTO density	m ³	90		
8.2.2.4		Supply G5 subbase, place and compact in 150mm layers under reservoir (Prov) stabilised with 3% ordinary portland cement (to create C4 material as directed by the Engineer) compacted to 98% mod AASHTO density	m ³	270		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.2.2.5		BROUGHT FORWARD Supply G5 subbase, place and compact in 150mm layers under reservoir (Prov) compacted to 95% mod AASHTO density	m ³	50		Rate Only
8.2.2.6		Supply G7 natural gravel, place and compact in 150mm layers under reservoir (Prov) compacted to 95% mod AASHTO density	m ³	90		
8.2.3		Finishing				
8.2.3.1	8.3.10	Topsoiling	m ²	1500		
8.2.3.2	8.3.11	Grassing or other Vegetation Cover	m ²	750		
8.2.4	SANS 1200DA	Restricted Excavation				
8.2.4.1		Excavate in all materials by hand to expose existing services	m ³	75		
	8.3.2(a)	Excavate for restricted foundations, footings and trenches in all materials and use for backfill or embankment or dispose				
8.2.4.2		Excavate and trim to lines and levels under reservoir	m ³	100		
8.2.4.3		Other restricted excavation for chambers etc	m ³	100		
	8.3.3(b)	Extra over items 2.3.2 for restricted excavation in:				
8.2.4.4		1) Intermediate material	m ³	25		
8.2.4.5		2) Hard rock material	m ³	50		
8.2.4.6		Excavate unsuitable material from below founding level as ordered by Engineer and dispose of to approved spoil site	m ³	150		
8.2.5	SANS 1200DB	PIPE EXCAVATIONS				
8.2.5.1	8.3.2 PSDB 8.1.4 PSDB 8.3.3.4	(a) Excavate in all material for trenches backfill and dispose of surplus and unsuitable material. Rate to include for all temporary works including trimming, shoring and dewatering where necessary.	m ³	500		
	8.3.2	(b) Extra over item 3.2.5.1 for excavation in:				
8.2.5.2		1) Intermediate material	m ³	50		
8.2.5.3		2) Hard rock (Prov)	m ³	150		
8.3	SANS 1200G	REINFORCED CONCRETE RESERVOIR				
8.3.1	8.1.1 8.2	FORMWORK				
	8.2.1	Rough vertical to degree of accuracy III				
8.3.1.1		Footings to walls (curved)	m ²	50		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
8.3.1.2		Walls outside below ground level (curved)	m ²	200		
8.3.1.3		Sump & encasement to pipes	m ²	40		
8.3.1.4		Manholes	m ²	120		
	8.2.2	Smooth vertical to degree of accuracy II				
8.3.1.5		Walls inside & outside above ground level (curved)	m ²	475		
8.3.1.6		Column bases	m ²	30		
8.3.1.7		Footing at expansion joint	m ²	20		
8.3.1.8		Circular Columns	m ²	60		
8.3.1.9		Roof slab & upstand	m ²	60		
8.3.1.10		Sump	m ²	20		
8.3.1.11		Manhole cover slab	m ²	10		
8.3.1.12		Manholes	m ²	100		
	8.2.2	Smooth horizontal to degree of accuracy II				
8.3.1.13		Roof soffit	m ²	325		
8.3.1.14		Manholes	m ²	50		
	8.2.6	Box-outs for pipe specials to be installed then grouted in place:				
		1) Box-out in reservoir wall to accommodate:				
8.3.1.15		a) DN150 inlet pipe	No.	1		
8.3.1.16		b) DN150 scour pipe	No.	1		
8.3.1.17		c) DN250 outlet pipe	No.	1		
8.3.1.18		d) DN300 overflow pipe	No.	1		
		2) Box-out in chamber wall to accommodate:				
8.3.1.19		a) DN150 scour pipe	No.	1		
8.3.1.20		b) DN250 outlet pipe	No.	1		
8.3.1.21		c) DN300 overflow pipe	No.	1		
		3) Box-out in reservoir roof to accommodate:				
8.3.1.22		a) DN50 holes for level control and telemetry equipment	No.	4		
8.3.1.23		b) DN100 holes for sampling equipment	No.	2		
8.3.1.24		c) DN150 air vents	No.	8		
8.3.1.25		d) DN150 roof drainage outlets	No.	18		
8.3.2	8.3	REINFORCEMENT				
	8.3.1	Mild steel bars				
8.3.2.1		R8 Basic Price	t	2		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
8.3.2.2	8.3.1	Extra-over item 3.3.2.1 for bars of diameter				
		R10	t	1		
8.3.2.3	8.3.1	High-tensile steel bars				
		Y25 Basic price	t	35		
8.3.2.4	8.3.1	Extra-over item 3.3.2.3 for bars of diameter				
		Y10	t	8		
8.3.2.5		Y12	t	20		
8.3.2.6		Y16	t	4		
8.3.2.7		Y20	t	1		
8.3.2.8	8.3.2	High-Tensile Welded Mesh				
		Type reference #245	m ²	60		
8.3.2.9		Type reference #193	m ²	20		
8.3.3	8.4 PSG 8.1.3	CONCRETE				
8.3.3.1	PSG 5.5.1.6 PSG 8.10	No-fines concrete under floor & to fill voids	m ³	45		
8.3.3.2	8.4.2 PSG 8.2.8	Blinding Layer (Grade 15/19 MPa) 50mm blinding layer	m ³	50		
8.3.3.3		5mm 1:5 Dry Mortar Mix layer below plastic bond breaker	m ²	380		
8.3.3.4	8.4.3	Strength concrete: 35MPa/19 mm watertight concrete with an approved crystalline waterproofing concrete additive				
		Walls above footing	m ³	75		
8.3.3.5		Footings to walls	m ³	50		
8.3.3.6		Floor slabs	m ³	65		
8.3.3.7		Roof slab & upstand	m ³	90		
8.3.3.8		Columns with bases	m ³	15		
8.3.3.9		Encasement to inlet / outlet / overflow / scour pipes	m ³	20		
8.3.3.10		Inlet & outlet chambers (as per Drawings)	m ³	30		
8.3.3.11	8.4.3 PSG 8.2.8	Strength concrete: 15 MPa/19 mm Minimum thickness 75 mm blinding layer to chambers and encasements	m ³	7		
8.3.3.12		Mass concrete including splash aprons from roof overflow and filling under reservoir footings (where ordered by the Engineer)	m ³	50		
	8.4.3	Strength 25MPa/19mm concrete				
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.3.3.13		BROUGHT FORWARD				
8.3.4	8.4.4 PSG 8.4.4	25MPa/19mm concrete to benching	m ³	5		
		UNFORMED SURFACE FINISHES				
		(a) Wood-floated finish (to degree of accuracy II)				
8.3.4.1		Top of reservoir wall footing (outside)	m ²	25		
8.3.4.2		Reservoir roof	m ²	320		
8.3.4.3		Invert to reservoir sump	m ²	4		
8.3.4.4		Top of upstand	m ²	7		
		(b) Steel-floated (to degree of accuracy II)				
8.3.4.5		Top of reservoir Wall	m ²	20		
8.3.4.6		Top Reservoir Floor Slab & Footing inside	m ²	320		
8.3.4.7		Top of column Bases	m ²	20		
8.3.5	8.5 PSG 8.5	JOINTS				
8.3.5.1		1) Expansion Joints in reservoir floor against wall footing (as per drawings) measured by the total lengths of expansion joints complete with:	m	70		
		a) 250 mm wide x 2mm thick hypalon bandage				
		b) 2mm aluminium strip with 50mm wide backing bondage breaker				
	PSG 3.11.2	c) 250mm rearguard waterstop as per detail on drawings				
		d) Closed cell Polyethylene 100kg/m or 30mm closed cell high density void former				
8.3.5.2		2) Contraction joints in reservoir floor (as per drawings) measured by the total lengths of contraction joints complete with:	m	35		
		a) 200mm wide x 2 mm thick hypalon bandage or similar approved				
	PSG 3.11.2	b) 250mm rearguard waterstop with centre bulb				
8.3.5.3		3) Construction joints in reservoir walls (as per drawings) measured by the total lengths of construction joints complete with:	m	130		
		a) 150mm wide by 1.6mm thick mild steel strips, hot dip galvanized GI waterstop				
		b) 150mm wide Lanko Bandage or similar approved				
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.3.5.4		BROUGHT FORWARD 4) Isolation Joints in reservoir (as per drawings) measured by the total lengths of isolation joints complete with: a) 10mm Jointex or softboard	m	75		
	PSG 3.11.4	b) 10x10mm polysulphide sealant to SABS 1077				
8.3.6		MISCELLANEOUS CONCRETE ITEMS				
8.3.6.1	PSG 3.11.4 PSG 8.17	500 micron black plastic bond breaker over no-fines concrete under reservoir floor	m ²	380		
8.3.6.2	PSG 8.18	Neoprene (Kilcher or similar approved) Teflon sliding bearing type 3T50/75	m	65		
8.3.6.3	PSG 8.19	Polyurethane seal between reservoir roof and walls	m	65		
8.3.6.4		Precast 220x70 deep x790 long saddleback Deranco coping (or similar approved) to reservoir roof complete installation including casting shuttering and placing on mortar.	m	65		
8.3.6.5		Concrete planks to reservoir over outlet manhole to reservoir.	No	4		
8.3.6.6		Cast in situ (25MPa concrete) standard 1000mm wide v-channelling around reservoir perimeter on 200gm/m2 needle punched geotextile around resevoir perimeter complete (see standard detail drg)	m	75		
8.3.6.7		200gm/m2 needle punched geotextile (1m width)	m ²	75		
8.3.6.8		Cleaning and sterilizing reservoir and associated pipework to Engineer's approval	Sum	1		
8.3.6.9	PSG8.15	Reservoir Watertightnes test including reservoir roof	sum	1		
8.3.6.10		Supply and install "Pulltrude" type fibreglass 25 deep 36x36 grating panel 650x1000mm	No	1		
8.3.6.11		150mm dia glvanised outlets, cut from a 150mm dia pipe with metal guaze vermin proof (GALVANISED AFTER FABRICATION) as per detail on the drawings (300mm long) Manhole items	No	14		
8.3.6.12		Concrete cover slab without manhole,including lifting hooks and air vents.	No	1		
8.3.6.13		Concrete cover slab complete with manhole frame cast in, including lifting hooks and air vents. Note payment of cast iron manhole frame and cover paid seperately	No	1		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.3.6.14	PSG 8.16	BROUGHT FORWARD "Calcimite" or similar approved step irons general purpose to BS1247:1975	No	10		
8.3.6.15	PSG 8.16	Manhole cover (to SABS 558) type 9E with frame	No	2		
8.4	SANS 1200 HA	RESERVOIR STRUCTURAL WORK				
8.4.1		STRUCTURAL STEELWORK				
	8.3.1	Supply, fabricate, deliver and install steelwork, to the finishes/coatings specified in the specification and on the drawings				
		Access ladders with Cage				
8.4.1.1		Internal 3.5m high ladder to reservoir as per drawings. Stainless steel grade 316L	No	1		
8.4.1.2		External 3.2m high GMS ladder to outer wall of reservoir as per drawings (HD Galvanised)	No	1		
8.4.1.3		2m high GMS ladder to inlet & outlet chambers as per drawings	No	2		
		Reservoir and Chambers' roof elements				
8.4.1.4		50mm diameter sleeved holes in reservoir roof for level control and telemetry equipment as shown on the drawings.	No	4		
8.4.1.5		100mm diameter sleeved holes in reservoir roof for sampling equipment (As required).	No	2		
8.4.1.6		Supply and install GMS manhole locking bar (reservoir roof) as per drawing details	No	8		
8.4.1.7	PSG 8.16	Supply and install 600x600 GMS hinged manhole cover and frame to chambers as per standard detail drawing complete.	No	2		
	PSG 8.16	Air Vents				
8.4.1.8		GMS DN150 reservoir ventilators as per detail on drawings	No	4		
		Wall-Brackets for inlet pipe as per drawings				
8.4.1.9		100x100x10mm thick end plate welded to 50mm dia pipe fixed to concrete with 4 No. M12 s/s bolts	No.	4		
8.4.1.10		1 No. M20 stainless steel bolt grade 8.8	No.	8		
8.4.1.11		1 No. M16 s/s bolt	No.	8		
8.4.1.12		50mm dia pipe 4mm wall thickness	No.	4		
8.5	SANS 1200L	RESERVOIR PIPEWORK				
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
8.5.1	8.2.5	Supply, handle, install and commission complete with couplings and GMS nuts and bolts and corrosion protection (all bolted connections to coated with Tectile mastic and bandaged with petrolatum saturated textile (Denso or equivalent)				
		INLET, OUTLET, SCOUR & OVERFLOW SPECIALS AND FITTINGS				
	PSL 8.2.1	OVERFLOW & SCOUR DRAINAGE PIPELINES				
8.5.1.1		300mm diameter uPVC Class 34 Heavy Duty Sewer Drainage Pipe	m	100		
8.5.1.2		Construct headwall complete with 2.2m wide by 3m long stone pitched scour apron, see detail drawing and build-in DN600 concrete pipe	Sum	1		
		SPECIALS AND FITTINGS				
		All pipework to be epoxy coated and lined galavanised mild steel, 4mm wall thickness.				
		OUTLET				
8.5.1.3		P1: DN250 epoxy coated and lined mild steel short radius 90° bend. Flanged, PN16 one end and DN550 bellmouth the other. 1100mm c/bellmouth and 2900mm C/F	No.	1		
8.5.1.4		P2: DN250 PN16 flanged double off-set butterfly valve with gearbox and handle wheel	No.	1		
8.5.1.5		P3: DN250 dismantling joint	No.	1		
8.5.1.6		P4: DN250 epoxy coated and lined mild steel pipe flanged PN16 one end and plain-ended the other, with DN100 flanged PN10 branch. Pipe barrel to be 1800mm f/plain end. Branch to be located 500mm C/Plain-end and extending 350 mm C/F	No.	1		
8.5.1.7		P5: DN100 RS gate valve flanged PN10 with non-rising spindle and handwheel	No.	1		
8.5.1.8		P6: DN100 multi-orifice anti-shock air valve as specified	No.	1		
8.5.1.9		P7: DN250 x DN110 epoxy coated and lined mild steel reducer flanged PN16 both ends		0		
8.5.1.10		P8: DN110 uPVC PN16 flange adaptor to suit spigot & socket uPVC pipe	No.	1		
		OVERFLOW				
8.5.1.11		P9: DN300 epoxy coated and lined mild steel pipe, buttressed flanged PN16 one end and DN450 bellmouth with 4 no. anti-vortex baffles the other end. 3250mm f/bellmouth.	No.	1		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.5.1.12		BROUGHT FORWARD P10: DN300 epoxy coated and lined mild steel 90° bend. Buttressed flanged PN16 one end and plain ended the other. 1250mm c/f and 3050mm c/plain end.	No.	1		
8.5.1.13		SCOUR P11: DN150 Rilsan coated and lined short radius 90° bend. Flanged PN10 one end and DN250 bellmouth the other. 750mm c/bellmouth and 11175mm c/f.	No.	1		
8.5.1.14		P12: DN150 clockwise closing non-rising spindle flanged wedge gate valve to SANS 664.	No.	1		
8.5.1.15		P13: DN150 Rilsan coated and lined mild steel short radius 90° bend. Flanged PN10 one end and plain ended the other end with standard c/f dimensions.	No.	1		
8.5.1.16		INLET P14: DN150 epoxy coated and lined mild steel puddle pipe, flanged PN16 both ends. Pipe barrel to be 600mm f/f with puddle flange 300mm from plain end.	No.	1		
8.5.1.17		P15: DN150 epoxy coated and lined mild steel 90° short radius bend, flanged PN16 both ends, 150mm c/f and 2800mm c/f.	No.	1		
8.5.1.18		P16: DN150 epoxy coated and lined mild steel pipe with 45° short radius bends each end, flanged PN16 both ends, length to suit.	No.	1		
8.5.1.19		P17: DN150 x DN110 epoxy coated and lined mild steel concentric reducer flanged each end 600mm long, PN16.	No.	1		
8.5.1.20		P17A: DN110 PN16 uPVC flange adaptor.	No.	1		
8.5.1.21		P18: DN150 Direct Acting Reservoir Control Float Valve PN16 to Engineer's Approval. (design max flow: 50 l/s; Max static head (no flow): 50m)	No.	1		
8.5.2	1200LB	BEDDING (overflow and scour pipelines)				
	8.2.1 PSL 8.2.1	Provision of bedding from available sources on site				
8.5.2.1		Selected granular material	m ³	20		
8.5.2.2		Selected fill material	m ³	200		
	8.2.2 PSL 8.2.2	Supply only of bedding by importation (provisional) from commercial sources				
8.5.2.3		Selected granular material	m ³	75		
8.5.2.4		Selected fill material	m ³	100		
8.5.3	PSL 8.2.6	SUBSOIL DRAINAGE (Reservoir)				
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
		Supply and lay (as detailed on drawing):				
8.5.3.1		Sand compacted to 100% Mod AASHTO	m ³	30		
8.5.3.2		19mm crushed stone to reservoir perimeter	m ³	45		
8.5.3.3		200gr/m ² needle punched geofabric to subsurface drains (bidim)	m ²	750		
8.5.3.4		110mm diameter class 4 slotted drainage pipe complete with all fittings. i.e. elbows, endcaps and tee connections to suit details on the drawings	m	175		
8.5.3.5		25mm proprietary drainage void former using premoulded HDPE or Similar Approved	m ²	200		
8.6		RESERVOIR SITE WORKS				
8.6.1		RESERVOIR FENCING AND SITE WORKS				
		FENCING				
8.6.1.1		Supply and install fencing around reservoir site complete with gates (3 quotes from local contractors to be arranged)	Prov Sum	1	250 000.00	250 000.00
8.6.1.2		Charges on profit on item 3.6.1.1 above	%	250000		
8.7		RESERVOIR ACCESS ROAD				
8.7.1	SANS 1200DM	EARTHWORKS (ROADS, SUBGRADE)				
	8.3.3b)	Road-bed preparation and compaction of material				
8.7.1.1		Scarify and compact in-situ material and compact to 93% Mod AASHTO density in 150 mm layer (Prov)	m ³	175		
		Extra over item 3.7.1.1 :				
8.7.1.2		Process in-situ material with Lime stabiliser	m ³	300		
8.7.2	SANS 1200MF	WEARING COURSE				
8.7.2.1	8.3.3a)	Import G5 wearing course material,place and compact to 95% Mod AASHTO in a 150mm layer	m ³	300		
8.8		MISCELLANEOUS				
8.8.1	1200DK	GABIONS AND PITCHING				
8.8.1.1	8.2.1a	Surface preparation for bedding of gabions with approved excavated material	m ²	10		
8.8.1.2	8.2.2	1mx1mx2m Gabions	m ³	6		
8.8.1.3	8.2.2	230mm thick reno mattress	m ²	10		
8.8.1.4	8.2.4	200grm/m2 needlepunched geofabric	m ²	20		
CARRIED FORWARD						

SECTION 8 : 1 ML RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
	SANS 1200ME	Stabilizing Agent				
8.8.2	8.3.8	Ordinary Portland Cement (CEM 1) 3% by weight.	50kg Bags	250		
8.8.3		Lime Stabiliser	t	1		
TOTAL FOR SECTION 8 CARRIED FORWARD TO SUMMARY						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.1	SANS 1200D	EARTHWORKS				
		Site Clearance and Removal of Topsoil				
9.1.1	8.3.1	Prepare Reservoir Site	ha	0.15		
9.1.2	8.3.1.2	Remove topsoil to nominal depth of 150 mm and stockpile or dispose	m ²	750		
9.1.3	SANS 1200C 8.2.9 PSC3.1 PSD 8.3.6	Transport and dispose of materials to suitable dumping site	m ³ .km	750		
9.2	SANS 1200D	EXCAVATION				
9.2.1	8.3.2	Bulk Excavation				
9.2.1.1	8.3.2(a) PSD 8.3.2	Excavate in all materials to bulk excavation line (that is about 100mm above the Final Excavation Level)), stockpile and maintain for backfill and dispose of remainder to approved spoil site (including shaping to be free-draining and with embankment slopes shallower than 1:3 and compacting)	m ³	1500		
	8.3.2(b)	Extra-over Item 3.2.1.1 for excavation in :				
9.2.1.2		1) Intermediate material	m ³	400		
9.2.1.3		2) Hard rock material (blasting)	m ³	500		
9.2.1.4		3) Hard rock excavation near residential buildings (Mounted hydraulic breaker where directed by the Engineer)	m ³	100		
9.2.1.5		4) Boulder material class A	m ³	75		
9.2.1.6		5) Boulder material class B	m ³	75		
9.2.2	8.3.4	Importing of Materials				
9.2.2.1	8.3.4(a)	Import approved topsoil from commercial source (provisional)	m ³	30		
9.2.2.2		Import approved 25 mm stone chips (reflective quartzite) from commercial source, stockpile and place by hand on reservoir roof	m ³	15		
	8.3.4(a)	Layer works To backfill over-excavation of unsuitable material:				
9.2.2.3		Supply G2 crusher run, place and compact in max 200mm layers under reservoir (Prov) compacted to 100% mod AASHTO density	m ³	50		
9.2.2.4		Supply G5 subbase, place and compact in 200mm layers under reservoir (Prov) stabilised with 3% ordinary portland cement (to create C4 material as directed by the Engineer) compacted to 98% mod AASHTO density	m ³	150		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.2.2.5		BROUGHT FORWARD Supply G5 subbase, place and compact in 150mm layers under reservoir (Prov) compacted to 95% mod AASHTO density	m ³	25		Rate Only
9.2.2.6		Supply G7 natural gravel, place and compact in 150mm layers under reservoir (Prov) compacted to 95% mod AASHTO density	m ³	50		
9.2.3		Finishing				
9.2.3.1	8.3.10	Topsoiling	m ²	800		
9.2.3.2	8.3.11	Grassing or other Vegetation Cover	m ²	400		
9.2.4	SANS 1200DA	Restricted Excavation				
9.2.4.1		Excavate in all materials by hand to expose existing services	m ³	50		
	8.3.2(a)	Excavate for restricted foundations, footings and trenches in all materials and use for backfill or embankment or dispose				
9.2.4.2		Excavate and trim to lines and levels under reservoir	m ³	100		
9.2.4.3		Other restricted excavation for chambers etc	m ³	100		
	8.3.3(b)	Extra over items 2.3.2 for restricted excavation in:				
9.2.4.4		1) Intermediate material	m ³	25		
9.2.4.5		2) Hard rock material	m ³	50		
9.2.4.6		Excavate unsuitable material from below founding level as ordered by Engineer and dispose of to approved spoil site	m ³	100		
9.2.5	SANS 1200DB	PIPE EXCAVATIONS				
9.2.5.1	8.3.2 PSDB 8.1.4 PSDB 8.3.3.4	(a) Excavate in all material for trenches backfill and dispose of surplus and unsuitable material. Rate to include for all temporary works including trimming, shoring and dewatering where necessary.	m ³	300		
	8.3.2	(b) Extra over item 3.2.5.1 for excavation in:				
9.2.5.2		1) Intermediate material	m ³	50		
9.2.5.3		2) Hard rock (Prov)	m ³	100		
9.3	SANS 1200G	REINFORCED CONCRETE RESERVOIR				
9.3.1	8.1.1 8.2	FORMWORK				
	8.2.1	Rough vertical to degree of accuracy III				
9.3.1.1		Footings to walls (curved)	m ²	20		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
9.3.1.2		Walls outside below ground level (curved)	m ²	75		
9.3.1.3		Sump & encasement to pipes	m ²	30		
9.3.1.4		Manholes	m ²	110		
	8.2.2	Smooth vertical to degree of accuracy II				
9.3.1.5		Walls inside & outside above ground level (curved)	m ²	325		
9.3.1.6		Column bases	m ²	5		
9.3.1.7		Footing at expansion joint	m ²	15		
9.3.1.8		Circular Columns	m ²	15		
9.3.1.9		Roof slab & upstand	m ²	35		
9.3.1.10		Sump	m ²	15		
9.3.1.11		Manhole cover slab	m ²	10		
9.3.1.12		Manholes	m ²	150		
	8.2.2	Smooth horizontal to degree of accuracy II				
9.3.1.13		Roof soffit	m ²	170		
9.3.1.14		Manholes	m ²	35		
	8.2.6	Box-outs for pipe specials to be installed then grouted in place:				
		1) Box-out in reservoir wall to accommodate:				
9.3.1.15		a) DN150 inlet pipe	No.	1		
9.3.1.16		b) DN150 scour pipe	No.	1		
9.3.1.17		c) DN250 outlet pipe	No.	1		
9.3.1.18		d) DN300 overflow pipe	No.	1		
		2) Box-out in chamber wall to accommodate:				
9.3.1.19		a) DN150 scour pipe	No.	1		
9.3.1.20		b) DN250 outlet pipe	No.	1		
9.3.1.21		c) DN300 overflow pipe	No.	1		
		3) Box-out in reservoir roof to accommodate:				
9.3.1.22		a) DN50 holes for level control and telemetry equipment	No.	4		
9.3.1.23		b) DN100 holes for sampling equipment	No.	2		
9.3.1.24		c) DN150 air vents	No.	4		
9.3.1.25		d) DN150 roof drainage outlets	No.	14		
9.3.2	8.3	REINFORCEMENT				
	8.3.1	Mild steel bars				
9.3.2.1		R8 Basic Price	t	1		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
9.3.2.2	8.3.1	Extra-over item 3.3.2.1 for bars of diameter R10	t	0.5		
9.3.2.3	8.3.1	High-tensile steel bars Y25 Basic price	t	17		
9.3.2.4	8.3.1	Extra-over item 3.3.2.3 for bars of diameter Y10	t	3.5		
9.3.2.5		Y12	t	12		
9.3.2.6		Y16	t	1.5		
9.3.2.7		Y20	t	0.5		
9.3.2.8	8.3.2	High-Tensile Welded Mesh Type reference #245	m ²	55		
9.3.2.9		Type reference #193	m ²	10		
9.3.3	8.4 PSG 8.1.3	CONCRETE				
9.3.3.1	PSG 5.5.1.6	No-fines concrete under floor & to fill voids	m ³	20		
9.3.3.2	8.4.2 PSG 8.2.8	Blinding Layer (Grade 15/19 MPa) 50mm blinding layer	m ³	15		
9.3.3.3		5mm 1:5 Dry Mortar Mix below plastic bond breaker	m ²	250		
9.3.3.4	8.4.3	Strength concrete: 35MPa/19 mm watertight concrete with an approved crystalline waterproofing concrete additive				
9.3.3.5		Walls above footing	m ³	37		
9.3.3.6		Footings to walls	m ³	16		
9.3.3.7		Floor slabs	m ³	30		
9.3.3.8		Roof slab & upstand	m ³	40		
9.3.3.9		Columns with bases	m ³	3		
9.3.3.10		Encasement to inlet / outlet / overflow / scour pipes	m ³	15		
9.3.3.11	8.4.3 PSG 8.2.8	Inlet & outlet chambers (as per Drawings) Strength concrete: 15 MPa/19 mm	m ³	30		
9.3.3.12		Minimum thickness 75 mm blinding layer to chambers and encasements	m ³	10		
		Mass concrete including splash aprons from roof overflow and filling under reservoir footings (where ordered by the Engineer)	m ³	30		
	8.4.3	Strength 25MPa/19mm concrete				
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.3.3.13		BROUGHT FORWARD				
9.3.4	8.4.4 PSG 8.4.4	25MPa/19mm concrete to benching	m ³	10		
		UNFORMED SURFACE FINISHES				
		(a) Wood-floated finish (to degree of accuracy II)				
9.3.4.1		Top of reservoir wall footing (outside)	m ²	35		
9.3.4.2		Reservoir roof	m ²	175		
9.3.4.3		Invert to reservoir sump	m ²	4		
9.3.4.4		Top of upstand	m ²	7		
		(b) Steel-floated (to degree of accuracy II)				
9.3.4.5		Top of reservoir Wall	m ²	20		
9.3.4.6		Top Reservoir Floor Slab & Footing inside	m ²	175		
9.3.4.7		Top of column Bases	m ²	20		
9.3.5	8.5 PSG 8.5	JOINTS				
9.3.5.1		1) Expansion Joints in reservoir floor against wall footing (as per drawings) measured by the total lengths of expansion joints complete with:	m	58		
		a) 250 mm wide x 2mm thick hypalon bandage				
		b) 2mm aluminium strip with 50mm wide backing bondage breaker				
	PSG 3.11.2	c) 250mm rearguard waterstop as per detail on drawings				
		d) Closed cell Polyethylene 100kg/m or 30mm closed cell high density void former				
9.3.5.2		2) Contraction joints in reservoir floor (as per drawings) measured by the total lengths of contraction joints complete with:	m	25		
		a) 200mm wide x 2 mm thick hypalon bandage or similar approved				
	PSG 3.11.2	b) 250mm rearguard waterstop with centre bulb				
9.3.5.3		3) Construction joints in reservoir walls (as per drawings) measured by the total lengths of construction joints complete with:	m	100		
		a) 150mm wide by 1.6mm thick mild steel strips, hot dip galvanized GI waterstop				
		b) 150mm wide Lanko Bandage or similar approved				
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.3.5.4		BROUGHT FORWARD 4) Isolation Joints in reservoir (as per drawings) measured by the total lengths of isolation joints complete with: a) 10mm Jointex or softboard	m	60		
	PSG 3.11.4	b) 10x10mm polysulphide sealant to SABS 1077				
9.3.6		MISCELLANEOUS CONCRETE ITEMS				
9.3.6.1	PSG 3.11.4 PSG 8.17	500 micron black plastic bond breaker over no-fines concrete under reservoir floor	m ²	200		
9.3.6.2	PSG 8.18	Neoprene (Kilcher or similar approved) Teflon sliding bearing type 3T50/75	m	47		
9.3.6.3	PSG 8.19	Polyurethane seal between reservoir roof and walls	m	47		
9.3.6.4		Precast 220x70 deep x790 long saddleback Deranco coping (or similar approved) to reservoir roof complete installation including casting shuttering and placing on mortar.	m	47		
9.3.6.5		Concrete planks to reservoir over outlet manhole to reservoir.	No	2		
9.3.6.6		Cast in situ (25MPa concrete) standard 1000mm wide v-channelling around reservoir perimeter on 200gm/m2 needle punched geotextile around reservoir perimeter complete (see standard detail drg)	m	52		
9.3.6.7		200gm/m2 needle punched geotextile (1m width)	m ²	52		
9.3.6.8		Cleaning and sterilizing reservoir and associated pipework to Engineer's approval	Sum	1		
9.3.6.9	PSG8.15	Reservoir Watertightnes test including reservoir roof	sum	1		
9.3.6.10		Supply and install "Pulltrude" type fibreglass 25 deep 36x36 grating panel 650x1000mm	No	1		
9.3.6.11		150mm dia galvanized outlets, cut from a 150mm dia pipe with metal guaze vermin proof (GALVANISED AFTER FABRICATION) as per detail on the drawings (300mm long) Manhole items	No	8		
9.3.6.12		Concrete cover slab without manhole,including lifting hooks and air vents.	No	1		
9.3.6.13		Concrete cover slab complete with manhole frame cast in, including lifting hooks and air vents. Note payment of cast iron manhole frame and cover paid seperately	No	1		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.3.6.14	PSG 8.16	BROUGHT FORWARD "Calcimite" or similar approved step irons general purpose to BS1247:1975	No	10		
9.3.6.15	PSG 8.16	Manhole cover (to SABS 558) type 9E with frame	No	2		
9.4	SANS 1200 HA	RESERVOIR STRUCTURAL WORK				
9.4.1		STRUCTURAL STEELWORK				
	8.3.1	Supply, fabricate, deliver and install steelwork, to the finishes/coatings specified in the specification and on the drawings				
		Access ladders with Cage				
9.4.1.1		Internal 4m high ladder to reservoir as per drawings. Stainless steel grade 316L	No	1		
9.4.1.2		External 3.5m high GMS ladder to outer wall of reservoir as per drawings (HD Galvanised)	No	1		
9.4.1.3		3m high GMS ladder to inlet & outlet chambers as per drawings	No	2		
		Reservoir and Chambers' roof elements				
9.4.1.4		50mm diameter sleeved holes in reservoir roof for level control and telemetry equipment as shown on the drawings.	No	4		
9.4.1.5		100mm diameter sleeved holes in reservoir roof for sampling equipment (As required).	No	2		
9.4.1.6		Supply and install GMS manhole locking bar (reservoir roof) as per drawing details	No	8		
9.4.1.7	PSG 8.16	Supply and install 600x600 GMS hinged manhole cover and frame to chambers as per standard detail drawing complete.	No	2		
	PSG 8.16	Air Vents				
9.4.1.8		GMS DN150 reservoir ventilators as per detail on drawings	No	8		
		Wall-Brackets for inlet pipe as per drawing C57-304				
9.4.1.9		100x100x10mm thick end plate welded to 50mm dia pipe fixed to concrete with 4 No. M12 s/s bolts	No.	8		
9.4.1.10		1 No. M20 stainless steel bolt grade 8.8	No.	16		
9.4.1.11		1 No. M16 s/s bolt	No.	16		
9.4.1.12		50mm dia pipe 4mm wall thickness	No.	8		
9.5	SANS 1200L	RESERVOIR PIPEWORK				
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
		Supply, handle, install and commission complete with couplings and GMS nuts and bolts and corrosion protection (all bolted connections to coated with Tectile mastic and bandaged with petrolatum saturated textile (Denso or equivalent)				
9.5.1	8.2.5	INLET, OUTLET, SCOUR & OVERFLOW SPECIALS AND FITTINGS				
	PSL 8.2.1	OVERFLOW & SCOUR DRAINAGE PIPELINES				
9.5.1.1		300mm diameter uPVC Class 34 Heavy Duty Sewer Drainage Pipe	m	100		
9.5.1.2		Construct headwall complete as shown on detail drawing and build-in DN300 uPVC pipe	Sum	1		
		SPECIALS AND FITTINGS				
		All pipework to be epoxy coated and lined galvanized mild steel, 4mm wall thickness.				
		OUTLET				
9.5.1.3		P1: DN250 epoxy coated and lined mild steel short radius 90° bend. Flanged, PN16 one end and DN550 bellmouth the other. 1100mm c/bellmouth and 2900mm C/F	No.	1		
9.5.1.4		P2: DN250 PN16 flanged double off-set butterfly valve with gearbox and handle wheel	No.	1		
9.5.1.5		P3: DN250 dismantling joint	No.	1		
9.5.1.6		P4: DN250 epoxy coated and lined mild steel pipe flanged PN16 one end and plain-ended the other, with DN100 flanged PN10 branch. Pipe barrel to be 1800mm f/plain end. Branch to be located 500mm C/Plain-end and extending 350 mm C/F	No.	1		
9.5.1.7		P5: DN100 RS gate valve flanged PN10 with non-rising spindle and handwheel	No.	1		
9.5.1.8		P6: DN100 multi-orifice anti-shock air valve as specified	No.	1		
9.5.1.9		P7: DN250 x DN200 epoxy coated and lined mild steel reducer flanged PN16 both ends	No.	1		
9.5.1.10		P8: DN200 uPVC PN16 flange adaptor to suit spigot & socket uPVC pipe	No.	1		
		OVERFLOW				
9.5.1.11		P9: DN300 epoxy coated and lined mild steel pipe, buttressed flanged PN16 one end and DN450 bellmouth with 4 no. anti-vortex baffles the other end. 3250mm f/bellmouth.	No.	1		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.5.1.12		BROUGHT FORWARD P10: DN300 epoxy coated and lined mild steel 90° bend. Buttressed flanged PN16 one end and plain ended the other. 1250mm c/f and 3000mm c/plain end.	No.	1		
9.5.1.13		SCOUR P11: DN150 Rilsan coated and lined short radius 90° bend. Flanged PN10 one end and DN250 bellmouth the other. 750mm c/bellmouth and 11300mm c/f.	No.	1		
9.5.1.14		P12: DN150 clockwise closing non-rising spindle flanged wedge gate valve to SANS 664.	No.	1		
9.5.1.15		P13: DN150 Rilsan coated and lined mild steel short radius 90° bend. Flanged PN10 one end and plain ended the other end with standard c/f dimensions.	No.	1		
9.5.1.16		INLET P14: DN150 epoxy coated and lined mild steel puddle pipe, flanged PN16 both ends. Pipe barrel to be 600mm f/f with puddle flange 300mm from plain end.	No.	1		
9.5.1.17		P15: DN150 epoxy coated and lined mild steel 90° short radius bend, flanged PN16 both ends, 150mm c/f and 2800mm c/f.	No.	1		
9.5.1.18		P16: DN150 epoxy coated and lined mild steel pipe with 45° short radius bends each end, flanged PN16 both ends, length to suit.	No.	1		
9.5.1.19		P17: DN150 x DN200 epoxy coated and lined mild steel concentric reducer flanged each end 600mm long, PN16.	No.	1		
9.5.1.20		P17A: DN200 PN16 uPVC flange adaptor to suit spigot & socket uPVC pipe	No.	1		
9.5.1.21		P18: DN150 Direct Acting Reservoir Control Float Valve PN16 to Engineer's Approval. (design max flow: 50 l/s; Max static head (no flow): 50m)	No.	1		
9.5.2	1200LB	BEDDING (overflow and scour pipelines)				
	8.2.1 PSL 8.2.1	Provision of bedding from available sources on site				
9.5.2.1		Selected granular material	m ³	20		
9.5.2.2		Selected fill material	m ³	250		
	8.2.2 PSL 8.2.2	Supply only of bedding by importation (provisional)from commercial sources				
9.5.2.3		Selected granular material	m ³	75		
9.5.2.4		Selected fill material	m ³	150		
9.5.3	PSL 8.2.6	SUBSOIL DRAINAGE (Reservoir)				
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		BROUGHT FORWARD				
		Supply and lay (as detailed on drawing):				
9.5.3.1		Sand compacted to 100% Mod AASHTO	m³	40		
9.5.3.2		19mm crushed stone to reservoir perimeter	m³	80		
9.5.3.3		200gr/m² needle punched geofabric to subsurface drains (bidim)	m²	1050		
9.5.3.4		110mm diameter class 4 slotted drainage pipe complete with all fittings. i.e. elbows, endcaps and tee connections to suit details on the drawings	m	500		
9.5.3.5		25mm proprietary drainage void former using premoulded HDPE or Similar Approved	m²	350		
9.6		RESERVOIR SITE WORKS				
9.6.1		RESERVOIR FENCING AND SITEWORKS				
		FENCING				
9.6.1.1		Supply and install fencing around reservoir and pumpstation complete with gates (3 quotes from local contractors to be arranged)	Prov Sum	1	150 000.00	150 000.00
9.6.1.2		Charges on profit on item 3.6.1.1 above	%	150000		
9.7		RESERVOIR ACCESS ROAD				
9.7.1	SANS 1200DM	EARTHWORKS (ROADS, SUBGRADE)				
	8.3.3b)	Road-bed preparation and compaction of material				
9.7.1.1		Scarify and compact in-situ material and compact to 93% Mod AASHTO density in 150 mm layer (Prov)	m³	200		
		Extra over item 3.7.1.1 :				
9.7.1.2		Process in-situ material with Lime stabiliser	m³	450		
9.7.2	SANS 1200MF	WEARING COURSE				
9.7.2.1	8.3.3a)	Import G5 wearing course material,place and compact to 95% Mod AASHTO in a 150mm layer	m³	300		
9.8		MISCELLANEOUS				
9.8.1	1200DK	GABIONS AND PITCHING				
9.8.1.1	8.2.1a	Surface preparation for bedding of gabions with approved excavated material	m²	10		
9.8.1.2	8.2.2	1mx1mx2m Gabions	m³	6		
9.8.1.3	8.2.2	230mm thick reno mattress	m²	10		
CARRIED FORWARD						

SECTION 9 : 500KL RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.8.1.4	8.2.4	BROUGHT FORWARD 200gm/m2 needlepunched geofabric	m²	20		
9.8.2	SANS 1200ME 8.3.8	Stabilizing agent Ordinary Portland cement (CEM 1) 3% by weight.	50kg Bags	140		
9.8.3		Lime Stabiliser	t	1.5		
TOTAL FOR SECTION 9 CARRIED FORWARD TO SUMMARY						

SECTION 10 : SUBCONTRACTOR'S SCOPE

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
10.1	C3.3.2.1	Scope of mandatory subcontract works	Sum	1	7 325 000.00	7 325 000.00
TOTAL FOR SECTION 10 CARRIED FORWARD TO SUMMARY						

SUMMARY OF BILL OF QUANTITIES

		AMOUNT
SECTION 1	SABS 1200 A - GENERAL	
SECTION 2	SABS 1200 C - SITE CLEARANCE	
SECTION 3	SABS 1200 D - EARTHWORKS	
SECTION 4	SABS 1200 DB - PIPE TRENCHES	
SECTION 5	SABS 1200 DK – GABIONS AND PITCHING	
SECTION 6	SABS 1200 L - MEDIUM-PRESSURE PIPELINES	
SECTION 7	SABS 1200 LB - BEDDING: (PIPES)	
SECTION 8	1 ML RESERVOIR	
SECTION 9	500KL RESERVOIR	
SECTION 10	SUBCONTRACTOR'S SCOPE	

NETT TOTAL OF TENDER

ALLOWANCE FOR CONTINGENCIES (10% OF SUBTOTAL)
 (to be spend as the Engineering may direct and to be deducted in whole
 or in part it not required)

TOTAL INCLUDING CONTINGENCIES

ALLOWANCE FOR CONTRACT PRICE ADJUSTMENT (6%)

TOTAL INCLUDING CONTRACT PRICE ADJUSTMENT

ALLOWANCE FOR VAT 15%

GROSS TOTAL CARRIED TO PART C1.1 FORM OF OFFER & ACCEPTANCE

TIME FOR COMPLETION OF CONTRACT (not to exceed 52 weeks) weeks

SIGNED BY/ON BEHALF OF TENDERER

NAME

SIGNATURE

DATE

COMPANY STAMP

