

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 1 PRELIMINARY & GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
1.1		FIXED - CHARGE ITEMS				
1.1.1		Contractual Requirements	Sum	1		
		<b>Establishment of Facilities on Site Including Comisioning Stages:</b>				
		1) Facilities for Engineer (SANS 1200 AB)				
1.1.2		a) Furnished office	Sum	1		
1.1.3		b) Meeting room	Sum	1		
1.1.4		c) Nameboards (2 No.)	Sum	1		
1.1.5		d) Survey assistant	Sum	1		
1.1.6		e) Survey equipment	Sum	1		
1.1.7		f) Covered Parking Bays (2 No.)	Sum	1		
1.1.8		g) All other specified facilities (incl wifi internet connection and printer)	Sum	1		
		2) Facilities for Contractors				
1.1.9		a) Office and storage sheds	Sum	1		
1.1.10		b) Workshops	Sum	1		
1.1.11		c) Laboratories	Sum	1		
1.1.12		d) Living accommodation	Sum	1		
1.1.13		e) Ablution and latrine facilities	Sum	1		
1.1.14		f) Tools and equipment	Sum	1		
1.1.15		g) Water supplied, electric power and communications.	Sum	1		
1.1.16		h) Dealing with water (Sub-clause 5.5)	Sum	1		
1.1.17		i) Access (Sub-clause 5.8)	Sum	1		
1.1.18		j) Plant	Sum	1		
1.1.19		General Responsibilities and other fixed charge obligations (including making allowance for effects and payments taking up to 60 days from date of invoice)	Sum	1		
		<u>Dis-establishment</u>				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 1 PRELIMINARY & GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
1.1.20		Partial Removal of Engineer's and Contractor's site establishment on completion of works at transition from commissioning to start of Trial Operating Period	Sum	1		
1.1.21		Removal of all remaining site establishment at end of Trial Operating Period		1		
		Fixed charges associated with complying with Health and Safety Requirements:				
1.1.22		a) Preparation of risk assessments, safe work procedures, the project H&S File, the H&S Plan, medicals for all workers, the provision of PPE and protective clothing, and all other fixed charge H&S matters that fulfill OHS Act 85 of 1993 and construction regulation 2014 requirements	Sum	1		
1.1.23		b) Completing and checking the Project H&S File and handing over the Client on completion of the works and exit medicals for all workers	Sum	1		
1.1.24		c) Provision of HIV/Aids Awareness plan and all necessary fixed charge items to achieve compliance with SANS 1921 Part 6 HIV/Aids Awareness	Sum	1		
1.1.25		Fixed charges associated with complying with the Environmental Management Plan	Sum	1		
1.2		<b>TIME-RELATED ITEMS</b>				
1.2.1		Contractual Requirements Operate and maintain of Facilities on Site for the duration of the construction up to commencement of Trial Operating Period: 1) Facilities for Engineer as per PSAB clause	Sum	1		
1.2.2		a) Furnished office	Sum	1		
1.2.3		b) Meeting room	Sum	1		
1.2.4		c) Nameboards (2 No.)	Sum	1		
1.2.5		d) Survey assistant	Sum	1		
1.2.6		e) Survey equipment	Sum	1		
1.2.7		f) Covered Parking Bays (2 No.)	Sum	1		
1.2.8		g) All other specified facilities (incl wifi internet connection and printer)	Sum	1		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 1 PRELIMINARY & GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
		2) Facilities for Contractor				
1.2.9		a) Office and storage sheds	Sum	1		
1.2.10		b) Workshops	Sum	1		
1.2.11		c) Laboratories	Sum	1		
1.2.12		d) Living accommodation	Sum	1		
1.2.13		e) Ablution and latrine facilities	Sum	1		
1.2.14		f) Tools and equipment	Sum	1		
1.2.15		g) Water supplied, electric power and communications.	Sum	1		
1.2.16		h) Dealing with water (Sub-clause 5.5)	Sum	1		
1.2.17		i) Access (Sub-clause 5.8)	Sum	1		
1.2.18		j) Plant	Sum	1		
1.2.19		Supervision for duration of construction	Sum	1		
1.2.20		Company and head office overhead costs for the duration of the contract	Sum	1		
1.2.21		General Responsibilities and other time-related obligations (including making allowance for effects and payments taking up to 60 days from date of invoice)	Sum	1		
1.2.22		Extension of Surety for the value of the M&E Contract, from date of Contractual Completion to issue of Final Completion Certificate (end of maintenance period) in respect of M&E.	Month	10		
1.2.23		Operate and maintain Facilities on Site for the duration of Trial Operating Period	Month	4		
1.2.24		All staffing required over duration of Trial Operating Period	Sum	1		
		Time-related charges associated with complying with Health and Safety Requirements:				
1.2.25		a) Updating and amending the risk assessments, safe work procedures, the project H&S File, the H&S Plan, medicals for all workers, the provision of PPE and protective clothing and all other H&S matters that fulfill OHS Act 85 of 1993 and construction regulation	Sum	1		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 1 PRELIMINARY & GENERAL

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
1.2.26		b) Full compliance with all H&S matters during the construction of the works under the Contract	Sum	1		
1.2.27		c) Compliance with SANS 1921 Part 6 HIV/Aids Awareness plan during the contract	Sum	1		
1.2.28		Time-related charges associated with complying with the Environmental Management Plan	Sum	1		
1.3		<b>TEMPORARY WORKS</b>				
1.3.1		Construct and maintain access to works	Sum	1		
1.3.2		Accommodation of traffic	Sum	1		
		<b>EXISTING SERVICES</b>				
1.3.3		(c) Excavate by hand in soft material to expose services. (Provisional)	m <sup>3</sup>	50		
<b>TOTAL FOR SECTION 1 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 2 DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
2.1		<b>DAYWORKS</b>				
		LABOUR				
2.1.1		a) Team leader / charge hand	hr	50		
2.1.2		b) Artisan	hr	50		
2.1.3		c) Skilled	hr	100		
2.1.4		d) Semi-skilled	hr	200		
2.1.5		e) Unskilled	hr	200		
		PLANT				
		For plant used in execution of dayworks				
2.1.6		As agreed with engineer	PC Sum	1	50 000,00	50 000,00
2.1.7		Mark up on item 2.1.6 above	%	50 000,00		
		MATERIALS				
2.1.8		For materials used in execution of dayworks as agreed with engineer	PC Sum	1	40 000,00	40 000,00
2.1.9		Mark up on item 2.1.8 above	%	40 000,00		
2.2		<b>SUM STATED PROVISIONALLY BY THE ENGINEER</b>				
		<b>ENGINEER</b>				
2.2.1		Cellphone allowance for the Engineer for the duration of the contract (R1000 pm).	PC Sum	1	11 000,00	100 000,00
2.2.2		Transportation for the Engineer for the duration of the contract (R30000 pm).	PC Sum	1	330 000,00	300 000,00
2.2.3		Equipment for the Engineer	PC Sum	1	50 000,00	50 000,00
2.2.4		Allow for Supervision by the Engineer's Site Representative for the Duration of the Contract	Prov Sum	1	1 000 000,00	1 000 000,00
2.2.5		Overheads, Charges and Profit on item 2.2.1 to 2.2.4 above	%	1 391 000,00		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 2 DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
2.2.7		Additional Acceptance control testing as may be required by the Engineer (Note that the Contractor's tendered rates are to include for all Quality Control testing required to achieve compliance with the specifications and that this scheduled item is to cover only the Engineer's additional testing that the Engineer may require) & Independant Inspectorate	PC Sum	1	150 000,00	150 000,00
2.2.8		Overheads, Charges and Profit on item 2.2.7 above	%	150 000,00		
		<b>TOPOGRAPHICAL SURVEY</b>				
2.2.9		Ad-hoc survey as requested by the Engineer.	PC Sum	1	50 000,00	50 000,00
2.2.10		Overheads, Charges and profit on item 2.2.9	%	50 000,00		
		<b>COMMUNITY LIASON OFFICER</b>				
2.2.11		Employment of CLO for the duration of the contract (R7500 pm plus R500 pm cellphone allowance)	PC Sum	1	88 000,00	88 000,00
2.2.12		Overheads, Charges and Profit on item 2.2.11 above	%	88 000,00		
2.2.13		Employment of PSC for duration of contract (6 No. at R500 pm each)	PC Sum	1	33 000,00	33 000,00
2.2.14		Overheads, Charges and Profit on item 2.2.13 above	%	33 000,00		
		<b>INSTITUTIONAL AND SOCIAL DEVELOPMENT (ISD)</b>				
2.2.15		ISD Consultant costs during the Construction Phase as per RFQ procurement process	PC Sum	1	280 000,00	280 000,00
2.2.16		Overheads, Charges and Profit on item 2.2.15 above	%	280 000,00		
		<b>ENVIRONMENTAL &amp; OH&amp;S OFFICERS</b>				
2.2.17		Cost of Environmental Compliance Officer as per RFQ procurement process	PC Sum	1	250 000,00	250 000,00
2.2.18		Overheads, Charges and Profit on item 2.2.17 above	%	250 000,00		
2.2.19		Employer's OH&S Agent as per RFQ procurement process	PC Sum	1	280 000,00	280 000,00
2.2.20		Overheads, Charges and Profit on item 2.2.19 above	%	280 000,00		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 2 DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
		TRAINING				
2.2.21		Allowance for training of local unskilled labour	PC Sum	1	100 000,00	100 000,00
2.2.22		Overheads, Charges and profit on item 2.2.21 above	%	100 000,00		
2.2.23		Transport and accommodation of workers for training where it is not possible to undertake the training in close proximity to the site	PC Sum	1	18 000,00	18 000,00
2.2.24		Overheads, Charges and profit on item 2.2.23 above	%	18 000,00		
		STUDENT				
2.2.25		Student monthly allowance for the for the duration of the contract (R10000 pm).	PC Sum	1	110 000,00	110 000,00
2.2.26		Overheads, Charges and Profit on item 2.2.25 above	%	110 000,00		
2.2.27		Transportation for the Student for the duration of the contract (R1000 pm	PC Sum	1	11 000,00	11 000,00
2.2.28		Overheads, Charges and Profit on item 2.2.27 above	%	11 000,00		
2.2.29		Accommodation for the Student for the duration of the contract (R2500 pm).	PC Sum	1	27 500,00	27 500,00
2.2.30		Overheads, Charges and Profit on item 2.2.29 above	%	27 500,00		
2.3		<b>PRIME COST ITEMS</b>				
		<u>M&amp;E SUBCONTRACT</u>				
2.3.1		Mechanical and Electrical Contract, selected to be part of this Contract	PC Sum	1	2 250 000,00	2 250 000,00
2.3.2		Contractor's mark up for co-operation and liaison with and payment in respect of M&E, including insurance.	%	2 250 000,00		
		<u>GENERATOR</u>				
2.3.3		Supply, testing, delivery, installation and commissioning of the 500kVA standby generator set as per the required specification	PC Sum	1	950 000,00	950 000,00
2.3.4		Overheads, Charges and Profit on item 2.3.3 above	%	950 000,00		
		<u>LOCAL SUBCONTRACTOR</u>				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 2 DAYWORKS, PROVISIONAL SUMS AND PRIME COST ITEMS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
2.3.5		Provisional Sum to cover any difference in Main Contractor's tendered rates and approved local subcontractor's tendered rates (incl subcon's P&G costs)	Sum	1		
		<u>UPGRADE OF TRANSFORMER &amp; POWERLINE</u>				
2.3.6		Upgrading of the existing transformers and Eskom connection to accommodate the load of additional pump sets and motor sets	PC Sum	1	1 850 000,00	1 850 000,00
2.3.7		Overheads, Charges and Profit on item 2.3.4 above	%	1 850 000,00		
		<u>COMPENSATION</u>				
2.3.8		Compensation payments to local residents (fertilizer or seed or similar)	PC Sum	1	100 000,00	100 000,00
2.3.9		Overheads, Charges and Profit on item 2.3.3 above	%	100 000,00		
<b>TOTAL FOR SECTION 2 CARRIED FORWARD TO SUMMARY</b>						



CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
3.1		<b>EXCAVATION</b>				
3.1.1		<b>Importing of Materials</b>				
3.1.1.1		Import approved topsoil from commercial source (provisional)	m <sup>3</sup>	30		
3.1.1.2		Import approved 25 mm stone chips (reflective quartzite) from commercial source, stockpile and place by hand on reservoir roof	m <sup>3</sup>	30		
3.1.2		<b>Finishing</b>				
3.1.2.1		Topsoiling	m <sup>2</sup>	1500		
3.1.2.2		Grassing or other Vegetation Cover	m <sup>2</sup>	750		
3.1.3		<b>PIPE EXCAVATIONS</b>				
3.1.3.1		(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. (b) Extra over item 3.2.5.1 for excavation in:	m <sup>3</sup>	500		
3.1.3.2		1) Intermediate material	m <sup>3</sup>	50		
3.1.3.3		2) Hard rock (Prov)	m <sup>3</sup>	150		
3.2		<b>REINFORCED CONCRETE RESERVOIR</b>				
3.2.1		<b>FORMWORK</b>				
		Rough vertical to degree of accuracy III				
3.2.1.1		Manholes	m <sup>2</sup>	120		
		Smooth vertical to degree of accuracy II				
3.2.1.2		Walls inside & outside above ground level (curved)	m <sup>2</sup>	675		
3.2.1.3		Roof slab & upstand	m <sup>2</sup>	60		
3.2.1.4		Manhole cover slab	m <sup>2</sup>	10		
3.2.1.5		Manholes	m <sup>2</sup>	12		
		Smooth horizontal to degree of accuracy II				
3.2.1.6		Roof soffit	m <sup>2</sup>	390		
3.2.1.7		Manholes	m <sup>2</sup>	50		
<b>CARRIED FORWARD</b>						

**BILL:**  
**SECTION:** 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
		Box-outs for pipe specials to be installed then grouted in place:				
		1) Box-out in reservoir wall to accommodate:				
3.2.1.8		a) DN200 inlet pipe	No.	1		
3.2.1.9		b) DN150 scour pipe	No.	1		
3.2.1.10		c) DN300 outlet pipe	No.	1		
3.2.1.11		d) DN300 overflow pipe	No.	1		
		2) Box-out in chamber wall to accommodate:				
3.2.1.12		a) DN150 scour pipe	No.	1		
3.2.1.13		b) DN300 outlet pipe	No.	1		
3.2.1.14		c) DN300 overflow pipe	No.	1		
		3) Box-out in reservoir roof to accommodate:				
3.2.1.15		a) DN50 holes for level control and telemetry equipment	No.	4		
3.2.1.16		b) DN100 holes for sampling equipment	No.	2		
3.2.1.17		c) DN150 air vents	No.	8		
3.2.1.18		d) DN150 roof drainage outlets	No.	18		
3.2.2		<b>REINFORCEMENT</b>				
		Mild steel bars				
3.2.2.1		R10	t	2		
		High-tensile steel bars				
3.2.2.2		Y10	t	2		
3.2.2.3		Y12	t	6		
3.2.2.4		Y16	t	1,5		
		High-Tensile Welded Mesh				
3.2.2.5		Type reference #245	m <sup>2</sup>	60		
3.2.2.6		Type reference #193	m <sup>2</sup>	20		
3.2.3		<b>CONCRETE</b>				
		Strength concrete: 35MPa/19 mm watertight concrete				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.2.3.1		Walls above footing	m <sup>3</sup>	75		
3.2.3.2		Roof slab & upstand	m <sup>3</sup>	105		
3.2.3.3		Encasement to inlet / outlet / overflow / scour pipes	m <sup>3</sup>	20		
3.2.3.4		Inlet & outlet chambers (as per Drawings)	m <sup>3</sup>	32		
		Strength concrete: 15 MPa/19 mm				
3.2.3.5		Minimum thickness 75 mm blinding layer to chambers and encasements	m <sup>3</sup>	10		
3.2.3.6		Mass concrete including splash aprons from roof overflow and filling under reservoir footings (where ordered by the Engineer)	m <sup>3</sup>	100		
		Strength 25MPa/19mm concrete				
3.2.3.7		25MPa/19mm concrete to benching	m <sup>3</sup>	10		
3.2.4		<b>UNFORMED SURFACE FINISHES</b>				
		(a) Wood-floated finish (to degree of accuracy II)				
3.2.4.1		Top of reservoir wall footing (outside)	m <sup>2</sup>	35		
3.2.4.2		Reservoir roof	m <sup>2</sup>	310		
3.2.4.3		Invert to reservoir sump	m <sup>2</sup>	4		
3.2.4.4		Top of upstand	m <sup>2</sup>	7		
		(b) Steel-floated (to degree of accuracy II)				
3.2.4.5		Top of reservoir Wall	m <sup>2</sup>	20		
3.2.4.6		Top Reservoir Floor Slab & Footing inside	m <sup>2</sup>	320		
3.2.4.7		Top of column Bases	m <sup>2</sup>	20		
3.2.5		<b>JOINTS</b>				
3.2.5.1		1) Expansion Joints in reservoir floor against wall footing (as per drawing C1.2_104) measured by the total lengths of expansion joints complete with: a) 200 mm wide x 2mm thick hypalon bandage	m	58		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.2.5.2		b) 2mm aluminium strip with 50mm wide backing bondage breaker c) 250mm rearguard waterstop as per detail on drawings d) Closed cell Polyethylene 100kg/m or 30mm closed cell high density void former 2) Contraction joints in reservoir floor (as per drawing C1.2_104) measured by the total lengths of contraction joints complete with:	m	96		
3.2.5.3		a) 250mm wide x 2 mm thick hypalon bandage or similar approved b) 250mm rearguard waterstop with centre bulb 3) Construction joints in reservoir walls (as per drawing C1.2_104) measured by the total lengths of construction joints complete with:	m	190		
3.2.5.4		a) 150mm wide by 1.6mm thick mild steel strips, hot dip galvanized GI waterstop b) 150mm wide Lanko Bandage or similar approved 4) Isolation Joints in reservoir (as per drawing C1.2_104) measured by the total lengths of isolation joints complete with:	m	100		
3.2.6		<b>MISCELLANEOUS CONCRETE ITEMS</b>				
3.2.6.1		Neoprene (Kilcher or similar approved) Teflon sliding bearing type 3T50/75	m	65		
3.2.6.2		Polyurethane seal between reservoir roof and walls	m	65		
3.2.6.3		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		
3.2.6.4		Concrete planks to reservoir over outlet manhole to reservoir.	No	2		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.2.6.5		Cast in situ standard 1000mm wide v-channelling around reservoir perimeter on 200gm/m2 needle punched geotextile around resevoir perimeter (see standard detail drg)	m	75		
3.2.6.6		200gm/m2 needle punched geotextile (1m width)	m <sup>2</sup>	75		
3.2.6.7		Cleaning and sterilizing reservoir and associated pipework	Sum	1		
3.2.6.8		Supply and install "Pulltrude" type fibreglass 25 deep 36x36 grating panel 650x1000mm	No	1		
3.2.6.9		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)	No	8		
		Manhole items				
3.2.6.10		Concrete cover slab without manhole,including lifting hooks and air vents.	No	1		
3.2.6.11		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		
3.2.6.12		"Calcimite" or similar approved step irons general purpose to BS1247:1975	No	10		
3.2.6.13		Manhole cover (to SABS 558) type 9E with frame	No	2		
3.3		<b>RESERVOIR STRUCTURAL WORK</b>				
3.3.1		<b>STRUCTURAL STEELWORK</b>				
		Supply, fabricate, deliver and install steelwork,to the finishes/coatings specified in the specification and on the drawings				
		Access ladders with Cage				
3.3.1.1		Internal 4m high ladder to reservoir as per drawings. Stainless steel grade 316L	No	1		
3.3.1.2		External 3.5m high GMS ladder to outer wall of reservoir as per drawings (HD Galvanised)	No	1		
3.3.1.3		3m high GMS ladder to inlet & outlet chambers as per drawings	No	2		
		Reservoir and Chambers' roof elements				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.3.1.4		50mm diameter sleeved holes in reservoir roof for level control and telemetry equipment as shown on the drawings.	No	4		
3.3.1.5		100mm diameter sleeved holes in reservoir roof for sampling equipment (As required).	No	2		
3.3.1.6		Supply and install GMS manhole locking bar (reservoir roof) as per drawing details	No	8		
3.3.1.7		Supply and install 600x600 GMS hinged manhole cover and frame to chambers as per standard detail drawing complete.	No	2		
		Air Vents				
3.3.1.8		GMS DN150 reservoir ventilators as per detail on drawings	No	8		
		Wall-Brackets for inlet pipe as per drawing C1.2_105				
3.3.1.9		100x100x10mm thick end plate welded to 50mm dia pipe fixed to concrete with 4 No. M12 s/s bolts	No.	8		
3.3.1.10		1 No. M20 stainless steel bolt grade 8.8	No.	16		
3.3.1.11		1 No. M16 s/s bolt	No.	16		
3.3.1.12		50mm dia pipe 4mm wall thickness	No.	8		
3.4		<b>RESERVOIR PIPEWORK</b>				
		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)				
3.4.1		<b>INLET, OUTLET, SCOUR &amp; OVERFLOW SPECIALS AND FITTINGS</b>				
		<b>OVERFLOW &amp; SCOUR DRAINAGE PIPELINES</b>				
3.4.1.1		300mm diameter uPVC Class 34 Heavy Duty Sewer Drainage Pipe	m	100		
3.4.1.2		Construct headwall complete as shown on detail drawing and build-in DN600 concrete pipe	Sum	1		
		<b>SPECIALS AND FITTINGS</b>				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
		All pipework to be epoxy coated and lined galavanised mild steel, 4mm wall thickness.				
		<b>OUTLET</b>				
3.4.1.3		P2: DN350 PN16 flanged double off-set butterfly valve with gearbox and handle wheel	No.	1		
3.4.1.4		P3: DN350 dismantling joint	No.	1		
3.4.1.5		P4: DN350 epoxy coated and lined mild steel pipe flanged PN16 one end and plain-ended the other, pipe barrel to be 600mm F/F	No.	1		
3.4.1.6		P5: DN350 PN 16 FL Magflow meter( meter specifications as approved by the Engineer)	No.	1		
3.4.1.7		P6: DN350 x DN 250 PN16 FL tee with FL branch pipe barrel to be 710mm long F/F with central branch extending 350mm C/F	No.	1		
3.4.1.8		P7: DN350 F.B.E coated and lined steel Puddle pipe. PN16 D/FL pipe barrel to be 850mm long with square Puddle 395mm from one end		0		
3.4.1.9		P8: DN50 GMS riser , PN16 D/FL ,Length 270mm F/F	No.	1		
		<b>OVERFLOW</b>				
3.4.1.10		P9: DN50 brass gate valve , PN 16 D/FL	No.	1		
3.4.1.11		P10: DN50 double acting Air valve (VENT-O-MAT RBX series or similar approved)	No.	1		
		<b>SCOUR</b>				
3.4.1.12		P12: DN200 PN16 FL double off-set Butterfly valve with gearbox and handle wheel	No.	1		
3.4.1.13		P13: DN200 PN16 dismantling joint	No.	1		
		<b>INLET</b>				
3.4.1.14		P14: DN200 F.B.E coated and lined mild steel puddle pipe. PN16 D/FL pipe barrel to be 2800mm long with square Puddle 458mm from one end.	No.	1		
3.4.1.15		P15: D300 x DN250 F.B.E coated and lined mild steel eccentric reducer PN16 D/FL	No.	1		
3.4.1.16		P16: DN250 F.B.E coated and lined mild steel pipe with 90° long radius bend. PN16 D/FL	No.	2		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.4.1.17		P17: DN250 F.B.E coated and lined mild steel long pipe. PN16 D/FL pipe barrel to be 3500mm F/F	No.	1		
3.4.1.18		P18: DN250 F.B.E coated and lined mild steel Puddle pipe. PN16 D/FL pipe barrel to be 520mm F/F with Puddle flange 260mm from one end	No.	1		
3.4.1.19		P19: DN250 Amanziflow Projects design diaphragm valve to suit DN250 flange	No.	1		
3.4.1.20		P20: DN300 F.B.E coated and lined mild steel pipe. PN16 FL one end with 450 bellmouth the other end (250mm F/F with 4 No. Anti-Vortex Baffles)	No.	1		
3.4.1.21		PN21: DN300 F.B.E coated and lined mild steel 90° long radius bend. PN16 FL one end and plain-ended the other	No.	1		
3.4.1.22		PN22: DN300 F.B.E coated and lined mild steel Puddle pipe. PN16 D/FL pipe barrel to be 420mm F/F with Puddle flange 210mm from one end	No.	1		
3.4.1.23		PN23: DN300 F.B.E coated and lined mild steel pipe 90° short radius bends at each end. PN16 D/FL with pipe barrel 2400mm long	No.	1		
3.4.2		<b>BEDDING (overflow and scour pipelines)</b>				
		Provision of bedding from available sources on site				
3.4.2.1		Selected granular material	m <sup>3</sup>	20		
3.4.2.2		Selected fill material	m <sup>3</sup>	250		
		Supply only of bedding by importation (provisional) from commercial sources				
3.4.2.3		Selected granular material	m <sup>3</sup>	75		
3.4.2.4		Selected fill material	m <sup>3</sup>	150		
3.4.3		<b>SUBSOIL DRAINAGE (Reservoir)</b>				
		Supply and lay (as detailed on drawing):				
3.4.3.1		Sand compacted to 100% Mod AASHTO	m <sup>3</sup>	40		
3.4.3.2		19mm crushed stone to reservoir perimeter	m <sup>3</sup>	80		
<b>CARRIED FORWARD</b>						



CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.4.3.3		200gr/m <sup>2</sup> needle punched geofabric to subsurface drains (bidim)	m <sup>2</sup>	1050		
3.4.3.4		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	250		
3.4.3.5		25mm proprietary drainage void former using premoulded HDPE or Similar Approved	m <sup>2</sup>	350		
3.5		RESERVOIR SITE WORKS				
3.5.1		RESERVOIR FENCING AND SITEWORKS				
		FENCING				
3.5.1.1		Supply and install fencing around reservoir and pumpstation complete with gates (3 quotes from local contractors to be arranged)	PC Sum	1	400 000,00	400 000,00
3.5.1.2		Charges on profit on item 3.6.1.1 above	%	400 000,00		
3.6		RESERVOIR ACCESS ROAD				
3.6.1		EARTHWORKS (ROADS, SUBGRADE)				
		Road-bed preparation and compaction of material				
3.6.1.1		Scarify and compact in-situ material and compact to 93% Mod AASHTO density in 150 mm layer (Prov)	m <sup>3</sup>	150		
		Extra over item 3.7.1.1 :				
3.6.1.2		Process in-situ material with Lime stabiliser	m <sup>3</sup>	450		
3.6.2		WEARING COURSE				
3.6.2.1		Import G5 wearing course material,place and compact to 95% Mod AASHTO in a 150mm layer	m <sup>3</sup>	250		
3.7		MISCELLANEOUS				
3.7.1		GABIONS AND PITCHING				
3.7.2		Surface preparation for bedding of gabions with approved excavated material	m <sup>2</sup>	44		
3.7.3		1mx1mx2m Gabions	m <sup>3</sup>	57		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 3 1ML COMMAND RESERVOIR

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
3.7.4		230mm thick reno mattress	m <sup>2</sup>	12		
3.7.5		200gm/m2 needlepunched geofabric	m <sup>2</sup>	48		
		Stabilizing agent				
3.7.6		Ordinary Portland cement (CEM 1) 3% by weight.	50kg Bags	50		
3.7.7		Lime Stabiliser	t	2,5		
<b>TOTAL FOR SECTION 3 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 4 O&M MANUALS & DRAWINGS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
4.1		O&M MANUALS AND DRAWINGS				
4.1.1		Record Mechanical drawings	Sum	1		
4.1.2		Record Electrical Drawings	Sum	1		
4.1.3		Operating and Maintenance Manuals (3 Copies)	Sum	1		
<b>TOTAL FOR SECTION 4 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 5 EARTHWORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		SITE CLEARANCE				
		Clear and Grub				
5.1		Clear excavation from vegetation	m <sup>2</sup>	40		
		Existing Services				
5.2		Excavate by hand in soft material to expose existing pipelines and buried structures	m <sup>3</sup>	30		
		Grassing				
5.3		Grassing: Grass using sods from the site shall be planted in all topsoiled areas or as directed by the Engineer (incl fertilizing, watering and maintaining to achieving 80% cover)	m <sup>2</sup>	100		
		RETAINING WALLS				
		Design, supply and construct dry-laid precast concrete block wall using Terraforce blocks or similar approved at 70°				
		Earthworks				
5.4		Rip and Recompact in-situ ground to 93% ModAASHTO (150mm)	m <sup>3</sup>	4,5		
5.5		G7 Gravel Material compacted to 93% ModAASHTO (Provisional)	m <sup>3</sup>	1,7		
5.6		Excavation for concrete bases	m <sup>3</sup>	9		
		Concrete				
5.7		"Type L13 Terraforce Block or similar approved	m <sup>3</sup>	70		
5.8		Construct Retaining wall base, Concrete grade 20/19	m <sup>3</sup>	9		
5.9		Concrete grade 20/19 for infill of blocks and shear key	m <sup>3</sup>	8		
5.10		Formwork for concrete bases	m <sup>2</sup>	35		
5.11		Reinforcement for concrete base	t	0,75		
5.12		50mm Blinding layer	m <sup>2</sup>	80		
5.13		Finishing-wood float	m <sup>2</sup>	5		
		Stormwater Control				
5.14		Supply and install 'Bidum A4' or 'Kaymat U24' or similar approved for subsoil drain	m <sup>2</sup>	25		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 5 EARTHWORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
5.15		Supply and install 19 mm aggregate stone for drains where specified	m <sup>3</sup>	1,7		
5.16		65mm geopipe or similar approved	m	18		
5.17		Cut-off Drain	m	21		
5.18		Weep holes @ 5m centres	No.	4		
		<b>GABIONS AND PITCHING</b>				
5.19		Surface preparation for bedding of gabions with approved excavated material	m <sup>2</sup>	44		
5.20		1mx1mx2m Gabions	m <sup>3</sup>	57		
5.21		230mm thick reno mattress	m <sup>2</sup>	12		
5.22		200gm/m2 needlepunched geofabric	m <sup>2</sup>	48		
		<b>EARTHWORKS (Pipe Trenches)</b>				
		Excavate in all materials for trenches backfill, compact, and dispose of surplus/unsuitable material, for 110mm-300mm diameter mains for total trench depth:				
		Over but not exceeding				
5.23		0,0 m 1,0 m	m	5		
5.24		1,0 m 2,0 m	m	90		
		Extra-over items 4.28 incl. for:				
5.25		Hard rock excavation by non-explosive methods	m <sup>3</sup>	10		
5.26		Hand excavation (where allowed or directed by the Engineer)	m <sup>3</sup>	5		
5.27		Selected fill material compacted in 150 mm thick layers to 93% Mod AASHTO in road reserve. Location and depths to be specified by Engineer (Prov)	m <sup>3</sup>	5		
5.28		Shoring trench opposite structures or services or where necessary	m	10		
		<b>FINISHING</b>				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 5 EARTHWORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
5.29		a) Reinststate gravel finishing roads and drainage after construction (Remove spoil and other foreign material from road surface, fill in pockets with G6/G7 gravel and compact to 95% mod AASHTO to form even travelling surface)	m <sup>3</sup>	3		
		<b>BEDDING (PIPES)</b>				
		Provision of bedding material from trench excavations				
5.30		a) Selected granular material	m <sup>3</sup>	2		
5.31		b) Selected fill material	m <sup>3</sup>	1		
		Provision of bedding material importated from commercial sources OR approved borrow pits selected by the Contractor				
5.32		a) Selected granular material	m <sup>3</sup>	32		
5.33		b) Selected fill material	m <sup>3</sup>	15		
<b>TOTAL FOR SECTION 5 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 6 PIPELINES & ASSOCIATED CHAMBERS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
6.1		MEDIUM PRESSURE PIPELINES INTERCONNECTING PIPEWORK (uPVC) Supply, lay, bed, test and disinfect pipes complete with couplings (pressure rating of coupling to match or exceed pipe rating): uPVC Solvent Welded mains (or spigot and socket pipes for straight runs) buried on flexible bedding for pipes, Class 12, according to SANS 966-1 or ISO 4422 300mm	m	60		
6.2		Extra over item 5.1 for the supplying, fixing and bedding of fittings complete for: 90 Deg bend to suit uPVC, Class 12 solvent welded mains (elbow where directed by space constraints; otherwise medium radius socketed bend) 300mm	No.	5		
6.3		Tee to suit uPVC, Class 12 solvent welded mains 300mm x 300mm equal tee	No.	1		
6.4		Socketed Flange Adaptor to suit uPVC mains 300mm	No.	5		
6.5		Extra over item 5.1 for stabilising bedding material and selected backfill material with 8% cement for: a) Backfilling over/around pipes on steep slopes (where directed by the Engineer)	m <sup>3</sup>	30		
6.6		PORTION OF RISING MAIN (STEEL) Supply, Lay, joint, bed, test. Including all cutting and preparation as required, welding, and making good of all internal linings and external coatings and keeping clean as laying progress and flushing pipes before filling, all as specified: Grade X42 steel, 12m long, plain ended Cement mortar lined and 'Sintakote'" or 3LPE coated pipe: 4.5mm thick steel pipes a) DN 300	m	30		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 6 PIPELINES & ASSOCIATED CHAMBERS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
		Extra over item 5.6 for the supply, fabrication, handling, laying, jointing, testing and bedding of DN300 bends including for making good internal linings and external coatings:				
6.7		Bend 30° to 45° degree (4 segment bend):	No.	1		
6.8		Bend 60° to 75° degree (6 segment bend):	No.	2		
		Extra over item 5.8 for the supply and fitting of temporary end-cap at battery limit of construction of steel rising main				
6.9		a) DN 300	No.	1		
		Extra over item 5.9 for stabilising bedding material and selected backfill material with 8% cement for:				
6.10		b) Road reserve and water crossings, over/around pipes (where directed by the Engineer)	m <sup>3</sup>	10		
		<b>PIPEWORK SPECIALS FOR VALVE CHAMBERS</b>				
		Supply, install, test and disinfect the following pipework specials inside valve chambers				
		Note: All pipe specials minimum 4mm wall thickness				
6.11		Cut into 2 x existing DN250 steel outlet pipes from reservoirs	Sum	1		
6.12		300mm, Flanged Resilient Seal Gate Valve with Hand wheel, PN10	No.	2		
6.13		250mm, Flanged Resilient Seal Gate Valve with Hand wheel, PN10	No.	2		
6.14		300mm diameter socketed flanged adaptor to suit uPVC pipe, PN10	No.	2		
6.15		250mm diameter socketed flanged adaptor to suit uPVC pipe, PN10	No.	2		
6.16		FBE coated and lined, Mild Steel Puddle pipe, Flanged, 1.4m, PN10, DN300	No.	2		
6.17		FBE coated and lined, Mild Steel Puddle pipe, Flanged, 1.4m, PN10, DN250	No.	4		
6.18		DN250 Flanged Dismantling Joint, PN10	No.	2		
<b>CARRIED FORWARD</b>						



CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 6 PIPELINES & ASSOCIATED CHAMBERS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
6.19		FBE coated and lined, DN300 x DN250 tee, Flanged, PN10	No.	2		
		REINFORCED CONCRETE CHAMBERS (2 No.)				
		New valve chambers for connections to existing reservoir outlets				
		FORMWORK				
6.20		Smooth vertical plane to outside of walls of chambers	m <sup>2</sup>	35		
6.21		Smooth horizontal plane to roof soffit	m <sup>2</sup>	15		
6.22		Smooth vertical to inside wall of chamber	m <sup>2</sup>	35		
6.23		Smooth vertical narrow widths (200mm) for roof slab	m <sup>2</sup>	3,5		
6.24		Smooth vertical to four sides of pedestal (500mm x500mm x450mm)	No.	4		
6.25		Smooth vertical to four sides of pedestal (400mm x400mm x500mm)	No.	4		
		UNFORMED SURFACE FINISHES				
6.26		Wood floated finish	m <sup>2</sup>	17		
		REINFORCEMENT				
6.27		High tensile bars	kg	7260		
6.28		Mesh Ref.888 centrally placed	m <sup>2</sup>	10		
		STEELWORK				
6.29		650mm x 650mm square GMS manhole cover and frame. Lugs cast in.	No.	2		
		Steelwork for valve chambers:				
6.30		20mm dia. Galvanized lifting eyes cast into concrete roof slabs over valves	No.	8		
6.31		Supply and install 'Multilocks' (MC10M-T-L) with standard pop shackle and master	No.	2		
		GMS Permanent access ladders (including safety cages):				
6.32		Approximately 2000mm o/a height	No.	0		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 6 PIPELINES & ASSOCIATED CHAMBERS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
6.33		Approximately 1100mm o/a height CONCRETE Prescribed mix concrete Concrete grade 15MPa/19mm	No.	2		
6.34		50mm blinding layer	m <sup>2</sup>	15		
6.35		70mm to 25mm thick screed to chamber floor Concrete grade 25MPa/19mm	m <sup>3</sup>	0,75		
6.36		Roof slab of chamber	m <sup>3</sup>	2		
6.37		Base slab of chamber	m <sup>3</sup>	3		
6.38		Walls of chamber	m <sup>3</sup>	9		
6.39		Pedestals JOINTS	m <sup>3</sup>	0,75		
6.40		500 Micron DPC as bond breaker	m	10		
6.41		One layer denso tape wrap where pipe exits concrete	m <sup>2</sup>	1		
		<b>AIR VENTS</b>				
6.42		Construct precast concrete air vent blocks and cast into chamber roofs complete, including DN110 uPVC pipework, end cap with holes and gauze, formwork and mesh reinforcement	No.	4		
6.43		Extra over Item 7.1 for extended 110 mm diameter Class 6 uPVC pipe droppers inside chambers, including supply and installation of aluminium holderbats & drilling and grouting same into walls	m	1		
		<b>MISCELLANEOUS</b>				
6.44		Supply and place in trench bottom, 12mm layer of stone as pipe drainage layer	m <sup>3</sup>	1		
6.45		300mm dia. PVC drain pipe, 610mm long, PN16	No.	10		
		Anchor/Thrust Block/Concrete Pedestals complete, allowing for excavation, concrete and formwork				
6.46		Strength Concrete grade 25 Mpa/19 mm	m <sup>3</sup>	5		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 6 PIPELINES & ASSOCIATED CHAMBERS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
6.47		Reinforcement	t	1		
6.48		Make good the concrete thrust block on pump station delivery side as per Engineer's direction on site	Sum	1		
<b>TOTAL FOR SECTION 6 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 7 ROADWORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		EARTHWORKS (ROADS, SUBGRADE)				
		Treatment of Roadbed				
7.1		Rip and Recompact 150mm in-situ material to 95% MOD AASHTO	m <sup>3</sup>	20		
7.2		C4 sub-base (150mm) to 95% MOD AASHTO (including stabilizing agent)	m <sup>3</sup>	20		
		Cut to fill or spoil in all materials				
7.3		Cut to fill and compact to 98% Mod AASHTO	m <sup>3</sup>	30		
		Borrow to Fill from local excavations				
7.4		Borrow to fill and compact to 98% Mod AASHTO	m <sup>3</sup>	20		
		Extra over item 6.2 to 6.4 for excavation for				
7.5		Hard rock material	m <sup>3</sup>	10		
7.6		Hand excavation (where allowed or directed by the Engineer)	m <sup>3</sup>	10		
7.7		8% Cement Stabilisation (where allowed or directed by the Engineer)	m <sup>3</sup>	50		
		CONCRETE PAVEMENT				
		Concrete Slab				
7.8		Construct 150mm concrete slab 30MPa/19mm including edge anchor	m <sup>3</sup>	20		
		Concrete lined stormwater v-drain				
7.9		Construct concrete v-drain 25MPa/19mm	m <sup>3</sup>	7,5		
		Construct concrete edge beam 30MPa/19mm				
7.10		Construct 30MPa/19mm edge beam at the intersection of the new concrete road with the existing gravel road	m <sup>3</sup>	2,5		
		FORMWORK				
		Smooth, plane, vertical to edges of:				
7.11		Concrete Slab	m <sup>2</sup>	13,5		
7.12		V-drain	m <sup>2</sup>	12		
		REINFORCEMENT				
		High tensile welded mesh				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 7 ROADWORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
7.13		Mesh Ref 395, minimum 300mm overlap	m <sup>2</sup>	140		
7.14		Mesh Ref 617, minimum 300mm overlap	m <sup>2</sup>	50		
		High tensile steel				
7.15		Y12	t	0,03		
7.16		25mm Dowel Bars	t	7,5		
		<b>UNFORMED FINISHES</b>				
7.17		Broomed Finish to concrete slab	m <sup>2</sup>	140		
7.18		Wood Float to v-drain	m <sup>2</sup>	50		
		Joints				
7.19		Expansion Joints for slab and v-drain	m	70		
7.20		1m x 2m x 0.3m Reno Mattress or similar approved	No.	1		
		<b>SIDEWALK, KERBING AND CHANNELING</b>				
7.21		Precast Concrete Chute	No	1		
		Bellmouth Construction				
7.22		Construct Bellmouth to gravel road as indicated on site layout drawing	Sum	1		
7.23		Cast-instu Concrete Kerb	m	40		
7.24		Formwork for Kerbing	m <sup>2</sup>	5		
<b>TOTAL FOR SECTION 7 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
8.1		RESTRICTED EXCAVATION				
		Excavation in all materials exceeding 2m deep and dispose of to spoil or stockpile or backfill				
8.1.1		Remove and spoil unsuitable material under floor slabs and ramp to depth as directed by the Engineer	m <sup>3</sup>	10		
		Extra-over items 7.1.1 to 7.1.4 for excavation in:				
8.1.2		Hand excavation	m <sup>3</sup>	5		
		Floor Slab Foundation layers				
8.1.3		Import G5 material from commercial source or borrow pit, place in layers not exceeding 150mm, compact to 98% ModAASHTO, including trimming of surface ready to receive floor slab	m <sup>3</sup>	15		
8.1.4		Import selected G5 material from stockpile, place in layers not exceeding 150mm, compact to 95% ModAASHTO, including trimming of surface ready to receive floor slab	m <sup>3</sup>	15		
8.1.5		Selected G7 material from stockpile, place in layers not exceeding 150mm, compact to 93% ModAASHTO, including trimming of surface ready to receive floor slab	m <sup>3</sup>	15		
8.2		SOIL POISONING				
		Soil insecticide				
8.2.1		Under floors of surface beds and ramps etc including forming and poisoning shallow furrows against foundation walls etc, filling in furrows and ramming	m <sup>2</sup>	15		
8.2.2		To bottoms and sides of cable trenches and sumps	m <sup>2</sup>	65		
8.3		CONCRETE (STRUCTURAL)				
8.3.1		FORMWORK				
		Smooth, plane, vertical to:				
8.3.1.1		Plinths	m <sup>2</sup>	60		
8.3.1.2		V- channel (on one side only)	m <sup>2</sup>	6		
8.3.1.3		Sides of ramp	m <sup>2</sup>	2		
8.3.1.4		Beams	m <sup>2</sup>	40		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.3.1.5		Suspended slabs Rough formwork to sides: Boxing in to formwork to form rebates,etc	m <sup>2</sup>	90		
8.3.1.6		Formwork to edge of cable trench wall to form 50 x 50mm rebate along top edge	m	45		
8.3.1.7		Rainwater drip	m	40		
8.3.1.8		Formwork in V-Channel to form rounded edge finish at top of contraction joint 25x25mm chamfers to edges of :	m	40		
8.3.1.9		Suspended slabs	m	80		
8.3.1.10		Plinths	m	20		
8.3.1.11		Beams	m	25		
8.3.2		<b>REINFORCEMENT</b>				
		Mild steel reinforcement to structural concrete work				
8.3.2.1		For all bar sizes	t	0,1		
		High tensile steel reinforcement to structural concrete work				
8.3.2.2		For all bar sizes	t	9		
		High-tensile welded mesh:				
8.3.2.3		Type 395 mesh reinforcement (double layer) in concrete surface bed and ramp	m <sup>2</sup>	6		
8.3.2.4		Type 245 mesh reinforcement (single layer) in concrete V-channel	m <sup>2</sup>	22		
8.3.3		<b>CONCRETE ITEMS</b>				
		Mass Concrete				
		15MPa/19mm concrete				
8.3.3.1		50mm blinding under RC chamber floor, ground beams, bases and cable trench floor and sump floor	m <sup>3</sup>	4		
		Strength Concrete				
		30MPa/19mm concrete				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.3.3.2		Suspended slab	m <sup>3</sup>	21		
8.3.3.3		Suspended beams	m <sup>3</sup>	6		
8.3.3.4		Surface bed cast in panels on waterproofing and plinths	m <sup>3</sup>	15		
8.3.3.5		V-channels cast in panels on waterproofing	m <sup>3</sup>	3		
8.3.3.6		Columns	m <sup>3</sup>	3		
8.3.3.7		Cable trench footings and sump footings	m <sup>3</sup>	6		
8.3.3.8		Cable trench walls and sump walls	m <sup>3</sup>	5		
8.3.3.9		V-channels cast in panels on waterproofing	m <sup>3</sup>	3		
		Unformed Surface Finishes: Smooth top surface of concrete with: Steel-float finish to horizontal surfaces:				
8.3.3.10		Top of V- Channels	m <sup>2</sup>	22		
8.3.3.11		Top of suspended slab and edges	m <sup>2</sup>	100		
8.3.3.12		Top of cable trench foundation and sumps	m <sup>2</sup>	10		
8.3.3.13		Top of plinths	m <sup>2</sup>	10		
8.3.3.14		Top of cable trench wall	m <sup>2</sup>	10		
		Power-floated finish to horizontal surfaces:				
8.3.3.15		Surface bed and chamber floor slab and ramp	m <sup>2</sup>	50		
		Joints Isolation Joints: with closed cell expanded polystyrene joint filler between vertical concrete and/or brick surfaces:				
8.3.3.16		10mm Joints in surface beds not exceeding 300mm high	m	70		
		Construction Joints with polyurethane :				
8.3.3.17		10mm Joints at brick / column joints	m	65		
8.3.3.18		10mm Construction Joints	m	20		
8.3.3.19		75mm diameter drainage pipe	m	8		
8.3.3.20		1m x 110 diameter sleeves	m	1		
<b>CARRIED FORWARD</b>						



CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.3.4		MISCELLANEOUS				
		Plinths				
8.3.4.1		Provide grout-pockets up to 300 deep for pump frame anchor bolts	Sum	1		
8.3.4.2		Supply and grout-in approved anchor bolts	Sum	1		
8.4		<b>BUILDING WORK</b>				
8.4.1		<b>BRICKWORK</b>				
		<b>FOUNDATIONS</b>				
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
8.4.1.1		230mm brick wall	m <sup>2</sup>	4		
		Brickwork reinforcement				
8.4.1.2		150mm Wide reinforcement built in horizontally	m	70		
		Firelight Amethyst Travertine FBS face bricks pointed with recessed horizontal and vertical joints				
8.4.1.3		Extra over brickwork for single skin face brick	m <sup>2</sup>	3		
		<b>MASONRY</b>				
		Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick. Face bricks shall be ordered timeously to obtain uniformity in size and colour. Pointing of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc.				
		Brickwork of NFX bricks (14 MPa nominal compressive strength) in class II mortar				
8.4.1.4		230mm thick face brick wall for superstructure	m <sup>2</sup>	30		
8.4.2		<b>BRICKWORK SUNDRIES</b>				
		Brickwork reinforcement				
8.4.2.1		150mm Wide reinforcement built in horizontally	m	120		
		Prestressed fabricated lintels				
8.4.2.2		150 x 70mm Lintels in lengths not exceeding 4m	m	15		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.4.2.3		Demolish 230mm brickwork to make provision for new position of both the roller shutter and pedestrian door	m <sup>2</sup>	11,86		
		Galvanised hoop iron cramps, ties, etc.				
8.4.2.4		30 x 1,6mm Wall tie 450mm long with one end shot pinned to concrete and other end built into brickwork	No	45		
8.4.3		<b>WATERPROOFING</b>				
		Damp-proofing of walls and floors				
		One layer of 375 micron "Consol Plastics Brikgrip DPC" embossed damp proof course				
8.4.3.1		In walls	m <sup>2</sup>	10		
		One layer of 500 micron "Consol Plastics Gunplas USB Green" waterproof sheeting sealed at laps with "Gunplas Pressure Sensitive Tape"				
8.4.3.2		Under surface bed and ramp	m <sup>2</sup>	75		
		Joint Sealants				
		Polyurethane joint sealant				
8.4.3.3		10 x 10mm on column joints	m	133		
8.4.4		<b>ROOF WATERPROOFING</b>				
		One layer derbigum SP4 waterproofing membrane, with 75mm side and 100mm end laps, sealed to bitumen primed surface to falls and crossfalls by means of ' Torchfusion'. Finish with reflective aluminium-Bitumen paint. Waterproofing to be carried out by an approved derbigum contractor.				
8.4.4.1		Derbigum waterproofing	m <sup>2</sup>	95		
8.4.4.2		Non shrink grout under base plates and end plates	m <sup>3</sup>	0,1		
8.4.5		<b>FLOOR</b>				
8.4.5.1		Preparation of concrete floor (ready to receive epoxy screed) by patching defects and holes with approved epoxy repair mortar then grinding to flat, smooth, defect-free hard durable surface then cleaning to remove all dust and contaminants	m <sup>2</sup>	75		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.4.5.2		Apply primer and 4mm 'Flowcrete Peran STB' epoxy floor screed (Dynamic Blue, matt finish) by approved 'Flowcrete' specialist subcontractor	m <sup>2</sup>	75		
8.4.6		<b>STRUCTURAL STEEL</b>				
8.4.6.1		Galvanized iron ladder	t	0,06		
8.4.6.2		305x165x40 I -section crawl beam	t	0,467		
8.4.6.3		180x70 parallel flange channel	t	0,62		
8.4.6.4		35x35x3L brace	t	0,06		
8.4.6.5		40x40x4 L	t	0,05		
8.4.6.6		Steel cleats/ brackets/ plates/ base plates and connections	t	0,25		
		Bolts to concrete beams:				
8.4.6.7		M20 chemical anchors	No	16		
8.4.6.8		M16 Grade 8,8 bolts	No	116		
		Certify gantry beam:				
8.4.6.9		Load Certification Test of new overhead 2 tonne beam in pumpstation by specialist ('Water Weights' or similar)	PC Sum	1	20 000,00	20 000,00
8.4.6.10		Contractor's mark-up on item 7.4.6.10	%	20 000,00		
8.4.7		<b>METALWORK</b>				
		Descriptions of bolts shall be deemed to include nuts and washers				
		Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in concrete				
		Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described				
		Galvanised "Rectagrid" type RS40 grille flooring panels with 40 x 4,5mm bearer bars, welded to bearers				
8.4.7.1		Floor of unbanded panels	t	0,94		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:  
SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.4.7.2		45 x 45 x 5mm Galvanized mild steel angle framing section cast into concrete edge with fishtail lugs at 600mm centres	t	0,147		
8.4.8		<b>WORKSHOP DRAWINGS</b>				
8.4.8.1		Provide workshop drawings to the satisfaction of the Engineer	Item	1		
8.4.9		Design, supply and install aluminium windows and shopfronts all in accordance with manufacturers specifications				
		Powder coated aluminium windows, doors, etc. with aluminium louvres, including sub-frames, and silicone sealant all round, fixed to brickwork or concrete as per Architect's window schedule				
8.4.9.1		Aluminium framed louvre size 600 x 900mm high	No	8		
8.4.10		<b>STEEL DOOR &amp; ROLLER SHUTTERS ETC.</b>				
		Powder coated roller shutters fixed to brickwork or concrete as per the Architect's door schedule (including motor and control)				
8.4.10.1		Chain operated steel roll up door with chromadek finish for 3000 x 3100mm high opening, motor, control unit, including locks, handles, hinges, fixing bolts, tracks etc., fixed as per manufacturers specifications	No	1		
8.4.10.2		Additional 900mmwide x 2100 high pedestrian door	No.	1		
8.4.11		<b>PLUMBING AND DRAINAGE</b>				
		Fire Appliances, etc.				
		Chubb				
8.4.11.1		Everyway hose reel complete with 30m plastic hose, chromium plated stopcock, shut-off nozzle and wall bracket	No	1		
8.4.11.2		4,5kg Carbon dioxide fire extinguisher complete with 520 x 115 x 22mm thick timber backboard plugged to wall and varnished	No	1		
		UPVC Drainage Pipe				
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 8 PUMPSTATION BUILDING

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
8.4.11.3		Supply DN250 pipes complete with couplings (pressure rating of coupling to match or exceed pipe rating): uPVC Solvent Welded mains (or spigot and socket pipes for straight runs) buried on flexible bedding for pipes, Class 12, according to SANS 966-1 or ISO 4422	m	70		
8.5		PROVISIONAL SUMS				
		BUDGETARY ALLOWANCES				
		Sundry building work				
8.5.1		Provide the sum of R 10 000,00 (Ten Thousand Rand) for sundry builders work	Sum	1		
8.5.2		Mark-up costs & Profit on item above	%	0,00		
		SIGNAGE				
8.5.3		Provide the sum of R 10 000,00 (Ten Thousand Rand) for Signage. Allow for general attendance	Sum	1		
8.5.4		Mark-up costs & Profit on item above	%	0,00		
<b>TOTAL FOR SECTION 8 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:  
COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 9 MISCELLANEOUS SITE WORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
9.1		Concrete Paving Blocks for walkway Supply and install new 60mm Interlocking Block Pavers (25MPa)	m <sup>2</sup>	400		
9.2		Supply and construct 25mm Bedding sand	m <sup>2</sup>	400		
9.3		In-situ Rip and Recompact to 93% MOD AASHTO	m <sup>2</sup>	400		
DOSING HOUSE						
9.4		Supply and install new dosing pump	No.	1		
9.5		Supply and install new chemical pumps	No.	2		
9.6		Clean the treatment works inlet, distribution chamber and clarifiers	Sum	1		
SLUDGE CLARIFIERS						
9.7		Connect desludging pipeline from the clarifiers to the ponds (investigate by exposing next to the desludging chamber: investigation to be done under supervision of the Engineer)	Sum	1		
9.8		Design and construct new sludge inlet and outlet to the ponds under the direction of the Engineer	Sum	1		
9.9		Re-align the existing outlet pipe from the sludge ponds and ensure discharge after the gravel road	Sum	1		
FILTER GALLERY						
9.10		Check all air and backwash valve spindles, fix and make good where necessary	No.	3		
9.11		Seal leaks on Filter Wall	Sum	1		
150kL BACKWASH RESERVOIR						
9.12		Cut suction pipe, deal with blockage and make pipe good for conveyance	Sum	1		
9.13		Drain all water in backwash reservoir, break at floor level and lay a desludging pipe; also install an isolation valve	Sum	1		
9.14		Screed the floor level and do benching to allow free-draining conditions	Sum	1		
DOMESTIC SEWAGE SYSTEM						
9.15		Check existing sewage system for blockages and also check and evaluate condition of existing septic tank	No.	1		
<b>CARRIED FORWARD</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 9 MISCELLANEOUS SITE WORKS

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
		<b>BROUGHT FORWARD</b>				
9.16		Rehabilitation of the existing domestic septic tank and connect to sewage system. Check and fix sewer pipework	No.	1		
		<b>DOMESTIC WATER SUPPLY SYSTEM</b>				
9.17		Supply and install an 50KL Elevated tank with all necessary fittings and foundation to supply water to domestic houses within the waterworks	PC Sum	1	150 000,00	150 000,00
9.18		Supply and install new pumps to supply water to domestic houses for staff	No.	2		
		<b>EXISTING RESIDENTIAL STRUCTURES</b>				
9.19		Ad hoc upgrading works on various aged residential structures to make them good for habitation as directed by the Engineer	PC Sum	1	300 000,00	300 000,00
9.20		Mark-up costs & Profit on item above	%	300 000,00		
		<b>PERIMETER FENCE</b>				
		2,4m high, High Density Razor Ripper Mesh Perimeter Fence				
9.21		Construct fencing complete as per Dwg J26137/C1.1-108 including excavation, mass concrete footings and ground beam, precast concrete posts, straining wires and mesh and flat wrap coil	Sum	1	450 000,00	450 000,00
9.22		Mark-up costs & Profit on item above	%	450 000,00		
9.23		Double leaf gates as per details	No.	3		
<b>TOTAL FOR SECTION 9 CARRIED FORWARD TO SUMMARY</b>						

CONTRACT: MIS 262 984 B

BILL OF QUANTITIES

CONTRACT TITLE: UPPER MHLAHLANE EXT WATER SUPPLY:

COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

BILL:

SECTION: 10 WEIR REFURBISHMENT

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
10.1		Removal of excess sedimentation built up behind the weir wall; dispose of material removed; other minor refurbishments to the weir as directed by the Engineer	Sum	1		
10.2		Evaluate existing screen and fix/replace as directed by the Engineer on site	PC Sum	1	50 000,00	50 000,00
<b>TOTAL FOR SECTION 10 CARRIED FORWARD TO SUMMARY</b>						50 000,00



**CONTRACT:** MIS 262 984 B  
**CONTRACT TITLE:** UPPER MHLAHLANE EXT WATER SUPPLY:  
 COMPLETION OF A PUMPSTATION AT MHLAHLANE WTW AND 1ML COMMAND RESERVOIR

**BILL:**  
**SECTION:** 11 TRAIN STAFF & TRIAL OPERATING PERIOD

ITEM	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE R	AMOUNT R
11.1		TRAIN STAFF				
11.1.1		FORMAL TRAINING OF EMPLOYERS STAFF (before commissioning)				
11.1.1.1		External formal training of O.R. Tambo Municipality nominated candidates on the maintenance and operation of low voltage switchgear and pumpsets	PC Sum	1	50 000,00	50 000,00
11.1.2		Contractors mark-up on item 3.2.2	%	50 000,00		
11.2		On-site training of OR Tambo Municipality Ops Staff on the maintenance and operations of this particular pumpstation	Sum	1		
11.3		Operate Works and train SRVM operating staff				
11.3.1		Resident technician assigned to maintainance and on-the-job training of SRVDM staff for a period of 2 months on site in a full time capacity post successful commissioning (incl all S&T, travel, allowances)	Month	2		
11.3.2		Operate and maintain all mechanical and electrical equipment under full working conditions ( 24 hrs per day) for one month following successful commissioning, including all materials required for routine maintenance. Certificates of Compliance	Month	2		
11.3.3		Supply all Certificates of Compliance for all electrical installations	Sum	1		
<b>TOTAL FOR SECTION 11 CARRIED FORWARD TO SUMMARY</b>						