SUMMARY OF CATEGORY ITEMS & PRICING:

CATEGORY ITEM	DESCRIPTION	PRICE, ZAR
A	**MCC Panels**	
B	**Flame Proof Cabling & Components**	
C	**Flame Proof Field Instrumentation & Components**	
D	**SCADA SYSTEMS, PLCs, HMI's & ANCILLARIES**	
E	**FLAME PROOF LIGHTING, AIRCONDITIONING & COMPONENTS**	
	TOTAL	
	VAT @ 15%	
	TOTAL (INCLUSIVE OF VAT)	

BILL OF QUANTITIES ITEMS A,B,C,D,E

ITEM A : MCC PANELS

ITEM A MCC PANEL	DESCRIPTION (equipment only)	UNIT OF MEASURE	QTY	UNIT COST	TOTAL
	Mild steel, powder coated - orange, bottom entry ports (2100 X 1200 X 750 mm) incl of :	EACH	4		
	* 116 kW (capacity + 20 % --- 4 bucket X 22 kW MCC panel, 380 V supply)	EACH	AS ABOVE		
	* Din rail mounting for PLC 220 V power supply, cpu, analogue I/O cards, isolators	EACH	AS ABOVE		
	* Relays, contactors, phase failure protection, overload devices (all per 22 kW bucket)	EACH	AS ABOVE		
	* Each contactor to be provided for with indication lights, key switches, individual breakers	EACH	AS ABOVE		
	* Emergency Push button isolation switch to be installed	EACH	AS ABOVE		
	* Allow for power to MCC room lighting, for 3 X 4-20 mA instruments and ethernet switches	EACH	AS ABOVE		
	* Wiring Diagram to be Provided per Panel in soft and hard copy	EACH	AS ABOVE		
		Total ex VAT			
		VAT @ 15%			
		Total incl VAT			

ITEM B : FLAME PROOF CABLING & COMPONENTS

NO	DESCRIPTION (equipment only)	UNIT OF MEASURE	QTY	UNIT COST	TOTAL
1	16 mm SWA 4 core, meters 4 X 200 m reels)	Meters	800		
2	10 mm SWA 3 core for decant pump motors, meters (4 X 250 m reels)	Meters	1000		
3	10 mm SWA 3 core for refuel pump motors, meters (4 X 250 m reels)	Meters	1000		
4	7 core 1.5mm SWA cable, meters (8 X 200 meter reels)	Meters	1600		
5	Cabtyre black 1.5 mm, meters (8 X 100 metre reels)	Meters	800		
6	Cabtyre grey 1.5 mm, meters (8 X 100 metre reels)	Meters	800		
7	Cable racking (industrial 90 mm width), meters	Meters	600		
8	Various size terminal ends (1.5, 2.5, 6, 10 and 16 mm - 48 each)	each	240		
9	CCG boxes (black, size 0, 150 mm diameter)	each	24		
10	No 2 Flameproof glands	each	16		
11	No 1 Flame proof glands	Each	32		
12	No 0 Flame proof glands	Each	32		
13	No 2 compression glands	Each	32		
14	No 1 compression glands	Each	32		
15	No 0 compression glands	Each	32		
16	Surfix 2.5 mm	Meters	1000		
		Total ex VAT			
		VAT @ 15%			
		Total incl VAT			

ITEM C :   FLAME PROOF FIELD INSTRUMENTATION &
        ELECTRICAL COMPONENTS

NO	DESCRIPTION (equipment only)	UNIT OF MEASURE	QTY	UNIT COST
1	Ashcroft DP switches (400 kPa) Flame Proof, preset at 50 kPa for open circuit	EACH	20	
2	Hydraulic HP Hoses and Fittings, 10 bar (stainless 316 10 mm ID, stainless steel fittings)	EACH 3 meter length	40	
3	Weather Resistant and Flame Proof Start Stop Switches for Field Start & Stop of pumps	EACH	20	
			Total ex VAT	
			VAT @ 15%	
			Total incl VAT	

ITEM D :   SCADA SYSTEMS, PLCs, HMI's &
        ANCILLARIES

NO	DESCRIPTION (equipment only)	UNIT OF MEASURE	QTY	UNIT COST	TOTAL
1	SCADA DESKTOP COMPUTER with SIEMENS or similar WIN CC RUNTIME SOFTWARE LICENSED	each	4		
2	Siemens PLC S 7 1212 SERIES (power supply or similar, CPU and 16 unit anologue and 16 unit digital IO cards	each	4		
3	HMI 9 inch SIEMENS or similar, with cabling and interface analogue/digital cards	each	4		
4	Ethernet Switches Industrial	each	4		
5	Ethernet Cable Industrial with terminations (100 meter reels)	each	8		
6	Ethernet Repeater switches, industrial	each	4		
			Total ex VAT		
			VAT @ 15%		
			Total incl VAT		

ITEM E :   FLAME PROOF LIGHTING,
AIRCONDITIONING & COMPONENTS

NO	DESCRIPTION (equipment only)	UNIT OF MEASURE	QTY	UNIT COST	TOTAL
1	4 foot Double Fluorescent Lights Flame Proof (4 X 5)	each	20		
2	Floodlights for external mount, powder coated, 50 W (4 X 8)	each	32		
3	Air conditioners (12000 BTU) X 4	each	4		
4	Air conditioner Wall Mounted Brackets(4 sets)	each	4		
5	DB Boards Industrial with breakers	each	4		
6	Double wall plugs surface mounted	each	16		
7	Double lever light switches surface mounted	each	8		
8	20 A Breakers	each	8		
9	20 A Isolators	each	4		
10	Day Night Switches	each	8		
11	1.5 mm household wiring red (100 meter roll)	each	4		
12	1.5 mm household wiring black (100 meter roll)	each	4		
13	1.5 mm household wiring white (100 meter roll)	each	4		
			Total ex VAT	
			VAT @ 15%	
			Total incl VAT	