

**ATTACHMENT 1- KAJUR TANKS & PIPELINES  
MATERIAL AND EQUIPMENT DETAIL SCHEDULE**

**WORK AND MATERIAL SPECIFICATIONS**

**All materials, equipment and finishes shall be as per the specifications listed below:**

- (a) Tank shell, backing ring and floor plates: Material spec to ASTM A 131M/A 131 Grade A, ISO 630 Grade E 275, CSA spec CSA G40 21M, 260W/(38W). Roof sheet to ASTM A570M/A570 Grade 33
- (b) Tank nozzles: ASTM Spec ASTM A106 Grade B, Schedule 80 or ES pipe.
- (c) Flanges: ASME B16.5-ANSI Class 150 –RF.
- (d) Valves: API 6D/ ASME B16.34. Valves for 50mm and above shall be Class 150 single wedge gate valves with rising stem. Valves less than 50mm shall be Class 600# single wedge gate valves.
- (e) Paint: Interzone 954-Silver Grey for both tanks and pipelines.
- (f) Pipe: Schedule 40 (std wt) seamless pipe to ASTM A106, or EN10216-10219-AS1518. Extruded high-density. polyethylene protective coating for underground pipes.
- (g) Gaskets: Spiral wound gaskets/graphite base gaskets.
- (h) Bolts and Nuts: ASTM A194 Grade 2H Nuts and ASTM A193 Grade B7 for Studs.
- (i) Electrical protection: All Electrical equipment and materials that is to be used in Zone 0, Zone 1 and Zone 2 areas should be explosion proof EX rated.
- (j) Pumps: Constructed of either cast steel or spheroidal graphite cast iron to ASTM A395, or equal.

**MATERIAL BILL OF QUANTITY**

All materials and equipment, any raw or manufactured materials and any equipment, parts or components required for or forming part of the Permanent Works, shall be:

- (a) New (unless otherwise specified)
- (b) To the latest appropriate technology
- (c) Suitable for the purpose
- (d) Proven in service
- (e) Suitable for installation where shown on the drawings with suitable access and clearances for maintenance requirements
- (f) Compatible with other materials and equipment to be used in the Works

The Supplier shall be responsible for ensuring that materials and equipment supplied meet the specified performance, construction, quality, space and structural loading requirements.

**Material and Equipment Schedule of Requirement -BOQ for Quotation purposes.**

Item	Description	Size	Specification	Qty
1	Seamless Carbon steel pipe	DN100(4")	Sch40 (std wt)@6M lenght	30m
2	Seamless Carbon steel pipe	DN100(4")	Sch40 (std wt) yellow jacket @12m lenght	84m
3	Seamless Carbon steel pipe	DN25(1")	sch80(xs)	12m
4	Seamless Carbon steel pipe	DN50(2")	sch80(xs)	100m
5	Equal Tee	DN100(4")	Sch40 (std wt)	13
6	Gate Valve	DN100(4")	Class 150 single wedge gate valves with rising stem.	24
7	Gate Valve	DN25(1")	Class 600 single wedge gate valves	6
8	Weldolet	1x1	Class 3000	12
9	90 Deg LR Elbow	DN100(4")	Sch40 (std wt)	16
	45 Deg LR Elbow	DN 100 (4")	Sch40 (std wt)	16



**ATTACHMENT 1- KAJUR TANKS & PIPELINES  
MATERIAL AND EQUIPMENT DETAIL SCHEDULE**

10	90 Deg Socket weld Elbow	DN25(1")	Class 3000	12
11	Swing check Valve	DN100(4")	Class 150	4
12	Flanged Basket Strainer	DN100(4")	Class 150	4
13	Flange	DN100(4")	Class 150 .WN, RF	72
14	Gasket	DN100(4")	Graphite Gasket/Spiral wound gasket	72
15	Bolts &Nuts	M16X85	ASTM A194 Grade 2H Nuts and ASTM A193 Grade B7 for Studs	1152
16	Pump		PD Pump-1200lpm	2
17	Flow meter		PD meter-LC smith meter	2
18	Pressure Gauge		1000KPA(10bar)	3
19	Vacuum Pressure gauge		1000KPA(10bar)	5
20	Thermal relief valve		10.34bar(150 psi)	6
21	Flotation suction unit		To suit diameter of 6403mm and height 11979mm, the inlet end of to the have a DN100 Flange to suit nozzle of DN100 inlet. Refer to Design	2
22	Sight Gauge		Details to be completed-Refer to Design	2
23	Rolls of Denso tap			100
24	Nozzles	DN100	Sch80 XS refer to design	12
25		DN150	Sch80 XS refer to design	4
26		DN80	Sch80 XS refer to design	4
27		DN50	Sch80 XS refer to design	4
28	Manhole	DN500	Refer to design	4
29	Sand or garnet bags			5
30	Paint		Interzone 954- Grey	1334ltr
31	Floor plate	8mm thick	Material spec to ASTM A 131M/A 131 Grade A, ISO 630 Grade E 275, CSA spec CSA G40 21M, 260W/(38W).	10
32	Roof plate	6mm thick	ASTM A570M/A570 Grade 33	10
33	Shell plate	6mm thick	Material spec to ASTM A 131M/A 131 Grade A, ISO 630 Grade E 275, CSA spec CSA G40 21M, 260W/(38W).	10
34	Fire Extinguishers	13kg	DCP	5
35	Fire Extinguishers	100kg	Mobile DCP	5
36	Dead-man valve			2
37	Loading arm			2
38	Flow meter			2
39	Pump		PD Pump-1200lpm	2
40	Local/Remote start/stop switch		Intrinsically EX explosion proof	2
41	Oily water mechanical separator		Hydro cyclone separator	1
42	Waste Oil Tank	10,000 gal	Constructed to API650	1
43	Pipeline Filters		Y Strainers/Filters	4
44	Air compressor		✓ Screw Air Compressor 5LT-185.5	1



**ATTACHMENT 1- KAJUR TANKS & PIPELINES  
MATERIAL AND EQUIPMENT DETAIL SCHEDULE**

45	Welding Machine		Main power supply	2
46	Welding Machine		Portable	1
47	Welding cables/leads			150m
48	Plasma Cutting Machine		With full kit	1
49	Welding rods		70/18-1/8	50 boxes
50	Welding rods		60/11-1/8	50 boxes
51	Sand Blasting Kit			1
52	Air compressor			1
53	Welding Machine		Main power supply	2
54	Air Eliminators			2
55	Basket Strainers			4
56	Reducers	DN100 to DN80	Eccentric and Concentric Reducers	4
57	Pipe Line Filters	D100		4
58	Earth Stake 4x earth stake, 4x earth clamp kit		Plus 90mm > 2 diameter drum of earth cable	4/4
59	Curb Angle		2x 13 lengths of 50x50x 6 each iron	26

Refer attached Tanks V1 and V2 Designs