Rig 16

1 INTRODUCTION

1.1 RIG

Rig Name:	MB Century Rig 16
Rig Manufacturer:	Skytop Brewster / KSM
Type:	Double Mechanical rig
Year of Manufacturer:	1980
Rig Depth Rating:	9,000 ft (2,750 m) with 3-1/2" DP 6,500 ft (2,000 m) with 5" DP

2 HOISTING SYSTEM

2.1 Drawworks

Manufacturer:	Skytop Brewster
Model:	RR550
Draw-works HP Rating:	425 hp
Drive Motors:	Detroit Series 60 diesel engine
Transmissions:	Alison 6 Speed Air Shift
Engine HP Rating:	425 hp
Quantity Motors:	1 off

2.1.1 Deadline Anchor

Manufacturer:	National
Model:	Type FS
Drill line Wire Rope Size:	1"
Rated Deadline Load:	40,000 lbs

2.1.2 Drawworks Sleeve

Manufacture:	Lebus
Type:	Grooved
To Suit Drill line:	1" diameter

2.1.3 Crown Saver

Manufacturer:	Koomey
Model:	Crown-O-Matic

2.1.4 Hydromatic Brake

Manufacturer:	Parmac
Model:	202

2.1.5 Auto Driller

Manufacture:	*Not applicable on this rig*
Model:	

2.2 DERRICK / MAST

Manufacturer:	KSM (Manufacture date Oct 2007)
Type:	Cantilever, Hydraulic Raised & Telescoping
Model:	104-220,000
API Capacity:	220,000 lbs
Height:	104 ft / 31.7m
Gross Nominal Capacity:	366,000 lbs / 162,800 daN
Rated Static Hook Load:	220,000 lbs / 97,000 daN / 6 lines 185,000 lbs / 82,300 daN / 4 Lines
Racking Capacity:	111 stands of 4-1/2" DP plus 8 stands of 6-1/4" DC
Maximum wind speed: Full Setback	69 mph / 111 kph / 60 knots
No Setback	69 mph / 111 kph / 60 knots
Number Of Sheaves In Crown Section:	4 off
Guying Arrangement:	External 6 off 60' x 60' Internal 4 off to Carrier

2.2.1 Make-up Cathead

Type:	Hydraulic
Location:	Drillers side of the mast
Maximum Make-up Torque:	10,000 lbs single line pull → 40k ft.lb with HT65 Tong or 65k ft.lb with double line (limited by tong)

2.2.2 Break-out Cathead

Type:	Hydraulic
Location:	Off-Drillers side of the mast
Maximum Break-out Torque:	10,000 lbs single line pull → 40k ft.lb with HT65 Tong or 65k ft.lb with double line (limited by tong)

2.3 SUBSTRUCTURE	Manufacturer:	Cooper / Superior Iron Works
	Model:	Heavy Duty Work Platform
	Rotary Table to Ground Level:	19 ft - 10 in (incl. 7ft filler base)
	Weight:	22 ton / 12 ton
	Setback area carrying capacity:	6,560ft / 2,000 mtrs
	Setback Capacity:	250,000 lbs
	Rotary Table Beams Capacity:	
	Rotary Table Beams to Ground Level:	16ft 10in clearance under Rotary beams
2.3.1 Sub Base Raising Winches	Manufacture:	*Not applicable on this rig*
	Model:	
	Maximum Load:	
	Quantity:	
2.4 DRILLING LINE	Manufacturer:	Bridon
	Rope Diameter:	1”
	Length:	3,280 ft / 1,000 m
	Construction:	6 x 19 I.W.R.C, E.I.P.S Bright, RH Ord Lay
	Breaking strength single pull:	116.4 kbs / 517.8 kN
		2.5
2.6 TRAVELLING BLOCK	Manufacturer:	NOV
	Model:	“C” NOI / IDECO 110 SHORTY
	API Working Load Strength Rating:	220,000 lbs
	API Bearing Rating @ 100 rpm	240,000 lbs
	Number & size of Sheaves:	3 of x 24” diameter
	Sheaves grooved to suit:	1” drill line
	Quantity:	1 off
2.7 ELEVATOR LINKS	Manufacture:	BJ Toolpusher 3-11-24
	Size:	2” diameter x 80” long
	Load Capacity:	150 ton
	Quantity:	1 set (2 per set)
2.8 WINCHES		
2.8.1 Hydraulic Service Winch		
	Manufacturer:	Braden
	Model:	PD-12
	Rated Line Pull > 1st Layer:	12,000 lbs
	Quantity:	2 off
	Line Size	16 mm x 80m
2.8.2 Man-Rider Winch	Manufacturer:	*Not applicable on this rig.*
	Model:	
	Capacity:	
	Brake:	
	Safety Features:	
	Quantity:	
2.9 CASING STABBING BOARD	Manufacturer:	Engineered stabbing board
	Type:	Fixed height
	Safety:	Static Line
	Quantity:	1 off

3 CIRCULATING EQUIPMENT

3.1 MUD TANKS:	Total Active Capacity:	*390 barrels*
	Total Pre-Hydration Capacity:	39 barrels
3.1.1 Tank No.1 (Suction Tank)	Total Capacity:	*197 barrels*
	Pill Tank:	34 barrels
	Mixing Tank:	39 barrels
	Active Tank:	58 barrels
	Cooling Tank	66 barrels
3.1.2 Tank No.2 (Shaker Tank)	Total capacity:	*193 barrels*
	Sand Trap	14 barrels
	Settling Tank #1:	59 barrels
	Settling Tank #2:	66 barrels
	Settling Tank #3:	54 barrels
3.2 SURFACE LINES	Welded 4" NB, 3,000psi WP, with 4" NB Fig 602/1002 hammer unions	
3.3 STANDPIPE	Welded 3" NB, 3000 psi WP, with 4" NB Fig 602/1002 hammer unions, 60º gooseneck.	
3.4 SHOCK HOSE	Size:	3" ID x 12ft x 4000 psi WP
	Connection:	4" Figure 1003 Hammer Union (screwed)
	Quantity:	2 off
3.5 KELLY HOSES	Size:	2-1/2" ID x 55 ft x 5,000 psi working pressure
	Connection:	3" Fig 602 / 1502 Hammer unions (screwed)
	Quantity:	1 off
3.6 SHALE SHAKERS	Manufacturer:	Drilling Fluids Engineering
Note:-All shaker screens are supplied by the Operator	Model:	SCR-01
	Capacity:	500 gpm with 110 mesh screens
	Screen Sizes available:	24-325
	Quantity:	2 off
3.7 DESANDER	Manufacturer:	Demco
	Model:	4045-1-2-1
	Type:	8" cone desander unit
	No. of Cones:	4 off
	Feed Rate:	584-624 gpm
	Pump Unit:	Warman Type SC, 6 x 4, 50HP, centrifugal pump, electric powered, three phase, 50Hz, 1470 rpm
	Quantity:	1 off
3.8 DESILTER	Manufacturer:	*Not available with this rig.*
	Model:	
	Type:	
	No. of Cones:	
	Feed Rate:	
	Pump Unit:	
	Quantity:	
3.9 CENTRIFUGE	Manufacture:	*Not available with this rig.*
	Model:	
	Capacity:	
3.10 SHEAR MIXER	Manufacturer:	Geolograph-Pioneer
	Type:	Shear mixer
	Model:	Sidewinder Model 400
	Flow Rate:	400 gpm (approx.)
	Pump Unit:	Warman Type SC, 6 x 4, 50HP, centrifugal pump, electric, three phase, 50Hz, 1470 rpm
	Quantity:	1 off
3.11 MUD AGITATORS	Manufacturer:	Reynolds Christian
	Model:	5/0 480 25
	Power unit:	Three phase 50 Hz, 5.5 hp, 1445 rpm
	Quantity:	4 off

3.12 MUD PUMPS	Manufacture:	Continental Emsco
	Model:	D 550
	Max Input:	550 @ 65 SPM
Note:-Rig comes with 6-1/2" liners only as standard. Other liners available at cost plus to the Operator	Input Drive:	Chain Compound
	Max Pressure:	2915 psi with 4-3/4" Liners 2090 psi with 5-1/2" Liners 1449 psi with 6-1/2" Liners 1067 psi with 7-1/2" Liners
	Gallons per minute - maximum	525 gpm @ 65 spm with 6-1/2" Liners
	Quantity:	2 off
3.12.1 Pulsation Dampeners	Manufacture:	Hydril
	Model:	K-20-3000
	Maximum Pressure Rating:	3,000 psi
	Quantity:	1 off per pump
3.12.2 Pressure Relief Valves	Manufacture:	Oteco
	Model:	PRV-30525 Shear Relief
	Pressure Settings:	500 psi to 2500 psi
	Quantity:	1 off per pump
3.12.3 Drive Motors	Manufacture:	Caterpillar
	Model:	3406 B
	Rating:	360 hp / 268 kW @ 1800 rpm
	Quantity:	2 off per pump
3.13 CELLAR PUMP	Manufacturer:	Wilden
	Model:	P15
	Rating:	240 gpm, 3/8" max dia. solids
	Displacement - Solids:	*Not applicable*
	Displacement - Slurries	
	Power Unit:	Pneumatically operated
	Speed Rating:	*Not applicable*
	Quantity:	1 off
3.14 RISER & FLOWLINE	Riser Diameter:	30", 24", 22", 13-5/8" diameter
	Connected to the Conductor Pipe Via:	Welded or flanged
	Quantity:	1 off each
	Flowline Diameter:	10" diameter
	Connected Via:	Hopper
	Quantity:	1 off
3.15 RIG WATER TANK	Total Drill Water Capacity:	150 barrels
	Quantity:	1 off

4 ROTATING EQUIPMENT

4.1 SWIVEL	Manufacturer:	GEFCO
	Model:	King Oil Tools 10MB
	Lower Connection:	4½" EU-8 Pin - 6⅝" API Reg LH Pin Sub
	Static Capacity:	240,000 lbs
	Rotating Capacity @ 100 rpm API	156,000 lbs
	Working pressure limit:	4,500 psi
	Quantity:	1 off
4.2 TOP DRIVE	Manufacture:	*Not applicable on this rig.*
	Model:	
	Rated Capacity:	
	Maximum Torque:	
	Maximum Speed:	
	Power Unit:	
	Quantity:	
4.3 KELLY	Manufacturer:	JSC – Drill Collars & Kelly Plant: Sumy, Ukraine.

	Size:	4¼"
	Bore:	2¼"
	Type::	Hexagonal
	Overall Length:	37 ft
	Working Length:	34ft
	Connection, Box:	6⅝" API Reg LH
	Connection, Pin:	NC 40 RH
	Quantity:	1 off
4.4 KELLY DRIVE BUSHING	Manufacturer:	Dencon
	Model:	27 HDP
	Type:	Pin drive
	Rollers:	To suit : 4¼', 5¼" Hex Kelly
	Quantity:	1 off
4.5 ROTARY TABLE	Manufacturer:	Mid Continent
	Model:	S-27½"-B
	Opening:	27½"
	Drive:	Hydraulic 2 x SAI variable speed motors
	Torque:	0-15,000 ft.lb
	Static Capacity:	1,000,000 lbs
	Rotating Load	500,000 lbs @100 rpm
	Max. speed:	200 rpm
	API Bowls:	Bowl No.'s 1, 2 & 3
	Quantity:	1 off
4.5.1 HPU	Manufacturer:	Sauer Sundstrand
	Model:	Series 90 250PV
	Drive:	Caterpillar D3406, 200 HP
4.6 KELLY SPINNER:	Manufacturer:	Gill
	Model:	100
	Power Unit:	Hydraulic, Pneumatically signaled
	Quantity:	1 off

5 WELL CONTROL EQUIPMENT

5.1 BLOWOUT PREVENTERS

5.1.1 Annular	Manufacturer:	Shaffer
	Model:	Spherical, studded top, flanged bottom
	Size:	21-1/4"
	Work Pressure:	2,000 psi
	Quantity:	1 off
5.1.2 Annular	Manufacturer:	Hydril
	Model:	GK, studded top, flanged bottom
	Size:	13-5/8"
	Work Pressure:	3,000 psi
	Quantity:	1 off
5.1.3 Double Gates	Manufacturer:	Shaffer
	Model:	Type E Double Gate, studded top and bottom
	Size:	13-5/8"
	Work Pressure:	3,000 psi
	Quantity:	1 off
	Ram Blocks:	1 set 3½" pipe 1 set blind
5.1.4 BOP Handling System	Manufacturer:	Engineered
	Type:	Trolley on rails
5.1.5 Drilling Spool	Drilling Spools:	1 off Flanged spool, 26" high 21-1/4" 2000 psi x 21-1/4" 2000 psi, 630psi WP 2-1/16" x 5,000 psi & 3-1/8" x 5,000 psi outlets 1 off Flanged spool, 24" high 13-5/8" 3,000 psi x 13-5/8" 3,000 psi 2-1/16" x 5,000 psi & 3-1/8" x 5,000 psi outlets

5.1.6 Spacer Spool	Spacer Spool	1 off Flanged Spool, 15" high 21-1/4" 2,000 psi x 21-1/4" 2,000 psi
5.1.7 DSA's	Double Studded Adaptors:	
5.1.8 Valves on the BOP's	Kill Line Valves:	1 off 2-1/16" 5,000 psi manual gate valve, flanged
	Choke Line Valves:	1 off 3-1/8" 5,000 psi manual gate valve, flanged 1 off 3-1/8" 5,000 psi HCR valve, flanged
5.2 ACCUMULATOR	Manufacturer:	Koomey
	Model:	T15 110 3S
	Bottles:	18 x 11 gallon, bottom loading
	Manifold Quantity:	2 banks
	Bank isolation:	Manually operated gate valves
	Relief Valves:	1 accumulator pressure relief valve
	Reservoir Capacity:	280 Gallons
	Functions:	4 x 1" selectors plus 1 x 1" spare selector
	Triplex Pump:	1 unit, 3/4" Plungers
	Air Pumps:	2 units, 6" air end x 50:1 ratio
	Working Pressure:	3,000 psi
	Annular Pressure regulator:	1" Type TR manually operated
	Manifold Regulator:	1" Type TR manually operated
	Safety Alarms:	Nil
	Drillers Remote Control:	Koomey Model GBK5A control station on the rig floor, operates annular, pipe & blind rams, & HCR & spare.
5.3 SAFETY VALVES		
5.3.1 Upper Kelly Cock	Manufacturer:	M & M
	Connection, Box:	6-5/8" LH Reg
	Connection, Pin:	6-5/8" LH Reg
	WP(psi):	10,000 psi
	Quantity:	1 off
5.3.2 Lower Kelly Cock	Manufacturer:	M & M
	Connection, Box:	NC 40
	Connection, Pin:	NC 40
	WP:	10,000 psi
	Quantity:	1 off
5.3.3 Inside BOP		*Available on request at cost plus to the Operator*
5.3.4 Pump-In Sub		*Available on request at cost plus to the Operator*
6 <u>POWER SYSTEM</u>		
6.1 ENGINES	Manufacturer:	Detroit
	Model:	8V92 TA turbo diesel
	Prime Rating:	450 HP
	Quantity:	2 off
6.2 GENERATORS	Manufacturer:	Stanford
	Model:	C5354D
	Rating:	380 kVA
	Quantity:	2 off
6.3 SWITCHBOARD	Manufacturer:	Jackson Electrical Ind
	System Voltage:	460 Vac / 240Vac
	Interrupting Rating:	35kA @ AC460V
	System Frequency:	50 Hertz
	Quantity:	1 off

6.4 SCR UNIT	Manufacture:	*Not available with this rig*
	Model:	
	No. of Independent Modules:	

6.5 AIR SYSTEM

6.5.1 Compressor No.1	Manufacturer:	Atlas Copco
	Model:	GA30P
	Type:	Rotary screw air compressor
	Pressure:	100 psi
	Rating:	203 cfm @ 100 psi
	Power:	Three phase, 30 kW
	Quantity:	1 off
6.5.2 Compressor No.2	Manufacturer:	Atlas Copco
	Model:	BT4
	Type:	Piston air compressor
	Pressure:	125 psi
	Rating:	120 cfm @ 125 psi
	Power:	GM 5034-7001, 65HP diesel
	Quantity:	1 off
6.6 FUEL TANKS	Total Diesel Capacity:	22,000 litres
6.6.1 Stationary Tanks	Tank Capacity:	7,000 litres
	Type:	Containerised, internal bund.
	Quantity:	2 off
6.6.2 Mobile Tanks	Tank Capacity:	8,000 litres
	Type	Trailer, double skinned
	Quantity:	1 off

7 <u>PIPE & HANDLING EQUIPMENT</u>

7.1 TUBULARS

7.1.1 Drillpipe	Size:	3-1/2”
	Grade:	G-105
	Class:	Premium
	Weight:	15.5 ppf
	Footage:	5,600 ft or 1,700 mtrs (176 joints)
	Connection:	NC38 (3-1/2” IF)
	Tool Joint:	5” OD
	Hard Banded:	Yes
	Internal Plastic Coating:	No
7.1.2 Drillpipe	Size:	5”
	Grade:	G-105
	Class:	Class 2
	Weight:	19.5 ppf
	Footage:	1,500 ft or 1000 mtrs (110 joints)
	Connection:	NC50 (4-1/2” IF)
	Tool Joint:	6-1/2” OD
	Hard Banded:	Yes
	Internal Plastic Coating:	No
7.1.3 Hevi-Wate Drillpipe	Size:	3-1/2”
	Connection:	NC38 (3-1/2” IF)
	Weight:	25.3 ppf
	Quantity:	18 off
7.1.4 Drill Collars	Size:	4-3/4” x 2-1/4” ID
	Connection:	NC38 (3-1/2” IF)
	Weight:	46.7 ppf
	Type:	Spiral
	Quantity:	20 off
7.1.5 Drill Collars	Size:	6-1/4” x 2-13/16” ID
	Connection:	NC46 (4” IF)

	Weight:	82.3 ppf
	Type:	Plain & Spiral
	Quantity:	20 off
7.1.6 Pup Joints	Size:	3-1/2”
	Connection:	NC38 (3-1/2” IF)
	Length:	5 ft, 10 ft
	Quantity:	2 off each

7.2 SUBS

Sub Description	Top Connection	Bottom Connection
Kelly Saver Sub	BOX NC40	PIN NC50 (4-1/2” IF)
Kelly Saver Sub	BOX NC40	PIN NC50 (4-1/2” IF)
Kelly Saver Sub	BOX NC40	PIN NC38 (3-1/2” IF)
Kelly Saver Sub	BOX NC40	PIN NC38 (3-1/2” IF)
Cross Over Sub	BOX NC50 (4-1/2” IF)	PIN 6-5/8” Reg
Cross Over Sub	BOX NC46 (4” IF)	PIN 6-5/8” Reg
Cross Over Sub	BOX NC50 (4-1/2” IF)	PIN NC46 (4” IF)
Cross Over Sub	BOX NC38 (3-1/2” IF)	PIN NC46 (4” IF)
Bit Sub (recessed for a 5F-6R float)	BOX 6-5/8" Reg	BOX 6-5/8" Reg
Bit Sub (recessed for a 4R float)	BOX NC 46 (4” IF)	BOX 4-1/2" Reg
Bit Sub (recessed for a 2F-3R float)	BOX NC 38 (3-1/2” IF)	BOX 3-1/2" Reg

7.3 CUP TESTERS	Manufacturer:	Cameron
	Model:	Type “F”
	Connection, Box:	NC 50 (4-1/2” IF)
	Connection, Pin:	NC 50 (4-1/2” IF)
	Casing Size:	9-5/8”, 43.5-53.5 ppf 13-3/8”, 48 to 61 ppf
	Total Load Capacity:	800,000 lbs
	Quantity:	1 off

7.4 FISHING TOOLS

1 x Bowen 5-3/4” Series 150 Overshot, Assy No 8975 (3-1/2”, 4-3/4”, plus)
1 x Bowen 8-1/8” Series 150 Overshot, Assy No C-5342 (5”, 6-1/4”, 6-1/2”, plus) (DS)
1 x Bowen 10-5/8” Series 150 Overshot, Assy No C-5312 (8”) (DS)

1 x 6” OD reverse circulating junk basket
1 x 5” Fishing magnet

7.5 LIFTING NUBBINS

7.5.1 6-1/4” Drill collars	Type:	Lifting subs
	Size DP:	3-1/2”
	Connection:	NC46 (4” IF)
	Qty:	10 off

7.6 ELEVATORS

7.6.1 Drillpipe elevators	Manufacturer:	Access Oil Tools
	Size:	3-1/2”
	Capacity:	150 tonne
	Quantity:	2 off
7.6.2 Drillpipe elevators	Manufacturer:	Access Oil Tools (DS)
	Size:	5”
	Capacity:	250 tonne
	Quantity:	1 off
7.6.3 Drill collar elevators	Manufacturer:	*Not applicable on this rig*
	Size:	*Rig uses Drillpipe elevators with 3-1/2” lifting subs*
7.6.4 Casing elevators	Manufacturer:	BJ (DS)
	Size:	9-5/8”
	Capacity:	150 tonne
	Quantity:	1 off

7.6.5	**Casing elevators**	Manufacturer: Size: Capacity: Quantity:	Access Oil Tools 13-3/8” 150 tonne 1 off
7.6.6	**Single joint pick-up elevators**	Manufacturer: Size: Capacity: Quantity:	BJ (DS) 9-5/8” 3 tonne 1 off
7.6.7	**Single joint pick-up elevators**	Manufacturer: Size: Capacity: Quantity:	Dencon 13-3/8” 4.5 tonne 1 off
7.7	**SLIPS**		
7.7.1	**Drill pipe slips**	Manufacturer: Size: Quantity:	Dencon 3-1/2” 1 off
7.7.2	**Drill pipe slips**	Manufacturer: Size: Quantity:	Varco (DS) 5” 1 off
7.7.3	**Drill collar slips**	Manufacturer: Size: Quantity:	Access Oil Tools 4-3/4” 1 off
7.7.4	**Drill collar slips**	Manufacturer: Size: Quantity:	Varco 6-1/4” 1 off
7.7.5	**Casing slips**	Manufacturer: Size: Quantity:	Access Oil Tools 9-5/8” 1 off
7.7.6	**Casing slips**	Manufacturer: Size: Quantity:	Access Oil Tools 13-3/8” 1 off
7.8	**SAFETY CLAMP**	Manufacture: Model: Size: Quantity:	Baasch Ross Type C 4-1/2” to 8-1/4” 2 off
7.9	**PIPE SPINNER:**	Manufacturer: Model: Pipe Range: Power Unit: Quantity:	Weatherford Mini Spinner, Model 169 2-3/8” to 5-1/2” Hydraulic powered 1 off
7.10	**MANUAL TONGS**	Manufacturer: Type: Length of Tong: Lug Jaws Available: <u>Torque Ratings</u>: 3-1/2” to 11-1/4” 11-1/4” to 14-3/8” Quantity:	Access Oil Tools HT65 – standard lever 4 ft 3-1/2” to 14-3/8” 65,000 ft / lbs 40,000 ft / lbs 1 set (Make-up tong & Break-out tong)

7.11	**CASING TONG**	Manufacturer:	Weatherford
		Model:	Model 16
		Torque Range, 2,000 psi, High Gear:	3,750 ft/lbs
		Torque Range, 2,000 psi, Low Gear:	15,400 ft/lbs
		Casing Range:	2-3/8” to 13-3/8”
		Casing Jaws Supplied with Tong:	5-1/2”, 7”, 9-5/8” & 13-3/8”
		Power Unit:	Powered off Rig hydraulic power unit
		Qty:	1 off
7.12	**WIRELINE UNIT**	Manufacturer:	*Not available with this rig.*
		Model:	
		Power Supply:	
		Feet:	
		Wire:	
		Quantity:	

8 MISCELLANEOUS

		Casing size	*Type*	*Quantity*
8.1	**CASING PROTECTORS**			
8.1.1		9-5/8”	Klampon	2 off
8.1.2		7”	Klampon	2 off
8.1.3		5-1/2”	Klampon	2 off

		Casing size	*Casing weight*	*Quantity*
8.2	**CASING DRIFTS**			
8.2.1		18-5/8”	87.5 ppf	1 off
8.2.2		13-3/8”	68 ppf	1 off
8.2.3		9-5/8”	47 ppf, 43.5 ppf	2 off

8.3	**WATER SUPPLY**	Manufacturer:	*Available on request at cost plus to the Operator*
		Model:	
		Type:	
		Maximum Head:	
		Maximum Discharge:	
		Power unit:	
		Quantity:	
8.4	**RIG LIGHTING**	Manufacturer:	Snellson & Hubbel
		Location:	Rig lightening system as required to give adequate lightening to all work areas including the derrick
		Hazardous Area Requirements:	All lighting on the rig is explosion proof. Lighting on the fringes of the location, i.e. smoko shack may be general purpose spot lights
8.4.1	**Emergency lighting**	Emergency Back-Up Lightening	Emergency lights installed at dog hut, Koomey, desander, mud transfer pump, gen shed, and mud mixing pump.

8.5 RIG COMMUNICATIONS

8.5.1 External Communication

Internet & e-mail Facilities at the Rig

Provider:	Tuaropaki Communications
Computers:	2 off
Phones – Voice Over IP:	2 off permanent in the office
Phones – Mobile	2 off (when in range)
Phones - Satellitie	Nil
Fax	Nil

8.5.2 Camp

Provider:	*Provided by the Operator*
Computers:	
Phones:	
Rig to Camp:	*Not applicable to this rig.*

8.5.3 Internal Communication

Rig Communication:	Nil.
Handheld radios	Nil

8.6 WELDING EQUIPMENT

Manufacturer:	Cig Weld
Model:	MPM 8/270 KA1, diesel powered
Amps:	270 amp
Quantity:	1 off welding machine. 1 set of oxy-acetylene cutting equipment.

8.7 VEHICLES

8.7.1 Loader

1 off Caterpillar 936F Loader 5 Ton, or equivalent complete with:-

- Roll Over protection
- Bucket
- Forklift tynes (7 T)
- Certified lifting stinger complete with lifting chains

8.7.2 Rig Ute

1 off Utility vehicle

8.7.3 Crew Van

1 off Crew van (hire equipment)

8.8 MATTING

1 set wooden matting for Substructure
1 set wooden matting for Mud Pumps

8.9 MUD BUCKET

Manufacture:	Katch Kan
Size:	3-1/2” drillpipe
Quantity:	1 off

8.10 SURVEY EQUIPMENT

Manufacture:	*Available on request at the cost of the Operator*
Compass size:	
Quantity:	

8.11 BUG BLOWER

Manufacture:	*Available on request at the cost of the Operator*
Quantity:	

8.12 TORQUE WRENCH

1 off 1/2” drive torque wrench

8.13 SAFETY EQUIPMENT

4 off BA sets
8 off ELSA sets
Fire extinguishers

8.14 OTHER BUILDINGS AND EQUIPMENT

1 off Mechanic / electrician workshop (attached to day tank)
1 off Tool-house
1 off Spare parts storage (critical spares)
1 off Catwalk complete with 2 sets of pipe racks (each set 28ft long)
4 off Pipe bins
1 off Dog house
1 off Welders workshop
1 off Lunch Room / Toilet
1 off Site Office
1 off 5,000Ltr water tank to supply water to the above buildings.

9 INSTRUMENTATION

9.1	**Geolograph.**	Manufacturer: Model: Capacity: Quantity:	Wagner Instrumentation Inc WWDR6114-40 6 pen 1 off
9.2	**Weight Indicator**	Manufacturer: Model: Capacity: Quantity:	Martin-Decker Type FS Weight indicator 0 – 240,000 lbs 1 off
9.2.1	**Deadline Anchor / Load Cell**	Manufacturer: Model: Load Cell: Quantity:	National Type F E160A tension type 1 off
9.2.2	**Tong Torque System**	Manufacturer: Model: Tension Type Load Cell Range: Indicating Gauge: Quantity:	Totco DCT 0 – 25,000 lbs single line pull Totco DCT25, 6” dial indicator gauge, c/w adjustable target pointer, damper, fluid filled 1 off
9.2.3	**Rotary Torque System**	Manufacturer: Model: Quantity:	Floyd *(supplied by Bournedrill)* 1 off
9.2.4	**Drillpipe & Casing Pressure Gauges**	Manufacturer: Model: Indicator Gauge: Quantity:	Martin Decker Type E17-152 c/w diaphragm protector 6” dial indicator gauge, c/w adjustable pointer, damper 1 off
9.2.5	**Pump Pressure Gauge**	Manufacturer: Model: Type: Indicator Gauge: Quantity:	Cameron Local 0 – 5000 psi 2 off
9.2.6	**Pit Volume Totaliser**	Manufacturer: Model: Type: Indicator Gauge: Quantity:	*Available by negotiation.*

10 ACCOMMODATION

10.1 Accommodation: 1 off Accommodation/Ablutions Block (2 man)