

**MAST**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Mast</i>	Rostel telescoping double certified and built to API 4F specifications. Clear height 102'-3". 400,000 lbs. static hook. Capable of withstanding 81 mph wind loading with full setback and 107 mph wind loading without setback. Included winterization around the racking board with integral derrickman warmup shack.	1
<i>Mast Trailer</i>	Trailer to transport mast	1
<i>Crown</i>	Tesco 8 lines split block setup, four 36" sheaves and one 30" crossover sheave all grooved for 1-1/8" drilling line.	
<i>Racking Board</i>	Racking board is enclosed with wind walls extending 12' above the board and 4' below the board.	1
<i>Setback &amp; Racking Board Capacity</i>	12,000' of 3-1/2" or 4" DP with 5-1/4" tool joints plus BHA.	1
<i>Setback &amp; Racking Board Capacity</i>	9500' of 4-1/2" Drill pipe (DP) with 6-1/2" tool joints plus heavy weight DP and bottom hole assembly (BHA).	1

**SUBSTRUCTURE**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Substructure</i>	Tesco Swing Up substructure with simultaneous 400,000 lbs. static rotary capacity & 200,000 lbs. setback capacity. Usable BOP height of 15' and drill floor height of 20'-6".	1
<i>Raising Skid</i>	Mast and floor raising skid with hydraulic raising rams.	1
<i>Sub DS and ODS Wings</i>	DS wing supports Water Tank, Change House, and Dog House stack up, ODS wing supports Shaker Tank, Shaker Module, and Toolhouse.	2
<i>Sub Rear Porch</i>	Rear Porch supports the Accumulator Module, Choke Manifold Module and Poorboy Degasser Module.	1
<i>Water Tank</i>	200bbl Main Rig Water Tank sits on the DS substructure frame on level 1 and supports a change room on level 2.	1
<i>Rig Change Room</i>	Change room with personnel lockers on level 2 supports the Rig Doghouse on level 3.	1
<i>Dog House</i>	The Dog house houses a PLC computer operated drillers console, the gas detection instrumentation, BOPE control panel and Super Choke controls.	1
<i>Accumulator module</i>	CTI 5 Station 3M BOPE accumulator with local manual controls and drill floor HMI controls. Equipped 1 electric and 3 air power pumping systems as well as with nitrogen backup accumulator system. (0 hours on API CAT IV just completed) Part of Substructure.	1
<i>Shaker Module</i>	This module houses two Swaco Mongoose shakers (a Pro Dual setup) capable of delivering cuttings to an attached auger house to convey cuttings to bins or tankage, or to optional Dewatering shaker unit.	1
<i>Choke Manifold Module</i>	3" double gut choke manifold with Tartan valves, hydraulic and manual chokes and 6k psi test pump.	1
<i>Shakers</i>	MI-SWACO Mongoose Dual Platform. <i>Part of Shaker Module.</i>	1
<i>Shaker Tank</i>	The Shaker tank sits on the ODS substructure frame on level 1 and supports the Shaker module above on level 2. This tank houses a 130bbl Sand Trap and a 26.6 bbl Trip Tank <i>Part of Shaker Module.</i>	1
<i>ODS Tool House</i>	This module is two rooms that houses tools and equipment	1
<i>Winterizing</i>	Complete substructure is enclosed with buildings, wind walls to a height of 12' above the doghouse roof, and doors enclosing the cellar.	1
<i>Mud Gas Separator Module (Poorboy Degasser)</i>	Mud/Gas Separator with 9' Mud Seal vented to atmosphere	1
<i>BOP Dolly</i>	A BOP dolly capable of moving a 13-5/8" 5000 psi BOP stack through a set of outside doors on a track, and into position in the cellar over the well center.	1

1200 HP Rig

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**POWER GENERATION**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Electric Power</i>	Two each 14 L Detroit Diesel Series 60 (600 HP each) engines. Each engine driving a "New Age" generator (producing 470 KW each) which provides AC for the rig and power the #2 Mud Pump. The system is designed with the capability to add an optional 3 <sup>rd</sup> stand alone generator and sync into the system if desired.	2
<i>Hydraulic Power</i>	Two each Series DDEC IV MTU 2000 Detroit Diesel engines. Maximum continuous power 600 KW (800 HP); maximum 634 KW (850 HP) each. Each engine driving 6 Linde HPV135 hydraulic pumps. Total rig hydraulic power 1,200 KW (1,600 HP). These units provide power for the drawworks, top drive and one mud pump.	2

**HOISTING SYSTEMS**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Drawworks</i>	Tesco Hydraulic Single Drum Drawworks, Lebus grooved for 1-1/8" drill line. The Drawworks mounts to the back of the mast and is equipped with two 50" disk brakes, two calipers for the working brake. The hydraulic system is used as the dynamic brake.	1
<i>Auxillary Braking System</i>	Spring applied hydraulically activated disk brakes for parking brake function. Hydraulic drawworks provides power in and out of hole. <i>This is integral to the drawworks.</i>	1
<i>BOP Handling System</i>	One set of hydraulic cylinders mounted horizontally under the floor for lifting the BOP stack and moving the BOPs on or off the BOP dolly. <i>This is integral to the substructure.</i>	1
<i>Tugger Utility Winches</i>	Two each tugger utility winches, with 10,000 lbs. hoisting capacity. <i>Integral to Drawworks.</i>	2
<i>Manrider Winches</i>	One winch engineered for man-riding applications with max overpull protections. <i>Mounted to Mast.</i>	2

**ROTARY & TRAVELLING EQUIPMENT**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Top Drive</i>	Tesco model 250 HMI top drive, 250-ton capacity with integrated swivel. Maximum torque of 20,600 ft-lbs. and maximum speed of 175 rpm.	1
<i>Travelling Block</i>	Tesco split block 400,000 lbs. capacity, 8 lines setup.	1
<i>Drilling Line</i>	1-1/8" x 5000' Tuf-Flex drilling line.	2 new, 1 partial
<i>Rotary Table</i>	Twister 175 rotary table (hydraulically driven) with 17-1/2" opening.	1

**MUD SYSTEM**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
<i>Mud Pump #1</i>	One each Ellis Williams WH 1000 A Triplex: 6"x10" stroke. Powered by a Haglund Hydraulic motors producing 746 KW (1000 HP). Equipped with PD 45-5000 pulsation dampener.	1
<i>Mud Pump #2</i>	One each TSM 1000 HP triplex pump. Powered by one each 1000 HP AC electric drive motor and Yaskawa 1000 hp VFD. Equipped with PD 45-5000 pulsation dampener.	1
<i>Pits</i>	472 BBLS active mud pits system. See drawing for tank capacities, use, and locations	7 tanks
<i>Vacuum Degasser</i>	Derrick Vacu-Flo Degasser	1
<i>Centrifugal Pumps</i>	6x5 Mission Magnum centrifugal pumps. Used for mud mixing, gun lines, mud transfer, charge pumps.	3
<i>Agitators</i>	7.5 HP agitators.	5
<i>Mud Mixing Hopper</i>	Venturi mud mix hoppers.	1

**HVAC SYSTEMS**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
Steam Heaters	Ruffneck Steam Heaters. <i>Integral to Rig throughout.</i>	

**BLOW OUT PREVENTER EQUIPMENT (BOPE)**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
BOPE	CTI 5 Station 3M BOPE accumulator with local manual controls and drill floor HMI controls.	
Accumulator	Equipped 1 electric and 3 air power pumping systems as well as with nitrogen backup accumulator system. (0 hours on API CAT IV just completed) <i>Part of Substructure.</i>	1

**INTERMEDIATE BOP SYSTEM**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
Choke Manifold	3" 5M working pressure with super choke. <i>Part of substructure</i>	1
Choke Hose	3" 5M system working pressure with HCR and manual valves.	1
Kill Hose	2" 5M system working pressure with 2 each manual valve.	1
BOP Test Pump	Test pump assembly comes equipped with pressure gauges, hoses and valving required to test the BOPs to AOGCC regulation. <i>Part of Choke Manifold and Substructure.</i>	1
Inside Blow Out Preventor (IBOP)	This item is integral to top drive system and is included with top drive assembly.	2

**INSTRUMENTATION**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
Dog House	PLC/HMI controlled joystick Drillers console with integral BOP control panel and Super Choke controls. <i>Part of Substructure.</i>	1
Gas Detection	Otis Gen II 32-Channel hybrid monitor system, as available	1
Gas Detection	Otis Gen II 32-wire free OI-6900 ambient air gas sensors (LEL & H2S), as available	4
Weight Indicator	Integrated weight indicator in Drillers console and hydraulic dead line anchor weight indicator.	1
HP Mud & Cement Pressure Gauges	Local pressure gauges at the mud pumps and at the rig floor mud manifold.	1
Rig Intercom	Gaitronics Page/Party Communications System	1

**HANDLING TOOLS**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
Lift Subs		1 lot
Crossovers		1 lot
Drill Pipe Slips	Hand slips for 4-1/2" drill pipe.	2 sets
Drill Collar Slips	Drill Collar slips for 6-1/2" collars	1 set
Power Slips	Cavins air slips 2-3/8" to 5-1/2"	1
Manual Rotary Tongs	B&V WRT 35 Manual rotary tongs	2 sets
Manual Rotary Tongs	Rostel Type B	2 sets

**MISCELLANEOUS EQUIPMENT**

<b><u>ITEM</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>QUANTITY</u></b>
Portable HPU Module	Cummins BT4 engine/generator, electric driven HPU pumps with manual and remote controls. <i>This HPU unit is used to raise and lower the mast and swing up rig floor.</i>	1
Test joint	27' long with 4-1/2" XT39 connections	1
Raising Cylinder	Spare Raising Hydraulic Cylinder	
Hydraulic Motors	Spare Hydraulic Motors for Top Drive and Draw Works	1 lot
Hydraulic Pumps	Spare Hydraulic pumps for HPU	1 lot
Gear Box	Spare HPU gear box for pump drive	1