

Rig #1

1. 22 Summer Loads
2. Fuel consumption – 2000-2500 L/day
3. Clear height under sub, 4.64m, 139”
4. Superior 700 Drawworks with 12V2000 Detroit
5. 2 – EMSCO F-1000 Pumps with 3412E CATS
6. 2 – 375 KW Generators, 2 – 60 Series Detroit Power
7. TESCO 250 HMI 475 Top Drive

RIG 1 EQUIPMENT LIST

| Item | Description |
|---------------------------|---|
| DEPTH RATING | - 3500 metres |
| TOP DRIVE | - TESCO 250 HMI 475 (250 Ton 475 HP Hydraulic Top Drive) |
| DRAWWORKS | - Superior Model 700 PDS Single Drum, double parmac hydromatic brake - Crownomatic Crown saver - Rated for 700 input horse power |
| a) ENGINE | - One fuel-efficient 12V 2000 Detroit Power set for 850 input HP |
| b) TRANSMISSIONS | - S6610 Allison transmission with direct drive – 6 forward gears and 1 reverse |
| C) RATED PULLING CAPACITY | - Low - 288,000 #(128,160 daN) - Second - 192,000 #(85,440 daN) - Third - 144,000 #(64,080 daN) - Fourth - 97,000 #(43,165 daN) - Fifth - 72,000 #(32,040 daN) |
| MUD PUMPS | - #1 – EMSCO F-1000 triplex pump driven by a C-27 CAT engine - #2 – EMSCO F-1000 triplex pump driven by a 3412E CAT engine |
| SUBSTRUCTURE | - Box type one piece Dreco sub - Floor height – 3.96 m (13 ft.) - Width at base – 4.15 m (13.6 ft.) - Length – 12.19 m (40 ft.) Rotary table support – 275,000 #(122,375 daN) - Rated casing capacity – 275,000 #(122,375 daN) with 200,000 - #(89,000 daN) drill pipe set back in derrick |

| Item | Description |
|--|---|
| MAST | <ul style="list-style-type: none"> - Dresco angle leg, floor mount cantilever mast base width – 4.12 m (13.6 ft.) - Rated – hook load – 151,300 daN (340,000#) - 90,000 daN (200,000#) pipe set back |
| ROTARY TABLE | <ul style="list-style-type: none"> - Emsco 17 ½” rotary table, type T1750 complete with split bushing. |
| TRAVELLING BLOCKS | <ul style="list-style-type: none"> - Ideco Shorty 200 ton. |
| SWIVEL | <ul style="list-style-type: none"> - N/A |
| MATTING | <ul style="list-style-type: none"> - 14 pieces 8’ x 40’ x 6” or 2.44 x 12.19 x .183 m; 3 pieces 8’ x 24’ x 6” or 2.44 x 7.32 x .183 m |
| FUEL TANK | <ul style="list-style-type: none"> - 24,000 litres |
| WATER TANK | <ul style="list-style-type: none"> - 63.56 m³ or 400 bbls or 63,644 litres |
| TANKS: Mud & Mud System | <ul style="list-style-type: none"> - Two (2) tank mud systems, total capacity 122m³ working capacity 95 m³ - Suction Tank – one 47.69m³, three-compartment, plus 4m³ pill tank with mud treatment room - Shaker tank – 55.64 m³, three-compartment plus 4m³ trip tank and desilter room. |
| TANKS: Con’t Mud & Mud System | <ul style="list-style-type: none"> - Mud tanks are equipped with all necessary plumbing, subsurface mud guns, easy clean out gates, walks with handrails, stairways, “bean” style mix hopper, and chemical mixing barrel. |

| Item | Description |
|---------------------------|---|
| | <ul style="list-style-type: none"> - Four Abcor Model AMA-50 agitators with 5 HP motor - DFTS 275 XG -S18 Linear Motion Shaker - Three Mission mixing pumps driven by 60 HP electric motors - each pump can do precharge mud pumps, mixing hoppers, desilter, desander and subsurface mixing. - One Mission 10 HP electric motor driven hole filler 1 ½” pump for trip tank -One Poor Boy Degasser - Two Ruffneck Heaters |
| GENERATORS | <ul style="list-style-type: none"> - Two Stewart & Stevenson 375 KW Generators with 60 Series 635 HP Detroit Power |
| BLOW OUT EQUIPMENT | <ul style="list-style-type: none"> - One Wagner Model 10-080-3 BN hydraulics fluid accumulator with Eight 10-gallon separator Type accumulator bottles – 210 gallons fluid Reservoir tank with 5-station remote control tri-plex hydraulic pump Driven by a 10 HP electric motor, two nitrogen bottles hooked on line. - One 279.4 mm (11”) Shaffco spherical annular bag preventer 21,000 KPA W.P. – 3000 PSI - One Shaffco single gate ram preventor with blind blocks – 21,000 KPA W.P. – 3000 PSI |
| BLOW OUT EQUIPMENT | <ul style="list-style-type: none"> - One Shaffco single gate ram preventor with 114.3 mm (4 ½”) pipe rams - 21,000 KPA W.P. – 3000 PSI - One 254 X 254 mm Spool with two 76 mm outlets - Three 76 mm (3”) National ball valves – 21,000 KPA or 3000 PSI - One 76 mm (3”) National hydraulic acutuator (HCR) with manual handles - One 76 mm (3”) National Check Valve - One 254 x 254 mm (10” x 10”) Galaxy spacer spool with two 76 mm flanged outlets. -Two 76 mm flange Demco Valves |

| Item | Description |
|------------------|---|
| | <ul style="list-style-type: none"> - Eight fireproof high-pressure 25.4 mm hydraulic hoses with quick hook-ups |
| CHOKE MANIFOLD | <ul style="list-style-type: none"> - Consists of 2 – 76 mm (3”) McEvoy gate valves and 8 – 50 mm (2”) FE McEvoy gate valves, 2 – Willis Multi-Orifice chokes, type M-2 |
| DRILL STRING | <ul style="list-style-type: none"> - 300 Joints of (4” FH) Grade X-95, 15.7 lb premium drill pipe with internal coating and fine particle hard-banded tool joints. |
| BOILER | <ul style="list-style-type: none"> - One Lister Volcano boiler and tank combination building with tool room, boiler room, and storage room, 8000 Litre fuel storage, skid mounted |
| SAFETY EQUIPMENT | <ul style="list-style-type: none"> - Four Scott Packs -First Aid Kit - Stretcher - Escape buggy - Fire Extinguishers |
| DRILL COLLARS | <ul style="list-style-type: none"> - 2 – 222 mm (8 ¾”) O.D. x 76 mm (3”) x 9 m average with 7” H-90 connection - 21 – 6 ¼” x 2 ¼” I.D. drill collars 4 ½” x H - Bit sub 6 5/8” reg. Box by 7” H-90 box |
| MISCELLANEOUS | <ul style="list-style-type: none"> - One Totco Pump stroke counter - One Totco Rotary RPM gauge -Four sets of 101.6 mm (4”) square tubing pipe racks (triangle shape) -Two Garrett 609.6 mm (24”) bug blower fans -One Griffith upper Kelly cock - Two 50.8 mm x 76.2 mm (2” x 3”) centrifugal water circulating pumps - One high-pressure rig wash gun Model Cat 310 - Two fuel transfer pumps |

| Item | Description |
|-------------|---|
| | <ul style="list-style-type: none"><li data-bbox="570 275 987 306">- Finn Hydraulic Pipe Spinner (N/A)<li data-bbox="570 338 1036 369">- One 4 1.2/" reg. Box 4 ½ x 0 box bit sub<li data-bbox="570 401 1036 432">- One Tool Push Quarters, self-contained<li data-bbox="570 464 911 495">- One Pason automatic driller<li data-bbox="570 527 1027 558">- One Type "C" Cameron WT Indicator<li data-bbox="570 590 1122 621">- One Roto-Torque Rotary Torque System (N/A)<li data-bbox="570 653 1008 684">- Foster Model 77 Kelly Spinner (N/A) |

PERFORMANCE DATA

Performance Data Sheet F-1000 Pump (6 3/4 x 10)

| SPM | HP | Liner size (in) & working Pressure (psi) | | | | | | |
|-----------------|------|--|--------|--------|--------|--------|--------|--------|
| | | 6 3/4 | 6 1/2 | 6 | 5 1/2 | 5 1/8 | 4 3/4 | 4 3/8 |
| | | 2343 | 2643 | 3014 | 3457 | 4000 | 4700 | 4900 |
| Flow Rate (GPM) | | | | | | | | |
| 150 | 1072 | 570.34 | 505.18 | 443.98 | 386.86 | 333.58 | 284.24 | 238.74 |
| 140* | 1000 | 532.35 | 471.54 | 414.43 | 361.01 | 311.28 | 265.25 | 222.91 |
| 130 | 929 | 494.23 | 437.91 | 384.88 | 335.29 | 288.99 | 246.26 | 206.95 |
| 120 | 857 | 456.24 | 404.14 | 355.21 | 309.44 | 266.83 | 227.40 | 190.99 |
| 110 | 786 | 418.25 | 370.51 | 325.66 | 283.72 | 244.54 | 208.40 | 175.16 |
| 100 | 714 | 380.27 | 336.74 | 295.98 | 257.86 | 222.38 | 189.41 | 159.20 |
| 1 | | 3.80 | 3.37 | 2.96 | 2.58 | 2.22 | 1.89 | 1.59 |

Notes

- 1) Based on 100% volumetric efficiency and 90% mechanical efficiency.
- 2) * Recommended speed and input horsepower for continuous services.

Based on 90% mechanical and 100% efficiency

Brake Horsepower – $\frac{\text{gpm} \times \text{psl}}{1714 \times 90\% \text{ Mech. Eff.}}$

Barrels per Day = Gal. Per Rev. x rpm x 34.3

1 inch = 25.4 mm Gal. Per Min = Gal. Per Rev. x rpm
 1sq. in = 6.451 6 sq cm
 1 cu. In = 0.016 386 6 litres Gal. Per Min – $\frac{\text{bpd}}{34.3}$

Gal. Per. Rev. = $\frac{\text{Area of Piston} \times (\text{Length of Stroke} \times \# \text{ ofPistons})}{231}$