

Rig #3

- 24 loads for moving (Summer)
- Fuel consumption when drilling – 2200 L/day
- 1 – Series 60 Drawworks
- 2 – 3406 Pumps
- 1 – 325 KW Generator
- 1 – 300 KW Generator
- 145” clear height, 4.65 m .KB to ground

Top Drive – FDS (Fluid Design Systems)

Features:

- Integrated Swivel and Traveling Block
- Back Torque Track and Bushing
- Integrated Backup Leg
- Integrated Thread Saver
- Top Drive Extend, c/w Back Torque Track
- Front Torque Track Available, no extend

Specifications:

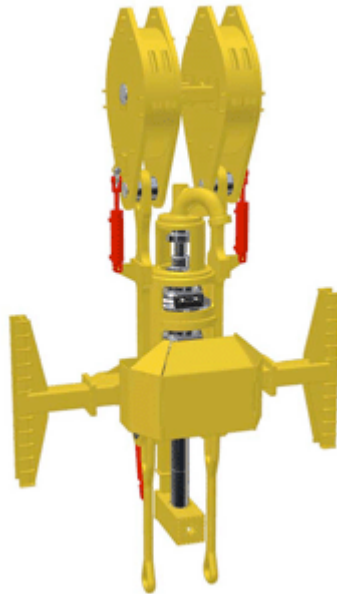
- Rated Capacity = 150 Ton
- API Dynamic Capacity = 100 Ton
- Pull Down Capacity = 15 Ton
- Breakout Torque = 15,000 ft-lb
- Makeup Torque = 13,000 ft-lb

Top Drive Running range:

@ 40 RPM max 23,500 ft-lb (intermittent)

@ 100 RPM max 19,000 ft-lb

@ 180 RPM max 13,000 ft-lb



Maximum Speed = 200 RPM

RIG #3 EQUIPMENT LIST

Item	Description																		
DEPTH RATING	- 2800 metres																		
DRAWWORKS	<ul style="list-style-type: none"> - Dreco D500 Single Drum, Double Hydromatic Brake, Foster Catheads - Crownomatic - One Detroit Series 60, 600 HP with rig saver, Transmission – Allison 6061, 5 forward gears and 1 reverse <p style="text-align: center;">500 PSD DRAWWORKS PERORMANCE</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 33%;">SPEED</th> <th style="width: 33%;">H.L. (LBS.) 8 LINES</th> <th style="width: 33%;">B.S. (FT./MIN.)</th> </tr> </thead> <tbody> <tr> <td>LOW</td> <td style="text-align: center;">225,000</td> <td style="text-align: center;">52</td> </tr> <tr> <td>SECOND</td> <td style="text-align: center;">150,000</td> <td style="text-align: center;">79</td> </tr> <tr> <td>THIRD</td> <td style="text-align: center;">110,000</td> <td style="text-align: center;">108</td> </tr> <tr> <td>FOURTH</td> <td style="text-align: center;">75,000</td> <td style="text-align: center;">157</td> </tr> <tr> <td>FIFTH</td> <td style="text-align: center;">55,000</td> <td style="text-align: center;">214</td> </tr> </tbody> </table> <p style="text-align: center;">H.L. = HOOK LOAD; B.S. = BLOCK SPEED</p>	SPEED	H.L. (LBS.) 8 LINES	B.S. (FT./MIN.)	LOW	225,000	52	SECOND	150,000	79	THIRD	110,000	108	FOURTH	75,000	157	FIFTH	55,000	214
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MUD PUMPS	- Gardner Denver PZ8 Triplex driven by 2 Cat 340+ engines, precharged by 5 x 6 mission pump																		
#2 PUMP	- Oil well A600 PT Triplex driven by 2 Cat 3406 engines																		
SUBSTRUCTURE	<ul style="list-style-type: none"> - Box type one piece sub - Floor Height – 13’ 6” - Width at base – 13’5” - Length – 46’8” - Rotary Table Support – 200,000# - Rated Casing Capacity – 200,000# - Drill Pipe Set Back – 175,000# 																		



Item	Description
MAST	<ul style="list-style-type: none"> - Dreco Angle Leg, Floor Mount Cantilever Mast Base Width 13' - Rated Hook Load – with 8 lines (128,555) daN 280,000#
ROTARY TABLE	<ul style="list-style-type: none"> - Ideal 17 ½” complete with split bushings
TRAVELLING BLOCKS	<ul style="list-style-type: none"> - McKissick Block Assembly 150 Ton 4-36” grooved for 1 1/8” line combined with BJ Unimatic 6150 150 hook
WATER TANK	<ul style="list-style-type: none"> - 63.56 m³ or 400 bbl tank built with doghouse drop in for transport
SWIVEL	<ul style="list-style-type: none"> - Gardner Denver 200 Ton
MATTING	<ul style="list-style-type: none"> - 10 pieces 8’ wide x 32’ long
FUEL TANK	<ul style="list-style-type: none"> - 25,000 litres
MUD TANK	<ul style="list-style-type: none"> - Two tank mud system, total capacity 122.4 m³ 105 m³ working capacity suction tank – One three compartment 64.5 m³ capacity with 11 m³ pill tank and mixing room - Shaker tank – 57.94 m³ five compartment including 4.88 m³ trip tank and solids control room -Mud tanks are equipped with all necessary plumbing, subsurface, mud guns, easy cleanout gates, walks, handrails, and mud mix hopper.
SHALE SHAKER	<ul style="list-style-type: none"> - DFTS Linear Motion Shale Shaker - Three mission 5 x 6 centrifugal pumps driven by 60 HP electric motors, each pump can run, mixer desilter, desander or subsurface guns. - One mission pump driven by 10 HP electric motor for hole fill pump - Poorboy degasser 4” inlet, 8” outlet



Item	Description
GENERATORS	<ul style="list-style-type: none"> - One 300 KW Stamford generator driven by Cummins NTA 855 diesel engine - One 325 KW generator driven by Cummins NTA 855 diesel engine.
B.O.P. EQUIPMENT:	<ul style="list-style-type: none"> - One Koomey T-80 hydraulic fluid accumulator with Nine 11 gallon greer accumulator bottles, 5 station remote control, triplex hydraulic pump, 2 air operated back up pumps, two nitrogen bottles hooked on line. - One 254 mm SHAFFER Spherical Annular Preventer 21,000 KPA W.P. - One 254 SHAFFER Single Gate equipped with blind rams 21,000 KPA W.P. - One 254 SHAFFER LWS single gate preventer with (4 1/2") pipe rams 21,000 KPA W.P. - Hydraulic Actuated Shaffer 5000# HCR - 2 – 2 1/16" 5000# McEvoy gate valves - One 76 mm Gate Valve - 1 – 2" 5000# crown check valve - 10 hoses 25.4 mm hydraulic with quick coupler hook-ups
CHOKE MANIFOLD	<ul style="list-style-type: none"> - Consists of 2 – 76 mm McEvoy Gate Valves and 8, 50.8 mm McEvoy Gate Valves 2 – Willis Multi Office Chokes, Type M-2
DRILL STRING	<ul style="list-style-type: none"> - 275 joints of 114 mm Grade E, 16.60# Range 2 drill pipe with 155.5 mm Q.D. tool joints, 4 1/2" XH threaded tool joints 18 taper fine article hardbanded tool joints. - 2 – 222 mm (8 3/4) O.D. x 76 mm (3") x 9 metre average with 7" H-90 connection
DRILL COLLARS	<ul style="list-style-type: none"> - 18 – 162 MM slip recessed 4 1/2" XH connections
MISC EQUIPMENT	<ul style="list-style-type: none"> - One Bell Automatic Driller - One type C Cameron weight indicator - Pason electronic Drilling recorder - Four sets of 101.6 mm square tubing pipe racks

Item	Description
BOILER:	<ul style="list-style-type: none">- Two 50.8 mm x 76.2 mm centrifugal water circulating pumps- Two monarch fuel transfer pumps - One-lister 100 HP boilers housed in combination building, boiler room with water tank.

A600 – PT
SINGLE ACTING TRIPLEX PUMP

SPECIFICATIONS	Measurement
Pump Size (Maximum Piston Dia. x Stroke).....7 x 8	inches
Standard Piston Sizes.....4, 4 ½, 5, 5 ½, 5 ¾, 6, 6 ½, 7	inches
Rated Brake Input Horsepower.....600 x 175	rpm
Rated Working Pressure	
Discharge.....6000	psi
Suction.....275	psi
Hydrostatic Test Pressure	
Discharge.....9000	psi
Suction.....425	psi
Fluid Suction Connection (ANSI150 # R.F.).....6	inches
Fluid Discharge Connection	
API Flange 5000# RIJ.....4	inches
Crankcase Oil Capacity.....42	gallons
Gear Ratio.....46 I or 69 I	
Input Shaft Extension:	
Diameter x Length.....4.750 x 5.750	inches
Keyway Width x Depth.....1 x ½	inches
Weight with Standard Equipment.....19,600	pounds

DIMENSIONS
Overall Length.....10' – 11 5/16"
Overall Width.....8' – 3"
Overall Height.....5' – 5"

PERFORMANCE DATA

English Units

Piston Size in Inches	Maximum Pressure PSI	Gallons Per Rev.	Displacement Gallons/Min. at Pump Speeds of					
			50	75	100	125	150	175
4	4058	1.31	65	98	131	164	196	229
4	3207	1.65	82	124	165	206	247	289
5	2597	2.04	102	153	204	255	306	357
5 ½	2147	2.47	123	185	247	309	370	432
5 ¼	1964	2.70	135	202	270	337	405	472
6	1804	2.94	147	221	294	368	442	514
6 ½	1537	3.45	172	259	345	432	517	603
7	1325	4.00	200	300	400	500	600	700
Brake Input Horsepower.....			172	258	343	429	515	601
Input shaft rpm w/6.9I ratio.....			346	517	690	862	1035	1207
Input shaft rpm w/4.6I ratio.....			230	345	460	576	691	806

Metric Units

Piston Size in Mm	Maximum Pressure Kpa	Litres Per Rev.	Displacement Litres/Min. at Pumps Speeds of					
			50	75	100	125	150	175
102	27979	4.96	4.10	6.18	8.26	10.35	12.37	14.45
114	22111	6.25	5.17	7.82	10.41	13.00	15.58	18.23
127	17906	6.44	6.44	9.65	12.87	16.09	19.31	22.52
140	14803	9.35	7.76	11.67	15.58	19.49	23.34	27.25
146	13541	10.22	8.52	12.74	17.03	21.26	25.55	29.78
152	12438	11.1	9.27	13.94	18.55	23.22	27.89	32.43
165	10597	13.06	10.85	16.34	21.77	27.25	32.62	38.04
178	9136	15.14	12.62	18.93	25.24	31.55	37.85	44.16
Kilowatt input.....			128	192	256	320	384	448
Input Shaft r/min w/6.9I ratio.....			346	517	690	862	1035	1207
Input shaft r/min w/4.6I ratio.....			230	345	460	576	691	806

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. = $\frac{\text{Area of Piston} \times (\text{Length of Stroke} \times \# \text{ of Pistons})}{231}$



PZ-8 (PZH) – 750 HP TRIPLEX MUD PUMP

SPECIFICATIONS															
CYLINDERS				DISPLACEMENT				MAXIMUM PRESSURE		PISTON LOAD		PUMP RPM	JACK SHAFT RPM	INPUT POWER	
Diameter		Stroke		Per Revolution		Per Minute		Psi	Kg/cm²	Lbs.	Kg			Hp	Kw
In.	Mm	In.	Mm	Gal	Lit	Gal	Lit								
76	178	8	203	4.00	15.14	580	2196	1996	140	76,800	34,836	145	652	750	559
6½"	165	8	203	3.45	13.06	500	1893	2315	163	76,800	34,836	145	652	750	559
6¼"	159	8	203	3.19	12.08	462	1749	2504	176	76,800	34,836	145	652	750	559
6	152	8	203	2.94	11.13	426	1613	2717	191	76,800	34,836	145	652	750	559
5½"	140	8	203	2.47	9.35	358	1355	3233	227	76,800	34,836	145	652	750	559
5	127	8	203	2.04	7.72	296	1120	3912	275	76,800	34,836	145	652	750	559
4½"	114	8	203	1.65	6.25	240	908	4830	340	76,800	34,836	145	652	750	559
4	102	8	203	1.31	4.96	189	715	5000	352	76,800	34,836	145	652	750	559