

**NORDIC CALISTA
RIG 3 INVENTORY**

Derrick:

- DRECO Jack knife, Model M-133-18700-142'
- Hook Load: 464,000 lbs w/ 10-line string up
433,000 lbs w/ 8-line string up
- Wind Resistance: 100 mph, no setback
80 mph w/ setback
- Racking Capacity: 16,000' x 4" drill pipe
- Deadline Anchor: SUPERIOR Model L075 for 1-1/8" line
- Belly board for small OD tubulars

Traveling Equipment:

- Traveling Blocks: 1 – MCKISSICK 250T, 5 x 36" sheaves grooved 1-1/8" line
- Hook: BJ Unimatic, 250 ton
- Links: BJ 108" x 2-1/4", 250 ton; 1 Set of 2-1/4" X 180", 250 ton elevator links

Drawworks:

- IDECO, Model 900 E, 900 hp rating, powered by GE 752 electric motor coupled to IDECO 3-speed transmission c/w makeup and breakout quick torque cylinders and 1 – BAYLOR DYNAMIC 5032 brake

Prime Movers:

- 3 – CATERPILLAR, Model 3512, DITA, 1102 kw each
- 3 – CATERPILLAR, SR4 generators, 600 vac, 1750 kva each
- IPS Model 1500, SCR and generator control drilling system

Rotary Equipment:

- 1 – COOPER CR, Model 27.5" rotary table w/ 17.5" Table Bushings
- 1 – TESCO 1,000 HCI Hydraulic over electric 500 ton rated Top Drive
Max. Break out Torque 49,395 ft lbs
Max. Make up Torque 43,906 ft lbs
Drilling Torque: High 21,000 ft lbs @ 140 rpm
Drilling Torque: Low 39,000 ft lbs @ 80 rpm
- 1 – Electric over hydraulic power unit rated at 1000 hp continuous
- 1 – Torque Arrest System
- 1 – Gardner Denver SW400 Swivel

Mud System: Pumps

- 2 – CONTINENTAL-EMSCO, F-1000 hp, w/ 5,000 psi pressure rating F-1000 Triplex Pump Performance Data

Liner Size and Pressure Rating

Strokes per Minute	Horsepower Rating	5-1/2" 3,750 psi	5" 4,330 psi	4-1/2" 5,000 psi
140	1,000	435	357	289
130	929	404	331	268
125	893	388	319	254
120	857	373	306	248
110	786	342	280	227
80	571	248	204	165
60	429	186	153	124
Gallons per Revolution		3.09	2.55	2.07

Table is based on 100% volumetric efficiency and 90% mechanical efficiency.

- Powered by GE Model 752 DC motor
- 5-1/2" swabs/liners included
- Pumps can be operated continuously at no more than 85% of published pressure rating and 90% of published strokes per minute rating (125 strokes per minute)
- Pulsation dampener, HYDRIL K-20, 5000 psi

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- Relief Valves, OTECO – 3”, 5000 psi

Mud Pits:

- 4 – 175 bbl working pits
- 1 – 40 bbl pill pit
- 1 – 50 bbl trip tank
- Total surface capacity – 700 bbl
- 4 – Swaco agitators, 15 hp
- 1 – Lobe star shear mixer, 1000 gpm
- Low pressure mud line including 12 jetting guns and surface guns
- 2 – MISSION 75 hp mixing pumps, 5” X 6”
- 2 – MISSION 75 hp transfer pumps, 5” X 6”
- Compartment equalizers
- Sunken suction
- Clean-out line, 3” X 4”
- 5 Flow Line Jets
- Vacuum cleaning system for oil-based muds

Solids Controls:

- 2 - SWACO Mongoose-Pro shale shakers
- Ability to install rental centrifuge on rig for additional solids control at client's request

Degassing Equipment:

- SWACO compact 900 GPM Vacuum Degasser
- 42” POOR BOY Degasser to allow gas venting
- Ventilation system, automatic exhaust fans

Manifolds:

- 2 – 4” 5000 psi mud lines to mud manifold consisting of 11 – 4” and 3” BAKER valves and 1 – CAMERON 2” H2 choke
- Valves – BAKER 4” x 3” – 5000 psi c/w 1 – CAMERON H2 bleed valve
- 1 – 4” Standpipe and Kelly hose (Top Drive)
- 1 – 3” Standpipe (Service Line)
- 1 – 3” Reverse Circulating Line

Rig Tank Capacities:

- 1 – 80 bbl boiler blow down tank (single wall, portable)
- 1 – 180 bbl cuttings tank (single wall, portable)
- 1 – 9800-gallon ULSD fuel capacity, double-walled tank
- 1 – 5000-gallon LSD fuel capacity, double-walled tank
- 200 bbl fresh water tank
- Independent BAYLOR DYNAMIC and brake flange cooling tank

Fire and Safety:

- 13 - 20# ABC Low Temperature Fire Extinguishers
- 1 - Carbon Dioxide Fire Extinguishers
- 2 – First Aid Kits
- 1 – JACOBS Stetcher with trauma blanket and straps
- 2 – ANSI-Compliant Eye Wash Stations
- 1 – ANSI –Compliant Emergency Shower
- 3 – Fixed LEL, H2S & O2 Monitors
- 1 – Portable 4-Gas Meter

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- 8 – SCBAs with cases and 30-minute bottles
- Compliant Fall Protection Systems, effective for all scopes of work
- Compliant Eye Protection, appropriate for the scope of work
- Compliant Ear Protection, appropriate for the scope of work and measured noise levels
- Chemically-Resistant Aprons and Gloves
- Flame-Retardant Clothing
- 6 – Respirators (organic vapor, dust particle masks, welders)
- ANSI-Compliant Hard Hats
- Confined Space Air Blower
- Compliant Electrical PPE for Permitted Work and Testing
- Compliant Welder PPE
- Flammable Liquids Storage Cabinets

Substructure:

- Maximum capacity: 700,000 lbs with 400,000 lbs on table, and 300,000 lbs set back
- BOP dual hoist handling system, rated 30 ton with two lift plates
- 1 – PULLMASTER M-10 hydraulically operated winch
- 1 – BRADEN BG6 hydraulically operated man winch
- INGERSOLL RAND K5U air winch
- Doghouse and change house
- Hydraulic catwalk, pipe skate, and pipe racks
- 2 – Hydraulic pipe elevators
- 2 – SULLAIR air compressors
- 10 - 40' X 8' rig mats included to support rig structure when required
- Ability to rig up a wirelines lubricator on the rig floor

Well Control Equipment:

- 1 – 13 valve CAMERON choke manifold, 3” – 5000 psi w/ CAMERON 2” manual choke full H2S trim, w/ 3” – 10,000 psi TRIFLOW hydraulic choke and actuator panel, w/ annular and drill pipe pressure sensing, and stroke counter and totalizer
- 1 – HYDRIL 160 gallon, 6 station accumulator w/ dual electric and air pumps, w/ electric over hydraulic remote unit at driller station. Manufactured in accordance with API RP 53, complies with current AOGCC regulations.
- 1 – CAT model 3507 9 gpm @ 5000 psi BOP test pump
- 3 – 3” 5M CAMERON gate valves to suit drilling spools
- 2 – HCR valve, 3” – 5000 psi on drilling spool
- 1 – 3-1/2” EUE 5000 psi FOSV

Blow Out Prevention Equipment:

Diverter System

- 1 – 21-1/4” HYDRIL 2,000 psi WP MSP annular preventer
- 1 – 21-1/4” – 2,000 psi WP diverter spool with 1 – 16” outlet
- 1 – 16” 150# hydraulic knife gate valve
- 1 – 16” heavy wall wear sleeve – 6’
- 1 – 16-3/4” – 2M X 21-1/4” – 2M double-studded adapter flange
- 80’ 16” 300# diverter lines (4 pieces) , including studs and gaskets

11” 5,000 psi Blow Out Preventer Stack consisting of:

- HYDRIL type GK annular, studded top and flanged bottom
- HYDRIL Type V double gate, flanged top and bottom
- Drilling spool, flange x flange w/ 2 ea. 3-1/8” flanged side outlets

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- HYDRIL type V single gate
- Pipe rams sizes and quantity; CSO (Blind), 2-7/8", 3-1/2", 4", 4-1/2", 5", 5-1/2", 7", 7-5/8"
- 1 set of variable bore rams: 2-7/8" – 5" VBR
- 1 ea. 30' BOP skid for above items

Note: Blind shear rams not included. Ram BOP in compliance with NACE requirements, API standard 16A Rev. 1, current inspection by API Q1 Certified shop. Complies with current AOGCC regulations.

Instrumentation:

- 1 – GENERAL MONITOR Gas detection, 4-station, 2/ methane and H2S sensors, and alarms/exhaust system
- 1 – HITEC line scale weight indicator
- 1 – HITEC hydraulic weight indicator, 8 or 10 line
- 1 – HITEC connection torque gauge
- 1 – PASON flow show indicator w/ pit volume indicators and loss/gain alarm
- 1 – PASON PVT system. (Internet connectivity not included)
- 1 – Crown Saver
- 1 – GAITRONICS rig phone communication system to 8 locations

Electrical:

- 3 – Motor Control System, including 1 IPS SCR system, 1,500 amp, 600 vac, 4-bay
- ALLEN BRADLEY MCC
- ALLEN BRADLEY Switch Gear
- IPS Rotary Torque/Amp Indicator
- NRL 4' emergency rig exit lighting

Handling Equipment:

Elevators:

- 1 – MW-TA tubing elevator, 100 ton, 2-7/8"
- 1 – MW-MAA tubing elevator, 150 ton, 3-1/2"
- 1 – MW-YT slip-type tubing elevator, 75 ton capacity with slip assemblies, 2-7/8" – 3-1/2"

Slips:

- 1 – CAVINS Model F, 400,000 lbs air operated slip and spider, 3-1/2" to 5"
- 1 – MW rotary slips: 2-7/8" X 4-1/2", 3-1/2" X 4-1/2"
- 2 – VARCO safety clamps

Tongs:

- 2 – FOLEY Type 1200 Rotary Tongs with Jaws from 2-3/8" to 7-1/4", 35,000 ft-lbs torque rated
- VARCO SSW-30 drill pipe spinner
- 1 – ECKEL Model 5-1/2" HSVS tubing tong with hydraulic backup capacity 2-3/8" to 5-1/2", maximum torque – 20,000 ft/lbs.

Hydraulic Catheads:

- 2 – TRI-SERVICE Universal Cobraheads, 9 tons or similar, with pull capacity to make-up and break-out 2-7/8", 3-1/2", and 5" drill pipe connections

Winterizing and Heating:

- 2 – CLEAVER BROOKS boilers, 80 hp with blow down tank
- 1 – DICKS air heater, 4.2 mm BTU

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- 10 – Roughneck heat exchangers
- 1 – Glycol heat recovery system
- Completely winterized for arctic winter conditions

Vehicles:

- 1 – Crew Van, 1 – Rig Manager’s Truck
- 1 – Loader, CAT 950 loader or equivalent with forks, extensions, snow bucket and stinger.

Spill Containment:

- All motors and hydraulic units equipped with oil catch pans (drip trays)

Moving System:

Nordic-Calista Rig 3 is a single module, self-propelled unit capable of moving at 2.0 miles per hour.

Pad to Pad Move, 10 mile move generally takes 10 hours from rig release to rig accept.

Well to Well Move time same pad, average time is < 3hours.

The moving system consists of:

- 8 – 40:00 X 57 ties and axles with 22” X 32” hydraulic jacks, all driving and steering.
- 16 - 18:00 X R33 support ties with 8 – 10” X 36” hydraulic jacks in a booster system. Booster tires are following the main ties while being steered.
- Capable of moving well to well on the same pad with 100,000# of drill pipe or tubing racked in the derrick.
Note: during frozen pad conditions only.
- Capable of moving pad to pad with the 13-5/8” BOP racked back in cellar, BOP normally removed for summer moves.
- Rig module weight is 2,680,000 lbs with a ground loading of approximately 110 psi.