Husky Oil Operations Limited

707 8th Avenue S.W.
Box 6525, Station D
Calgary, Alberta, Canada
T2P 3G7

Bus: (403) 298-6583
Fax: (403) 298-7133

June 23, 2008

Chief conservation Officer
National Energy Board
411 Seven Avenue SW
Calgary, Alberta T2P 0X8

RE: Final Well Report
Husky et al Keele River L-52

Dear Sir

Attached please find Final Well Report for well Husky et al Keele River L-52 prepared as per requirement of Canada Oil and Gas Drilling Regulations.

Following documents are submitted:

Husky et al Keele River L-52 Final Well Report includes well drilling operations summary, directional survey, Time analysis, final well status, daily drilling report, daily drilling fluid report and relevant information.

Well Geology report (attachment E-8 to the Final Well Report)
Well Strip log
Mud logging Log
Digital copy of the Final Well Report and Strip log.

For any clarification or information please contact myself or Goly Zilabi.

Yours truly,
HUSKY OIL OPERATIONS LTD

Kim Richardson
Drilling Superintendent NWT

HUSKY ET AL KEELE RIVER L-52
FINAL WELL REPORT

NWT- NEW FIELD WILDCAT
TIGHT HOLE

JUNE 2008

ABSTRACT

This final well report covers drilling operations, Geology, evaluation and abandonment of the Husky et al Keele River L-52 Exploration well drilled in NWT during winter of 2008.

Prepared by Senior Drilling Engineer
G. Zilabi, P.Eng.

AMENDMENTS AND REVISIONS

Revision	Description	Date	Originator	Reviewed by
Initial Draft	Issue for Approval			

DISTRIBUTION LIST

copy	Addressee /position	Copy format
1	Mike MacKinnon Manager – Drilling West and NWT	PDF
1	Kim Richardson Drilling Superintendent	PDF
1	Goly zilabi Drilling Engineer	PDF
1	Wayne Dwyer Operations Geologist	PDF
1	John James Technology and Performance Manager	PDF
1	Ken Hansen NWT Exploration Geo science Manager	PDF
1	Louise Klatzel-Mudry NWT Exploration Geologist	PDF
1	Ian Zapfe-Smith NWT Exploration Petro physicist	PDF
1	John McCrossan NWT Exploration Geo physicist	PDF
1	Calgary office central file	Hard copy
1	International Frontier	Hard copy
1	Pacific Rodera	Hard copy
2	The NEB	2 hard copy+ pdf

LIST OF REFERENCES

This document is prepared with reference to the following documents:

- Canada Oil and Gas Drilling Regulations (SOR/79-82)
- Keele River L-52 Geology report
- Keele River L-52 well file (Drilling reports)

TABLE OF CONTENTS

A WELL INFORMATION

A.1 WELL SUMMARY

Husky et al Keele River L-52 was drilled by Husky Oil Operations Limited in Sahtu region of NWT on Crown Land, within Exploration Licence 423 (EL423). Access to the project area crossed EL423, EL443 and a combination of Crown land and First Nations land with surface and/or subsurface rights during the winter of 2008. Working interest of the project partners is as follows:

Husky Oil Operations Limited: 75%

International Frontier Resources Corp.:15%

Pacific Rodera Energy Inc: 10%

The program area was located approximately 120km SSW of the Hamlet of Tulita within the foothills and eastern slopes of the Mackenzie Mountains. The locations have been selected based upon a review of the Summit-Redstone 06-1 Seismic Program that was acquired during the summer of 2006.

Well Keele River L-52 is located at the surface coordinates of:

Latitude: 64°01'30.159"N , Longitude: 124°56' 07.308"W (NAD 27)

Overland travel to the program area utilized the Government of the Northwest Territories (GNWT) winter road to an access point approximately 14km north of the Blackwater River. From there access to the locations was via 9 km winter ice road to the eastern bank of the Mackenzie River, an ice bridge across the Mackenzie River downstream from the confluence of the Dahadinni River, 41 km winter access road from the western bank of the Mackenzie River to the Redstone River, and 5 km From the Redstone River to L-52 drilling location

Well site &Ice pad was built as per program.339.72mm conductor pipe was installed and cemented at 26m below the ground level(30m KB) in East Fork formation. Rat hole rig was used for setting the conductor pipe and cemented by Schlumberger cementing.

Rig Akita 14 was mobilized to the well site and spud on 16:00 March 6th, 2008

311mm surface hole was drilled to 252m across East Fork formation with Gel/Chem. mud. 244.5mm casing was run to section TD and cemented with return to surface.

215.9 mm main hole was drilled to 531m in Little Bear formation. Cut core from 531 to 540.5m. Drilled to well TD at 895m in Slater River formation. Well was drilled vertically. Inclination at 884m was 1.5 degree.

Water based polymer mud was used to drill main hole. Mud weight was 1100 kg/m^3 at well TD.

At well TD, ran wireline Logs. Due to lack of hydrocarbon evidence testing program was cancelled.

177.8mm casing was ran to well TD and cemented with return to surface. A permanent bridge plug was set at 50m and cement plug was set across top 50m of 177.8mm casing. Casing Bowl was removed and well was abandoned as per Canada Oil and Gas Drilling Regulations. Well operations completed at 24:00 March 21st, 2008 and rig was released. Rig was completely out of area on March 22nd 2008,

Drilling operations was performed as per Canada Oil and Gas Drilling Regulations (SOR/79-82) with very good safety performance. Drilling and environmental inspections was performed by the NEB and rated satisfactory.

A.1.1 WELL SUMMARY DATA

Well name	Husky et al Keele River L-52
Province /Territories	North West Territories
Operator	Husky Oil Operations Limited
AFE number	US-28423
Well Classification	New Field Wildcat
Block /Prospect	EL423 /North Haywood
WID	2052
UWI	300L526410124450
Proposed Final Depth (Meas./TVD)	830m
Well Profile	Vertical
Surface Coordinates NAD 27, UTM zone 10	Lat. 64°01'30.159"N Long. 124°56' 07.308"W
	Seismic Line: H06-268, Trace: 259
Ground Elevation	309.7 m
KB Elevation	313 m
Drilling Unit	Rig Akita 14
Spud date	March 6, 2008
Rig Release date	March 21, 2008
Well Total Depth	895m MD (895m TVD)
Planned Days /Actual Days	15 days /15 days
AFE amount /Actual	$ 9,000,000 /+/- 10,000,000
Final Well Status	Abandoned

A.2 PROJECT SET UP& GENERAL OVERVIEW

A.2.1 SUPERVISION AND PERSONNEL

- Calgary office multi disciplinary project team including a drilling superintendent, a drilling engineer, a geologist, a geophysicist, Testing superintendent, construction supervisor, procurement advisor and administrator was dedicated to the project from the conceptual design to the end of project execution.
- Onsite supervision was under the direction of a Senior Drilling Supervisor reporting to Husky Oil Operations Limited head office in Calgary. There was also a Night Drilling Supervisor to allow 24 hour direct supervision of all drilling operations...
- Husky construction& logistics project manager managed logistics, access road maintenance, base camps operations, transportations and related services.
- There was a full time safety advisor and medic on the site.
- A geologist was onsite from spud to rig release with support from a full operational mud logging team...
- Full time drilling fluids engineer was on the project site, providing service to well Dahadinni B-20 and well Keele River L-52 drilling fluid.
- Drilling waste supervision was implemented by full time technician on the project site. Providing service to well Dahadinni B-20 and well Keele River L-52 drilling fluid.
- Full time mud logging team was on the site
- H2S service including full time technician was on the site from spud to the end of the well.
- Drilling contractor, Akita/Sahtu, provided a full time rig Manager onsite Rig crew of minimum 6 will be kept on the site.
- Specialized services personnel mobilized as required.

A.2.2 SERVICE PROVIDERS

SERVICE	Supplier	TELEPHONE
Drilling Contractor Rig Akita- 14	Akita/Sahtu Drilling Ltd - Nisku	(780) 955-8746 (403) 292-7966
Onsite Medical	EMS-Sahtu	(403) 291-3184
Camps	Caribou Camps	(403) 266-5647
Catering	Bushmaster	(867) 588-3503
Environmental / Drilling waste management	Northern EnviroSearch Ltd.	(403) 543-5353
Lease/Field Survey	Challenger Geomatics	(403) 660-6661
Lease and Road Construction	Hodgson Contracting	(867) 587-491
Rig Moving	Transco Energy Services / Red Dog Mountain Contracting	
Helicopter Support	Sahtu Helicopters Canadian Helicopters	(867) 588-4988 (867) 777-2424
Fixed Wing Aviation	North-Wright Airways Ltd.	(867) 587-2333
Communications (Rig Phones, Satellite)	Aurora Communications	(867) 587-2634
Fuel	NTCL – Hay River	(867) 874-5125
Rathole Rig	Cancor	(250)-787-5555
Casing Bowl & Wellhead	Stream-Flo Industries	(780) 468-8520
Drilling Fluids	Newpark Drilling Fluids	(403) 266-7383
Cementing	Schlumberger Norman Wells	(867) 587-2645
Mud Logging (Mud Gas Logging)	Continental Laboratories	(403) 250-5125
Openhole Logging	Schlumberger	(403) 509-4000
Casing	TSS	1-800-340-1176
Float Equipment /Stage tool	Import Tools	(403) 261-3032
Power Tongs	FI Canada	1-888-300-1996
Pressure Testing	Big Eagle	(250) 787-7149
Drill Bits	Smith Bits /Hughes	(403) 264-6077
Coring	Baker Hughes Inteq	(403)537-3461
Centrifuges	APEX	(403) 257-5152
Jars/Shock Subs	Baker Hughes Inteq	
Vertical drilling	Baker Inteq	(403)537-3461
Fishing Services	Weatherford	(403) 269-7788
Production Testing Surface Equipment	Weatherford-	(403) 264-9700
Drill Stem Testing Down hole	Baker Oil Tools	(403) 537-3400

A.2.3 PROJECT MOBILIZATION

Project mobilization started in October 2007 by barging access road construction machinery, and access road construction commenced Mid November 2007. Project plan was to have the access ice road west of Mackenzie river and well site pad ready mid January 2008.

Reference to previous years record of Government of North West Territories winter access road from South, it was planned to move the rig during second week of February 2008 and spud the well L-52 on February 15th 2008 to maximize the time window available to drill, evaluate well L-52 and demobilize the rig and project.

Due to warm winter, main project access road construction was delayed, As the well B-20 was deeper well, priority was give to well B-20 access road and well site construction, In addition to this, difficulty was experienced in L-52 access road route construction. As the result Keele River L-52 access road and well site construction was completed end of the February, Rig Akita 14 was moved to the project and Spud the rig on March 6th 2008.

A.2.4 ACCESS ROAD

- Refer to attachment E_5 Access road map
- Machinery for access road construction was barged to the Birch Island staging area at West side of Mackenzie River before the ice season. Helicopter service out of Norman Wells was used to access the project.
- Overland travel to the program area utilized the Government of the Northwest Territories (GNWT) winter road to an access point approximately 14km north of the Blackwater River. From there access to the locations was via 9 km winter ice road to the eastern bank of the Mackenzie River, an ice bridge across the Mackenzie River downstream from the confluence of the Dahadinni River, 41 km winter access road from the western bank of the Mackenzie River to the Redstone River, and 5 km From the Redstone River to L-52 drilling location.
- Air transport to the program area was by plane from Norman Wells to airstrip on the Cloverleaf Lake. At the start of the project helicopter service out of Norman Wells was used to access the project.

.

A.2.5 WELL SITE

- 135 m x 135 m. ice pad (0.2 m thickness) was made at the well site to support the drilling rig.
- A 2.4 m diameter corrugated steel cellar was dug into the ice pad and frozen permafrost below the natural ground level and grouted in place.

A.2.6 DRILLING RIG

Rig Akita 14 was mobilized to drill this well. Rig performed as per well program requirement. Rig 14 was equipped with second mud pump for this project.

Refer to attachment E_4 rig specifications & layout

A.2.7 CAMP

The L-52 drilling location was equipped with a 30-person camp sited at project staging area.

5 well site trailers were stationed at the well site to accommodate personnel on-site during the drilling operations.

A.2.8 WATER SUPPLY

Water required for ice bridge construction, road and lease construction, camps and drilling operations. Mackenzie River, the Redstone River and Cloverleaf Lake have been approved for implementation of this program. Water intakes were as per the current Department of Fisheries and Oceans (DFO) Protocol.

Drinking water was transported to the project area. Domestic water supply (camp wash water, showers, and toilets) was treated prior to use.

A.2.9 WASTE DISPOSAL

- Freshwater based gel-slurry and polymer water systems and rock cuttings was mixed, buried and covered in L-52 drilling sump. Environmental liners were utilized to ensure containment of the drilling wastes**.** Total of 517 m^3 of water based, drilling waste deposited in the sump for mix, bury and cover disposal
- Cement return from surface casing buried in cement sump besides drilling fluid sump,
- Black water and grey water: on-site (camp) portable waste treatment units discharging treated effluent to the land surface.
- Northern EnviroSearch Ltd (NESL) provided drilling waste management service supervision for this project. Full time technician was at the full site during. Refer to attachment E_6 drilling waste disposal report for detailed drilling waste disposal report.

A.2.10 SAFETY AND INSPECTION

- Husky North Haywood project had site specific emergency response plan.
- NEB performed drilling and environmental inspection of the drilling facility on well L-52 on March 12, 2008. Inspection was rated satisfactory. Husky implemented corrections recommended by the NEB. Refer to attachment E_7 neb inspection reports
- Incidents were reported as per regulatory requirement.

B WELL RESULTS

B.1 WELL RESULT

B.1.1 WELL OBJECTIVE

Well Keele River L-52 was planned to drill entire Little Bear formation into the Slate River formation. Well objective was to evaluate Little Bear formation.

Well L-52 location drilled into East Fork, Little Bear and Slater River as per prognosis.

Core was cut in the Little Bear sandstone from 51m to 540.5m. Drilled to 895m well TD and performed reservoir evaluation logging and wireline pressure and sampling which proved water bearing layers Due to lack of hydrocarbon, Testing program was cancelled.

Refer to E_9 well Keele River L-52 planned stick diagram for well objectives and well design.

B.1.2 GEOLOGY

Refer to Geology report E_8 geological report

B.1.3 EVALUATION

Refer to E_8 geological report for detailed Geological report.

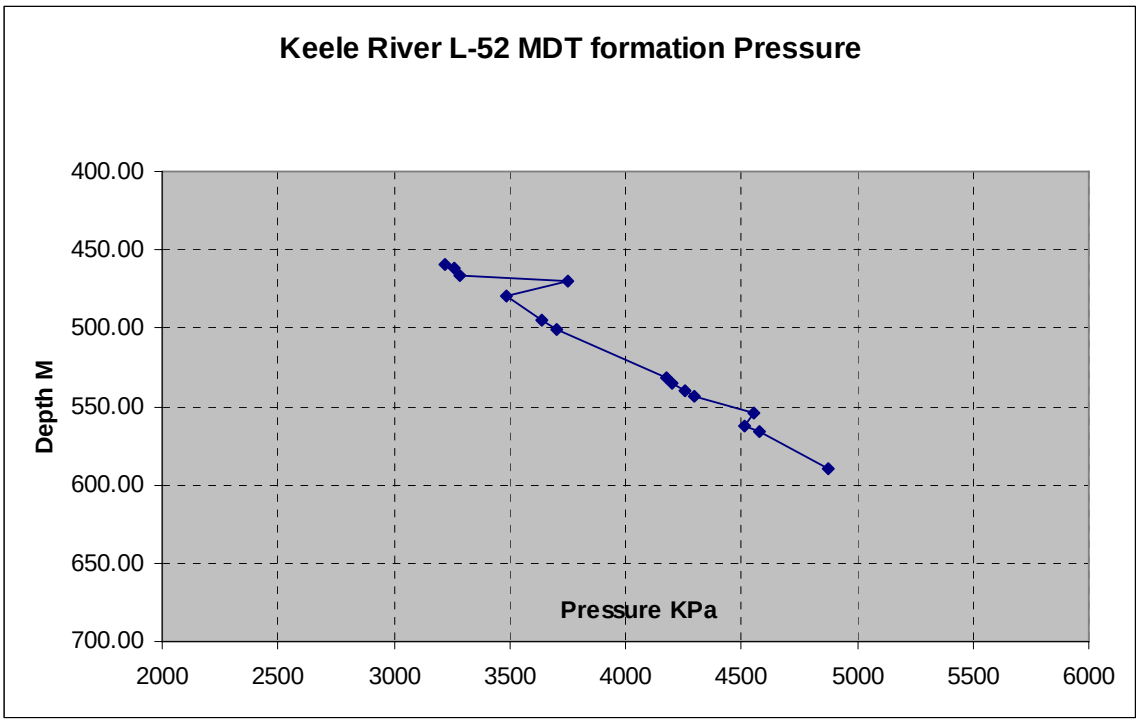
Cutting Sample	Husky NEB GSC	➢ 1 set: 5 m intervals from 30m to section TD, washed & vialed
	NEB	➢ 1 set: 5 m intervals from 30m to TD, unwashed & bagged (500g)
Mud Log		Full Spectrum Gas Chromatograph From 30m to 895m well TD
Log	Main hole 252-895m	➢ Log 1 : FMI DSI PPC HNGS ➢ AIT TLD HGNS CMR+ ECS TLD2 GR ➢ TLD HGNS CMR+ PPC (fluid typing) ➢ MDT/ GR ➢ Water sample was recovered by MDT ➢ No evidence of hydrocarbon.
Core		Core was cut from 531 to 540.5m (100% recovery)
DST		Testing service was planned and mobilized to the wellsite. Due to no evidence of hydrocarbon, no test was performed.

B.1.4 RESERVOIR FLUIDS, PRESSURE & TEMPERATURE

Reservoir evaluation was performed by wireline logging. Wireline Modular Dynamic Tester (Schlumberger MDT), pressure and sample proved presence of water in the main hole. There was no evidence of hydrocarbon, thus no DST was performed.

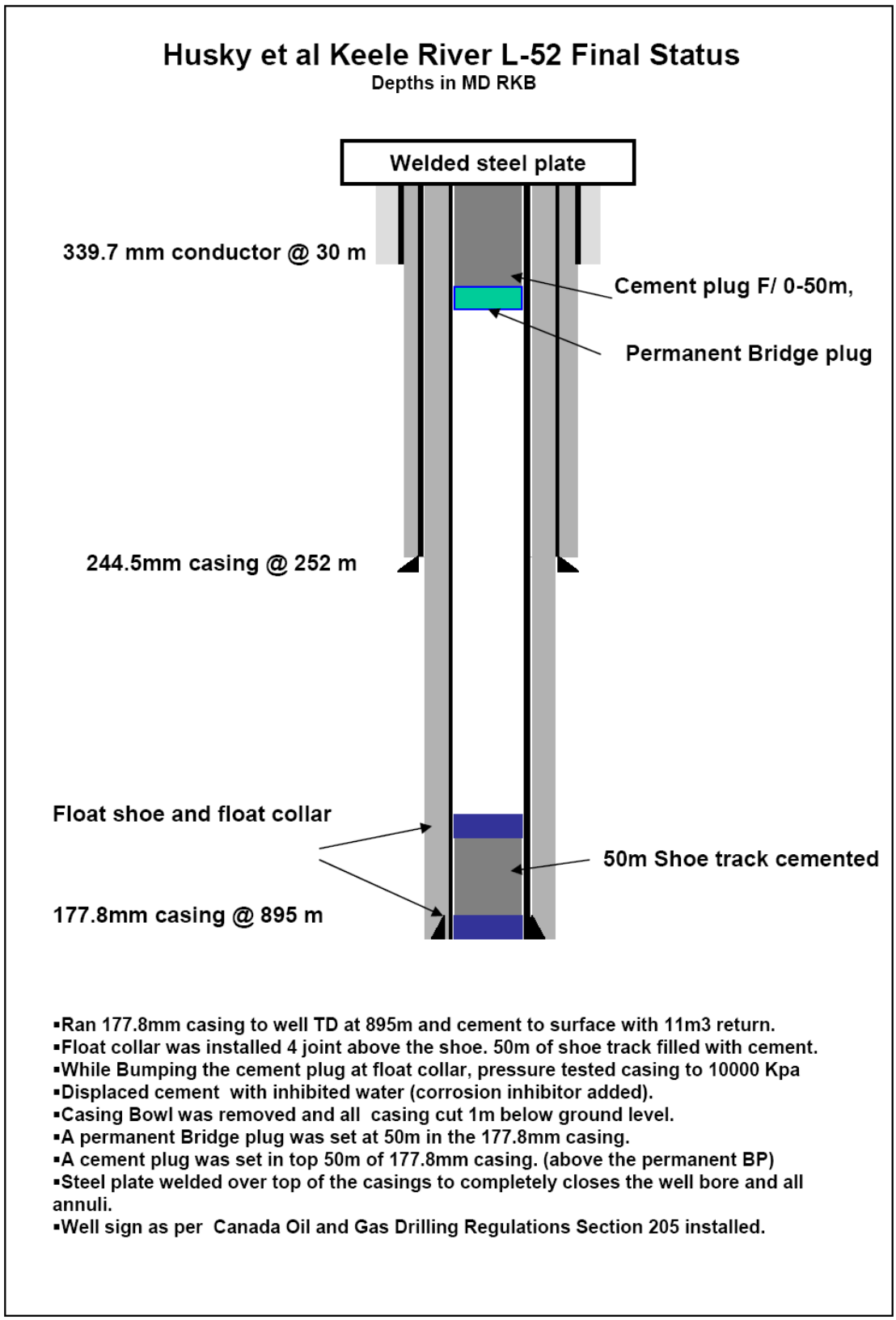
Following graph shows the pressure gradient reading across Little Bear formation. Maximum pressure reading was 4874 KPa at 589m.

Maximum bottom hole temperature recorded while logging was 32 degree C at 885m

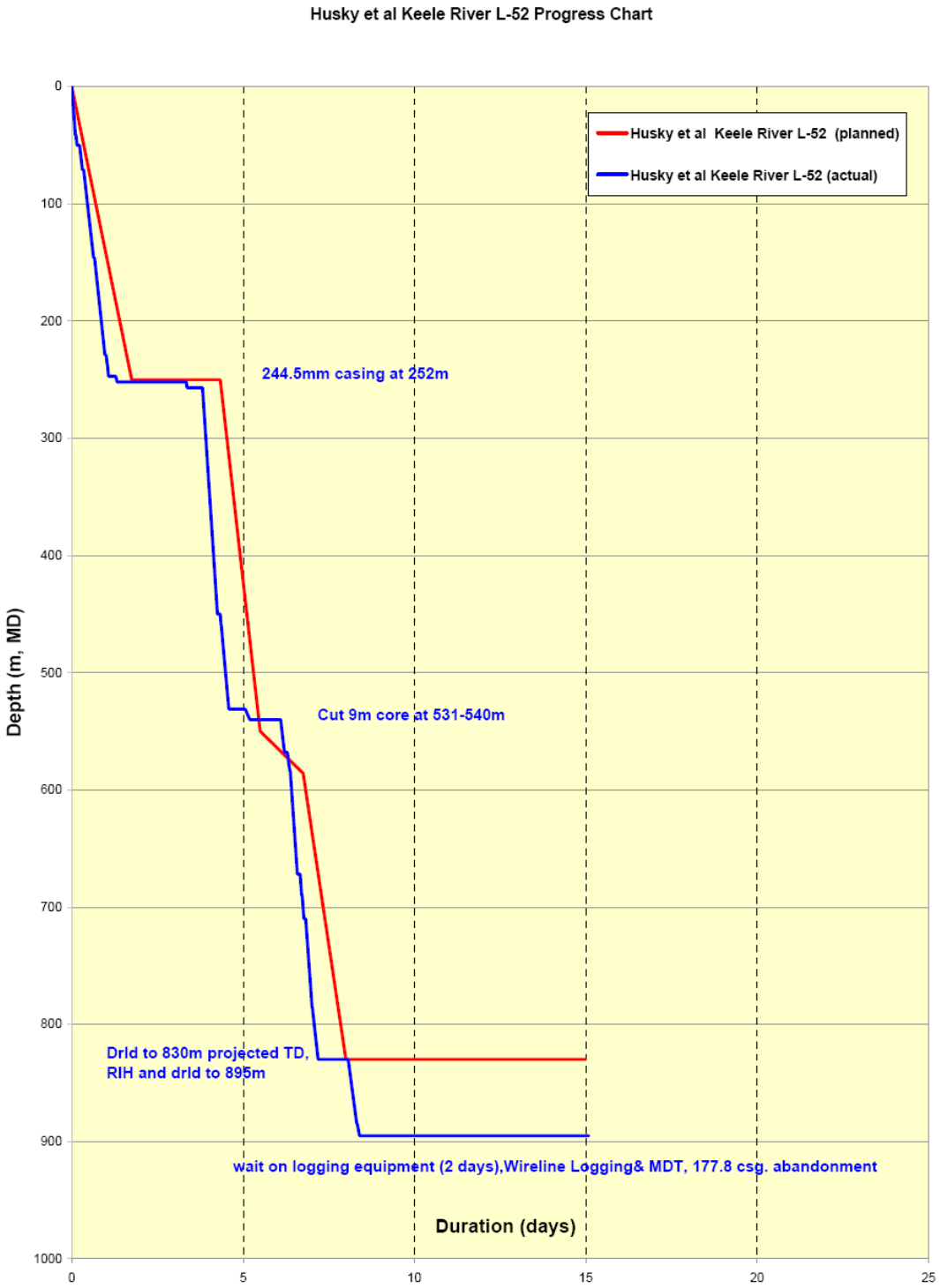


B.2 FINAL WELL STATUS

For detail abandonment operations refer to section C.4.10 abandonment



B.3 TIME VS DEPTH CURVE



C WELL CONSTRUCTION

C.1 WELL SITE

- Size of the well site is 135 m x 135 m. ice pad (0.2 m thickness) was made at the well site to support the drilling rig
- A 2.4 m (8 ft) diameter corrugated steel cellar dug into the ice pad and frozen permafrost, one meter below the natural ground level and grouted in place.

C.2 CONDUCTOR PIPE 508 MM

C.2.1 INSTALLATION

- Conductor was set by Rat Hole Rig provided by Cancor Rathole.
- Permafrost thickness was 5m at this location.
- 411 mm vertical hole drilled to 26m below the ground level. Ran 339.72mm 90.76 kg/m , K-55 casing was installed.
- Pressure cemented with 8 m^3 (10.24 tons) of Arctic Set cement with returns to surface.
- Top of the 339.72mm conductor pipe was cut above the level of the ice pad and 346mm, 21,000 Kpa Diverter was installed. Refer to attachment E_3 well control set up

C.3 SURFACE HOLE 311 MM SECTION (30-252m)

C.3.1 SECTION OVERVIEW

311mm Surface hole was drilled vertically with pendulum assembly to 252m in East Fork formation using a Gel/Chem drilling fluid. 244.5 mm surface casing set at 252m and cemented with cement return to surface .

No Logs was run in this section.

No hydrocarbon bearing zone encountered in this section. Diverter system was installed for drilling this section.

C.3.2 SURFACE SECTION SUMMARY

	Remarks
Well Control	346 mm, 21,000 Kpa Diverter was installed. Refer to attachment E_3 well control set up
H2S Service	As the well was exploration H2S service including H2S detector and air package and full time technician was operational from spud to the end of the well.
Drilling	Drilled 311mm section with Pendulum assembly to 252m
Drilling fluid	Water based Gel/Chem mud. MW increased while drilling to 1120 kg/m3 at section TD. Refer to C.3.4 surface hole drilling fluid and attachment E_11 daily drilling fluid reports
Bit& BHA	Refer toC.3.6 Drilling parameters& Bit &BHA (311mm surface hole section) for detailed bit & BHA and drilling parameters.
Formation	Permafrost and East Fork at surface Refer to E_8 geological report
Mud Logging	Mud logging service was utilized from surface to well TD.
Hydrocarbon show	No Hydrocarbon show
Hole stability	No Hole stability issue
Hole deviation	Well drilled with vertically and surveyed by Totco. Inclination was 0.5 deg at 237m. for detailed directional drilling and well surveys refer to attachment E_2 directional survey
Lost of Circulation	No Losses
Casing	244.5mm casing ran to252m and cemented with return to surface. 100% excess cement was used on the gauge hole size and 8m3 cement returned to surface. Refer to C.3.7 and C.3.8 for casing and cement detail

C.3.3 LESSON LEARNED

Operations	Remarks
Vertical Drilling	Seismic showed no dipping formation at this site, to control deviation while drilling 311mm surface hole with 177.8mm &152 mm DC, 308mm stabilizer was installed two joints from bit. Inclination at 237 m was 0.5 degree. and E_2 directional survey

C.3.4 DRILLING FLUID

Refer to attachment E_11 daily drilling fluid reports for detailed mud properties and chemical consumption..

Spud the 311 mm hole section with water treated with Soda Ash. Increased viscosity with Gel. MW increased during drilling to 1100 Kg/m^3 at section TD. Pumped sweeps for hole cleaning and controlled MW and solids by running centrifuge.

The following are the mud parameters:

Mud Parameter	
Mud Type	Gel /Chem
Density (kg/m^3)	1020 – 1120
Viscosity (sec/liter)	40-75
PV (mPa-sec)	7
YP (Pa)	3.5
Gel Strengths 10sec / 10min	3/5
Fluid loss (cc)	12
pH	8

C.3.5 DIRECTIOANL SURVEY

- Drilled from 30m to 252m with pendulum BHA and survey the well with Totco
- Entire section was drilled with inclination less than 1.25 deg. Inclination at 237m was 0.5 degree. Refer to E_2 directional survey for well survey.

C.3.6 DRILLING PARAMETERS& BIT &BHA (311MM SURFACE HOLE SECTION)

Bit No/ Run	Size (mm)	Make/ Type	IADC Code	TFA (in²) Nozzle (mm)	MD In/ Out (m)	Total Drilled (m)	Rot Hours	ROP m/hr	WOB KdaN	RPM	Pump output (m^3)	Pump press (KPa)	Mud Wt Kg/m^3	Bit condition	Remark
1	311	Hughes GTCS1	117	/19.1/19.1/19.1	30/252	222	22.25	10	2-6	120-180	2	4000	1120	4-3-FC-A-E-1-BT-TD	Drilled out Conductor and entire surface hole to 252m
BHA: 311mm Bit+Bit sub (w/float)+2 x 177.8mm DC+308mm stabilizer+ 1x177mm DC +X-over+5x 152mm DC+152mm Jar+3x 152mm DC+x-over+4x 121mm DC+ 101.6mm DP, Drilled with low WOB and high RPM to keep the well vertical. Deviation at 237m 0.5 deg.															

C.3.7 SURFACE CASING SPECIFICATION

Interval (m)		Size	Weight	Tubular	Thread	Pipe ID	Drift	Coupling
From	To	(mm)	(kg/m)	Grade	Type	(mm)	(mm)	OD (mm)
0	252	244.5	69.94 kg/m	L-80	LT&C	220.50	216.53	269.87

Casing Performance Properties						
Burst KPa	Collapse KPa	Pipe body yield strength daN	Joint strength daN	Make up Torque N-m		
				Min	Optimum	Max
47,350	32,750	483,000	397000	9200 N-m 6800 ft-lb	12250 N-m 9000 ft-lb	15300 N-m 11300 ft-lb

C.3.7.1 SURFACE CASING STRING DETAILS

Qt.	Length	Description	Centralization
1	0.54	244.5 mm Float shoe PDC drillable	
1	13.8	244.5mm Csg Joint	C-1 One Bow spring at 3m above the shoe (on stop collar)
1	0.49	244.5 mm Float shoe PDC drillable	
17	237m	244.5mm Csg Joint	C-1 One Bow spring per joint on the 2 joints above Float collar C-4 One every 4jts (50m) up to conductor (on the coupling)

C.3.8 SURFACE CASING CEMENT DESIGN

Type	Composition	Density/ thickening time	Volume	Remarks
Pre flush	Water	1000+ Kg/m^3	3 m^3	
Cement	Surface cement RFC 2% S001 Ca Cl_2 0.2% D 46 De-foamer	1740 Kg/m^3 Thickening time: 3 hrs	16.4 m^3 17.8tonnes 100% over gauge size	
NOTE: Mixed and pumped cement. Displaced with water at 1 m3. Full return during pumping cement and displacement.8 m^3 cement return to surface. Bumped the cement plug with 8000 KPa.				

C.3.9 CASING BOWL & BOP

After cementing 244.5mm casing. Waited on cement for 6 hours.

Nipple down diverter, cut the conductor and installed the Casing Bowl

Installed Streamflo casing bowl 11" (279.4mm) 3000 psi (21 MPa) x 9 5/8"" (244.5mm) slip-on bowl c/w two 2-1/16" 3000 psi (21 MPa) SSO and two lockdowns (PSL-2).

Tested casing Bowl weld to casing at 7000 KPa.

Installed 229mm, 21 MPa (9"-3000) BOP stack (Annular preventer, blind ram, 101.6 mm pipe ram,), Kill lines, Choke line, choke manifold,.

Pressure test BOP, and related lines and equipment with 1500 KPa low and 21000 KPa high. Tested annular perventer to 1500 KPa low and 10000 KPa high.

Tested Blind ram against surface casing to 1500 KPa low and 14000 KPa high. This was casing pressure test as well.

Pressure test stabbing valves, top drive valve as per program.

Big Eagle pressure tester provided the BOP pressure test service,.

C.4 MAIN HOLE 215.9 MM SECTION (252-895m)

C.4.1 SECTION OVERVIEW

Ran in hole with 216mm insert bit& slick BHA. Drilled out 244.5mm casing shoe track and drilled new formation from 252m to 257m.

Circulate hole, pulled to casing shoe and performed formation integrity test to14.6 KPa/m gradient. Hold 1200 KPa for 10 minutes. Refer to attachment E_1 Formation integrity test

Displaced hole with water/polymer mud, pulled out and ran 215.9mm insert bit& Baker Vertitrack. Drilled with 216mm section with Vertitrack to 531m coring point.

Core #1 was cut from 531 to 540m and recovered 8.8m core from Little Bear sandstone. Core#2 jammed after 0.5m due to incorrect alignment of inner plastic liner. Recovered 0.5m core.

Drilled with PDC bit& Baker Vertitrack. Drilled with 216mm section from 541.5 to 830m projected well TD in Slater River formation.

Decided to drill deeper in Slater River formation, drilled to 895m well TD.

Performed wireline logs and pressures&sample by Schlumberger MDT which proved water bearing.

Reached well TD with MW of 1095 kg/m^3 . It was increased to 1095 kg/m^3 due to hole bridge while logging.

Due to no evidence of hydrocarbon presence decision was made to abandon the well, 177.8mm casing was ran to well TD and cemented to surface with good cement return. Installed a permanent bridge plug at 50m and set cement plug across top 50m of casing. Casing bowl was removed, conductor and casings were cut 1m below the ground level and well was abandoned.

C.4.2 MAIN HOLE SECTION SUMMARY

	Remarks
Well control	229mm, 21 MPa (9"-3000) BOP stack (Annular preventer, blind ram, 101.6 mm pipe ram,) Refer to attachment E_3 well control set up
H2S Service	As the well was exploration H2S service and air package and full time technician was operational from spud to the end of the well.
Drilling	➢ Drilled 216mm section with Vertitrack from 257m to 830m ➢ Drilled with conventional assembly from 830m to 895 well TD
Drilling fluid	Water polymer. MW 1095 kg/m^3 at section TD. Refer to C.4.4 215.9mm section drilling fluid and attachment E_11 daily drilling fluid reports
Bit& BHA	Refer to C.4.5 Drilling parameters& Bit &BHA (216mm hole section)for detailed Bit& BHA report and drilling parameters.
Mud Logging	Mud logging service was utilized from surface to well TD.
Formations	Refer to E_8 geological report
Hydrocarbon show	No Hydrocarbon show .
Hole stability	No hole stability problem while drilling. During logging , tagged bridge at 780m top of Slater River formation, performed wiper trip and increased MW to 1095 kg/m^3 While waiting for logging it was reported slight flow at 12 litters per hour . Tripped in and wash the bridge at 780m No influx was detected at

	bottoms up
Hole deviation	No deviation problem. Vertitrack kept the deviation very low. . Refer to C.4.6 , and E_2 directional survey
Lost of Circulation	No Losses
Logging /coring /DST	➢ Total of 9.3m core was cut. ➢ Performed wireline logs and pressures&sample by Schlumberger MDT which proved water bearing. ➢ Due to no evidence of hydrocarbon DST was cancelled.
Casing	177.8mm casing ran to 895m and cemented with 11m3 returns to surface.. Refer to C.4.8 and C.4.9 for casing & cementing.

C.4.3 LESSON LEARNED

Operations	Remarks
Coring operations	Core#2 jammed after 0.5m, It was resulted from incorrect handling of plastic inner barrel by core technician, and Overheated the plastic liner while cutting it resulted to shrinkage after cooling down.

C.4.4 DRILLING FLUID

Refer to Drilling Fluid reports attachment E_11 daily drilling fluid reports for detailed mud properties and chemical consumption..

Water /polymer mud was used to drill this section, Reached well TD with MW of 1095 kg/m^3. It was increased to 1095 kg/m^3 due to hole bridge while logging.

Caliper log showed wash out across East Fork formation. Cement volume log showed 25% excess volume over the gauge size hole.

The following are the mud parameters range.

Mud Parameter	
Mud Type	Water/Polymer
Density (kg/m^3)	1020-1095
Viscosity (sec/liter)	45-70
PV (mPa-sec)	10-21
YP (Pa)	10-18
Gel Strengths 10sec / 10min	7/15
Fluid loss (cc)	6-8

C.4.5 DRILLING PARAMETERS& BIT &BHA (216MM HOLE SECTION)

Bit No/ Run	Size (mm)	Make/ Type	IADC Code	TFA (in²) Nozzle (mm)	MD In/ Out (m)	Total Drilled (m)	Rot Hours	ROP m/hr	WOB KdaN	RPM	Pump output (m^3)	Pump press (KPa)	Mud Wt Kg/m^3	Bit condition	Remark
1	216	Hughes GX-18	447	15.9/15.9/15.9	252/257	5	0.5	10	8	80	1.5	8000	1020	No grading. Very good	Drilled out surface casing and 5m of new formation
BHA: 216mm Bit+Bit sub +8 x 152mm DC + x-over+4 x 121mm DC. Drilled out 244.5mm casing shoe track. Drilled F/252 to 257m. Performed FIT, displaced with water/polymer mud															
1RR#1	216	Hughes GX-18	447	15.9/15.9/15.9	257/531	274	16	17.1	8-11	Slide 120	1.5	8500	1030	-2-NO-A-E-I-NO-CP	Drilled East Fork (sandstone&Shale) and Little Bear Sandstone from 450m
BHA:216mm PDC bit+ 171mm VertiTrak+Filter sub+Float sub+216mm Reamer+1x 152mm DC+PBL+7 x 159mm DC+152mm Jar+ 2X152mm DC + x-over+4 x 121mm DC+ + 101.6mm DP Drilled with Vertitrack to coring point at 531m. Very low deviation, less than 0.3 entire intervals . 0.05 degree at 527m															
2	171	Hughes C-22 core head			531/540	9	3.25	2.8	4	50	0.725	3000	1030		Recovered 8.8m core Plastic lined core barrel was used.
BHA: 171mm Core Head+ 9 m core barrel+152mm Jar+ X-over +10 x 152mm DC + x-over+4 x 121mm DC.															
2RR#1	171	Hughes C-22 core head			540/540.5	0.5									Core barrel jammed. Recovered 0.5m of core Failure was due to not correct installation of plastic inner barrel.
BHA: 171mm Core Head+ 9 m core barrel+152mm Jar+ X-over +10 x 152mm DC + x-over+4 x 121mm DC.															
3	216	M516 BHVPX	M223	5x16	540/830	290	20	14.5	4	Slide 120	1.5	9000	1050	2-2-NO-A-X-I-NO-TD	Drilled Little Bear sand and shale to 780m top of Slater River. Drilled to 830m projected TD,
BHA:216mm PDC bit+ 171mm VertiTrak+Filter sub+Float sub+216mm Reamer+1x 152mm DC+PBL+7 x 159mm DC+152mm Jar+ 2X152mm DC + x-over+4 x 121mm DC+ + 101.6mm DP Drilled with Vertitrack to 830m planned well TD.. 0.12 degree at 830m															

3RR#1	216	M516 BHVPX	M223	5x16	830/895	65	8.5	7.5	2	100	1.56	5000	1060		Geology decided to drill deeper, ran same bit with slick BHA and drilled Slater River shale to 895,
BHA:216mm PDC bit+ bit sub (Float) +4x 152mm DC+PBL+152mm Jar+ 2X152mm DC + x-over+4 x 121mm DC+ + 101.6mm DP															
1RR#2	216	Hughes GX-18	447	15.9/15.9/15.9							1.4	4500	1095		Condition trip between logs Reamed 770-830m Increased MW to 1095 d Kg/m^3 due to tight hole
216mm Insert bit+ Bit sub (Float) +4x 152mm DC+PBL+152mm Jar+ 2X152mm DC + x-over+4 x 121mm DC+ + 101.6mm DP															
1RR#3	216	Hughes GX-18	447	15.9/15.9/15.9							1.4	4500	1095		Clean out trip before casing Washed bridge at 645m and 9m fill at well TD
216mm Insert bit+ Bit sub (Float) +4x 152mm DC+PBL+152mm Jar+ 2X152mm DC + x-over+4 x 121mm DC+ + 101.6mm DP															

C.4.6 DIRECTIOANL DRILLING &SURVEY

Refer to E_2 directional survey for well survey.

- **Main hole was drilled vertically to 895m.**
  - Drilled with Vertitrack from 257 to 531 m . Inclination less than 1 degree
  - Cored from 531 to 540.5m
  - Drilled with Vertitrack from 540 to 830 m. Inclination less than 1 degree
  - Drilled with slick BHA from 830m to 895m well TD . Inclination 1.5 degree at 884m

C.4.7 MAIN HOLE CASING SPECIFICATION

Interval (m)		Size	Weight	Tubular	Thread Type	Pipe ID	Drift	Coupling OD (mm)
From	To	(mm)	(kg/m)	Grade		(mm)	(mm)	
0	2420	177.8	38.69	L-80	LT&C	159.41	156.24	194.46

Casing Performance Properties						
Burst KPa	Collapse KPa	body yield strength daN	Joint strength daN	Make up Torque N-m		
				Min	Optimum	Max
49,900	37,300	268,000	227,000	5300 N-m (3900 ft-lb)	7000 N-m (5200 ft-lb)	8800 N-m (6500 ft-lb)

C.4.7.1 MAIN HOLE CASING STRING DETAILS

Qt.	Length	Description	Centralization
1	0.71m	177.8 mm Float shoe PDC drillable	
4	52m	177.85mm Csg Joint	C-1 One Bow spring at 3m above the shoe (on stop collar)
1	0.46m	177.8 mm Float shoe PDC drillable	C-1 One Bow spring per joint
62	842m	244.5mm Csg Joint	C-4 One every 4jts (50m) up to 50m from surface. (on the coupling)
Note: 4 joint shoe track was used to have 50m filled with cement at the bottom of casing as abandonment plug.			

C.4.8 MAIN HOLE CASING CEMENT

Type		Composition	Density/ thickening time	Volume	Remarks
Pre flush		Chemical wash	1000+ Kg/m^3	4 m^3	
Cement	Lead	RFC lite 0.2% D13+ 0.2% D46	1530 Kg/m^3	24.2 m^3 18.4 tonne	100% excess over Caliper volume on lead and tail
	Tail	G	1900 Kg/m^3	4.6m^3 8.4 tonnes	
➢ Mixed and pumped cement. Displaced with water treated with corrosion inhibitor Safe Cote (0.15%) at 1 m^3 /min with. Full return during pumping cement and displacement.11 m^3 cement return to surface. Bumped the plug. Tested casing to 10000 KPa					

C.4.9 ABANDONMENT

After cementing 177.8mm casing. Pressure test the casing to 10000 KPa for 10 minutes.

Set 177.8mm casing drillable Bridge plug by Weatherford wireline at 50m.

Lift BOP stack, cut the casing, set BOP back, Ran in hole with 101mm DP to 50m and set cement plug from 50m to top of casing. Rigged down BOP and released the rig.

Mean while removed casing Bowl, cut all casings and conductor pipe, welded plate over casing stubs. Installed well sign.

Refer to B.2 final well status for well schematics after release and E_12 Well abandonment sign for well sign.

D TIME AND NPT ANALYSIS

Following charts D1 and D2 and tables show detail time breakdown from spud to rig release. It is prepared by the category of operations and services.

Total of 368 hours (15.3 days) duration of the operations is as per plan time (15 days AFE). Projected TD was 830m. Actual TD was 895m

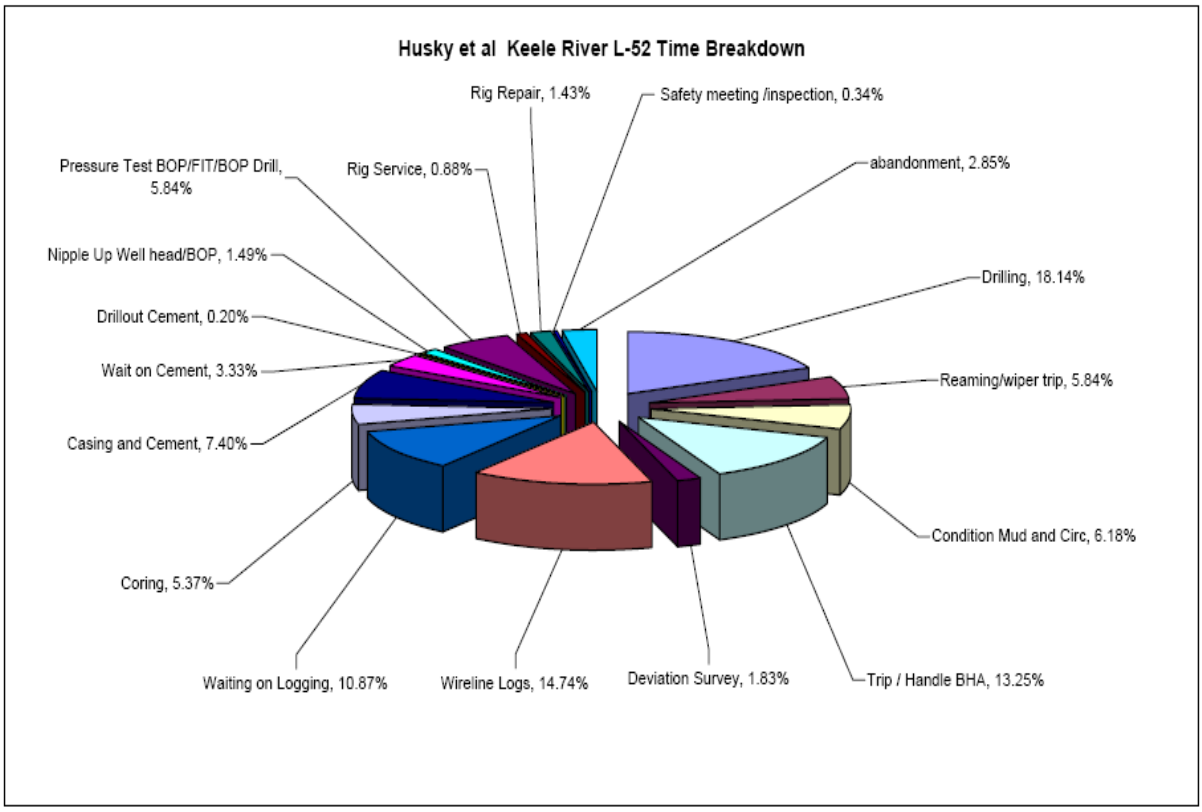
Total logging program was 54 hours, plus 40 hours waiting on logging unit

Timing of logging on well L-52 coincided with well Husky Dahadinni B-20 sidetrack operations, Priority was given to well B-20 and logging unit was moved to well B-20 to perform logging before the sidetrack operations. As the result operations of well L-52 was delayed for total of 40 hours.

Total evaluation time planned for this well was 120 hours to perform coring, logging and DST. Actual time spent for evaluation to core and log including NPT was 122 hrs.

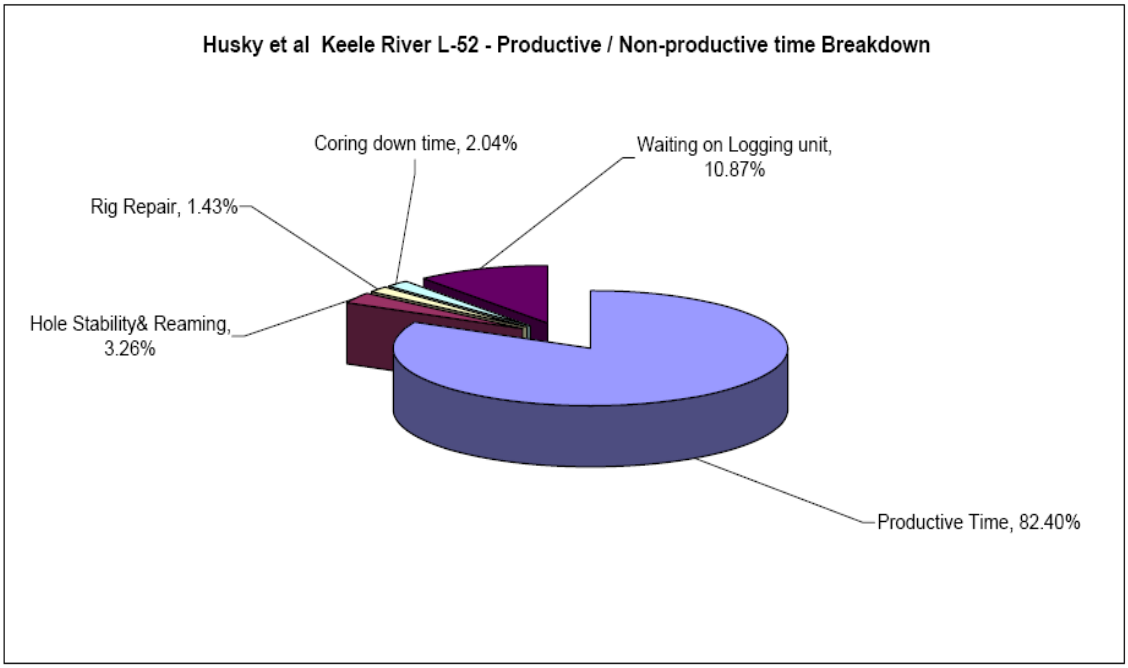
Due to no presence of hydrocarbon DST was not performed on this well

D.1 TIME BREAKDOWN



Description	311 mm Surface Hole 252m		215.9 mm Main Hole (252-895m)		TOTAL WELL	
					Hours	%
Drilling	22.25	28.71%	44.5	15.32%	**66.75**	**18.14%**
Reaming/wiper trip	4.5	5.81%	17	5.85%	**21.5**	**5.84%**
Condition Mud and Circ	1.75	2.26%	21	7.23%	**22.75**	**6.18%**
Trip / Handle BHA	4	5.16%	44.75	15.40%	**48.75**	**13.25%**
Deviation Survey	2.5	3.23%	4.25	1.46%	**6.75**	**1.83%**
Wireline Logs			54.25	18.67%	**54.25**	**14.74%**
Waiting on Logging			40	13.77%	**40**	**10.87%**
Coring			19.75	6.80%	**19.75**	**5.37%**
Casing and Cement	9.5	12.26%	17.75	6.11%	**27.25**	**7.40%**
Wait on Cement	6.25	8.06%	6	2.07%	**12.25**	**3.33%**
Drillout Cement			0.75	0.26%	**0.75**	**0.20%**
Nipple Up Well head/BOP	5.5	7.10%		0.00%	**5.5**	**1.49%**
Pressure Test BOP/FIT/BOP Drill	19.75	25.48%	1.75	0.60%	**21.5**	**5.84%**
Rig Service	1	1.29%	2.25	0.77%	**3.25**	**0.88%**
Rig Repair		0.00%	5.25	1.81%	**5.25**	**1.43%**
Safety meeting /inspection	0.5	0.65%	0.75	0.26%	**1.25**	**0.34%**
abandonment			10.5	3.61%	**10.5**	**2.85%**
TOTAL	**77.5 hrs 3.23 days**		**290.5 hrs 12.10 days**		**368 hrs 15.33 days**	**100.00%**

D.2 PRODUCTIVE & NON-PRODUCTIVE TIME



Description	311 mm Surface Hole 252m		216 mm Main Hole (252--895m)		TOTAL WELL	
					Hours	%
Productive Time	77.5	100.00%	225.75	77.71%	303.25	82.40%
Hole Stability& Reaming			12	4.13%	12	3.26%
Rig Repair			5.25	1.81%	5.25	1.43%
Coring down time			7.5	2.58%	7.5	2.04%
Waiting on Logging unit			40	13.77%	40	10.87%
	77.5 hrs 3.23 days	100.00%	290.5 hrs 12.1 days	100.00%	368 hrs 15.33 days	100.00%

E ATTACHMENTS

E.1 FORMATION INTEGRITY TEST

BIG EAGLE SERVICES
Div. of BIG EAGLE L.P.
BOX 6067, FORT ST. JOHN, BC V1J 4H6
Phone (250)785-5563 or (250)774-2550

FORMATION PRESSURE TEST
2531

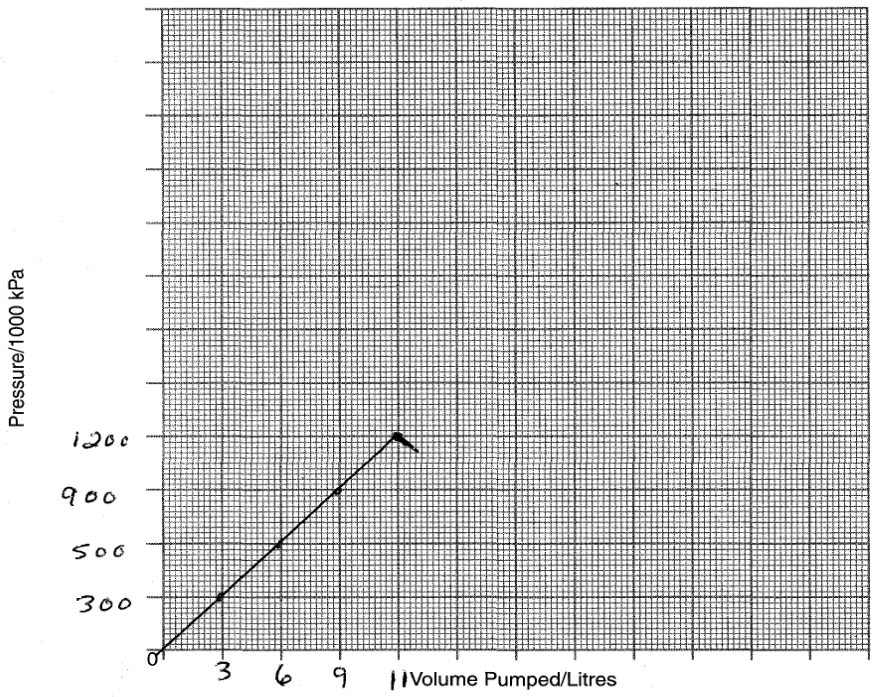
WELL Husky et al Keele River. DATE March 9/08 (y-m-d) 20__

MAXIMUM TEST PRESSURE - LESSER OF

(1) B.O.P. Rating _____ 21000 kPa (1)

(2) Weakest Casing 244.5 mm 69.93 kg/m L-80 Grade

Burst Rating (kPa) 47370 x 0.75 = 35527 kPa (2)



VOL. PUMPED LITRES	PRESSURE kPa
3	300
6	500
9	900
11	1200

Depth of casing	a)		252	m
Mud gradient	b)	(mud density x 0.00981)	9.81	kPa/m
Hydrostatic pressure	c)	(a x b)	2472	kPa
Leak-off pressure	d)	(see note below)	1200	kPa
Total pressure (at shoe)	e)	(c + d)	3672	kPa
Formation gradient	f)	(e ÷ a)	14.6	kPa/m
Maximum allowable mud density with no annulus pressure	g)	(f ÷ 0.00981)	1485	kg/m3

Note: The last point **ON** the straight line plotted above is the leak-off pressure that you enter in line (d).

E.2 DIRECTIONAL SURVEY

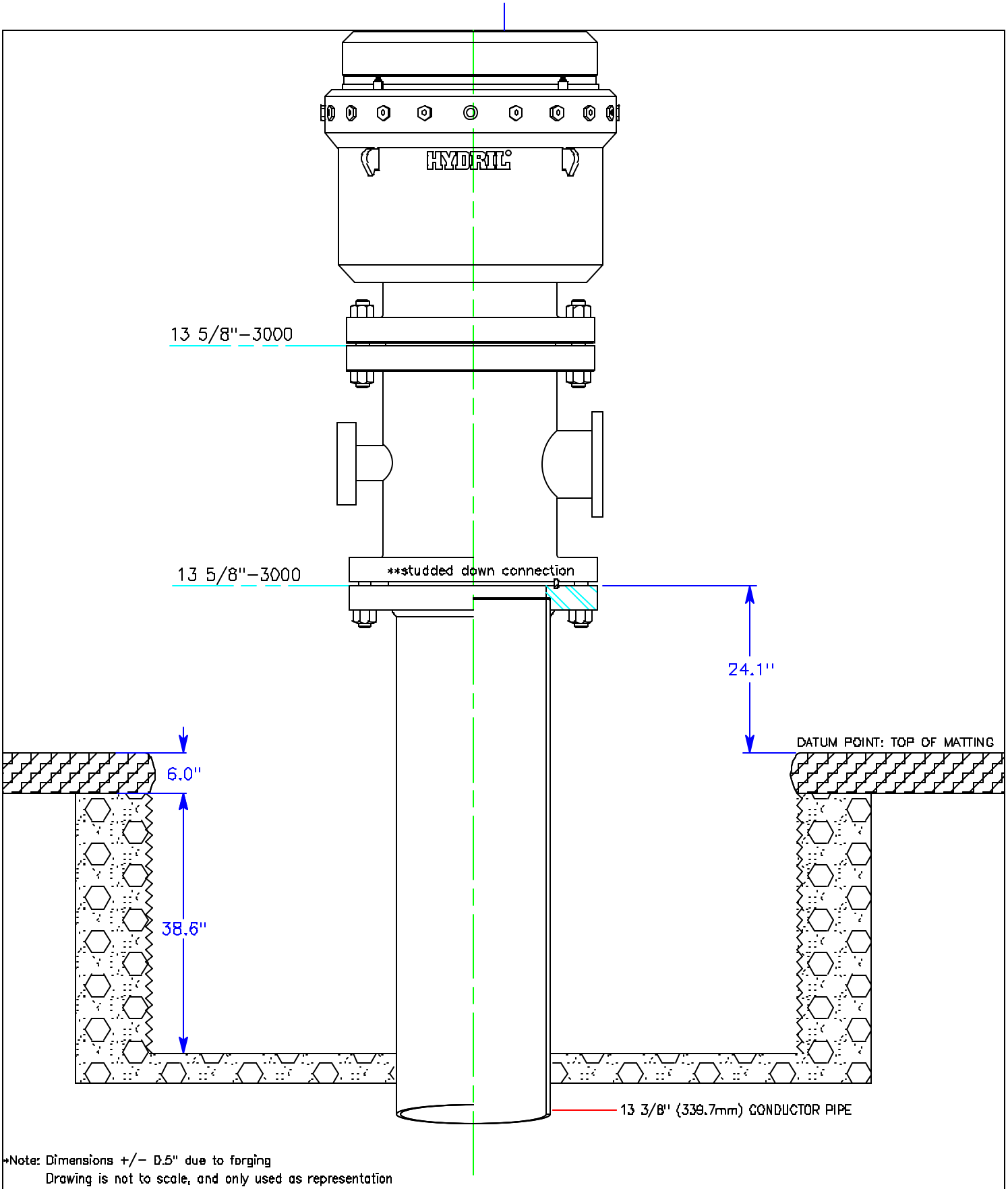
Following table shows the survey across the L-52 well bore. Surface hole Interval (0-250m) was surveyed by Totco deviation survey. Main hole interval (252-895m) was survey by dip meter directional log. Azimuth of following survey point in main hole from dip meter directional log was assumed for surface section.

Survey calculation shows the departure of 2 meters from vertical in South direction

Measured Depth	Inclination	Azimuth
0	0	0
42	0.75	206.9
61	0.75	206.9
94	0.25	206.9
123	1	206.9
180	1.25	206.9
208	0.75	206.9
237	0.5	206.9
264.11	0.7	206.9
274.11	0.1	329.5
284.11	1	56.9
294.11	0.2	65.3
304.11	0.4	140.3
314.11	0.5	321.9
324.11	0.7	140.1
334.11	0.6	317.9
344.11	0.4	295
354.11	0.4	62.9
364.11	0.4	190.9
374.11	0.3	32.3
384.11	0.9	124.8
394.11	0.3	298.3
404.11	0.7	55.2
414.11	0.6	106.7
424.11	0.6	313.6
434.11	0.3	34.3
444.11	0.3	159.4
454.11	0.1	15.8
464.11	0.1	239.2
474.11	0.1	261.8
484.11	0.1	127.7
494.11	0.1	240.9
504.11	0.6	295.9
514.11	0.4	123.5
524.11	0.4	25.7
534.11	0.2	69.9
544.11	0	52.9
554.11	0.1	237.4
564.11	0.2	3.3
574.11	0	262.5
584.11	0.3	70.1
594.11	0.6	252.6
604.11	0.5	50.7
614.11	0.5	236.6

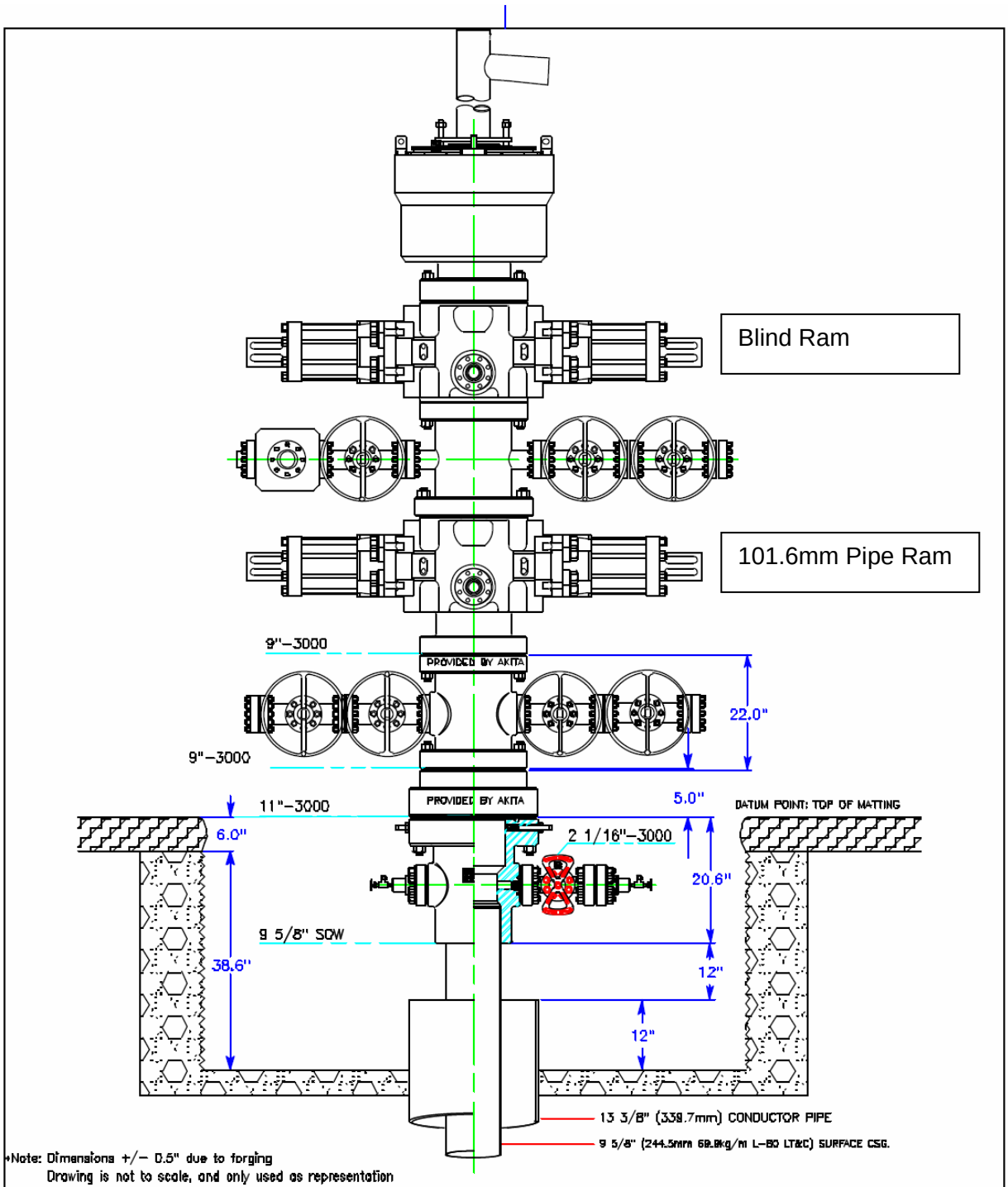
624.11	0.2	22.9
634.11	0.1	174
644.11	0.3	325.9
654.11	0.3	104.5
664.11	0.4	272.5
674.11	0.3	198.5
684.11	0.4	309.8
694.11	0.5	10.3
704.11	0.8	13.8
714.11	0.9	38.6
724.11	0.8	23.4
734.11	0.9	2.5
744.11	0.9	0.1
754.11	0.6	359.9
764.11	0.7	41.2
774.11	0.6	27.8
784.11	0.5	48.7
794.11	0.2	121.9
804.11	0.4	161.1
814.11	0.5	153.6
824.11	0.3	274.5
834.11	0.3	61.2
844.11	0.6	105.4
854.11	0.8	91.6
864.11	1.2	92.4
874.11	1.5	102.3
884.11	1.8	104.4

E.3 WELL CONTROL SET UP



**Note: Dimensions +/- 0.5" due to forging
Drawing is not to scale, and only used as representation

HUSKY et al Keele River L-52 AKITA 14	DWN.			EDMONTON, AB. CANADA	DRAWING No. C2040 PAGE 3 of 8 REV 2
	CHK.				
	APPR.				
		BY:	DATE		



*Note: Dimensions +/– 0.5" due to forging
Drawing is not to scale, and only used as representation

HUSKY et al Keele River L–52 AKITA 14	DWN.			EDMONTON, AB. CANADA	DRAWING No. C2040 PAGE 6 of 8 REV 2
	CHK.				
	APPR.				
		BY:	DATE		

E.4 RIG SPECIFICATIONS & LAYOUT

RIG 14

CAPACITY - 1400 m, 4.1 m KB, Floor Height 3.81 m.

DRAWWORKS - P300 RigMaster Single Drum, grooved for 25.4 mm drill line and a 24" double Eaton 224 WCB disc brake.

RIG POWER - Caterpillar 3306 rated at 242 kW with an Allison HT750 DR five speed automatic transmission.

SUBSTRUCTURE - RigMaster 16 wheel HiBoy with integrated drawworks, rotary table, cantilevered raised drilling floor, and hydraulic sub leveling system. Casing capacity 66,700 daN irrespective of set back. Clear height 3.3 m.

MAST - RigMaster 20.7 m clear height, static hook load with six lines rated at 72,000 daN.

BLOCK-HOOK - IDECO UTB 75 unitized shortly, SHL rated at 66,700 daN.

SWIVEL - King 75 WP, static rated at 110,400 daN.

ROTARY TABLE - Howard Turner RT-18.

MUD PUMP - Continental Emsco F 500 triplex powered by Caterpillar 3406 rated at 343 kW. 152 mm liners - 11,720 kPa at 110 SPM.

MUD SYSTEM - 38.9 m^3 single tank comprised of 4 compartments including pill tank. 5.0 m^3 trip tank, mix building, and choke manifold building. Equipped with 610 mm poor boy degasser, two 127 mm x 152 mm centrifugal pump, and low pressure mix system.

DESILTER- Chimo 10 cone desilter

SHAKER- Double Life Shaker

B.O.P. EQUIPMENT - Shaffer 229 mm 21,000 kPa Annular preventer. 1 - Shaffer LWP 229 mm 21,000 kPa single gate ram preventer. 1 – Shaffer 229mm 21,000 kPa single gate ram preventer. 5 station, 300 litres Neutron PLC controlled accumulator.

LIGHT PLANTS - Two Caterpillar 3306 - 225 kW 480/208 volt AC generator.

FUEL & WATER TANK - Fuel storage 10,000 litres. Water storage 51 m^3.

BOILER - Volcano 80 hp

DRILL STRING - As per Contract.

RIG MANAGERS QUARTERS - ATCO skid unit (Electrical).

PIPE TUBS - 2 hydraulic pipe tubs.

WINTER LOADS - 12

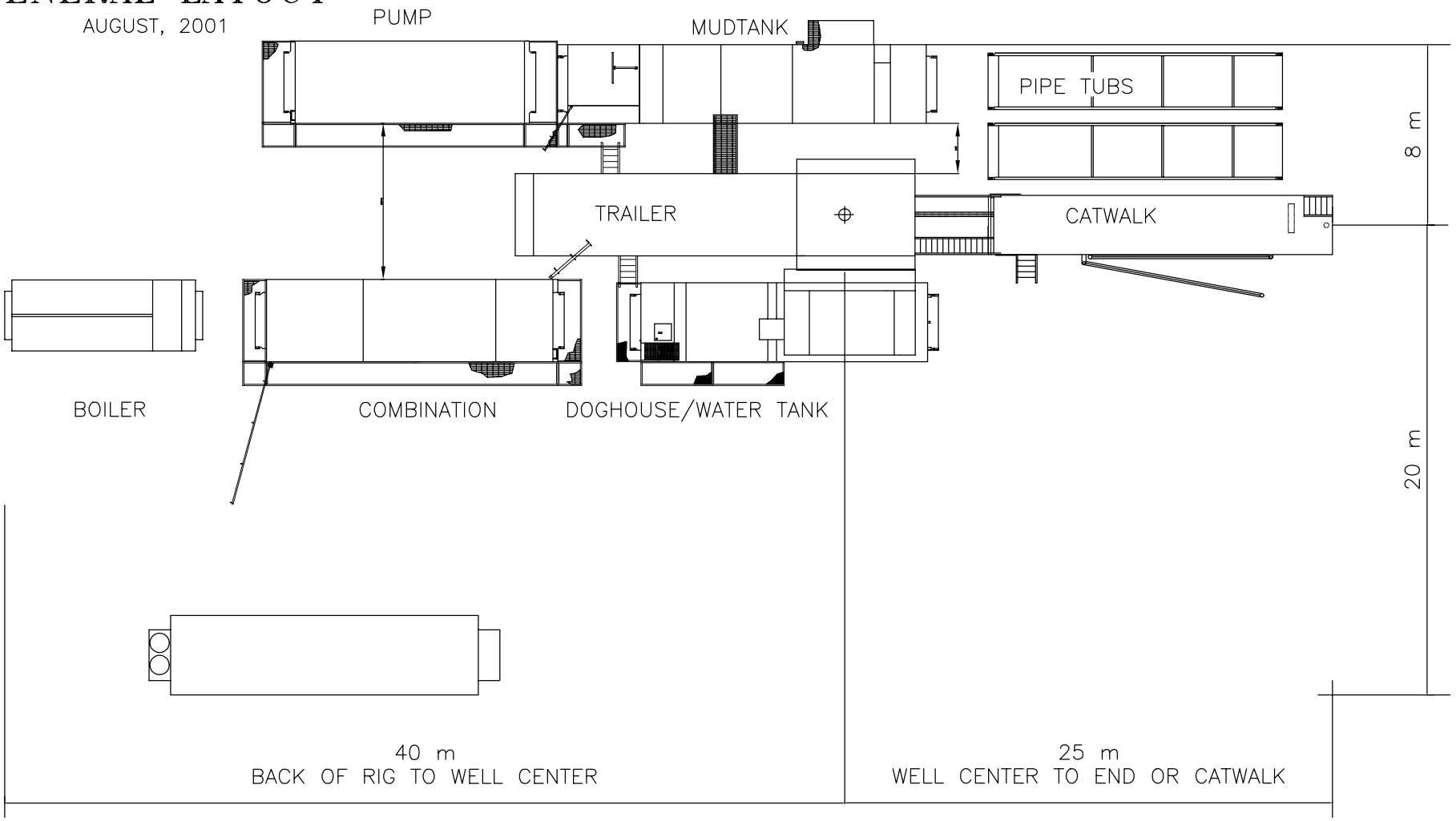
All ratings quoted herein are manufacture specifications. AKITA's normal operating parameters are 90% of manufacturers mast rating and 80% of mud pump manufacturer pressure rating. Operation of rig equipment beyond these parameters requires approval from AKITA field office management.

AKITA DRILLING LTD.

RIG 14

GENERAL LAYOUT

AUGUST, 2001



E.5 ACCESS ROAD MAP

125°0'0"W

124°45'0"W

124°30'0"W

64°10'0"N

64°5'0"N

Rig Camp

722m EAZ

Keele River L-52

361m EPZ

North Cloverleaf Road

Dahadinni B-20

361m EPZ

722m EAZ

Cloverleaf Lake Road

CLOVERLEAF LAKE AIRSTRIP

CLOVERLEAF LAKE

REDSTONE RIVER

REDSTONE RIVER

SAHTU SURFACE RIGHTS AREA

SAHTU SUBSURFACE RIGHTS AREA

Cloverleaf Sleigh Camp

Haywood Road

EL423 EXPLORATION LICENCE AREA

Birch Island Staging Area

BIRCH ISLAND

MACKENZIE RIVER

BIRCH ISLAND AIRSTRIP

DAHADINNI RIVER

KM 0 Haywood Road

Wells
Spill Kits
Security Gate
Empty
Loaded

Route
Winter Road (GNWT)
Hydrology
Waterbody
Sahtu Subsurface Rights
Sahtu Surface Rights
EL423 Exploration Licence Boundary
EPZ
EAZ

Elevation (m)

250 - 689
689 - 1128
1127 - 1566
1566 - 2005
2005 - 2444
2444 - 2883
2883 - 3322
3322 - 3761
3761 - 4200

COMMUNICATION CHANNELS

REPEATERS	TX: 165.105	RX: 170.085
MOBILES	TX: 170.085	RX: 165.105

AREA OVERVIEW MAP

NORMAN WELLS
TULITA
NORTH HAYWOOD DRILLING PROGRAM
NORTHWEST TERRITORIES
YELLOWKNIFE
FORT SIMPSON
0 50 100 200 (km)

NORTH HAYWOOD DRILLING PROGRAM

NORTHWEST TERRITORIES

Husky Oil

Draft Date: June 01, 2007	Scale: 1:100,000
Revision Date: January 7, 2007 FS	UTM ZONE 10 NAD83

0 1.5 3 6 (km)

MAP PRODUCED BY:

H2Safety Services Inc.

403-212-2332
WWW.H2SAFETY.CA

E.6 DRILLING WASTE DISPOSAL REPORT

Husky Northwest Territories 2008 Project Summary – Husky Keele River L-52

Northern Envirosearch's Role

Northern EnviroSearch Ltd. (NESL) was retained by Husky Oil Operations Ltd. (Husky) Northwest Territories (NT) Drilling Program with the goal to provide Husky with a 'risk minimizing' disposal program. This included screening and sampling of water based drilling waste prior to sump deposition (surface hole and main hole). This also included disposal of contaminated snow from the drilling pads to CCS in Rainbow Lake and also to Northern Transportation Company Ltd. (NTCL) de-watering plant in Hay River, NT. NESL had an active role in working with the construction supervisors to help ensure that the sumps were constructed properly, and stabilized properly to meet the criteria listed in the SAHTU Land and Water Board's water licence and achievement of sump closure approval was obtained. Upon closure of the sumps, NESL installed thermal monitoring stations for active monitoring of sub-surface ground temperatures and will continue to have a leading role in data interpretation and reporting duties over the next fifteen years as set out in the water licence.

Surface hole drilling was set for the first 244 meters of the hole and the remaining main hole drilling to total depth (890m) used water based drilling fluids. This allowed for the subsequent drilling waste to be deposited into a sump located on the L-52 drilling location. In order to achieve minimal risk of sump contamination and to ensure that Husky would remain in compliance with environmental guidelines set forth by the SAHTU Land and Water Board, real time field salinity testing was performed on site by a NESL environmental supervisor.

In regards to the sump, real time mix, bury and cover methods were implemented. It was the duty of the NESL environmental supervisor to perform periodic field sampling of the waste being deposited into the sumps, and to collect an overall composite sample that was representative of the entire waste stream deposited into the sump. This sample, along with three other random samples during drilling operations, was analyzed by a third party laboratory to assess toxicity and loading rates as per the SAHTU Land and Water Board Licence Guidelines. Furthermore, the environmental supervisor also spent time working with equipment operators that were performing the mix, bury and cover duties. During this interaction, proper sump mixing techniques and soil to waste ratios were managed. A total of 390 cubic meters of water-based drilling waste was deposited into the sump.

The environmental supervisor also worked actively with the rig crew and drilling consultants to help identify and clean-up spills, and to address and advise solutions in problematic areas. This was achieved by constantly monitoring the lease activities and performing regular site inspections.

Project Breakdown – Successes

Remote Sump Integrity and Stabilization

Maintaining the integrity of the remote sump was vital to the overall success of this drilling project from the standpoint of waste management. In order to make this a possibility, having a full time on-site environmental supervisor maintaining the compliance of the sump, and monitoring all waste being deposited, is very important. The environmental supervisor could

620, 703 – 6 Avenue S.W.
Calgary, AB
T2P 0T9
TEL 403 543 5353
FAX 403 233 2513
www.mwhglobal.com

periodically obtain real time waste samples and test them to accurately profile the analytes of the waste stream. Also, in working closely with the mud engineers and rig crew, mud additive product usage could be actively monitored and project goals in relation to sump integrity could be relayed and re-enforced actively to promote a sense of teamwork and compliance in the area of waste management.

The sump was stabilized with minimal effort. This was made possible by implementing a the use of a mixing tank at the sump, where much of the raw drilling waste was mixed with soil prior to sump deposition. Not all of the drilling waste was pre-mixed, as the amount of waste that could be mixed was largely dependant on the Hoe Operator's ability to keep up with the waste stream volume. However, this created a situation where the amount of mixing within the sump was reduced and stabilization was achieved quickly and with time to spare. Furthermore, the L-52 sump was dug with the sides and floor squared out. Therefore, the full capacity of the proposed size was allowed for supplemental volume from the B20 sump to be deposited in L52 with room to spare.

Contaminated Fluids

An on-site evaporation tank was utilized for the reduction and storage of contaminated fluids. The evaporation tank was hooked up properly and was a huge success in the reduction of contaminated snow, and waste water. In contrast to the Summit Keele drilling program of 2006 where waste water volumes were actually increased throughout the project by having a waste tank that was not hooked up to the boiler properly, the 2008 North Haywood drilling program saw a huge improvement in the ability to reduce and deal with waste fluids on location.

Communication

Wireless Internet was available at the main construction camp. This allowed for internet based communication with support staff back in Calgary, Alberta. The internet was somewhat slow for uploading files, mainly in the evenings when the majority of people were online. However, even when it was slow, it was good enough to receive and relay important information over programs such as MSN Messenger.

Transportation

NESL provided a work truck that was driven to the project from Calgary. This allowed for all of the equipment needed throughout the project to be driven north by the environmental supervisor and eliminated problems caused by depending on un-reliable cargo services to the north. Also, a vast amount of trouble was experienced on this project with rental trucks breaking down. Due to this unforeseen circumstance, a fair number of personal were left without transportation on the project. The environmental supervisor was able to use the vehicle provided to transport personal as needed to locations on the project.

Project Improvements / Recommendations

Surface Waste (Water Based)

During the surface hole drilling, progress was extremely fast. This created a situation where drilling mud was coming over the shakers, regardless of the screen size or the elevation of the

shakers. This resulted in a problem where solids were settling out in the back of the tank while the fluids were running out of the top and migrating towards the front of the tank. This was not an issue in regards to general waste management because the cuttings were all getting deposited into the remote sump. In the beginning the loader was being used to transport the cuttings to the sump. However, the tires on the loader were getting coated with the drilling fluids and after a few return trips to the sump, the disposal path was being tracked with drilling waste. Also, the shale sloop off of the rig was too far into the cuttings bin and prevented the loader from cleaning to the back of the bin. This did not allow him to adequately fill his bucket and prevented the back of the bin from being cleaned until the end of the hole.

The Drilling Consultants wanted the vacuum truck to be utilized for the transport of the waste to the sump. However aside from the small amount of fluids migrating to the entrance of the bin, the cuttings were quite heavy and could not be removed by vacuum truck. This created a situation where the vacuum truck had to be implemented to remove the fluids from the entrance to the bin before the loader could remove the solids near the rear of the bin. Because there was only one vacuum truck driver and the waste flow was constant, the result was a potential safety hazard when the vacuum truck driver was on location for extended periods of time. This situation was resolved by working with the rig crew to formulate a plan where minimal tracking would occur while performing the waste transfer with the loader. On occasion the vacuum truck was utilized to remove drilling fluids that were building up near the entrance.

Recommendation: Regardless on whether a vacuum truck needs to be implemented for waste transport to the sump, two drivers should be assigned to the rig. This will allow the truck to be fully utilized during situations of high waste volumes and will promote safe work practices on the job-site.

Conclusion

The 2008 Keele River L-52 project was a success from the standpoint of waste management. The project was completed with compliance and approval to close the sump. This was made possible by Husky's continuing commitment to invest in a full time environmental supervisor. An investment of this kind is very important in a regulatory sensitive area such as the NT and in consideration of the vast scope of responsibilities present on drilling programs in the north. In addition, many improvements and innovations implemented on this project were built upon from the previous 2006 Summit Keele drilling program. This is extremely important, as it is vital to always be looking for ways to improve upcoming projects by building upon practices set forth in the past.

E.7 NEB INSPECTION REPORTS

National Energy Board

Office national de l'énergie

File: WID# 2051, 2052
16 January 2008

Mr. Kim Richardson
Drilling Superintendent
Husky Oil Operations Ltd.
Box 6525, Station D
707 – 8th Avenue SW
Calgary, AB T2P 3G7
Facsimile (403) 298-6378

Dear Mr. Richardson:

Approval to Drill a Well for Husky et al Dahadinni B-20 & Husky et al Keele River L-52

The application for an Authority to Drill a Well, pursuant to section 83 of the *Canada Oil and Gas Drilling Regulations*, is approved for Husky et al Dahadinni B-20 and Husky et al Keele River L-52.

Husky Oil Operations Limited is given waiver of paragraphs 70(1)(b) and 60(7)(e) for B-20 and L-52, respectively, of the *Canada Oil and Gas Drilling Regulations* for the proposed casing and testing programs. Attached please find the Authority to Drill a Well forms which are to be posted in a conspicuous place on location during oil and gas operations.

Any changes or deviation from the approved programs will require the additional specific approval of the Chief Conservation Officer. Please be reminded that all oil and gas activities are, at minimum, to meet the requirements of the *Canada Oil and Gas Drilling Regulations*, the *Oil and Gas Occupational Safety and Health Regulations* and the *Canada Labour Code, Part II.* Conditions of approval are attached.

If you have any questions, please do not hesitate to contact the undersigned at 299-2792.

Yours truly,

Bharat C. Dixit
Chief Conservation Officer

cc: G. Morrell – INAC

444 Seventh Avenue SW
Calgary, Alberta T2P 0X8

444, Septième Avenue S.-O.
Calgary (Alberta) T2P 0X8

Canada

Telephone/Téléphone : (403) 292-4800
Facsimile/Télécopieur : (403) 292-5503
http://www.neb-one.gc.ca
Telephone/Téléphone : 1-800-899-1265
Facsimile/Télécopieur : 1-877-288-8803

National Energy Board | Office national de l'énergie

Exploratory	☒			Delineation	☐
Development	☐	Other:	(N/A)	Service	☐

APPROVAL TO DRILL A WELL

This application is submitted under Section 82.(1) of the *Canada Oil and Gas Drilling Regulations* (SOR/79-82). When approved under Section 83 of the Regulations it is the requisite approval for the commencement of drilling operations.

Well Name:	Husky et al Keele River L-52				
Operator:	Husky Oil Operations Limited				
Operating License No.:	1171			Drilling Program No.:	
Contractor:	Akita Sahtu Drilling Ltd			Interest Identifier:	Exploration Licence 423
Drilling Rig or Unit:	Rig # 14			Estimated Well Cost:	$9000000.00
Land Use Permit No.:	S07A-015			Water Licence No.:	S07L1-004
Location:	Unit: L	Section: 52		Grid:	64-10-124-45
Coordinates: (NAD 27)	Surface:	Lat.: 64°1'30.2"		Long.:	124°56'07.3"
	Bottom Hole:	Lat.: 64°1'30.2"		Long.:	124°56'07.3"
Region:	MacKenzie Valley- Central			Field / Pool:	North Cloverleaf
Elevation KB/RT:	300.30m			GL / Seafloor:	304.0m
Approximate Spud Date:	1/10/2008			Est. Days on Location:	22
Anticipated Total Depth:	830.00m			Target Formation:	Little Bear formation

EVALUATION PROGRAM

	Interval (m KB)	Comments
Ten-metre samples:	----- - -----	-----
Five-metre samples:	0.00 - 830.00	3 sets, 5 m interval from surface to well total depti
Canned sample intervals:	0.00 - 830.00	1 set 5 m interval, unwashed -bagged (500mg)
Conventional cores at:	540.00 - 576.00	Coventional core in Little Bear Formation (Optiona)l
Logs and Tests:	250.00 - 830.00	Array Induction Resistivity,Di-Pole Sonic – Gamma (250 -TD), Dual CNL-Density Gamma (250 -TD) (Neutron /GR will be extended to sureface across surface casing) ,Temperature Log (250- TD), UBI Formation Imager (250-TD), MDT Sample & Pressure (optional), Side wall Core (optional), Open hole DST (optional)

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m KB)	Cementing (m³)
339.72	90.76	K-55	30.00	2.00
244.50	69.94	L-80	250.00	14.30
177.80	34.23	L-80	830.00	18.4
-----	-----	-----	-----	-----

B.O.P. Equipment: See attached

Other Information: Well Program Attached

Signed: Kim Richardson Date: December 3, 2007

Responsible Officer

Name: Kim Richardson Operator: Husky Oil Operations Ltd

Title: Drilling Superintendent Phone: (403)298-7273

NEB USE ONLY

An approved copy of this notice is to be posted at each drillsite. This operation is authorized under Section 5.(1)(b) of the *Canada Oil and Gas Operations Act* (O-7) and is subject to the terms and conditions attached to this authorization.

Date: 17 JAN 08

File: 9200

WID: 2052

UWI: 300L526410124450

Signed: _____

Chief Conservation Officer

Canada

Inspection Report / Rapport d'inspection

National Energy Board Act / Loi sur l'Office national de l'énergie	
☐ *Onshore Pipeline Regulations, 1999* / *Règlement de 1999 sur les pipelines terrestres*	☐ *Processing Plant Regulations* / *Règlement sur les usines de traitement*
☐ *National Energy Board Pipeline Crossing Regulations* / *Règlement de l'Office national de l'énergie sur le croisement de pipe-lines*	X *Other* / *Autre* — *Canada Oil & Gas Operations Act*
Canada Labour Code, Part II / Code canadien du travail, Partie II	
☐ *Canada Occupational Safety and Health Regulations* / *Règlement sur la sécurité et la santé au travail*	

COMPANY / SOCIÉTÉ

Husky Oil Operations Limited (Husky)

LOCATION / EMPLACEMENT

Approximately 120 km SSW of the Hamlet of Tulita, NWT

FACILITY / INSTALLATION

Husky et al Keele River L-52 wellsite

Activity # / Activité n° : 2008-045

DATE OF INSPECTION (*DD/MM/YYYY*) / DATE DE L'INSPECTION (*JJ/MM/AAAA*)

2008-03-12

COMPANY REPRESENTATIVE / REPRÉSENTANT(E) DE LA SOCIÉTÉ	Keith Tichowsky PRINT (NAME, TITLE) / EN MAJUSCULES (NOM, TITRE) SIGNATURE	(403) 536-0820 PHONE / TÉLÉPHONE (403) 537-2591 FAX 2008-03-12 DATE
NEB INSPECTOR / INSPECTEUR DE L'ONÉ	Pamela Romanchuk PRINT / EN MAJUSCULES SIGNATURE	(403) 299-3906 PHONE / TÉLÉPHONE (403) 292-5876 FAX 2008-03-12 DATE

REMARKS / COMMENTAIRES:

- An Environment Inspection was conducted by Pamela Romanchuk, Environmental Specialist and Conservation Officer with the National Energy Board.
- Lori Reimer, Husky Health and Safety Representative, Sam Machnee, Drilling Supervisor, Keith Tichowsky, Drilling Supervisor, Randy Ambler, Lease Superintendent, and Justin Masley, Northern EnviroSearch, addressed questions during the environment inspection with the NEB.
- Drug test was conducted by HSE personnel and this testing is conducted for all personnel who show up at the Husky site.
- Personnel follow the Husky Energy Corporate Incident Report and enter on the Omni-Safe tracking system.
- Workers on site have stop and go cards for recording.
- All incidents and near-misses are recorded, tracked and investigated where necessary.
- Lori ensures all reports are followed up as appropriate.
- Spills require an immediate response.
- Observed spill kits along the access road and at the camps. Looked in several and they were properly stocked.
- **Recommend that a spill kit be added on L-52 road in area of hill in case of an incident. Please send an email to confirm this has been completed.**
- A copy of the Approval to Drill a Well (ADW), Environmental Protection Plan (EPP), Land Use Permit, drilling waste fluids report, and Water Licence were posted.
- Randy Ambler is keeping track of all water withdrawal for the program to ensure commitments of the Water Licence are met. This is submitted to INAC on Mondays.
- Using potassium chloride and gel-chem for drilling.
- Any mud that is left after program completion will be trucked south to an approved landfill site.
- Water withdrawal from the Redstone River was observed during the inspection.
- **Observed three water truck haulers that were using water screens as outlined by DFO requirements (screen mesh size of 2.54 mm) and indicated in the Preliminary Screening and Water Licence. This has been corrected since the last inspection. There will be a dedicated person who will monitor and ensure water screens are being used for water withdrawal - Steve Orcott will ensure this continues to be carried out for the remainder.**
- Justin indicated he conducts lease inspections to observe operations and note any issues for the drilling lease operations.
- Keith Tichowsky conducted the lease inspection with the NEB. He also conducts daily lease inspections.
- New-sorb is added to cuttings as an absorbent to reduce volumes.
- The lease is built up from ice and the rig and mud area has ice, matting, a liner and then a wood fibre pad at the mud bins.
- Dedicated vac truck on site for clean-up of any spills on the rig lease.
- Observed a bin with HC contaminated water. This is stored on lease until it is full and then loaded into a vacuum truck and hauled off site.
- All tanks with drilling additives are contained in bermed area with impermeable liner.
- Observed spill reporting documentation – some trackable spills and reportable spills.
- Drip trays are used during re-fuelling.
- Observed use of drip trays at the drill rig and both camp.
- There was an amendment to the Land Use Permit to add a cement pit to the program. This is 25 m^3 and HC free. The area will be fenced. Solid clay materials.
- Sump is approximately 34 m length x 5 m depth x 10 m width.

INSPECTOR INITIALS / INITIALES DE L'INSPECTEUR

REPRESENTATIVE INITIALS / INITIALES DU REPRESENTANT

REMARKS / COMMENTAIRES:

- Sump is lined with an impermeable liner and fenced.
- Incinerators are forced air and run on diesel and used for burnable camp waste.
- Camp waste is burned daily.
- CSA approved from Westland in Edmonton.
- Waste is separated out before being burned.
- All hazardous materials go into a separate bin and this is transported to Rainbow Lake.
- Kitchen grease is hauled to Rainbow Lake.
- Waste oil materials are stored in bins and will then be hauled out.
- Ashes are contained in a metal bin and will be hauled off site to Tulita after program completion.
- No hazardous material is burned in the incinerators.
- Observed sewage treatment plants which are being run by Wellco and spoke with Glen Robinson who is in charge of this.
- There is a wet shack for laundry and showers.
- Wastewater goes to a waste treatment system for grey and black water. There are two inflows, one for effluent and one for influent.
- The system has a membrane and aeration.
- Solids are hauled to Fort St. John for disposal once program is completed. Liquids are deposited to land and are periodically tested.
- Observed overflow on the floor and frozen material outside the trailer from last inspection. This has been cleaned up and verification sent to the NEB.
- The lease was built by building up a snow pack and using water to build layers of ice to create a stable working surface for rig equipment. There was no soil excavation on this lease except for the sump and cement pit.
- Husky shall meet the Guideline for Ambient Air Quality standards in the NWT when conducting any flaring associated with the drilling program – flaring observed during inspection.
- They are not flaring very high volumes.
- Flare stack is 120 feet high. Reflective shield & breathing space between this and the ice pad.
- Fuel containment for the lease is lined and bermed.
- Spot spills are chipped up and put in the evaporator and then solids are hauled out.
- **Observed a spill in the accumulator (~ 50 gallons) and it was cleaned up and materials will be put in an appropriate container. Lori will send a report by email outlining details.**
- **Also request that spill kit be replenished and confirmation sent by email.**
- Drill rig sewage goes into holding tanks and is then taken to the main camp where it is treated and discharged to land.
- Husky has wildlife (Derek Widow) and environment (Terence Andrew) monitors to look at lease housekeeping, spills, sump, fuel tanks, water holes, drip trays, and wildlife sightings.
- They met with the monitors from the B-20 site to get an overview and talk with Keith about any issues that are identified.
- Findings are documented in reports which are being kept at the safety office.
- **It is important to ensure that there is a dedicated person in the field who can ensure that commitments from the application and all program conditions are being carried out in the field and communicated to personnel who need to know.**
- a couple of issues noted during the inspection and these are being followed up by 13 March 2008.

NEB would like to thank Husky representatives for their cooperation and the time they took to address questions and explain site facilities and operations.

INSPECTOR INITIALS / INITIALES DE L'INSPECTEUR

REPRESENTATIVE INITIALS / INITIALES DU REPRESENTANT

Activity # / Activité n° :

Canada

Date of Inspection / Date de l'inspection
2008-01-15/17

E.8 GEOLOGICAL REPORT

Husky *et al* Keele River L-52

Geology

The Husky *et al* Keele River new field wildcat was drilled in the Tulita District of the Sahtu Region, Central Mackenzie Valley, N.W.T. The purpose of this well was to evaluate the hydrocarbon potential of the Upper Cretaceous Little Bear Formation. The location of the well is 64 degrees, 1 minute 30.2 seconds North and 124 degrees 56 minutes and 07.3 seconds West (NAD27).
The UWI is 300L526410124450.

The Keele River L-52 well is located SSW of the Hamlet of Tulita about 110 km. The closest offset wells are Decalta Keele South A-28 (12.3) and South Keele E-19 (14.3 km to southeast).

Akita/Sahtu Rig #14 spud the Keele River L-52 well on March 06, 2008 and drilled to a final total depth of 895 metres measured depth on March 14, 2008.

The well spud in the East Forks Formation; the oldest formation penetrated was the Slater River Formation. The surface hole (0-252 metres) was drilled with water-based polymer mud system and the main hole (252 to 895 metres) was drilled with water based polymer system.

Well site geological supervision was provided by McGrath Resource Consulting Ltd., hydrocarbon mud logging services were provided by Continental Laboratories Ltd. and Schlumberger Canada performed the wireline logging.

Conventional core was cut from 531.2 m to 540.7 m; a total of 9.5 meters of core was recovered.

There were no indications of hydrocarbon in the well. There were no significant lost circulation zones and no over pressures were encountered.

No Drill Stem Tests were run. Water was recovered from 4 MDT stations.

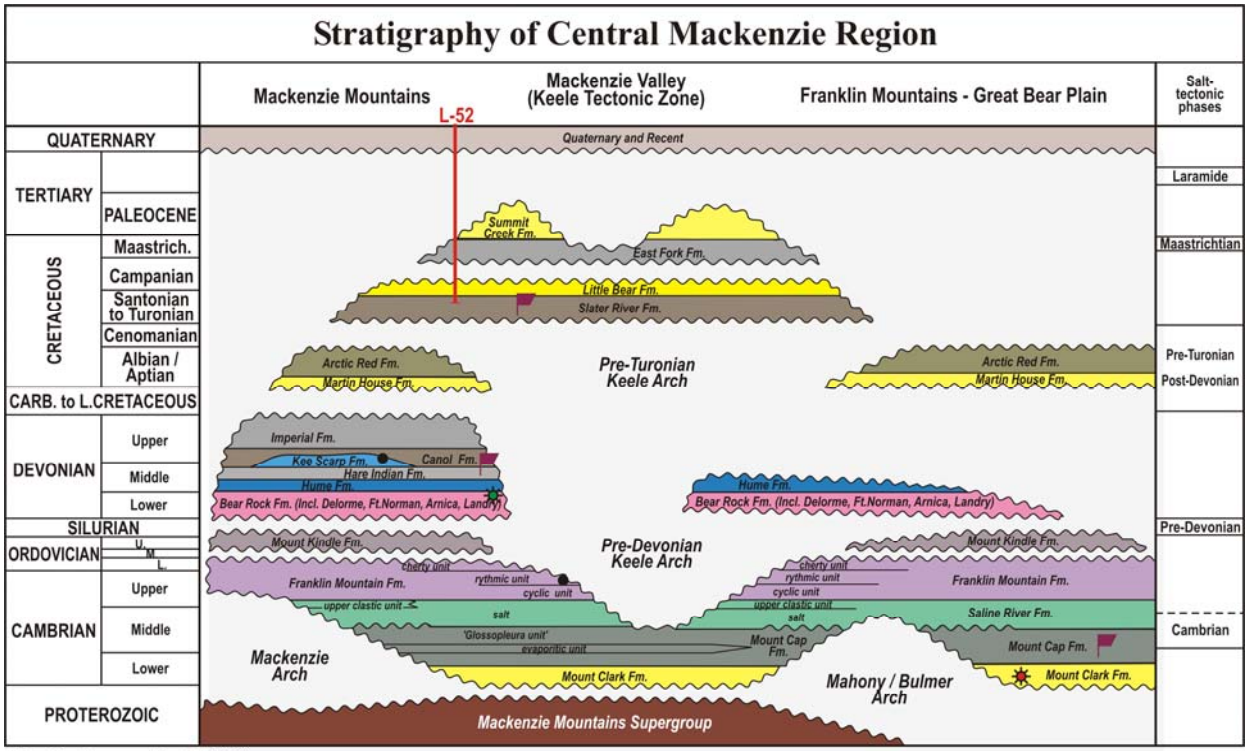
The well bore was cased to the total depth (895 m) and abandoned. On March 21, 2008 the well was rig released. All drilling equipment and materials were de-mobilized south to Alberta via the GNWT winter road.

Stratigraphy

The Keele River L-52 well tested the Upper Cretaceous Little Bear Formation in a gently folded anticlinal structure.

The Upper Cretaceous stratigraphy consists primarily of interbedded shales and sandstones with rare coal beds. The depositional environments of the East Forks and Little Bear Formations may include fluvial, delta plain and shallow marine facies. The shale in the Slater River Formation suggests a deeper, basinal depositional environment.

The stratigraphy of the Mackenzie Plain Basin has been described by a number of authors; the stratigraphic chart published by MacLean and Cook (1999) illustrates the stratigraphic relationships for the region. The stratigraphic section encountered at Keele River L-52 is indicated on the attached modified version of the MacLean and Cook chart.
The Cretaceous strata encountered in the well were folded during the Laramide deformation.



After MacLean and Cook (1999)

Summary of Major Lithologies

Cutting samples were collected every 5 m from the base of the Conductor Pipe at 25 m to the T D at 895m.

The major lithology intervals: (units are Measured Depth relative to the Kelly Bushing):

Cretaceous

East Fork Formation
35 – 252 metres

SANDSTONE (60-90%). Clear, black, pink, quartz and chert grains, very fine to coarse grained, large floating grains, sub angular to sub rounded, generally poorly to moderately sorted. No porosity. No shows

SHALE (40 to 10 %) light to medium grey, light brown, medium hard, occasionally silty and sandy, trace pyrite, trace carbonaceous matter (see detailed sample descriptions for exact zones).

East Fork Formation
252 – 382 metres

SANDSTONE (70-50 %). Light to medium grey, quartz and chert grains, fine to medium grained, sub angular to sub rounded, moderately sorted, siliceous cement, tight to poor intergranular porosity (3%). Poor porosity. No shows.

SHALE (30-50 %) medium grey to grey brown, medium hard, silty and sandy to very silty and sandy, trace pyrite, trace carbonaceous matter (see detailed sample descriptions for exact carbonaceous zones).

East Fork Shale
382- 415 metres

SHALE (60-80 %) medium grey, medium hard, silty and sandy to very silty and sandy, trace pyrite, trace carbonaceous matter (see detailed sample descriptions for exact zones).

SANDSTONE (40-20%) clear to light grey quartz and chert grains, unconsolidated, fine to coarse grained, angular to sub rounded, poorly to moderately sorted.

East Fork Shale
415 – 450 metres

SHALE (80-90 %) medium grey to dark grey, medium hard, silty and sandy, carbonaceous matter from trace to common, trace pyrite, (see detailed sample descriptions for exact zones), blocky.

SANDSTONE (20-10%) clear to light grey quartz and chert grains, medium to coarse grained, subangular, poorly to moderately sorted, unconsolidated.

Upper Little Bear Formation

450 - 515 metres	CHERT CONGLOMERATE (10-30%) varicoloured, white to grey and black, very coarse grained, angular, moderately sorted, trace pyrite SHALE (10-30%) medium grey, medium hard, silty and sandy, trace carbonaceous matter, trace pyrite.
515 - 565 metres	SANDSTONE (50-80%) clear to light grey, brown and black quartz and chert, very fine to medium grained, subangular to subrounded, moderately sorted, siliceous cement, fair intergranular porosity (8 - 10%), trace carbonaceous material, slightly silty or argillaceous. SHALE (30-50%) medium grey to light brown, medium hard, silty, trace carbonaceous matter (coal above 535m), blocky
565 - 625 metres	ALTERNATING SANDSTONE AND SHALE INTERBEDS WITH SANDSTONE GENERALLY DOMINATING OVER INTERVAL SANDSTONE (20-80%) light grey, grey brown, salt and pepper quartz and chert, very fine to fine grained, subangular to subrounded, moderately sorted, siliceous cement, hard, fair intergranular porosity (5%), slightly silty or argillaceous. SHALE (20-80%) medium grey to light brown, medium hard, silty, trace carbonaceous matter, blocky

Lower Little Bear Formation

625 – 780 metres	ALTERNATING SANDSTONE AND SHALE INTERBEDS WITH SANDSTONE GENERALLY DOMINATING OVER INTERVAL SANDSTONE (20-80%) light to medium grey, salt and pepper quartz grains, very fine to fine grained, subangular to subrounded, moderately sorted, siliceous cement, hard, fair intergranular porosity (5%), slightly silty or argillaceous, trace pyrite. SHALE (20-80%) light brown to medium grey, medium hard, silty, trace carbonaceous matter, blocky

715 – 780 metres

ALTERNATING SHALE AND SANDSTONE INTERBEDS WITH SHALE DOMINATING, (BECOMING 100% SHALE OVER LAST 30M OF INTERVAL)

SHALE (20 - 80%) medium grey, medium hard, silty, trace carbonaceous matter, also minor interbeds of light brown sideritic shale, hard.

SANDSTONE (20-80%) light to medium grey, salt & pepper very fine to fine grained quartz grains, hard, silty, trace pyrite.

Slater River Formation

780 - 895 metres

SHALE (100%) medium grey, silty, hard, dolomitic.
NOTE: Sandstone and coal described in sample descriptions are thought to be cavings as geophysical logs do not indicate any lithology other than shale or silty shale in this interval.

GEOLOGICAL FORMATION TOPS

FORMATION

	Prog Depth	**Sample MKB**	**Log Depth**	**Sub Sea.Elev**	**ISOPACH**
East Fork					66.53
East Fork Shale	450	382	381.10	-66.58	69.20
Little Bear	550	450.5	450.20	-135.78	177.00
Lower Little Bear	780	625	627.20	-312.78	151.80
Slater River	820	782.5	779.00	-464.58	109.30
Total Depth	830	895	888.30	-573.88	

Well Evaluation Program

Wireline Logging

The wireline logging program consisted of one run with five descents. The logs were run across the open main hole. The main suite of logs were run from TD (895 m) to surface casing (252 m) Schlumberger provided all logging services and equipment for the well logging program.

1) The first descent tool combination was: FMI DSI PPC HNGS

Formation Micro Imager Gamma Ray	FMI
Di-Pole Sonic Imager Gamma Ray SP	DSI
Hostile Natural Gamma	HNGS
X-Y Caliper	PPC

2) The second and third descents (due to bridge during logging operations) were with the tool combination:

AIT TLD HGNS CMR+ ECS TLD2 GR

Array Induction Resistivity	AIT
Combinable Magnetic Resonance	CMR+
X-Y Caliper	PPC
Elemental Capture Spectroscopy	ECS
Dual Density	TLD, TLD2, GR
High Gamma Neutron Sonde	HGNS

3) The fourth descent tool combination was the TLD HGNS CMR+ PPC (fluid typing)

Density	TLD
High Gamma Ray Neutron Sonde	HGNS
Combinable Magnetic Resonance\Calipers	CMR+ PPC

4) The fifth descent tool combination was MDT/GR

Modular Dynamic Tester\ Gamma Ray

Six stations were tested: 6 fluid samples and 5 successful pressure tests were completed.

Mud Hydrocarbon Logging

Continental Laboratories Ltd. ran Full Spectrum Gas Chromatograph with H2S detection from the base conductor pipe at 25 metres to TD at 895 metres.

Drill Cuttings Sampling

Cuttings samples were obtained and distributed as listed below:

Container	Sampling Interval	Drilling Interval (MD)	Distribution
Washed & dried in clear plastic vials	5 metres	Surface to TD (25 m to 895)	Husky NEB
Washed & air dried in 500 g plastic lined bags	5 metres	Surface to TD (25 m to 895)	Husky NEB

Coring

Two conventional cores were cut. Core #1 was from 531.2 to 540.01 mKB and Core #2 was from 540.01 to 540.7 mKB (jammed off).

Well Testing

No Drill Stem Tests were completed.

25.00 to 30.00 (5.00)	40%	**CEMENT**
	30%	**SHALE** medium to dark gray, medium hard, silty, trace carbonaceous, trace micro pyrite, blocky.
	30%	**SANDSTONE** clear, pink, quartz, chert, feldspar, unconsolidated, coarse to very coarse grained, subrounded to angular, moderately sorted, siliceous with clay cement, tight to poor intergranular porosity (5-10%).
30.00 to 35.00 (5.00)	60%	**SANDSTONE** clear, black, pink, quartz, chert, feldspar, unconsolidated, medium to very coarse grained, subrounded to angular, poorly sorted, siliceous with clay cement, tight to poor intergranular porosity (5-10%).
	20%	**CEMENT**
	20%	**SHALE** medium to dark gray, medium hard, silty, as above.
35.00 to 40.00 (5.00)	80%	**SANDSTONE** clear black, pink, quartz, chert feldspar, unconsolidated, medium to coarse grained, subrounded to angular, poorly sorted, siliceous with calcareous cement, tight to poor internal granular porosity (5-10%).
	20%	**SHALE** medium to dark gray, medium hard, silty, as above.
40.00 to 45.00 (5.00)	70%	**SANDSTONE** clear, black, pink, quartz, chert, feldspar, unconsolidated, medium to very coarse grained, as above.
	30%	**SHALE** medium to dark gray, medium hard, silty, as above.
45.00 to 50.00 (5.00)	70%	**SANDSTONE** clear, red brown, quartz, chert, unconsolidated, very fine to coarse grained, subangular to angular, poorly sorted, argillaceous cement, tight to poor intergranular porosity (3-5%), argillaceous.
	30%	**SHALE** gray brown, red brown, medium gray, medium hard, silty, trace micro pyrite, blocky.
50.00 to 55.00 (5.00)	60%	**SANDSTONE** clear, black, white, pink, quartz, chert, feldspar, mica, unconsolidated, fine to very coarse grained, subrounded to angular, poorly sorted, siliceous cement, tight to poor intergranular porosity (3-5%).

50.00 to 55.00 (5.00)	40%	**SHALE** medium gray, red brown, gray brown, medium hard, silty, trace micro pyrite, blocky.
55.00 to 60.00 (5.00)	80%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to medium grained, subangular, moderately sorted, siliceous cement, tight to trace intergranular porosity (3%), argillaceous, trace micro pyrite.
	20%	**SHALE** medium gray, red brown, brown, medium hard, silty, as above.
60.00 to 65.00 (5.00)	90%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to medium grained, as above.
	10%	**SHALE** medium gray, red brown, brown, medium hard, silty, trace micro pyrite, blocky.
65.00 to 70.00 (5.00)	80%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to coarse grained, subrounded angular, poorly sorted, siliceous cement, tight to trace intergranular porosity (3%), trace pyrite.
	20%	**SHALE** medium gray, red brown, brown, medium hard, as above.
70.00 to 75.00 (5.00)	80%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to coarse grained, as above.
	20%	**SHALE** medium gray, red brown, brown, medium hard, as above.
75.00 to 80.00 (5.00)	80%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to fine grained, with large floating grains, subangular, moderately sorted, siliceous cement, tight to trace intergranular porosity (3%), trace pyrite.
	20%	**SHALE** medium gray, red brown, brown medium hard, as above.
80.00 to 85.00 (5.00)	80%	**SANDSTONE** clear, black, pink, quartz, chert, unconsolidated, very fine to fine grained, with large floating grains, as above.
	20%	**SHALE** medium gray, red brown, brown, medium hard, as above.
85.00 to 90.00 (5.00)	70%	**SANDSTONE** clear, black, slightly pink, unconsolidated, very fine to fine grained, with large floating grains, as above.

85.00 to 90.00 (5.00)	30%	**SHALE** medium gray, red brown, brown, medium hard, silty, sandy, blocky.
90.00 to 95.00 (5.00)	95%	**SANDSTONE** clear, black, slightly pink, unconsolidated, very fine to fine grained, with large floating grains, subangular, moderately sorted, siliceous cement, tight to trace intergranular porosity (3%), trace pyrite.
	5%	**SHALE** medium gray, red brown, brown, medium hard, as above.
95.00 to 100.00 (5.00)	80%	**SANDSTONE** clear, black, slightly pink, unconsolidated, very fine to fine grained, moderately sorted, as above.
	20%	**SHALE** medium gray, brown, medium hard, as above.
100.00 to 105.00 (5.00)	50%	**SHALE** medium gray, light brown, medium hard, very silty, sandy, trace micro pyrite, trace carbonaceous matter, blocky.
	50%	**SANDSTONE** clear, light gray, quartz, chert, friable to unconsolidated, very fine to fine grained, occasionally large floating grains, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3-5%), trace carbonaceous matter, argillaceous, trace pyrite, slightly calcareous in part.
105.00 to 110.00 (5.00)	60%	**SANDSTONE** clear, light gray, quartz, chert, friable to unconsolidated, very fine to fine grained, occasionally lower floating grains, as above.
	40%	**SHALE** medium gray, light brown, medium hard, as above.
110.00 to 115.00 (5.00)	70%	**SANDSTONE** light gray, clear, friable to unconsolidated, fine to coarse grained, subrounded to subangular, poorly sorted, siliceous with clay cement, tight to poor intergranular porosity (3-5%), trace carbonaceous matter, argillaceous, trace pyrite.
	30%	**SHALE** medium gray, light brown, medium hard, as above.
115.00 to 120.00 (5.00)	50%	**SHALE** medium gray, light brown, medium hard, as above.
	50%	**SANDSTONE** light gray, clear, friable to unconsolidated, fine to coarse grained, as above.
120.00 to 125.00 (5.00)	70%	**SHALE** light brown, light gray, medium hard, very silty, sandy, trace micro pyrite, trace carbonaceous matter, blocky.

120.00 to 125.00 (5.00)	30%	**SANDSTONE** clear, light gray, black, unconsolidated, fine to coarse grained, subangular to subrounded, poorly sorted, siliceous with clay cement, tight to poor intergranular porosity, (3-5%), trace carbonaceous matter, argillaceous, trace pyrite.
125.00 to 130.00 (5.00)	80%	**SANDSTONE** clear, black, light gray, quartz, chert, unconsolidated, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight to poor intergranular porosity (3-5%), trace carbonaceous matter, argillaceous, trace pyrite.
	20%	**SHALE** light to medium gray, medium hard, very silty, trace micro pyrite, trace carbonaceous matter, blocky.
130.00 to 135.00 (5.00)	70%	**SHALE** light to medium gray, medium hard, very silty, as above.
	30%	**SANDSTONE** clear, black, light gray, quartz, chert, unconsolidated, fine to medium grained, with large floating grains, as above.
135.00 to 140.00 (5.00)	70%	**SHALE** light to medium gray, medium hard, very silty, as above.
	30%	**SANDSTONE** clear, black, light gray, quartz, chert, unconsolidated, as above.
140.00 to 145.00 (5.00)	70%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, with large floating grains, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3-5%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, light brown, medium hard, silty, trace micro pyrite, trace carbonaceous matter, blocky.
145.00 to 150.00 (5.00)	70%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, as above.
150.00 to 155.00 (5.00)	70%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, silty, as above.

155.00 to 160.00 (5.00)	70%	**SANDSTONE** light gray, clear, chert, friable to unconsolidated, fine to medium grained, with large floating grains,
	30%	**SHALE** medium gray, light brown, medium hard, silty, as above.
160.00 to 165.00 (5.00)	60%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grains, as above.
	40%	**SHALE** medium gray, light brown, medium hard, silty, as above.
165.00 to 170.00 (5.00)	60%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grsw, as above.
	40%	**SHALE** medium gray, light brown, medium hard, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
170.00 to 175.00 (5.00)	70%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, very silty, as above.
175.00 to 180.00 (5.00)	70%	**SANDSTONE** clear, black, light gray, quartz, chert, friable to unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above.
180.00 to 185.00 (5.00)	70%	**SANDSTONE** clear, black, light gray, quartz, chert, unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above.
185.00 to 190.00 (5.00)	70%	**SANDSTONE** light gray, quartz, medium hard, very fine to fine grained, subangular, moderately sorted, siliceous with clay cement, tight to trace intergranular porosity (3%), trace carbonaceous material, argillaceous, silty, trace micro pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above.
190.00 to 195.00 (5.00)	60%	**SANDSTONE** light gray, quartz, medium hard, very fine to fine grained, as above.

190.00 to 195.00 (5.00)	40%	**SHALE** medium gray, medium hard, silty, sandy, trace micro pyrite, trace carbonaceous matter, blocky.
195.00 to 200.00 (5.00)	70%	**SANDSTONE** light gray, clear, quartz, chert, very fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight to trace intergranular porosity (3%), trace carbonaceous matter, argillaceous, silty, trace micro pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above.
200.00 to 205.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, chert, medium hard, very fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight to trace intergranular porosity (3%), trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
	40%	**SHALE** medium gray, medium hard, very silty, sandy, trace micro pyrite, trace carbonaceous matter, blocky.
205.00 to 210.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, chert, medium hard, very fine to medium grained, with large floating grains, as above.
	40%	**SHALE** medium gray, medium hard, very silty, as above.
210.00 to 215.00 (5.00)	60%	**SANDSTONE** light gray, quartz, chert, medium hard to unconsolidated, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight to trace intergranular porosity (3%), trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
	40%	**SHALE** medium gray, light brown, medium hard, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
215.00 to 220.00 (5.00)	80%	**SANDSTONE** light gray, quartz, chert, medium hard to unconsolidated, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight to trace intergranular porosity (3%), trace carbonaceous matter, very argillaceous, very silty, calcareous, trace pyrite.
	20%	**SHALE** medium gray, light brown, medium hard, very silty, sandy, trace micro pyrite, blocky.
220.00 to 225.00 (5.00)	50%	**SHALE** medium gray, light brown, medium hard, as above.

220.00 to 225.00 (5.00)	50%	**SANDSTONE** light gray, quartz, chert, medium hard to unconsolidated, fine to medium grained, with large floating grains, as above.
225.00 to 230.00 (5.00)	70%	**SANDSTONE** light gray, quartz, chert, medium hard, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
230.00 to 235.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, medium hard to unconsolidated, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight, trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
235.00 to 240.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, medium hard unconsolidated, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, as above.
240.00 to 245.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, medium hard unconsolidated, fine to medium grained, with floating grains, as above.
	30%	**SHALE** medium gray, light brown, medium hard, as above.
245.00 to 250.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, medium hard, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous with clay cement, tight, trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
	30%	**SHALE** medium gray, light brown, medium hard, very silty, sandy, trace micro pyrite, blocky.
250.00 to 255.00 (5.00)	40%	**CEMENT**
	30%	**SHALE** medium gray, medium hard, silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.

250.00 to 255.00 (5.00)	30%	**SANDSTONE** light gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, argillaceous, silty, trace pyrite, abundant large floating quartz & chert grains.
255.00 to 260.00 (5.00)	50%	**SHALE** medium gray, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	50%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty.
260.00 to 265.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, as above.
	40%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
265.00 to 270.00 (5.00)		**No Sample**
270.00 to 275.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	30%	**SANDSTONE** light to medium gray, quartz, chert, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace micro pyrite.
275.00 to 280.00 (5.00)	60%	**SHALE** medium gray, medium hard, very silty, as above.
	40%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, as above.
280.00 to 285.00 (5.00)	50%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	50%	**SANDSTONE** gray brown, light gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace micro pyrite.
285.00 to 290.00 (5.00)	60%	**SANDSTONE** gray brown, light gray, quartz, chert, hard, fine to medium grained, as above.
	40%	**SHALE** medium gray, medium hard, very silty, sandy, as above.

290.00 to 295.00 (5.00)	60%	**SANDSTONE** gray brown, light gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace micro pyrite.
	40%	**SHALE** medium gray, medium hard, very silty, very silty, as above.
295.00 to 300.00 (5.00)	50%	**SHALE** medium gray medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	50%	**SANDSTONE** light to medium gray, gray brown, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace micro pyrite.
300.00 to 305.00 (5.00)	50%	**SANDSTONE** gray brown, light to medium gray, quartz, chert, hard, fine to medium grained, as above.
	50%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
305.00 to 310.00 (5.00)	60%	**SHALE** medium gray, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	40%	**SANDSTONE** gray brown, light to medium gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace pyrite.
310.00 to 315.00 (5.00)	50%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	50%	**SANDSTONE** gray brown, light to medium gray, quartz, chert, hard, fine to medium grained, as above.
315.00 to 320.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace pyrite.
	30%	**SHALE** medium gray, gray brown, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky with SHALE gray green, soft, silty, waxy, smooth, blocky.

320.00 to 325.00 (5.00)	70%	**SANDSTONE** light gray, clear, medium gray, quartz, chert, unconsolidated, medium to coarse grained, subangular to subrounded, moderately sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous matter, argillaceous, trace pyrite.
	30%	**SHALE** medium gray, medium hard, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky, with SHALE white, soft, smooth, waxy, blocky.
325.00 to 330.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, subangular, moderate sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, very silty, sandy, as above.
330.00 to 335.00 (5.00)	70%	**SANDSTONE** light gray, clear, white, quartz, chert, hard to unconsolidated, fine to coarse grained, subangular to subrounded, poorly sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, very silty, sandy, as above.
335.00 to 340.00 (5.00)	60%	**SANDSTONE** gray brown, light to medium gray, quartz, chert, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, very silty, trace pyrite.
	40%	**SHALE** medium gray, medium hard, very silty, sandy, as above.
340.00 to 345.00 (5.00)	80%	**SHALE** medium gray, medium hard, very silty, very sandy, trace micro pyrite, trace carbonaceous matter, blocky.
	20%	**SANDSTONE** gray brown, quartz, chert, hard, fine to medium grained, as above.
345.00 to 350.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	30%	**SANDSTONE** gray brown, light to medium gray, quartz, chert, hard, fine to medium grained, as above.
350.00 to 355.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, silty, trace pyrite.

350.00 to 355.00 (5.00)	30%	**SHALE** medium gray, medium hard, very silty, very sandy, trace micro pyrite, trace carbonaceous matter, blocky.
355.00 to 360.00 (5.00)	60%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	40%	**SANDSTONE** light to medium gray, gray brown, quartz, chert, hard, fine to medium grained, as above.
360.00 to 365.00 (5.00)	60%	**SHALE** medium gray, gray brown, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky
	40%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, as above.
365.00 to 370.00 (5.00)	70%	**SHALE** medium gray, gray brown, medium hard, very silty, very sandy, trace pyrite, trace carbonaceous matter, blocky.
	30%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, as above.
370.00 to 375.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, with large floating grains, as above.
	30%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
375.00 to 380.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, with large floating grains, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, silty, trace pyrite.
	40%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.

East Fork Shale: 382.00 MD, 381.98 TVD, -67.56 SSL

380.00 to 385.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	30%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, with large floating grains, as above.
385.00 to 390.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.

385.00 to 390.00 (5.00)	30%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, as above.
390.00 to 395.00 (5.00)	60%	**SHALE** medium gray, medium hard, very silty, very sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	40%	**SANDSTONE** light to medium gray, quartz, chert, fine to medium grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous to shaly, silty, trace pyrite.
395.00 to 400.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, as above.
	30%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, as above.
400.00 to 405.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, hard to unconsolidated, fine to coarse grained, angular to subangular, poorly sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous, very argillaceous to shaly, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, very silty, sandy, common large scattered carbonaceous grains, as above.
405.00 to 410.00 (5.00)	70%	**SHALE** medium gray, medium hard, very silty, very sandy, common scattered large carbonaceous grains, as above.
	30%	**SANDSTONE** light to medium gray, quartz, chert, hard to unconsolidated, fine to coarse grained, poorly sorted, as above.
410.00 to 415.00 (5.00)	60%	**SHALE** medium gray, medium hard, very silty, very sandy, common large scattered carbonaceous grains, trace micro pyrite, blocky.
	40%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to coarse grained, angular to subangular, poorly sorted, as above.
415.00 to 420.00 (5.00)	80%	**SHALE** medium gray, medium hard, very silty, very sandy, common large scattered carbonaceous grains, trace micro pyrite, blocky.
	20%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, moderately sorted, subangular, siliceous cement, tight, trace carbonaceous matter, very argillaceous shaly, silty, trace pyrite.

420.00 to 425.00 (5.00)	90%	**SHALE** medium gray, medium hard, silty, sandy, common large scattered carbonaceous grains, trace micro pyrite, blocky.
	10%	**SANDSTONE** light to medium gray, quartz, chert, fine to medium grained, as above.
425.00 to 430.00 (5.00)	90%	**SHALE** medium gray, medium hard, silty, sandy, trace large scattered carbonaceous grains, trace micro pyrite, blocky.
	10%	**SANDSTONE** light to medium gray, quartz, chert, hard, as above.
430.00 to 435.00 (5.00)	80%	**SHALE** medium gray, medium hard, silty, sandy, common large scattered carbonaceous grains, trace pyrite blocky, with SHALE white, medium hard, silty, blocky.
	20%	**SANDSTONE** clear, light gray, quartz, chert, unconsolidated, medium grained, occasionally coarse, subangular, moderately sorted, siliceous cement, tight.
435.00 to 440.00 (5.00)	90%	**SHALE** medium to dark gray, medium hard, silty, sandy, as above with SHALE medium hard, silty, blocky.
	10%	**SANDSTONE** light gray, clear, quartz, chert, unconsolidated, medium grained, as above.
440.00 to 445.00 (5.00)	90%	**SHALE** medium to dark gray, medium hard, silty, sandy, common large scattered carbonaceous grains, trace pyrite, blocky, with SHALE white, silty, blocky.
	10%	**SANDSTONE** light gray, clear, quartz, chert, unconsolidated, medium grained, as above.
445.00 to 450.00 (5.00)	90%	**SHALE** medium gray, medium hard, silty, sandy, as above.
	10%	**SANDSTONE** light gray, clear, quartz, chert, unconsolidated, medium grained, as above.

Little Bear: 450.50 MD, 450.48 TVD, -136.06 SSL

450.00 to 455.00 (5.00)	90%	**SANDSTONE** brown, clear, black, light gray, unconsolidated to friable, quartz, chert, medium to very coarse grained, angular to subrounded, poorly sorted, siderite cement, fair intergranular porosity, (10%), argillaceous, silty.
	10%	**SHALE** medium gray, medium hard, silty, sandy, as above.

455.00 to 460.00 (5.00)	70%	**SANDSTONE** brown, light gray, clear, hard to unconsolidated, fine to very coarse grained, angular to subrounded, poorly sorted, siderite with siliceous cement, fair intergranular porosity, (10%), argillaceous, silty.
	30%	**SHALE** medium gray, brown, silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
460.00 to 465.00 (5.00)	60%	**SANDSTONE** light brown, light gray, clear, quartz, chert, hard to unconsolidated, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**CHERT** varicolored white, black, light gray, brown, orange, hard, very coarse grained, angular, moderately sorted, tight, pyritic.
	10%	**SHALE** medium gray, light brown, medium hard, as above.
465.00 to 470.00 (5.00)	50%	**SANDSTONE** light gray, quartz, chert, medium hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5-8%), trace carbonaceous matter, argillaceous, silty.
	30%	**SHALE** medium gray, medium hard, silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	20%	**CHERT** varicolored, light gray, white, black, hard, very coarse grained, angular, moderately sorted, tight, pyritic.
470.00 to 475.00 (5.00)	80%	**SANDSTONE** light gray, light brown, quartz, chert, medium hard, fine to medium grained, subangular, moderately sorted, siliceous with clay cement, tight to poor intergranular porosity (5-8%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	10%	**CHERT** varicolored, black, white, gray, hard, very coarse grained, as above.
	10%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
475.00 to 480.00 (5.00)	80%	**SANDSTONE** light gray, quartz, chert, medium hard, fine to medium grained, subangular, moderately sorted, siliceous with clay cement, tight to poor intergranular porosity (5-8%), trace carbonaceous matter, argillaceous, silty, trace pyrite.

475.00 to 480.00 (5.00)	10%	**CHERT** varicolored, white, black, gray, hard, as above.
	10%	**SHALE** medium gray, medium hard, silty, as above.
480.00 to 485.00 (5.00)	80%	**SANDSTONE** light gray, quartz, chert, medium hard, fine to medium grained, as above.
	20%	**SHALE** medium gray, medium hard, silty, as above.
		CHERT Trace, as above.
485.00 to 490.00 (5.00)	50%	**SANDSTONE** light gray, quartz, chert, medium hard, fine to medium grained, as above.
	30%	**CHERT** varicolored, white, light gray, black, hard, very coarse grained, angular, moderately sorted, tight pyritic.
	20%	**SHALE** medium gray, medium hard, silty, as above.
490.00 to 495.00 (5.00)	90%	**CONGLOMERATE** light gray, clear, black, quartz, chert, unconsolidated to friable, coarse to very coarse grained, subrounded to angular, moderately sorted, siliceous cement, tight to fair intergranular porosity (10-12%), slightly argillaceous, trace pyrite.
	10%	**SHALE** medium gray, medium hard, silty, as above.
495.00 to 500.00 (5.00)	60%	**CHERT** white, light gray, black, hard, very coarse grained, angular, moderately sorted, tight, trace pyrite.
	30%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to fair intergranular porosity (12%), trace carbonaceous matter, slightly argillaceous, trace pyrite.
	10%	**SHALE** medium gray, medium hard, as above.
500.00 to 505.00 (5.00)	60%	**CHERT** varicolored, white, light gray, black, hard, as above.
	40%	**SANDSTONE** light gray, clear, quartz, chert, fine to medium grained, as above.

505.00 to 510.00 (5.00)	50%	**SANDSTONE** light gray, clear, quartz, chert, friable to unconsolidated, fine to medium grained, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above.
	20%	**CHERT** varicolored, white, light gray, black, hard, as above.
510.00 to 515.00 (5.00)	70%	**SANDSTONE** light gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, argillaceous, silty, trace pyrite.
	20%	**CHERT** varicolored, white, light gray, black, hard, as above.
	10%	**SHALE** medium gray, light brown, medium hard, silty, as above.
515.00 to 520.00 (5.00)	50%	**SHALE** medium gray, light brown, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
	50%	**SANDSTONE** light gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
520.00 to 525.00 (5.00)	60%	**SANDSTONE** light gray, light brown, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, very argillaceous, very silty, trace pyrite.
	40%	**SHALE** medium gray, light brown, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
525.00 to 530.00 (5.00)	70%	**SANDSTONE** light gray, quartz, medium hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous matter, trace coal grains, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, light brown, medium hard, as above.
530.00 to 531.00 (1.00)	80%	**SANDSTONE** light gray, white, clear, quartz, friable to unconsolidated, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to fair intergranular porosity (12-15%), trace carbonaceous matter, trace coal grains, slightly argillaceous, trace pyrite.

530.00 to 531.00 (1.00)	20%	**SHALE** medium gray, medium hard, as above.
531.00 to 535.00 (4.00)	50%	**SANDSTONE** light gray, white, clear, quartz, chert, friable to unconsolidated, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5-8%), trace carbonaceous matter, slightly argillaceous, trace pyrite.
	30%	**SHALE** medium gray, medium hard, as above.
	20%	**COAL**
535.00 to 540.00 (5.00)	70%	**SHALE** medium gray, light brown, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
	30%	**SANDSTONE** light to medium gray, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5-10%), trace carbonaceous matter, slightly argillaceous, slightly silty, trace pyrite.
540.00 to 545.00 (5.00)	50%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
	50%	**SANDSTONE** light gray, gray brown, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, argillaceous, silty, trace pyrite.
545.00 to 550.00 (5.00)	60%	**SHALE** medium gray, medium hard, silty, as above.
	40%	**SANDSTONE** light brown, light gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to fair intergranular porosity (8-10%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
550.00 to 555.00 (5.00)	70%	**SANDSTONE** light gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to fair intergranular porosity (8-10%), slightly argillaceous, silty, trace micro pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above.
555.00 to 560.00 (5.00)	60%	**SHALE** medium gray, medium hard, silty, as above.

555.00 to 560.00 (5.00)	40%	**SANDSTONE** light gray, white, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3-5%), trace carbonaceous matter, slightly argillaceous, silty, trace micro pyrite.
560.00 to 565.00 (5.00)	60%	**SANDSTONE** gray brown, light gray, quartz, large floating chert & quartz, hard, very fine to fine grained, subangular, poorly sorted, siliceous cement, tight to poor intergranular porosity (8-10%), trace carbonaceous matter, argillaceous, silty, trace micro pyrite.
	40%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
565.00 to 570.00 (5.00)	80%	**SHALE** medium gray, medium hard, silty, as above.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, medium hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, very argillaceous, silty, trace micro pyrite.
570.00 to 575.00 (5.00)	70%	**SHALE** medium gray, medium hard, silty, as above.
	30%	**SANDSTONE** light gray, salt and pepper, quartz, hard very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5%), argillaceous, silty, trace pyrite, rare kaolinitic.
575.00 to 580.00 (5.00)	70%	**SANDSTONE** light gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	30%	**SHALE** medium gray, light brown, medium hard, silty, as above.
580.00 to 585.00 (5.00)	90%	**SANDSTONE** light gray, light brown, salt and pepper, quartz, hard, very fine to fine grained, as above.
	10%	**SHALE** medium gray, medium hard, silty, as above.
585.00 to 590.00 (5.00)	90%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	10%	**SHALE** medium gray, medium hard, silty, as above.

590.00 to 595.00 (5.00)	80%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	20%	**SHALE** medium gray, medium hard, silty, as above.
595.00 to 600.00 (5.00)	80%	**SHALE** medium gray, medium hard, very silty, trace carbonaceous matter, trace micro pyrite, blocky.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, very argillaceous, silty, trace pyrite.
600.00 to 605.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
605.00 to 610.00 (5.00)	80%	**SANDSTONE** light gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	20%	**SHALE** medium gray, light brown, medium hard, as above.
610.00 to 615.00 (5.00)	80%	**SANDSTONE** light gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	20%	**SHALE** medium gray, light brown, medium hard, silty, as above.
615.00 to 620.00 (5.00)	70%	**SHALE** medium gray, medium hard, silty, as above.
	30%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
620.00 to 625.00 (5.00)	80%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	20%	**SHALE** medium gray, light brown, medium hard, silty, as above.

Lower Little Bear: 625.00 MD, 624.98 TVD, -310.56 SSL

625.00 to 630.00 (5.00)	95%	**SHALE** medium gray, medium hard, very silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.

625.00 to 630.00 (5.00)	5%	**SANDSTONE** light to medium gray, as above.
630.00 to 635.00 (5.00)	90%	**SHALE** medium gray, medium hard, very silty, sandy, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine, as above.
635.00 to 640.00 (5.00)	90%	**SANDSTONE** light to medium gray, salt and pepper, quartz, chert, friable to unconsolidated, fine to medium grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (5%), argillaceous, silty, trace pyrite.
	10%	**SHALE** medium gray, medium hard, as above.
640.00 to 645.00 (5.00)	80%	**SHALE** medium gray, light brown, medium hard, silty, sandy, trace carbonaceous matter, trace micro pyrite, blocky.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.
645.00 to 650.00 (5.00)	80%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.
	20%	**SHALE** medium gray, light brown, medium hard, silty, as above.
650.00 to 655.00 (5.00)	90%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, as above.
	10%	**SHALE** medium gray, light brown, medium hard, as above.
655.00 to 660.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, as above.
	40%	**SHALE** medium gray, light brown, medium hard, as above.
660.00 to 665.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, medium hard, very fine to fine grained, as above.
	30%	**SHALE** medium gray, light brown, medium hard, silty, as above.
665.00 to 670.00 (5.00)	80%	**SHALE** medium gray, light brown, medium hard, silty, as above.

665.00 to 670.00 (5.00)	20%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, as above.
670.00 to 675.00 (5.00)	70%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace pyrite, blocky, with SHALE light brown, hard, dolomitic, silty, blocky.
675.00 to 680.00 (5.00)	70%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, dolomitic, as above.
	30%	**SANDSTONE** light to medium gray, quartz, chert, friable to unconsolidated, fine to coarse grained, poorly sorted, subangular to subrounded, siliceous cement, tight to fair intergranular porosity (10%), slightly argillaceous, trace pyrite.
680.00 to 685.00 (5.00)	70%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, trace micro pyrite, trace carbonaceous matter, blocky with SHALE light brown, hard, dolomitic, silty, trace micro pyrite, blocky.
685.00 to 690.00 (5.00)	80%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, very sideritic, as above.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
690.00 to 695.00 (5.00)	80%	**SANDSTONE** medium gray, gray brown, salt and pepper, quartz, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, very argillaceous, silty, trace pyrite.
	20%	**SHALE** medium gray, medium hard, silty, as above, SHALE light brown, medium hard, dolomitic, as above.
695.00 to 700.00 (5.00)	80%	**SHALE** medium gray, medium hard, silty, as above, minor SHALE light brown, as above.

695.00 to 700.00 (5.00)	20%	**SANDSTONE** medium gray, gray brown, quartz, medium hard, very fine to fine grained, as above.
700.00 to 705.00 (5.00)	70%	**SHALE** medium gray, medium hard, silty, as above, with minor SHALE light brown, as above.
	30%	**SANDSTONE** medium gray, medium hard, quartz, hard, very fine to fine grained, as above.
705.00 to 710.00 (5.00)	70%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, massive, blocky, with SHALE light brown, hard, very sideritic, silty, blocky.
710.00 to 715.00 (5.00)	80%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, very fine to fine grained, as above.
	20%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, as above.
715.00 to 720.00 (5.00)	70%	**SHALE** medium gray, medium hard, as above, with SHALE light brown, hard, as above.
	30%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
720.00 to 725.00 (5.00)	80%	**SHALE** medium gray, medium hard, as above, with SHALE light brown, hard, as above.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
725.00 to 730.00 (5.00)	70%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with SHALE light brown, as above.
	30%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.

730.00 to 735.00 (5.00)	95%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with minor SHALE light brown, as above.
	5%	**SANDSTONE** light to medium gray, quartz, hard, very fine grained, as above.
735.00 to 740.00 (5.00)	100%	**SHALE** medium gray, medium hard, as above, with trace SHALE light brown, hard, as above.
		SANDSTONE Trace, as above.
740.00 to 745.00 (5.00)	90%	**SHALE** medium gray, medium hard, as above, with minor SHALE light brown, hard, as above.
	10%	**SANDSTONE** light to medium gray, quartz, hard, as above.
745.00 to 750.00 (5.00)	95%	**SHALE** medium gray, hard, silty, as above, with minor SHALE light brown, hard, as above.
	5%	**SANDSTONE** light to medium gray, quartz, hard, as above.
750.00 to 755.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, as above, with minor SHALE light brown, hard, as above.
755.00 to 760.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
760.00 to 765.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
765.00 to 770.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, as above.
770.00 to 775.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky.
775.00 to 780.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, as above.

Slater River: 782.50 MD, 782.47 TVD, -468.05 SSL

780.00 to 785.00 (5.00)	60%	**SANDSTONE** light to medium gray, quartz, chert, hard to slightly unconsolidated, fine to medium grained, occasionally coarse, moderately sorted, subangular, siliceous cement, tight to poor intergranular porosity (5-8%), argillaceous, silty, slightly calcareous in part, trace pyrite.
	40%	**SHALE** medium gray, silty, as above, with SHALE light brown, hard, as above.
785.00 to 790.00 (5.00)	70%	**SANDSTONE** light gray, quartz, chert, medium hard to unconsolidated, fine to medium grained, occasionally coarse, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (8%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
790.00 to 795.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
795.00 to 800.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, very fine to medium grained, subangular, poorly sorted, siliceous cement, tight to trace intergranular porosity (3%), argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
800.00 to 805.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, chert, very fine to medium grained, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above, with trace SHALE light brown, hard, as above.
805.00 to 810.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, argillaceous, silty, trace pyrite.

805.00 to 810.00 (5.00)	30%	**SHALE** medium gray, medium hard, silty, as above, with trace SHALE light brown, hard, as above.
810.00 to 815.00 (5.00)	70%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, argillaceous, silty, trace pyrite.
	30%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with SHALE light brown, hard, as above.
815.00 to 820.00 (5.00)	70%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
820.00 to 825.00 (5.00)	70%	**SANDSTONE** light to medium gray, quartz, hard, very fine to fine grained, as above.
	30%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
825.00 to 830.00 (5.00)	60%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	40%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
830.00 to 835.00 (5.00)	50%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with SHALE light brown, hard, silty, dolomitic, blocky.
	45%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight, trace carbonaceous matter, argillaceous, silty, trace pyrite.
	5%	**COAL**
835.00 to 840.00 (5.00)	50%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.

835.00 to 840.00 (5.00)	40%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	10%	**COAL**
840.00 to 845.00 (5.00)	75%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, dolomitic, as above.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
	5%	**COAL**
845.00 to 850.00 (5.00)	75%	**SHALE** medium gray, medium hard, silty, trace micro pyrite, trace carbonaceous matter, blocky, with SHALE light brown, hard, dolomitic, silty, blocky.
	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above, rare glauconite, tight to poor intergranular porosity (3%).
	5%	**COAL**
850.00 to 855.00 (5.00)	90%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, dolomitic, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above, tight.
855.00 to 860.00 (5.00)	90%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, dolomitic, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above.
		COAL Trace.
860.00 to 865.00 (5.00)	80%	**SHALE** medium gray, medium hard, silty, as above. with SHALE light brown, medium hard, as above.

860.00 to 865.00 (5.00)	20%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, subangular, moderately sorted, siliceous cement, tight to poor intergranular porosity (3%), trace carbonaceous matter, silty, argillaceous, very pyritic.
		COAL Trace.
865.00 to 870.00 (5.00)	85%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, as above.
	5%	**COAL**
870.00 to 875.00 (5.00)	85%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above, tight.
	5%	**COAL** Trace.
875.00 to 880.00 (5.00)	85%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with SHALE light brown, hard, dolomitic, silty, blocky.
	15%	**SANDSTONE** light to medium gray, salt and pepper, quartzose, hard, very fine to fine grained, as above, tight.
		COAL Trace.
880.00 to 885.00 (5.00)	85%	**SHALE** medium gray, medium hard, silty, as above, with SHALE light brown, hard, as above.
	10%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above, tight.
	5%	**COAL** Trace.

885.00 to 890.00 (5.00)	95%	**SHALE** medium gray, medium hard, silty, as above, SHALE light brown, hard, as above.
	5%	**SANDSTONE** light to medium gray, salt and pepper, quartz, hard, very fine to fine grained, as above, tight.
		COAL Trace.
890.00 to 895.00 (5.00)	100%	**SHALE** medium gray, medium hard, silty, trace carbonaceous matter, trace micro pyrite, blocky, with trace SHALE light brown, hard, as above.

531.20 to 531.21 (0.01)	**SANDSTONE** white, light gray, clear, quartz, chert, salt and pepper, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, fair intergranular porosity (10-12%), trace kaolinitic, trace micro pyrite.
532.20 to 532.21 (0.01)	**SANDSTONE** white, light gray, clear, quartz, chert, salt and pepper, hard, fine to medium grained, as above.
533.70 to 533.71 (0.01)	**SANDSTONE** white, light gray, clear, quartz, chert, salt and pepper, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, fair intergranular porosity (10-12%), carbonaceous matter, slightly kaolinitic, trace micro pyrite.
535.20 to 535.21 (0.01)	**SANDSTONE** white, light gray, clear, salt and pepper, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, fair intergranular porosity (10-12%), slightly kaolinitic, trace micro pyrite.
536.70 to 536.71 (0.01)	**SANDSTONE** white, light gray, clear, salt and pepper, quartz, chert, hard, fine to medium grained, as above.
538.20 to 538.21 (0.01)	**SANDSTONE** white, light gray, clear, quartz, chert, salt and pepper, hard, fine to medium grained, as above.
540.00 to 540.01 (0.01)	**SANDSTONE** white, light gray, clear, salt and pepper, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, fair intergranular porosity (10-12%), slightly kaolinitic, trace micro pyrite.
540.01 to 540.70 (0.69)	**SANDSTONE** white, light gray, clear, salt and pepper, quartz, chert, hard, fine to medium grained, subangular, moderately sorted, siliceous cement, poor intergranular porosity (8-10%), slightly kaolinitic, trace pyrite.

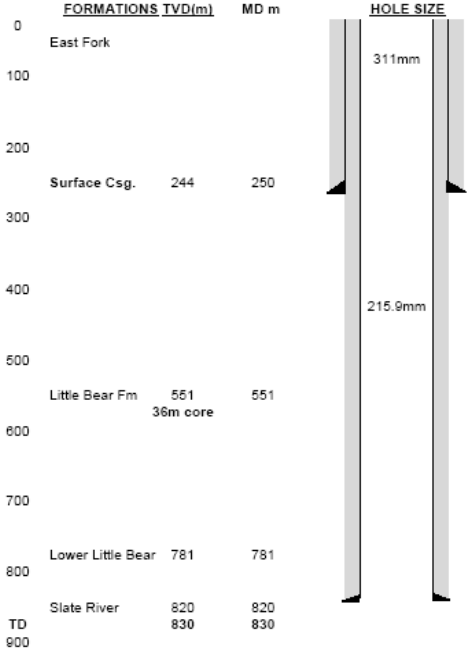
E.9 WELL KEELE RIVER L-52 PLANNED STICK DIAGRAM

Husky Oil Operations Limited

Well Name:	Husky et al Keele River L-52
Well Type:	New Field Wildcat
Well Profile	Vertical
Target:	Little Bear Formation
Drlg Superintendent:	Kim Richardson
AFE Number:	US-28423
License #:	
Tight Hole Status:	Confidential

DRILL PLAN SUMMARY

Surface Coordinates:	64°01'30.159"N	124°56' 07.308"W	NAD 27
Bottom Hole Coordinates@ 831m TVD	64°01'30.159"N	124°56' 07.308"W	NAD 27
Surface Coordinates UTM:	7 101 044.92 N	405 429.12 E	NAD 27
Ground Elevation:	309.68 m		
KB Elevation:	313m		
Total Depth	830m TVD		
D&C Cost Estimate:	$9,000,000		



SURFACE HOLE 311 mm (0-250m):
Conductor Pipe:+/- 30 m (25m below ground level) 339.72 mm , 90.76 kg/m, K-55, BTC casing. Pressure cemented.
-A diverter is required on surface hole.
MUD: Water based Gel/Chemical
SURVEYS: Inclination survey with Totco
DIRECTIONAL: Maintain straight hole and minimal dog-legs
PROBLEMS: Possible loss
CASING: 244.5 mm csg 69.93 kg/m, L-80, LT&C (0-250m)
CEMENT:RFC + additives 1740 Kg/m3 (250m - surface)
100% excess over gauge hole size

MAIN HOLE 215.9mm (250- 830 mTVD)
FLOT: to be performed at 14.2 KPa/m Equivalent MW
MUD: Water based Gel/Polymerl
PROBLEMS:
-Hole deviation/doglegs
-Borehole instability
-Mud losses
SURVEYS: Vertitrack /with Inclination
DIRECTIONAL: Maintain straight hole w/ Vertitrack
CASING:
177.8 mm, 34.23 kg/m L-80, LT&C (0-830m MD)
CEMENT:
-Lead: RFC Lite 1530 Kg/m3+ additives (630m - surface) 30% excess over caliper
-Tail : RFC + additives 1740 Kg/m3 (830m - 630m) 30% excess over caliper

OPERATION	DURATION DAY
Clean out CP & Drill 311mm hole to 245m	1.75
Run&Cement surface csg. WOC, N/U Csg Bowl, BOP& Test	1.75
Drill to 550m	1.50
Cut 36m core	2.00
Drill to well TD at 830m	1.25
Log and MDT	1.50
DST (3 test)	3.25
Run& cement 177.8mm casing, well suspension	2.00
Total Estimated days	15.00

EVALUATION:
Mud Logging: Full Spectrum Gas Chromatograph From Surface To TD
Open Hole Logging:
-Dual Induction - SP: Surface Casing to TD
-Di-Pole Sonic - Gamma: Surface Casing To T.D.
-Dual CNL-Density Gamma: Surface Casing To T.D.(GR /Neutron log will be run across casing to surface.)
-Temperature Log: Surface Casing To TD
-UBI Formation Imager: Intermediate Casing to TD
MDT (Pressure and sample)
-Determine fluid type and contacts in upper and Lower Bear Rock.
CORING: 36m cores in little Bear formation planned.
DST: 3 DST's

PRESSURE & TEMPERATURE
-All zones are expected to be sweet.
-Pressure: Normally pressured to slightly under pressured reservoirs are expected to be encountered in all intervals.
In well Husky Husky et al Stewart D-57, DST was performed in little bear at depth of 1100m in Little Bear formation. Test resulted to sweet gas flow to surface. Bottom hole pressure was 9 Mpa@ 1100m. (834 kg/m3 equivalent mud weight)
Little Bear test pressures from A-28 indicate a reservoir pressure gradient as low as 6 kPa/m.
Maximum well bore temperatures of 40C are expected at the planned L-52 total depth.

Well	Pressure	Test	Formation
D-57	9000 KPa@ 1100m	DST Sweet Gas Flowed	Cretaceous Little Bear
A-28	3300 KPa @ 520m	DST	Cretaceous Little Bear
B-44	24.07 Mpa @2721.5mTVD 23.85 MPa @ 2608mTVD	Production Test Gas Flowed	Bear Rock Amica
B-44 pressure data are from devonian Bear Rock and Amica. Does not apply to this well.			

E.10 DAILY DRILLING REPORTS

Daily drilling reports are in separate file.

E.11 DAILY DRILLING FLUID REPORTS

Daily drilling fluid reports are in separate file.

E.12 WELL ABANDONMENT SIGN


L-52

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	0
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	6
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	71.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$94,455.00
Operations @ 00:00	Drill 311 mm surface hole at 71 m.	311.00		Cumulative Costs	$1,019,575.00
Operations @ 06:00	Drill 311 mm surface hole at 125 m at .25 deg.			Cumulative AFE	$1,019,575.00

Key Personnel

Drilling Supervisor Sam Machnee	(306)222-6665	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)357-8930	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	6
Rig	12
Total	20

Brief Summary of Day's Activities

Welded diverter flange and nippled up diverter. Finished spotting rig, (premix tank, pipe racks) while changing out damaged flare line unions. Made up BHA , tagged cement at 24 m. Spudded well at 16;00 hrs. Mar.6/08. Drilled 311 mm hole to 71 m.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1A	311.00	Hughes	GTCS1	6022344	20.0 / 20.0 / 20.0 / .0 / / / /	.00		71.00	5.50	12.9	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1A	12000	80/120	12000		12000		2/4	.00 / .00 / /	41.55 / 36.91 / /	37.7

Activities

Code	From	To	Hours	Remarks
NUBOP	00:00	01:00	1.00	Nipple up diverter, (weld diverter flange).
NUBOP	01:00	08:00	7.00	Nippled up diverter and flare lines, rig in flare tank.
RIGUP	08:00	14:00	6.00	Spot pipe tubs and premix tank, change out flare line hammer unions due t damage.
RIGSER	14:00	14:15	0.25	Rig service.
TRIP	14:15	15:15	1.00	Make up BHA and tripped in well, tagged cement at 24 m.
TESTBOP	15:15	15:45	0.50	Pressure test diverter, Function test hydril and HCR, Accum. test.
SAFETY	15:45	16:00	0.25	Pre-job hazzard meeting.
DRILL	16:00	18:30	2.50	Drilled 311 mm hole from 24 m - 41 m.
RIGSER	18:30	18:45	0.25	Rig service.
DRILL	18:45	19:45	1.00	Drill 311 mm hole from 41 m - 51 m.
CIRC	19:45	20:00	0.25	Circ prior to survey.
SURVEY	20:00	20:15	0.25	Survey at 42 m .75 deg.
TRIP	20:15	21:30	1.25	Trip out and pick up stabilizer.
DRILL	21:30	23:30	2.00	Drill 311 mm hole from 42 m - 71 m.
SURVEY	23:30	00:00	0.50	Survey at 61 m .75 deg.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0125	100		1.250	2800
.0104	85		.884	2800

Survey

Depth(m)	Incl.	Azim.
42.00	.750	
61.00	.750	

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	3/6/2008
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	14.0 m3
Premix Tank	.0 m3
String	2.0 m3
Annular	5.0 m3
Total Mud	21.0 m3
Mud Loss	1.0 m3
Cum. Mud Loss	1.0 m3
Bottom Up Time	2.00 min
Circulating Time	14.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Surface Hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	311.000	.000	.000	.30	Regular threads	140.000
Sub - bit	1	177.800	.900	.000	1.00	H-90	140.000
Drill collar - standard	2	177.800	.900	.000	18.69	H-90	140.000
Stabilizer - non rotating	1	308.000	.850	.000	1.30	H-90	140.000
Drill collar - standard	1	177.800	.850	.000	9.46	H-90	140.000
Sub - cross over	1	177.800	.850	.000	.75	Extra hole	114.000
Drill collar - standard	5	152.000	.620	.000	46.83	Extra hole	114.000
Jars - mechanical	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	3	152.000	.600	.000	28.38	Extra hole	114.000
Sub - cross over	1	121.000	.580	.000	.26	Internal flush	88.000
Drill collar - standard	4	121.000	.580	.000	38.09	Internal flush	88.000

Mud Additives

#

Mud Properties

Density(kg/m3)	1030.0
Viscosity(sec/L)	39.0
pH	9.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1620	1010	120.0	8.0

Shale Shaker

15 Double Decker	60	60	0	0 (mesh/sq.in)	
					(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	0
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	6
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	71.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$94,455.00
Operations @ 00:00	Drill 311 mm surface hole at 71 m.		311.00	Cumulative Costs	$1,019,575.00
Operations @ 06:00	Drill 311 mm surface hole at 125 m at .25 deg.			Cumulative AFE	$1,019,575.00

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	0
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	6
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	71.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$94,455.00
Operations @ 00:00	Drill 311 mm surface hole at 71 m.		311.00	Cumulative Costs	$1,019,575.00
Operations @ 06:00	Drill 311 mm surface hole at 125 m at .25 deg.			Cumulative AFE	$1,019,575.00

Detailed Remarks

- No incidents to report.
- Spudded well at 1600 hrs. Mar.6/08.

- Welded diverter flange and nippled up diverter.
- Pressure tested diverter (gravity) and accumm check, pre-spud meeting.
- Made up BHA and tagged cement at 24 m.
- Drilled 311 mm hole to 71m at .75 deg.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	1
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	7
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	181.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$103,417.00
Operations @ 00:00	Circ/proir to run 244.5 csg. 252 m.	311.00		Cumulative Costs	$1,122,992.00
Operations @ 06:00	Run 244.5 mm csg.			Cumulative AFE	$1,122,992.00

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Drilled 311 mm surface hole from 71 m - 247 m, wiper tripped, and drilled to 252 m. Circulated prior to tripping out to run 244.5 mm csg.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1A	311.00	Hughes	GTCS1	6022344	20.0 / 20.0 / 20.0 / .0 / / / /	.00	252.00	252.00	22.25	11.3	4-3-FC-A-3-I-BT-TD

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1A	19000	120/190	20000		18000		4/7	.00 / .00 / /	40.54 / 36.01 / /	36.8

Activities

Code	From	To	Hours	Remarks
RIGSER	00:00	00:15	0.25	Service rig.
DRILL	00:15	07:15	7.00	Drilled 311 mm hole from 71 m - 146 m.
SURVEY	07:15	08:00	0.75	Surveys.
DRILL	08:00	15:15	7.25	Drilled 311 mm hole from 146 m - 229 m.
SURVEY	15:15	16:00	0.75	Surveys.
DRILL	16:00	16:45	0.75	Drilled 311 mm hole from 229 m - 237 m.
SURVEY	16:45	17:00	0.25	Survey
DRILL	17:00	17:45	0.75	Drilled 311 mm hole from 237 m - 247 m.
CIRC	17:45	18:15	0.50	Circulate prior to wiper trip.
TRIP	18:15	22:45	4.50	Wiper tripped prior to running 244.5 mm casing.
DRILL	22:45	23:45	1.00	Drilled 311 mm hole from 247 m - 252 m.
CIRC	23:45	00:00	0.25	Circ. prior to tripping out to run csg.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104	80		.832	6800
.0125	100		1.250	6800

Survey

Depth(m)	Incl.	Azim.
94.00	.250	
123.00	.250	
151.00	1.000	
180.00	1.250	
208.00	.750	
237.00	.500	

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	14.0 m3
Premix Tank	.0 m3
String	2.0 m3
Annular	5.0 m3
Total Mud	21.0 m3
Mud Loss	2.0 m3
Cum. Mud Loss	3.0 m3
Bottom Up Time	3.00 min
Circulating Time	14.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Surface Hole							
Bit	1	311.000	.000	.000	.30	Regular threads	140.000
Sub - bit	1	177.800	.900	.000	1.00	H-90	140.000
Drill collar - standard	2	177.800	.900	.000	18.69	H-90	140.000
Stabilizer - non rotating	1	308.000	.850	.000	1.30	H-90	140.000
Drill collar - standard	1	177.800	.850	.000	9.46	H-90	140.000
Sub - cross over	1	177.800	.850	.000	.75	Extra hole	114.000
Drill collar - standard	5	152.000	.620	.000	46.83	Extra hole	114.000
Jars - mechanical	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	3	152.000	.600	.000	28.38	Extra hole	114.000
Sub - cross over	1	121.000	.580	.000	.26	Internal flush	88.000
Drill collar - standard	4	121.000	.580	.000	38.09	Internal flush	88.000

Mud Additives

	#
Sawdust (1.0sack)	32.00
Newlig / Lignite (50.0lb)	2.00
Soda Ash (50.0lb)	2.00
Bentonite Wyo (40.0kg)	54.00

Mud Properties

Density(kg/m3)	1120.0
Viscosity(sec/L)	54.0
pH	8.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1620	1060	80.0	24.0

Shale Shaker

14 Double Decker	80	80	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	1
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	7
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	181.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$103,417.00
Operations @ 00:00	Circ/proir to run 244.5 csg. 252 m.	311.00		Cumulative Costs	$1,122,992.00
Operations @ 06:00	Run 244.5 mm csg.			Cumulative AFE	$1,122,992.00

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	1
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	7
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	181.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 5 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$103,417.00
Operations @ 00:00	Circ/proir to run 244.5 csg. 252 m.		311.00	Cumulative Costs	$1,122,992.00
Operations @ 06:00	Run 244.5 mm csg.			Cumulative AFE	$1,122,992.00

Detailed Remarks

No incidents to report.

- Drilled 311 mm surface hole from 71 m - 247 m.
- Wiper tripped to 24 m, no tight hole , no fill on bottom.
- Drilled 311 mm surface hole from 247 m - 252 m, Surface TD. Final survey, .5 deg.
- Circ. prior to running 244.5 mm surface casing.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	2
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	8
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-10 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$62,959.00
Operations @ 00:00	Nipple up BOP. 252 m.	311.00		Cumulative Costs	$1,185,951.00
Operations @ 06:00	Press test BOP.			Cumulative AFE	$1,185,951.00

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	12
Rig	12
Total	27

Brief Summary of Day's Activities

Circulated and and tripped out to run 18 jts of 244.5 mm surface csg, landed at 252 m. Cemented with 20.5 tonne of RFC Fillup with 8 m3 of good cement returns. WOC and nippled down diverter. Welded 279 mm, 21,000 kps bowl.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks
CIRC	00:00	00:45	0.75	Circ prior to running 244.5 mm surface csg.
RIGSER	00:45	01:00	0.25	Service rig.
TRIP	01:00	03:45	2.75	Tripped out to run csg.
SAFETY	03:45	04:00	0.25	Safety meeting with FI Canada.
CASE	04:00	09:30	5.50	Ran 18 jts of 244.5 mm surface csg. Landed at 252 m.
RIGSER	09:30	09:45	0.25	Rig service.
CIRC	09:45	11:00	1.25	Circulated casing.
SAFETY	11:00	11:15	0.25	Safety meeting with Schlumberger.
CEMENT	11:15	13:45	2.50	Cemented 244.5 mm csg. 8 m3 cement returns.
WOC	13:45	20:00	6.25	WOC
NUBOP	20:00	20:45	0.75	Nippled down diverter.
NUBOP	20:45	00:00	3.25	Weld casing bowl.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104	80		.832	600
.0125			.000	

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	14.0 m3
Premix Tank	.0 m3
String	2.0 m3
Annular	5.0 m3
Total Mud	21.0 m3
Mud Loss	.5 m3
Cum. Mud Loss	3.5 m3
Bottom Up Time	4.00 min
Circulating Time	14.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)

Mud Additives

	#
Desco CF (25.0lb)	1.00
Newlig / Lignite (50.0lb)	1.00
Bentonite Wyo (40.0kg)	15.00

Mud Properties

Density(kg/m3)	1120.0
Viscosity(sec/L)	65.0
pH	9.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1450	1050	60.0	12.0

Shale Shaker

13 Double Decker	80	80	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	2
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	8
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-10 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$62,959.00
Operations @ 00:00	Nipple up BOP. 252 m.	311.00		Cumulative Costs	$1,185,951.00
Operations @ 06:00	Press test BOP.			Cumulative AFE	$1,185,951.00

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description Surface #1 **Stage #** 1

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type
Lead #1	RFC Fillup	3% Cacl2	20.50	1740.00	16.30	.0	252.0	8.0	Cement slurry

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	2
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	8
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-10 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$62,959.00
Operations @ 00:00	Nipple up BOP. 252 m.		311.00	Cumulative Costs	$1,185,951.00
Operations @ 06:00	Press test BOP.			Cumulative AFE	$1,185,951.00

Detailed Remarks

No incidents to report.

- Circulated prior to running csg.
- Tripped out of well, lay 177.8 mm collars.
- Ran 18 jts of 244.5 mm, 69.94 kg/m, L-80 surface csg. Landed at 252 m.
- Circulated and cemented with 20.5 tonne of RFC Fillup Schlumberger cement. 8 m3 of good cement reurns. Plug held and down at 13;15 hrs. Mar.8/08.
- WOC for 6 hrs.
- Nippled down diverter.
- Welded on 279 mm , 21000 kpa streamflo casing bowl.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	3
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	9
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$58,086.70
Operations @ 00:00	Drill plug and cement. 245 m.	311.00		Cumulative Costs	$1,244,037.70
Operations @ 06:00	Picking up vertitrack			Cumulative AFE	$1,244,037.75

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Welded on 279 mm csg bowl, Nipple BOP, Pressure tested BOP and surface equipment. Tripped in well with 216 mm insert bit. Pressure tested kelly cock. Drilled out cement, tagged cement at 233 m.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0 / / / /	252.00		.00	.00	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1	12000	80/80	12000		12000		6/6	.00 / .00 / /	.00 / .00 / /	.0

Activities

Code	From	To	Hours	Remarks
NUBOP	00:00	01:30	1.50	Weld on 279 mm csg bowl.
SAFETY	01:30	01:45	0.25	Safety meeting with press. tester.
TESTBOP	01:45	17:30	15.75	Pressure test BOP and surface equipment.
TRIP	17:30	19:00	1.50	Trip in with 216 mm insert bit to drill out cement.
TESTBOP	19:00	23:00	4.00	Pressure test upper kelly cock, winterize BOP system.
TESTBOP	23:00	23:15	0.25	Bop drill with crews.
RIGSER	23:15	23:30	0.25	Rig service.
DRILLOUT	23:30	00:00	0.50	Drill out cement. Tagged shoe at 233 m.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125			.000	

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	25.0 m3
Premix Tank	.0 m3
String	2.0 m3
Annular	5.0 m3
Total Mud	32.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	3.5 m3
Bottom Up Time	5.00 min
Circulating Time	20.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.30	Regular threads	114.000
Sub - bit	1	152.800	.600	.000	.73	Extra hole	114.000
Drill collar - standard	8	152.000	.620	.000	75.21	Extra hole	114.000
Sub - cross over	1	121.000	.580	.000	.26	Internal flush	88.000
Drill collar - standard	4	121.000	.580	.000	38.09	Internal flush	88.000

Mud Additives

	#
Cal Carb "O" (25.0kg)	10.00
Cal Carb "325" (25.0kg)	10.00
Drispac Reg (50.0lb)	4.00
Kelzan XCD (25.0kg)	5.00

Mud Properties

Density(kg/m3)	1000.0
Viscosity(sec/L)	32.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge			.0	

Shale Shaker

12 Double Decker	80	80	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	3
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	9
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$58,086.70
Operations @ 00:00	Drill plug and cement. 245 m.	311.00		Cumulative Costs	$1,244,037.70
Operations @ 06:00	Picking up vertitrack			Cumulative AFE	$1,244,037.75

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	3
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	9
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	252.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$58,086.70
Operations @ 00:00	Drill plug and cement. 245 m.		311.00	Cumulative Costs	$1,244,037.70
Operations @ 06:00	Picking up vertitrack			Cumulative AFE	$1,244,037.75

Detailed Remarks

No incidents to report.

- Welded on csg bowl. (279 mm 0
- Nippled up BOP stack.
- Pressure tested BOP's and surface equipment.
  Maniflod valves - 1500 kpa - 21,000 kpa 15 min each
  Pipe rams 1500 kpa - 21,000 kpa 15 min
  Hydril 1500 kpa - 10,000 kpa 15 min
  Blind rams/csg 1500 kpa - 14,000 kpa 15 min
  Surface eqiup. 1500 kpa - 21,000 kpa 15 min each
  Kill line and valves 1500 kpa - 21,000 kpa 15 min each
- Tripped in with GX-18 insert bit and drilled out cement.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	4
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	10
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	526.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	274.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$77,791.25
Operations @ 00:00	Drill 216 mm hole at 450 m.	216.00		Cumulative Costs	$1,321,828.95
Operations @ 06:00	Drlg @ 531 m.	311.00		Cumulative AFE	$1,321,829.00

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Drilled out cement to 252 m. Drilled new hole to 257 m, circ and performed an integrity test to 1200 kpa. Displaced hole to mud and tripped out to pick up vertitrack tools. Drilled 216 mm hole from 216 m - 450 m.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0	252.00		198.00	10.75	18.4	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1	21000		22000		20000		8/9	.00 / .00	59.66 / 81.09	26.5

Activities

Code	From	To	Hours	Remarks
DRILLOUT	00:00	00:15	0.25	Drilled out cement.
DRILL	00:15	00:45	0.50	Drilled 216 mm hole from 252 m - 257 m.
CIRC	00:45	01:15	0.50	Circ hole clean.
TESTBOP	01:15	01:45	0.50	Preform integrity test on formation. 1200 kpa with no formation break down
CIRC	01:45	03:30	1.75	Circ and displace well with drilling mud.
TRIP	03:30	11:00	7.50	Tripped out and picked up vertitrak tools.
TESTBOP	11:00	11:30	0.50	BOP drill.
DRILL	11:30	22:00	10.50	Drill 216 mm hole from 257 m - 450 m .
CIRC	22:00	00:00	2.00	Connection and survey time.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0125	120	60	1.500	8500
.0104			.000	

Survey

Depth(m)	Incl.	Azim.
269.00	.290	
317.00	.050	
348.00	.070	
378.00	.200	
408.00	.080	
438.00	.140	

Well Control

MACP	2039.00 kPa
Hydrostatic	2521.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	21.0 m3
Premix Tank	.0 m3
String	2.5 m3
Annular	8.0 m3
Total Mud	31.5 m3
Mud Loss	2.0 m3
Cum. Mud Loss	5.5 m3
Bottom Up Time	4.00 min
Circulating Time	20.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Bit	1	216.000	.000	.000	.24	Regular threads	114.000
Down hole motor	1	152.000	.000	.000	9.39	Internal flush	114.000
Sub - screw in	1	152.000	.000	.000	1.67	Internal flush	114.000
Sub - float	1	152.000	.000	.000	.68	Extra hole	114.000
Reamer	1	216.000	.600	.000	1.35	Extra hole	114.000
Drill collar - standard	1	152.000	.600	.000	9.40	Extra hole	114.000
Sub - pump out	1	152.000	.600	.000	2.66	Extra hole	114.000
Drill collar - standard	7	152.000	.600	.000	65.81	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890

Mud Additives

	#
Bicarb (50.0lb)	11.00
PHPA LV (25.0kg)	2.00
High Perm (20.0L)	9.00
Cal Carb "325" (25.0kg)	5.00
Cal Carb "O" (25.0kg)	5.00
Drispac Reg (50.0lb)	7.00
Newlig / Lignite (50.0lb)	11.00

Mud Properties

Density(kg/m3)	1020.0
Viscosity(sec/L)	48.0
pH	8.0
Fluid Loss(cm3/30 min.)	10.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1010	1410	80.0	16.0

Shale Shaker

11 Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	4
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	10
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	526.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	274.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$77,791.25
Operations @ 00:00	Drill 216 mm hole at 450 m.	216.00		Cumulative Costs	$1,321,828.95
Operations @ 06:00	Drlg @ 531 m.	311.00		Cumulative AFE	$1,321,829.00

Key Personnel

Drilling Supervisor	Geologist
Drilling Supervisor	Office Contact
Rig Manager	

Personnel on Site

Company
Service
Rig
Total

Brief Summary of Day's Activities

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP
Hydrostatic
BOP Last Tested
Last Casing Size
Casing Shoe
Surface Tank
Premix Tank
String
Annular
Total Mud
Mud Loss
Cum. Mud Loss
Bottom Up Time
Circulating Time
Sump Volume
Sump Freeboard

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives | **#** | **Mud Properties**

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	4
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	10
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	526.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	274.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$77,791.25
Operations @ 00:00	Drill 216 mm hole at 450 m.	216.00		Cumulative Costs	$1,321,828.95
Operations @ 06:00	Drlg @ 531 m.	311.00		Cumulative AFE	$1,321,829.00

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	4
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	10
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	526.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	274.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 15 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$77,791.25
Operations @ 00:00	Drill 216 mm hole at 450 m.		216.00	Cumulative Costs	$1,321,828.95
Operations @ 06:00	Drlg @ 531 m.		311.00	Cumulative AFE	$1,321,829.00

Detailed Remarks

No incidents to report.

- Drilled out float shoe /cement/ . to 252 m.
- Drilled new hole from 252 m - 257 m.
- Circ and ran integrity formation test to 1200 kpa , no formation break down.
- Displaced well from cement water with polymer mud.
- Tripped out and picked up vertitrak tool.
- Drilled 216 mm hole from 257 m - 450 m. 27 m/per/hr.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	5
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	11
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	540.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	14.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 12 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$107,984.20
Operations @ 00:00	Trip out with core #1.	216.00		Cumulative Costs	$1,429,813.15
Operations @ 06:00	Attempt to start cutting core #2. Jammed.			Cumulative AFE	$1,429,813.13

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Drilled 216 mm hole from 450 m - 531 m. (Core point). Wiper tripped 5 singles and tripped out to pick up core bblls. Cut core #1 from 531 m - 540 m. Tripped out to recover core #1.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
2	171.00	Hughes	C-22	7113946	.0 / .0 / .0 / .0	531.00	540.00	9.00	3.25	2.8	1-1-NO-A-1-I-NO-CP
1	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0	252.00	531.00	279.00	16.50	16.9	2-2-NO-A-2-I-NO-CP
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
2	23000	45/50	23500		22500		3/4	.00 / .00	63.23 / 150.42	.0
1	24000		25000		23000		8/11	.00 / .00	28.83 / 39.19	12.8
								/	/	

Activities

Code	From	To	Hours	Remarks
DRILL	00:00	00:30	0.50	Drilled 216 mm hole from 450 m - 459 m.
RIGSER	00:30	00:45	0.25	Rig service.
DRILL	00:45	06:00	5.25	Drilled 216 mm hole from 459 m - 531 m. Core point.
CIRC	06:00	08:00	2.00	Accumm circ. and connections.
TRIP	08:00	08:15	0.25	Wiper tripped 5 singles.
CIRC	08:15	08:45	0.50	Circ prior to cut core.
TRIP	08:45	13:00	4.25	Tripped out.
RIGSER	13:00	13:15	0.25	Rig service.
SAFETY	13:15	13:30	0.25	Safety meeting with Core hand.
TRIP	13:30	16:45	3.25	Make up core bbll and trip in well.
CIRC	16:45	17:30	0.75	Wash to core point.
CORE	17:30	20:45	3.25	Cut core #1 from 531 m - 540 m.
TRIP	20:45	00:00	3.25	Trip out to recover core #1.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	58	58	.725	3000

Survey

Depth(m)	Incl.	Azim.
468.00	.060	
498.00	.460	
527.00	.040	

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	22.0 m3
Premix Tank	.0 m3
String	2.5 m3
Annular	14.7 m3
Total Mud	39.2 m3
Mud Loss	.0 m3
Cum. Mud Loss	5.5 m3
Bottom Up Time	10.00 min
Circulating Time	29.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Coring						.	
Bit	1	171.000	.000	.000	.26	Slim hole	114.000
Core barrel	1	159.000	.000	.000	10.43	Slim hole	114.000
Jars - hydraulic	1	159.000	.600	.000	2.12	Extra hole	114.000
Sub - double pin	1	159.000	.600	.000	.27	Regular threads	114.000
Sub - bit	1	159.000	.600	.000	.73	Regular threads	114.000
Drill collar - standard	10	159.000	.600	.000	93.96	Extra hole	114.000
Sub - cross over	1	121.000	.580	.000	.26	Internal flush	89.000
Drill collar - standard	4	121.000	.580	.000	38.09	Internal flush	89.000

Mud Additives

	#
Desco CF (25.0lb)	3.00
Soda Ash (50.0lb)	5.00
Cal Carb "O" (25.0kg)	5.00
Cal Carb "325" (25.0kg)	5.00
PHPA LV (25.0kg)	1.00
Drispac Reg (50.0lb)	5.00
High Perm (20.0L)	1.00
Newlig / Lignite (50.0lb)	12.00

Mud Properties

Density(kg/m3)	1030.0
Viscosity(sec/L)	83.0
Gel Strength 1(Pa)	10.0
Gel Strength 2(Pa)	12.0
Filter Cake(mm)	2.0
Yield Point(Pa)	19.0
Plastic Viscosity(mPa.s)	21.0
pH	7.5
Calcium(mg/l)	90.0
Chlorides(mg/l)	350.0
Solids%	.02
Fluid Loss(cm3/30 min.)	9.3

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1280	1010	60.0	12.0

Shale Shaker

10 Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	5
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	11
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	540.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	14.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 12 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$107,984.20
Operations @ 00:00	Trip out with core #1.	216.00		Cumulative Costs	$1,429,813.15
Operations @ 06:00	Attempt to start cutting core #2. Jammed.			Cumulative AFE	$1,429,813.13

Casing

Landed Depth **m** **Well Depth** **m** **Hole Size** **mm**

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	5
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	11
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	540.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	14.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 12 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$107,984.20
Operations @ 00:00	Trip out with core #1.		216.00	Cumulative Costs	$1,429,813.15
Operations @ 06:00	Attempt to start cutting core #2. Jammed.			Cumulative AFE	$1,429,813.13

Detailed Remarks

No incidents to report.

- Drilled 216 mm hole from 450 m - 531 m.
- Circulated and wiper tripped 5 singles.
- Tripped out and picked up core bblls. tripped in well.
- Cut core #1 from 531.2 m - 540 m.
- Tripped out with core #1.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	6
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	12
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	578.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	38.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$67,732.65
Operations @ 00:00	Drill 216 mm hole at 578 m.	216.00		Cumulative Costs	$1,497,545.80
Operations @ 06:00	Drill 216 mm hole at 650 m.			Cumulative AFE	$1,497,545.75

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Recoved core #1 (8.8 m full), Tripped in to cut core #2, Attempt to core - jammed, tripped out, found plastic sleeve was loose allowing catcher to be pushed up in core bbll jamming. Decided to drill ahead with PDC , 540 m - 578 m. National Energy Board check OK.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
3	216.00	Smith	M516 BHYPX	SOA586	16.0 / 16.0 / 16.0 / 16.0 / / / / / /	531.00		47.00	3.75	12.5	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
3	23000		24000		22000		2/3	.00 / .00 / /	59.66 / 81.09 / /	31.1

Activities

Code	From	To	Hours	Remarks
RIGSER	00:00	00:15	0.25	Rig service.
SAFETY	00:15	00:30	0.25	Safety meeting prior to recover core, (check for H2s).
CORE	00:30	01:30	1.00	Recover core, full recover 8.8 m.
TRIP	01:30	04:00	2.50	Tripped in well to cut core #2.
CIRC	04:00	04:15	0.25	Wash to bottom.
CORE	04:15	06:00	1.75	Attempt to core, Jammed off due to plastic sleeve cut to loose.
TRIP	06:00	11:30	5.50	tripped out and lay out core bblls.
REPAIR	11:30	13:30	2.00	Repair, o - ring in accummulater pump.
TRIP	13:30	17:00	3.50	Tripped in well with vertitrak and PDC bit.
REAMUG	17:00	18:15	1.25	Reamed rathole from 531 m - 540 m.
DRILL	18:15	21:00	2.75	Drilled 216 mm hole from 540 m - 568 m.
REPAIR	21:00	23:00	2.00	Weld wash on standpipe in sub.
DRILL	23:00	00:00	1.00	Drill 216 mm hole from 568 m - 578 m.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	120	60	1.500	7500

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	24.0 m3
Premix Tank	.0 m3
String	2.6 m3
Annular	14.7 m3
Total Mud	41.3 m3
Mud Loss	.0 m3
Cum. Mud Loss	5.5 m3
Bottom Up Time	9.70 min
Circulating Time	31.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Bit	1	216.000	.000	.000	.24	Regular threads	114.000
Down hole motor	1	152.000	.000	.000	9.39	Internal flush	114.000
Sub - screw in	1	152.000	.000	.000	1.67	Internal flush	114.000
Sub - float	1	152.000	.000	.000	.68	Extra hole	114.000
Reamer	1	216.000	.600	.000	1.35	Extra hole	114.000
Drill collar - standard	1	152.000	.600	.000	9.40	Extra hole	114.000
Sub - pump out	1	152.000	.600	.000	2.66	Extra hole	114.000
Drill collar - standard	7	152.000	.600	.000	65.81	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890

Mud Additives

	#
Kelzan XCD (25.0kg)	1.00
High Perm (20.0L)	1.00
Newlig / Lignite (50.0lb)	2.00
Drispac Reg (50.0lb)	2.00
Cal Carb "O" (25.0kg)	10.00
Cal Carb "325" (25.0kg)	6.00
Sawdust (1.0sack)	5.00
Desco CF (25.0lb)	5.00

Mud Properties

Density(kg/m3)	1030.0
Viscosity(sec/L)	56.0
Gel Strength 1(Pa)	6.0
Gel Strength 2(Pa)	11.0
Filter Cake(mm)	2.0
Yield Point(Pa)	12.0
Plastic Viscosity(mPa.s)	18.0
pH	7.0
Calcium(mg/l)	80.0
Chlorides(mg/l)	350.0
Solids%	.20
Fluid Loss(cm3/30 min.)	8.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge			.0	

Shale Shaker

9. Double Decker	(mesh/sq.in)
	(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	6
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	12
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	578.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	38.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$67,732.65
Operations @ 00:00	Drill 216 mm hole at 578 m.	216.00		Cumulative Costs	$1,497,545.80
Operations @ 06:00	Drill 216 mm hole at 650 m.			Cumulative AFE	$1,497,545.75

Key Personnel

Drilling Supervisor	Geologist
Drilling Supervisor	Office Contact
Rig Manager	

Personnel on Site

Company	
Service	
Rig	
Total	

Brief Summary of Day's Activities

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP
Hydrostatic
BOP Last Tested
Last Casing Size
Casing Shoe
Surface Tank
Premix Tank
String
Annular
Total Mud
Mud Loss
Cum. Mud Loss
Bottom Up Time
Circulating Time
Sump Volume
Sump Freeboard

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives | **#** | **Mud Properties**

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	6
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	12
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	578.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	38.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$67,732.65
Operations @ 00:00	Drill 216 mm hole at 578 m.	216.00		Cumulative Costs	$1,497,545.80
Operations @ 06:00	Drill 216 mm hole at 650 m.			Cumulative AFE	$1,497,545.75

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	6
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	12
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	578.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	38.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$67,732.65
Operations @ 00:00	Drill 216 mm hole at 578 m.		216.00	Cumulative Costs	$1,497,545.80
Operations @ 06:00	Drill 216 mm hole at 650 m.			Cumulative AFE	$1,497,545.75

Detailed Remarks

No incidents to report.
INSPECTION BY NATIONAL ENERGY BOARD, RIG IN GOOD STANDING ORDER.
- Safety meeting and H2S drill for potential gas in core.
- Recovered 8.8 m of core, full recovery.
- Tripped in to cut core #2, jammed off due to plastic liner being to loose in core barrel. This was caused by the core hand steaming the plastic sleeve very hot to cut it and when it cooled it contracted causing it ti be loose.
- Decided to ream rathole and drill ahead with vertitrak and PDC bit.
- Drilled 216 mm hole from 540 m - 568 m.
- Repaired wash on stand pipe.
- Drill 216 mm hole from 568 m - 578 m.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	7
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	13
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	830.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	252.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$66,130.60
Operations @ 00:00	Wiper trip prior to log, 830 m	216.00		Cumulative Costs	$1,563,676.40
Operations @ 06:00	POOH to log.			Cumulative AFE	$1,563,676.38

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Drilled 216 mm hole from 578 m - 830 m TD. Repaired stand pipe for 1.25 hrs. (welded wash). Reached TD at 20:30 hrs. Mar. 13/08. Circ, 1 hr. and wiper tripped to 500 m.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
3	216.00	Smith	M516 BHYPX	SOA586	16.0 / 16.0 / 16.0 / 16.0 / / / / / /	531.00	830.00	299.00	20.25	14.8	2-2-NO-A-2-I-NO-TD

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
3	27000		28000		26000		4/4	.00 / .00 / /	59.66 / 81.09 / /	31.1

Activities

Code	From	To	Hours	Remarks
DRILL	00:00	00:45	0.75	Drilled 216 mm hole from 578 m - 584 m.
RIGSER	00:45	01:00	0.25	Rig service.
DRILL	01:00	06:00	5.00	Drilled 216 mm hole from 584 m - 672 m.
CIRC	06:00	08:00	2.00	Work pipe and connections time.
DRILL	08:00	09:00	1.00	Drilled 216 mm hole from 672 m - 690 m.
RIGSER	09:00	09:15	0.25	Rig service.
DRILL	09:15	10:30	1.25	Drilled 216 mm hole from 690 m - 710 m.
REPAIR	10:30	11:45	1.25	Welded washed stand pipe.
DRILL	11:45	16:15	4.50	Drilled 216 mm hole from 710 m - 785 m.
RIGSER	16:15	16:30	0.25	Rig service.
DRILL	16:30	20:30	4.00	Drilled 216 mm hole from 785 m - 830 m. TD.
CIRC	20:30	21:30	1.00	Circulated.
TRIP	21:30	00:00	2.50	Wiper tripped to 500 m.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	120		1.500	8500

Survey

Depth(m)	Incl.	Azim.
553.00	.020	
583.00	.070	
613.00	.210	
643.00	.200	
673.00	.150	
703.00	.650	
733.00	.720	
763.00	.590	
793.00	.390	
823.00	.120	
830.00	.120	

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	20.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	45.0 m3
Mud Loss	2.0 m3
Cum. Mud Loss	7.5 m3
Bottom Up Time	15.00 min
Circulating Time	38.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Bit	1	216.000	.000	.000	.24	Regular threads	114.000
Down hole motor	1	152.000	.000	.000	9.39	Internal flush	114.000
Sub - screw in	1	152.000	.000	.000	1.67	Internal flush	114.000
Sub - float	1	152.000	.000	.000	.68	Extra hole	114.000
Reamer	1	216.000	.600	.000	1.35	Extra hole	114.000
Drill collar - standard	1	152.000	.600	.000	9.40	Extra hole	114.000
Sub - pump out	1	152.000	.600	.000	2.66	Extra hole	114.000
Drill collar - standard	7	152.000	.600	.000	65.81	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890

Mud Additives

	#
Caustic Soda (50.0lb)	1.00
PHPA LV (25.0kg)	1.00
Sawdust (1.0sack)	15.00
Cal Carb "O" (25.0kg)	5.00
Cal Carb "325" (25.0kg)	5.00
Newlig / Lignite (50.0lb)	2.00
High Perm (20.0L)	4.00
Kelzan XCD (25.0kg)	5.00
Drispac Reg (50.0lb)	9.00

Mud Properties

Density(kg/m3)	1050.0
Viscosity(sec/L)	88.0
Gel Strength 1(Pa)	8.0
Gel Strength 2(Pa)	12.0
Filter Cake(mm)	2.0
Yield Point(Pa)	19.0
Plastic Viscosity(mPa.s)	22.0
pH	8.5
Calcium(mg/l)	80.0
Chlorides(mg/l)	380.0
Solids%	.50
Fluid Loss(cm3/30 min.)	6.8

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1280	1020	60.0	12.0

Shale Shaker

8. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	7
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	13
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	830.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	252.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$66,130.60
Operations @ 00:00	Wiper trip prior to log, 830 m	216.00		Cumulative Costs	$1,563,676.40
Operations @ 06:00	POOH to log.			Cumulative AFE	$1,563,676.38

Key Personnel

Drilling Supervisor	Geologist
Drilling Supervisor	Office Contact
Rig Manager	

Personnel on Site

Company	
Service	
Rig	
Total	

Brief Summary of Day's Activities

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP
Hydrostatic
BOP Last Tested
Last Casing Size
Casing Shoe
Surface Tank
Premix Tank
String
Annular
Total Mud
Mud Loss
Cum. Mud Loss
Bottom Up Time
Circulating Time
Sump Volume
Sump Freeboard

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

Mud Additives	#	Mud Properties

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)

(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	7
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	13
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	830.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	252.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$66,130.60
Operations @ 00:00	Wiper trip prior to log, 830 m	216.00		Cumulative Costs	$1,563,676.40
Operations @ 06:00	POOH to log.			Cumulative AFE	$1,563,676.38

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	7
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	13
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	830.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	252.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 18 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$66,130.60
Operations @ 00:00	Wiper trip prior to log, 830 m		216.00	Cumulative Costs	$1,563,676.40
Operations @ 06:00	POOH to log.			Cumulative AFE	$1,563,676.38

Detailed Remarks

No incidents to report.

- Drilled 216 mm hole from 578 m - 830 m. Reached TD at 20:30 hrs. mar.13/08.
- Welded washed out stand pipe for 1.25 hrs.
- Circulated 1 hr with 78 vis.
- Wiper tripped to 500 m.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	8
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	14
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	885.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	55.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$167,329.00
Operations @ 00:00	Drill 216 mm hole at 885 m.	216.00		Cumulative Costs	$1,731,005.40
Operations @ 06:00	Circ at TD. 895 m.			Cumulative AFE	$1,731,005.38

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Wiper tripped, circulated 1 hr. Tripped out to log. Decision was made to move Schlumberger loggers over to B-20 and drill to 1000 m on L-52. Rigged out loggers and tripped in well with slick string. Drilled 216 mm hole from 830 m - 885 m.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
3RR	216.00	Smith	M516 BHYPX	SOA586	20.0 / 20.0 / 20.0 / .0 / / / /	830.00		55.00	26.25	2.1	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
3RR	27000	100/100	28000		26000		1/2	54.57 / .00 / /	62.14 / 93.07 / /	27.6

Activities

Code	From	To	Hours	Remarks
TRIP	00:00	00:45	0.75	Finished wiper trip to 500 m.
CIRC	00:45	01:45	1.00	Circulated and condition well prior to logging.
TRIP	01:45	07:45	6.00	Tripped out of well to log, lay out directional tools.
LOG	07:45	11:00	3.25	Safety meeting and rig up loggers. / Decision made to rig out loggers and move to B-20.
TRIP	11:00	15:45	4.75	Tripped in well with PDC and slick string.
CIRC	15:45	17:15	1.50	Wash to bottom.
REPAIR	17:15	17:30	0.25	Rig service.
DRILL	17:30	23:30	6.00	Drilled 216 mm hole from 830 m - 885 m.
TESTBOP	23:30	23:45	0.25	Bop drill.
RIGSER	23:45	00:00	0.25	Rig service.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	125	60	1.563	5000

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	20.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	45.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	7.5 m3
Bottom Up Time	16.00 min
Circulating Time	38.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
PHPA LV (25.0kg)	1.00
Newlig / Lignite (50.0lb)	5.00
Drispac Reg (50.0lb)	1.00
Kelzan XCD (25.0kg)	1.00
Soda Ash (50.0lb)	1.00

Mud Properties

Density(kg/m3)	1060.0
Viscosity(sec/L)	75.0
Gel Strength 1(Pa)	7.0
Gel Strength 2(Pa)	14.0
Filter Cake(mm)	2.0
Yield Point(Pa)	17.5
Plastic Viscosity(mPa.s)	20.0
pH	8.5
Calcium(mg/l)	80.0
Chlorides(mg/l)	400.0
Fluid Loss(cm3/30 min.)	6.7

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1430	1020	60.0	8.0

Shale Shaker

7. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	8
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	14
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	885.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	55.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$167,329.00
Operations @ 00:00	Drill 216 mm hole at 885 m.	216.00		Cumulative Costs	$1,731,005.40
Operations @ 06:00	Circ at TD. 895 m.			Cumulative AFE	$1,731,005.38

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	8
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	14
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	885.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	55.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$167,329.00
Operations @ 00:00	Drill 216 mm hole at 885 m.		216.00	Cumulative Costs	$1,731,005.40
Operations @ 06:00	Circ at TD. 895 m.			Cumulative AFE	$1,731,005.38

Detailed Remarks

No incidents to report.

- Wiper tripped to 500 m.
- Circulated 1 hr prior to logging.
- Tripped out and layed out Dir. tools.
- Rigged up to log. / Decided to rig out loggers and move logging equipment to B-20
- Tripped in with PDC bit and slick string.
- Drilled 216 mm hole from 830 m- 885 m.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	9
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	15
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	
Rig Name / Model	Akita #14 / Single	Daily Progress	10.0 m	AFE Number	US-28423
Final Status Code		Accident	No	AFE Amount	$9,000,000.00
Weather	- 30 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$79,584.50
Operations @ 00:00	Tripped in well/ well flowing.	216.00		Cumulative Costs	$1,415,674.90
Operations @ 06:00	Circ and prepare to trip out to test BOP.			Cumulative AFE	$1,415,674.88

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Drilled 216 mm hole from 885 m - 895 m TD. Wiper tripped and tripped out to 240 m. Circ in csg wait on loggers. Well began to slowly flow(1 lite per 5 min.) Tripped in well.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
4RR	216.00	Smith	M516 BHYPX	SOA586	20.0 / 20.0 / 20.0 / .0 / / / /	830.00	895.00	65.00	27.75	2.3	2-2-NO-A-3-I-NO-TD

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
4RR	27000	100/100	28000		26000		1/2	26.19 / .00 / /	29.83 / 44.68 / /	13.3

Activities

Code	From	To	Hours	Remarks
DRILL	00:00	01:30	1.50	Drilled 216 mm hole from 885 m - 895 m.
CIRC	01:30	03:45	2.25	Circulated.
SURVEY	03:45	04:00	0.25	Survey.
TRIP	04:00	05:00	1.00	Wiper tripped to 800 m.
CIRC	05:00	06:45	1.75	Circulated.
TRIP	06:45	10:30	3.75	Tripped out past casing shoe. 240 m.
CIRC	10:30	21:30	11.00	Circ. and wait for orders and loggers/ monitor well.
TESTBOP	21:30	21:45	0.25	BOP drill with crew.
TRIP	21:45	00:00	2.25	Well flowing , 1 litre per 5 min. Tripped in well.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	60	60	.750	855

Survey

Depth(m)	Incl.	Azim.
884.00	1.500	

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	20.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	45.0 m3
Mud Loss	.5 m3
Cum. Mud Loss	6.0 m3
Bottom Up Time	17.00 min
Circulating Time	38.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.24	Regular threads	114.000
Drill collar - standard	8	152.000	.600	.000	75.21	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
Kelzan XCD (25.0kg)	2.00
Drispac Reg (50.0lb)	4.00
Newlig / Lignite (50.0lb)	2.00

Mud Properties

Density(kg/m3)	1050.0
Viscosity(sec/L)	72.0
Yield Point(Pa)	18.0
Plastic Viscosity(mPa.s)	21.0
pH	8.0
Calcium(mg/l)	60.0
Chlorides(mg/l)	400.0
Solids%	.04
Fluid Loss(cm3/30 min.)	7.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge	1300	1020	.0	12.0

Shale Shaker

1. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	9
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	15
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	
Rig Name / Model	Akita #14 / Single	Daily Progress	10.0 m	AFE Number	US-28423
Final Status Code		Accident	No	AFE Amount	$9,000,000.00
Weather	- 30 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$79,584.50
Operations @ 00:00	Tripped in well/ well flowing.	216.00		Cumulative Costs	$1,415,674.90
Operations @ 06:00	Circ and prepare to trip out to test BOP.			Cumulative AFE	$1,415,674.88

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	9
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	15
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	
Rig Name / Model	Akita #14 / Single	Daily Progress	10.0 m	AFE Number	US-28423
Final Status Code		Accident	No	AFE Amount	$9,000,000.00
Weather	- 30 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$79,584.50
Operations @ 00:00	Tripped in well/ well flowing.		216.00	Cumulative Costs	$1,415,674.90
Operations @ 06:00	Circ and prepare to trip out to test BOP.			Cumulative AFE	$1,415,674.88

Detailed Remarks

No incidents to report.

- Drilled 216 mm hole from 885 m - 895 m. TD.
- Surveyed @ 890 m 1.5 deg.
- Wiper tripped to 800 m. circ and tripped to 240 m.
- Waited on loggers. Circ in csg at 60 strokes, monitor well.
- Well began to flow, tripped in well.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	10
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	16
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$79,390.00
Operations @ 00:00	Run logs, FMI,DSI,PPC,HNGS,GR WITH Schlumberger.	216.00		Cumulative Costs	$1,889,979.90
Operations @ 06:00	Run logs AIT,TLD,HGNS,CMR,ECS,TLD,			Cumulative AFE	$1,889,979.88

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist	CLARANCE KENNEDY	(403)850-8180	
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273	
Rig Manager					

Personnel on Site

Company	3
Service	8
Rig	12
Total	23

Brief Summary of Day's Activities

Tripped in well due to well flowing. Reamed bridge at 780 m. Circ and mix mud due to vis dropping from 85 - 65. Tripped out to 500 m, (while waiting for loggers and clear influx area) circ and tripped out to log. Logged with Schlumberger. tagged bottom @ 2130 hrs. Mar.16/08 .

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
3RR	216.00	Smith	M516 BHYPX	SOA586	20.0 / 20.0 / 20.0 / .0 / / / /	895.00		.00	27.75	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
3RR	27000		28000		26000		/	45.84 / .00 / /	52.20 / 70.95 / /	23.2

Activities

Code	From	To	Hours	Remarks
TRIP	00:00	01:45	1.75	Tripped in well./ Washed bridge at 780 m.
CIRC	01:45	07:45	6.00	Circ and mixed mud, due to vis dropping. No gas bubbles.
TRIP	07:45	12:15	4.50	Tripped out to 500 m. 1/2 flow check @ 500 m to see if well will continue to flow.
CIRC	12:15	14:45	2.50	Circ and conditioned mud to 85 vis.
TRIP	14:45	19:30	4.75	Tripped out to log.
SAFETY	19:30	19:45	0.25	Safety meeting with loggers.
LOG	19:45	00:00	4.25	Run FMI, DSI,PPC,HNGS,GR LOGS, Depth 888 M.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	105		1.313	4147

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1990.00 kPa
Hydrostatic	2571.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	20.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	45.0 m3
Mud Loss	1.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	18.00 min
Circulating Time	38.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
Kelzan XCD (25.0kg)	7.00
Caustic Soda (50.0lb)	1.00
Soda Ash (50.0lb)	2.00
Cal Carb "O" (25.0kg)	25.00
Drispac Reg (50.0lb)	7.00

Mud Properties

Density(kg/m3)	1050.0
Viscosity(sec/L)	83.0
Gel Strength 1(Pa)	7.0
Gel Strength 2(Pa)	12.0
Filter Cake(mm)	2.0
Yield Point(Pa)	18.5
Plastic Viscosity(mPa.s)	20.0
pH	8.0
Calcium(mg/l)	70.0
Chlorides(mg/l)	360.0
Fluid Loss(cm3/30 min.)	6.7

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge				.0

Shale Shaker

5. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	10
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	16
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$79,390.00
Operations @ 00:00	Run logs, FMI,DSI,PPC,HNGS,GR WITH Schlumberger.	216.00		Cumulative Costs	$1,889,979.90
Operations @ 06:00	Run logs AIT,TLD,HGNS,CMR,ECS,TLD,			Cumulative AFE	$1,889,979.88

Casing

Landed Depth **m** **Well Depth** **m** **Hole Size** **mm**

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	10
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	16
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$79,390.00
Operations @ 00:00	Run logs, FMI,DSI,PPC,HNGS,GR WITH Schlumberger.		216.00	Cumulative Costs	$1,889,979.90
Operations @ 06:00	Run logs AIT,TLD,HGNS,CMR,ECS,TLD,			Cumulative AFE	$1,889,979.88

Detailed Remarks

No incidents to report.

- Tripped in well due to well flowing. Bridged at 780 m. No gas to surface.
- Circ to raise vis.
- Wiper tripped to 500 m to heal influx area.
- Circ and raised mud density to 1050 from 1020 with cal-carb. Vis 85.
- Tripped out to log.
- Logged with Schlumberger, Log on bottom at 2130 hrs. Mar.16/08. 888 m. Driller depth 895 m. Ist run, FMI,DSI,PPC,HNGS,GR.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	11
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	17
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$48,467.00
Operations @ 00:00	Circ and wt up well to trip to log.	216.00		Cumulative Costs	$1,938,446.90
Operations @ 06:00	Trip out of well to log with 1095 mud wt.			Cumulative AFE	$1,938,446.88

Key Personnel

Drilling Supervisor Sam Machnee (403)537-2591
Drilling Supervisor Keith Tichkowsky. (403)537-2591
Rig Manager
Geologist
Office Contact Richardson, Kim (403)298-7273

Personnel on Site

Company	2
Service	8
Rig	12
Total	22

Brief Summary of Day's Activities

Log with Schlumberger, Log # 1, FMI, DSI ,PPC, HNGS, GR. Log #2, AIT, TLD, HGNS, CMR, ECS, TLD. Tripped in well to ream bridge at 780 m. Reamed from 770 m - 829 m. Washed 9 m to bottom. Circ. well started to flow as just as we were to trip out, Circ and increase mud wt 1060 - 1095.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1RR	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0 / / / / / /	895.00		.00	16.50	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1RR	23000	80/90	24000		22000		3/4	50.21 / .00 / /	57.17 / 77.71 / /	25.4

Activities

Code	From	To	Hours	Remarks
LOG	00:00	01:00	1.00	Log #1 , FMI, DSI, PPC, HNGS, GR
LOG	01:00	11:30	10.50	Log #2 , AIT, TLD, HGNS, CMR, ECS, TLD.
TRIP	11:30	13:00	1.50	Lay out 4 159 mm collars.
SAFETY	13:00	13:30	0.50	Safety meeting with Husky safety rep.
TRIP	13:30	17:30	4.00	Tripped in well.
CIRC	17:30	19:30	2.00	Blow kelly. Ream bridge from 770 m - 829 m.
TRIP	19:30	20:00	0.50	Tripped in well.
CIRC	20:00	22:00	2.00	Circulate, Washed 9 m to bottom.
CIRC	22:00	00:00	2.00	Hole had cleaned up, prepared to trip, and well began to flow and shale out Increased wt to 1095 and vis back to 90.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	115	60	1.438	4500

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1693.00 kPa
Hydrostatic	2867.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	28.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	53.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	18.00 min
Circulating Time	39.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
PHPA LV (25.0kg)	1.00
Newlig / Lignite (50.0lb)	1.00
Kelzan XCD (25.0kg)	3.00
Drispac Reg (50.0lb)	4.00
Soda Ash (50.0lb)	1.00
Cal Carb "O" (25.0kg)	25.00

Mud Properties

Density(kg/m3)	1095.0
Viscosity(sec/L)	89.0
Gel Strength 1(Pa)	5.0
Gel Strength 2(Pa)	8.0
Filter Cake(mm)	2.0
Yield Point(Pa)	19.0
Plastic Viscosity(mPa.s)	22.0
pH	9.0
Calcium(mg/l)	60.0
Chlorides(mg/l)	400.0
Fluid Loss(cm3/30 min.)	6.7

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge			.0	

Shale Shaker

4. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	11
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	17
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$48,467.00
Operations @ 00:00	Circ and wt up well to trip to log.	216.00		Cumulative Costs	$1,938,446.90
Operations @ 06:00	Trip out of well to log with 1095 mud wt.			Cumulative AFE	$1,938,446.88

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	11
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	17
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$48,467.00
Operations @ 00:00	Circ and wt up well to trip to log.		216.00	Cumulative Costs	$1,938,446.90
Operations @ 06:00	Trip out of well to log with 1095 mud wt.			Cumulative AFE	$1,938,446.88

Detailed Remarks

No incidents to report.

- Logged #1 to 880 m. FMI, DSI, PPC, HNGS, GR.
- Logged #2 to 780 m Bridged off. AIT, TLD, HGNS, CMR, ECS, TLD.
- Layed 4 159 mm collars.
- Safety meeting with Husky Safety rep. and Drlg Supervisor.
- Tripped in well reamed bridge from 770 m - 829 m. Washed 9 m of fill at bottom.
- Circulated and mixed mud.
- Prepared to trip out with 1060 mud wt, and well began to flow , mud vis had dropped from 84 to 64. Tank volume increase by 1.5 m3 and well began to shale out. Circ and increased mud wt to 1095 and increased vis back to 90 , before tripping out of well. Flow had stopped.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	12
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	18
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly cloudy.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$353,219.80
Operations @ 00:00	Log with Schlumberger #3.	216.00		Cumulative Costs	$2,291,666.70
Operations @ 06:00	Log #4, bridged at 652m ,continue logging up.			Cumulative AFE	$2,291,666.75

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	8
Rig	12
Total	22

Brief Summary of Day's Activities

Circ and wt up from 1060 to 1095 due to well flowing, (1 litre per 5 min.) Tripped out to log and logged with Schlumberger. Ran log #2 , (AIT,TLD,HNGS,CMR,ECS,TLD). Log # 3. (CMR, Fluid typing.).

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1RR	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0 / / / /	895.00		.00	16.50	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1RR	23000	20/20	24000		22000		/	50.21 / .00 / /	57.17 / 77.71 / /	25.4

Activities

Code	From	To	Hours	Remarks
CIRC	00:00	03:00	3.00	Circulated and increase vis from 75 to 85, Wt from 1060 to 1095.
TRIP	03:00	07:30	4.50	Tripped out to log, well volumes ok.
SAFETY	07:30	07:45	0.25	Safety meeting with shlumberger loggers.
LOG	07:45	15:00	7.25	Log # 2 AIT, TLD, HNGS, CMR, ECS, TLD.
LOG	15:00	00:00	9.00	lOG # 3 CMR Fluid typing.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	115	60	1.438	4500

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1841.00 kPa
Hydrostatic	2719.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	28.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	53.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	18.00 min
Circulating Time	39.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Main hole							
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
Kelzan XCD (25.0kg)	1.00
Drispac Reg (50.0lb)	4.00
Cal Carb "O" (25.0kg)	117.00

Mud Properties

Density(kg/m3)	1095.0
Viscosity(sec/L)	85.0
Gel Strength 1(Pa)	5.0
Gel Strength 2(Pa)	10.0
Filter Cake(mm)	2.0
Yield Point(Pa)	18.0
Plastic Viscosity(mPa.s)	22.0
pH	8.5
Calcium(mg/l)	60.0
Chlorides(mg/l)	350.0
Fluid Loss(cm3/30 min.)	6.9

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge				.0

Shale Shaker

3. Double Decker	5,050	(mesh/sq.in)
		(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	12
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	18
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly cloudy.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$353,219.80
Operations @ 00:00	Log with Schlumberger #3.	216.00		Cumulative Costs	$2,291,666.70
Operations @ 06:00	Log #4, bridged at 652m ,continue logging up.			Cumulative AFE	$2,291,666.75

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	12
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	18
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly cloudy.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$353,219.80
Operations @ 00:00	Log with Schlumberger #3.		216.00	Cumulative Costs	$2,291,666.70
Operations @ 06:00	Log #4, bridged at 652m ,continue logging up.			Cumulative AFE	$2,291,666.75

Detailed Remarks

There is one incident to report. Roughneck strained an abdominal muscle lifting a 25 kg. Cal Nit bag. Report sent in to Tim Deschner.

- Circ and increase mud wt from 1060 to 1095, due to well flowing, I litre - 5 min.
- Tripped out of well to log, volumes ok.
- Logged with Schlumberger. Log #2 AIT, TLD, HNGS, CMR, ECS, TLD. Log # 3. CMR fluid typing.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	13
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	19
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C partly overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$342,920.24
Operations @ 00:00	Clean out trip to run 177.8 mm casing.	216.00		Cumulative Costs	$2,634,586.94
Operations @ 06:00	Lay pipe prior to running casing.			Cumulative AFE	$2,634,587.00

Key Personnel

Drilling Supervisor Sam Machnee (403)537-2591
Drilling Supervisor Keith Tichkowsky. (403)537-2591
Rig Manager
Geologist
Office Contact Richardson, Kim (403)298-7273

Personnel on Site

Company	2
Service	8
Rig	12
Total	22

Brief Summary of Day's Activities

Ran log #3, CMR, Fluid typing. Ran log #4, MRPS, MRHY, MRPO, LFA, MRMS, GR. Rigged out loggers and tripped in well. (Clean out trip prior to running 177.8 mm csg.)

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1RR	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0 / / / /	895.00		.00	16.50	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1RR	23000		24000		22000		/	.00 / .00 / /	.00 / .00 / /	.0

Activities

Code	From	To	Hours	Remarks
LOG	00:00	01:00	1.00	Log #3 CMR, Fluid typing.
LOG	01:00	20:00	19.00	Log # 4, MRPS, MRHY, MRPO, LFA, MRMS, GR. Bridged off at 652 m, logged well above bridge.
SAFETY	20:00	20:15	0.25	Safety meeting prior to tripping in well.
TRIP	20:15	00:00	3.75	Clean out trip prior to running casing.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0125			.000	
.0104			.000	

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1841.00 kPa
Hydrostatic	2719.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	27.0 m3
Premix Tank	.0 m3
String	4.0 m3
Annular	21.0 m3
Total Mud	52.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	18.00 min
Circulating Time	39.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

#

Mud Properties

Density(kg/m3)	1095.0
Viscosity(sec/L)	78.0
Gel Strength 1(Pa)	5.0
Gel Strength 2(Pa)	10.0
Filter Cake(mm)	2.0
Yield Point(Pa)	18.0
Plastic Viscosity(mPa.s)	22.0
pH	8.5
Calcium(mg/l)	60.0
Chlorides(mg/l)	350.0
Fluid Loss(cm3/30 min.)	6.9

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge				.0

Shale Shaker

2. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	13
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	19
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C partly overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$342,920.24
Operations @ 00:00	Clean out trip to run 177.8 mm casing.	216.00		Cumulative Costs	$2,634,586.94
Operations @ 06:00	Lay pipe prior to running casing.			Cumulative AFE	$2,634,587.00

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	13
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	19
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 29 C partly overcast			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$342,920.24
Operations @ 00:00	Clean out trip to run 177.8 mm casing.		216.00	Cumulative Costs	$2,634,586.94
Operations @ 06:00	Lay pipe prior to running casing.			Cumulative AFE	$2,634,587.00

Detailed Remarks

No incidents to report.

- Ran log #3, (CMR Fluid typing.
- Ran log #4, (MRPS, MRHY, MRPO, LFA, MRMS, GR.
- Tripped in well prior to running 177.8 mm casing.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	14
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	20
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly Cloudy			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$78,399.60
Operations @ 00:00	Circ prior to cementing 177.8 mm abondonment csg.	216.00		Cumulative Costs	$2,712,986.54
Operations @ 06:00	Wait on cement, clean mud tanks.			Cumulative AFE	$2,712,986.50

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	8
Rig	12
Total	22

Brief Summary of Day's Activities

Tripped in well, reamed bridge @ 643 m - 676 m. washed 9 m to bottom. Circ. and layed drill string. Safety meeting and ran 66 jts of 177.8 mm csg with FI Canada .

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
1RR	216.00	Hughes	GX-18	6062422	20.0 / 20.0 / 20.0 / .0 / / / / / /	895.00		.00	16.50	.0	

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
1RR							/ / /	30.56 / .00 / / /	34.80 / 47.30 / /	15.5

Activities

Code	From	To	Hours	Remarks
TRIP	00:00	03:15	3.25	Tripped in well, washed bridge at 643 m and 9 m of fill on bottom.
CIRC	03:15	06:30	3.25	Circulated.
TRIP	06:30	11:15	4.75	Lay drill string, prior to running 177.8 mm casing.
CASE	11:15	13:30	2.25	Move out pipe tubs, load casing on pipe racks and prepare.
SAFETY	13:30	13:45	0.25	Safety meeting with FI Canada.
CASE	13:45	21:45	8.00	Run 177.8 mm, 38.68 kg/m, L-80, LT&C abondonment csg. 66 jts. 4 csg jts below float collar.
CIRC	21:45	00:00	2.25	Circulate 177.8 mm csg.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	70	60	.875	1700

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	1841.00 kPa
Hydrostatic	2719.00 kPa
BOP Last Tested	3/9/2008
Last Casing Size	244.500 mm
Casing Shoe	252.00 m
Surface Tank	16.0 m3
Premix Tank	.0 m3
String	15.0 m3
Annular	8.0 m3
Total Mud	39.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	18.00 min
Circulating Time	34.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Main hole

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)
Bit	1	216.000	.000	.000	.27	Regular threads	114.000
Drill collar - standard	4	152.000	.600	.000	38.14	Extra hole	114.000
Jars - hydraulic	1	152.000	.600	.000	4.76	Extra hole	114.000
Drill collar - standard	2	152.000	.600	.000	18.85	Extra hole	114.000
Sub - cross over	1	121.000	.570	.000	.26	Internal flush	.890
Drill collar - standard	4	121.000	.570	.000	38.09	Internal flush	.890
Sub - cross over	1	121.000	.570	.000	.30	Full hole	101.000

Mud Additives

	#
Desco CF (25.0lb)	1.00

Mud Properties

Density(kg/m3)	1090.0
Viscosity(sec/L)	55.0
Fluid Loss(cm3/30 min.)	6.8

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours
Centrifuge				.0

Shale Shaker

1. Double Decker	50	50	(mesh/sq.in)
			(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	14
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	20
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly Cloudy			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$78,399.60
Operations @ 00:00	Circ prior to cementing 177.8 mm abondonment csg.	216.00		Cumulative Costs	$2,712,986.54
Operations @ 06:00	Wait on cement, clean mud tanks.			Cumulative AFE	$2,712,986.50

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	14
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	20
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 28 C Partly Cloudy			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$78,399.60
Operations @ 00:00	Circ prior to cementing 177.8 mm abondonment csg.		216.00	Cumulative Costs	$2,712,986.54
Operations @ 06:00	Wait on cement, clean mud tanks.			Cumulative AFE	$2,712,986.50

Detailed Remarks

No incidents to report.

- Tripped in well prior to run casing. Washed bridge at 643 m and 9 m fill on bottom.
- Circulated.
- Layed drill string.
- Ran 66 jts of 177.8 mm, 38.68 kg/m, L-80, LT&C abondonment casing.
- Circ and waited for cementers to transfer cement.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	15
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	21
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 31 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$467,352.00
Operations @ 00:00	R.R. at 2400 hrs. Mar.21/08.	216.00		Cumulative Costs	$3,180,338.54
Operations @ 06:00	RIg out, prepare to move.			Cumulative AFE	$3,180,338.50

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	8
Rig	12
Total	22

Brief Summary of Day's Activities

Circulated 177.8 mm abandonment csg. Cemented 177.8 mm csg. Bumped plug with 10,000 kpa, held for 10 min. Displaced cement / safe-kot inhibiter/fresh water. Set perm/packer@50 m. Cement from 50 m - surface. Nipple down, rig out. Haul extra loads to base.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks
CIRC	00:00	03:45	3.75	Circulate 177.8 mm csg and wait for cementers to start engine on pumper unit.
CEMENT	03:45	07:30	3.75	Cement 177.8 mm abandonment casing to 895 m. 11 m3 returns. Displace with fresh water and 20 lites of safe-kot inhibiter. Bumped plug, 10Mpa - 10 min
WOC	07:30	13:15	5.75	Waited on cement.
SAFETY	13:15	13:30	0.25	Safety meeting with wireline crew.
PLUG	13:30	14:30	1.00	Set permanent packer at 50 m.
NUBOP	14:30	15:00	0.50	Nipple down BOP's. cut casing.
CEMENT	15:00	18:00	3.00	Pick up drill pipe and cement from 50 m to surface.
RIGUP	18:00	00:00	6.00	Finish nipple down BOP, clean mud tanks.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)
.0104			.000	
.0125	60		.750	1100

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	1/1/1900
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	.0 m3
Premix Tank	.0 m3
String	.0 m3
Annular	.0 m3
Total Mud	.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	.00 min
Circulating Time	.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)

Mud Additives

	#
Safe-Kote (20.0L)	1.00

Mud Properties

Density(kg/m3)	1100.0
Viscosity(sec/L)	55.0
Gel Strength 1(Pa)	5.0
Gel Strength 2(Pa)	7.0
Filter Cake(mm)	2.0
Yield Point(Pa)	6.0
Plastic Viscosity(mPa.s)	20.0
pH	7.5
Calcium(mg/l)	60.0
Chlorides(mg/l)	300.0
Fluid Loss(cm3/30 min.)	6.0

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	15
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	21
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 31 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$467,352.00
Operations @ 00:00	R.R. at 2400 hrs. Mar.21/08.	216.00		Cumulative Costs	$3,180,338.54
Operations @ 06:00	Rlg out, prepare to move.			Cumulative AFE	$3,180,338.50

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description Production #1 **Stage #** 1

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type
Lead #1	RFC-lite	0.2% D046 0.2% DO13	18.40	1530.00	24.20	.0	575.0	11.0	Cement slurry
Tail #1	Class G		8.40	1900.00	4.60	575.0	898.0	11.0	Cement slurry

Cementing Remarks

Ran float shoe, 4 jts csg, float collar, and 62 jts of 177.8 mm, 38.68 kg/m, L-80, new abandonment casing. Cemented with 18.4 tonne of RFC lite, followed with 8.4 tonne of Class G neat. Displaced with 16.8 m3 of fresh water/mix with 25 litres of Safe-kot inhibiter. 11 m3 of cement returns, plug bumped and held for 10 min at 10,000 kpa. Ran permanent bridge plug at 50 m and topped to surface with I tonne of Class -G.

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office National Energy Board **Person Rick Turner Rick Turner** **Date 3/21/2008 00:00**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives
1	Plug back and case	895.0	.0	.0				26.80		

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	15
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	21
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 31 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$467,352.00
Operations @ 00:00	R.R. at 2400 hrs. Mar.21/08.		216.00	Cumulative Costs	$3,180,338.54
Operations @ 06:00	Rlg out, prepare to move.			Cumulative AFE	$3,180,338.50

Detailed Remarks

No incidents to report.

- Circulated and waited on Schlumberger to start mix engine on pumper unit.
- Cemented 177.8 mm casing with 18.4 tonne of lead, followed with 8.4 tonne of Class G. Displaced with 16.8 m3 (correct calculated), mixed with 25 liters of inhibiter.
Pumped plug with 10,000 kpa and held pressure for 10 min.
- WOC 8 hours.
- Nippled down BOP.
- Set permenent bridge plug at 50 m.
- Cemented top of plug to surface with Class-G cement.
- Lay pipe and nippled down casing flange.
- Continue to clean tanks, cut casing bowl.
- R.R. at 2400 hrs. Mar. 21/08.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	16
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	22
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$386,811.00
Operations @ 00:00	Load out Akita 14 for move to Nisku.	216.00		Cumulative Costs	$3,567,149.54
Operations @ 06:00	Loaded trucks traveling to Nisku.			Cumulative AFE	$3,567,149.50

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	16
Rig	12
Total	30

Brief Summary of Day's Activities

Rigged out , lay derrick, Loaded out all Akita 14 off location. 10 loads left for Nisku, remaining will leave Mar.23/08.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks
RIGUP	00:00	08:00	8.00	Rig out lay derrick , prepare to load out.
SAFETY	08:00	08:15	0.25	Safety meeting with Transco Trucking.
RIGUP	08:15	00:00	15.75	Load out all Akita 14 loads and begin to travel to Nisku.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	1/1/1900
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	.0 m3
Premix Tank	.0 m3
String	.0 m3
Annular	.0 m3
Total Mud	.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	.00 min
Circulating Time	.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)

Mud Additives

Mud Additives	#

Mud Properties

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	16
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	22
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$386,811.00
Operations @ 00:00	Load out Akita 14 for move to Nisku.		216.00	Cumulative Costs	$3,567,149.54
Operations @ 06:00	Loaded trucks traveling to Nisku.			Cumulative AFE	$3,567,149.50

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	16
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	22
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 25 C Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$386,811.00
Operations @ 00:00	Load out Akita 14 for move to Nisku.		216.00	Cumulative Costs	$3,567,149.54
Operations @ 06:00	Loaded trucks traveling to Nisku.			Cumulative AFE	$3,567,149.50

Detailed Remarks

No incidents to report.

- Rigged out and prepare derrick to be lifted off sub.
- Load out loads at base camp. Load out all Akita 14 loads to Base camp. Some loads began traveling to Nisku
- 2 wellsite units left on location to be loaded out Mar.23. All remaining Akita 14 loads to leave Base for Nisku Mar.23/08.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	18
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	24
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 10 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$876,848.00
Operations @ 00:00	Truck Akita 14 rig loads to Nisku.	216.00		Cumulative Costs	$4,465,047.54
Operations @ 06:00	Truck Akita 14 rig loads to Nisku.			Cumulative AFE	$4,465,047.50

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	16
Rig	12
Total	30

Brief Summary of Day's Activities

Truck Akita 14 rig loads from Keele River L-52 to Akita yard Nisku.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks
RIGUP	00:00	00:00	24.00	Moved Akita 14 from Keele River L-52 to Akita yard in Nisku.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	1/1/1900
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	.0 m3
Premix Tank	.0 m3
String	.0 m3
Annular	.0 m3
Total Mud	.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	.00 min
Circulating Time	.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)

Mud Additives

Mud Additives	#	Mud Properties

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	18
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	24
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 10 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$876,848.00
Operations @ 00:00	Truck Akita 14 rig loads to Nisku.	216.00		Cumulative Costs	$4,465,047.54
Operations @ 06:00	Truck Akita 14 rig loads to Nisku.			Cumulative AFE	$4,465,047.50

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	18
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	24
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	- 10 C Clear.			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$876,848.00
Operations @ 00:00	Truck Akita 14 rig loads to Nisku.		216.00	Cumulative Costs	$4,465,047.54
Operations @ 06:00	Truck Akita 14 rig loads to Nisku.			Cumulative AFE	$4,465,047.50

Detailed Remarks

Truck and unload Akita 14 rig from Keele river L-52 to Akita yard Nisku.

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	17
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	23
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-15 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (mm)**		Daily Costs	$21,050.00
Operations @ 00:00	Haul Akita 14 to Akita yard Nisku.	216.00		Cumulative Costs	$3,588,199.54
Operations @ 06:00	Haul Akita 14 to Akita yard Nisku.			Cumulative AFE	$3,588,199.50

Key Personnel

Drilling Supervisor Sam Machnee	(403)537-2591	Geologist		
Drilling Supervisor Keith Tichkowsky.	(403)537-2591	Office Contact	Richardson, Kim	(403)298-7273
Rig Manager				

Personnel on Site

Company	2
Service	16
Rig	12
Total	30

Brief Summary of Day's Activities

Load remaining loads from Base camp and truck to Akita yard Nisku.

Bit

Bit #	Size (mm)	Make	Type	Serial #	Jets (mm)	In at (m)	Out at (m)	Progress (m)	Cum. bit hrs	ROP (m/hr)	Condition
					/ / /						
					/ / /						
					/ / /						

Drilling Parameters

Bit #	Rot. Str. Wt. (daN)	RPM	P.U. Str. Wt. (daN)	Mechanical Torque (Nm)	Slack Str. Wt. (daN)	Electrical Torque (Nm)	Weight on Bit (daN)	DP Vel. (m/min)	DC Vel. (m/min)	Jet Vel. (m/sec)
								/	/	
								/	/	
								/	/	

Activities

Code	From	To	Hours	Remarks
RIGUP	00:00	00:00	24.00	Move Akita 14 to Nisku, Akita yard.

Pump

Stroke Vol. (m3)	SPM	Reduced SPM	Circ Rate (m3/min)	Pressure (kPa)

Survey

Depth(m)	Incl.	Azim.

Well Control

MACP	.00 kPa
Hydrostatic	.00 kPa
BOP Last Tested	1/1/1900
Last Casing Size	.000 mm
Casing Shoe	.00 m
Surface Tank	.0 m3
Premix Tank	.0 m3
String	.0 m3
Annular	.0 m3
Total Mud	.0 m3
Mud Loss	.0 m3
Cum. Mud Loss	9.0 m3
Bottom Up Time	.00 min
Circulating Time	.00 min
Sump Volume	.0 m3
Sump Freeboard	.0 m

Bottom Hole Assembly

Item	#	OD (mm)	ID (mm)	Fishneck (mm)	Length (m)	Thread Type	Thread Size (mm)

Mud Additives

Mud Additives	#	Mud Properties

Solids Control

Item	UF (kg/m3)	OF (kg/m3)	Flow (L/min)	Hours

Shale Shaker

(mesh/sq.in)
(mesh/sq.in)

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	17
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	23
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-15 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)	**Hole Size (unit)**		Daily Costs	$21,050.00
Operations @ 00:00	Haul Akita 14 to Akita yard Nisku.	216.00		Cumulative Costs	$3,588,199.54
Operations @ 06:00	Haul Akita 14 to Akita yard Nisku.			Cumulative AFE	$3,588,199.50

Casing

Landed Depth m **Well Depth** m **Hole Size** mm

Item Description	Item Type	Make	Size (mm)	Weight (kg/m)	Grade	Thread & Coupling	Joints Ran	Surplus Joints	Surplus Length (m)	Cuttoff (m)	Length Ran(m)	Top Depth (m)

Casing Remarks

Cementing

Cementing Description **Stage #**

Slurry Type	Cement Type	Additives	Quantity (Mt)	Density (kg/m3)	Volume (m3)	Top Depth (m)	Bottom Depth(m)	Return Vol. (m3)	Return Type

Cementing Remarks

Cores

Core No.	Formation	Bottom Depth (m)	Top Depth (m)	Cut (m)	Recovery (m)	Side wall	Remarks
2	Bearpaw Fm	540.0	531.2	8.8	8.8	No	Little Bear fm
3	Bearpaw Fm	540.7	540.2	.5	.5	No	Little Bear fm

Drill Stem Testing

DST No.	DST Type	DST Company	Formation	Bottom Depth (m)	Top Depth (m)

Abandonment/Plugback

Office **Person** **Date**

Plug No.	Plug Type	Bottom Depth (m)	Top Depth (m)	Felt at Depth (m)	Felt By	Felt Method	Cement Type	Cement Volume (m3)	Cement Method	Additives

Husky Oil Operations Limited

Well	**KEELE RIVER L-52**	Ground Elevation	310.17 m	Days From Spud	17
Project	**Initial Drilling**	KB Elevation	314.42 m	Days on Location	23
UWI	**300L026401124560**	Projected Depth	830.0 m	Spud Date	3/6/2008 16:00
Licence	**2052**	Present Depth	895.0 m	Rig Release Date	3/21/2008 00:00
Rig Name / Model	Akita #14 / Single	Daily Progress	.0 m	AFE Number	US-28423
Final Status Code	Drilled & Abandoned	Accident	No	AFE Amount	$9,000,000.00
Weather	-15 Clear			Budget Amount	$5,829,000.00
Formation	Surface (top hole)		**Hole Size (unit)**	Daily Costs	$21,050.00
Operations @ 00:00	Haul Akita 14 to Akita yard Nisku.		216.00	Cumulative Costs	$3,588,199.54
Operations @ 06:00	Haul Akita 14 to Akita yard Nisku.			Cumulative AFE	$3,588,199.50

Detailed Remarks

Moved Akita 14 rig from Keele River L-52 to Akita yard Nisku.

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**06-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	0	Total Vert Depth (m)	0
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
1			
Report #	**1**	Total Days	1

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator		Contractor Rep	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity **Spud Report**

AFE # **28423**

Drilling Fluid (Type)

PROPERTIES	Flowline	Suction
Time (Hours)	15:38	
Temperature (C)	0	0
Density (kg/m3)	0	0
Viscosity (sec/L)	0	0
Fann 600	2	0
Fann 300	1.5	0
Fann 200	0	0
Fann 100	0	0
Fann 6	0	0
Fann 3	1	0
Fann A.V. (mPa.s)	1	0
Plastic Vis (mPa.s)	0.5	0
Yield Point (Pa)	0.5	0
10 Sec Gel (Pa)	0	0
10 Min Gel (Pa)	0	0
30 Min Gel (Pa)	0	0
Fluid Loss (ml/30 min)		
Filter Cake (mm)		
PH Meter	0	0
Pf	0	0
Mf	0	0
Chlorides (mg/l)	0	0
Calcium (mg/l)	0	0
MBT (kg/m3)	0	0
Sand Volume Fraction		
Water Volume Fraction	0	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)		

HOLE GEOMETRY

Washout % 0

Equivalent Hole Diameter (mm) 0.0

	OD (mm)	ID (mm)	Length (M)	Ann. m/min	Ann. Vol OH m3	Ann. Vol Cased Hole m3	String Vol m3
Hole Size	0.0						
Casing#1	0.0	0.0	0.0				
Casing#2	0.0	0.0	0.0				
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
BHA	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Last Casing Set	0.0	0.0	0.0	Low "n"	0.1	Low "K" (Pa S)	0.4

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	0.0	0.0	0.0
Strokes	0	0	0

Total Ann Mud Volume (m3)	0.0
Total String Mud Volume (m3)	0.0
Tanks(s) Volume (m3)	0.0
Total Circulating Volume (m3)	0.0
ECD (kg/m3)	0
Hydrostatic Pressure (kPa)	0
Low Gravity Solids (kg/m3)	-1625
High Gravity Solids (kg/m3)	0

BIT DATA

Bit # | Depth In 0 | Type | Hours 0 | WOB (daN)

Size (mm) 0 | Depth Out 0 | RPM | Noz Vel (m/s) 0.0 | T.F.A. (mm2) 0.0

Bit Depth 0	1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	0	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	0	0	0
Output (l/min)	0	0	0	Mesh Size 3	0	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	0	Ream	0
Circulation	0	Clean	0
Rig Service	0	Misc.	0
Dir. Work	0	Testing	0
Coring	0	Total:	0

TANK FARM

0	0	0	
0	0	0	
0	0	0	
0	0	0	

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
	0	0	0.0	0	0.00
	0	0	0.0	0	0.00
	0	0	0.0	0	0.00

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	0.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	0.0
Pump Presure (kPa)	0.0

PRODUCT USAGE / COST

OPERATION LAST 24 HOURS

SUGGESTIONS

For Spud
- Fill tanks with water and mix 2 sx Soda Ash.
- Spud in with water allowing Native Clays to build viscosity.
- Add PHPA Liquid on Supervisor's instruction.
- Increase Viscosity to 70 sec/l with Gel for running casing.

Sand/ Gravel/ Boulders
- Increase Viscosity to 45 sec/l with Gel if hole cleaning becomes an issue.

Lost Circulation
- Mix an LCM pill in one of the rig tanks. Add 1/2 sk Lime, raise viscosity to 80+ sec/l with Gel.
- Mix Sawdust, Fiber Seal and Cellophane in a 10:2:1 ratio. Mix as much product as possible and still be able to pump.
- Pump at reduce pump speed and spot in thief zone. Allow to settle while top filling hole.

Wil

Mud Rings
- Put Dyna Detergent in a warm building to thaw.
- Add Dyna Det at suction, 10 min/pail if mud-rings present.

- If severe, add SAPP down pipe, 1 viscup per connection. Try not to use more then 1 sk SAPP, for enviromental reasons.

Casing point

- Do not use Caustic if possible. pH needs to be under 8.5 prior to cleaning tanks. Use Sulphamic Acid if needed to reduce.

Cementing
- Isolate returns to 1 tank.
- Lower Viscosity to 45 sec/l with water additions.

Please pails of PHPA in a warm building to thaw.

Thx

Inventory Cost Prior	0.00
Inventory Cost This Report	0.00
Total Inventory Costs	0.00

Warehouse	**Formula Powell**			Service Tech	**Wil Skogstad**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita Rig # 40, Room #130**	Phone	**Camp**

24 Hour Phone (403) 266-7383

24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

WATER BASED MUD REPORT

Report Date	**07-Mar-08**	Spud Date	**05-Mar-08**
Measured Depth (m)	165	Total Vert Depth (m)	165
Deviation Deg. / Depth	0 / 0	Azimuth	0
Report #	**2**	Total Days	2

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity
Operator Rep	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep		**Drilling surface hole**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #

Drilling Fluid (Type): Gel Slurry

PROPERTIES	Flowline	Suction
Time (Hours)	9:58	
Temperature (C)	22	0
Density (kg/m3)	1110	0
Viscosity (sec/L)	36	0
Fann 600	21	0
Fann 300	14	0
Fann 200	0	0
Fann 100	0	0
Fann 6	0	0
Fann 3	3	0
Fann A.V. (mPa.s)	10.5	0
Plastic Vis (mPa.s)	7	0
Yield Point (Pa)	3.5	0
10 Sec Gel (Pa)	2.5	0
10 Min Gel (Pa)	4	0
30 Min Gel (Pa)	0	0
Fluid Loss (ml/30 min)	12	
Filter Cake (mm)	1	
PH Meter	8	0
Pf	0.05	0
Mf	0.3	0
Chlorides (mg/l)	300	0
Calcium (mg/l)	30	0
MBT (kg/m3)	35	0
Sand Volume Fraction	.005	
Water Volume Fraction	0.93	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.07	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)		

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)
Hole Size	311.0		
Casing#1	0.0	0.0	0.0
Casing#2	0.0	0.0	0.0
Liner/Csg#3	0.0	0.0	0.0
D.P.#1	102.0	85.0	45.0
D.P.#2	0.0	0.0	0.0
D.C.#1	159.0	60.0	120.0
D.C.#2	0.0	0.0	0.0
BHA	0.0	0.0	0.0
Last Casing Set	0.0	0.0	0.0

Washout % 0

Equivalent Hole Diameter (mm) 311.0

	Ann. Velocity m/min	Ann. Vol OH m3	Ann. Vol Cased Hole m3	String Vol m3
Casing#1				
Casing#2				
Liner/Csg#3				
D.P.#1	31.47	3.05	0.00	0.26
D.P.#2	0.00	0.00	0.00	0.00
D.C.#1	38.02	6.73	0.00	0.34
D.C.#2	0.00	0.00	0.00	0.00
BHA	0.00	0.00	0.00	0.00

Low "n" 0.3 Low "K" (Pa S) 0.9

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	4.6	4.9	11.9
Strokes	427	453	1108

Total Ann Mud Volume (m3)	9.8
Total String Mud Volume (m3)	0.6
Tanks(s) Volume (m3)	15.0
Total Circulating Volume (m3)	25.4
ECD (kg/m3)	1118
Hydrostatic Pressure (kPa)	1797
Low Gravity Solids (kg/m3)	179
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	1a	Depth In	24	Type	GTCS1	Hours	0	WOB (daN)	5			
Size (mm)	311	Depth Out	0	RPM	120	Noz Vel (m/s)	37.6	T.F.A. (mm2)	942.0			
Bit Depth	165	1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)		20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	ShaleShaker	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	0	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	0	0	0
Output (l/min)	0	0	0	Mesh Size 3	0	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	5.5	Survey	0.5
Tripping	2.25	Ream	0
Circulation	0.5	Clean	0
Rig Service	0.5	Misc.	14.75
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

	0		0	0
	0		0	0
	0		0	0
	0		0	0

PUMP DATA

Make/Mdl	Liner Sz	Stroke Lng.	Litres/ Stroke	Strokes/ Min	m3/ min
Emsco F	152	191	10.4	85	0.89
Emsco F	152	229	12.5	100	1.25
	0	0	0.0	0	0.00

Total Pump Output m3/min 2.1

Pump Presure (kPa) 2000.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	25.4	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Sawdust Bag	23	4.20	96.60
Drilling Detergent Liqu	1	51.75	51.75
Engineering	1	1000.00	1000.00

OPERATION LAST 24 HOURS

- Spudded with water at 16:00 hours, 03/06/08.
- Drilled ahead to 71 meters at 2400 hours.
- Drilling ahead on surface hole

SUGGESTIONS

- Maintain Viscosity at 40 + sec/l with Gel.

Casing point
- Increase Viscosity to 70 sec/l with Gel for running casing.
- Do not use Caustic if possible. pH needs to be under 8.5 prior to cleaning tanks. Use Sulphamic Acid if needed to reduce.

Cementing
- Isolate returns to 1 tank.
- Lower Viscosity to 45 sec/l with water additions.

Please pails of PHPA in a warm building to thaw.

While WOC

- Clean tanks and drain all suction lines,centrifuge lines, etc.
- Fill tanks with water.
- Mix 5 sx Kelzan, 4 sx Drispac and 7 pails High Perm. 10 sx Cal Carb "0" and 10 sx Cal Carb 325.
- Drill out cement with water using pill tank.
- When thru the shoe, displace hole to polymer mud. Run 2" stream of water to maintain volume.
- Begin adding PHPA Liquid at suction 1 pail very 75 meters. Add PHPA slowly to prevent screen blinding.
- Adjust Viscosity to 45 se/l initially with Kelzan at 40 min/sk.
- Adjust Water Loss to under 8 cc with Drispac/ Humilite at 40 min/sk.
- Add 5 sx Cal Carb 0 and 5 sx CalCarb 325 each tour.

Inventory Cost Prior	0.00
Inventory Cost This Report	1148.35
Total Inventory Costs	1148.35

Warehouse	**Formula Powell**			Service Tech	**Wil Skogstad**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita Rig # 40, Room #130**	Phone	**Camp**

24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**15-Feb-08**	Spud Date	**14-Feb-08**
Measured Depth (m)	0	Total Vert Depth (m)	0
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
3			
Report #	**3**	Total Days	3

Operator	**Huskey**	Contractor	**Akita #40**	Present Activity	
Operator	**Bill Cottrell//Alvin Vogt**	Contractor Rep		**Rigging Up**	
Well Location	**Dahadinni B-20**	Well Name	**Huskey et al North Haywood**	AFE #	

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	13:28	
Temperature (C)	15	0
Density (kg/m3)	1010	0
Viscosity (sec/L)	65	0
Fann 600	55	0
Fann 300	41	0
Fann 200	36	0
Fann 100	24	0
Fann 6	8	0
Fann 3	6	0
Fann A.V. (mPa.s)	27.5	0
Plastic Vis (mPa.s)	14	0
Yield Point (Pa)	13.5	0
10 Sec Gel (Pa)	4	0
10 Min Gel (Pa)	6	0
30 Min Gel (Pa)	8	0
Fluid Loss (ml/30 min)	11	
Filter Cake (mm)	2	
PH Meter	8.5	0
Pf	0.25	0
Mf	0.8	0
Chlorides (mg/l)	300	0
Calcium (mg/l)	80	0
MBT (kg/m3)	15	0
Sand Volume Fraction	0	
Water Volume Fraction	99	0
Oil Volume Fraction	0	0
Solids Volume Fraction	1	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)		

HOLE GEOMETRY

Washout % 0

	OD (mm)	ID (mm)	Length (M)	Equivalent Hole Diameter (mm) 0.0			
Hole Size	0.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	0.0	0.0	0.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
BHA	0.0	0.0	0.0	0.00	0.00	0.00	0.00
Last Casing Set	0.0	0.0	0.0	Low "n"	0.4	Low "K" (Pa S)	1.6

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	0.0	0.0	0.0
Strokes	0	0	0

Total Ann Mud Volume (m3)	0.0
Total String Mud Volume (m3)	0.0
Tanks(s) Volume (m3)	0.0
Total Circulating Volume (m3)	0.0
ECD (kg/m3)	0
Hydrostatic Pressure (kPa)	0
Low Gravity Solids (kg/m3)	16
High Gravity Solids (kg/m3)	0

BIT DATA

Bit # 1 Depth In 0 Type Hours 0 WOB (daN)

Size (mm) 0 Depth Out 0 RPM Noz Vel (m/s) 0.0 T.F.A. (mm2) 0.0

Bit Depth	0	1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	0	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	0	0	0
Output (l/min)	0	0	0	Mesh Size 3	0	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	0	Ream	0
Circulation	0	Clean	0
Rig Service	0	Misc.	24
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

			Make/Mdl.	Liner
0	0	0		0
0	0	0		0
0	0	0		0
0	0	0		0

PUMP DATA

Stroke	Litres/	Strokes/ Min	m3/ min
0	0.0	0	0.00
0	0.0	0	0.00
0	0.0	0	0.00

Total Pump Output m3/min	0.0
Pump Presure (kPa)	0.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	0.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

OPERATION LAST 24 HOURS

-Rigging up

-Built spud mud to 65 sec/L viscosity and lowered fluid loss to 11 mL/30 min with 3 soda ash, 4 Humalite, 8 Drispac, 8 Flozan and NewGel

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Drispac Regular 50 lb.	8	273.30	2186.40
Soda Ash 25 kg.	3	21.75	65.25
Kelzan XCD 25 kg.	8	554.70	4437.60
Humalite	4	10.95	43.80
Bentonite - Natural 40	25	12.45	311.25
Engineering	1	1000.0	1000.00

SUGGESTIONS

1) Use mud in rig tanks for Spud mud. When drilling maintain viscosity at 60 to 80 sec/L with NewGel, KELZAN and DRISPAC at 15 to 1 to 1 ratio. 2 Kelzan then add Gel (Bentonite) for +\-50 sec/L viscosity.

2) Maintain the mud density ALAP with use of all solids control at all times. Run all agitators and guns. Turn on centrifuge when ENGINEER requests.

3) Maintain PH at 8.5 to 9.0. Don't go over 9.5.

4) Please watch tank volumes for any sudden increases or decreases. Add water as needed to maintain voulume.

5) Put 3-4 pails DYNA DET in pump house to thaw out, then when requested add 1 pail slowly over suction tank.

PREMIX TANK:

Fill with 3/4 with water, add 2 Soda Ash, 2 Drispac,

Then add 1 pallet SAWDUST and 10 sx Cellophane
Then add 20 sx More Bentonite to raise viscosity.
**Will pump as needed or as requested.

**Try using 84's for screens for now on shakers, when drilling starts, when everything going good, can go to finer screens.

Inventory Cost Prior	8000.00
Inventory Cost This Report	8044.30
Total Inventory Costs	16044.30

Warehouse	**Fomula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds Alberta**	Phone **1403-885-5151**	Address	**Camp**	Phone

24 Hour Phone (403) 266-7383

24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**10-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	260	Total Vert Depth (m)	260
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
4			
Report #	**4**	Total Days	4

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep		**Drilling**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	12:46	
Temperature (C)	18	0
Density (kg/m3)	1010	0
Viscosity (sec/L)	44	0
Fann 600	32	0
Fann 300	24	0
Fann 200	0	0
Fann 100	0	0
Fann 6	8	0
Fann 3	6	0
Fann A.V. (mPa.s)	16	0
Plastic Vis (mPa.s)	8	0
Yield Point (Pa)	8	0
10 Sec Gel (Pa)	3	0
10 Min Gel (Pa)	8	0
30 Min Gel (Pa)	10	0
Fluid Loss (ml/30 min)	12	
Filter Cake (mm)	2	
PH Meter	9.5	0
Pf	0.35	0
Mf	0.82	0
Chlorides (mg/l)	320	0
Calcium (mg/l)	200	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.99	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.01	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)		

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			0
Hole Size	216.0			Equivalent Hole Diameter (mm)			216.0
Casing#1	244.5	220.0	252.0	Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#2	0.0	0.0	0.0	m/min	OH	Cased Hole	
Liner/Csg#3	0.0	0.0	0.0		m3	m3	m3
D.P.#1	102.0	85.0	125.6	49.36	0.00	3.75	0.71
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	55.56	0.00	1.02	0.11
D.C.#2	159.0	60.0	86.6	81.13	0.00	1.57	0.24
BHA	181.0	78.0	9.4	134.99	-0.12	0.02	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.3	Low "K" (Pa S)	1.9

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	4.2	5.0	28.7
Strokes	500	589	3392

Total Ann Mud Volume (m3)	6.2
Total String Mud Volume (m3)	1.1
Tanks(s) Volume (m3)	35.0
Total Circulating Volume (m3)	42.3
ECD (kg/m3)	1054
Hydrostatic Pressure (kPa)	2576
Low Gravity Solids (kg/m3)	16
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	252	Type	GTCS1	Hours	0	WOB (daN)	5				
Size (mm)	216	Depth Out	0	RPM	120	Noz Vel (m/s)	26.0	T.F.A. (mm2)	942.0				
Bit Depth	260	1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)		20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	110	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	110	0	0
Output (l/min)	0	0	0	Mesh Size 3	110	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	1.5	Ream	0
Circulation	0	Clean	0
Rig Service	0.25	Misc.	22.25
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	Make/Mdl.	Liner	Stroke	Litres/
0	0	0	Emsco	152	191	0.0
0	0	0	Emsco	152	229	12.5
0	0	0		0	0	0.0

PUMP DATA

Strokes/ Min	m3/ min
0	0.00
118	1.47
0	0.00

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	42.3	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Kelzan XCD 25 kg.	5	554.70	2773.50
Drispac Regular 50 lb.	4	273.30	1093.20
Cal Carb #0 (25kg)	10	5.70	57.00
Cal Carb #325 (25kg)	10	5.70	57.00
High Perm 20 l	6	194.25	1165.50

OPERATION LAST 24 HOURS

- Nipple up and PT BOP's
- Drill out with 216 mm bit using water, drill 5 meter, perform PIT. Displace hole over to premixed mud (containing Kelzan, Drispac, Highperm)
-TOH and TIH with vertitrac and new bit.

SUGGESTIONS

While drilling

1) Lower Water Loss to under 8 cc with Drispac/ Humilite at 30 to 40 min/sk at 1 to 1 ratio.

2) Add 1 pail PHPA Liquid (Shale Stabilizer) at suction 1 pail every 100 meters. Add PHPA very SLOWLY to prevent screen blinding.

3) Add 1 pail HIGHPERM every 100 meters thru grating.

4) After Fluid loss under 8.0 mL/30 min adjust Viscosity to 45 - 55 sec/L with KELZAN at 30 to 40 min/sk.

5) Add 5 sx Cal Carb 0 and 5 sx CalCarb 325 each tour.

volume.

**Have Viscosity at 50-60 sec/L (With KELZAN) for CORING or as CO. MAN requests.

Thanks
Wayne

Inventory Cost Prior	4271.70
Inventory Cost This Report	6146.20
Total Inventory Costs	10417.90

-- Run small stream of water as required to maintain

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**11-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	531	Total Vert Depth (m)	531
Deviation Deg. / Depth	.46 / 498	Azimuth	Total Days
5			
Report #	**5**	Total Days	5

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity: **TOH to Core**

AFE #

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	10:43	
Temperature (C)	22	0
Density (kg/m3)	1030	0
Viscosity (sec/L)	83	0
Fann 600	80	0
Fann 300	59	0
Fann 200	0	0
Fann 100	0	0
Fann 6	15	0
Fann 3	10	0
Fann A.V. (mPa.s)	40	0
Plastic Vis (mPa.s)	21	0
Yield Point (Pa)	19	0
10 Sec Gel (Pa)	10	0
10 Min Gel (Pa)	12	0
30 Min Gel (Pa)	15	0
Fluid Loss (ml/30 min)	9.3	
Filter Cake (mm)	2	
PH Meter	7.5	0
Pf	0.02	0
Mf	0.3	0
Chlorides (mg/l)	350	0
Calcium (mg/l)	90	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.978	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.022	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	1.0	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	396.6	49.36	4.38	7.52	2.25
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	55.56	1.04	0.00	0.11
D.C.#2	159.0	60.0	86.6	81.13	1.61	0.00	0.24
BHA	181.0	78.0	9.4	119.93	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.7

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	10.0	11.8	29.4
Strokes	1175	1387	3469

Total Ann Mud Volume (m3)	14.7
Total String Mud Volume (m3)	2.6
Tanks(s) Volume (m3)	26.0
Total Circulating Volume (m3)	43.3
ECD (kg/m3)	1117
Hydrostatic Pressure (kPa)	5365
Low Gravity Solids (kg/m3)	49
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	252	Type	GTCS1	Hours	15.25	WOB (daN)	11					
Size (mm)	216	Depth Out	531	RPM	120	Noz Vel (m/s)	26.0	T.F.A. (mm2)	942.0					
Bit Depth	252	1	2	3	4	5	6	7	8	9	10	11	12	
Nozzle Sizes (mm)		20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	1010	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	1820	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	8	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	10.75	Survey	2
Tripping	5	Ream	0
Circulation	2.25	Clean	0
Rig Service	0.5	Misc.	3.5
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	
0	0	0	
0	0	0	
0	0	0	

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
Emsco	152	191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
	0	0	0.0	0	0.00

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	43.3	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

OPERATION LAST 24 HOURS

--TIH with vertitrac and start drilling 216 mm hole. Drill ahead at 11:15 hours, March 10th.

--Drill to core point at 531 meters at 06:00 hours march 11th. Viscosity at 84 sec/L with Drispac regular and Humalite. Fliud loss at 9.5 mL/30 min. Mud weight at 1030 kg/m3.--TOH to run Core.--Sulfamic acid and Biacrb used for Surface mud and water to

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Humilite 25 kg	11	10.95	120.45
Drispac Regular 50 lb.	7	273.30	1913.10
Cal Carb #0 (25kg)	5	5.70	28.50
Cal Carb #325 (25kg)	5	5.70	28.50
High Perm 20 l	3	194.25	582.75
NewPHPA 25 kg	2	274.50	549.00
Bicarbonate of Soda	11	154.95	1704.45
4	54.15	216.60	

SUGGESTIONS

While Coring:
volume.

1) Have Water Loss under 8 cc with Drispac/ Humilite at 30 to 40 min/sk at 1 to 1 ratio.
***ADD 1 DESCO THRU CHEM BARREL WHEN ADDING THE 1ST BAG OF DRISPAC and HUMALITE.
***TRY AND KEEP VISCOSITY UNDER 80 sec/L USING SMALL AMOUNTS OF DESCO WHEN ADDING THE DRISPAC.

2) Add 1 pail HIGHPERM every 50 meters thru grating until finished.
Wayne

3) After Fluid loss under 8.0 mL/30 min use KELZAN at 30-40 min/sk to maintain viscosity 50+ sec/L.

4) Add 5 sx Cal Carb 0 and 5 sx CalCarb 325 each tour.

-- Run small stream of water as required to maintain Sulfamic Acid 25 kg.

-- To lower viscosity, add 1 DESCO thru chem barrel at a time very slowly over 1-2 hours. If viscosity fall to where you want it, stop the additions.

-- If needed to raise PH add 1 sk CAUSTIC thru chem barrel very slowly for 8.0-8.5 ph (Only as Co. Man requests).

Thanks

Inventory Cost Prior	10417.90
Inventory Cost This Report	6143.35
Total Inventory Costs	16561.25

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**20-Aug-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	531	Total Vert Depth (m)	531
Deviation Deg. / Depth	.46 / 498	Azimuth	Total Days
6			
Report #	**6**	Total Days	6

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**	**Drilling**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	16:09	
Temperature (C)	21	0
Density (kg/m3)	1030	0
Viscosity (sec/L)	56	0
Fann 600	60	0
Fann 300	42	0
Fann 200	0	0
Fann 100	0	0
Fann 6	8	0
Fann 3	5	0
Fann A.V. (mPa.s)	30	0
Plastic Vis (mPa.s)	18	0
Yield Point (Pa)	12	0
10 Sec Gel (Pa)	6	0
10 Min Gel (Pa)	11	0
30 Min Gel (Pa)	14	0
Fluid Loss (ml/30 min)	8.0	
Filter Cake (mm)	2	
PH Meter	7	0
Pf	0.01	0
Mf	0.28	0
Chlorides (mg/l)	350	0
Calcium (mg/l)	80	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.98	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.2	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	1	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0						
Casing#1	244.5	220.0	252.0	Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#2	0.0	0.0	0.0	m/min	OH	Cased Hole	
Liner/Csg#3	0.0	0.0	0.0		m3	m3	m3
D.P.#1	102.0	85.0	369.1	48.61	3.55	7.52	2.09
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.5	Low "K" (Pa S)	1.2

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	9.7	11.5	31.2
Strokes	1149	1355	3678

Total Ann Mud Volume (m3)	14.3
Total String Mud Volume (m3)	2.6
Tanks(s) Volume (m3)	29.0
Total Circulating Volume (m3)	45.9
ECD (kg/m3)	1089
Hydrostatic Pressure (kPa)	5365
Low Gravity Solids (kg/m3)	49
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	252	Type	GTCS1	Hours	15.25	WOB (daN)	11				
Size (mm)	216	Depth Out	531	RPM	120	Noz Vel (m/s)	26.0	T.F.A. (mm2)	942.0				
Bit Depth	531	1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)		20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	5.75	Survey	2
Tripping	11.5	Ream	0
Circulation	0.75	Clean	0
Rig Service	0.5	Misc.	3.5
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0
0	0	0
0	0	0
0	0	0

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
		191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
Emsco	152	0	0.0	0	0.00
	0				

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	45.9	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

OPERATION LAST 24 HOURS

--POH and TIH with core barrel and cut core from 17:30 to 20:45 hours, March 11th. TOH and retrieve core. TIH and run core from 540 o 541 meters, core jammed off. TOH and rerieve core. TIH with vertitrac to drill ahead. added DESCO to mud due to high viscosity from DRISPAC REGULAR to get fluid loss under 8.0 mL/30 min.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Drispac Regular 50 lb.	6	273.30	1639.80
High Perm 20 l	2	194.25	388.50
Humilite 25 kg	12	10.95	131.40
Desco CF 25 lb.	1	75.60	75.60
Sawdust Bag	20	4.20	84.00
PHPA Liquid 20 l	2	274.50	549.00
Cal Carb #0 (25kg)	5	5.70	28.50
Cal Carb #325 (25kg)	5	5.70	28.50
Walnut Medium 50 lb.	1	29.25	29.25
3	54.75	164.25	

SUGGESTIONS

While DRILLING please add before TD:

-- Before TD, add 1 sk Caustic thru chem barrell over 1-2 hours to raise PH.

1) Have Water Loss 6 cc or lower with Drispac/ Humilite at 30 to 40 min/sk at 1 to 1 ratio.

***KEEP VISCOSITY 60 - 80 sec/L USING DRISPAC and IF NEEDED KELZAN. Use DESCO for excessive Viscosities.

drilling over 1-2 hours.

2) Add 1 pail HIGHPERM every 50 meters thru grating until finished.

Thanks

3) Add 1 pail NEWPHPA when drilling thru grating at suction before TD.

-- Run small stream of water as required to maintain volume.

Dyna Det. 20 l

-- To lower viscosity, add 1 DESCO thru chem barrel at a time very slowly over 1-2 hours. If viscosity fall to where you want it, stop the additions, can use the rest for cementing.

-- Add 1 sk Caustic thru chem barrellf to raise PH when

Wayne

4) After Fluid loss under 6.0 mL/30 min use KELZAN at 30-40 min/sk if needed to maintain Visc. 60+ sec/L.

5) Add 5 sx Cal Carb 0 and 5 sx CalCarb 325 each tour.

Inventory Cost Prior	16564.25
Inventory Cost This Report	4118.80
Total Inventory Costs	20683.05

Warehouse	**Formula Powell**			Service Tech	**Wayne Turgeon**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita #40**	Phone	**Akita 40**

24 Hour Phone (403) 266-7383

24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**13-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	780	Total Vert Depth (m)	780
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
7			
Report #	**7**	Total Days	7

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**	**Drilling**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	13:47	
Temperature (C)	27	0
Density (kg/m3)	1050	0
Viscosity (sec/L)	68	0
Fann 600	82	0
Fann 300	60	0
Fann 200	0	0
Fann 100	0	0
Fann 6	15	0
Fann 3	10	0
Fann A.V. (mPa.s)	41	0
Plastic Vis (mPa.s)	22	0
Yield Point (Pa)	19	0
10 Sec Gel (Pa)	8	0
10 Min Gel (Pa)	12	0
30 Min Gel (Pa)	14	0
Fluid Loss (ml/30 min)	6.8	
Filter Cake (mm)	2	
PH Meter	8.5	0
Pf	0.08	0
Mf	0.35	0
Chlorides (mg/l)	380	0
Calcium (mg/l)	80	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.95	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.5	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.1	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)
Hole Size	216.0		
Casing#1	244.5	220.0	252.0
Casing#2	0.0	0.0	0.0
Liner/Csg#3	0.0	0.0	0.0
D.P.#1	102.0	85.0	618.1
D.P.#2	0.0	0.0	0.0
D.C.#1	121.0	60.0	38.4
D.C.#2	159.0	60.0	114.1
BHA	181.0	78.0	9.4
Last Casing Set	244.5	220.0	252.0

Washout % 5

Equivalent Hole Diameter (mm) 221.3

	Ann.	Ann. Vol	Ann. Vol	String Vol
	m/min	OH	Cased Hole	
		m3	m3	m3
D.P.#1	48.61	11.09	7.52	3.51
D.P.#2	0.00	0.00	0.00	0.00
D.C.#1	54.61	1.04	0.00	0.11
D.C.#2	81.13	2.13	0.00	0.32
BHA	115.58	0.12	0.00	0.04
Last Casing Set	Low "n"	0.4	Low "K" (Pa S)	2.7

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	14.9	17.6	37.2
Strokes	1753	2073	4395

Total Ann Mud Volume (m3)	21.9
Total String Mud Volume (m3)	4.0
Tanks(s) Volume (m3)	29.0
Total Circulating Volume (m3)	54.9
ECD (kg/m3)	1133
Hydrostatic Pressure (kPa)	8034
Low Gravity Solids (kg/m3)	81
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	252	Type	GTCS1	Hours	15.25	WOB (daN)	11					
Size (mm)	216	Depth Out	531	RPM	120	Noz Vel (m/s)	26.0	T.F.A. (mm2)	942.0					
Bit Depth	780		1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)			20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	24	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	3.75	Survey	0
Tripping	10	Ream	1.25
Circulation	0.5	Clean	0
Rig Service	0.25	Misc.	3.75
Dir. Work	0	Testing	0
Coring	4.5	Total:	24

TANK FARM

				Make/Mdl.	Liner
	0	0	0		
	0	0	0	Emsco	152
	0	0	0	Emsco	152
	0	0	0		0

PUMP DATA

Stroke	Litres/	Strokes/ Min	m3/ min
191	0.0	0	0.00
229	12.5	118	1.47
0	0.0	0	0.00

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	54.9	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

OPERATION LAST 24 HOURS

- Retrieve core and TIH with vertitrac. Ream rat hole to 540 meters. Drill ahead.
- Keeping water loss low and viscosity 50-6- sec/L.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Desco CF 25 lb.	5	75.60	378.00
Sawdust Bag	5	4.20	21.00
Drispac Regular 50 lb.	3	273.30	819.90
Kelzan XCD 25 kg.	2	554.70	1109.40
Humilite 25 kg	3	10.95	32.85
High Perm 20 l	1	194.25	194.25
Cal Carb #0 (25kg)	10	5.70	57.00
Cal Carb #325 (25kg)	10	5.70	57.00

SUGGESTIONS

While DRILLING please add before TD:
Wayne
-- Before TD, add 1 sk KELZAN, 1 pail NEWPHPA, 1 pail HIGHPERM, 1 sk SODA ASH and DRISPAC for Viscosity 70 to 80 sec/L and Fluid Loss as low as possible.
1) Have Water Loss 6 cc or lower with Drispac at 30 to 40 min/sk and to increase viscosity
.Use DESCO for excessive Viscosity.

2) Run small stream of water as required to maintain volume.

-3) To lower viscosity, add 1 DESCO thru chem barrel at a time very slowly over 1-2 hours. If viscosity fall to where you want it, stop the additions, can use the rest for cementing.

-- Add 1 sk soda ash before TD.

Thanks

Inventory Cost Prior	20683.05
Inventory Cost This Report	3669.40
Total Inventory Costs	24352.45

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**14-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	830	Total Vert Depth (m)	830
Deviation Deg. / Depth	.12 / 823	Azimuth	Total Days
8			
Report #	**8**	Total Days	8

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity: **Drilling**

AFE # **28423**

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	17:01	
Temperature (C)	22	0
Density (kg/m3)	1060	0
Viscosity (sec/L)	65	0
Fann 600	75	0
Fann 300	55	0
Fann 200	23	0
Fann 100	17	0
Fann 6	11	0
Fann 3	9	0
Fann A.V. (mPa.s)	37.5	0
Plastic Vis (mPa.s)	20	0
Yield Point (Pa)	17.5	0
10 Sec Gel (Pa)	7	0
10 Min Gel (Pa)	14	0
30 Min Gel (Pa)	18	0
Fluid Loss (ml/30 min)	6.7	
Filter Cake (mm)	2	
PH Meter	8.5	0
Pf	0.05	0
Mf	0.39	0
Chlorides (mg/l)	400	0
Calcium (mg/l)	80	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.948	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.052	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.2	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	668.1	48.61	12.61	7.52	3.79
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.4

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	15.9	18.8	38.5
Strokes	1875	2217	4539

Total Ann Mud Volume (m3)	23.4
Total String Mud Volume (m3)	4.3
Tanks(s) Volume (m3)	29.0
Total Circulating Volume (m3)	56.7
ECD (kg/m3)	1134
Hydrostatic Pressure (kPa)	8631
Low Gravity Solids (kg/m3)	98
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	3	Depth In	531	Type	M516BHVPH	Hours		WOB (daN)	11					
Size (mm)	216	Depth Out		RPM	120	Noz Vel (m/s)	20.1	T.F.A. (mm2)	1218.5					
Bit Depth	830	1	2	3	4	5	6	7	8	9	10	11	12	
Nozzle Sizes (mm)		16.6	16.6	16.6	16.6	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	16.5	Survey	0
Tripping	2.5	Ream	0
Circulation	1	Clean	0
Rig Service	0.75	Misc.	3.25
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	
0	0	0	
0	0	0	
0	0	0	

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
		191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
Emsco	152	0	0.0	0	0.00
	0				

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	56.7	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

OPERATION LAST 24 HOURS

--Drill to 830 meters at 20:30 hours, March 13th. Circulate and POH at 21:30 hours to run Logs.--Viscosity at 78 sec/L--Wiper trip and POH to log. Start to run logs at 07:45 hours, March 14th, cancell logging to move loggers over to Akita #40. TIH with drill pipe and drill.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Cal Carb #325 (25kg)	5	5.70	28.50
Engineering	1	1000.0	1000.00
Soda Ash 25 kg.	2	21.75	43.50
Kelzan XCD 25 kg.	5	554.70	2773.50
Drispac Regular 50 lb.	9	273.30	2459.70
Cal Carb #0 (25kg)	5	5.70	28.50
Humilite 25 kg	2	10.95	21.90
Desco CF 25 lb.	2	75.60	151.20
1	48.00	48.00	
PHPA Liquid 20 l	1	274.50	274.50
Sawdust Bag	15	4.20	63.00
High Perm 20 l	4	194.25	777.00

SUGGESTIONS

While DRILLING please add before TD:
Caustic Soda 50 lb.

1) Before TD, add DRISPAC and KELZAN for Viscosity 70 to 80 sec/L and Fluid Loss as low as possible.
2) Add water as requested, then run a stream of water as required.

-3) To lower viscosity, add DESCO thru chem barrel at a time very slowly over 1-2 hours. If viscosity fall to where you want it, stop the additions, can use the rest for cementing.

Thanks
Wayne

Inventory Cost Prior	24352.45
Inventory Cost This Report	7669.30
Total Inventory Costs	32021.75

Warehouse	**Formula Powell**			Service Tech	**Wayne Turgeon**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita #40**	Phone	**Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**15-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	1.5 / 884	Azimuth	Total Days
9			
Report #	**9**	Total Days	9

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity: **Tripping to Shoe//W.O.C.**

AFE #

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	9:36	
Temperature (C)	25	0
Density (kg/m3)	1050	0
Viscosity (sec/L)	72	0
Fann 600	78	0
Fann 300	57	0
Fann 200	27	0
Fann 100	17	0
Fann 6	14	0
Fann 3	9	0
Fann A.V. (mPa.s)	39	0
Plastic Vis (mPa.s)	21	0
Yield Point (Pa)	18	0
10 Sec Gel (Pa)	7	0
10 Min Gel (Pa)	10	0
30 Min Gel (Pa)	15	0
Fluid Loss (ml/30 min)	7.0	
Filter Cake (mm)	2	
PH Meter	8	0
Pf	0.02	0
Mf	0.35	0
Chlorides (mg/l)	400	0
Calcium (mg/l)	60	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.96	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.04	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.3	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	733.1	48.61	14.58	7.52	4.16
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.4

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	17.2	20.4	37.3
Strokes	2033	2404	4406

Total Ann Mud Volume (m3)	25.4
Total String Mud Volume (m3)	4.6
Tanks(s) Volume (m3)	25.0
Total Circulating Volume (m3)	55.0
ECD (kg/m3)	1125
Hydrostatic Pressure (kPa)	9219
Low Gravity Solids (kg/m3)	81
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	531	Type	GTCS1	Hours	22	WOB (daN)	11				
Size (mm)	216	Depth Out	830	RPM	120	Noz Vel (m/s)	21.0	T.F.A. (mm2)	1167.2				
Bit Depth	550		1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)			16.1	16.1	16.1	16.1	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	6	Survey	0
Tripping	11.25	Ream	0
Circulation	2.5	Clean	0
Rig Service	0.75	Misc.	3.5
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	Make/Mdl.	Liner	Stroke	Litres/
0	0	0	Emsco	152	191	0.0
0	0	0	Emsco	152	229	12.5
0	0	0		0	0	0.0

PUMP DATA

Strokes/ Min	m3/ min
0	0.00
118	1.47
0	0.00

Total Pump Output m3/min	1.5
Pump Presure (kPa)	6600.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	55.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
NewPHPA 25 kg	1	274.50	274.50
Kelzan XCD 25 kg.	1	554.70	554.70
Soda Ash 25 kg.	1	21.75	21.75
Drispac Regular 50 lb.	1	273.30	273.30
Humilite 25 kg	7	10.95	76.65

OPERATION LAST 24 HOURS

--TIH and wash to bottom from16:15 to 17:30 hours, drill ahead from 830 to 885 meters, March 14th.
--Drill ahead to final depth 895 meters, circulate and POH to casing shoe and W.O.O.

SUGGESTIONS

While DRILLING//CIRCULATING:

***ADD 1 SK SODA ASH WHILE CIRCULATING.

1) Use DRISPAC for Viscosity 70 to 80 sec/L and Fluid Loss as low as possible.

2) Add water as requested, then run a stream of water as required.

3) To lower viscosity, add DESCO thru chem barrel at a time very slowly over 1-2 hours. If viscosity fall to where you want it, stop the additions, can use the rest for cementing.

Thanks
Wayne

Inventory Cost Prior	32021.75
Inventory Cost This Report	2200.90
Total Inventory Costs	34222.65

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**16-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	1.5 / 884	Azimuth	Total Days
10			
Report #	**10**	Total Days	10

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowskoy**	Contractor Rep	**Hallock//Unrau**	**TOH to shoe//W.O.O.**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	**28423**

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	8:19	
Temperature (C)	24	0
Density (kg/m3)	1050	0
Viscosity (sec/L)	75	0
Fann 600	77	0
Fann 300	57	0
Fann 200	34	0
Fann 100	24	0
Fann 6	15	0
Fann 3	10	0
Fann A.V. (mPa.s)	38.5	0
Plastic Vis (mPa.s)	20	0
Yield Point (Pa)	18.5	0
10 Sec Gel (Pa)	7	0
10 Min Gel (Pa)	12	0
30 Min Gel (Pa)	15	0
Fluid Loss (ml/30 min)	6.7	
Filter Cake (mm)	2	
PH Meter	8	0
Pf	0.02	0
Mf	0.36	0
Chlorides (mg/l)	360	0
Calcium (mg/l)	70	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.958	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.042	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	22	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	733.1	48.61	14.58	7.52	4.16
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.8

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	17.2	20.4	37.3
Strokes	2033	2404	4406

Total Ann Mud Volume (m3)	25.4
Total String Mud Volume (m3)	4.6
Tanks(s) Volume (m3)	25.0
Total Circulating Volume (m3)	55.0
ECD (kg/m3)	1127
Hydrostatic Pressure (kPa)	9219
Low Gravity Solids (kg/m3)	81
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	2	Depth In	531	Type		GTCS1	Hours	22	WOB (daN)	0				
Size (mm)	216	Depth Out	830	RPM		105	Noz Vel (m/s)	21.0	T.F.A. (mm2)	1167.2				
Bit Depth	895	1	2	3	4	5	6	7	8	9	10	11	12	
Nozzle Sizes (mm)		16.1	16.1	16.1	16.1	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	1020	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	1470	0	0	Mesh Size 2	50	0	0
Output (l/min)	8	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	1.5	Survey	0.25
Tripping	7	Ream	0
Circulation	14.5	Clean	0
Rig Service	0.5	Misc.	0.25
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	
0	0	0	
0	0	0	
0	0	0	

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
Emsco	152	191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
	0	0	0.0	0	0.00

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	55.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	1.5
Pump Presure (kPa)	3975.0

OPERATION LAST 24 HOURS

--Circulate until 08:30 hours, TOH to shoe. Viscosity at 75 sec/L and mud weight at 1050 kg/m3.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Drispac Regular 50 lb.	3	273.30	819.90
Kelzan XCD 25 kg.	4	554.70	2218.80

SUGGESTIONS

While CIRCULATING:
it, stop the additions, can use the rest for cementing.
1) Use DRISPAC and KELZAN at 2 to 1 ratio for Viscosity 70 to 80 sec/L and Fluid Loss as low as possible.
Wayne
2) Add 5 sx CALCIUM CARBONATE (CACO3) when back on bottom circulating.
***IF NEEDED TO RAISE MUD WEIGHT ADD CALCIUM CARBONATE AT 1-2 MIN/SK

3) Add water as requested, then run a stream of water as required.

very slowly over 1-2 hours. If viscosity fall to where you want

Thanks

Inventory Cost Prior	34222.65
Inventory Cost This Report	4038.70
Total Inventory Costs	38261.35

4) To lower viscosity, add DESCO thru chem barrel at a time

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383

24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**17-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
11			
Report #	**11**	Total Days	11

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowsky**	Contractor Rep	**Hallock//Unrau**	**Circulating**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	**28423**

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	16:01	
Temperature (C)	21	0
Density (kg/m3)	1060	0
Viscosity (sec/L)	75	0
Fann 600	82	0
Fann 300	60	0
Fann 200	32	0
Fann 100	23	0
Fann 6	9	0
Fann 3	8	0
Fann A.V. (mPa.s)	41	0
Plastic Vis (mPa.s)	22	0
Yield Point (Pa)	19	0
10 Sec Gel (Pa)	5	0
10 Min Gel (Pa)	8	0
30 Min Gel (Pa)	12	0
Fluid Loss (ml/30 min)	6.7	
Filter Cake (mm)	2	
PH Meter	9	0
Pf	0.14	0
Mf	0.43	0
Chlorides (mg/l)	400	0
Calcium (mg/l)	60	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.945	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.55	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.3	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	733.1	48.61	14.58	7.52	4.16
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.0

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	17.2	20.4	38.7
Strokes	2033	2404	4566

Total Ann Mud Volume (m3)	25.4
Total String Mud Volume (m3)	4.6
Tanks(s) Volume (m3)	27.0
Total Circulating Volume (m3)	57.0
ECD (kg/m3)	1134
Hydrostatic Pressure (kPa)	9307
Low Gravity Solids (kg/m3)	98
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	3	Depth In	895	Type	GX-18	Hours		WOB (daN)	0					
Size (mm)	216	Depth Out	895	RPM	105	Noz Vel (m/s)	41.1	T.F.A. (mm2)	595.4					
Bit Depth	895		1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)			15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	10	Ream	0.5
Circulation	8.25	Clean	0
Rig Service	0.75	Misc.	4.5
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0
0	0	0
0	0	0
0	0	0

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
Emsco	152	191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
	0	0	0.0	0	0.00

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	57.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	1.5
Pump Presure (kPa)	3975.0

OPERATION LAST 24 HOURS

--Run 3RD Log until 11:30 hours. Hit bridge at 780 meters. TIH with drill pipe for cleanout trip. Wash from 770 to 895 meters from 19:30 to 20:30 hours. Circulate.
--Circulate to run more Logs, raise mud weight to 1100 kg/m3 with Calcium Carbonate due to gas.
--

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Caustic Soda 50 lb.	1	48.00	48.00
Soda Ash 25 kg.	2	21.75	43.50
Cal Carb #0 (25kg)	25	5.70	142.50
Cal Carb #325 (25kg)	25	5.70	142.50
Drispac Regular 50 lb.	7	273.30	1913.10
Kelzan XCD 25 kg.	7	554.70	3882.90

SUGGESTIONS

While CIRCULATING:
it, stop the additions, can use the rest for cementing.
1) Use DRISPAC and KELZAN at 2 to 1 ratio for Viscosity 75 to 85 sec/L and Fluid Loss as low as possible.
Wayne
2) Add 15 sx CALCIUM CARBONATE (CACO3) when back on bottom circulating.
***IF NEEDED TO RAISE MUD WEIGHT ADD CALCIUM CARBONATE AT 1-2 MIN/SK

3) Add water as requested, then run a stream of water as required.

very slowly over 1-2 hours. If viscosity fall to where you want

Thanks

Inventory Cost Prior	38261.35
Inventory Cost This Report	7172.50
Total Inventory Costs	45433.85

4) To lower viscosity, add DESCO thru chem barrel at a time

Warehouse	**Formula Powell**			Service Tech	**Wayne Turgeon**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita #40**	Phone	**Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**18-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
12			
Report #	**12**	Total Days	12

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**	Present Activity	
Operator	**Sam Machnee/ Keith Tichkowsky**	Contractor Rep	**Hallock//Unrau**	**Logging**	
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**	AFE #	**28423**

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	13:00	
Temperature (C)	21	0
Density (kg/m3)	1095	0
Viscosity (sec/L)	78	0
Fann 600	80	0
Fann 300	58	0
Fann 200	38	0
Fann 100	27	0
Fann 6	10	0
Fann 3	8	0
Fann A.V. (mPa.s)	40	0
Plastic Vis (mPa.s)	22	0
Yield Point (Pa)	18	0
10 Sec Gel (Pa)	5	0
10 Min Gel (Pa)	10	0
30 Min Gel (Pa)	12	0
Fluid Loss (ml/30 min)	6.9	
Filter Cake (mm)	2	
PH Meter	8.5	0
Pf	0.03	0
Mf	0.41	0
Chlorides (mg/l)	350	0
Calcium (mg/l)	60	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.93	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.07	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.3	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	733.1	48.61	14.58	7.52	4.16
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.4	Low "K" (Pa S)	2.0

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	17.2	20.4	38.7
Strokes	2033	2404	4566

Total Ann Mud Volume (m3)	25.4
Total String Mud Volume (m3)	4.6
Tanks(s) Volume (m3)	27.0
Total Circulating Volume (m3)	57.0
ECD (kg/m3)	1168
Hydrostatic Pressure (kPa)	9614
Low Gravity Solids (kg/m3)	154
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	3	Depth In	895	Type	GX-18	Hours		WOB (daN)	0					
Size (mm)	216	Depth Out	895	RPM	105	Noz Vel (m/s)	41.1	T.F.A. (mm2)	595.4					
Bit Depth	895	1	2	3	4	5	6	7	8	9	10	11	12	
Nozzle Sizes (mm)		15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	4.5	Ream	1.75
Circulation	3.5	Clean	0
Rig Service	0.5	Misc.	13.75
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	
0	0	0	
0	0	0	
0	0	0	

PUMP DATA

Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
		191	0.0	0	0.00
Emsco	152	229	12.5	118	1.47
Emsco	152	0	0.0	0	0.00
	0				

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	57.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

Total Pump Output m3/min	1.5
Pump Presure (kPa)	3975.0

OPERATION LAST 24 HOURS

-- Circulate until 03:00 hors, rasie mud weight to 1100 kg/m3. TOH and Log well.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Cal Carb #0 (25kg)	142	5.70	809.40
Drispac Regular 50 lb.	8	273.30	2186.40
Kelzan XCD 25 kg.	4	554.70	2218.80
Soda Ash 25 kg.	2	21.75	43.50
Humilite 25 kg	1	10.95	10.95
PHPA Liquid 20 l	1	274.50	274.50

SUGGESTIONS

While CIRCULATING:

***Use DRISPAC and KELZAN at 2 to 1 ratio for Viscosity 75 to 80 sec/L and Fluid Loss as low as possible.
***Finish off the 1/2 sk Caustic into rig tanks.

***IF NEEDED TO RAISE MUD WEIGHT ADD CALCIUM CARBONATE AT 1-2 MIN/SK

***Add water as requested, then run a stream of water as required.

***To lower viscosity, add DESCO thru chem barrel at a time very slowly over 1-2 hours.

Inventory Cost Prior	45433.85
Inventory Cost This Report	6543.55
Total Inventory Costs	51977.40

Thanks
Wayne

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**20-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
13			
Report #	**13**	Total Days	13

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator	**Sam Machnee/ Keith Tichkowsky**	Contractor Rep	**Hallock//Unrau**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity: **Laying down DP**

AFE # **28423**

Drilling Fluid (Type) (WBM)

PROPERTIES	Flowline	Suction
Time (Hours)	9:04	
Temperature (C)	18	0
Density (kg/m3)	78	0
Viscosity (sec/L)	78	0
Fann 600	77	0
Fann 300	56	0
Fann 200	35	0
Fann 100	25	0
Fann 6	9	0
Fann 3	7	0
Fann A.V. (mPa.s)	38.5	0
Plastic Vis (mPa.s)	21	0
Yield Point (Pa)	17.5	0
10 Sec Gel (Pa)	5	0
10 Min Gel (Pa)	9	0
30 Min Gel (Pa)	12	0
Fluid Loss (ml/30 min)	6.0	
Filter Cake (mm)	2	
PH Meter	8.5	0
Pf	0.024	0
Mf	0.41	0
Chlorides (mg/l)	270	0
Calcium (mg/l)	60	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.93	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.07	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.4	

HOLE GEOMETRY

Washout % 5

	OD (mm)	ID (mm)	Length (M)	Equivalent Hole Diameter (mm)			
				Ann.	Ann. Vol	Ann. Vol	String Vol
Hole Size	216.0			221.3			
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	0.0	0.0	0.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	733.1	48.61	14.58	7.52	4.16
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	38.4	54.61	1.04	0.00	0.11
D.C.#2	159.0	60.0	114.1	81.13	2.13	0.00	0.32
BHA	181.0	78.0	9.4	115.58	0.12	0.00	0.04
Last Casing Set	244.5	220.0	252.0	Low "n"	0.5	Low "K" (Pa S)	1.7

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	17.2	20.4	37.3
Strokes	2033	2404	4406

Total Ann Mud Volume (m3)	25.4
Total String Mud Volume (m3)	4.6
Tanks(s) Volume (m3)	25.0
Total Circulating Volume (m3)	55.0
ECD (kg/m3)	146
Hydrostatic Pressure (kPa)	685
Low Gravity Solids (kg/m3)	-1498
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	3	Depth In	895	Type	GX-18	Hours		WOB (daN)	0					
Size (mm)	216	Depth Out	895	RPM	105	Noz Vel (m/s)	41.1	T.F.A. (mm2)	595.4					
Bit Depth	895		1	2	3	4	5	6	7	8	9	10	11	12
Nozzle Sizes (mm)			15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	3.5	Ream	0
Circulation	0	Clean	0
Rig Service	0.75	Misc.	19.75
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	Make/Mdl.	Liner	Stroke	Litres/
0	0	0	Emsco	152	191	0.0
0	0	0	Emsco	152	229	12.5
0	0	0		0	0	0.0

PUMP DATA

Strokes/ Min	m3/ min
0	0.00
118	1.47
0	0.00

Total Pump Output m3/min 1.5

Pump Presure (kPa) 3975.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	55.0	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

OPERATION LAST 24 HOURS

-- TIH to 887 meters, ream and wash to 895 meters. Circulate --80 sec/L visocosity and 1100 kg/m3 mud weight.
-- Lay down drill pipe to run casing.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Engineering	1	1000.0	1000.00
Caustic Soda 50 lb.	1	48.00	48.00
Cal Carb #325 (25kg)	25	5.70	142.50
Kelzan XCD 25 kg.	4	554.70	2218.80
Drispac Regular 50 lb.	4	273.30	1093.20
Soda Ash 25 kg.	1	21.75	21.75

SUGGESTIONS

**WHEN CIRCULATING CASING ON BOTTOM, ADD DESCO and 1 SACK SULFAMIC ACID THRU CHEM BARRELL.

LOWER VISCOSITY TO 45 to 50 SEC/L WITH DESCO FOR CEMENTING.

Inventory Cost Prior	51977.40
Inventory Cost This Report	4524.25
Total Inventory Costs	56501.65

Warehouse	**Formula Powell**			Service Tech	**Wayne Turgeon**		
Address	**Blackfalds, Ab.**	Phone	**403-885-5151**	Address	**Akita #40**	Phone	**Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Calgary Office: (403) 266-7383 (fax) 263-1760

Drilling Fluids Report

0

WATER BASED MUD REPORT

Report Date	**21-Mar-08**	Spud Date	**06-Mar-08**
Measured Depth (m)	895	Total Vert Depth (m)	895
Deviation Deg. / Depth	0 / 0	Azimuth	Total Days
14			
Report #	**14**	Total Days	14

Operator	**Husky Oil Operations**	Contractor	**Akita # 14**
Operator	**Sam Machnee/ Keith Tichkowsky**	Contractor Rep	**Hallock//Unrau**
Well Location	**Cloverleaf L-52**	Well Name	**Husky et al Cloverleaf**

Present Activity **W.O.C.**

AFE # **28423**

Drilling Fluid (Type)	(WBM)	
PROPERTIES	Flowline	Suction
Time (Hours)	22:31	
Temperature (C)	18	0
Density (kg/m3)	1100	0
Viscosity (sec/L)	55	0
Fann 600	52	0
Fann 300	32	0
Fann 200	22	0
Fann 100	13	0
Fann 6	7	0
Fann 3	6	0
Fann A.V. (mPa.s)	26	0
Plastic Vis (mPa.s)	20	0
Yield Point (Pa)	6	0
10 Sec Gel (Pa)	5	0
10 Min Gel (Pa)	7	0
30 Min Gel (Pa)	9	0
Fluid Loss (ml/30 min)	6	
Filter Cake (mm)	2	
PH Meter	7.5	0
Pf	0	0
Mf	0.31	0
Chlorides (mg/l)	300	0
Calcium (mg/l)	60	0
MBT (kg/m3)	0	0
Sand Volume Fraction	0	
Water Volume Fraction	0.93	0
Oil Volume Fraction	0	0
Solids Volume Fraction	0.07	0
Potassium (mg/l)	0	0
Excess Polymer (kg/m3)	2.3	

HOLE GEOMETRY

	OD (mm)	ID (mm)	Length (M)	Washout %			5
				Equivalent Hole Diameter (mm)			221.3
Hole Size	216.0			Ann.	Ann. Vol	Ann. Vol	String Vol
Casing#1	244.5	220.0	252.0	m/min	OH	Cased Hole	
Casing#2	178.0	158.0	895.0		m3	m3	m3
Liner/Csg#3	0.0	0.0	0.0				
D.P.#1	102.0	85.0	895.0	87.34	0.00	10.23	5.08
D.P.#2	0.0	0.0	0.0	0.00	0.00	0.00	0.00
D.C.#1	121.0	60.0	0.0	0.00	0.00	0.00	0.00
D.C.#2	159.0	60.0	0.0	0.00	0.00	0.00	0.00
BHA	181.0	78.0	0.0	0.00	0.00	0.00	0.00
Last Casing Set	178.0	158.0	895.0	Low "n"	0.4	Low "K" (Pa S)	1.7

CIRCULATION TIMES

	Bottoms Up	Surf-Surf	Circ Time
Minutes	10.2	15.3	40.4
Strokes	820	1226	3229

Total Ann Mud Volume (m3)	10.2
Total String Mud Volume (m3)	5.1
Tanks(s) Volume (m3)	25.0
Total Circulating Volume (m3)	40.3
ECD (kg/m3)	1173
Hydrostatic Pressure (kPa)	9658
Low Gravity Solids (kg/m3)	163
High Gravity Solids (kg/m3)	0

BIT DATA

Bit #	3	Depth In	895	Type	GX-18	Hours		WOB (daN)	0					
Size (mm)	216	Depth Out	895	RPM	105	Noz Vel (m/s)	27.9	T.F.A. (mm2)	595.4					
Bit Depth	0	1	2	3	4	5	6	7	8	9	10	11	12	
Nozzle Sizes (mm)		15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

SOLIDS CONTROL EQUIPMENT

Centrifuge	#1	#2	#3	**ShaleShaker**	#1	#2	#3
Overflow Kg/m3	0	0	0	Mesh Size 1	50	0	0
Underflow Kg/m3	0	0	0	Mesh Size 2	50	0	0
Output (l/min)	0	0	0	Mesh Size 3	50	0	0
Hours	0	0	0	Mesh Size 4	0	0	0
				Other			

TIME BREAKDOWN

Drilling	0	Survey	0
Tripping	5.75	Ream	2
Circulation	5.5	Clean	0
Rig Service	0.25	Misc.	10.5
Dir. Work	0	Testing	0
Coring	0	Total:	24

TANK FARM

0	0	0	Make/Mdl.	Liner	Stroke	Litres/	Strokes/ Min	m3/ min
0	0	0	Emsco	152	191	0.0	0	0.00
0	0	0	Emsco	152	229	12.5	80	1.00
0	0	0		0	0	0.0	0	0.00

PUMP DATA

Total Pump Output m3/min	1.0
Pump Presure (kPa)	3975.0

FLUID TRACKING

Total in Tank Farm	0	Cumulative Volume Built	0.0
Total Volume On Location	40.3	Surface Losses	0.0
Delivered	0.0	Subsurface Losses	0.0
Cumulative Delivered	0.0	Cumulative Losses	0.0

OPERATION LAST 24 HOURS

--Circulate and cement casing at 04:00 hours.
W.O.C. To run cement plug inside casing.

PRODUCT USAGE / COST

Product	Units	/Unit	Total
Cal Carb #325 (25kg)	205	5.70	1168.50
Drispac Regular 50 lb.	3	273.30	819.90
Humilite 25 kg	1	10.95	10.95
Caustic Soda 50 lb.	2	48.00	96.00
Desco CF 25 lb.	2	75.60	151.20
Kelzan XCD 25 kg.	1	554.70	554.70
Engineering	1	1000.0	1000.00
-20	5.70	-1151.40	
2	54.15	108.30	
Saf-Kote 20 L.	2	185.25	370.50

SUGGESTIONS

Cal Carb #0 (25kg)
Sulfamic Acid 25 kg.
THANK YOU-- GOOD JOB-- HAVE A GOOD YEAR

TY

WAYNE

###INVENTORY ADJUSTMENT ON THE CALCIUM CARBONATE

Inventory Cost Prior	56501.65
Inventory Cost This Report	3128.65
Total Inventory Costs	59630.30

Warehouse	**Formula Powell**		Service Tech	**Wayne Turgeon**	
Address	**Blackfalds, Ab.**	Phone **403-885-5151**	Address	**Akita #40**	Phone **Akita 40**

24 Hour Phone (403) 266-7383
24 Hour Phone (403) 266-7383

Newpark Drilling Fluids

Drilling Fluid Summary Sheet

Well Location	Cloverleaf L-52	Operator	Husky Oil Operations
Well Name	Husky et al Cloverleaf	Attention	
Province	NWT	Supervisor	Mr. Machnee / Mr. Tichkowsky
Total Days		Rig Manager	Mr. Hallock / Mr. Unrau
Total Depth	895	Contractor	Akita # 14
Spud Date	06-Mar-08	Release Date	21-Mar-08

SURFACE HOLE

Drilling Fluid	Gel Slurry				
Surface Hole Diameter	311.0	(mm)	Surface Hole Depth	252.0	(m)
Surface Casing Diameter	244.5	(mm)	Surface Casing Depth	252.0	(m)
Surface Hole Days	3.0				
Programmed Cost	2733.00		Actual Cost	4275.00	

Problem

Lost Circulation	**neglible**	Vol. Lost	**10**	(m^3)
Sand/Gravel/Etc.	**nil**			
Mud Rings	**nil**			
Coal	**nil**			

Comments

06-Mar-2008
- Pretreated spud water with Soda Ash.
- Spudded with water at 16:00 hours, on March 6, 2008.
- Drilled ahead to 71 meters at 24:00 hours.

07-Mar-2008
- Drilled ahead to 247 meters. Wiper tripped to conductor barrel.
- Increased viscosity to 80+ sec/L with Gel.
- Drilled to 252 meters, total depth on surface hole.
- Pulled out of hole to run casing.

08-Mar-2008
- Ran 244.5 mm casing to bottom with no problems.
- Circulated casing and reduced viscosity to 45 sec/L with water for cementing.
- Cemented casing with returns to surface.
- Plug down at 13:15 hours on March 8, 2008.

MAIN HOLE

Drilling Fluid	Power Drill Polymer				
Main Hole Diameter	216	(mm)	Total Depth	895	(m)
Production Casing Diameter	178	(mm)	Production Casing Depth	895	(m)
Main Hole Days	14				
Programmed Cost	49095.00		Actual Cost	55679.00	

Comments

08-Mar-2008
- While waiting on cement, cleaned tanks and refilled with fresh water.
- Premixed 25 m3 with 5 sacks Kelzan, 4 sacks Drispac Reg and 7 pails High Perm.

10-Mar-2008
- Nippled up and pressure tested BOP's.

- Drilled out with 216mm bit using water.
- Drilled 5 meter, performed pressure integrity test. Displaced hole over to premixed mud (containing Kelzan, Drispac, High Perm).
- Tripped out of the hole and tripped in hole with vertitrac and new bit.
- Tripped in hole with vertitrac and started drilling 216mm hole.
- Drilled ahead at 11:15 hours, March 10, 2008.

11-March-2008
- Drilled to core point at 531 meters at 06:00 hours on March 11, 2008. Viscosity at 84 sec/L with Drispac Regular and Humalite. Fluid loss at 9.5 mL/30 min. Mud weight at 1030 kg/m3.
- Tripped out of hole to run core.
- Sulphamic acid and Bicarb used for surface mud and water to lower pH.
- Pulled out of hole and tripped in with core barrel. Cut core from 17:30 to 20:45 hours.
- Tripped out and retrieved core. Tripped in and ran core from 540 o 541 meters, core jammed off.
- Tripped in and retrieved core. Tripped in with vertitrac to drill ahead.
- Added Desco and Humalite due to high viscosity from Drispac R used to help get fluid loss under 8.0 mL/30 min.

12-March-2008
- Retrieved core and tripped in with vertitrac. Reamed rat hole to 540 meters. Drilled ahead.
- Kept water loss low and viscosity 50 - 60 sec/L. Added lots of Humalite to help keep fluid loss low.

13-March-2008
- Drilled to 830 meters at 20:30 hours. Circulated and pulled out at 21:30 hours to run Logs.
- Viscosity at 78 sec/L. Mud weight at 1030 kg/m3.
- Added lots of Humalite as per company man's requests.
- Needed to compensate with extra Drispac R and Kelzan to help keep viscosity up for drilling.

14-March-2008
- Wiper tripped and pulled out to log. Started to run logs at 07:45 hours.
- Cancelled logging to move loggers over to Akita #40.
- Tripped in and washed to bottom from 16:15 to 17:30 hours. Drilled ahead from 830 to 885 meters.

15-March-2008
- Drilled ahead to final depth 895 meters. Circulated and pulled out of the hole to casing shoe and Waited on orders.
- Well flowed. Tripped in until 21:45 hours and circulated. Shut off centrifuge.
- Circulated until 08:30 hours and tripped out of the hole to shoe. Viscosity at 75 sec/L and mud weight at 1050 kg/m3.
- Added Calcium Carbonate to help clean hole and lower fluid loss. Brought up small sizes of shale while weighting up.

16-March-2008
- Circulated from 01:45 to 07:30 hours. Tripped out and ran 2 sets of logs at 19:45 hours.
- Ran third log until 11:30 hours. Hit bridge at 780 meters.
- Tripped in hole with drill pipe for cleanout trip. Washed from 770 to 895 meters from 19:30 to 20:30 hours.
- Circulated.
- Circulated to run more logs. Raised mud weight to 1100 kg/m3 with Calcium Carbonate due to gas and water flow.

17-March-2008
- Circulated until 03:00 hours, raised mud weight to 1100 kg/m3.
- Tripped out and logged well all day..

18-March-2008
- Logged and hit bridge on log #4 at 676 meters.
- Tripped in hole with drill pipe. Reamed from 643 to 676 meters.

19-March-2008
- Tripped in hole to 887 meters. Reamed and washed to 895 meters. Circulated. 80 sec/L viscosity and 1100 kg/m3 mud weight.

20-March-2008
- Laid down drill pipe to run casing. Ran casing until 21:45 hours. Circulated and lowered viscosity to 55 sec/L with Desco.
- Mud in good shape to cement.

21-March-2008
- Circulated and cemented casing at 04:00 hours with no problems.
- Waited on cement.
- Ran cement plug inside casing.
- Rigged out

Problem

Lost Circulation	**Seepage-none to major to report**	Vol. Lost	(m^3)
Anhydrite	**None reported**		
Abn. Pressures	**Minor gas and water flow**	Mud Density	**1100** (kg/ m^3)
Sloughing Shale	**Minor sloughing shale after first set of Logs**		
H_2S	**None**		
Salt	**None**	Max. Chlorides	**400** (mg/l)
Coal	**None**		

Solids Control Equipment Comments

- Had 1 shaker and 1 centrifuge.
- Centrifuge worked very well keeping mud weight down.
- Shaker at times had problems keeping polymer mud on screens when pumping fast because of high excess of Drispac, Kelzan and PHPA.
- During logging bridged off at 780 meters. Tripped back in and raised mud weight to 1100 kg/m3 with Calcium Carbonate
- Brought up small sizes of shale after weighting up with Calcium Carbonate to 1100 kg/m3.
- Helped stabilize hole better for logging.

Products Used

Product	Units Used	Product	Units Used
Bentonite ABI Premium 40 kg.	64	Bicarbonate of Soda 50 lb.	11
Cal Carb #0 (25kg)	0	Cal Carb #325 (25kg)	290
Caustic Soda 50 lb.	5	Desco CF 25 lb.	10
Drispac Regular 50 lb.	55	Dyna Det. 20 l	6
Engineering	14	High Perm 20 l	16
Humilite 25 kg	40	Kelzan XCD 25 kg.	33
PHPA Liquid 20 l	7	Saf-Kote 20 L.	2
Sawdust Bag	100	Soda Ash 25 kg.	8
Sulfamic Acid 25 kg.	12	Walnut Medium 50 lb.	1

Bit Record

Bit #	Depth In	Depth Out	Bit Type	Bit Size	Hours	Acc. Hours	ROP	Nozzles 1	2	3	4	5	6	7	8	9	10	11	12
2	252	531	GTCS1	216	15.3	15.3	18.3	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	252	531	GTCS1	216	15.3	30.5	36.6	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	252	531	GTCS1	216	15.3	45.8	54.9	20.0	20.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	531	830	GTCS1	216	22.0	67.8	68.5	16.1	16.1	16.1	16.1	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
2	531	895	GTCS1	216	22.0	89.8	85.0	16.1	16.1	16.1	16.1	15.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0
3	895	895	GX-18	216		89.8	85.0	15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	895	895	GX-18	216		89.8	85.0	15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	895	895	GX-18	216		89.8	85.0	15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	895	895	GX-18	216		89.8	85.0	15.9	15.9	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Time Breakdown Analysis

Report #	Drilling	Tripping	Circu-lation	Rig Service	Dir. Work	Coring	Survey	Ream	Clean	Misc.	Testing	**Total**
1	0	0	0	0	0	0	0	0	0	0	0	0
2	5.5	2.25	0.5	0.5	0	0	0.5	0	0	14.75	0	24
3	16.75	6.75	3.25	1.25	0	0	1.75	0	0	18.25	0	48
4	0	1.5	0	0.25	0	0	0	0	0	22.25	0	24
5	10.75	5	2.25	0.5	0	0	2	0	0	3.5	0	24
6	5.75	11.5	0.75	0.5	0	0	2	0	0	3.5	0	24
7	3.75	10	0.5	0.25	0	4.5	0	1.25	0	3.75	0	24
8	16.5	2.5	1	0.75	0	0	0	0	0	3.25	0	24
9	6	11.25	2.5	0.75	0	0	0	0	0	3.5	0	24
10	1.5	7	14.5	0.5	0	0	0.25	0	0	0.25	0	24
11	0	10	8.25	0.75	0	0	0	0.5	0	4.5	0	24
12	0	4.5	3.5	0.5	0	0	0	1.75	0	13.75	0	24
13	0	3.5	0	0.75	0	0	0	0	0	19.75	0	24
14	0	5.75	5.5	0.25	0	0	0	2	0	10.5	0	24
Total	**66.5**	**81.5**	**42.5**	**7.5**	**0**	**4.5**	**6.5**	**5.5**	**0**	**121.5**	**0**	**336**

Newpark Drilling Fluids - Drilling Fluid Properties Sheet

Days From Spud	Depth m.	Density kg/m3	Fun vis sec/l	FANN 600	FANN 300	P.V. mPa.s	Y.P. Pa	GELS Pa 10s.	GELS Pa 10m.	Fluid Loss cm3/30	PH	Alkalinity PF	Alkalinity MF	CL - mg/l	CA++ mg/l	MBT kg/m3	volume fraction Sand	volume fraction Water	volume fraction Solids	volume fraction Oil	Dev. deg
			Oil Mud Properties							HTHP cm3/30	POM	exce LIME	CaCL2 w/w%		Oil / Water	electric stability	Brine Density				
1	0.0	0.0	0	2	2	0.5	0.5	0.0	0.0		0.0	0.00	0.00		0	0		0.000	0.000	0.000	0.0
2	165.0	1110.0	36	21	14	7.0	3.5	2.5	4.0	12	8.0	0.05	0.30		30	35	.005	0.930	0.070	0.000	0.0
3	252.0	0.0	0	0	0	0.0	0.0	0.0	0.0		0.0	0.00	0.00		0	0		0.000	0.000	0.000	0.0
4	260.0	1010.0	44	32	24	8.0	8.0	3.0	8.0	12	9.5	0.35	0.82		200	0	0	0.990	0.010	0.000	0.0
5	531.0	1030.0	83	80	59	21.0	19.0	10.0	12.0	9.3	7.5	0.02	0.30		90	0	0	0.978	0.022	0.000	0.5
6	531.0	1030.0	56	60	42	18.0	12.0	6.0	11.0	8.0	7.0	0.01	0.28		80	0	0	0.980	0.200	0.000	0.5
7	780.0	1050.0	68	82	60	22.0	19.0	8.0	12.0	6.8	8.5	0.08	0.35		80	0	0	0.950	0.500	0.000	0.0
8	830.0	1060.0	65	75	55	20.0	17.5	7.0	14.0	6.7	8.5	0.05	0.39		80	0	0	0.948	0.052	0.000	0.1
9	895.0	1050.0	72	78	57	21.0	18.0	7.0	10.0	7.0	8.0	0.02	0.35		60	0	0	0.960	0.040	0.000	1.5
10	895.0	1050.0	75	77	57	20.0	18.5	7.0	12.0	6.7	8.0	0.02	0.36		70	0	0	0.958	0.042	0.000	1.5
11	895.0	1060.0	75	82	60	22.0	19.0	5.0	8.0	6.7	9.0	0.14	0.43		60	0	0	0.945	0.550	0.000	0.0
12	895.0	1095.0	78	80	58	22.0	18.0	5.0	10.0	6.9	8.5	0.03	0.41		60	0	0	0.930	0.070	0.000	0.0
13	895.0	78.0	78	77	56	21.0	17.5	5.0	9.0	6.0	8.5	0.02	0.41		60	0	0	0.930	0.070	0.000	0.0
14	895.0	1100.0	55	52	32	20.0	6.0	5.0	7.0	6	7.5	0.00	0.31		60	0	0	0.930	0.070	0.000	0.0

Husky Energy

Well Information

Operator:	Husky Energy Inc.
Well Name:	Husky et al Keele River L-52
Location:	L-52
UWI:	Keele River L-52
Pool:	Little Bear
Field:	North Cloverleaf
Province / State:	Northwest Territories
Country:	Canada

Elevations

Reference:	Ground	Ground:	310.17 m
Cut(-) / Fill(+):		Kelly Bushing:	314.42 m
K.B. to Ground:	4.25 m	Casing Flange:	m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	895 m	894.96 m
Drillers TD (Strap or SLM)	m	m
Loggers TD	888.3 m	888.26 m

Surface Co - Ordinates

Well Type:	Straight		
Longitude:	124 56' 07.3"	N / S Co - Ordinates:	
Latitude:	64 01' 30.2"	E / W Co - Ordinates:	

Bottom Hole Co - Ordinates

Longitude:		N / S Co - Ordinates:	
Latitude:		E / W Co - Ordinates:	

Well Summary

Spud Date:	Mar 6, 2008 @ 16:00hrs
TD Date:	Mar 15, 2008 @ 01:30hrs
Rig Release Date:	Mar 21, 2008 @ 23:59hrs
Contractor:	Akita Sahtu Drilling Ltd. #14

Drilling Fluid Summary

Fluid Type	From	To
Gel Chem	0 m	252 m
Gel Polymerl	252 m	895 m

Casing Summary

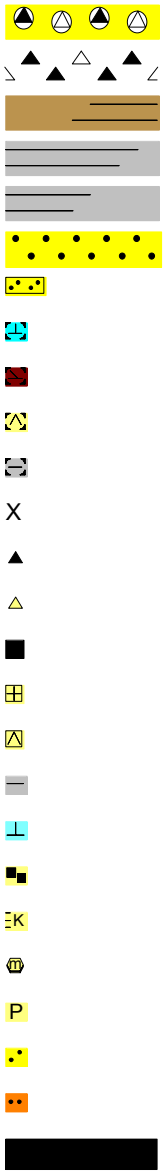
Type	Hole Size	Casing Size	Landed
Surface	311 mm	244.5 mm	252 m
Production	216 mm	177.8 mm	895 m

Work Schedule

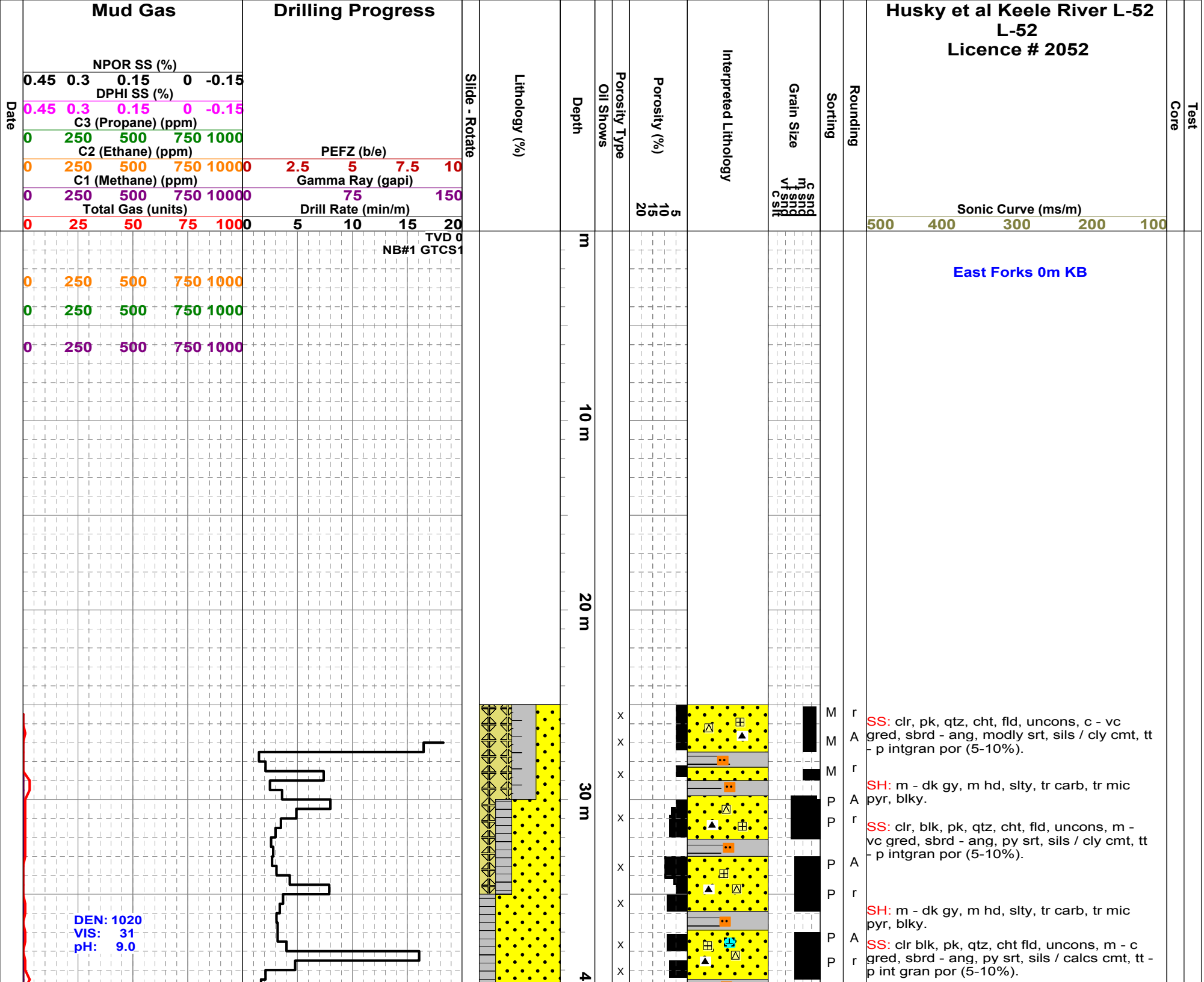
Contractor	Geologist	Log Interval	Dates Logged
McGrath Resource Consulting	Clarence G. Kennedy, P.Geol.	0 m - 895 m	Mar 3, 2008 - Mar 16, 2008

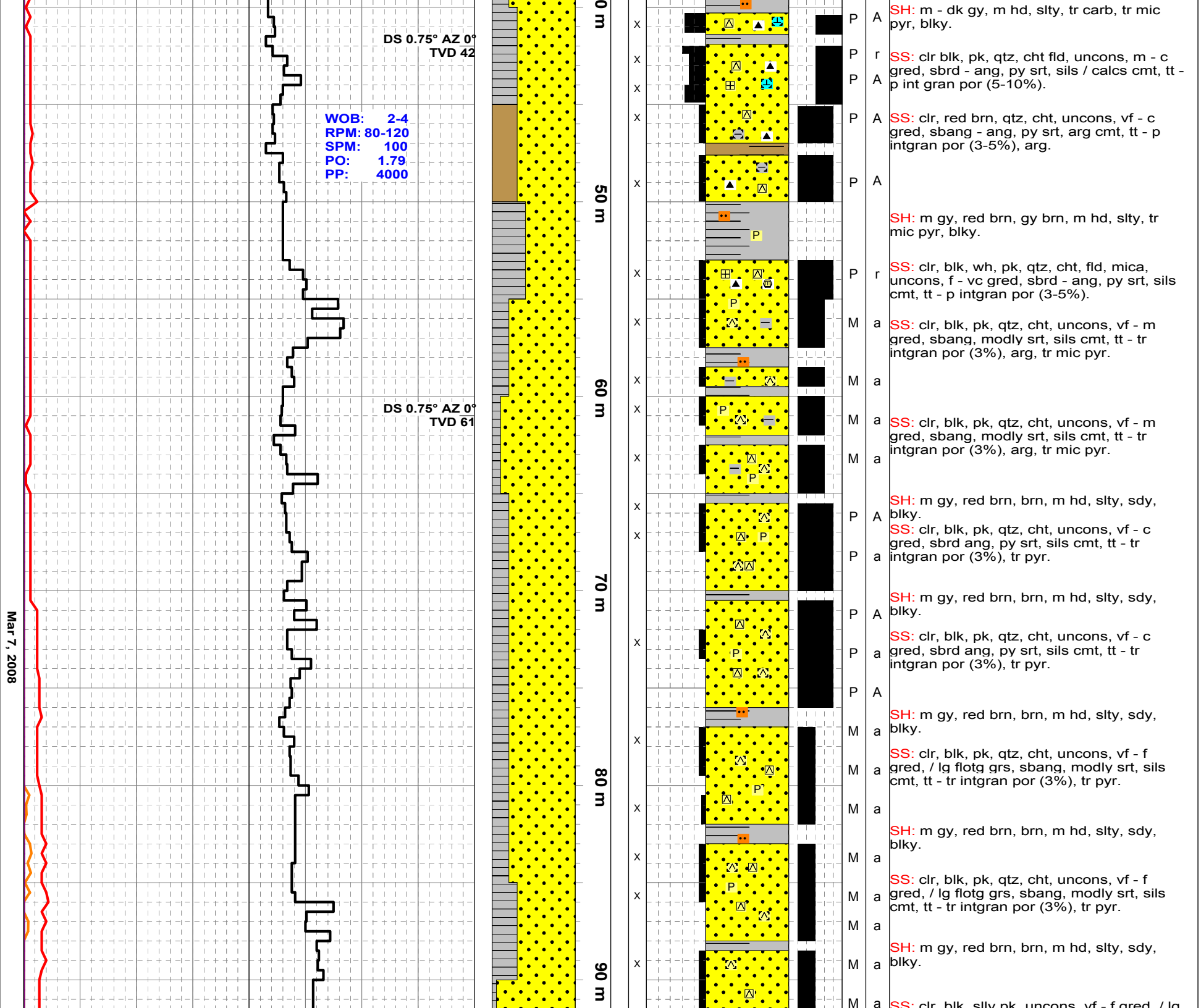
Remarks

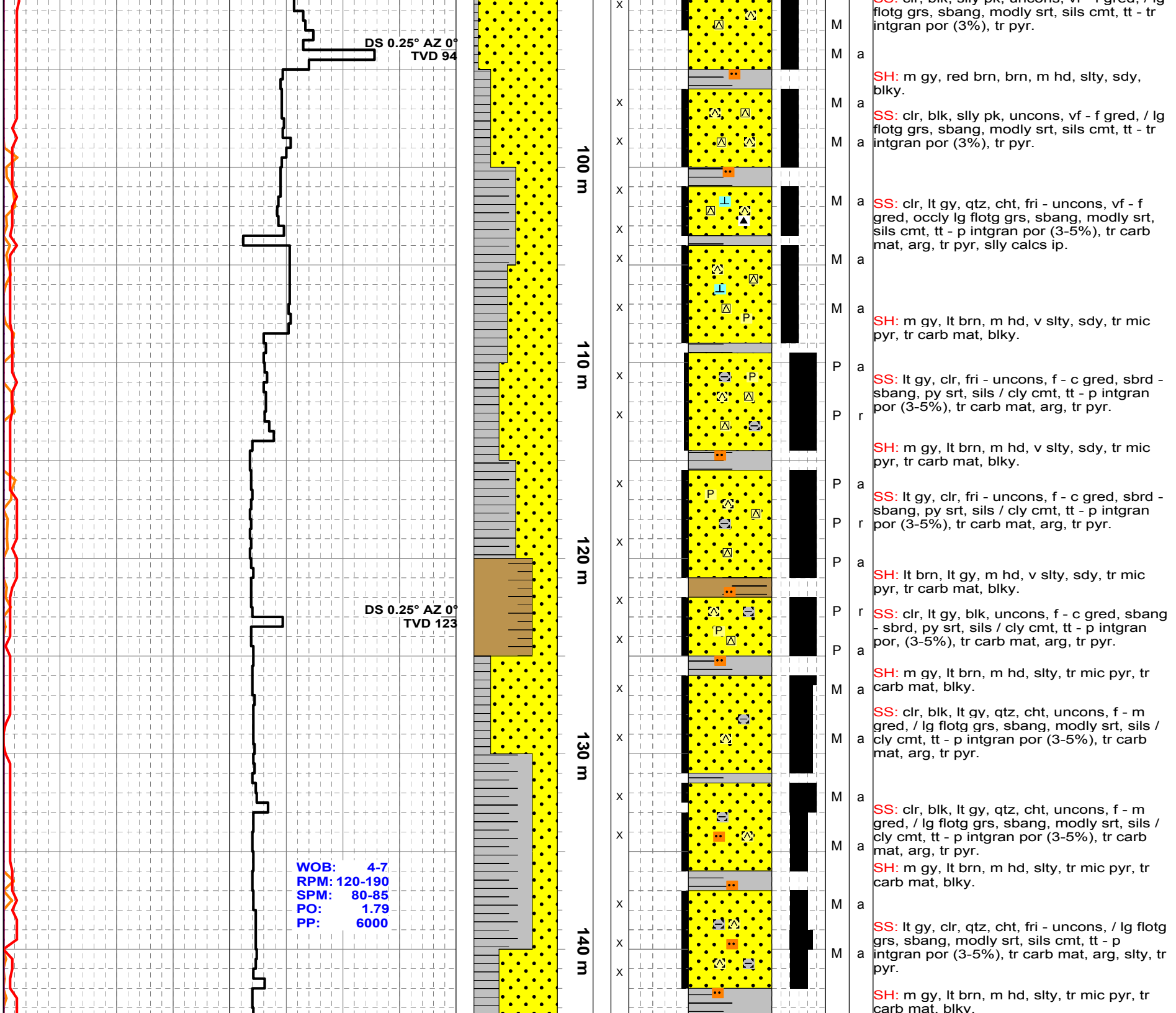
Legend

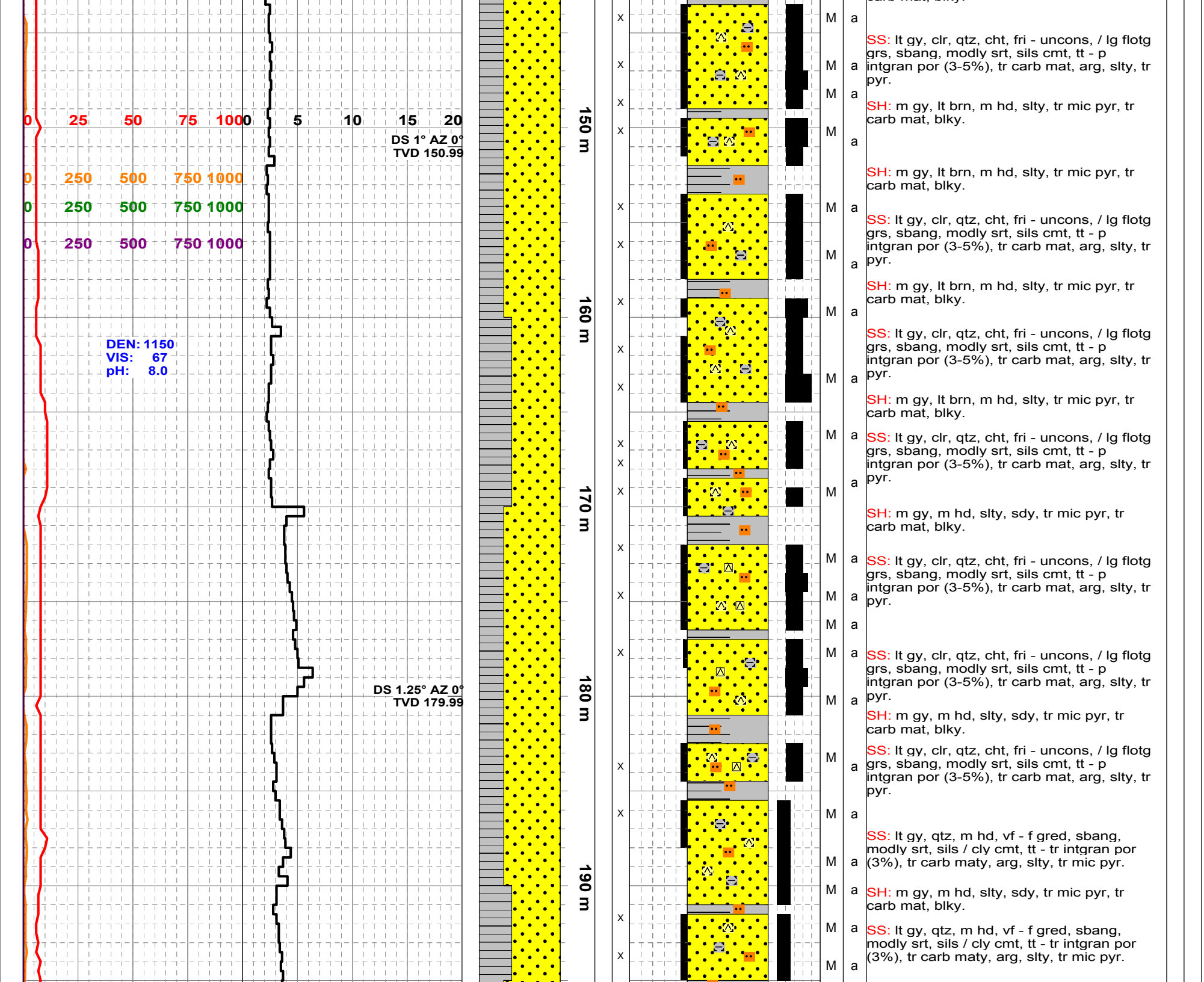


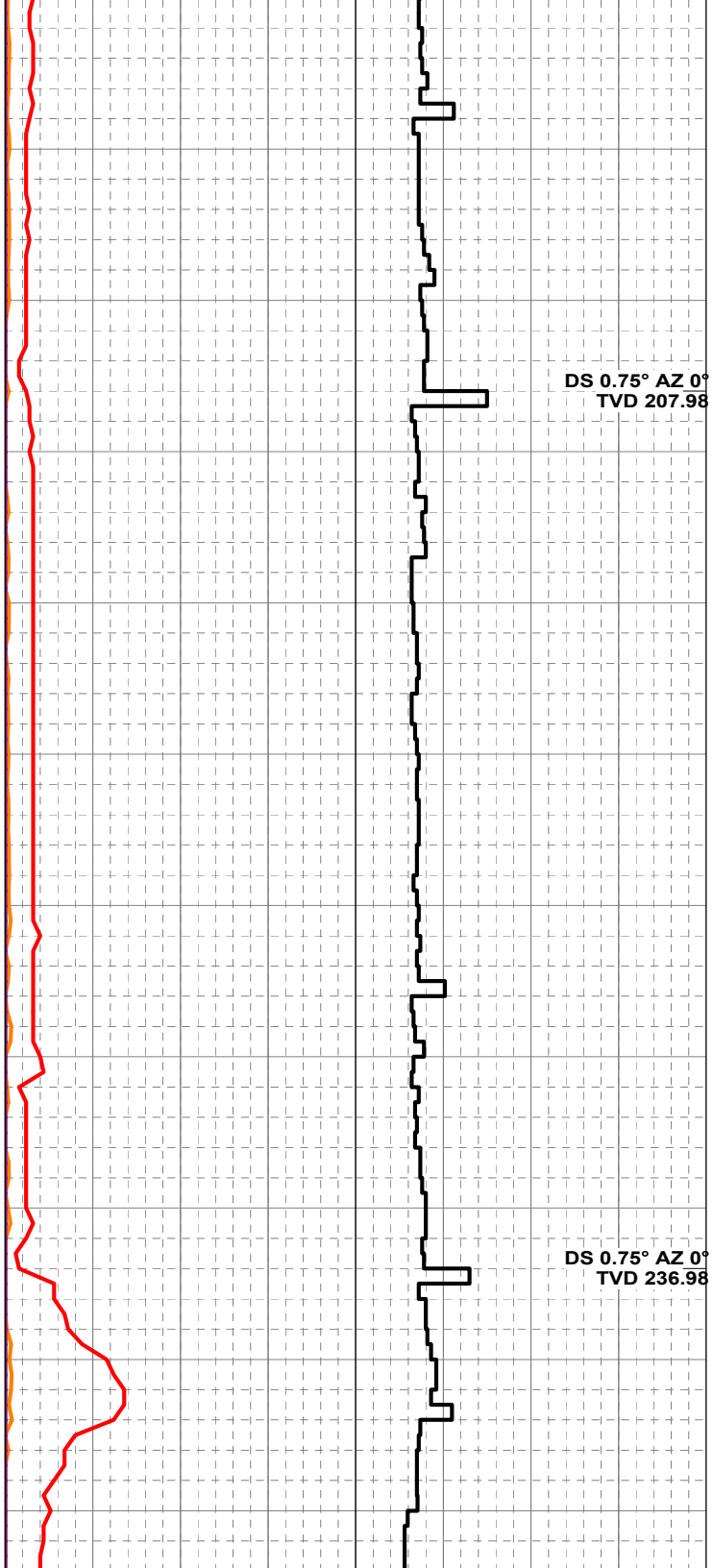
* Abundance: Trace Occasional Common Abundant No Indication

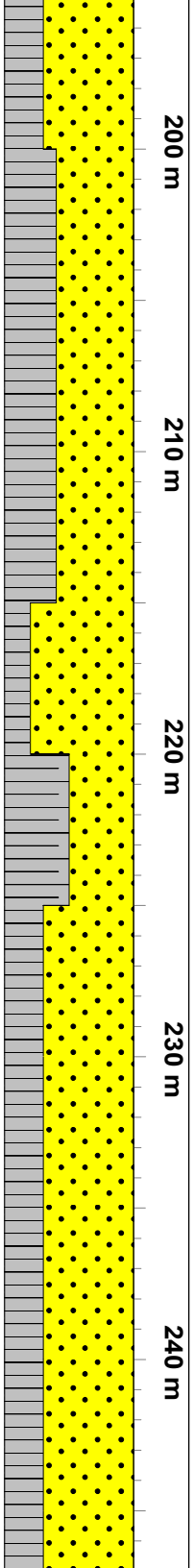

Mud Gas
Drilling Progress
Husky et al Keele River L-52
L-52
Licence # 2052
NPOR SS (%)
0.45 0.3 0.15 0 -0.15
DPHI SS (%)
0.45 0.3 0.15 0 -0.15
C3 (Propane) (ppm)
0 250 500 750 1000
C2 (Ethane) (ppm)
0 250 500 750 1000
C1 (Methane) (ppm)
0 250 500 750 1000
Total Gas (units)
0 25 50 75 100
PEFZ (b/e)
0 2.5 5 7.5 10
Gamma Ray (gapi)
0 75 150
Drill Rate (min/m)
0 5 10 15 20
Sonic Curve (ms/m)
500 400 300 200 100
TVD 0
NB#1 GTCS1
East Forks 0m KB
DEN: 1020
VIS: 31
pH: 9.0
Slide - Rotate
Lithology (%)
Depth
m
10 m
20 m
30 m
Oil Shows
Porosity Type
Porosity (%)
5 10 15 20
Interpreted Lithology
Grain Size
c sand
m sand
f sand
vf sand
c silt
Sorting
Rounding
Core
Test
Date
SS: clr, pk, qtz, cht, fld, uncons, c - vc gred, sbrd - ang, modly srt, sils / cly cmt, tt - p intgran por (5-10%).
SH: m - dk gy, m hd, slty, tr carb, tr mic pyr, blky.
SS: clr, blk, pk, qtz, cht, fld, uncons, m - vc gred, sbrd - ang, py srt, sils / cly cmt, tt - p intgran por (5-10%).
SH: m - dk gy, m hd, slty, tr carb, tr mic pyr, blky.
SS: clr blk, pk, qtz, cht fld, uncons, m - c gred, sbrd - ang, py srt, sils / calcs cmt, tt - p int gran por (5-10%).

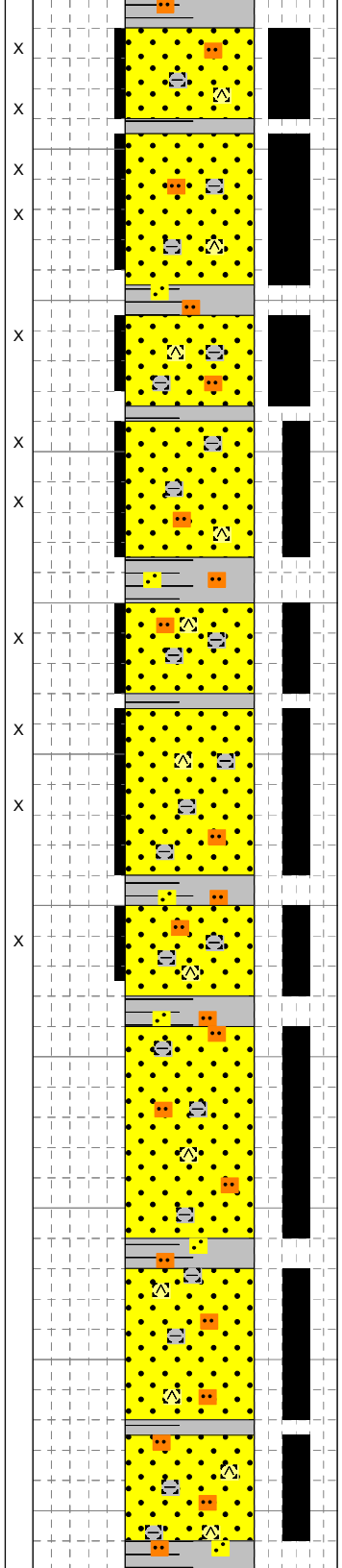

DS 0.75° AZ 0°
TVD 42
WOB: 2-4
RPM: 80-120
SPM: 100
PO: 1.79
PP: 4000
DS 0.75° AZ 0°
TVD 61
50 m
60 m
70 m
80 m
90 m
Mar 7, 2008
SH: m - dk gy, m hd, slty, tr carb, tr mic pyr, blky.
SS: clr blk, pk, qtz, cht fld, uncons, m - c gred, sbrd - ang, py srt, sils / calcs cmt, tt - p int gran por (5-10%).
SS: clr, red brn, qtz, cht, uncons, vf - c gred, sbang - ang, py srt, arg cmt, tt - p intgran por (3-5%), arg.
SH: m gy, red brn, gy brn, m hd, slty, tr mic pyr, blky.
SS: clr, blk, wh, pk, qtz, cht, fld, mica, uncons, f - vc gred, sbrd - ang, py srt, sils cmt, tt - p intgran por (3-5%).
SS: clr, blk, pk, qtz, cht, uncons, vf - m gred, sbang, modly srt, sils cmt, tt - tr intgran por (3%), arg, tr mic pyr.
SS: clr, blk, pk, qtz, cht, uncons, vf - m gred, sbang, modly srt, sils cmt, tt - tr intgran por (3%), arg, tr mic pyr.
SH: m gy, red brn, brn, m hd, slty, sdy, blky.
SS: clr, blk, pk, qtz, cht, uncons, vf - c gred, sbrd ang, py srt, sils cmt, tt - tr intgran por (3%), tr pyr.
SH: m gy, red brn, brn, m hd, slty, sdy, blky.
SS: clr, blk, pk, qtz, cht, uncons, vf - c gred, sbrd ang, py srt, sils cmt, tt - tr intgran por (3%), tr pyr.
SH: m gy, red brn, brn, m hd, slty, sdy, blky.
SS: clr, blk, pk, qtz, cht, uncons, vf - f gred, / lg flotg grs, sbang, modly srt, sils cmt, tt - tr intgran por (3%), tr pyr.
SH: m gy, red brn, brn, m hd, slty, sdy, blky.
SS: clr, blk, pk, qtz, cht, uncons, vf - f gred, / lg flotg grs, sbang, modly srt, sils cmt, tt - tr intgran por (3%), tr pyr.
SH: m gy, red brn, brn, m hd, slty, sdy, blky.


DS 0.25° AZ 0°
TVD 94
DS 0.25° AZ 0°
TVD 123
WOB: 4-7
RPM: 120-190
SPM: 80-85
PO: 1.79
PP: 6000
100 m
110 m
120 m
130 m
140 m
M
M a
SH: m gy, red brn, brn, m hd, slty, sdy, blky.
SS: clr, blk, slly pk, uncons, vf - f gred, / lg flotg grs, sbang, modly srt, sils cmt, tt - tr intgran por (3%), tr pyr.
SS: clr, lt gy, qtz, cht, fri - uncons, vf - f gred, occly lg flotg grs, sbang, modly srt, sils cmt, tt - p intgran por (3-5%), tr carb mat, arg, tr pyr, slly calcs ip.
SH: m gy, lt brn, m hd, v slty, sdy, tr mic pyr, tr carb mat, blky.
P a
SS: lt gy, clr, fri - uncons, f - c gred, sbrd - sbang, py srt, sils / cly cmt, tt - p intgran por (3-5%), tr carb mat, arg, tr pyr.
P r
SH: m gy, lt brn, m hd, v slty, sdy, tr mic pyr, tr carb mat, blky.
SS: lt gy, clr, fri - uncons, f - c gred, sbrd - sbang, py srt, sils / cly cmt, tt - p intgran por (3-5%), tr carb mat, arg, tr pyr.
SH: lt brn, lt gy, m hd, v slty, sdy, tr mic pyr, tr carb mat, blky.
SS: clr, lt gy, blk, uncons, f - c gred, sbang - sbrd, py srt, sils / cly cmt, tt - p intgran por, (3-5%), tr carb mat, arg, tr pyr.
SH: m gy, lt brn, m hd, slty, tr mic pyr, tr carb mat, blky.
SS: clr, blk, lt gy, qtz, cht, uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - p intgran por (3-5%), tr carb mat, arg, tr pyr.
SS: clr, blk, lt gy, qtz, cht, uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - p intgran por (3-5%), tr carb mat, arg, tr pyr.
SH: m gy, lt brn, m hd, slty, tr mic pyr, tr carb mat, blky.
SS: lt gy, clr, qtz, cht, fri - uncons, / lg flotg grs, sbang, modly srt, sils cmt, tt - p intgran por (3-5%), tr carb mat, arg, slty, tr pyr.
SH: m gy, lt brn, m hd, slty, tr mic pyr, tr carb mat, blky.


0 25 50 75 1000
5 10 15 20
DS 1° AZ 0°
TVD 150.99
0 250 500 750 1000
0 250 500 750 1000
0 250 500 750 1000
DEN: 1150
VIS: 67
pH: 8.0
DS 1.25° AZ 0°
TVD 179.99
150 m
160 m
170 m
180 m
190 m
SS: lt gy, clr, qtz, cht, fri - uncons, / lg flotg grs, sbang, modly srt, sils cmt, tt - p intgran por (3-5%), tr carb mat, arg, slty, tr pyr.
SH: m gy, lt brn, m hd, slty, tr mic pyr, tr carb mat, blky.
SH: m gy, m hd, slty, sdy, tr mic pyr, tr carb mat, blky.
SS: lt gy, qtz, m hd, vf - f gred, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb maty, arg, slty, tr mic pyr.







SH: m gy, m hd, v slty, sdy, tr mic pyr, tr carb mat, blky.

SS: lt - m gy, qtz, cht, m hd, vf - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, tr pyr.

SS: lt - m gy, qtz, cht, m hd, vf - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, tr pyr.

SH: m gy, m hd, v slty, sdy, tr mic pyr, tr carb mat, blky.

SS: lt - m gy, qtz, cht, m hd, vf - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, tr pyr.

SS: lt gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, tr pyr.

SH: m gy, lt brn, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.

SS: lt gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, calcs, tr pyr.

SS: lt gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, calcs, tr pyr.

SH: m gy, lt brn, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.

SS: lt gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt - tr intgran por (3%), tr carb mat, v arg, v slty, calcs, tr pyr.

SH: m gy, m hd, v slty, sdy, tr carb mat, tr mic pyr, blky.

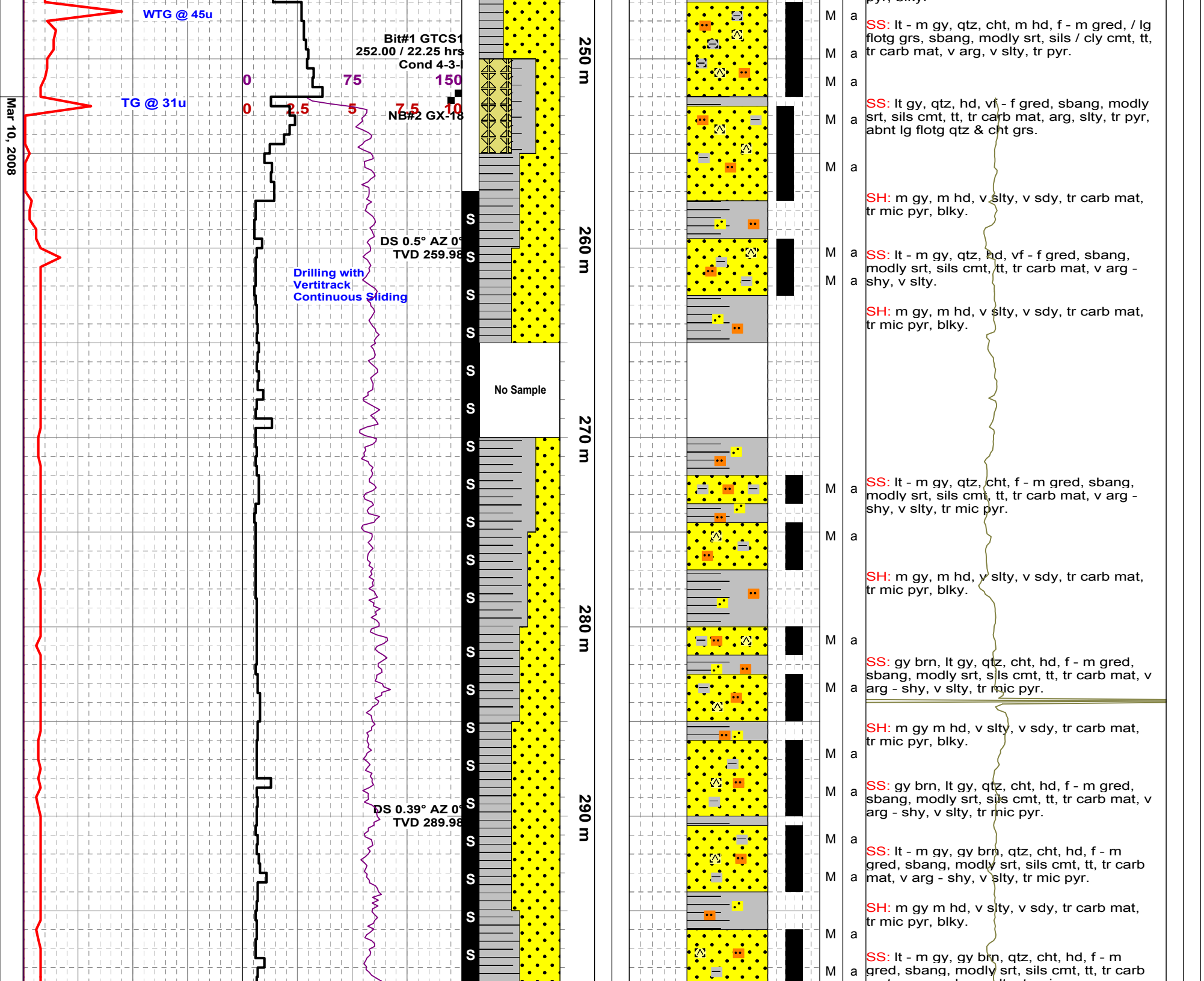
SS: lt - m gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt, tr carb mat, v arg, v slty, tr pyr.

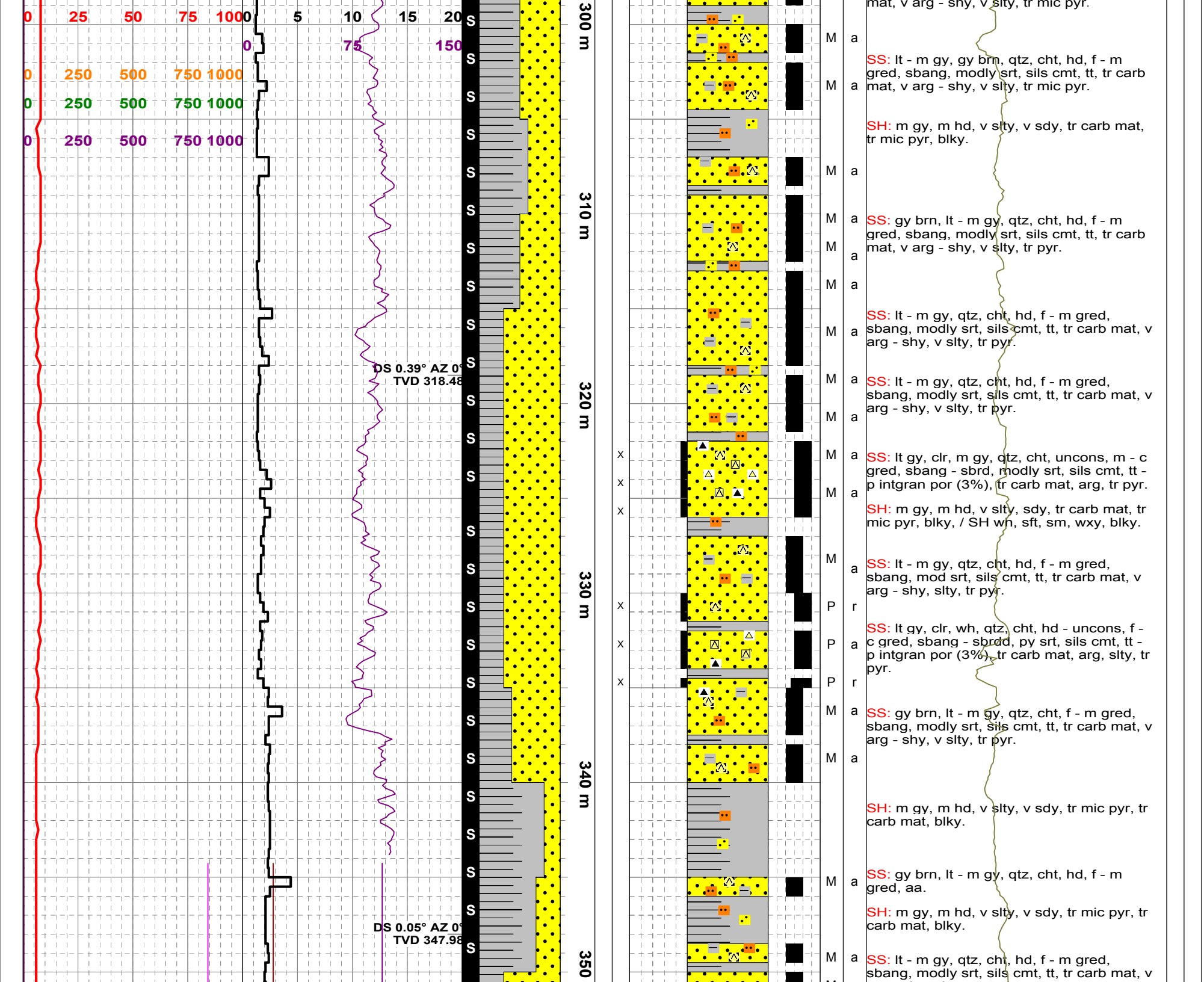
SH: m gy, m hd, v slty, sdy, tr carb mat, tr mic pyr, blky.

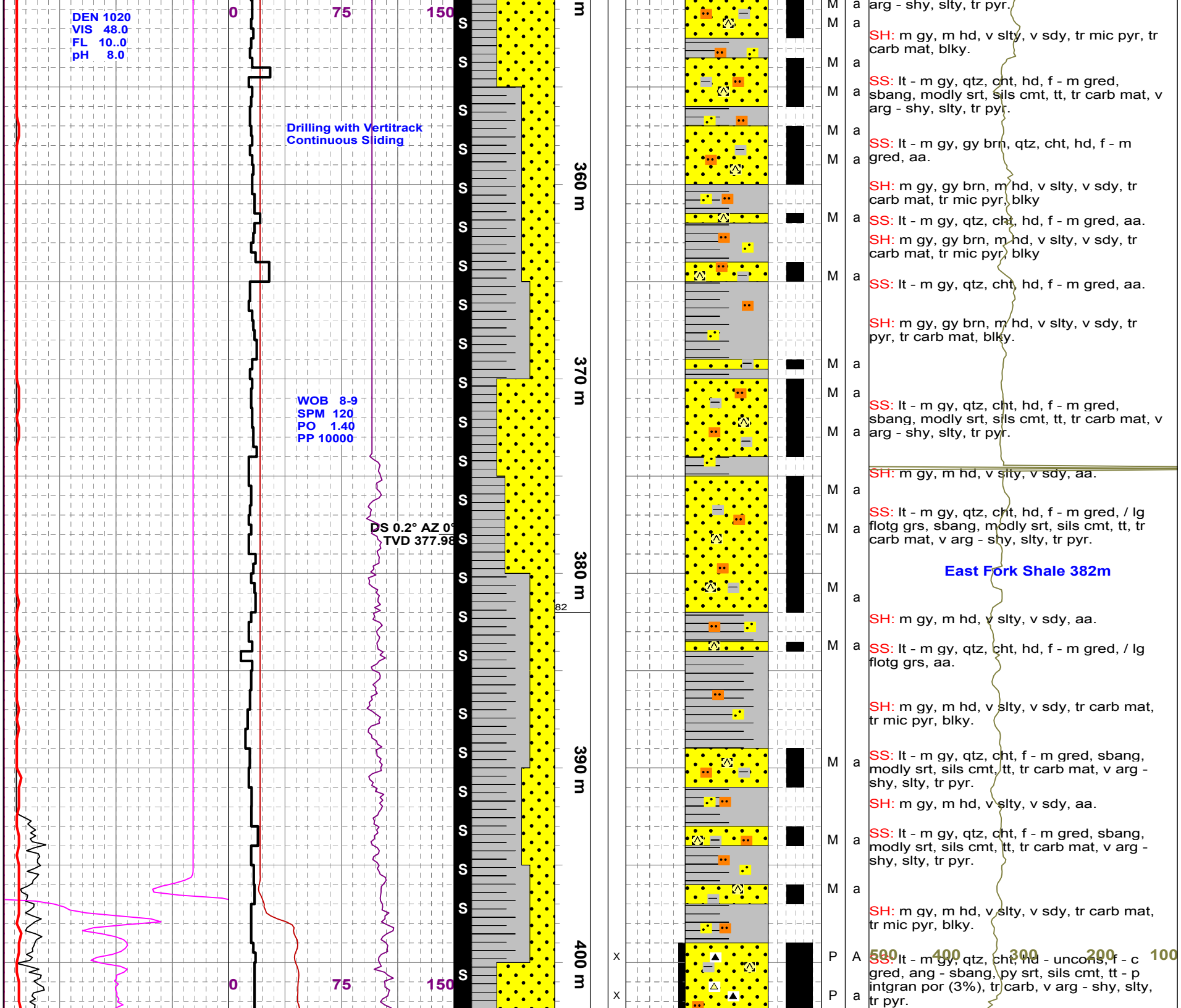
SS: lt - m gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt, tr carb mat, v arg, v slty, tr pyr.

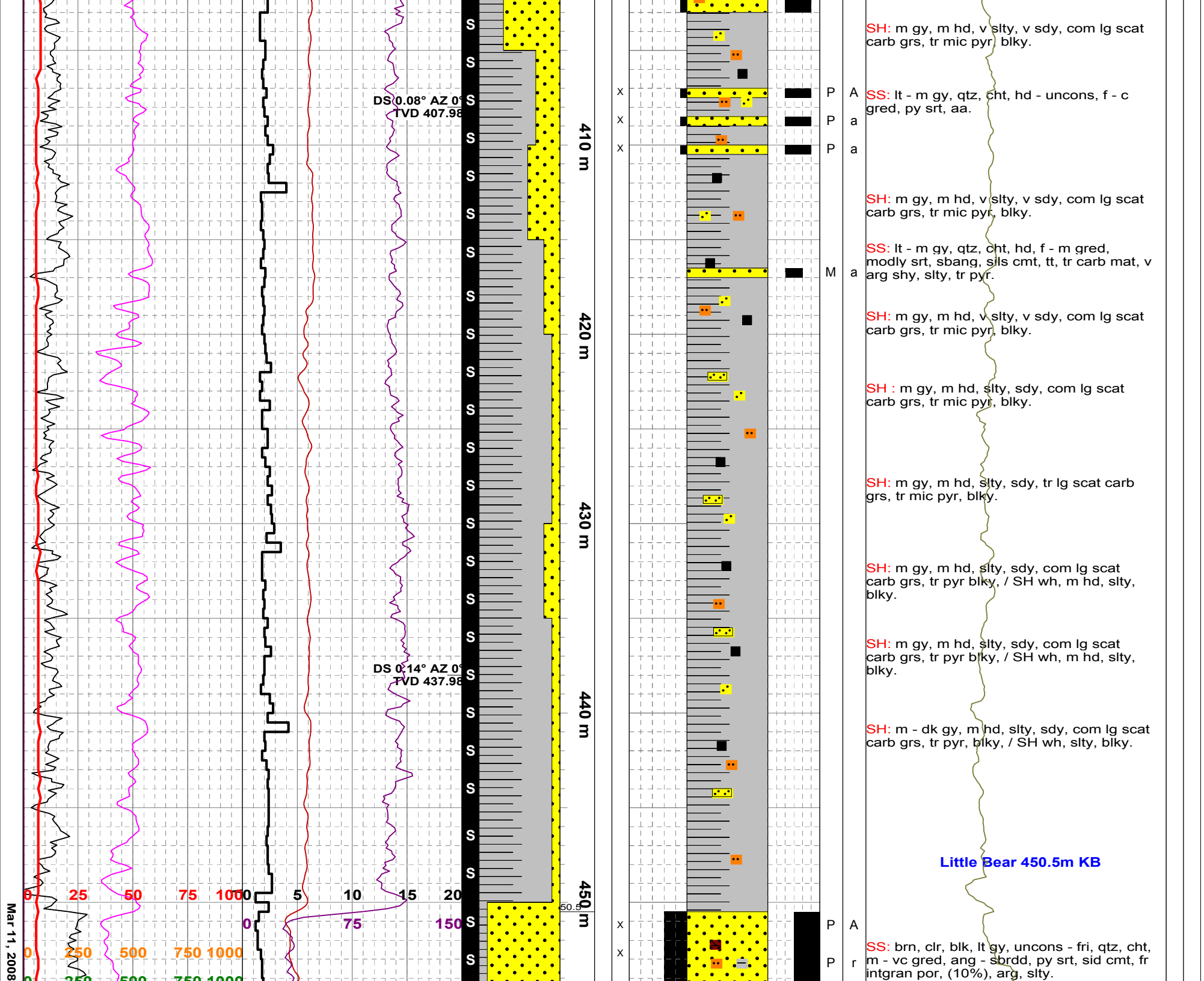
SS: lt - m gy, qtz, cht, m hd - uncons, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt, tr carb mat, v arg, v slty, tr pyr.

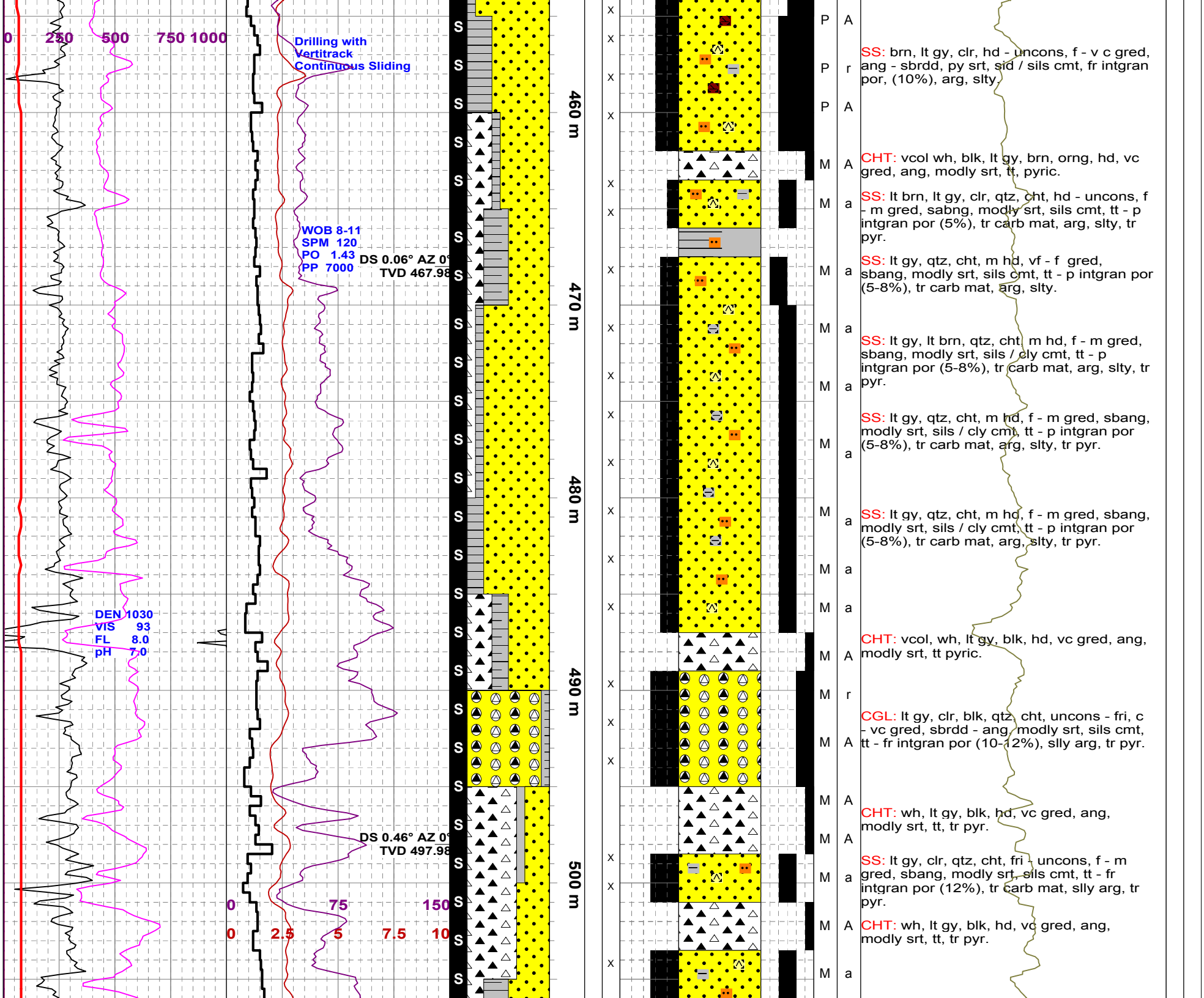
SH: m gy, lt brn, m hd, v slty, sdy, tr mic pyr, blky.

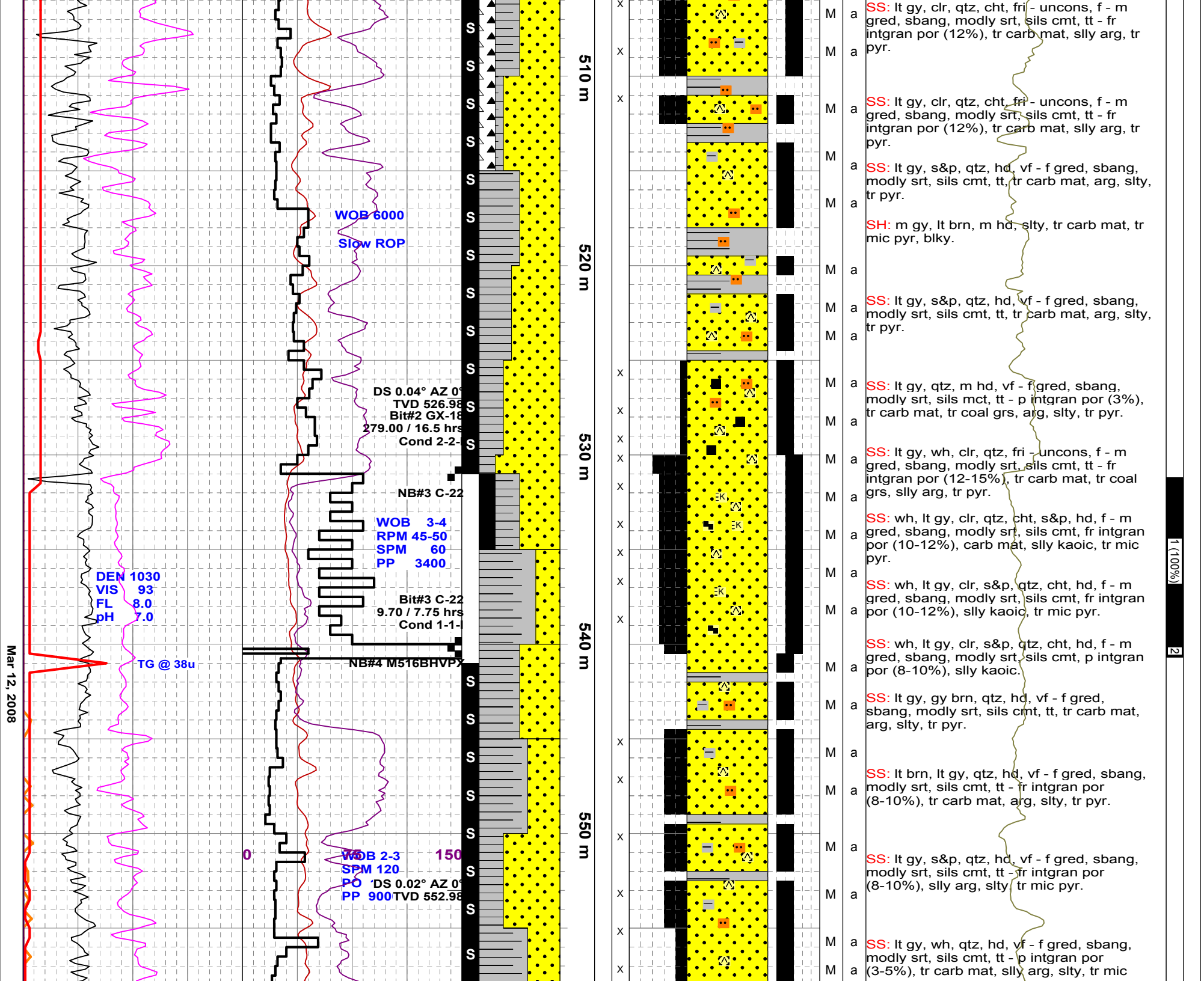

Mar 10, 2008
WTG @ 45u
TG @ 31u
Bit#1 GTCS1
252.00 / 22.25 hrs
Cond 4-3-I
NB#2 GX-18
0
75
150
0
2.5
5
7.5
10
DS 0.5° AZ 0
TVD 259.98
Drilling with
Vertitrack
Continuous Sliding
No Sample
DS 0.39° AZ 0
TVD 289.98
250 m
260 m
270 m
280 m
290 m
SS: lt - m gy, qtz, cht, m hd, f - m gred, / lg flotg grs, sbang, modly srt, sils / cly cmt, tt, tr carb mat, v arg, v slty, tr pyr.
SS: lt gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr, abnt lg flotg qtz & cht grs.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, qtz, cht, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr mic pyr.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: gy brn, lt gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr mic pyr.
SH: m gy m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: gy brn, lt gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr mic pyr.
SS: lt - m gy, gy brn, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr mic pyr.
SH: m gy m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, gy brn, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb

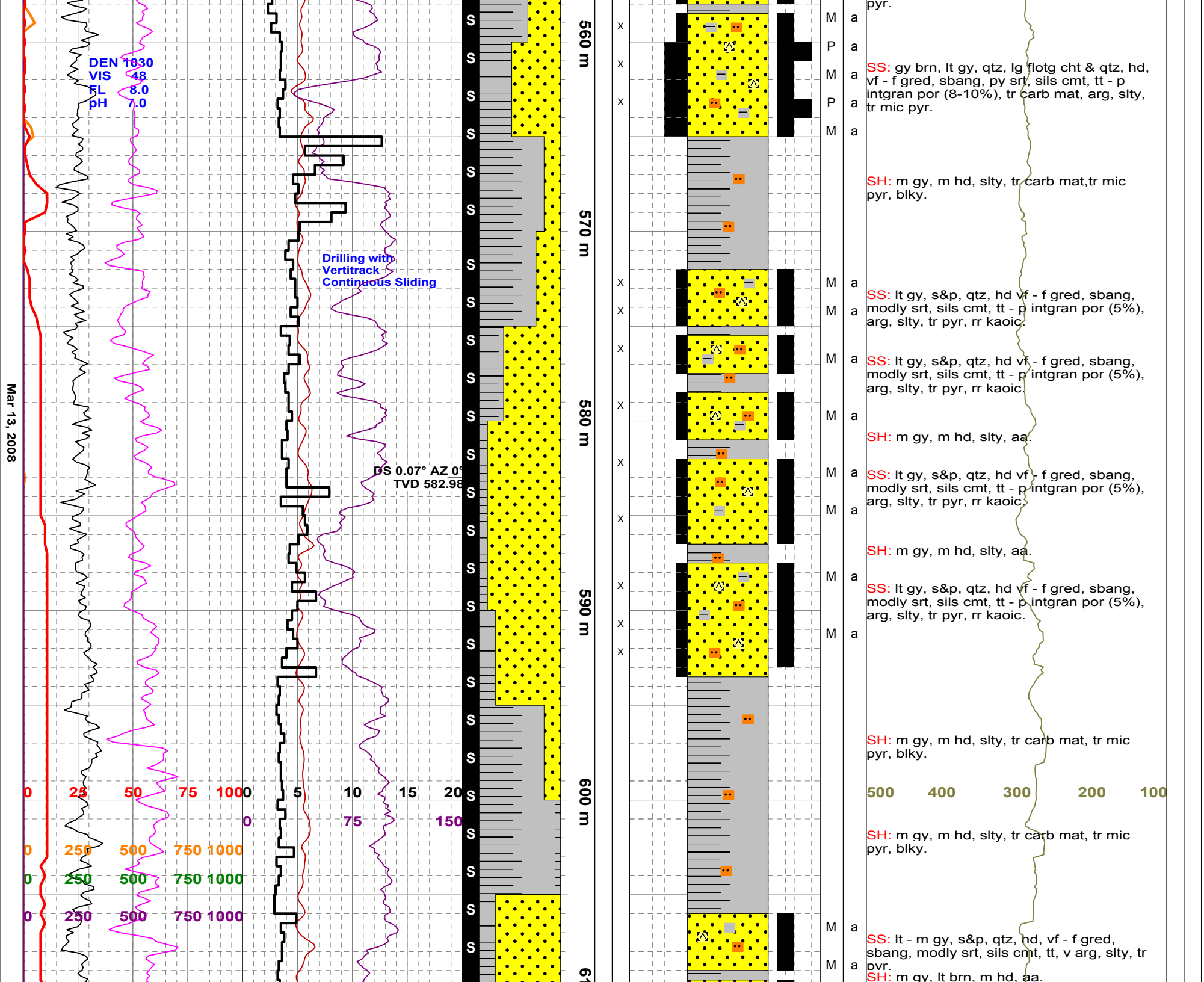

0 25 50 75 100
0 5 10 15 20
0 75 150
0 250 500 750 1000
0 250 500 750 1000
0 250 500 750 1000
300 m
310 m
320 m
330 m
340 m
350
DS 0.39° AZ 0
TVD 318.48
DS 0.05° AZ 0
TVD 347.98
mat, v arg - shy, v slty, tr mic pyr.
SS: lt - m gy, gy brn, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr mic pyr.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: gy brn, lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr pyr.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr pyr.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr pyr.
SS: lt gy, clr, m gy, qtz, cht, uncons, m - c gred, sbang - sbrd, modly srt, sils cmt, tt - p intgran por (3%), tr carb mat, arg, tr pyr.
SH: m gy, m hd, v slty, sdy, tr carb mat, tr mic pyr, blky, / SH wh, sft, sm, wxy, blky.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, mod srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
SS: lt gy, clr, wh, qtz, cht, hd - uncons, f - c gred, sbang - sbrdd, py srt, sils cmt, tt - p intgran por (3%), tr carb mat, arg, slty, tr pyr.
SS: gy brn, lt - m gy, qtz, cht, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, v slty, tr pyr.
SH: m gy, m hd, v slty, v sdy, tr mic pyr, tr carb mat, blky.
SS: gy brn, lt - m gy, qtz, cht, hd, f - m gred, aa.
SH: m gy, m hd, v slty, v sdy, tr mic pyr, tr carb mat, blky.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v

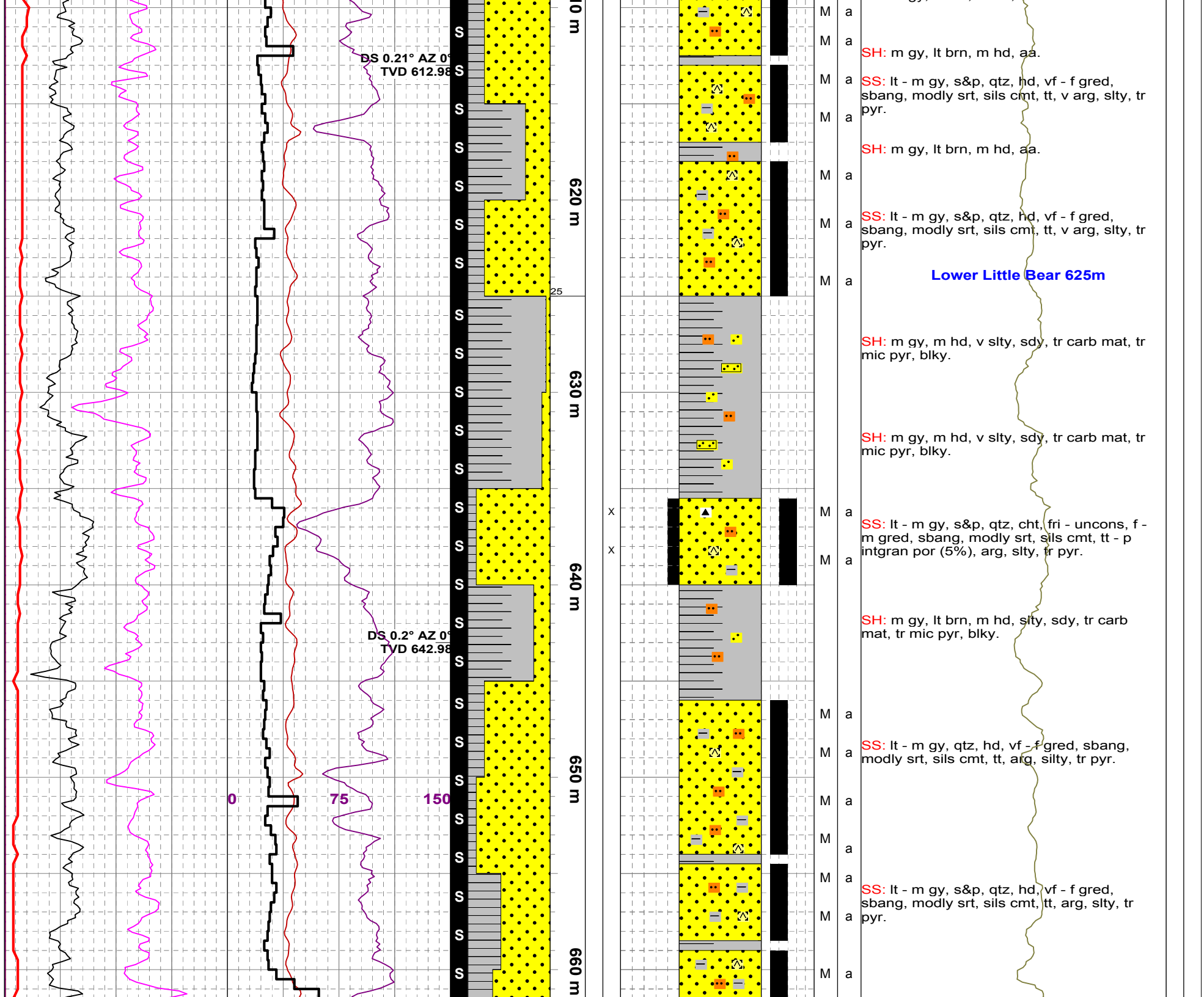

DEN 1020
VIS 48.0
FL 10..0
pH 8.0
0
75
150
Drilling with Vertitrack
Continuous Sliding
WOB 8-9
SPM 120
PO 1.40
PP 10000
DS 0.2° AZ 0°
TVD 377.98
360 m
370 m
380 m
390 m
400 m
82
SH: m gy, m hd, v slty, v sdy, tr mic pyr, tr carb mat, blky.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
SS: lt - m gy, gy brn, qtz, cht, hd, f - m gred, aa.
SH: m gy, gy brn, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky
SS: lt - m gy, qtz, cht, hd, f - m gred, aa.
SH: m gy, gy brn, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky
SS: lt - m gy, qtz, cht, hd, f - m gred, aa.
SH: m gy, gy brn, m hd, v slty, v sdy, tr pyr, tr carb mat, blky.
SS: lt - m gy, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
SH: m gy, m hd, v slty, v sdy, aa.
SS: lt - m gy, qtz, cht, hd, f - m gred, / lg flotg grs, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
East Fork Shale 382m
SH: m gy, m hd, v slty, v sdy, aa.
SS: lt - m gy, qtz, cht, hd, f - m gred, / lg flotg grs, aa.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, qtz, cht, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
SH: m gy, m hd, v slty, v sdy, aa.
SS: lt - m gy, qtz, cht, f - m gred, sbang, modly srt, sils cmt, tt, tr carb mat, v arg - shy, slty, tr pyr.
SH: m gy, m hd, v slty, v sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, qtz, cht, hd - uncons, f - c gred, ang - sbang, py srt, sils cmt, tt - p intgran por (3%), tr carb, v arg - shy, slty, tr pyr.
500
400
300
200
100

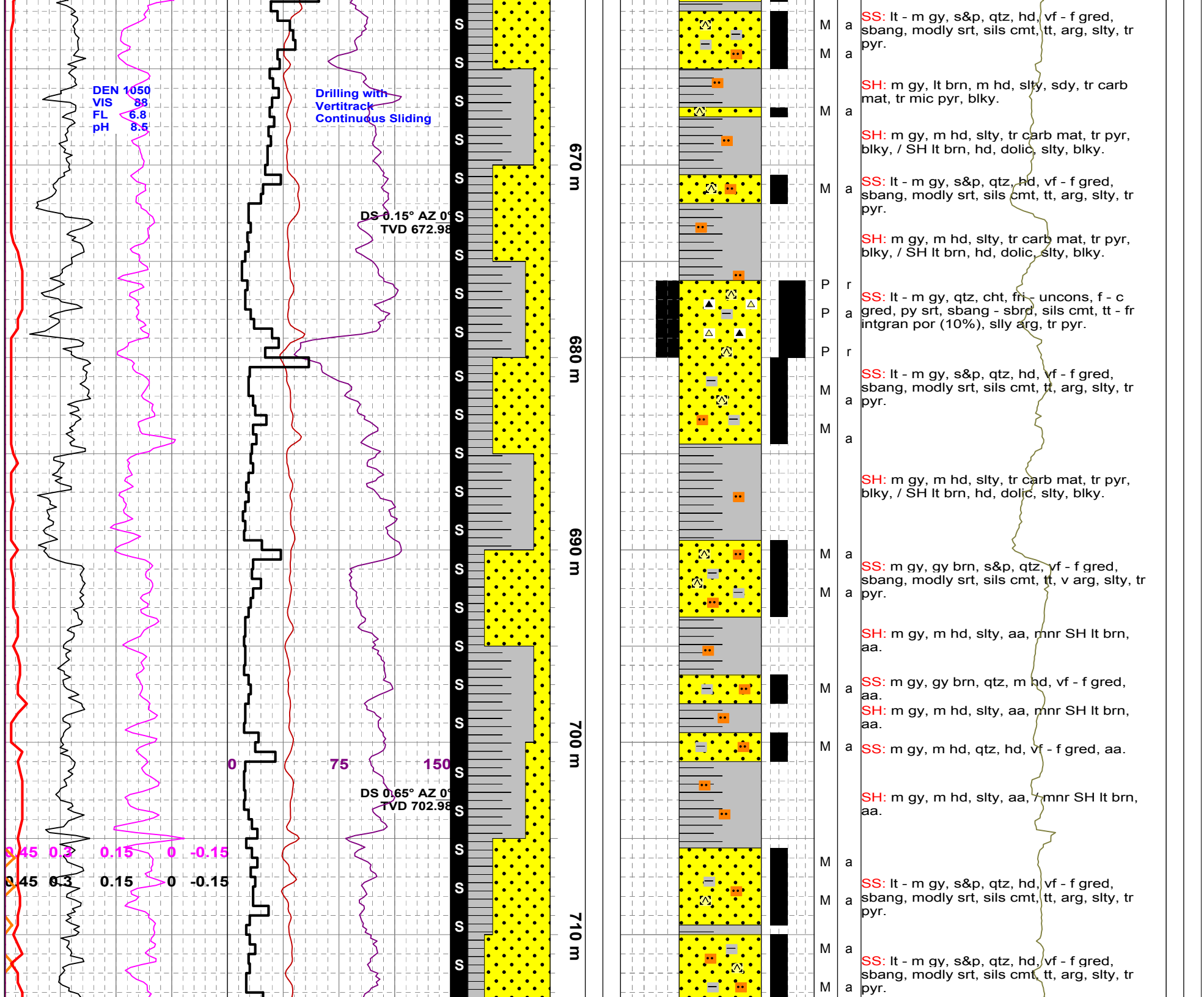

DS 0.08° AZ 0°
TVD 407.98
DS 0.14° AZ 0°
TVD 437.98
410 m
420 m
430 m
440 m
450 m
50.5
0 25 50 75 100
0 5 10 15 20
0 75 150
0 250 500 750 1000
0 250 500 750 1000
Mar 11, 2008
SH: m gy, m hd, v slty, v sdy, com lg scat carb grs, tr mic pyr, blky.
SS: lt - m gy, qtz, cht, hd - uncons, f - c gred, py srt, aa.
SH: m gy, m hd, v slty, v sdy, com lg scat carb grs, tr mic pyr, blky.
SS: lt - m gy, qtz, cht, hd, f - m gred, modly srt, sbang, sils cmt, tt, tr carb mat, v arg shy, slty, tr pyr.
SH: m gy, m hd, v slty, v sdy, com lg scat carb grs, tr mic pyr, blky.
SH : m gy, m hd, slty, sdy, com lg scat carb grs, tr mic pyr, blky.
SH: m gy, m hd, slty, sdy, tr lg scat carb grs, tr mic pyr, blky.
SH: m gy, m hd, slty, sdy, com lg scat carb grs, tr pyr blky, / SH wh, m hd, slty, blky.
SH: m gy, m hd, slty, sdy, com lg scat carb grs, tr pyr blky, / SH wh, m hd, slty, blky.
SH: m - dk gy, m hd, slty, sdy, com lg scat carb grs, tr pyr, blky, / SH wh, slty, blky.
Little Bear 450.5m KB
SS: brn, clr, blk, lt gy, uncons - fri, qtz, cht, m - vc gred, ang - sbrdd, py srt, sid cmt, fr intgran por, (10%), arg, slty.

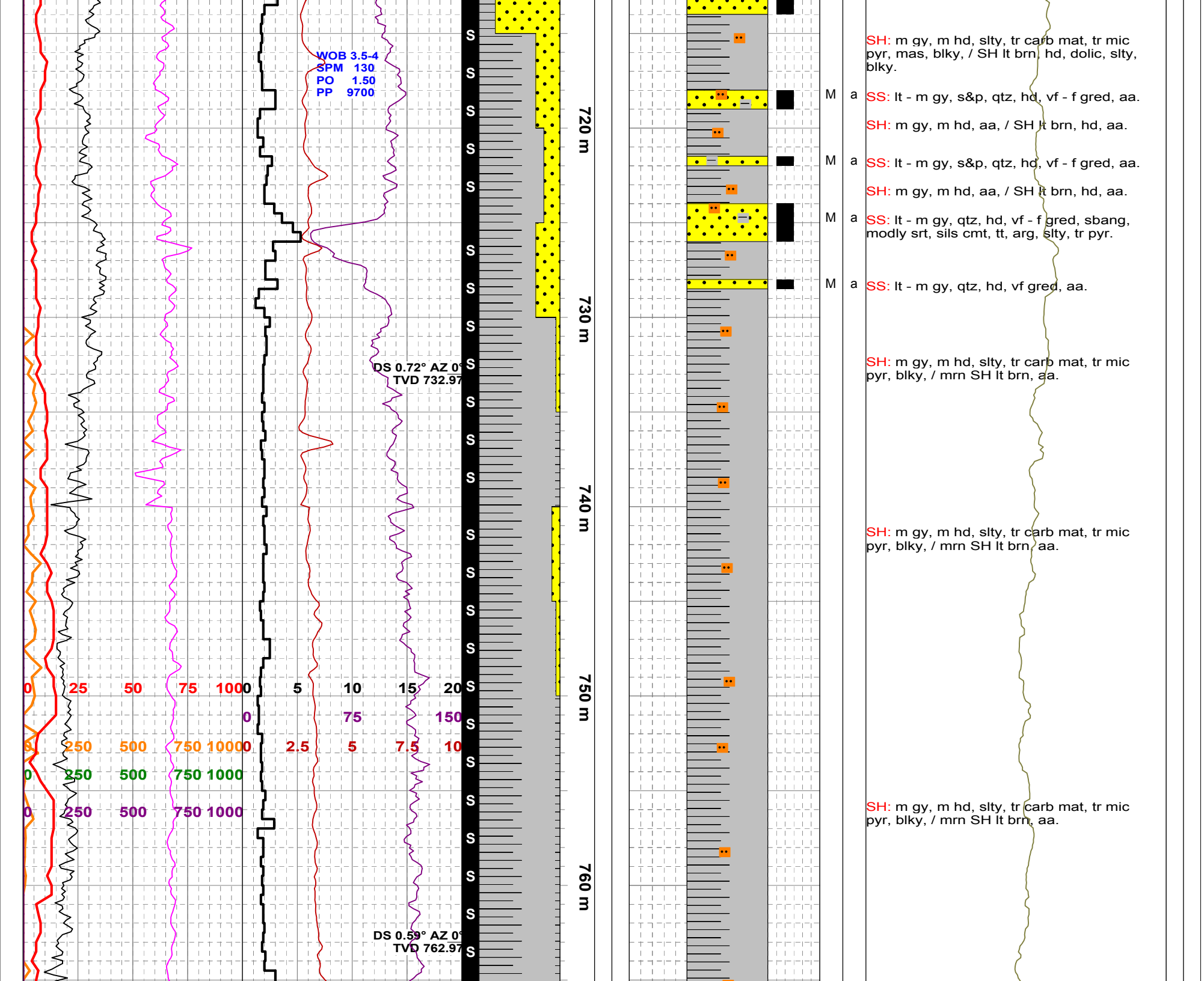

0 250 500 750 1000
Drilling with
Vertitrack
Continuous Sliding
WOB 8-11
SPM 120
PO 1.43
PP 7000
DS 0.06° AZ 0
TVD 467.98
DEN 1030
VIS 93
FL 8.0
pH 7.0
DS 0.46° AZ 0
TVD 497.98
0 75 150
0 2.5 5 7.5 10
460 m
470 m
480 m
490 m
500 m
SS: brn, lt gy, clr, hd - uncons, f - v c gred, ang - sbrdd, py srt, sid / sils cmt, fr intgran por, (10%), arg, slty.
CHT: vcol wh, blk, lt gy, brn, orng, hd, vc gred, ang, modly srt, tt, pyric.
SS: lt brn, lt gy, clr, qtz, cht, hd - uncons, f - m gred, sabng, modly srt, sils cmt, tt - p intgran por (5%), tr carb mat, arg, slty, tr pyr.
SS: lt gy, qtz, cht, m hd, vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (5-8%), tr carb mat, arg, slty.
SS: lt gy, lt brn, qtz, cht, m hd, f - m gred, sbang, modly srt, sils / cly cmt, tt - p intgran por (5-8%), tr carb mat, arg, slty, tr pyr.
SS: lt gy, qtz, cht, m hd, f - m gred, sbang, modly srt, sils / cly cmt, tt - p intgran por (5-8%), tr carb mat, arg, slty, tr pyr.
SS: lt gy, qtz, cht, m hd, f - m gred, sbang, modly srt, sils / cly cmt, tt - p intgran por (5-8%), tr carb mat, arg, slty, tr pyr.
CHT: vcol, wh, lt gy, blk, hd, vc gred, ang, modly srt, tt pyric.
CGL: lt gy, clr, blk, qtz, cht, uncons - fri, c - vc gred, sbrdd - ang, modly srt, sils cmt, tt - fr intgran por (10-12%), slly arg, tr pyr.
CHT: wh, lt gy, blk, hd, vc gred, ang, modly srt, tt, tr pyr.
SS: lt gy, clr, qtz, cht, fri - uncons, f - m gred, sbang, modly srt, sils cmt, tt - fr intgran por (12%), tr carb mat, slly arg, tr pyr.
CHT: wh, lt gy, blk, hd, vc gred, ang, modly srt, tt, tr pyr.

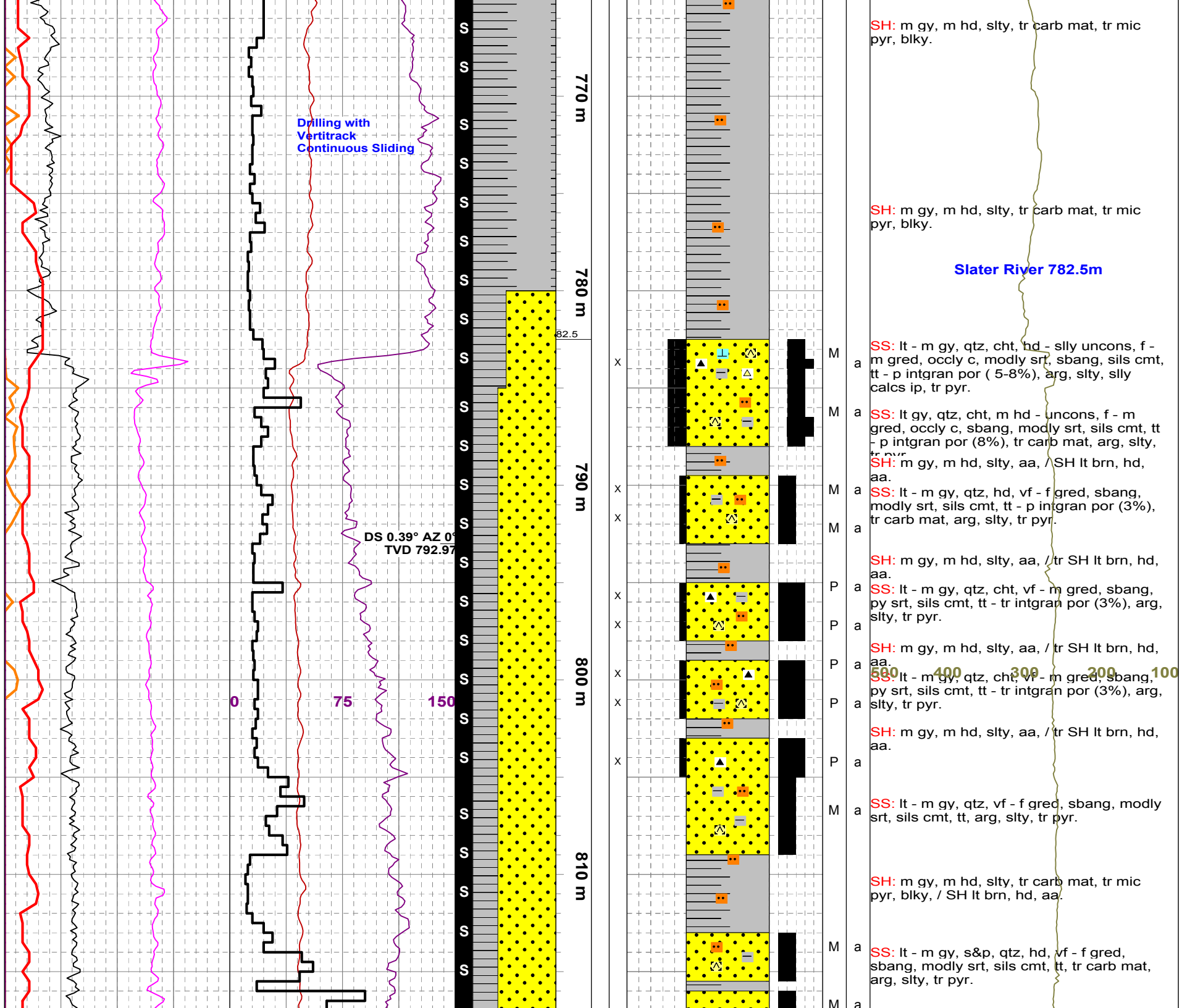

510 m
520 m
530 m
540 m
550 m
WOB 6000
Slow ROP
DS 0.04° AZ 0
TVD 526.98
Bit#2 GX-18
279.00 / 16.5 hrs
Cond 2-2-
NB#3 C-22
WOB 3-4
RPM 45-50
SPM 60
PP 3400
DEN 1030
VIS 93
FL 8.0
pH 7.0
Bit#3 C-22
9.70 / 7.75 hrs
Cond 1-1-
TG @ 38u
NB#4 M516BHVPX
0
150
WOB 2-3
SPM 120
PO
PP 900
DS 0.02° AZ 0
TVD 552.98
Mar 12, 2008
SS: lt gy, clr, qtz, cht, fri - uncons, f - m gred, sbang, modly srt, sils cmt, tt - fr intgran por (12%), tr carb mat, slly arg, tr pyr.
SS: lt gy, clr, qtz, cht, fri - uncons, f - m gred, sbang, modly srt, sils cmt, tt - fr intgran por (12%), tr carb mat, slly arg, tr pyr.
SS: lt gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr.
SH: m gy, lt brn, m hd, slty, tr carb mat, tr mic pyr, blky.
SS: lt gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr.
SS: lt gy, qtz, m hd, vf - f gred, sbang, modly srt, sils mct, tt - p intgran por (3%), tr carb mat, tr coal grs, arg, slty, tr pyr.
SS: lt gy, wh, clr, qtz, fri - uncons, f - m gred, sbang, modly srt, sils cmt, tt - fr intgran por (12-15%), tr carb mat, tr coal grs, slly arg, tr pyr.
SS: wh, lt gy, clr, qtz, cht, s&p, hd, f - m gred, sbang, modly srt, sils cmt, fr intgran por (10-12%), carb mat, slly kaoic, tr mic pyr.
SS: wh, lt gy, clr, s&p, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, fr intgran por (10-12%), slly kaoic, tr mic pyr.
SS: wh, lt gy, clr, s&p, qtz, cht, hd, f - m gred, sbang, modly srt, sils cmt, p intgran por (8-10%), slly kaoic.
SS: lt gy, gy brn, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr.
SS: lt brn, lt gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt - fr intgran por (8-10%), tr carb mat, arg, slty, tr pyr.
SS: lt gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt - fr intgran por (8-10%), slly arg, slty, tr mic pyr.
SS: lt gy, wh, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (3-5%), tr carb mat, slly arg, slty, tr mic
1 (100%)
2

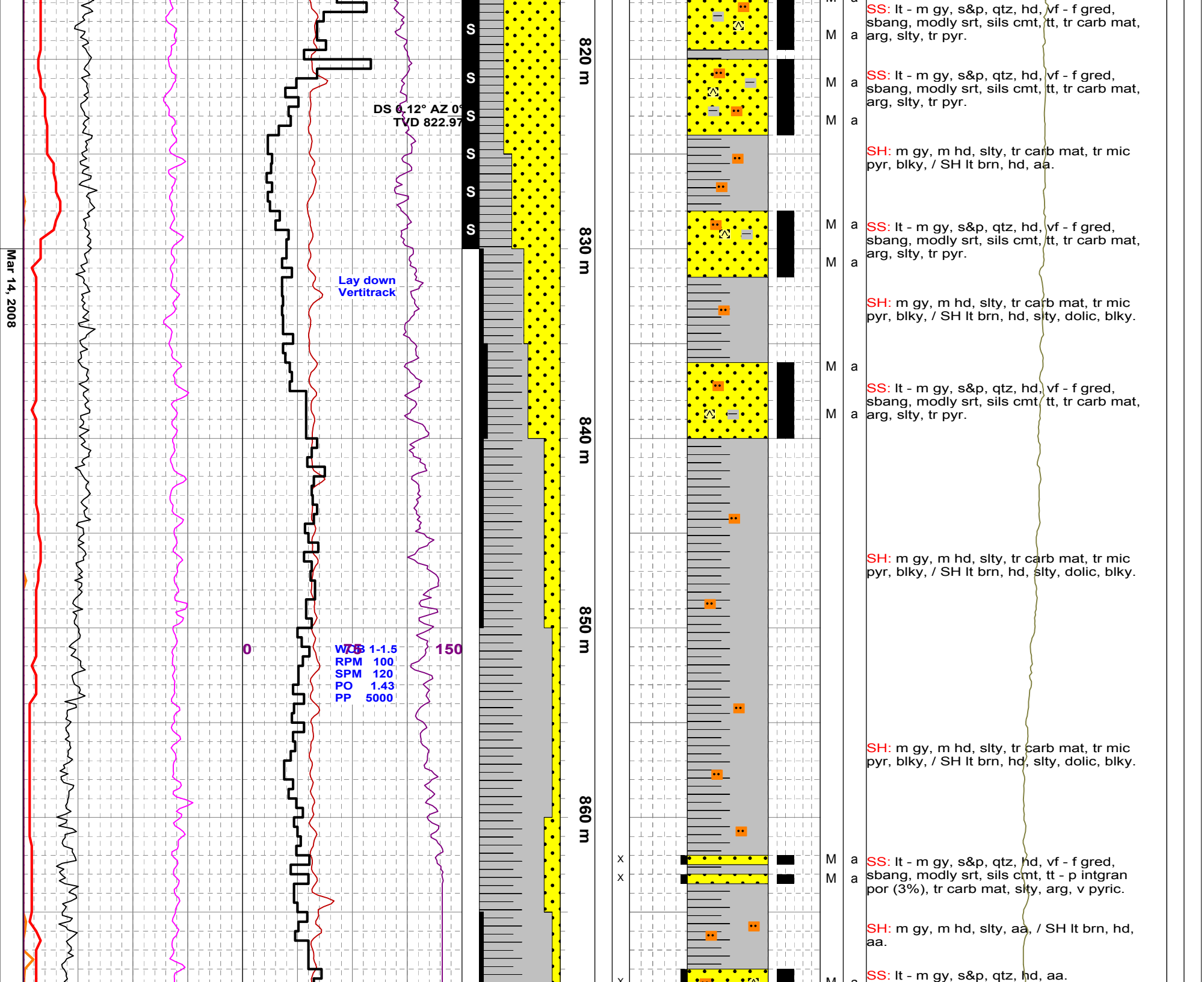

DEN 1030
VIS 48
FL 8.0
pH 7.0
Drilling with
Vertitrack
Continuous Sliding
DS 0.07° AZ 0
TVD 582.98
560 m
570 m
580 m
590 m
600 m
0 25 50 75 100
0 5 10 15 20
0 75 150
0 250 500 750 1000
0 250 500 750 1000
0 250 500 750 1000
Mar 13, 2008
SS: gy brn, lt gy, qtz, lg flotg cht & qtz, hd, vf - f gred, sbang, py srt, sils cmt, tt - p intgran por (8-10%), tr carb mat, arg, slty, tr mic pyr.
SH: m gy, m hd, slty, tr carb mat,tr mic pyr, blky.
SS: lt gy, s&p, qtz, hd vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (5%), arg, slty, tr pyr, rr kaoic.
SS: lt gy, s&p, qtz, hd vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (5%), arg, slty, tr pyr, rr kaoic.
SH: m gy, m hd, slty, aa.
SS: lt gy, s&p, qtz, hd vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (5%), arg, slty, tr pyr, rr kaoic.
SH: m gy, m hd, slty, aa.
SS: lt gy, s&p, qtz, hd vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (5%), arg, slty, tr pyr, rr kaoic.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky.
500 400 300 200 100
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, v arg, slty, tr pyr.
SH: m gy, lt brn, m hd, aa.

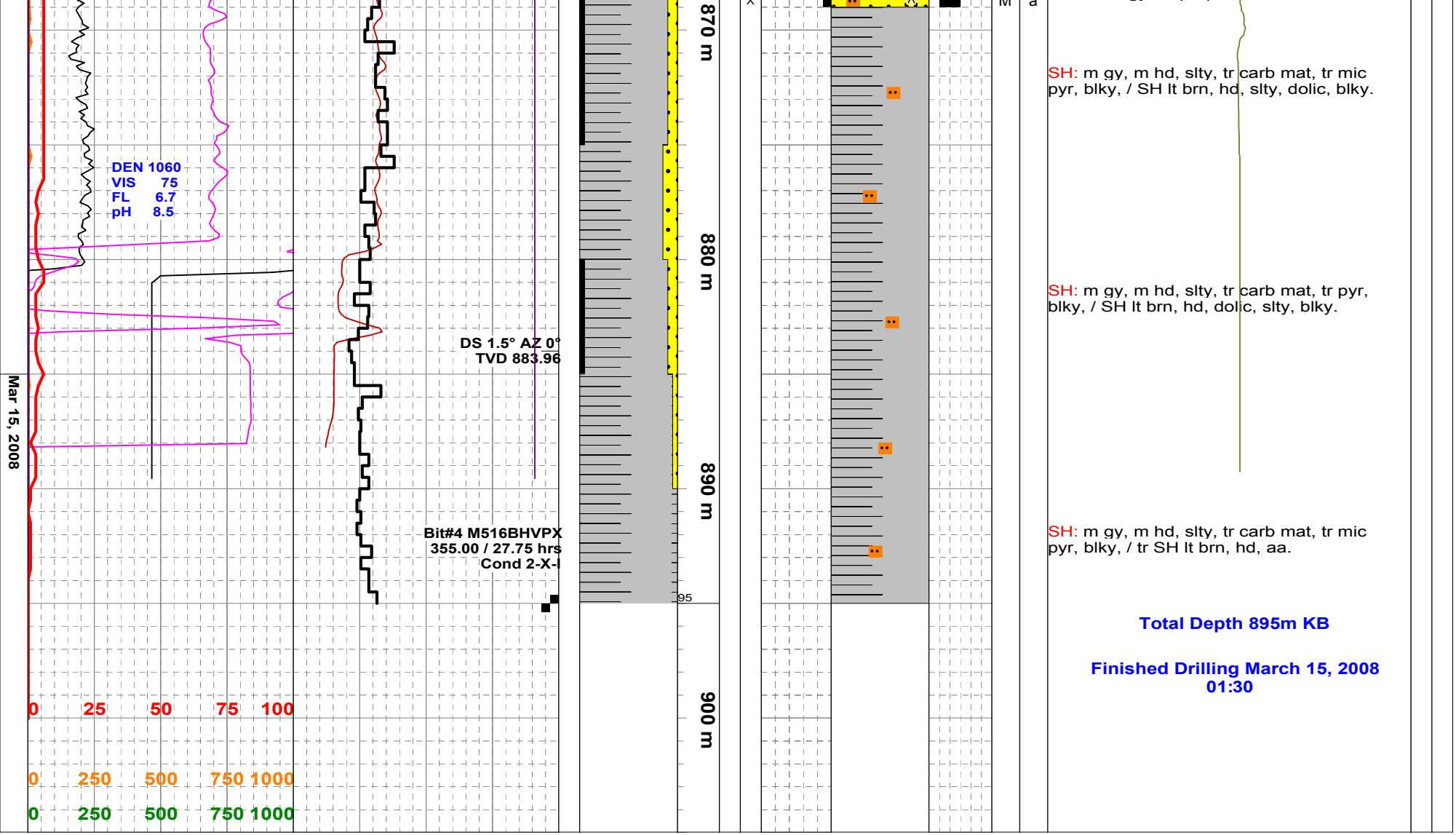

DS 0.21° AZ 0
TVD 612.98
DS 0.2° AZ 0
TVD 642.98
0
75
150
620 m
630 m
640 m
650 m
660 m
25
SH: m gy, lt brn, m hd, aa.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, v arg, slty, tr pyr.
SH: m gy, lt brn, m hd, aa.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, v arg, slty, tr pyr.
Lower Little Bear 625m
SH: m gy, m hd, v slty, sdy, tr carb mat, tr mic pyr, blky.
SH: m gy, m hd, v slty, sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, s&p, qtz, cht, fri - uncons, f - m gred, sbang, modly srt, sils cmt, tt - p intgran por (5%), arg, slty, tr pyr.
SH: m gy, lt brn, m hd, slty, sdy, tr carb mat, tr mic pyr, blky.
SS: lt - m gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, silty, tr pyr.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.


DEN 1050
VIS 88
FL 6.8
pH 8.5
Drilling with
Vertitrack
Continuous Sliding
DS 0.15° AZ 0
TVD 672.98
DS 0.65° AZ 0
TVD 702.98
0 75 150
0.45 0.3 0.15 0 -0.15
670 m
680 m
690 m
700 m
710 m
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SH: m gy, lt brn, m hd, slty, sdy, tr carb mat, tr mic pyr, blky.
SH: m gy, m hd, slty, tr carb mat, tr pyr, blky, / SH lt brn, hd, dolic, slty, blky.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SH: m gy, m hd, slty, tr carb mat, tr pyr, blky, / SH lt brn, hd, dolic, slty, blky.
SS: lt - m gy, qtz, cht, fri - uncons, f - c gred, py srt, sbang - sbrd, sils cmt, tt - fr intgran por (10%), slly arg, tr pyr.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SH: m gy, m hd, slty, tr carb mat, tr pyr, blky, / SH lt brn, hd, dolic, slty, blky.
SS: m gy, gy brn, s&p, qtz, vf - f gred, sbang, modly srt, sils cmt, tt, v arg, slty, tr pyr.
SH: m gy, m hd, slty, aa, mnr SH lt brn, aa.
SS: m gy, gy brn, qtz, m hd, vf - f gred, aa.
SH: m gy, m hd, slty, aa, mnr SH lt brn, aa.
SS: m gy, m hd, qtz, hd, vf - f gred, aa.
SH: m gy, m hd, slty, aa, / mnr SH lt brn, aa.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.


WOB 3.5-4
SPM 130
PO 1.50
PP 9700
DS 0.72° AZ 0
TVD 732.97
DS 0.59° AZ 0
TVD 762.97
720 m
730 m
740 m
750 m
760 m
0 25 50 75 100
0 5 10 15 20
0 75 150
250 500 750 1000
0 2.5 5 7.5 10
250 500 750 1000
250 500 750 1000
M a
M a
M a
M a
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, mas, blky, / SH lt brn, hd, dolic, slty, blky.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, aa.
SH: m gy, m hd, aa, / SH lt brn, hd, aa.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, aa.
SH: m gy, m hd, aa, / SH lt brn, hd, aa.
SS: lt - m gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SS: lt - m gy, qtz, hd, vf gred, aa.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / mrn SH lt brn, aa.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / mrn SH lt brn, aa.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / mrn SH lt brn, aa.


Drilling with
Vertitrack
Continuous Sliding
DS 0.39° AZ 0
TVD 792.97
0
75
150
770 m
780 m
790 m
800 m
810 m
82.5
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky.
Slater River 782.5m
SS: lt - m gy, qtz, cht, hd - slly uncons, f - m gred, occly c, modly srt, sbang, sils cmt, tt - p intgran por (5-8%), arg, slty, slly calcs ip, tr pyr.
SS: lt gy, qtz, cht, m hd - uncons, f - m gred, occly c, sbang, modly srt, sils cmt, tt - p intgran por (8%), tr carb mat, arg, slty,
SH: m gy, m hd, slty, aa, / SH lt brn, hd, aa.
SS: lt - m gy, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (3%), tr carb mat, arg, slty, tr pyr.
SH: m gy, m hd, slty, aa, / tr SH lt brn, hd, aa.
SS: lt - m gy, qtz, cht, vf - m gred, sbang, py srt, sils cmt, tt - tr intgran por (3%), arg, slty, tr pyr.
SH: m gy, m hd, slty, aa, / tr SH lt brn, hd, aa.
SS: lt - m gy, qtz, cht, vf - m gred, sbang, py srt, sils cmt, tt - tr intgran por (3%), arg, slty, tr pyr.
SH: m gy, m hd, slty, aa, / tr SH lt brn, hd, aa.
SS: lt - m gy, qtz, vf - f gred, sbang, modly srt, sils cmt, tt, arg, slty, tr pyr.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / SH lt brn, hd, aa.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr.
500
400
300
200
100


Mar 14, 2008
DS 0.12° AZ 0°
TVD 822.97
Lay down
Vertitrack
0
WOB 1-1.5
RPM 100
SPM 120
PO 1.43
PP 5000
150
820 m
830 m
840 m
850 m
860 m
S
M
a
x
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt, tr carb mat, arg, slty, tr pyr.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / SH lt brn, hd, aa.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / SH lt brn, hd, slty, dolic, blky.
SS: lt - m gy, s&p, qtz, hd, vf - f gred, sbang, modly srt, sils cmt, tt - p intgran por (3%), tr carb mat, slty, arg, v pyric.
SH: m gy, m hd, slty, aa, / SH lt brn, hd, aa.
SS: lt - m gy, s&p, qtz, hd, aa.


DEN 1060
VIS 75
FL 6.7
pH 8.5
DS 1.5° AZ 0°
TVD 883.96
Bit#4 M516BHVPX
355.00 / 27.75 hrs
Cond 2-X-I
870 m
880 m
890 m
900 m
Mar 15, 2008
0 25 50 75 100
0 250 500 750 1000
0 250 500 750 1000
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / SH lt brn, hd, slty, dolic, blky.
SH: m gy, m hd, slty, tr carb mat, tr pyr, blky, / SH lt brn, hd, dolic, slty, blky.
SH: m gy, m hd, slty, tr carb mat, tr mic pyr, blky, / tr SH lt brn, hd, aa.
Total Depth 895m KB
Finished Drilling March 15, 2008
01:30