ANADARKO CANADA CORPORATION

ANADARKO ARROWHEAD RIVER K-35

60° 34' 38.1" N. LAT.
122° 51' 47.2" W. LONG
Grid 60° 40' 122° 45' NWT

GEOLOGICAL WELLSITE REPORT

Prepared For: Mr.Wayne Dwyer
Anadarko Canada Corporation

Merlin Petroleum Services
By: Harold Cowan

March 1, 2004

ANADARKO ARROWHEAD RIVER K-35

TABLE OF CONTENTS

Well Summary ....Page 1

Well History ....Page 2

Survey Plot ....Page 3

Bit Record ....Page 5

Formation Tops ....Page 5

Sample Descriptions ....Page 6

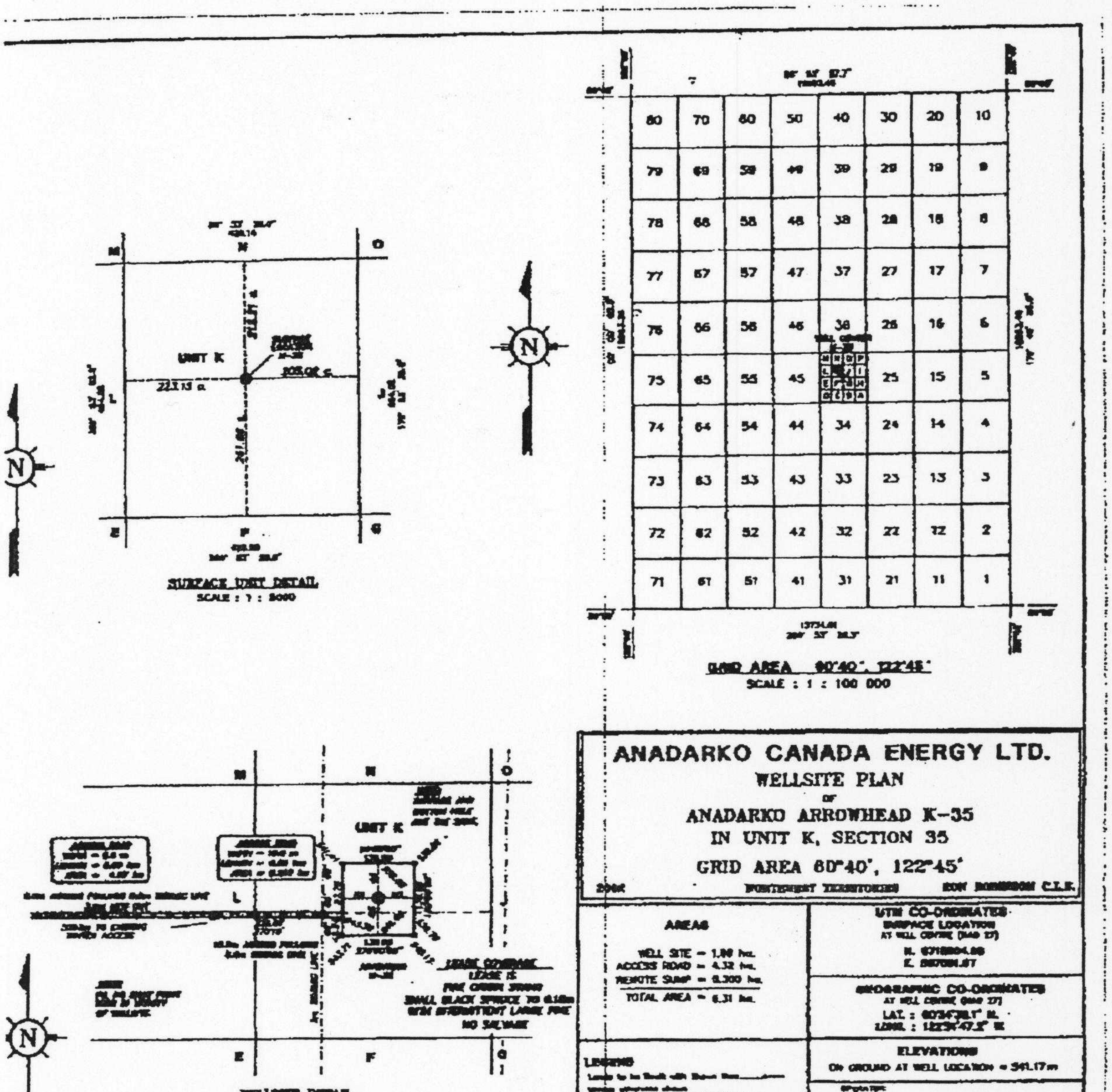
Strip Log - in pocket

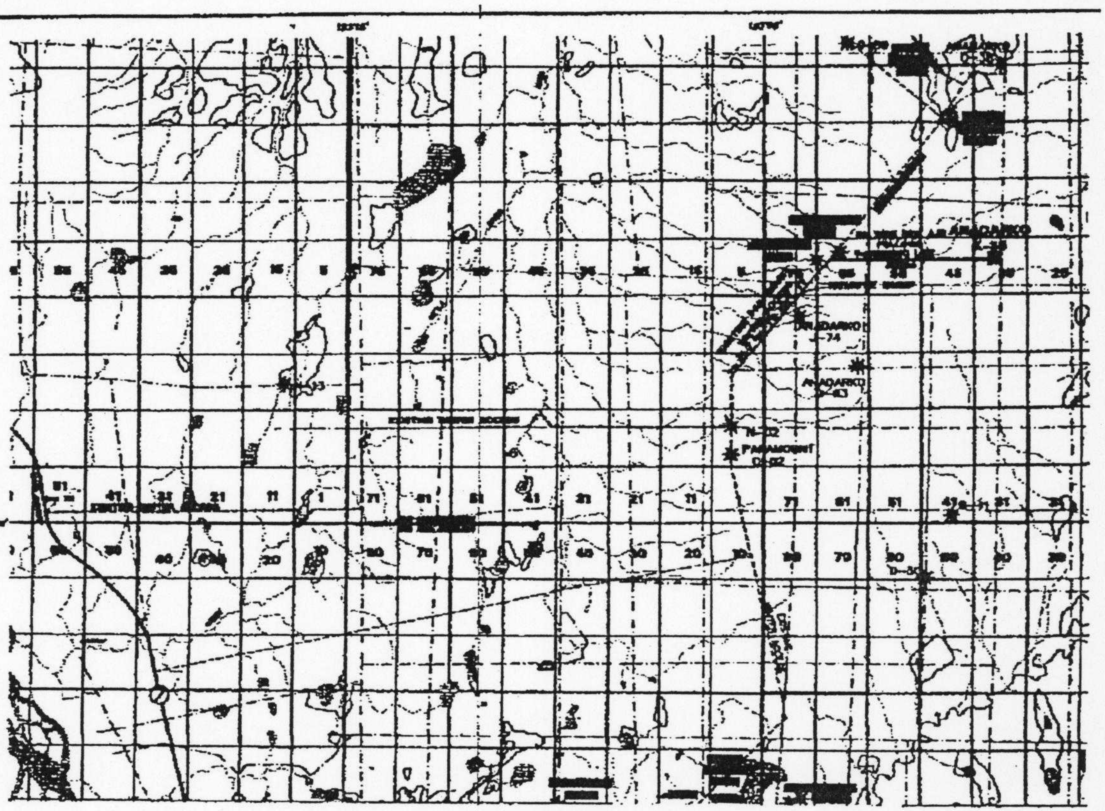
WELL DATA SUMMARY

Well Name:	Anadarko Arrowhead River K-35	
Location:	60° 34’ 38.1” N. LAT., 122° 51’ 47.2” W. LONG	
Operator:	Anadarko Canada Corporation	
Elevations:	Grd. 541.1 m	KB. 547.5 m
Total Depth:	2812 m KB	
Hole Data:	Intermediate:	215.9 mm, 653 – 2442.7 m
	Main Hole:	155.9 mm, 2442.7 – 2812.0 m
Casing Size:	Surface Casing:	244.5 mm, Base @ 653 m
	Intermediate Casing:	177.8 mm, 0 – 2442.7 m
	Main Hole (Liner):	2440 – 2812 m
Spud Date:	Re-Entry February 11, 2004 – Start base of surface casing	
Rig Release:		
Classification:		
Well Status:	Confidential	
Primary Objective:	Slave Point	
Province:	NWT	Area: Ft. Liard, NWT
Drilling Contractor:	Akita, Rig 37	
Wellsite Engineer:	Brian Preece	
Wellsite Geologist:	Harold Cowan	

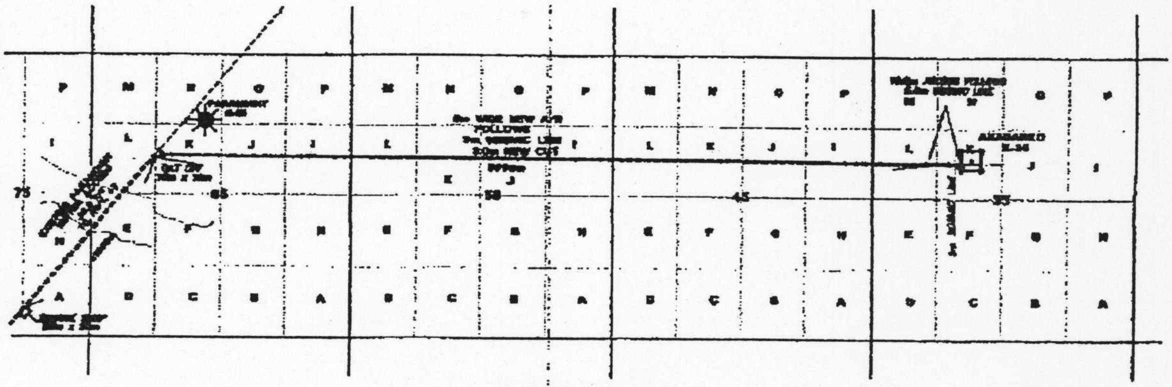
DRILLING HISTORY

Date	Depth (m)	Mud Properties				Operations Conducted
2004		Dens.	Vis.	WL	PH	
Feb. 7						• Move rig to K-35 from F-56.
Feb. 8						• Raise Derrick, rigging up.
Feb. 9						• Rigging up – Pre-Spud meeting. • Re-entry surface pipe shoe @ 653 m.
Feb. 10	0					• Pressure testing. Pick up BHA, drillpipe and collars. Casing 244.5 mm.
Feb. 11	653					• Drill 215.9 mm hole with MWD, mud motor (square) and PDC bit. Start drilling @ 7:30 am, 11-02-2004. Drilled float collar and shoe, displaced inhibited water to Invert mud system.
Feb. 12	1153	950	70			• Drill, progress 500 m.
Feb. 13	1680	945	87			• Drill, progress 527 m.
Feb. 14	1946	955	88			• Trip for Bit #2.
Feb. 15	2025	970	87			• Drilling, run in with Directional motor (1.5°) and MWD @ 1946 m.
Feb. 16	2255	950	86			• Drill, slide to correct deviation.
Feb. 17	2442.7	950	85			• Pull out to log. Reached intermediate casing point at 5:45 am, 17-02-2004. Precision on site. Hole was close to vertical @ 2395 survey. 6.7 m of Slave Point was penetrated prior to stopping for logs and casing.
Feb. 18	2442.7					• Loggers released @ 3:45 am – one run.
Feb. 19	2442.7					• Prep to run 177.8 mm intermediate casing. Laid down 4-1/2" drillpipe.
Feb. 20	2442.7					• W.O.C. currently pressure testing.
Feb. 21	2442.7	1040	46		10.5	• Drilling casing shoe. Picked up 3-1/2" drillstring. Changed out BOP stack, Kelly bar and bushings for 3-1/2" drillstring.
Feb. 22	2608	1020	43		10.0	• Drilling 155.6 mm hole with Bit #3. • Performed a FIT test after drilling 5 m of new hole. Drilling with Polymer mud.
Feb. 23	2730	1035	44		11.0	• Run in hole with Bit #4. Motor cratered.
Feb. 24	2812 TD	1040	46		10.5	• Reached TD @ 7:30 am, 24-02-2004. Pull out to log.
Feb. 25	2812 TD					• W.O.O. Hole logged by Precision.


ANADARKO CANADA ENERGY LTD.
WELLSITE PLAN
OF
ANADARKO ARROWHEAD K-35
IN UNIT K, SECTION 35
GRID AREA 60°40', 122°45'
SURFACE UNIT DETAIL
GRID AREA 60°40', 122°45'
SCALE : 1 : 100 000
WELLSITE DETAIL
SCALE : 1 : 5000
UNIT K
AREAS
WELL SITE = 1.00 ha.
ACCESS ROAD = 4.32 ha.
REMOTE SUMP = 0.300 ha.
TOTAL AREA = 6.31 ha.
UTM CO-ORDINATES
SURFACE LOCATION
GEOGRAPHIC CO-ORDINATES
ELEVATIONS
LEGEND
AS SHOWN
OCT. 3/02
N
CHALLENGER



LOCATION DETAIL
SCALE : 1 : 100 000



ACCESS ROAD DETAIL
SCALE : 1 : 20000

BIT RECORD

BIT NO.	SIZE MM	SERIAL NO.	MAKE	TYPE	HOURS	DEPTH OUT	METRES DRILLED
1	215.9	104617	Reed	PSX145	54.75	1946	1293
2	215.9	00694	Reed	216VD5138	39.25	2442	496
3	156.0	2070	United	VD513		2730	288
3RR	156.0	2070	United	VD513		2812	370

FORMATION TOPS

	SAMPLE MD (m)	SAMPLE SS (m)	LOG TOPS (m)	SUBSEA (m)
Banff	657.0	-109.5	664.7	-117.2
Exshaw	1190.0	-642.5	1191.0	-643.5
Ketcho			1215.5	-668.0
Trout River	1609.0	-1061.5	1609.0	-1061.5
Kakisa			1733.7	-1186.2
Ft. Simpson	1764.0	-1216.5	1763.7	-1216.2
Ft. Simpson MKR	2371.0	-1823.5	2371.0	-1823.5
Slave Point	2436.0	-1888.5	2436.0	-1888.5
Watt Mtn.	2515.0	-1967.5	2520.0	-1972.5
Keg River	2545.0	-1997.5	2544.5	-1997.0
Headless	2694.0	-2146.5	2693.5	-2146.0
Landry	2752.5	-2205.0	2750.0	-2202.5
Arnica	2785.6	-2238.1	2786.4	-2238.8
Total Depth	2812.0			

SAMPLE DESCRIPTIONS

653-660	Shale, dark brown, splintery, non-calcareous. Few coarse, translucent, well rounded quartz pellets. Trace Dolomite, grey, fine-coarsely crystalline, massive in part, fair scattered yellow fluorescence, good cut.
665	Dolomite, cream, grey, fine-coarsely crystalline, massive in part, no porosity, good yellow fluorescence, quick milky cut. Sandstone, brown, silty, argillaceous. Shale, dark grey, flakey non-calcareous.
670	Dolomite, cream, grey, fine-coarsely crystalline, limey in part, no obvious porosity, good yellow fluorescence, quick milky cut. Trace Sandstone, grey, fine grained-very fine grained, limey in part, dense.
675	Limestone, cream, fragmental, coarsely crystalline-massive, crinoidal shadows, no porosity, good yellow fluorescence, good cut.
680	Limestone, buff, fragmental, crinoidal?, no obvious porosity, no shows, dull yellow fluorescence, no cut.
685	Shale, grey, dark grey, fissile, non-calcareous.
690	Shale, grey, blocky, fissile, non-calcareous.
695	Shale, as above. Limestone, buff, fragmental, coarse, chalky in part.
700	Limestone, buff, finely crystalline, fragmental in part, no porosity, scattered yellow fluorescence, no cut. Shale, grey, blocky, fissile.
705-725	Limestone, cream, finely crystalline, fragmental in part, no porosity, dull yellow fluorescence, no cut. Shale, as above.
730	Limestone, cream, dolomitic, finely crystalline-coarsely fragmental, no porosity. Shale, as above (10%).
735	Limestone, cream, dolomitic, finely crystalline, coarsely fragmental, no porosity, dull yellow fluorescence, no cut. Shale, as above (20%).
740	Shale, grey, slightly calcareous, blocky (65%). Limestone, buff, finely crystalline, fossiliferous, no porosity, dull yellow fluorescence, no cut.
745	Dolomitic Limestone, cream, buff, fine-coarsely fragmental, dense.
750	Dolomitic Limestone, cream, fine-coarsely crystalline, fragmental in part crinoidal, no porosity, fair yellow fluorescence, no cut.

755-795	Shale, greenish-grey, splintery, micro-micaceous, slightly dolomitic.
800	Shale, as above. Siltstone, grey, sandy, dolomitic.
805	Shale, as above. Siltstone, as above.
810	Siltstone, grey, sandy, dolomitic.
815	Shale, grey, blocky, micro-micaceous.
820-835	Shale, grey, blocky, micro-micaceous. Trace Siltstone, grey, sandy.
840-895	Shale, grey, blocky, fissile in part, slightly dolomitic.
900-940	Shale, grey, blocky, fissile.
945-1040	Shale, grey, blocky, micaceous.
1045-1100	Shale, grey, blocky, micro-micaceous.
1105-1115	Shale, grey, blocky, micaceous.
1120-1160	Shale, grey, blocky, micro-micaceous.
11651175	Shale, grey, micro-micaceous, blocky, slightly dolomitic.
1180	Shale, grey, as above, becoming darker grey, fissile.
1185	Shale, grey-medium, grey, blocky, micro-micaceous.
1190	Shale, grey-medium grey, blocky, micro-micaceous, slightly pyritic.
1195	Shale, medium grey, fissile, slightly carbonaceous.
1200	Shale, medium-dark grey, fissile, slightly carbonaceous.
1205	Shale, medium grey, fissile.
1210	Shale, medium grey, fissile, slightly carbonaceous in part.
1215-1225	Shale, as above.
1230	Shale, medium grey, blocky, micaceous. Trace Shale, dark grey, fissile.
1235	Shale, dark grey, blocky, carbonaceous, pyrite common.

1240	Shale, black, bituminous, blocky, no fluorescence.
1245	Shale, as above.
1250	Shale, black, as above.
1255	Shale, black, as above, pyrite common.
1260	Limestone, cream, chalky, finely crystalline in part, no porosity, no shows (10%). Shale, grey, silty, pyritic.
1265	Dolomite, grey, finely crystalline, silty, dense. Shale, grey, silty, pyritic.
1270	Dolomite, grey, finely crystalline, silty. Shale, grey, silty.
1275	Shale, grey, dolomitic.
1280	Shale, grey, dolomitic, micro-micaceous, blocky.
1285-1295	Shale, as above.
1300	Shale, as above. Limestone, buff, microcrystalline, dense (10%).
1305-1310	Shale, as above. Limestone, as above (20%).
1315	Shale, grey, blocky. Limestone, buff, finely crystalline, dense (10%).
1320-1330	Limestone, buff, finely crystalline, dense.
1335	Limestone, buff, microcrystalline, dense. Shale, grey, micro-micaceous, blocky.
1340	Shale, grey, silty. Limestone, buff, as above.
1345	Shale, as above (50%). Limestone, as above (50%).
1350	Shale, grey, silty, partly micro-micaceous, blocky.
1355-1415	Shale, grey, silty, dolomitic, micro-micaceous, blocky.
1420-1435	Shale, medium grey, silty, dolomitic, as above. Trace Limestone, cream, chalky.
1440-1455	Shale, medium grey, silty, dolomitic, blocky. Trace Limestone, cream, finely crystalline, dense.

1460-1480	Shale, medium grey, silty, dolomitic, micro-micaceous, blocky. Trace Limestone, as above.
1485-1495	Shale, as above. Limestone, as above.
1500	Shale, medium grey, silty, dolomitic, micro-micaceous. Limestone, buff, crinoidal, dense (10%).
1505-1585	Shale, medium-dark grey, blocky, micro-micaceous.
1590	Shale, brown, dark brown (20%). Shale, medium-dark brown, blocky, micro-micaceous (80%).
1595	Shale, brown, dark brown, bituminous (30%), Shale, as above (70%).
1600	Shale, dark brown, bituminous (100%).
1605-1610	Shale, as above.
1615-1625	Limestone, light brown, microcrystalline, dense.
1630-1645	Shale, light brown, silty, blocky. Limestone, light brown, microcrystalline, dense.
1650	Shale, brown, partly dark brown, bituminous, blocky. Limestone, light brown, finely crystalline, dense.
1655	Limestone, buff, finely crystalline, fossiliferous in part, dense. Shale, as above.
1660	Limestone, buff, cream, finely crystalline, chalky in part. Shale, as above.
1665	Siltstone, grey, sandy. Shale, medium grey, silty.
1670	Shale, medium grey, silty. Siltstone, grey, sandy. Limestone, buff, finely crystalline, dense.
1675-1680	Siltstone, green-grey, sandy. Shale, medium grey, silty, hard.
1685	Siltstone, green-grey, sandy, pyritic.
1690	Siltstone, green-grey, sandy, pyritic. Shale, medium grey, silty, pyritic, micro-micaceous.
1695	Shale, medium grey, flakey, micro-micaceous. Siltstone, as above.

1700	Shale, as above. Siltstone, as above.
1705	Siltstone, green-grey, salt and pepper in part, sandy. Shale, as above.
1710	Shale, medium grey, silty, micro-micaceous, flakey, hard.
1715	Shale, as above. Siltstone, green-grey, salt and pepper, sandy.
1720-1750	Shale, as above.
1755-1760	Shale, grey, dark grey, silty, micro-micaceous, blocky.
1765	Limestone, buff, fragmental, dense (5%). Shale, as above.
1770	Dolomite, buff, finely crystalline, fragmental, fossiliferous?, dense (70%). Shale, as above.
1775-1780	Dolomite, as above.
1785	Dolomite, buff, finely crystalline-very finely sucrosic, dense, no shows.
1790-1795	Dolomite, grey, buff, finely crystalline, dense.
1800	Dolomite, as above. Shale, medium grey, micro-micaceous, blocky.
1805	Shale, medium grey, silty, blocky, micro-micaceous.
1810	Shale, dark grey, blocky, micro-micaceous.
1815-1820	Shale, dark grey, blocky, micro-micaceous. Trace Limestone, buff, finely crystalline, dense.
1825-1830	Shale, dark grey, blocky, micro-micaceous, slightly dolomitic.
1835-1840	Shale, as above.
1845	Shale, dark grey, blocky, silty, micro-micaceous.
1850-1865	Shale, as above.
1870	Shale, dark grey, silty, blocky, slightly dolomitic.
1875	Dolomite, buff, finely crystalline, argillaceous, dense. Shale, dark grey, silty.
1880	Dolomite, buff, fragmental, fossiliferous shadows, argillaceous, dense.

1885	Shale, dark grey, silty, argillaceous in part.
1890	Shale, dark grey, silty.
1895	Shale, dark grey, silty, blocky, slightly dolomitic.
1900	Siltstone, grey, sandy. Sandstone, clear, very fine grained, argillaceous in part, dense.
1905	Siltstone, grey, dark grey, sandy, argillaceous in part, dense.
1910	Dolomitic, cream, finely crystalline, argillaceous, dense. Siltstone, grey, dark grey, sandy, argillaceous in part.
1915	Siltstone, grey, dark grey, sandy.
1920	Siltstone, grey, sandy. Shale, dark grey, brown, siliceous, brittle.
1925	Shale, dark grey, blocky, calcareous. Siltstone, grey, sandy (20%).
1930	Shale, dark grey, blocky, calcareous.
1935	Shale, medium grey, blocky, calcareous. Trace Limestone, buff, finely crystalline, dense.
1940	Shale, medium grey, blocky, calcareous. Trace Limestone, as above.
1945	Shale, medium grey, blocky, dolomitic.
1950-1965	Shale, medium grey, blocky, dolomitic, micro-micaceous.
1970-1975	Shale, as above.
1980	Siltstone, grey, sandy. Shale, as above (70%).
1985	Shale, medium grey, micaceous, blocky, slightly dolomitic, trace Siltstone, as above.
1990-1995	Shale, medium grey, as above.
2000-2015	Shale, as above.
2020-2045	Shale, medium grey, blocky, micro-micaceous.
2050-2075	Shale, medium grey, blocky, splintery in part, micro-micaceous.

2080-2120	Shale, as above.
2125-2155	Shale, medium grey, splintery, blocky in part, micro-micaceous.
2160-2205	Shale, as above.
2210-2240	Shale, medium grey, blocky, flakey, micaceous.
2245-2270	Shale, as above.
2275-2295	Shale, medium grey, blocky, micaceous.
2300-2325	Shale, light-medium grey, blocky, micaceous.
2330	Shale, light-medium grey, blocky, micaceous.
2335-2345	Very poor samples.
2350	Shale, medium grey.
2355	Shale, medium grey, blocky.
2360	Shale, medium grey, fissile in part, blocky.
2365	Shale, medium grey, blocky, fissile, non-calcareous.
2370	Siltstone, grey, dolomitic, sandy, impermeable (50%). Shale, dark brown, soft, bituminous.
2375	Shale, medium grey, blocky with trace of Siltstone, as above.
2380	Shale, medium grey, blocky.
2385	Shale, grey, blocky.
2390	Shale, medium grey, blocky, silty in part.
2395	Shale, medium grey, blocky.
2400	Shale, medium grey, blocky, silty in part.
2405	Shale, medium grey, blocky.
2410	Shale, medium grey, becoming dark grey, blocky, trace pyrite.

2415	Shale, medium grey, blocky. Trace Shale, dark grey, blocky. Trace pyrite.
2420	Shale, medium grey, blocky, trace Shale, dark grey, blocky. Trace pyrite.
2425	Shale, as above.
2430	Shale, dark grey-black, micro-micaceous, disseminated pyrite common, non-calcareous.
2435	Limestone, brown-light brown, mottled, fragmental, fossiliferous?, argillaceous, few dolomite filled vugs, argillaceous, no shows, no fluorescence.
2440	Limestone, brown, mottled, fossiliferous?, few dolomited filled vugs, no shows, no fluorescence.
2445	Limestone, brown, mottled, finely crystalline, dense.
2450	Limestone, brown, dark brown, finely crystalline, dense. Bentonite, white, soft.
2455	Limestone, brown, finely crystalline, dense. Limestone, buff, finely fossiliferous, chalky, dense.
2460	Limestone, brown, microcrystalline, dense. Limestone, buff, argillaceous, dense.
2465	Limestone, brown, dark brown, microcrystalline, dense. Limestone, buff, argillaceous dense.
2470-2475	Limestone, brown, dark brown, as above. Limestone, buff, as above.
2480-2485	Limestone, brown, dark brown, microcrystalline, dense. Limestone, buff, fossiliferous?, argillaceous, dense.
2490	Limestone, grey, wackestone, argillaceous, styolitic in part with pyrobitumen partings. Limestone, brown, dark brown, microcrystalline (10%).
2495	Limestone, grey, wackestone, argillaceous, styolitic, as above. Limestone, ream, chalky. Trace Anhydrite, white, finely crystalline.
2500	Limestone, buff, finely crystalline, dense. Limestone, brown, dark brown, microcrystalline, dense, few styolites, as above.

2505	Limestone, buff, finely fossiliferous, argillaceous, dense. Limestone, dark brown, microcrystalline, dense, with few anhydrite blebs.
2510	Limestone, dark brown, microcrystalline, dense.
2515	Limestone, grey, wackestone, argillaceous, dense. Limestone, brown, dark brown, microcrystalline, dense.
2520	Limestone, dark brown, microcrystalline, dense. Limestone, grey, argillaceous, as above.
2525	Shale, dark brown, bituminous, dolomitic, brittle. Limestone, dark brown, microcrystalline, dense.
2530	Limestone, buff, finely crystalline, dense. Limestone, brown, dark brown, microcrystalline, dense.
2535	Shale, white, dolomitic, soft. Limestone, dark brown, microcrystalline, dense.
2540	Shale, white, dolomitic, soft. Limestone, buff, finely fossiliferous, argillaceous.
2545	Limestone, buff, finely crystalline, finely fragmental, argillaceous in part, no shows.
2550	Dolomite, cream, mudstone, argillaceous, no shows, no permeability.
2555	Dolomite, cream, mudstone, argillaceous, no shows.
2560	Dolomite, cream, argillaceous. Limestone, dark brown, microcrystalline, dense.
2565	Limestone, grey, finely crystalline, argillaceous with few white anhydrite blebs, impermeable, no shows.
2570	Limestone, grey, finely crystalline, argillaceous, styolitic, no shows.
2575-2590	Limestone, as above.
2595	Limestone, grey-medium grey, finely crystalline, argillaceous in part, fine lenses pyrobitumen, no shows, dense.
2600	Limestone, as above.

2605	Limestone, grey, finely crystalline, argillaceous, with fine lenses, white, anhydrite, chalky in part.
2610	Limestone, grey, finely sucrosic, argillaceous, impermeable.
2615	Limestone, grey, very finely sucrosic, argillaceous, no shows. Pyrobitumen common.
2620	Limestone, grey, very finely sucrosic to chalky. Dolomite, dark grey, black, microcrystalline, dense. Traces Dolomite, white, massive (vein filling?).
2625	Limestone, grey, finely crystalline-chalky. Traces Dolomite, white, massive (vein filling?).
2630-2635	Limestone, grey, as above.
2640	Limestone, grey, finely crystalline-chalky, styolitic in part. Traces of Dolomite, white, massive (vein filling?).
2645	Limestone, as above. Trace Dolomite, as above.
2650	Limestone, grey, argillaceous. Limestone, buff, microcrystalline, dense.
2655	Dolomite, dark brown, microcrystalline, dense (60%). Limestone, grey, argillaceous.
2660	Limestone, grey, argillaceous. Dolomite, brown, microcrystalline, dense.
2665-2670	Limestone, buff, finely crystalline, dense. Limestone, grey, argillaceous.
2675	Dolomite, brown, finely crystalline, dense. Limestone, grey, argillaceous. Trace Dolomite, white, massive, dense (vein filler?).
2680	Limestone, brown, finely crystalline, dense. Limestone, grey, argillaceous.
2685	Limestone, grey, very finely sucrosic, argillaceous, impermeable. Trace Dolomite, dark brown, microcrystalline.
2690	Limestone, grey, buff, very finely sucrosic, argillaceous in part, impermeable, no shows.
2695	Limestone, grey, very finely sucrosic, argillaceous in part. Dolomite, dark brown, microcrystalline, dense. Trace Shale, black, flaky.

2700	Dolomite, dark brown, microcrystalline, flaky. Dolomite, white, massive, dense (vein filler).
2705	Dolomite, dark brown, black, micritic, styolitic with pyrobitumen partings. Trace Dolomite, white, massive (fracture filling?), dense.
2710	Dolomite, dark brown, black, micritic, dense. Trace Dolomite, white, massive (fracture filling), dense.
2715	Dolomite, dark brown, micritic, finely crystalline in part, dense. Increase in white, massive Dolomite (fracture filling), dense.
2720	Dolomite, dark brown, as above. Dolomite, fracture fill, as above. Dolomite, buff, finely sucrosic, argillaceous, dense.
2725	Dolomite, dark brown, as above. Limestone, buff, finely crystalline, argillaceous, partly chalky, dense.
2730	Dolomite, dark brown, as above. Limestone, as above.
2735	Dolomite, dark grey, finely crystalline, pyritic, dense. Limestone, buff, finely crystalline, dense. Few chips of Dolomite fracture filler, as above.
2740	Dolomite, dark grey, finely crystalline, pyritic, dense.
2745-2750	Dolomite, dark grey, finely crystalline.
2755	Dolomite, dark grey (50%). Dolomite, white, massive, fracture filler (50%). Abundant pyrite.
2760	Dolomite, grey, finely crystalline, silty in part. Decrease in Dolomite, fracture filler (10%).
2765	Dolomite, white, massive, coarsely crystalline, no obvious porosity, no shows (65%). Dolomite, grey, finely crystalline, with abundant very fine disseminated pyrite. Trace black Shale.
2770	Dolomite, white, as above (50%). Dolomite, grey-dark grey, finely crystalline, dense.
2775	Dolomite, white, as above. Trace Shale, green, dolomitic.
2780	Dolomite, white, grey, massive-coarsely crystalline, no porosity, no shows, traces well formed clear quartz crystals. Trace Shale, dark grey, siliceous, pyritic.

2785	Dolomite, white, grey, massive-coarsely crystalline, dense. Few well formed clear quartz crystals. Trace Shale, dark grey, siliceous.
2790	Dolomite, buff, finely crystalline, dense. Dolomite, white, as above. Few large quartz crystals.
2795	Dolomite, buff, finely crystalline, dense.
2800-2805	Dolomite, buff-light brown, microcrystalline, dense.
2810	Dolomite, as above.
2812 TD	Dolomite, as above.

LITHOLOGY STRIP LOG
WellSight Systems
Scale 1:240 (5"=100') Metric

Well Name: ANADARKO ARROWHEAD RIVER K - 35 Re - entry
Location: Grid Area :60 40 122 45
Licence Number: 9211-A069-4-2 **Region:** Ft. Liard , NWT
Spud Date: 11 - 02 - 2004 re-entry **Drilling Completed:** 24 - 02 - 2004
Surface Coordinates: 60 34" 38.1" N .Lat , 122 51" 47.2 "" W . Long .

Bottom Hole Coordinates: Planned vertical . Bore hole on target at 2442m. Bottom hole survey : Inc , 11.4 deg , Azimuth , 324 deg .
Ground Elevation (m): 541.17 **K.B. Elevation (m):** 547.5m
Logged Interval (m): 653 **To:** 2812m **Total Depth (m):** 2812m
Formation: Banff / Headless (Arnica)
Type of Drilling Fluid: Invert - Intermediate : Polymer - Main Hole .

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR
Company: ANADARKO CANADA CORPORATION
Address:

GEOLOGIST
Name: Harold Cowan
Company: Merlin Petroleum Services
Address:

Cores
None

DSTs
None

Comments
UWI 300F356040122450

ROCK TYPES

▨ Anhy	▨ Clyst	▨ Gyp	▨ Mrlst	▨ Shgy
▨ Bent	■ Coal	▨ Igne	▨ Salt	▨ Sltst
▨ Brec	▨ Congl	▨ Lmst	▨ Shale	▨ Ss
▨ Cht	▨ Dol	▨ Meta	▨ Shcol	▨ Till

ACCESSORIES

MINERAL
- Anhy
- Arggrn
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Glau
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff

FOSSIL
- Algae
- Amph
- Belm
- Bioclst
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

STRINGER
- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE
- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY
- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

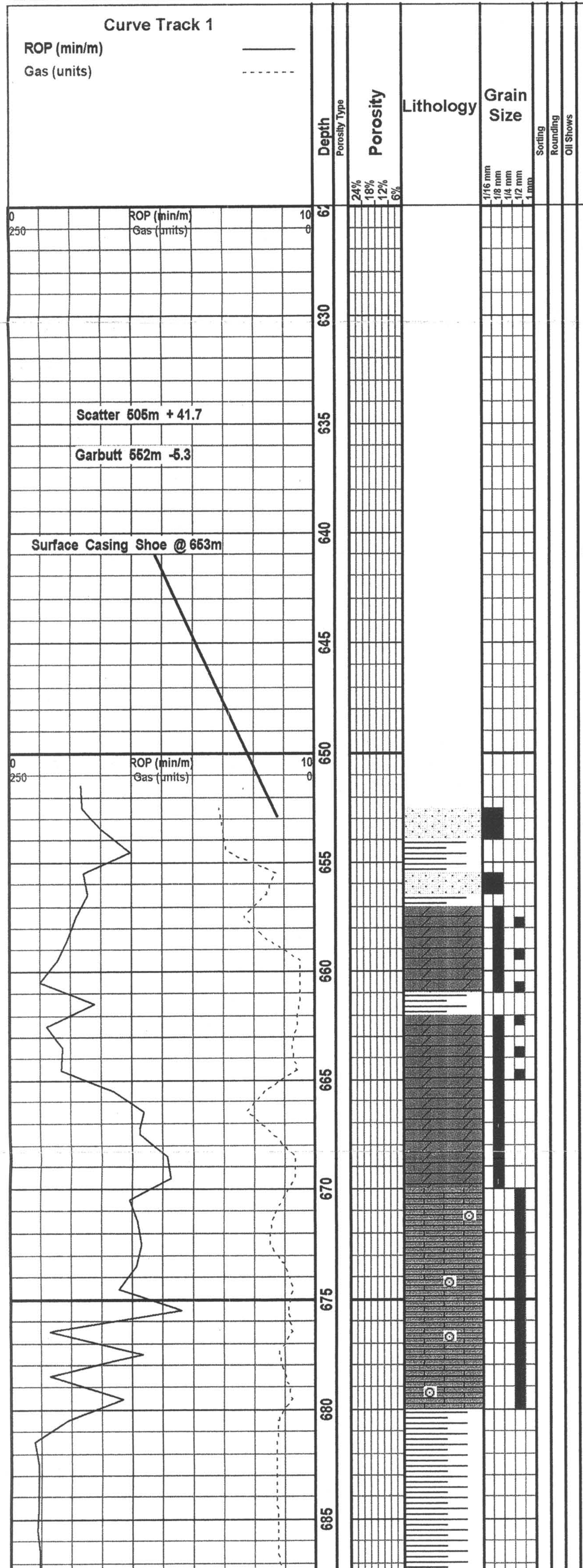
SORTING
- Well
- Moderate
- Poor

ROUNDING
- Rounded
- Subrnd
- Subang
- Angular

OIL SHOW
- ● Even
- Spotted
- Ques
- Dead

INTERVAL
- ■ Core
- Dst

EVENT
- Rft
- Sidewall



Geological Descriptions

Start Drilling below 215.9mm Intermediate Casing @ 7:30
11 - 02 - 2004

Shale , dk gy , fissile , non calc . Sandstone , br , f - vfg , arg , w/ thin interbeds & inclusions of Gilsonite .

Shale , dk br , splintery , non calc . Few crs clear well rdd Qtz pellets . Tr Dolomite , gy , f - crs xln , massive in pt , fair scattered yell fluor , gd cut .

Dolomite , cr , gy , f - crs xln , massive in pt , no por , gd yell fluor , quick mlky cut . Sandstone , br , silty , arg . Shale , dk gy , flakey , non calc .

Dolomite , cr , gy , f - crs xln , limey in pt , no obvious por , gd yell fluor , quick mlky cut . Tr Sandstone , gy , f - vfg , limey in pt .

Limestone , cr , frag , crs xln - massive , crinoid shadows , no por , gd yell fluor , gd cut .

Limestone , bf , frag , crinoidal ? , no obvious por , no shows , dull yell fluor , no cut .

Shale , gy , dk gy , fissile , non calc .

Shale , a / a . Limestone , bf , frag , crs , chky in pt .

Limestone , bf , fx , frag in pt , no por , scatt yell fluor , no cut . Shale , gy , blky , fissile .

Limestone , a / a . Shale , a / a .

Limestone , a / a . Shale , a / a .

Limestone , a / a . Shale , a / a .

Shale , gy , sl calc , blky (65%) . Limestone , bf , fx , foss , no por , dull yell fluor , no cut .

Dolomitic Limestone , cr bf , f - crs xln , frag in pt , crinoidal , no por , f - yell fluor , no cut .

Dolomitic Limestone , cr , a / a .

Shale , gn gy , splintery , micro mic , sli dolomitic .

Shale , gn gy , splintery , blky , micro mic , sli dolomitic .

Shale , a / a .

Shale , gn gy , blky , micro mic , sli dolomitic .

Shale , a / a . Siltstone , gy , sandy , dolomitic .

Siltstone , gy , sdy , dolomitic .

Shale , gy , blky , micro mic , sli dolomitic .

Shale , gy , blky , micro mic , sli dolomitic .

Shale , a / a .

Shale , gy , blky , fissile in pt , sli dolomitic .

Shale , a / a .

Shale , a / a .

Shale , a / a .

Shale , gy , blky , fissile .

Shale , a / a .

Shale , gy , blky , fissile .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , micaceous .

Shale , gy , blky , mic .

Shale , gy , blky , micaceous .

Shale , gy , micaceous , blky .

Shale , gy , blky , micaceous .

Shale , a / a .

Shale , gy , blky , micaceous .

Shale , gy , micaceous , blky . , sli dolomitic .

Shale , gy , a / a .

Shale , gy , a / a , becoming darker gy , fissile .

Shale , gy , md gy , blky , micro mic .

Shale , a / a . , sli pyritic .

Shale , md gy , fissile , sl carb .

Shale , md -dk gy , fissile , sl carb .

Shale , md gy , fissile .

Shale , md gy , fissile , sli carb in pt .

Shale , a / a .

Shale , a / a .

Shale , md gy , blky , micaceous . Tr Shale , dk gy , fissile .

Shale , dk gy , blky , carb , pyrite common .

Shale , bl - dk br , bituminous , blky , no fluor .

Shale , dk br , bituminous .

Shale , dk br , bituminous .

Shale , bl - dk br , bituminous , pyrite common .

Limestone , cr , chalky , fx in pt , no por , no shows . Shale , gy , silty , pyritic (90%)

Dolomite , gy , fx , silty , dns . Shale , gy , silty , pyritic .

Dolomite ,gy , fx , silty . Shale , gy , silty .

Shale , gy , dolomitic .

Shale , gy , dolomitic , micro mic , blky .

Shale , a / a .

repetitive gas peaks originate in the Exshaw section

no gas values

Shale , a / a .

Shale , a / a . Limestone , bf , mx , dns (10%)

Shale , a / a . Limestone , a / a (20%)

Shale , a / a . Limestone , bf , mx , dns (10%)

Limestone , bf , fx , dns .

Limestone ,bf , mx , dns . Shale , gy , micro mic , blky .

Shale , gy , silty . Limestone , bf , fx , dns .

Shale , a / a (50%) . Limestone , a / a (50%)

Shale , gy , silty , pt micro mic , blky .

Shale , a / a .

Shale , a / a .

Shale , a / a .

Shale , md gy , silty , dolomitic , micro mic , blky . Tr Limestone , cr , chalky .

Shale , a / a . Tr Limestone , a / a .

Shale , a / a . Tr Limestone , cr , fx , dns .

Shale , a / a . Tr Limestone , a / a .

Shale , a / a . Tr Limestone , a / a .

Shale , md gy , silty , dolomitic , micro mic . Limestone , bf , crinoidal , dns (10%) .

Shale , md gy , blky , micro mic .

Shale , a / a .

Shale , a / a .

Shale , a / a .

Shale , a / a .

Shale , md gy , a / a .

Shale , br , dk br (20 %) . Shale , md br , blky , micro mic (80 %)

Shale , br , dk br , bit (30 %) . Shale , a / a (70 %)

Shale , dk br , bituminous (100%)

Shale , a/a .

Shale , a / a .

Limestone , lt br , mx , dns .

Limestone , a / a .

Shale , lt br , silty , blky . Ls , lt br , mx , dns .

Shale , a / a . Ls , a / a .

Shale , a / a . Ls , a / a .

Shale , br , pt dk br , bit , blky . Limestone , lt br , fx , dns .

Limestone , bf , fx , foss in pt , dns . Shale , a / a .

Limestone , bf , cr , fx , chalky in pt . Shale , a / a .

Siltstone , gy , sdy . Shale , md gy , silty .

Shale , md gy , silty . Siltstone , gy , sdy . Limestone , bf , fx , dns .

Siltstone , gn gy , sdy . Shale , md gy , silty , hard .

Siltstone , a / a . Shale , a / a .

Siltstone , gn gy , sdy , pyritic .

Siltstone , gn gy , sdy , pyritic . Shale , md gy , silty , pyritic , micro mic .

Shale , md gy , flakey , micro mic . Siltstone , a / a .

Shale , a / a . Siltstone , a / a .

Siltstone , gn gy , s & p in pt , sdy . Shale , a / a .

Shale , md gy , silty , micro mic , flakey , hard .

Shale , a / a . Siltstone , gn gy , s & p , sandy .

Shale , a / a .

Shale , md gy , silty , micro mic , flakey , hard .

Shale , a / a .

Shale , a / a .

Shale , gy , dk gy , silty , micro mic , blky .

Limestone , bf , frag , dns (5%) . Shale , a / a .

Dolomite , bf , fx , frag , foss shadows , dns (70%) . Shale , a / a .

Dolomite , bf , fx - vf sucrosic , dns , no shows .

Dolomite , gy , bf , fx , dns .

Shale , md gy , silty , blky , micro mic , sli dolomitic .

Shale , a / a .

Shale , a / a .

Shale , dk gy , blky , silty , sli dolomitic , micro mic .

Shale , a / a .

Shale , a / a .

Shale , dk gy , silty , blky , micro mic .

Shale , a / a .

Shale , dk gy , silty , blky . micro mic , sli dolomitic .

Dolomite , bf , fx , arg , dns . Shale , dk gy , silty .

Dolomite , bf , fragmental , foss shadows , arg in pt , dns .

Shale , dk gy , silty , arg in pt .

Shale , dk gy , silty .

Shale , dk gy , silty , blky , sli dolomitic .

Siltstone , gy , sandy . Sandstone , clear , vfg , arg in pt , dns .

Siltstone , gy , dk gy , sandy , arg in pt , dns .

Dolomite , cr , fx , arg , dns . Siltstone , gy , dk gy , sandy , arg in pt , hard .

Siltstone , gy , dk gy , sandy .

Siltstone , gy , sandy . Shale , dk gy , br , siliceous , brittle .

Shale , dk gy , blky , calc . Siltstone , gy , sandy (20%)

Shale , dk gy , blky , calc .

Shale , md gy , blky , calc . Tr Limestone , bf , fx , dns .

Shale , md gy , blky , calc . Tr Limestone , a / a .

Shale , md gy , blky , dolomitic , micromic.

Shale , md gy , blky , dolomitic , micro mic .

Shale , md gy , dolomitic , blky , micro mic .

Shale , md gy , micro mic , blky , dolomitic.

Siltstone , gy , sandy . Shale , a / a (70%)

Shale , md gy , micro mic , dolomitic , blky . Tr Siltstone , a / a

Shale , md gy , micro mic , dolomitic , blky .

Shale , a / a .

Shale , a / a .

Shale , md gy , blky , micro mic

Shale , gy , md gy, blky , micro micaceous .

Shale , md gy , blky , splintery in pt , micro mic ,

Shale , a / a .

Shale , a / a .

Shale , md gy , micro mic , splintery , blky .

Shale , a / a .

Shale , a / a .

Shale , md gy , splintery , blky in pt , micro micaceous .

Shale , md gy , blky , flakey , non calc .

Shale , a / a .

Shale , a / a .

Shale , md gy , blky , flakey , micaceous .

Shale , md gy , blky , flakey , micaceous .

Shale , a / a .

Shale , a / a .

Shale , md gy , blky , micaceous .

Shale , a / a .

Shale , lt - md gy , blky , micaceous .

Shale , a / a .

Shale , lt - md gy , blky , micaceous .

Shale , md gy , blky .

Shale , md gy , blky .

Shale , md gy , blky , fissile in pt .

Shale , md gy , blky , fissile in pt , non calc .

Siltstone , gy , dolomitic , sandy , imperm . Shale , dk br , soft , bituminous .

Shale , md gy , blky , w/ a tr of Siltstone , a / a .

Shale ,md gy , blky .

Shale , md gy , blky .

Shale , md gy , blky , silty in pt .

Shale , md gy , blky .

Shale , md gy , blky , silty in pt .

Shale , md gy , blky .

Shale , md gy , becoming dk gy , blky , tr pyrite .

Shale , md gy , blky . Tr Shale , dk gy , blky , tr pyrite .

Shale , md gy , blky . Tr Shale , dk gy , blky . Tr pyrite .

Shale , a / a .

Shale , dk gy - bl , micromic , disseminated pyrite common, non calc .

Qtz pellets (60%) , f- crs , angular to semi rdd , yell , uncons , tr crs pyrite .

Limestone , br - lt br , mottled ,fragmental, foss ??, arg , few dolomite filled vugs , no shows , no fluor .

Limestone , br ,mottled, foss ?? , few dolomite filled vugs , no shows , no fluor .

Limestone , br , dk br , mottled , fx ,dns .

Limestone , br, fx , dns . Limestone , bf , finely foss , chky . no shows .

Limestone , br , mx , dns . Limestone , bf , arg , dns .

Limestone , br - dk br , mx , dns . Limestone , bf , arg , dns .

Limestone , br , dk br , mx , dns . Limestone , bf , arg , dns .

Limestone , a / a . Limestone , bf , fossiliferous ? , arg , dns .

Limestone , a / a . Limestone , a / a .

Limestone , gy , wackestone , arg , styolitic in pt , w / pyrobitumen partings .

Limestone , gy , ws , arg , styolitic , a / a . Limestone , cr , chalky . Tr Anhydrite , wh , fx .

Limestone , bf , fx , dns . Limestone , br , dk br , mx , dns , few styolites a / a .

Limestone , bf , finely foss , arg , dns . Limestone , br , dk br , mx , dns , w / few wh Anhydrite blebs .

Limestone , gy , ws , arg , dns . Limestone , br -dk br , mx , dns .

Limestone , gy , ws , arg , dns . Limestone , br , dk br , mx , dns .

Limestone , dk br , mx , dns . Limestone , gy , arg , dns .

Shale , dk br , bituminous , dolomitic , brittle . Limestone , dk br , mx , dns .

Limestone , bf , fx , dns . Limestone , br , dk br , mx , dns .

Shale , wh , dolomitic , soft . Limestone , dk br , mx , dns .

Shale , wh , dolomitic , soft . Limestone , bf , finely foss , arg , no shows , dns .

Limestone , bf , fx , finely frag , arg in pt , dns , no shows .

Dolomite , cr , mudstone , arg , no shows , no perm .

Dolomite , cr , mudstone , arg , no shows .

Dolomite , cr , arg . Limestone , dk br , mx , dns .

Limestone ,gy , fx , arg , w/ a few wh Anhydrite blebs , imperm , no shows .

Limestone , gy , fx , arg , styolitic , no por , no shows .

Limestone , a / a .

Limestone , a / a .

Limestone , gy , fx , arg , dns . No shows .

Limestone , gy - md gy , fx , arg in pt , fine lenses pyrobitumen, no shows , dns .

Limestone , a / a .

Limestone , gy , fx , arg , w / fine lenses wh xln Anhydrite , chky in pt .

Limestone , gy , finely sucrosic , arg , imperm .

Limestone , gy , vf sucrosic , arg , no shows . Pyrobitumen common .

Limestone , gy , vf sucrosic to chalky . Dolomite , dk gy , bl , mx , dns . Traces Dolomite , wh , massive (vein filling ??)

Limestone , gy , fx - chky . Traces Dolomite , wh , massive (vein filling ??)

Limestone , gy , a / a .

Limestone , gy , a / a .

Limestone , gy , fx - chky , styolitic in pt . Traces Dolomite , wh , massive (vein filling ?).

Limestone , a / a . Tr Dolomite , a / a .

Limestone , gy , arg . Limestone , bf , mx , dns .

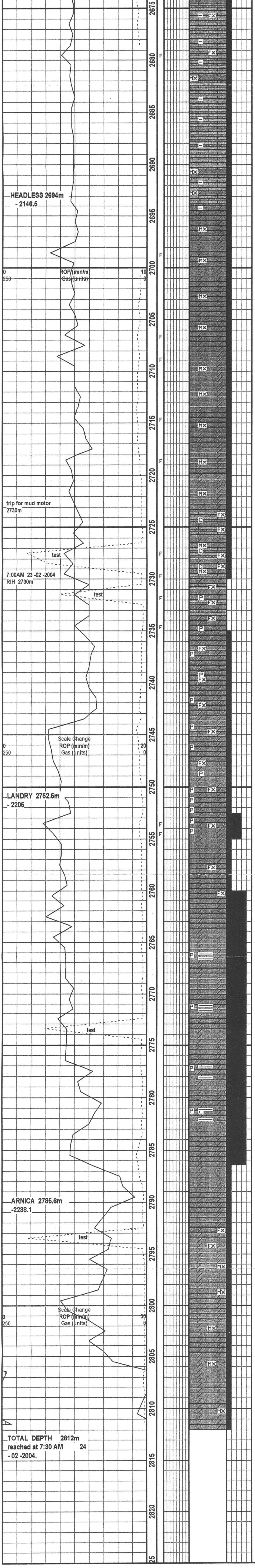
Dolomite , dk br , mx , dns (60%) . Limestone , gy , arg .

Limestone , gy , arg . Dolomite , br , mx , dns .

Limestone , bf , fx , dns . Limestone , gy , arg .

a / a .

Dolomite , br , fx , dns . Limestone , gy , arg . Tr Dolomite , wh , massive (vein filler ??) , dns .



Limestone , br , fx , dns . Limestone , gy , arg .

Limestone , gy , bf , vf sucrosic , arg in pt , impermeable , no shows . Tr Dolomite , dk br , mx , dns .

Limestone , gy , bf , vf sucrosic , arg in pt , imperm .

Limestone , gy , vf sucrosic , arg in pt . Dolomite , dk br , mx , dns . Tr Shale , bl , flakey .

Dolomite , dk br , mx , flakey . Dolomite , wh , massive (fracture filling) dns .

Dolomite , dk br , bl , micritic , styolitic w/ pyrobitumen partings . Tr Dolomite , wh , massive (fracture filling) dns .

Dolomite , dk br , bl , micritic , dns . Tr Dolomite , wh , massive (fracture filling) , dns .

Dolomite , dk br , micritic , fx in pt , dns . Inc in wh massive Dolomite fracture filling , dns .

Dolomite , dk br , a / a . Dolomite fracture fill a / a . Dolomite , bf , finely sucrosic , arg , dns .

Dolomite , dk br , a / a . Limestone , bf , fx , arg , pt chalky , no shows , dns .

Dolomite , a / a . Limestone , a / a .

Dolomite , dk gy , fx , pyritic , dns . Limestone , bf , fx , dns . Tr Dolomite , wh , fracture filler .

Dolomite , dk gy , fx , pyritic , dns .

Dolomite , dk gy , a / a .

Dolomite , dk gy , fx , pyritic , dns .

Dolomite , dk gy , fx (50%) . Dolomite , wh , massive , fracture filler (50%) . Abdt coarse pyrite .

Dolomite , gy , fx , silty in pt . Decrease in Dolomite fracture filler (10%) .

Dolomite , wh , massive - crs xln , no obvious por , no shows (65%) . Dolomite , gy , fx , w / abdt very fine disseminated pyrite . Tr bl Shale .

Dolomite , wh , a / a (50%) . Dolomite ,gy -dk gy , fx , dns . Tr black siliceous Shale .

Dolomite , wh , a / a . Tr Shale , green , dolomitic .

Dolomite , wh , gy , massive - cxln , dns , no shows . Tr large Qtz xls . Tr Shale , dk gy , siliceous , pyritic .

Dolomite , wh , gy , massive - cxln , dns . Few large Qtz xls . Tr Shale , dk gy , siliceous , pyritic .

Dolomite , bf , fx , dns . Dolomite , wh , a / a . Few large Qtz xls .

Dolomite , bf , fx , dns .

Dolomite , bf - lt br , mx , dns .

Dolomite , bf - lt br , mx , pt fx , dns .

Dolomite , a / a .