

FINAL WELL REPORT

Revision:	Version 2
Operating Company:	Vulcan Minerals Inc.
Partner Company:	Investcan Energy Corp.
Well Name:	Vulcan Investcan Red Brook #2
Rig:	Stoneham Drilling Rig #11
Field:	Bay St. George Basin, Permit #03-107
Location:	Western Newfoundland, Canada
Submission Date:	11-Mar-2010
Revised On:	4-Jun-2010

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Date:	Date:

Vulcan-Investcan Red Brook #2 Final Well Report



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1 Introduction (2.2)

The Vulcan Investcan Red Brook #2 well was drilled by Vulcan Minerals Inc. (Vulcan) (pursuant to a 50/50 joint venture with Investcan Energy Corp.) to test a flank play along the west side of the Flat Bay Anticline which is mapped at surface over a 20 km strike length. The main objective of the Red Brook #2 exploration well was to explore and evaluate the hydrocarbon bearing potential of structures at and below the Fischells Brook conglomerate identified off surface seismic of the Bay St. George basin. This exploratory oil and gas well is located approximately 1.5 km due east of the community of Heatherton in the Bay St. George area of western Newfoundland.

The well spudded on October 21st, 2009 using Stoneham Drilling's Rig #11, drilled to 1965 mMD, was cased with 178 mm production casing and suspended. Based on numerous gas shows and data from a full suite of wireline evaluation logs run over the potential pay zones, five drill stem tests were run on this well. The Red Brook #2 well flowed natural gas to surface on three drill stem tests. This was the first flow of natural gas to surface for any petroleum well in the Bay St. George basin and clearly demonstrates the hydrocarbon potential of this under-explored area.

On site drilling supervision was provided by Mr. Bill Williams and Don Campbell and site geological work by Mr. Michael Smith. Operations management was by Mr. Terry Brooker, P. Eng..

2 Map (2.3)

A map showing the location of the well and the final legal site survey are included in Appendix #1.

3 General Information (2.4)

- Well Name Vulcan Investcan Red Brook #2
- Operator Vulcan Minerals Inc.
- Partner Investcan Energy Corp.

 Permit
 - Exploration Permit #03-107

 DPA
 - #2009-116-03

 ADW
 - #2009-116-03-01

Contractor - Stoneham Drilling



Drilling Rig - Rig #11

Location - NAD 27, UTM Zone 21; N 5,347,380.564m, E 370,104.380m

Survey Summary

While drilling single shot surveys and the mud-pulse Teledrift tool were used to track wellbore deviation. The final survey list used totco single-shot (inclination only) surveys from 36 - 890 m and then the Baker wireline deviation survey from 920 – 1940m.

4 Difficulties and Delays (2.5)

See the drilling curve and time breakdown included in Appendix #2 with highlights as follows:

- 2.5 days waiting on the 339.7mm casing to arrive from supplier in Ontario.
- 1 day waiting on Stoneham's BOP technician from Calgary to arrive and fix the remote BOP control.
- 6 days curing losses with LCM and cement plugs from 242-321 m.
- Drilled into a pressured zone at 948m and increased mud weight up to 1200 kg/m3.
- 2 days delayed waiting on Wireline crew to arrive on site for the main hole logging.

5 Drilling Operations (3.0)

5.1		- 57.1 m (ref. MSL) - 6.3 m (ref. GL)
5.2	Total Depth l	- 1965.00 meters MD KB/ 1951.64 meters TVD KB ogged – 1955 meters MD KB casing flange – -0.27 m (ref. GL)
5.3	Spud Date	- 0000 hrs, Oct. 21 st , 2009
5.4	TD Date	- 1015 hrs, Nov. 23 rd , 2009
5.5	Rig Release	- 2359 hrs, Dec. 5 th , 2009
5.6	Well Status	- well is suspended with 177.8mm casing set to 1947.0 meters.



5.7 Hole Size and Depths

- Conductor	- Drilled 431.8 mm hole to 220 m
- Surface	- Drilled 340 mm hole to 889 m

- Main Drilled 215.9 mm hole to 1965 m
- 5.8 Bit records

There were a total of 8 bit runs during the well. See Appendix #2 for details.

- 5.0 Drilling Operations (continued)
 - 5.9 Casing and Cementing Record
 - Conductor

Ran 339.7mm, 71.4 kg/m, H-40 to 220m KB. Cemented with 33.75t BJ Portland + 2% CaCl2 @ 1878 kg/m3. Full returns to surface.

- Surface

Ran 244.5 mm, 64.7 kg/m L-80 casing 0 - 331m KB; Ran 244.5 mm, 53.6 kg/m J-55 casing 331 - 885m KB; Cemented with 6.4 t Class "G" @1826kg/m3 (w/ 3% CaCl2 & 6.94% NaCl) + 24.6t BJMaxxCem*@1650kg/m3 (w/ 3% CaCl2 & 6.94% NaCl). Returns to surface.

- Main

Ran 177.8 mm, 38.7 kg/m J-55 casing to 1947m KB; Cemented with 13.27t Fill-Lite w/0.9% FL-5 + 2%A-11 + 0.7% R-3 @ 1518 kg/m3 & 8t Class 'G' w/ 2% Microsil 12P + 0.4% FL-5 + 0.5% CD-3 @1901 kg/m3. Approximately 50% of scavenger returns back to surface; Calculated TOC at 107m.

****a 0.70m MARKER JOINT was run at 1240.79m MD KB with a limiting ID of 165.1254mm (6.501")***



							ELEV:	GND	57.10 m
					Hanger	Seals	(ref. MSL)	КВ	63.40 m
Hole SIZE (mm)	Csg SIZE (mm)	kg/m	GRADE	CONN	Type/ Make*	Type/ Make*	JNTS	Shoe mMD- KB	Joints that have centralizers (1st joint is after float collar)
431.8	339.7	71.4	H-40	STC	STREAM-FLO CROWN CASING HANGER MANDREL C9FBD	STREAM-FLO CROWN PACKOFF BUSHING FBD	18	220.18	none
311	244	64.7	L-80	LTC	STREAM-FLO CROWN CASING HANGER MANDREL	STREAM-FLO CROWN PACKOFF BUSHING	27	331	1, 1, 2, 2, 5, 8, 11,14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, 47, 50,
216	244	38.7	J-55 i-55	LTC	CUFBD STREAM-FLO CROWN CASING HANGER MANDREL	STANDARD FBD STREAM-FLO CROWN PRIMARY PACKOFF FBD	46	1947.04	53 1, 1, 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, 47, 50, 53, 56, 59, 62, 65, 68, 71, 74, 77, 80, 83, 86, 89, 92, 95, 98, 101, 104, 107, 110, 113, 116, 119, 121, 124, 127, 120
210	1/8	38.7	J-55		CUFBD	PACKOFF FBD	153	1947.04	130

5.10 Sidetracked Hole

There were no sidetracks during the well.

5.11 Drilling Fluid

The well was drilled with a simple low viscosity water-based mud. A summary table is shown below:

	Depth	Size	Fluid	Viscosity	Weight
Casing	[m]	[mm]	Туре		kg/m3
Conductor Hole	212	431.8	Polymer Water Based Mud	102-111	1115-1145
Surface Hole	889	311.15	Salt Saturated Water Based Mud	34-55	1080-1255
Production Casing	1965	215.9	Polymer Water Based Mud	41-86	1190-1270
			Water with Oxygen Scavanger,		
Completion	1965	215.9	Biocide, Filming Amine and Caustic Soda		1000

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5.0 Drilling Operations (continued)

5.12 Fluid Disposal

The drilling mud and cuttings were transported to the Jefferys municipal landfill for disposal in accordance with the applicable government regulations.

5.13 Fishing Operations

There were no fishing operations.

5.14 Well Influxes

At 20:45 on November 12th, 2009 there was an influx of 0.25m3. The BOPs were closed and the influx was circulated out using the Driller's Method. The mud density was increased from 1020 kg/m3 to 1200 kg/m3. There was no gas to surface, nor sheen on the surface of the mud tanks observed.

5.15 Formation Leak-Off Tests

There were no Leak-Off tests performed during drilling operations.

A FIT was performed on 21-Nov-2009; 7000 Kpa at surface with a hole depth of 892m and mud weight of 1020 kg/m3 for a calculated gradient of 17.91 kpa/m (1826 kg/m3 equivalent mud weight).

5.16 Time Distribution

A daily detailed time breakdown is available from the Vulcan morning reports included in Appendix #3.

5.17 Deviation Plot

There was very little well deviation for the first 700 mMD KB of drilling. From 754 to 890 meters the well angle built from 3.00 to 7.02 degrees inclination. At that point a packed BHA was used and effectively held the well angle between 7.0 to 9.5 degrees from 890 to 1965 meters.



5.0 Drilling Operations (continued)

While drilling single shot surveys and the mud-pulse Teledrift tool were used to track wellbore deviation. The final survey list used totco single-shot (inclination only) surveys from 36 - 890 m and then the Baker wireline deviation survey from 920 – 1940m. The wellbore position is calculated using the average angle method for both inclination and azimuth. The deviation plot and surveys are in Appendix #1.

5.18 Suspension / Abandonment Plugs

There are no plugs in the main hole as it was cased and cemented.

5.19 Well Schematic

A schematic showing hole sizes and depths, casing sizes and depths, and cementing tops is included in Appendix #4. The final installed wellhead configuration is also included.

5.20 Fluid Samples

There were no formation fluid samples taken during the drilling of the well. However during the DST runs in the main hole 3 gas samples were obtained in the downhole testing tool. The analysis of these samples in included in Appendix #5.



6 Geological (4.0) (Prepared by Mr. Michael Smith)

The geological summary report and final geological column diagram is included in Appendix #6. A description of all cuttings collected is in the detailed report. All bagged and vialed cuttings samples are stored in Vulcan's St. John's office.

6.1 Sidewall cores

Thirty one (31) sidewall cores were taken in the 216mm open hole section with Baker Inteq's RCOR tool. The core descriptions are included in the geology report in Appendix #6. The analysis of these samples is still pending at the time of this report's submission.

6.2 Hydrocarbon Shows

The Red Brook #2 well flowed natural gas to surface on three drill stem tests. This is the first flow of natural gas to surface for any petroleum well in the Bay St. George basin and clearly demonstrates the hydrocarbon potential of this under-explored area. The well was cased to a total depth of 1965 metres for further evaluation and determination of accurate sustainable flow rates in order to fully assess the discovery. The well tested a flank play along the west side of the Flat Bay Anticline which is mapped at surface over a 20 km strike length. It was drilled pursuant to a 50/50 joint venture with Investcan Energy Corp.

During drilling of the well an over pressured zone was encountered which required using a heavy mud system to control the well. Based on the drill stem test results significant formation damage was caused by this heavy drilling fluid. This damage constricted the formation's ability to flow natural gas into the well bore. As a result the flow rates achieved at Red Brook on the drill stem tests are not an accurate reflection of the potential flow rates achievable after the reservoirs have been stimulated by hydraulic fracturing. A fracture stimulation is designed to increase permeability and access formation fluids deep beyond the damaged zone. Consequently, flow rates can increase significantly as evidenced by the results achieved in similar rocks in New Brunswick. As a result, the Company is having all evaluation data analyzed towards designing a fracture stimulation program. This program will also include an evaluation of the Robinsons #1 well which encountered a significant number of gas shows as reported on October 15, 2009.

A full geological striplog is attached for detailed reference in Appendix #7.

7 Well Evaluation (5.0)

7.1 Logging Program

All wireline logging information is attached in Appendix #8. For reference a summary of the wireline logs run by <u>BAKER ATLAS</u> is shown below:

Hole size	Logging	Depth	Services Run	Run #	Date
	Start	Stop			
311.15 mm	883.9	220	Laterlog/GR/Caliper	3	10-Nov-2009
311.15 mm	888	20	DENSITY/NEUTRON/GR/X-Y CAL	2	10-Nov-2009
311.15 mm	881	220	SONIC/GR/Digital Spectralog	1	10-Nov-2009
215.9 mm	1956.7	885	INDUCTION/GR/Caliper/SP	1	25-Nov-2009
215.9 mm	1956.7	885	DENSITY/NEUTRON/GR/X-Y CAL	1	25-Nov-2009
215.9 mm	1952	800	SONIC/GR/Digital Spectralog	2	25-Nov-2009
215.9 mm	1955	885	Zero Offset Vertical Seismic Profile w/ Gamma Ray		27-Nov-2009
215.9 mm	1945	890	Rotary Sidewall Coring	4	26-Nov-2009
215.9 mm			ForMation Tester (Pressure tester)	5	27-Nov-2009
215.9 mm	1950	885	STAR DIP/IMAGER	3	25-Nov-2009

7.2 Drill Stem Tests

All DST information (HOLLAND TESTERS) is provided in Appendix #9. A summary of the DSTs is shown below:

DST	Hole size	Test	Testing De	epth mMD	Result				
#		Туре	Тор	Bottom					
		Conventional			Successful test- Gas to surface				
1	215.9 mm	Straddle	1556	1574	on Main Flow				
		Conventional			Successful Test- No gas to				
2	215.9 mm	Straddle	1360	1383	surface				
		Conventional			Successful test- Gas to surface				
3	215.9 mm	Straddle	1297	1338	on Main Flow				
		Conventional			Successful Test- No gas to				
4	215.9 mm	Straddle	1587	1641	surface				
		Conventional			Successful test- Gas to surface				
5	215.9 mm	Straddle	872	908	on Main Flow				

Formation Pressures from the Baker wireline FMT tool is also included in Appendix #8.



8 Synthetic Seismograms

The synthetic seismogram for Red Brook #2 is shown in Appendix #10.

9 Vertical Seismic Profiles/Velocity Surveys

The complete ZVSP Processing report is included in Appendix #11.

10 Formation Stimulation

A fracture stimulation program is planned for the well in 2010.

11 Benefits tracking

Included in Appendix #12 is the complete benefits tracking for the well.

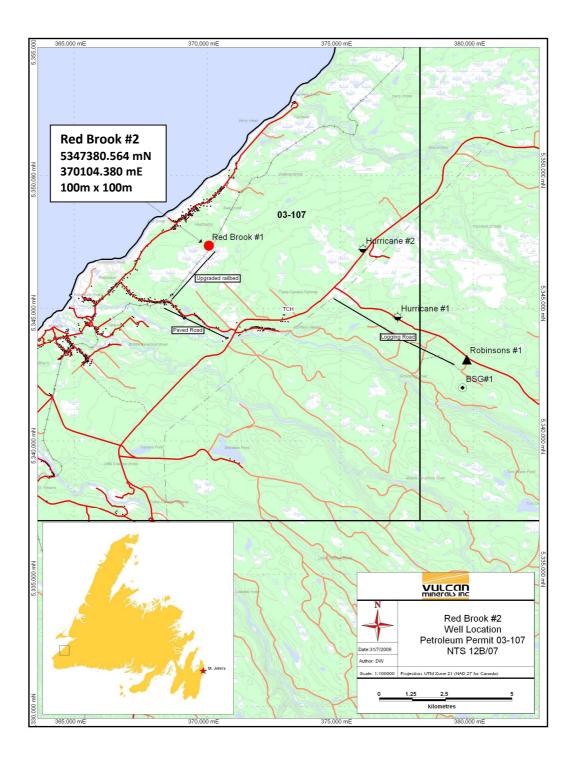
12 Drilling costs

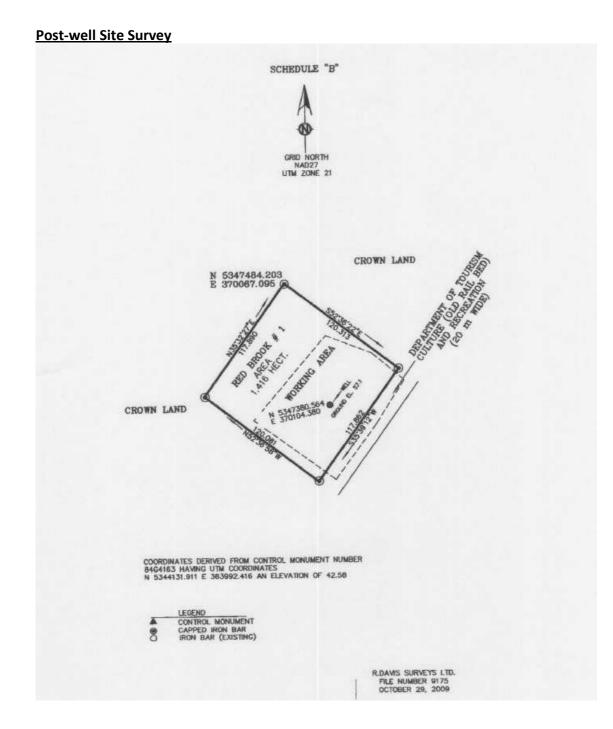
Included in Appendix #13 is a summary of the drilling costs for the well.

13 Approvals

Included in Appendix #14 are copies of the various government approvals granted during operations.

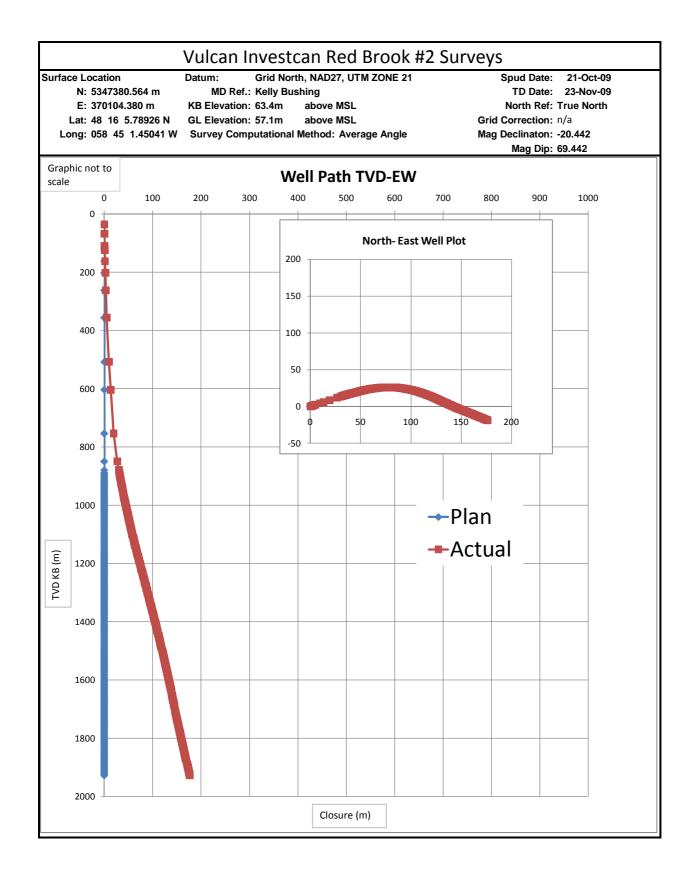
APPENDIX 1: WELL LOCATION MAP AND DEVIATION SURVEY





ulcan Mir	nerals Inc. (Confident	tial			23/02/2010											Page
					Vulca	an Inv	vestca	n Red	d Bro	ok #2	Survey	'S					
E: Lat:	5347380.5 5347380.5 370104.38 48 16 5.7 058 45 1.	80 m 8926 N	Datum: Grid No NAD27 UTM ZO	orth	MD Ref.: Kelly BushingSpud Date:21-Oct-09Mag Declinaton:-20.44KB Elevation:63.4m above MSLTD Date:23-Nov-09Mag Dip:69.442GL Elevation:57.1m above MSLNorth Ref:Grid NorthGrid Correction:n/aSurvey Computational Method:Average Angle								69.442				
Measured Depth	Inclination	Azimuth	Delta	Ave Incl	Ave Azm	dTVD	TVD	dNS	dEW	Horizontal Disp	NS	EW	Closure	Closure Azimuth	Dogleg	DLS	Comment
(m)	(deg)	(deg)	md	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(deg)	(deg)	(deg/30m)	
36.00	0.75	65.97	36.00	0.38	65.97	36.00	36.00	0.10	0.22	0.24	0.10	0.22	0.24	1.15	0.75	0.63	Incl. only totco
68.00	0.50	65.97	32.00	0.63	65.97	32.00	68.00	0.14	0.32	0.58	0.24	0.53	0.58	1.15	0.25	0.23	Incl. only totco
109.00	0.25	65.97	41.00	0.38	65.97	41.00	109.00	0.11	0.25	0.85	0.35	0.78	0.85	1.15	0.25	0.18	Incl. only totco
162.00	1.00	65.97	53.00	0.63	65.97	53.00	161.99	0.24	0.53	1.43	0.58	1.31	1.43	1.15	0.75	0.42	Incl. only toted
202.00	1.50	65.97	40.00	1.25	65.97	39.99	201.98	0.36	0.80	2.30	0.94	2.10	2.30	1.15	0.50	0.37	Incl. only totco
262.00	0.75	65.97	60.00	1.13	65.97	59.99	261.97	0.48	1.08	3.48	1.42	3.18	3.48	1.15	0.75	0.38	Incl. only totco
356.00	1.25	65.97	94.00	1.00	65.97	93.99	355.96	0.67	1.50	5.12	2.09	4.68	5.12	1.15	0.50	0.16	Incl. only totco
508.00	2.75	65.97	152.00	2.00	65.97	151.91	507.87	2.16	4.84	10.43	4.25	9.52	10.43	1.15	1.50	0.30	Incl. only toted
604.00	2.00	65.97	96.00	2.38	65.97	95.92	603.78	1.62	3.63	14.41	5.87	13.16	14.41	1.15	0.75	0.23	Incl. only toted
754.00	3.00	65.97	150.00	2.50	65.97	149.86	753.64	2.66	5.98	20.95	8.53	19.13	20.95	1.15	1.00	0.20	Incl. only toted
850.00	6.70	65.97	96.00	4.85	65.97	95.66	849.30	3.31	7.41	29.06	11.84	26.55	29.06	1.15	3.70	1.16	Incl. only totco
880.00	7.10	65.97	30.00	6.90	65.97	29.78	879.08	1.47	3.29	32.67	13.30	29.84	32.67	1.15	0.40	0.40	Incl. only totco
890.00	7.02	65.97	10.00	7.06	65.97	9.92	889.00	0.50	1.12	33.90	13.80	30.96	33.90	1.15	0.08	0.24	Incl. only totco
920.00	6.94	68.45	30.00	6.98	67.21	29.78	918.78	1.41	3.36	37.54	15.22	34.32	37.54	1.15	0.31	0.31	From Baker W/
950.00	7.21	69.99	30.00	7.07	69.22	29.77	948.55	1.31	3.45	41.23	16.53	37.78	41.23	1.16	0.32	0.32	From Baker W/
980.00	7.50	70.19	30.00	7.35	70.09	29.75	978.31	1.31	3.61	45.06	17.83	41.39	45.06	1.16	0.30	0.30	From Baker W/
1010.00	7.83	70.39	30.00	7.66	70.29	29.73	1008.04	1.35	3.77	49.06	19.18	45.15	49.06	1.17	0.33	0.33	From Baker W/
1040.00	8.17	70.97	30.00	8.00	70.68	29.71	1037.75	1.38	3.94	53.22	20.57	49.09	53.22	1.17	0.35	0.35	From Baker W/
1070.00	8.41	72.37	30.00	8.29	71.67	29.69	1067.43	1.36	4.11	57.54	21.93	53.20	57.54	1.18	0.32	0.32	From Baker W
1100.00	8.67	75.48	30.00	8.54	73.92	29.67	1097.10	1.23	4.28	61.97	23.16	57.48	61.97	1.19	0.53	0.53	From Baker W/
1130.00	8.90	78.19	30.00	8.78	76.83	29.65	1126.75	1.04	4.46	66.50	24.20	61.94	66.50	1.20	0.47	0.47	From Baker W/
1160.00	8.95	81.96	30.0	8.92	80.08	29.64	1156.39	0.80	4.58	71.07	25.00	66.52	71.07	1.21	0.59	0.59	From Baker W
1190.00	9.07	84.84	30.0	9.01	83.40	29.63	1186.01	0.54	4.67	75.63	25.54	71.19	75.63	1.23	0.47	0.47	From Baker W/
1220.00	9.10	87.31	30.0	9.09	86.07	29.62	1215.64	0.32	4.73	80.20	25.87	75.91	80.20	1.24	0.39	0.39	From Baker W/
1250.00	9.22	91.82	30.0	9.16	89.56	29.62	1245.26	0.04	4.78	84.75	25.91	80.69	84.75	1.26	0.73	0.73	From Baker W/

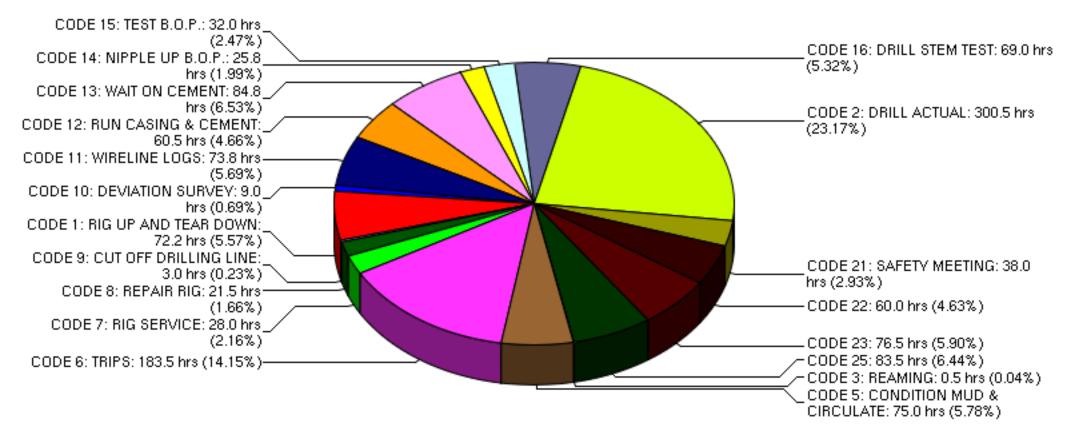
Vulcan Min	erals Inc.	Confident	ial						23/02/2	010							Page 2
1280.00	9.18	96.15	30.0	9.20	93.98	29.61	1274.87	-0.33	4.79	89.22	25.57	85.48	89.22	1.28	0.69	0.69	From Baker W/L
1310.00	8.75	100.26	30.0	8.97	98.20	29.63	1304.50	-0.67	4.63	93.48	24.91	90.10	93.48	1.30	0.77	0.77	From Baker W/L
1340.00	8.94	103.94	30.0	8.85	102.10	29.64	1334.15	-0.97	4.51	97.60	23.94	94.62	97.60	1.32	0.60	0.60	From Baker W/L
1370.00	9.31	106.98	30.0	9.13	105.46	29.62	1363.77	-1.27	4.59	101.76	22.67	99.20	101.76	1.35	0.60	0.60	From Baker W/L
1400.00	9.38	110.33	30.0	9.34	108.66	29.60	1393.37	-1.56	4.61	105.94	21.11	103.82	105.94	1.37	0.55	0.55	From Baker W/L
1430.00	9.27	113.10	30.0	9.32	111.72	29.60	1422.97	-1.80	4.52	110.04	19.31	108.33	110.04	1.39	0.46	0.46	From Baker W/L
1460.00	9.23	115.65	30.0	9.25	114.37	29.61	1452.58	-1.99	4.39	114.05	17.32	112.72	114.05	1.42	0.41	0.41	From Baker W/L
1490.00	9.44	117.75	30.0	9.33	116.70	29.60	1482.19	-2.19	4.35	118.04	15.14	117.07	118.04	1.44	0.40	0.40	From Baker W/L
1520.00	9.50	120.62	30.0	9.47	119.18	29.59	1511.78	-2.41	4.31	122.04	12.73	121.38	122.04	1.47	0.48	0.48	From Baker W/L
1550.00	9.41	122.03	30.0	9.46	121.33	29.59	1541.37	-2.56	4.21	126.00	10.17	125.59	126.00	1.49	0.25	0.25	From Baker W/L
1580.00	9.20	122.03	30.0	9.31	122.03	29.61	1570.97	-2.57	4.11	129.92	7.60	129.70	129.92	1.51	0.21	0.21	From Baker W/L
1610.00	8.66	121.51	30.0	8.93	121.77	29.64	1600.61	-2.45	3.96	133.76	5.14	133.66	133.76	1.53	0.54	0.54	From Baker W/L
1640.00	8.03	122.18	30.0	8.35	121.84	29.68	1630.29	-2.30	3.70	137.39	2.85	137.36	137.39	1.55	0.64	0.64	From Baker W/L
1670.00	7.88	121.79	30.0	7.96	121.99	29.71	1660.00	-2.20	3.52	140.88	0.65	140.88	140.88	1.57	0.16	0.16	From Baker W/L
1700.00	8.14	120.35	30.0	8.01	121.07	29.71	1689.71	-2.16	3.58	144.47	-1.51	144.46	144.47	-1.56	0.33	0.33	From Baker W/L
1730.00	8.44	119.15	30.0	8.29	119.75	29.69	1719.40	-2.15	3.75	148.26	-3.66	148.21	148.26	-1.55	0.34	0.34	From Baker W/L
1760.00	8.65	117.55	30.0	8.54	118.35	29.67	1749.07	-2.12	3.92	152.25	-5.77	152.14	152.25	-1.53	0.32	0.32	From Baker W/L
1790.00	8.64	117.73	30.0	8.64	117.64	29.66	1778.72	-2.09	3.99	156.33	-7.86	156.13	156.33	-1.52	0.03	0.03	From Baker W/L
1820.00	8.71	118.95	30.0	8.67	118.34	29.66	1808.38	-2.15	3.98	160.42	-10.01	160.11	160.42	-1.51	0.20	0.20	From Baker W/L
1850.00	8.81	119.69	30.0	8.76	119.32	29.65	1838.03	-2.24	3.98	164.55	-12.25	164.09	164.55	-1.50	0.15	0.15	From Baker W/L
1880.00	9.06	118.23	30.0	8.93	118.96	29.64	1867.67	-2.25	4.08	168.79	-14.50	168.17	168.79	-1.48	0.34	0.34	From Baker W/L
1910.00	8.78	118.49	30.0	8.92	118.36	29.64	1897.31	-2.21	4.09	173.07	-16.71	172.26	173.07	-1.47	0.28	0.28	From Baker W/L
1940.00	9.01	118.50	30.0	8.90	118.49	29.64	1926.94	-2.21	4.08	177.35	-18.93	176.34	177.35	-1.46	0.23	0.23	From Baker W/L
1965.00	9.01	118.50	25.0	9.01	118.50	24.69	1951.64	-1.87	3.44	180.98	-20.79	179.78	180.98	-1.46	0.00	0.00	Proj. to TD



APPENDIX 2: DRILLING CURVE, TIME BREAKDOWN & BIT RUN SUMMARIES

Daily Drilling Reports Time Breakdown

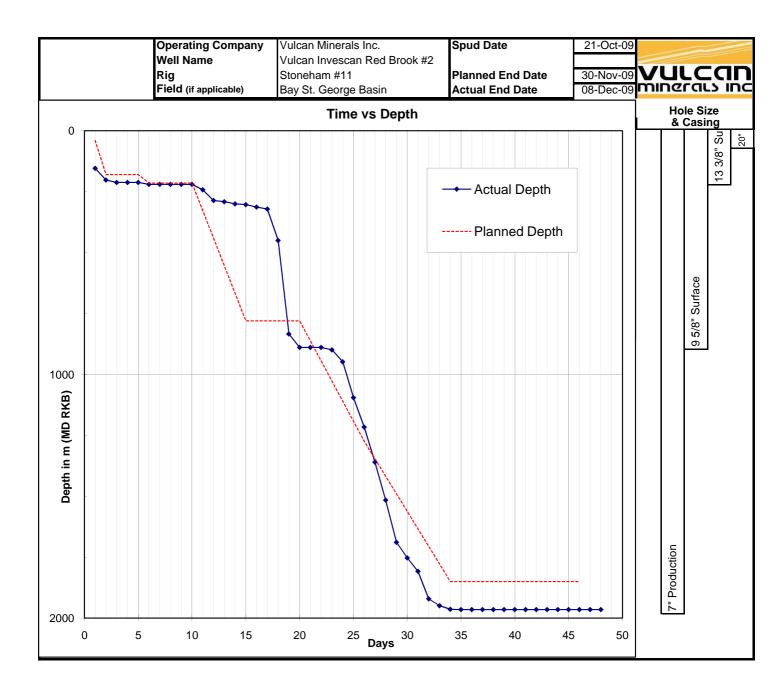
Well name:	VULCAN INVESTCAN RED BROOK #2	Spud Date:	Oct 21,2009
Operator:	Vulcan Minerals Inc.	Release Date:	Dec 07,2009
Contractor:	Stoneham Drilling Inc.	From Date:	Oct 16,2009
Rig:	Stoneham 11	To Date:	Dec 08,2009



Time vs Depth Data

Operating Company Well Name	Vulcan Minerals Inc. Vulcan Invescan Red E Stoneham #11	Spud Date To Date	21-001-09	Planned End Expected End		30-Nov-0 08-Dec-0
Rig Field (if applicable)	Bay St. George Basin					
,	Plan		Actual			
	Fidit		Actual			
Operation	Planned Days	Planned Depth	Operation	Date	Actual Days	Actual Depth
Lease prep	-35	0	Spud 17" hole	21-Oct-09	1	15
Cellar/lease prep + eng	-30	0	Drilling 17" hole	22-Oct-09	2	20
Cellar/lease prep + eng	-25	0	TD 17" hole- waiting on casing	23-Oct-09	3	21
Mob cost + Demob + eng	-20	0	Waiting on Casing	24-Oct-09	4	21
Cellar/lease prep + eng	-15	0	Waiting on Casing	25-Oct-09	5	21
Cellar/lease prep + eng	-10	0	Drill to 220m run casing	26-Oct-09	6	22
Rig-down	-5	0	POOH with casing- RIH clean out trip	27-Oct-09	7	22
Spud 17.5" conductor Drill to Lost Circ Zone	1 2	40 180	Cement and istall wellhead Pressure Test Casing and BOPs	28-Oct-09 29-Oct-09	8 9	22 22
Fix Lost Circ	5	180	Pickup BHA- waiting on BOP tech	29-0ct-09 30-0ct-09	9 10	22
Drill to 13 3/8" casing pt	6	215	FIT and Drilling 12 1/4" hole- losses	31-Oct-09	10	24
Casing and cementing	10	215	Pumping cement for losses- drilling	01-Nov-09	12	28
	10	215	Pumping cement for losses- drilling	02-Nov-09	13	29
Drill to 9 5/8" casing pt	15	780	Pumping cement for losses- drilling	03-Nov-09	14	30
Logging	16	780	Pumping cement for losses- drilling	04-Nov-09	15	30
Casing and cementing	20	780	Pumping cement for losses- drilling	05-Nov-09	16	31
Drilling 8.5" section	26	1274	Pumping cement for losses- drilling	06-Nov-09	17	32
Drill to 7" casing point	34	1850	Drilling 17 1/2" hole	07-Nov-09	18	45
Logging	36	1850	Drilling 17 1/2" hole	08-Nov-09	19	83
Testing	38	1850	TD section- W/L logging	09-Nov-09	20	88
Casing and cementing	40	1850	W/L logging & run 9 5/8" casing	10-Nov-09	21	88
Rig Release	46	1850	Cement and install wellhead	11-Nov-09	22	88
			RIH 8 1/8" section, drilled into influx	12-Nov-09	23	89
			Weight up to 1.2sg and RIH packed BHA	13-Nov-09	24	94
			Drilling	14-Nov-09	25	109
	I	I	Drilling Drilling	15-Nov-09 16-Nov-09	26 27	121 136
			Drilling	17-Nov-09	27	15
			Drilling	18-Nov-09	20	168
			POOH due to low ROP, RIH Insert	19-Nov-09	30	175
			POOH to change to PDC	20-Nov-09	31	180
			Drilling	21-Nov-09	32	192
			Pooh to check bit	22-Nov-09	33	194
			TD Well- Circulate	23-Nov-09	34	196
			Circ- WL	24-Nov-09	35	196
			Clean out, Wireline Run #1: TCB, Run #2: Sonic	25-Nov-09	36	196
			Run #3: STAR Imager, Run #4: RCOR	26-Nov-09	37	196
			Run #5: FMT, Run #6: VSP	27-Nov-09	38	196
			Clean out run, DST#1	28-Nov-09	39	196
			DST#2 DST#3	29-Nov-09	40	196
			DST#3 DST#4	30-Nov-09 01-Dec-09	41 42	196 196
			DST#5	01-Dec-09 02-Dec-09	42	
			Clean Out run	02-Dec-09 03-Dec-09	43	
			Run Casing and cement	03-Dec-09	44	196
			Nipple down BOPs, rig release at 23:59	05-Dec-09	46	196
			Tear-out rig	06-Dec-09	40	196
			Finish tear out- lay derrick down	07-Dec-09	48	196
			······································	08-Dec-09	49	
				00-Dec-03		

Prepared By Date Shane Halley 24-Feb-10



Bitrun Summary Table

Well:Vulcan Investcan Red Brook #2Spud:21-Oct-09

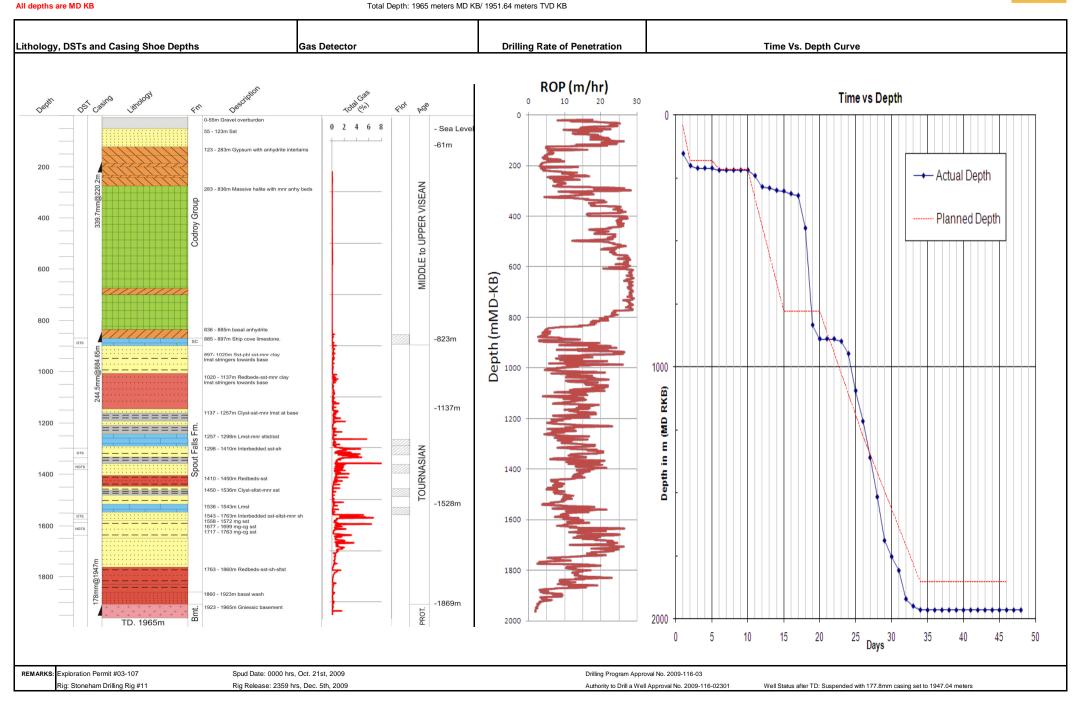
No.	Size	Mfr	Туре	IADC	Serial No.	Depth Out	Depth Drilled	Hours	Accum. Hrs	ROP	Weight	RPM	Date Run
<u>1</u>	432	REED	17T11		LX2077	220	220	37.5	37.5	5.87	5/12	130/175	2009-Oct-26
<u>2</u>	311	HUGHES	GT-CS1		5157199	242	22	7.25		3.03	10	120	2009-Oct-30
<u>3</u>	311	HUGHES	TN1593		109973	889	647	53.5		12.09	5/15	70/150	2009-Nov-10
<u>4</u>	216	HUGHES	GX-30DX	537	6065996	899	10	4.25		2.35	6	70	2009-Nov-12
<u>5</u>	216	HUGHES	HCD506ZX		7120914	1750	851	117.75		7.23	6/15	60/130	2009-Nov-18
<u>RR</u>	216	HUGHES	GX-30DX	537	6065996	1776	26	9		2.89	14/15	65/70	2009-Nov-19
<u>7</u>	216	HUGHES	HC505ZX	M32	7114926	1935	159	32.75		4.85	9/18	55/80	2009-Nov-21
<u>8RR</u>	216	HUGHES	GX30DX	537	6065996	1965	30	17	279	1.76	0/18	1/60	2009-Dec-05

Vulcan-Investcan Red Brook #2 Exploration Well, Oct-Dec 2009

Position: projection NAD 27, UTM Zone 21; N 5,347,380.564m, E 370,104.380m



GL= +57.1 m (rel. MSL), KB Ref = + 6.3 m (rel. GL) Total Depth: 1965 meters MD KB/ 1951.64 meters TVD KB



Liner own 165 165 BHA Length: 279 182.02 m Strap: mominin Board: Dell Pielo (D. mominin) Board: Dell Pielo (D. mominin) Board: Dell Pielo (D. mominin) Board: mominin mm SPM 0 D.C. Annular Vel: molec mominin DP Annular Vel: molec mominin DP Annular Vel: molec mominin DP Annular Vel: molec mominin State Deritt Azimuth North East Time Gad Cacub Preval 36.00 0.75 Image: State (D. State (D.				Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Depth: 154.0 mKB Progresses 154.0 Diffing Enc ROP, mArr. Kit: Storetum # 11 the next of Sport LCM pill, dial aload	Well:		Vulc						~	•	Date:	21-0)ct-09
Operation (# 0800) hrs: Poil out to spot LCM pill. KB etc. 6.17.5 m. (* 0.9 m.) Bit # Stor Make Made Latter Fordia National Natinterne Nate National National National National National Nationa		154.0						•					
the set of Spot LCM pill, delia back UN EXE or Spot LCM pill, delia back EXE or Status EXE or Status EXE or Status IO LE GO R. 1 432 Til LZ2077 0 0 Notes Rev Rev Rev Rev Rev Rev Rev Rev Notes Rev	-			0		8.					0		
Bit # Size/Male Boards ADC Serial No. In Out Metree Hours Nozzles RPM WOB kalan TO D J. B G O R 1 432 111 L2077 0 Bit / Sub/Floid sub 1-20 nm 02c, 120 nm 0	-				-								
1 432 T11 L22077 0 1 150 5-10 Pump 1 Pump 2 Drilling Assembly: Bit / Sub. Four aub. 1-230 nm DC, 420 nm stab. 1230 nm DC, 420 nm stab. 1240 nm nm nm strapp. Name Not at the stable of the					In	Out	Metres	Hours	Nozzles	RPM			
Model Penng 1 Penng 2 Drilling Assembly: Bit / Sub/Post sub 1-230 mm DC, 420 mm Sub, 120 mm DC, 400 mm Auguer, 8165 mm DC Model PZ-11 <													
Model PZ-11 PZ-11 <th< td=""><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		-											
Liner mm 165 165 BHA Length: 279 182.02 m Strap: mominin Board: Dell Pielo D. SPM 0 D.C. Annular Vel: mominin mominin DP Annular Vel: molec mominin DP Annular Vel: molec mominin DE Annular Vel: molec Molec DE Annular Vel:			Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	bat sub 1-230	0 mm DC, 42	0 mm stab,1	230 mm D0	C,Jars, 8 165	mm DC
Stroke mm 279 279 0 DC. Annuhar Vol. mm DP Annuhar Vol. mm/min Val. n*imin 9 0% 0.0000 Jet Velocity: m/sec MUD MUD ADDITIVES Starker Starker North East MUD MUD ADDITIVES KW Starker Starker MUD MUD ADDITIVES KW KW KW Starker Starker MUD MUD ADDITIVES KW KW KW Starker Starker MUD MUD ADDITIVES Starker	Model		PZ-11	PZ-11	_	-				Pump Pres	sure:	0	kPa
SPM 0 D.C. Anumlar Vel.: m/min D.P. Anumlar Vel.: m/min D.P. Anumlar Vel.: m/min Vol. m/min D.P. Anumlar Vel.: m/min D.P. Anumlar Vel.: m/min Vol. m/min D.P. Anumlar Vel.: m/min D.P. Anumlar Vel.: m/min Vol. m/min D.P. Anumlar Vel.: m/min D.P. Anumlar Vel.: M/D Dopth Dorff Azimuth North East Too Gal Casa Development Devevlopment	Liner	(mm)	165	165	BHA Leng	th:	182.02	m	Strap:	•	Board:		-
Vail n/me m/me True Hydraulic HP: kW SURVEYS MUD MUD MUD ADDITIVES Borgh Doright Doright North East Time Gd Access press	Stroke	(mm)	279	279	Drill Colla	r O.D.		mm	Drill Pipe ().D.	-	mm	-
SURVEYS MUD NUD ADDITIVES Depth Derift Azimuth North East Time 6d Occept 6d Occept 6d Occept 6d NuD ADDITIVES 68.00 0.75 Image: Stress of the stress o	SPM			0	D.C. Annul	ar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
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MBT Sofa Ash pellets							Ca (mg/l)			PHPA		Bioside	
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Today losses at surface Total surf. Next Casing Test Flow Rate,m3/min Today total losses Cumulative Next BOP Test Operating hours Well Control - kPa Hole Condition kdaN & Kft/# Total Gas Readings (%) Pump Strokes Pressure MACP Depth Drag up Torque Background Mace RSPP #1 Strokes Pressure MACP Depth Drag up Torque Background Mace RSPP #2	Total circu	lating Vol.	56.0			Last Ca	sing Test			Underflow	Density		
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Well Control - kPa Hole Condition kdaN & Kft/# Total Gas Readings (%) Pump RSPP #1 Strokes Pressure MACP Depth Drag up Torque Background RSPP #1 Brag Dn Connection Connection Image of the second sec	, i i i i i i i i i i i i i i i i i i i									<i></i>			
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RSPP #2 Hook Load Trip 1. Rig up/Out		Strokes	Pressure	MACP	Depth			Torque					
I. Rig up/Out 9. Slip & Cut 17. Plug Back 2. Drill 19.00 10. Survey 0.50 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Flow checks 19. Flow checks 4. Drill Out 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 27. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 24.00 8. Rig Repair 16. BOP Drill Total Hours 24.00 22.00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs													
2. Drill 19.00 10. Survey 0.50 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Flow checks 4. Drill Out 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 1.00 7. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 24.00 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface 22:00-2400 Note: lost circulation @ 173 m @)700 hrs 10.00 10.00 Frev Cost \$607,744 Today \$34,945 Total Cost \$642,689 Weather: 7 deg, rain. Mud Type	RSPP #2					Hook Load				Т	rip		
2. Drill 19.00 10. Survey 0.50 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Flow checks 4. Drill Out 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 1.00 7. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 24.00 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface 22:00-2400 Note: lost circulation @ 173 m @)700 hrs 10.00 10.00 Frev Cost \$607,744 Today \$34,945 Total Cost \$642,689 Weather: 7 deg, rain. Mud Type							. .		-				-
3. Ream 11. Wireline Logs 19. Flow checks 4. Drill Out 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools		•••	Jut	10.00		-		0.50	-	0			-
4. Drill Out 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 1.00 7. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 24.00 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface 20.00 Note: lost circulation @ 173 m @)700 hrs 10.00 10.00 Tops: Prev Cost \$607,744 Today \$34,945 Total Cost \$642,689 Weather: 7deg, rain.				19.00		•		0.50	-				-
5. Circ. & Cond. 1.50 13. Pump Out Cement 21. Safety Meeting 1.00 6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 23 Other WO daylight 7. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 24.00 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs							0		-				-
6. Trip 1.25 14. Nipple Up BOP 22. Handle Tools 7. Rig Service 0.75 15. Test BOP & FIT 23 Other WO daylight 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface 20.00 hrs Note: lost circulation @ 173 m @)700 hrs 0.000 hrs 0.000 hrs Tops: Prev Cost \$607,744 Today \$34,945 Total Cost \$642,689 Weather: 7deg, rain.				1.50		0			-			1.00	-
7. Rig Service 8. Rig Repair 0.75 15. Test BOP & FIT 16. BOP Drill 23 Other WO daylight Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs Note: lost circulation @ 173 m @)700 hrs Total You will with the surface Note: lost circulation @ 173 m @)700 hrs Prev Cost \$607,744 Total Cost \$642,689 Weather: 7deg, rain.			Cona.	-		-			-			1.00	-
8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs — Note: lost circulation @ 173 m @)700 hrs Tops: Prev Cost \$607,744 Yoday \$34,945 Total Cost \$642,689 Weather: 7deg, rain. Mud Type 7deg, rain.			iaa						-				-
REMARKS 00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs		0		0.75					-		• •	24.00	-
00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs No Incidents today. Tops: Prev Cost\$607,744 Today \$34,945 Total Cost\$642,689 Weather: 7deg, rain. Mud Type		o. Kig Kep	an			10. DUF D	TIII		-	Total Hour	8	24.00	-
00:00-22:00 Spud well @ 0:00 hrs and drill 432 mm hole to 154 m. 22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs No Incidents today. Tops: Prev Cost\$607,744 Today \$34,945 Total Cost\$642,689 Weather: 7deg, rain. Mud Type							REMADIZ						
22:00-2400 Wiper trip to surface Note: lost circulation @ 173 m @)700 hrs No Incidents today. Tops: Prev Cost\$607,744 Today \$34,945 Total Cost\$642,689 Weather: 7deg, rain. Mud Type	00.00-22.00	Soud well @	0.00 hrs an	d drill 432 m	m hole to 14		REIMARKS						
Note: lost circulation @ 173 m @)700 hrs No Incidents today. Tops: Prev Cost\$607,744Today \$34,945Total Cost\$642,689Weather: 7deg, rain. Mud Type		•		ia unn 432 ll		/ i 111.							
No Incidents today. Tops: Prev Cost <u>\$607,744</u> Today \$34,945 Total Cost <u>\$642,689</u> Weather: 7deg, rain. Mud Type	22.00 2400	· ·		173 m @)70	00 hrs								
Tops:													
Tops:													
Tops:													
Tops:													
Tops:		No Incident	s today.										
Mud Type	Tops:												
	Prev Cost	\$607	7,744	Today	\$34	,945	Total Cost	\$642	2,689			7deg, rain.	
Foreman Bill Williams Rig Phone 709-649-7106 Taken By: Terry Brooker / Shane Halley													
	Foreman		Bill W	lliams		Rig Phone		709-649-710	6	Taken By:	Terry Bi	ooker / Sha	ne Halley

			Vulo	an Mi	ineral	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Red Bro	ok #2		Day:	2	•	Date:	22-0	ct-09
Depth:	202.0	mKB	Progress:	48.0	Drilling:	13.50	hrs ROP,		3.50	Rig:	Stoneha	
-	@ 0800 hrs:				8		,			KB elev:	61.75	m.
-	Wait on cas									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0					150	5-10		
_												
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	pat sub 1-23	0 mm DC, 42		230 mm D0		
Model		PZ-11	PZ-11	DITAT		102.02		<u>G</u> ,	Pump Pres		0	kPa
Liner	(mm)	165	165	BHA Leng Drill Collar		182.02	_m	Strap: Drill Pipe (2.0	Board:		
Stroke SPM	(mm)	279	279 0	D.C. Annul			mm m/min	D.P Annula			mm m/min	
Vol.	m ³ /min @ 95%		0.0000	Jet Velocity			m/sec	True Hydr			kW	
			0.0000	Joer Verbere	,.			110011501				
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1145		Caustic		Percol	
68.00		0.5				Vis.	102		Envirofloc		Sulphamic	
109.00		0.25				pH	7.8		Kelzan		T-352	
124.00	ļ	1				Fluid Loss		L	Cello		Defoamer	
162.00		1				P.V.	24.0		Bicarb		2K-7	
202.00	ļ	1.50				Y.P.	20.0	L	Newedge		Sapp	
						Gel S.			Drispac		Dyna det	
						Filter Ck		L	Desco		Walnut	
						Solids %	7.0		Barite		Lime Hydrate	d
						Oil			Lignite		Dyna fiber	
						Ca (mg/l)	1000.0		PHPA		Bioside	
						Cl (mg/l) MBT	4800.0 57.5		Sawdust		MSDS	
					1	Тетр	57.5		Soda Ash		pellets Day Cost	617.002
						XSPolymer			Supervision Mud Van		Well Cost	\$17,883 \$23,189
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests		ate	Wild Vali	Cent	rifuge	\$25,189
	lating Vol.	56.0				sing Test	_		Underflow		8-	
	es down hole		Total hole			OP Test			Overflow I			
Today loss	es at surface		Total surf.		Next Ca	sing Test			Flow Rate,	m3/min		
Today tota	l losses		Cumulative	e	Next B	OP Test			Operating	hours		
		ll Control -				ole Condition		ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	1	Torque		· · · · ·	ground		
RSPP #1					Drag Dn Hook Load					ection		
RSPP #2					HOOK LOAD				1	rip		
	1. Rig up/O	Jut		-	9. Slip & C	`ut		-	17. Plug B	ack		
	2. Drill	Jui	13.50	-	10. Survey		0.25	-	18. Wash t			
	3. Ream		0.25	-	11. Wirelin		0.20	-	19. Flow ch			
	4. Drill Ou	t		-	12. Casing	0		-	20. Wk on	mud pumps		
	5. Circ. &	Cond.	2.50	-	13. Pump	Out Cement		-	21. Safety	Meeting	0.75	
	6. Trip		6.00	-	14. Nipple	Up BOP		_	22. Handle	e Tools		
	7. Rig Serv	vice	0.75	-	15. Test B			_	23 Other W	VO daylight		
	8. Rig Rep	air		-	16. BOP D	rill		_	Total Hour	'S	24.00	
00.00.00.1		1.0 1	40 / 154			REMARKS	5					
	5 Run in hole.											
	Orilled to 1' Drilled out o											
) Picked up d			nen ended a	nd numped 4	m31CMmi	ll at 171 m					
) Pulled out o		i in noie t	ren ended a	pumped 4	Deni pi	ut 1/1 111.					
	Ran in hole		d out stabiliz	zer.Washed t	o 173 m. No	losses						
) Drilled from											
			Total losse	s 8 m3								
	No Incident	s today.										
Tops:												
Prev Cost	\$658	3,500	Today	\$41	,110	Total Cost	\$69	9,610	Weather:		1deg, snow	
E		D.01 1-1	2112		D:- D!		700 240 510	<i>(</i>	Mud Type		Polamer	
Foreman		Bill W	illiams		Rig Phone		709-649-710	0	Taken By:	Terry Bi	ooker / Sha	ne Halley

			Vulc	an Mi	nerals	5 Daily	<i>D</i> rill	ing Re	eport			
Well:		Vulc	an Investca	an Red Bro	ok #2	U	Day:	3	-	Date:	23-0	ct-09
Depth:	212.0	mKB	Progress:	10.0	Drilling:	2.75	hrs ROP,		3.50	Rig:	Stoneha	
Operation	@ 0800 hrs:				9					KB elev:	61.75	
-	Wait on cas									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0					150	5-10		
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Fle	oat sub 1-23	0 mm DC, 42	20 mm stab, l	1 230 mm D	C,Jars, 8 165	mm DC
Aodel		PZ-11	PZ-11						Pump Pres		0	kPa
liner	(mm)	165	165	BHA Leng			m	Strap:		Board:		
stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe			mm	
SPM	3		0	D.C. Annul			m/min	D.P Annula			m/min	
/ol.	m ³ /min @ 95%		0.0000	Jet Velocity	y:		m/sec	True Hydr	aunc HP:		kW	
		SUD	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	MUD		Gel	MUDAD	CaC03	
36.00	ptil	0.75	Azimuti	norm	Last	Density	1115		Caustic		Percol	
68.00		0.75	<u> </u>	t		Vis.	1115	1	Envirofloc		Sulphamic	
109.00		0.25	<u> </u>	<u> </u>		pH	7.5		Kelzan	1	T-352	
124.00		1	<u> </u>	<u> </u>		Fluid Loss			Cello	16	Defoamer	
162.00		1				P.V.	24.0		Bicarb	-	2K-7	
202.00		1.50				Y.P.	20.0	1	Newedge		Sapp	
			1			Gel S.			Drispac		Dyna det	
			<u> </u>	<u> </u>		Filter Ck		<u> </u>	Desco		Walnut	
	-	ł	<u> </u>	<u> </u>		Solids %	7.0	1	Barite		time Hydrate	d
			<u> </u>	<u> </u>		Oil			Lignite		Dyna fiber	
			·			Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust	61	MSDS	
				-		MBT	57.5		Soda Ash		pellets	
						Temp	29.0		Supervision		Day Cost	\$4,684
						XSPolymer			Mud Van		Well Cost	\$28,032
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Centi	rifuge	
Fotal circu		68.0				sing Test			Underflow			
	es down hole		Total hole			OP Test			Overflow I			
,	es at surface	2.0	Total surf.			sing Test			Flow Rate,			
Foday total	losses		Cumulative	1	Next B	OP Test			Operating	hours		
	W.	ell Control -	LD.		II.	le Condition	. I. J. N. P. IZ	£4/4		Total Gas R	(0/)	
Dumm	Strokes	Pressure	МАСР	Depth		le Condition		11/#		round	eaungs (76)	
Pump RSPP #1	Strokes	Pressure	MACP	Depth	Drag up Drag Dn		Torque		· · · · · · · · · · · · · · · · · · ·	ection		
					Diag Di							
					Hook Load							
KSPP #2					Hook Load					rip		
KSPP #2	1. Rig un/C)ut			•	ut			T	rip		
KSPP #2	1. Rig up/0 2. Drill)ut	2.75		Hook Load 9. Slip & C 10. Survey	ut	0.25	-		rip ack		
KSPP #2	• •	Jut	2.75	- - -	9. Slip & C		0.25	-	Ti 17. Plug B	rip ack to Btm		
<u>KSPP #2</u>	2. Drill		2.75	- - -	9. Slip & C 10. Survey	ne Logs	0.25	- - - -	Ti 17. Plug B 18. Wash t 19. Flow ch	rip ack to Btm		
KSPP #2	2. Drill 3. Ream	ıt	<u>2.75</u> 6.50	- - - -	9. Slip & C 10. Survey 11. Wirelin	ne Logs /Cement	0.25	- - - - -	Ti 17. Plug B 18. Wash t 19. Flow ch	rip ack to Btm necks mud pumps	0.50	
KSPP #2	 Drill Ream Drill Ou 	ıt		- - - - -	9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple	ne Logs /Cement Dut Cement Up BOP	0.25	- - - - -	17. Plug B 18. Wash t 19. Flow ch 20. Wk on p	rip ack to Btm tecks mud pumps Meeting	0.50	
RSPP #2	 Drill Ream Drill Ou Circ. & Trip Rig Serv 	ıt Cond. vice	6.50	- - - - - - - - -	 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	ne Logs /Cement Dut Cement Up BOP OP & FIT	0.25	- - - - - -	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
RSPP #2	 Drill Ream Drill Ou Circ. & Trip 	ıt Cond. vice	6.50 5.00	- - - - - - - - - - - - - - - - - - -	9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple	ne Logs /Cement Dut Cement Up BOP OP & FIT	0.25	- - - - - - -	17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	rip ack oo Btm necks mud pumps Meeting e Tools VO casing		
RSPP #2	 Drill Ream Drill Ou Circ. & Trip Rig Serv 	ıt Cond. vice	6.50 5.00	-	 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	tt Cond. vice air	6.50 5.00	-	 Slip & C Survey Wirelin Casing Pump (Pump (Nipple Test B(BOP D 	ne Logs /Cement Dut Cement Up BOP OP & FIT		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting 2 Tools VO casing	8.25	
0:00-03:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	ıt Cond. vice air m.	6.50 5.00 0.75	-	 Slip & C Survey Wirelin Casing Pump (Pump (Nipple Test B(BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting 2 Tools VO casing	8.25	
0:00-03:00 03:0008:1	 Drill Ream Drill Ou Circ. & Trip Rig Serv Rig Rep 	nt Cond. vice air m. condition m	6.50 5.00 0.75 nud. Survey	-	 Slip & C Survey Wirelin Casing Pump (Pump (Nipple Test B(BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting 2 Tools VO casing	8.25	
0:00-03:00 3:00-08:11 8:15-12:30	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t	tt Cond. vice air m. condition m o surface. No	6.50 5.00 0.75 nud. Survey o fill		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 33:00-08:1 8:15-12:30 2:30-14:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate &	nt Cond. vice air m. condition m o surface. No condition m	6.50 5.00 0.75 nud. Survey o fill		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 3:00-08:1 8:15-12:0 2:30-14:1 4:15-16:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Pull out of f	t Cond. vice air condition m o surface. No condition m nole	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill			T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 3:00-08:11 8:15-12:03 2:30-14:15 4:15-16:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Wiper trip t Circulate of Wait on arri	nt Cond. vice air m. condition m o surface. No condition m	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		-	T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 3:00-08:11 8:15-12:30 2:30-14:15 4:15-16:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Pull out of f	t Cond. vice air condition m o surface. No condition m nole	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill			T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 3:00-08:1 8:15-12:0 2:30-14:1 4:15-16:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Wait on arri	nt Cond. vice air m. condition m o surface. No condition m nole ival of casing	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill			T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
0:00-03:00 3:00-08:1 8:15-12:0 2:30-14:1 4:15-16:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Pull out of I Wait on arri No losses	nt Cond. vice air m. condition m o surface. No condition m nole ival of casing	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill			T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack oo Btm necks mud pumps Meeting e Tools VO casing	8.25	
00:00-03:00 3:00-08:11 38:15-12:30 2:30-14:15 4:15-16:00 6:00-24:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Wait on arri- No losses No Incident	nt Cond. vice air m. condition m o surface. No condition m nole ival of casing	6.50 5.00 0.75 nud. Survey o fill nud.		 Slip & C Survey Wirelin Casing Pump O Pump O Nipple Test BO BOP D 	ne Logs /Cement Out Cement Up BOP OP & FIT rill		2,199	T. Plug B 17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	rip ack to Btm tecks mud pumps Meeting : Tools VO casing s	8.25	
0:00-03:00 3:00-08:1 8:15-12:30 2:30-14:15 4:15-16:00 6:00-24:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill to 212 Circulate & Wiper trip t Circulate & Wait on arri- No losses No Incident	nt Cond. vice air m. condition m o surface. No condition m nole ival of casing is today. 9,610	6.50 5.00 0.75 mud. Survey o fill nud. g		9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ie Logs ('Cement Jut Cement Up BOP DP & FIT rill <u>REMARKS</u>		2,199	The second secon	rip ack o Btm tecks mud pumps Meeting o Tools VO casing 's	8.25 24.00	

431.8

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	4		Date:	24-0	ct-09
Depth:	212.0	mKB	Progress:	0.0	Drilling:		hrs ROP,			Rig:	Stoneha	
-	@ 0800 hrs:									KB elev:	61.75	
-	Run casing.									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0								
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	oat sub 1-230	0 mm DC, 42	20 mm stab,1	230 mm D0	C,Jars, 8 165	mm DC
Model		PZ-11	PZ-11						Pump Pres		0	kPa
Liner	(mm)	165	165	BHA Leng		182.02	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe			mm	
SPM	3		0	D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%		0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
		CUD					MUD				DIDINEC	
De	nth		VEYS	North	Fact	Time	MUD	1	C 4	MUD AD	DITIVES	1
36.00	epth	Drift 0.75	Azimuth	North	East	Time Density	1105		Gel Caustic		CaC03 Percol	
68.00		0.75				Vis.	1105		Envirofloc		Sulphamic	
109.00	<u> </u>	0.25				vis. pH	7.5	1	Kelzan	1	T-352	
124.00		1				Fluid Loss	1.5		Cello	16	Defoamer	
162.00		1				P.V.	24.0		Bicarb	10	2K-7	
202.00	1	1.50	1	1		Y.P.	20.0	1	Newedge		Sapp	
		2.00				Gel S.			Drispac		Dyna det	
						Gei S. Filter Ck			Drispac Desco		Walnut	
						Solids %	6.3		Desco Barite		Vianut Lime Hydrate	d
						Oil	0.5		Lignite		Dvna fiber	u
						Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust	61	MSDS	
						MBT	30.0		Soda Ash		pellets	
				1		Temp	36.0		Supervision		Day Cost	\$11,177
						XSPolymer			Mud Van		Well Cost	\$36,950
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	68.0			Last Ca	sing Test			Underflow	Density		
Today loss	es down hole	0.0	Total hole		Last B	OP Test			Overflow I	Density		
Today loss	es at surface	2.0	Total surf.		Next Ca	sing Test			Flow Rate,	m3/min		
Today tota	l losses		Cumulative	e	Next B	OP Test			Operating	hours		
		ll Control -				ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque			ground		
RSPP #1					Drag Dn					ection		
RSPP #2					Hook Load				Т	rip		
						• .		-				
	1. Rig up/C	Jut			9. Slip & C			-	17. Plug B			
	2. Drill				10. Survey			-	18. Wash (
	3. Ream 4. Drill Ou	t			11. Wirelin 12. Casing	0		-	19. Flow ch	necks mud pumps		
	4. Drift Ou 5. Circ. &				0	Out Cement		-	20. WK on 21. Safety			
	6. Trip	conu.			14. Nipple			-	21. Safety 22. Handle			
	7. Rig Serv	ice			15. Test BC			-	23 Other V		24.00	
	8. Rig Rep				16. BOP D			-	Total Hour		24.00	
	or ing nop			•	101 201 2			-	10000 11000	5		
						REMARKS)					
00:00-24:00) Wait on casi	ing.										
		0										
	NT T											
(T)	No Incident	s today.										
Tops:	070	100	T - 1	44	210	T-4-1-0	AD 1	2 400	W., 41		11 01	1
Prev Cost	\$152	2,199	Today	2110),210	Total Cost	\$ 84.	2,409	Weather: Mud Type		1deg, Cloud Polamer	
Foreman		Rill W	illiams		Rig Phone	,	709-649-710	6	Taken By:		ooker / Sha	ne Hallev
i oi cinan			manis		ing i none		· ····································	•	Taken Dy.	Terry DI	ooner / Oila	ic malley

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	-	Day:	5		Date:	25-0	ct-09
Depth:	212.0	mKB	Progress:	0.0	Drilling:		hrs ROP,			Rig:	Stoneha	um # 11
Operation	@ 0800 hrs:	Circulate @	220 m. to ru	in casing	-					KB elev:	61.75	m.
the next da	Run casing.	cement.								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0								
N 11		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	pat sub 1-230) mm DC, 42		230 mm D0		
Model Liner		PZ-11 165	PZ-11 165	BHA Leng	the	202.00	m	Strap:	Pump Pres	sure: Board:	3,200	kPa
Stroke	(mm) (mm)	279	279	Drill Colla		202.00	mm	Drill Pipe (<u> </u>	- Doard.	mm	
SPM	()	84	0	D.C. Annu			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity	y:		m/sec	True Hydr			kW	
								-				
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1105		Caustic		Percol	
68.00		0.5				Vis.	111		Envirofloc		Sulphamic	
<u>109.00</u> 124.00		0.25				pH Fluid Loss	7.5		Kelzan	1	T-352	
124.00		1				Fluid Loss P.V.	24.0		Cello	16	Defoamer 2K-7	
202.00		1.50				P.V. Y.P.	24.0		Bicarb			
202.00	+	1.50			-	Gel S.	20.0	-	Newedge		Sapp Dome det	
	-					Gel S. Filter Ck			Drispac		Dyna det Walnut	
						Filler CK Solids %	6.3		Desco Barite		Walnut Lime Hydrate	a
						Oil	0.5		Lignite		Dyna fiber	1
						Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust	61	MSDS	
						MBT	30.0		Soda Ash		pellets	
						Temp	36.0		Supervision		Day Cost	\$11,177
						XSPolymer			Mud Van		Well Cost	\$36,950
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu		68.0				sing Test			Underflow	Į.		
	es down hole		Total hole			OP Test			Overflow I	ě		
	es at surface	2.0	Total surf.			sing Test OP Test			Flow Rate,			
Today tota	1 losses		Cumulative		Next B	OP Test			Operating	nours		
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque	10#	Backe	ground	eaungs (70)	
RSPP #1	Strokes	11cosure	MACI	Deptii	Drag Dn		Iorque		, ,	ection		
RSPP #2					Hook Load	l				rip		
										•		
	1. Rig up/C	Dut			9. Slip & C	Cut	-	-	17. Plug B	ack		
	2. Drill				10. Survey			-	18. Wash t	o Btm		
	3. Ream				11. Wirelin	0		-	19. Flow ch			
	4. Drill Ou				12. Casing			-		mud pumps		
	5. Circ. &	Cond.			-	Out Cement		_	21. Safety	0		
	6. Trip 7. Rig Serv	iaa		-	14. Nipple 15. Test B			-	22. Handle 23 Other W		24.00	
	8. Rig Rep				16. BOP D			-	25 Other V Total Hour	0	24.00 24.00	
	o. Kig Kep	a11			10. DOI D	1111		-	10tal 110ti	3	24.00	
						REMARKS						
00:00-24:00) Wait on cas	ing.										
		-										
	08:00 drill t	o casing poir	nt 220 m.									
	No Incident	s today										
Tops:	i to metachi	s touay.										
Prev Cost	\$842	2,409	Today	\$24	,908	Total Cost	\$86	7,317	Weather:		5deg, Cloud	
	·	-						-	Mud Type		Polamer	
Foreman		Bill W	illiams		Rig Phone		709-649-710	6	Taken By:	Terry Bi	ooker / Sha	ne Halley
-												

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	6		Date:	26-0	ct-09
Depth:	220.0	mKB	Progress:	8.0	Drilling:	3.00	hrs ROP,			Rig:	Stoneha	
-	@ 0800 hrs:		0	in	8					KB elev:	61.75	
-	Run casing.									KB - GL	6.30	
Bit #		Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
1	432	T11	LX2077	0			35	4 X 20	170	8-12		
								1				
	-	Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	oat sub 1-230) mm DC, 42	20 mm stab,1	230 mm D0	C,Jars, 8 165	mm DC
Model		PZ-11	PZ-11	_					Pump Pres		3,200	kPa
Liner	(mm)	165	165	BHA Leng	th:	202.00	m	Strap:	-	Board:		
Stroke	(mm)	279	279	Drill Collar	r O.D.		mm	Drill Pipe).D.		mm	
SPM		84	0	D.C. Annu	ar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1110		Caustic	1	Percol	
68.00		0.5				Vis.	120		Envirofloc		Sulphamic	
109.00		0.25				pН	7.5		Kelzan	1	T-352	
124.00		1				Fluid Loss			Cello	16	Defoamer	
162.00		1				P.V.	24.0		Bicarb		2K-7	
202.00		1.50				Y.P.	20.0		Newedge		Cal carb	56
						Gel S.			Drispac		Dyna det	
						Filter Ck			Desco		Walnut	
						Solids %	6.3		Barite		Lime Hydrate	d
						Oil			Lignite		Dyna fiber	
						Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust		MSDS	
						MBT	30.0		Soda Ash		pellets	
						Temp	36.0		Supervision		Day Cost	\$1,835
						XSPolymer			Mud Van		Well Cost	\$33,391
Mud	l losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	68.0			Last Ca	sing Test			Underflow	Density		
Today loss	es down hole	0.0	Total hole		Last B	OP Test			Overflow I	Density		
Today loss	es at surface	2.0	Total surf.		Next Ca	sing Test			Flow Rate,	m3/min		
Today tota	l losses		Cumulative	e	Next B	OP Test			Operating	hours		
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg	ground		
RSPP #1					Drag Dn					ection		
RSPP #2					Hook Load				T	rip		
								-				
	1. Rig up/C	Dut			9. Slip & C			_	17. Plug B			
	2. Drill		2.25		10. Survey			-	18. Wash t			
	3. Ream			-	11. Wirelin	0		_	19. Flow ch			
	4. Drill Ou			-	12. Casing		11.00	_		mud pumps		
	5. Circ. &	Cond.	2.75		-	Out Cement		_	21. Safety	0	0.50	
	6. Trip		2.75		14. Nipple			-	22. Handle			
	7. Rig Serv		0.50		15. Test B			_	23 Other W	0	4.25	
	8. Rig Repa	air			16. BOP D	rill		-	Total Hour	'S	24.00	
						DEMADING						
00.00 01 1	5 W:-					REMARKS						
	5 Wait on casi	0	0	noint								
	Drillrd from											
· · · · · · · · · · · · · · · · · · ·	Circulate an											
	Rig to run ca	U		0	not							
14:00-24:00	Run casing t			Ű	*							
	08:00. Pulle	eu casing,ran	in hole with	on nor clear	iout trip							
	No Incident	s today										
Tops:	No Incidents	s touay.										
Tops: Prev Cost	\$ 9 67	,317	Today	¢91	,548	Total Cost	\$0.4	8,865	Weather:		3deg, Rain	
LICT COSt	φ 00 7	,	Touay	φ 01	,	i otar Cost	φ / 40	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Mud Type		Polamer	
Foreman		Bill W	illiams		Rig Phone	7	09-649-710	6	Taken By:		ooker / Sha	ne Hallev
		2				,				j D		

			Vulc	an Mi	inerals	s Daily	<u>Drill</u>	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	7		Date:	27-0	ct-09
Depth:		mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	um # 11
	@ 0800 hrs:		tor,weld casi	ng bowl.						KB elev:	61.75	m.
	n Nipple up,p				•			•		KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0	220	220	35	4 X 20	170	8-12		
		D 1	D 0	D. III' A			(1.1.02)		1 1	220 D	0.165	DC
Madal		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	bat sub 1-230	0 mm DC, 42			C,Jars, 8 165	
Model Liner		PZ-11 165	PZ-11 165	BHA Leng	th.	202.00	m	Steam	Pump Pres	Board:	3,200	kPa
Stroke	(mm) (mm)	279	279	Drill Collar		202.00	mm	Strap: Drill Pipe (תר	Doaru.	mm	
SPM	(11111)	84	0	D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity			m/sec	True Hydra			kW	
					, -							
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1110		Caustic	1	Percol	
68.00		0.5				Vis.	120		Envirofloc		Sulphamic	
109.00		0.25				pН	7.5		Kelzan	1	T-352	
124.00		1				Fluid Loss			Cello	16	Defoamer	
162.00		1				P.V.	24.0		Bicarb		2K-7	
202.00		1.50				Y.P.	20.0		Newedge		Cal carb	56
						Gel S.			Drispac		Dyna det	
						Filter Ck			Desco		Walnut	
						Solids %	6.3		Barite		Lime Hydrate	d
						Oil			Lignite		Dyna fiber	
						Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust		MSDS	
						MBT	30.0		Soda Ash		pellets	
				1		Temp	36.0		Supervision		Day Cost	\$6,904
		0 D 1				XSPolymer			Mud Van	C 4	Well Cost	\$40,296
	l losses Surfa		nole Estimat	es mo		asing Tests	D	ate	T las al a sufficient		rifuge	
	ılating Vol. es down hole	68.0 0.0	Total hole			sing Test OP Test			Underflow Overflow E			
	es at surface	2.0	Total surf.			sing Test			Flow Rate,			
Today tota		2.0	Cumulative			OP Test			Operating			
· ·									1 0			
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas F	leadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg	round		
RSPP #1					Dana Da				Conn	ection		
					Drag Dn							
RSPP #2					Hook Load				Ti	rip		
RSPP #2					Hook Load			_		•		
RSPP #2	1. Rig up/C	Dut			Hook Load 9. Slip & C	Cut		-	17. Plug Ba	ack		
RSPP #2	2. Drill	Dut			Hook Load 9. Slip & C 10. Survey	Cut		-	17. Plug Ba 18. Wash t	ack o Btm		
RSPP #2	2. Drill 3. Ream				Hook Load 9. Slip & C 10. Survey 11. Wirelin	Cut 7 ne Logs	12.00	- - -	17. Plug Ba 18. Wash t 19. Flow ch	ack o Btm ecks		
RSPP #2	 Drill Ream Drill Ou 	t	4.50	- - - -	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	Cut ne Logs /Cement	13.00	- - - -	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on p	ack o Btm ecks nud pumps	0.75	
RSPP #2	 Drill Ream Drill Ou Circ. & 	t	4.50	- - - - -	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (Cut 7 ne Logs /Cement Out Cement	13.00	- - - - -	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety	ack o Btm ecks nud pumps Meeting	0.75	
RSPP #2	 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 	t Cond.	5.50		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple	Cut ne Logs //Cement Out Cement Up BOP	13.00	- - - - - -	17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle	ack o Btm ecks nud pumps Meeting Tools	0.75	
RSPP #2	 Drill Ream Drill Ou Circ. & 	t Cond. ice			Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (Cut ne Logs /Cement Out Cement Up BOP OP & FIT	13.00	- - - - -	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety	ack o Btm ecks nud pumps Meeting Tools /O casing	0.75	
RSPP #2	 Drill Ream Drill Ou Circ. & Trip Rig Serv 	t Cond. ice	5.50		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	13.00	-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
RSPP #2	 Drill Ream Drill Ou Circ. & Trip Rig Serv 	t Cond. ice	5.50	- - - - - -	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00	 Drill Ream Drill Ou Circ. & 1 Trip Rig Serv Rig Rep: 	t Cond. ice air g out of hole	5.50 0.25	- - - - - - -	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00	 Drill Ream Drill Ou Circ. & 6 Trip Rig Serv Rig Reps 	t Cond. ice air g out of hole	5.50 0.25		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill		-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00	 Drill Ream Drill Ou Circ. & 1 Trip Rig Serv Rig Rep: 	t Cond. ice air g out of hole with bit.	5.50 0.25		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3	2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 8 Washed to b	t Cond. ice air g out of hole with bit. > 80 m. bottom.	5.50 0.25		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 Washed to b 5 Pulled out out	t Cond. ice air g out of hole with bit. > 80 m. oottom. f hole and ri	5.50 0.25		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:00-11:3 11:30-14:42 14:45-22:30	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casim 5 Run in hole 0 Pulled out to 3 Washed to b 5 Pulled out out 9 Pulled out out 10 Pulled out out 10 Pulled out out 10 Pulled out to 10 Pulled out out 10 Pulled out 10 Pulled out out 10 Pulled out 10	t Cond. ice air g out of hole with bit. > 80 m. > ottom. f hole and ri to 220 m. Ta	5.50 0.25 g to run casin gged bottom	, 1 m stickup	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0. Pulled casin 5 Run in hole 0. Pulled out to 3. Washed to B 5. Pulled out to 0. Ran casing 1 5. Minor losse:	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo	5.50 0.25 g to run casin gged bottom	, 1 m stickup	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Rep: 0 Pulled casin 5 Run in hole 0 Pulled out to 30 Washed to b 5 Pulled out to 30 Washed to b 5 Pulled out o 0 Ran casing 1 5 Minor losse: 0 Rig to and c	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement.	5.50 0.25 g to run casin gged bottom t LCM pill . 1	, 1 m stickup Full returnes	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill			17. Plug B 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other W	ack o Btm ecks nud pumps Meeting Tools /O casing		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 30 Washed to b 5 Pulled out to 5 Pulled out to 10 Ran casing 1 5 Minor losses 10 Rig to and c Ran 18 joint	t Cond. ice air g out of hole with bit. b 80 m. bottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. as J-55 48 lb	5.50 0.25 g to run casin gged bottom t LCM pill . /ft 13 3/8"ca	, 1 m stickup Full returnes sing to TD 2	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bt 16. BOP D 0. 20 mkb.	Cut , ne Logs /Cement Out Cement Up BOP OP & FIT prill REMARKS		-	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	ack o Btm ecks nud pumps Meeting Tools /O casing s		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 (Washed to b 5 Pulled out o 0 Ran casing 1 5 Minor losses 1) Rig to and c Ran 18 joint Cement with	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. is J-55 48 lb h BJ services	5.50 0.25 g to run casin gged bottom t LCM pill . 1 //ft 13 3/8"ca s. Pumped 3 1	, 1 m stickup Full returnes sing to TD 2 m3 preflush,	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS 26.23 m3, 18	78 kg/m3, pc		17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	ack o Btm ecks nud pumps Meeting Tools /O casing s		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 (Washed to b 5 Pulled out o 0 Ran casing 1 5 Minor losses 1) Rig to and c Ran 18 joint Cement with	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. is J-55 48 lb h BJ services	5.50 0.25 g to run casin gged bottom t LCM pill . 1 //ft 13 3/8"ca s. Pumped 3 1	, 1 m stickup Full returnes sing to TD 2 m3 preflush,	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D 16. BOP D	Cut , ne Logs /Cement Out Cement Up BOP OP & FIT prill REMARKS	78 kg/m3, pc		17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	ack o Btm ecks nud pumps Meeting Tools /O casing s		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 (Washed to b 5 Pulled out o 0 Ran casing 1 5 Minor losses 1) Rig to and c Ran 18 joint Cement with	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. is J-55 48 lb h BJ services rith 17.3 m3	5.50 0.25 g to run casin gged bottom t LCM pill . 1 //ft 13 3/8"ca s. Pumped 3 1	, 1 m stickup Full returnes sing to TD 2 m3 preflush,	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS 26.23 m3, 18	78 kg/m3, pc		17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	ack o Btm ecks nud pumps Meeting Tools /O casing s		
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 14:45-22:30 22:30-23:15	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repu 0 Pulled casin 5 Run in hole 0 Pulled out to 3 (Washed to b 5 Pulled out o 0 Ran casing 1 5 Minor losses 1) Rig to and c Ran 18 joint Cement with Displaced w	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. is J-55 48 lb h BJ services rith 17.3 m3	5.50 0.25 g to run casin gged bottom t LCM pill . 1 //ft 13 3/8"ca s. Pumped 3 1	, 1 m stickup Full returnes sing to TD 2 m3 preflush,	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS 26.23 m3, 18	78 kg/m3, pc		17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	ack o Btm ecks nud pumps Meeting Tools /O casing s		
00:00-07:00 07:00-08:12 08:15-09:00 09:0011:3 11:30-14:42 14:45-22:30 22:30-23:12 23:15-2400	2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 Washed to b 5 Pulled out out 0 Ran casing 1 5 Minor losses 0 Rig to and c Ran 18 joint Cement with Displaced w	t Cond. ice air g out of hole with bit. o 80 m. oottom. f hole and ri to 220 m. Ta s 3 m3 . Spo ement. is J-55 48 lb h BJ services rith 17.3 m3	5.50 0.25 g to run casin gged bottom t LCM pill . 1 //ft 13 3/8"ca s. Pumped 3 1	, 1 m stickup Full returnes sing to TD 2 m3 preflush, ped plug. 3 m	Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS 26.23 m3, 18	78 kg/m3, po Annulas stat		17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 2 22. Handlee 23 Other W Total Hour nt. 2 % CaCl	ack o Btm ecks nud pumps Meeting Tools /O casing s	24.00 24.00 cess.	
00:00-07:00 07:00-08:15 08:15-09:00 09:0011:3 11:30-14:45 12:30-23:15 22:30-23:15 23:15-2400 	2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 Washed to b 5 Pulled out out 0 Ran casing 1 5 Minor losses 0 Rig to and c Ran 18 joint Cement with Displaced w	t Cond. ice air g out of hole with bit. b 80 m. bottom. f hole and ri is 200 m. Ta s 3 m3. Spo ement. is J-55 48 lb n BJ services ith 17.3 m3 s today.	5.50 0.25 g to run casin gged bottom t LCM pill .1 /ft 13 3/8"ca s. Pumped 3 i water. Bumped Today	, 1 m stickup Full returnes sing to TD 2 m3 preflush, ped plug. 3 m	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump d 14. Nipple 15. Test B(16. BOP D 16. BOP D 20 mkb. 33.76 ton, 2 3 good ceme ,548	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS 26.23 m3, 18 ent returnes. Total Cost	78 kg/m3, pc Annulas stat \$94	ic. 8,865	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 2 22. Handlee 23 Other W Total Hour nt. 2 % CaCl Weather: Mud Type	ack o Btm ecks nud pumps Meeting Tools /O casing s 2, 100 % ex	24.00 24.00 cess. 3deg, Rain Polamer	
00:00-07:00 07:00-08:15 08:15-09:00 99:0011:3 11:30-14:45 14:45-22:30 22:30-23:15 23:15-2400 Tops:	2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps 0 Pulled casin 5 Run in hole 0 Pulled out to 3 Washed to b 5 Pulled out out 0 Ran casing 1 5 Minor losses 0 Rig to and c Ran 18 joint Cement with Displaced w	t Cond. ice air g out of hole with bit. b 80 m. bottom. f hole and ri is 200 m. Ta s 3 m3. Spo ement. is J-55 48 lb n BJ services ith 17.3 m3 s today.	5.50 0.25 g to run casin gged bottom t LCM pill . 1 /ft 13 3/8"ca s. Pumped 3 water. Bump	, 1 m stickup Full returnes sing to TD 2 m3 preflush, ped plug. 3 m	Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D 16. BOP D 20 mkb. 33.76 ton, 2 33.76 ton, 2	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS 26.23 m3, 18 ent returnes. Total Cost	78 kg/m3, po Annulas stat	ic. 8,865	17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 2 22. Handlee 23 Other W Total Hour nt. 2 % CaCl	ack o Btm ecks nud pumps Meeting Tools /O casing s 2, 100 % ex	24.00 24.00 cess.	ne Halley

			Vulc	an Mi	ineral	s Daily	^v Drill	ing Re	eport			
Well:		Vulc	an Investca			v	Day:	<u> </u>		Date:	28-0	ct-09
Depth:		mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	
-	@ 0800 hrs:		BOP's							KB elev:	61.75	
	Nipple up,p			-			~~			KB - GL	6.30	
Bit #	432	Model IADC T11	Serial No. LX2077	In 0	Out 220	Metres 220	Hours 35	Nozzles 4 X 20	RPM 170	WOB kdaN 8-12	IODL	BGOR
I	432	111	LA2077	0	220	220	33	4 A 20	170	0-12		
1		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub Flo	pat sub 1-230	0 mm DC, 42	20 mm stab 1	230 mm D	Lars 8 165	mm DC
Model		PZ-11	PZ-11	Drining ris	semory.	Bit / Bub,i it	Jul 300 1 250	5 mm DC, 12	Pump Pres		3,200	kPa
Liner	(mm)	165	165	BHA Leng	th:	202.00	m	Strap:		Board:	- ,	
Stroke	(mm)	279	279	Drill Colla	r O.D.		mm	Drill Pipe ().D.	-	mm	
SPM		84	0	D.C. Annu	lar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
		r	VEYS				MUD	1		MUD AL	DITIVES	
	epth	Drift	Azimuth	North	East	Time	1110		Gel		CaC03	
<u>36.00</u> 68.00		0.75 0.5				Density Vis.	1110 120		Caustic	1	Percol	
109.00		0.25				vis. pH	7.5		Envirofloc Kelzan	7	Sulphamic T-352	
124.00		1				Fluid Loss	7.5		Cello	20	Defoamer	
162.00		1				P.V.	24.0		Bicarb	20	2K-7	
202.00	1	1.50				Y.P.	20.0		Newedge		Cal carb	
						Gel S.			Drispac		Dyna det	
	1					Filter Ck			Desco		Walnut	
	1					Solids %	6.3		Barite		Lime Hydrate	d
-						Oil			Lignite		Dyna fiber	
						Ca (mg/l)			PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust	40	MSDS	
						MBT	30.0		Soda Ash		pellets	
						Temp	36.0		Supervision		Day Cost	\$6,314
					DOD 6 C	XSPolymer			Mud Van	<u> </u>	Well Cost	\$40,296
	l losses Surfa		iole Estimat	tes m3		asing Tests	D	ate	TI I C		rifuge	
	ılating Vol. es down hole	68.0 0.0	Total hole			sing Test OP Test			Underflow Overflow I	•		
•	es at surface	2.0	Total surf.			sing Test			Flow Rate,	Į.		
Today tota		2.0	Cumulative	e		OP Test			Operating			
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas F	leadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg	ground		
RSPP #1					Drag Dn					ection		
RSPP #2					Hook Load				T	rip		
	1 Dia) 4		-	0 612- 8 6	34		-	17 W.I.I.	1	15.00	
	1. Rig up/C 2. Drill	Jui		-	9. Slip & C 10. Survey			-	17. Weld b 18. Wash t		15.00	
	2. Drin 3. Ream			-	10. Survey 11. Wirelin			-	10. Wash t 19. Flow ch			
	4. Drill Ou	t		-	12. Casing	0	1.00	-	20. Wk on 1			
	5. Circ. &			-	0	Out Cement		-	21. Safety		1.25	
	6. Trip			-	14. Nipple	Up BOP	0.50	-	22. Handle	Tools		
	7. Rig Serv		0.25	_	15. Test B			_	23 Other W		6.00	
	8. Rig Rep	air		-	16. BOP D	rill		_	Total Hour	S	24.00	
00.00.01.02		- 4		0.00.541		REMARKS						
	Continued v Wait on cen					low 70001	ma high 10	min aaah taa	+			
	Cut conduct			nannoiu var	ves 1400 kpa	1 IOW - 7000 I	ipa nign, 10	mm each tes	d.			
) Prep casing		0									
) Pre heat boy	-		procedure.								
	O Install stream				owl. Ser # 15	6826-03. We	ld casing bo	wl				
	5 Wrap bowl					. Pressure tes	t bowl weld	to 5000 kpa	- 10 min - ol	κ.		
23:15-24:00	Held safety	0	** *	0 0								
		ts J-55 48 lb		-			101 / 2			0.100		
				-		26.23 m3, 18			nt. 2 % CaC	12, 100 % ex	cess.	
	Displaced w	/1th 17.3 m3	water. Bump	bed plug. 3 m	15 good ceme	ent returnes.	Annulas stat	1C.				
	No Incident	e today										
Tops:	No Incident	s iouay.										
Prev Cost	\$1.05	1,690	Today	\$624	4,195	Total Cost	\$1.67	75,885	Weather:		1deg, Cloud	1
I												
		,							Mud Type		Polamer	
Foreman			illiams		Rig Phone		709-649-710	6	Mud Type Taken By:		Polamer rooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca			v	Day:	~	•	Date:	29-0	ct-09
Depth:	220.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:		am # 11
-	@ 0800 hrs:	Wait on tech	h.from Alber	ta	0		,			KB elev:	61.75	m.
the next da	repair remot	e for accum	ulator							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1	432	T11	LX2077	0	220	220	35	4 X 20	170	8-12		
1												
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	pat sub 1-230	0 mm DC, 42		230 mm D0		
Model		PZ-11	PZ-11	DILA L	d	202.00		64	Pump Pres		3,200	kPa
Liner Stroke	(mm)	165 279	165 279	BHA Leng Drill Colla		202.00	m mm	Strap: Drill Pipe (0.0	Board:	mm	•
SPM	(mm)	84	0	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity			m/sec	True Hydr			kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1110		Caustic	1	Percol	
68.00		0.5				Vis.	120		Envirofloc		Sulphamic	
109.00		0.25				pH	7.5		Kelzan	7	T-352	
124.00		1				Fluid Loss	24.0		Cello	20	Defoamer	
<u>162.00</u> 202.00		1				P.V.	24.0		Bicarb		2K-7	
202.00		1.50				Y.P.	20.0		Newedge		Cal carb	
						Gel S.		ł	Drispac		Dyna det	
						Filter Ck Solids %	6.3		Desco Barita		Walnut	<u> </u>
						Solids %	0.3		Barite Lignite		Lime Hydrate Dyna fiber	d
						Ca (mg/l)			Lignite PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust	40	MSDS	
						MBT	30.0		Soda Ash		pellets	
						Тетр	36.0		Supervision		Day Cost	\$13,253
						XSPolymer			Mud Van		Well Cost	\$59,864
Mud	losses Surfa	ce & Down	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	68.0			Last Ca	sing Test			Underflow	Density		
	es down hole		Total hole			OP Test			Overflow I	í		
	es at surface	2.0	Total surf.			sing Test			Flow Rate,			
Today tota	1 losses		Cumulative		Next B	OP Test			Operating	nours		
	We	ll Control -	kPa		H	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque	10/#	Backe	ground	eaungs (70)
RSPP #1	onones	11050010	in the second	Deptii	Drag Dn		Torque		· · · · · · · · · · · · · · · · · · ·	ection		
RSPP #2					Hook Load	l				rip		
										-		
	1. Rig up/C	Dut		-	9. Slip & C	Cut		_	17. Weld b	owl		
	2. Drill			_	10. Survey			_	18. Wash t			
	3. Ream			-	11. Wirelin	0		-	19. Flow ch			
	4. Drill Ou			-	12. Casing			-		mud pumps	0.77	
	5. Circ. &	Cond.		-	-	Out Cement	11.25	-	21. Safety 22. Handle	0	0.75	-
	6. Trip 7. Rig Serv	ice	0.75	-	14. Nipple 15. Test B	-	11.25 11.25	-	22. Handle 23 Other V			
	8. Rig Rep		0.75	-	16. BOP D		11.25	-	Total Hour		24.00	
	or mg nep			-	10. DOI D			_	1000111001	5	21.00	-
						REMARKS						
00:00-12:30) Nipple up a	nd function t	est BOP's. Pi	ressure test c								
12:30-24:00) Pressure tes	t casing and	BOP's									
					*	0 kpa high 10						
ļ			0.			e. Lower pip	A A					
		ventor choke	e line.Picked	up kelly and	l pressure tes	sted upper and	i lower kelly	y cock valves	s All test 140	JU kpa low -	3000 kpa hig	;h -
	10 min.	Domot	tual for DOD	la not france'	ning W-12	a on o!!	ftaah-:-:	from All	to at 22:00 1	n todor: -:	to op 1	otor
	function test			s not runctio	ming. Waitin	ng on arrival o	n technician	1 from Alber	ta at 22:00 hr	s today, piro	to accumula	ator
	No Incident		ι ι .									
Tops:	NO INCIDENT	s touay.										
Prev Cost	\$1,67	7,862	Today	\$37	,350	Total Cost	\$1.71	15,212	Weather:		1deg, Cloud	1
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,			,		. /	,	Mud Type		Polamer	
Foreman		Bill W	'illiams		Rig Phone		709-649-710	6	Taken By:		ooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	-	Day:	10		Date:	30-0	ct-09
Depth:	220.0	mKB	Progress:		Drilling:		hrs ROP, 1			Rig:	Stoneha	am # 11
-	@ 0800 hrs:	Drilling	0		0		,			KB elev:	61.75	m.
the next da	Drill ahead	-								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
2	311	GT-C51	5157199	220				4 X 20	170	8-12		
-												
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub,Flo	oat sub 1-230) mm DC, 42		230 mm D0	C,Jars, 8 165	mm DC
Model		PZ-11	PZ-11						Pump Pres	sure:	3,200	kPa
Liner	(mm)	165	165	BHA Leng		202.00	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe (mm	
SPM		84	0	D.C. Annu			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
			VEYS				MUD	1		MUD AD	1	
	epth	Drift	Azimuth	North	East	Time	10.55		Gel		CaC03	
36.00	-	0.75				Density	1255		Caustic	1	Percol	
68.00	-	0.5				Vis.	55		Salt	130	Sulphamic	
109.00	-	0.25				pH Fluid Loss	9.6		Kelzan	7	T-352	
124.00	-	1				Fluid Loss	22.0		Cello	20	Defoamer	
162.00		1				P.V. V D	23.0		Bicarb		2K-7	
202.00		1.50				Y.P.	13.0		Newedge		Cal carb	
						Gel S.			Drispac		Dyna det	
						Filter Ck			Desco		Walnut	
						Solids %	6.3		Barite		Lime Hydrate	d
						Oil			Lignite		Dyna fiber	
						Ca (mg/l)	480.0		PHPA		Bioside	1
	-					Cl (mg/l)	150000.0		Sawdust	14	MSDS	
	-					MBT	27.0		Soda Ash	14	pellets	
	-			1		Temp	26.0		Supervision		Day Cost	\$4,513
		0.D			DOD 6 C	XSPolymer		ļ	Mud Van		Well Cost	\$64,377
	l losses Surfa		nole Estimat	es mo		asing Tests	Da	ate	TLL CL		rifuge	
Total circu	0	68.0	T. (11 1			sing Test			Underflow	•		
ř	es down hole	0.0	Total hole Total surf.			OP Test			Overflow I	ě		
Today tota	es at surface	2.0	Cumulative	ļ		sing Test OP Test			Flow Rate, Operating			
Touay tota	1105565		Cullulative		THEAT D	or rest			Operating	liours		
	We	ll Control -	kPa		H	ole Condition	u kdaN & Ki	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque	10#	Rook	ground	caungs (70)	
RSPP #1	Strokes	1 ressure	MACI	Deptii	Drag Dn		Torque		· · · · · · · · · · · · · · · · · · ·	ection		
RSPP #2					Hook Load					rip		
ROTT #2					HOOK LOUG				-	- P		
	1. Rig up/O	Dut			9. Slip & C	Inf		-	17. Weld b	owl		
	2. Drill	, ut		•	10. Survey		-	-	18. Wash t			
	3. Ream				11. Wirelin			-	19. Flow ch			
	4. Drill Ou	t			12. Casing	0		-		mud pumps		
	5. Circ. &	Cond.		-	0	Out Cement		-	21. Safety	Meeting	1.25	
	6. Trip		5.00	•	14. Nipple	Up BOP	1.00	-	22. Handle	Tools		
	7. Rig Serv	vice	0.50		15. Test B	OP & FIT		-	23 Other W	VO cement		
	8. Rig Rep	air	16.25		16. BOP D	rill		-	Total Hour	s	24.00	
								-				
						REMARKS						
00:00-07:30	0 Install flow	T. Make up	new BHA an	d run in hole	e to 192 m. H	leld bop drill	with both cr	rews.				
07:30-24:00) Wait on arri	val of accun	nulator tech.									
	Note: Accur	nulator repai	ired @ 02:00	hrs. Functio	ned tested fr	om building	and remote o	control.				
ļ												
ļ												
												
	No Incident	s today.										
Tops:	A	5 0/0	T 1	ф с -	250	T 4 1 C - 1		5 010	XX7 /1		11 01 1	1
Prev Cost	\$1,67	7,862	Today	\$37	,350	Total Cost	\$1,71	15,212	Weather:		1deg, Cloud	
									Mad T-		Dolarrer	
Foreman		D:11 11	illiams		Rig Phone		709-649-710	6	Mud Type Taken By:		Polamer ooker / Sha	no Uollow

Operation @ 0800 hrs: Drilling Ki Bit # GT-CS1 5157199 220 4X.20 170 Ki Bit # GT-CS1 5157199 220 4X.20 170 Ki Model Promp 1 Pump 2 prilling Assembly: Bit /121/8" NB stab. 2-230 mm DC. 121/8" mm stab. Pump Pressur Liner cmm 165 165 BHA Length: 151.00 m Strap: Bit Stroke cmm 279 279 Drill Collar O.D. mm Dr. Annular VeL: m/min D.P Annular VeL: m/min D.P Annular VeL: True Hydraulic HP: Tru					Vulc	an Mi	ineral	s Daily	v Drill	ing Re	eport				
Operation © 6000 hrs: Desiling the next dc/Drill No. In Out Metres Hours No.216 RPM No. 181 # StreAMake [Model tance] StreAMake [Model tance] Pump 1 Pump 2 Drilling Assembly: Bit / 12.18" NB stab. 2.23 mm DC; 12.18" mm stab. Model PZ / 11 PZ / 11 PZ / 11 PUmp 7 resum														ct-09	
the next dip Drill alead Total No.2 Starl No.2	-						Drilling:	hrs ROP, m/hr:						ım # 11	
Bit # Starchake Nacit NO. Serial No. In Out Market Hours Nacites Hours <				ing								KB elev:	61.75		
2 311 GT-C51 517/99 220 4 X 20 170 Pump 1 Pump 2 NB 121/28 NB sub, 2230 nm DC, 1218" nm sub, 230 nm DC, 230 nm PC, 230 nm PC	-			LIADC	Sorial No.	In	Out	Motros	Uours	Nozzlos	DDM	KB - GL WOB kdaN	6.30		
Pomp 1 Pomp 2 Drilling Assembly: Provide the second secon								Metres	Hours			8-12	TODE	DUUK	
Model PZ-11 PPUID Pressur Liner mm 165 BHA Length: 151.00 mm Drift Pipe O.D. Britt Pi		-				-									
Liner oscillation 165 165 BHA Length: 272 151 Old Collar O.D. mm Strap: Draft Pipe O.D. Draft P			Pur	mp 1	Pump 2	Drilling As	sembly:	Bit /121/8"	NB stab, 2-2	30 mm DC,	121/8" mm s	tab, XO, Jars	s,1 230 mm D	C, 8 165 mm	
Stroke own 279 279 Drill Callar O.D. mm Drill Pipe O.D. Vol. n*am # vos 1.4300 0.0000 Jet Velocity: m/om Home DPA Annular Vel: True Hydrauller HP: Vol. n*am # vos 1.4300 0.0000 Jet Velocity: m/om DPA Mundual Vel: True Hydrauller HP: Stroke Depth Doff Azimuth North East Ima DPA Mundual Vel: True Hydrauller HP: 105200 0.0.75 Ima Density 1155 Cassite Cassite Density 112.2 Kotan 1062.00 1 Ima PN. 20.0 International Point East Density 12.2 Strokean Strokean <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Pump Pres</td><td></td><td>3,200</td><td>kPa</td></t<>											Pump Pres		3,200	kPa	
SPM 84 0 D.C. Annular Vel.: m/min D.P. Annular Vel.: Vol. m/min 970. 1.4300 0.0000 Jet Velocity: m/see True Hydraulic HP: 36.00 0.075 4 Dentity 1155 Castic 6 36.00 0.055 4 Vik. 58 Satic 1155 Castic 6 66.00 0.25 4 Piti 11.2 Ketan 124.00 1 11.2 Ketan 124.00 1 4 P.V. 20.0 Bitern 20.0 Ketasa 105.0 Ketasa 105.0 Ketasa 106.0 PHTA 107.0 Phta 10.0 Partic 10.0 10.0 <	((mm)						151.00	-			Board:			
Val. m/min m/min True Hydraulic HP: SURVEYS MUD Cat Depth Drift Azimuth North East Time Cat 36.00 0.75 North East Density 1155 Canaté 06.00 0.25 PII 11.2 Refaal Cello 1 162.00 1 Pridi Loss Cello 1 Refaal Cello 162.00 1.50 P.Y. 20.0 Biterb Drippe Drippe Cello 1 Refaal Drippe	((mm)							-	-			_mm		
SURVEYS MUD cd T 36.00 0.75 Azimuth North East Time Cat T 36.00 0.75 Density 1155 Caustic Sat 109.00 0.25 PH 11.2 Kelam Cation 102.00 1 PRV 20.0 Bicorb Cation 162.00 1 PRV 20.0 Bicorb Cation 202.00 0.75 Get 8. Drippe 262.00 0.75 Get 8. Drippe 27.01 Matter 8. Suptract Suptract 20.01 Total bot Suptrat Suptra	mi	in @ 95%			-				-				m/min kW		
Depth Drift Azimuth North East Time Image Image <thimage< th=""> Image <thi< td=""><td></td><td></td><td></td><td>500</td><td>0.0000</td><td>oct verocit</td><td>,.</td><td></td><td>moce</td><td>II uc II y ui</td><td>uune m</td><td></td><td></td><td></td></thi<></thimage<>				500	0.0000	oct verocit	,.		moce	II uc II y ui	uune m				
36 00 0.75 Density 1155 Constr. 68.00 0.5 Vis. 58 Sat 109.00 0.25 PH 11.2 Ketzan 124.00 1 Phid Loss Cela Cela 1262.00 1 Phid Loss Cela December 202.00 0.75 Gel S. Pripage Deripage 262.00 0.75 Gel S. Deripage Solids % 1.0 Barrie 262.00 0.75 Gel S. Solids % 1.0 Barrie Solids % Mol No 27.00 Mol Osses Surface & Downhole Estimates m3 BOP & Cassing Test Date<				SUR	VEYS				MUD			MUD AL	DITIVES		
68.00 0.5 PII Vis. 58 Sat Netzon 109.00 0.25 PII 11.2 Netzon Netzon 124.00 1 PV. 20.0 Blarab Cetto Netzon 162.00 1 PV. 20.0 Blarab Cetto Netzon 202.00 0.75 Get S. Priter Ck Desco Netzon 262.00 0.75 Get S. Desco Netzon Netzon Netzon 262.00 0.75 Get S. Otil Percesol Netzon			D	rift	Azimuth	North	East	Time			Gel		CaC03		
109.00 0.25 pH 11.2 Nethan 124.00 1 Pluid Loss Cetha 126.00 1 Pluid Loss Cetha 202.00 1.50 N.P. 10.5 Kwieksad 262.00 0.75 Gel S. Dripge Dripge 262.01 0.775 Gel S. Dripge Dripge Dripge 27.5 Sold Ab Dripge Dr			_					ř				1	Percol		
124.00 1 Pixit Loss Cells 162.00 1 P.V. 20.0 Biterb 202.00 1.50 Y.P. 10.5 Kwickseal 262.00 0.75 Gel S. Dringer Biterb 262.01 C. (mg/) 1160.0 PHPA 262.01 C. (mg/) Biterb Nawdust Sodat Ash 262.01 C. (mg/) Nouton Swadust Mod Vasi Mod Vasi 263.01 Cat (mg/) Last BOP Test Date Inderflow De 264.01 Sodat Ash Swadust Swadust Inderflow De 264.02 Total hote 1.2 Last BOP T			-									17	Sulphamic	3	
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202.00 1.50 Y.P. 10.5 Kwickeel 262.00 0.75 Gel S. Dripac 262.00 0.75 Gel S. 1.0 Barrie 262.01 Gel S. 1.0 Barrie Dripac 262.01 Gel GrangDi 1160.0 PHPA 262.01 Ga (mg/D) 1160.0 Saodas 262.01 Ga (mg/D) Mathematic Sacoas Saoda Ash 262.01 Total surf. 48.0 Next Gor Test Ol-Oct-30 Overflow De 10day total bases Camulative Next BOP Test Ol-Oct-30 Overflow De 10day total base Camulative Next BOP Test Ol-Oct-30 Overflow De 10day total base Total surf. 48.0 Next BOP Test Ol-Oct-30 Overflow De <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>20.0</td> <td></td> <td></td> <td>6</td> <td>2K-7</td> <td></td>			-						20.0			6	2K-7		
262.00 0.75 Gel S. Dripac Construction Filter Ck Desco Solids% 1.0 Bartie Construction Solids% 1.0 Bartie Construction Ca (mg/t) 1160.0 PiltrA Ca (mg/t) Supervision Supervision Supervision Mud losses Surface & Downhole Estimates m3 BOP & Casing Tests Date Total circulating Vol. 63.0 Last Casing Test Ol-Oci-30 Overflow Den Today losses down hole 28.0 Total hole 15.2 Last BOP Test Ol-Oci-30 Underflow Den Today losses a surface 0.0 Total hole 15.2 Last BOP Test Operating how Today losses a surface 0.0 Total hole 15.2 Last Casing Test Pilow Ratem Today losses a surface 0.0 Total hole Next Casing Test Operating how Today losses a surface 0.0 Total hole Next Casing Test Operating how Today losses a surface 0.0 Total hole <			-							1	1	15	Cal carb		
Vell Control - kPa Filter Ck Desce 01 Filter Ck 1.0 Barte 02 03 Filtersal Barte 03 Ca (mg/l) 1160.0 Filtersal 04 Ca (mg/l) 1160.0 Several 1 1 Ca (mg/l) 1160.0 Several 1 1 1160.0 Several Several 1 1 1160.0 Several Several Several 1 1 1160.0 Several Several Several Several 1 1 1160.0 Several MBT 22.5 Seda Ash 1 111 121.2 Last Casing Test 01-Oct-30 Underflow De 1 101 Catal several Next BOP Test 01-Oct-30 Overflow De 1 National several Next BOP Test 01-Oct-30 Overflow De 1 May to all losse Camual tive Next BOP Test 01-Oct-30 1 Well													Dyna det		
Note Solids % 1.0 Barrie 01 01 Fibersed 02 01 Fibersed 03 Ca (mg/l) 1160.0 PIIPA 04 01 Ca (mg/l) 80000.0 Sawdust 04 01 Ca (mg/l) 80000.0 Sawdust 04 01 72.8 Supersion Supersion 04 0 Temp 27.8 Supersion Mud van 04 0 1.2 Last Casing Tests Date Date 0404 Josses down hold 2.0 Total and Last Casing Test 0.1-Oct-30 Underflow De 0404 Josses down hold 2.0 Total surf. 48.0 Next Casing Test 0.0 Perton Mark 70day total losses Cumulative Next BOP Test 0.0 Operating how 7041 Josses at surface 0.0 Total surf. 48.0 Next Casing Test 0.0 Date 7041 Josses at surface 0.0 Total surf. 4.0 Torag up <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td>1</td> <td>1</td> <td>-</td> <td>2</td> <td>Walnut</td> <td></td>							1		1	1	-	2	Walnut		
Image: Constraint of the second state of the second sta									1.0				Lime Hydrated	1	
Vell Control - kPa Cl (mg/l) 80000.0 Sawdast MBT 22.5 Sofa Aså Temp 27.8 Supervision Mud losses Surface & Downhole Estimates m3 BOP & Casing Tests D1-Oct-30 Underflow De Total circulating Vol. 63.0 I ast Casing Test 01-Oct-30 Underflow De Today losses at surface 0.0 Total and the set Surface & Downhole Estimates m3 BOP & Casing Test 01-Oct-30 Underflow De Today losses at surface 0.0 Total and the set Surface & Downhole Estimates m3 BOP & Casing Test 01-Oct-30 Overflow Den Today losses at surface 0.0 Total and the set Surface & Downhole Estimates m3 BOP & Casing Test 01-Oct-30 Overflow Den Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #1 Ream Trip 4.00 1. With bask to B 3. Ream Strokes Pressone 10. Strokes 19. Flow chech 6. Trip 4.00 14.								-				14	Dyna fiber	14	
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Image: Note of the image in the image. The image is the image in the imag			-					. Ο /				185 14	MSDS pellets		
Mud Iosses Stype Mud Van Otal circulating Vol. 6.3.0 Last Casing Test Ol-Oct-30 Underflow De Today Iosses at surface 0.0 Total hole 15.2 Last BOP Test Ol-Oct-30 Overflow Den Today Iosses at surface 0.0 Total surf. 48.0 Next Casing Test Ol-Oct-30 Overflow Den Today Iosses at surface 0.0 Total surf. 48.0 Next Casing Test Olow Rate,mb Today Iosses at surface 0.0 Total surf. 48.0 Next BOP Test Operating how Today Iosses at surface 0.0 Total surf. 48.0 Next Casing Test Operating how Pump Strokes Pressure MACP Depth Drag up Torgue Backgrow RSPP #1 Strokes Pressure MACP Depth Drag up Torgue Backgrow 8. Ream 1. Wireline Logs 19. Flow Acc 19. Flow Acc 19. Flow Acc 9. Slip & Cut 1. Stroke P 22. Hand P T 20.0 Not												14	Day Cost	\$450	
Mud losses Surface & Downhole Estimates m3 BOP & Casing Test Date Total circulating Vol. 63.0 Last Casing Test 01-Oct-30 Underflow De Today losses ad swn hole 28.0 Total hole 15.2 Last BOP Test 01-Oct-30 Overflow Den Today losses at surface 0.0 Total surf. 48.0 Next Casing Test 01-Oct-30 Overflow Den Today losses at surface 0.0 Total surf. 48.0 Next Casing Test 01-Oct-30 Overflow Den Today losses at surface 0.0 Total surf. 48.0 Next Casing Test 01-Oct-30 Overflow Den Totag up Totag up Torque Backgrow 00-Oct-30 Operating how Well Control - kPa MACP Depth Drag up Torque Backgrow RSP #1 Drag up Torque Backgrow Connect RS Ris RS Newhole MACP Depth Drag up Torque Backgrow Ris Raw 17.1 Weld bow Newhole MACP Desth Mack MACP Desth Mack MACP Desth								-				30	Well Cost	\$64,377	
Today losses down hole 28.0 Total hole 15.2 Last BOP Test 01-Oct-30 Overflow Den Today total losses 0.0 Total surf. 48.0 Next Casing Test Flow Rate,n3. Today total losses Cumulative Next BOP Test Operating how Pump Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #1	e	s Surf	ace & I	Down	hole Estimat	es m3	BOP & C	- ·		ate		Cent	rifuge		
Today tosses at surface 0.0 Total surf. 48.0 Next Casing Test Flow Rate,m3 Today total losses 0.0 Total surf. 48.0 Next BOP Test Operating hou Pump RSPP #1 Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #2 0.0 Total 0.2 Drag up Torque Backgrow 1. Rig up/Out							——————————			Underflow Density					
Today total losses Cumulative Next BOP Test Operating how Well Control - kPa Hole Condition kdaN & Kft/# To Pump RSPP #1 Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #1 Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #2 I Rig up/Out 7.25 10. Strokes Pinew Pinew <t< td=""><td colspan="3">v v</td><td></td><td colspan="2"></td><td></td><td></td><td colspan="2">01-Oct-30</td><td colspan="2">Overflow Density</td><td></td><td></td></t<>	v v								01-Oct-30		Overflow Density				
Well Control - kPa Hole Condition kdaN & Kft/# To Pump RSPP #1 Strokes Pressure MACP Depth Drag up Torque Backgrow RSPP #1 Drag Dn Image Not Connect Book Load Trip 1. Rig up/Out 7.25 10. Survey 18. Wash to B 3. Wash to B 3. Ream 11. Wireline Logs 19. Flow checl 20. Wk on mut 20. Wk on mut 5. Circ. & Cond. 4.25 13. Pump Out Cement 0.75 21. Safety Me 6. Trip 4.00 14. Nipple Up BOP 22. Handle Tc 7. Safety Me 7. Rig Service 1.00 15. Test BOP & FIT 0.75 23 Other WO 7. Rig Service 1.00 15. Test BOP & FIT 0.75 23 Other WO 00:00-02:00 Continued to wait on accumulator tech. Functioned tested accumulator. 4 function test. Start pressure 21500 kpa Total pressure loss 8300 kpa. Pressure left on accumulator 13200 kpa. 07:30-08:15 Formation intregity test. Pressure build to 2000 kpa. 8:15-08:30 Displace hol to salt saturated mud. 08:30-10:15 Drill 311 mm hole from 229 m to 240 m. 07:30-08:15 Formation intregity test. Pressure build to 2000 kpa.<	*						0			Flow Rate,m3/min					
Pump RSPP #1 Strokes RSP #2 Pressure MACP Depth Drag Dn Torque Backgrou Connect Hook Load 1. Rig up/Out	s	es			Cumulative		Next D	OF Test			Operating	nours			
Pump RSPP #1 Strokes RSP #2 Pressure MACP Depth Drag Dn Torque Backgrou Connect Hook Load 1. Rig up/Out		W	ell Cor	ntrol -	kPa		He	ole Condition	ı kdaN & K	ft/#		Total Gas F	Readings (%)		
RSPP #2 Hook Load Trip 1. Rig up/Out 9. Slip & Cut 17. Weld bow 2. Drill 7.25 10. Survey 18. Wash to B 3. Ream 11. Wireline Logs 19. Flow check 4. Drill Out 12. Casing/Cement 20. Wk on mus 5. Circ. & Cond. 4.25 13. Pump Out Cement 0.75 6. Trip 4.00 14. Nipple Up BOP 22. Handle Tr 7. Rig Service 1.00 15. Test BOP & FIT 0.75 23 Other WO 8. Rig Repair 1.50 16. BOP Drill Total Hours REMARKS 00:00-02:00 Continued to wait on accumulator tech.Functioned tested accumulator. 4 function test. Start pressure 21500 kpa. Total pressure loss 8300 kpa. Pressure left on accumulator 13200 kpa. Time to recharge 1 min, 30 secs. 02:00-06:15 Run in hole tag cement @ 202 m. Drilled float @ 207 m. and shoe @ 220 m. 07:30-08:15 Formation intregity test. Pressure build to 2000 kpa. 19. Slip30. Slip30 cols bot salt saturated mud. 08:30-10:15 Drill 311 mm hole from 229 m to 2240 m. 10:15-13:30 Lost circulation.Drilled to 242 m, no returnes.Pumped LCM pill and spot on bottom. Top fill. No returnes Spot 2 r 13:30-16:00 Pulled out of hole 10:00 Hais 110:15-18:00 Waited on cement. 17:5-18:										Background					
I. Rig up/Out 9. Slip & Cut 17. Weld bow 2. Drill 7.25 10. Survey 18. Wash to B 3. Ream 11. Wireline Logs 19. Flow check 4. Drill Out 12. Casing/Cement 20. Wk on mut 5. Circ. & Cond. 4.25 13. Pump Out Cement 0.75 6. Trip 4.00 14. Nipple Up BOP 22. Handle Tr 7. Rig Service 1.00 15. Test BOP & FIT 0.75 8. Rig Repair 1.50 16. BOP Drill Total Hours REMARKS 00:00-02:00 Continued to wait on accumulator tech.Functioned tested accumulator. 4 function test. Start pressure 21500 kpa. Total pressure loss 8300 kpa. Pressure left on accumulator 13200 kpa. 17:30-08:15 Formation intregity test. Pressure built to 2000 kpa. 000 kpa. 06:15-07:30 Drill 311 mm hole from 220 m to 220 m. 0200 kpa. 07:30-08:15 Formation intregity test. Pressure build to 2000 kpa. 08:30 kpa. 08:30-01:15 Drill 311 mm hole from 229 m to 240 m. 01:15-13:30 Lost circulation.Drilled to 242 m, no returnes.Pumped LCM pill and spot on bottom. Top fill. No returnes Spot 2 r 15:30-16:00 Pulled out of hole 17:15-18:00 Waited on cement truck. 18:4	RSPP #1			_		Drag Dn				Connection					
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Mud Type		\$1,7	77,837		Today	\$41	,848	Total Cost	\$1,81	9,685	_		9deg, Rain		
				Rill W	llions		Rig Phone	,	700-640 710	6	• •		Polamer / salt rooker / Shar		
Arg 1 none /07-047-/100 1 aktil Dy;				5111 W	maills		Ang I nome		, 37-3 7 7-/10	v	rancii Dy:	I CITY D	JUNCI / OHAI	ic maney	

			Vulc	an Mi	nerals	5 Daily	Drill	ing Ke	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	<u> </u>	Day:	12	•	Date:	01-No	ov-09
Depth:	242.0	mKB	Progress:		Drilling:		hrs ROP, 1	n/hr:		Rig:	Stoneha	ım # 11
Operation	@ 0800 hrs:	Pump ceme	nt plug.							KB elev:	61.75	m.
	WOC, Drill									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
2	-	GT-C51	5157199	220	242	42	5	4 X 20	170	8-12		
3	311	HCM 608	109973	242	L	D: /101/0/1	TD 1 2 2	8 X 11.1	120			0.0165
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembly:	Bit /121/8" [NB stab, 2-2.	30 mm DC,			s,1 230 mm D	
Liner		165	165	BHA Lengt	th.	151.00	m	Strap:	Pump Pres	sure: Board:	3,200	kPa
Stroke	(mm) (mm)	279	279	Drill Collar			mm	Drill Pipe	D	Doaru.	mm	
SPM	(mm)	84	0	D.C. Annul		-	m/min	D.P Annula				
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity			m/sec	True Hydr			kW	
				····,								
		SUR	VEYS				MUD			MUD AL	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00		0.75				Density	1155		Caustic	1	Percol	
68.00		0.5				Vis.	58		Salt		Sulphamic	3
109.00		0.25				pН	11.2		Kelzan	17	T-352	
124.00		1				Fluid Loss			Cello		Defoamer	
162.00		1				P.V.	20.0		Bicarb	6	2K-7	
202.00		1.50				Y.P.	10.5		Kwickseal	15	Cal carb	
262.00		0.75				Gel S.			Drispac		Dyna det	
						Filter Ck			Desco	2	Walnut	
						Solids %	1.0		Barite		Lime Hydrated	1
						Oil			Fiberseal	14	Dyna fiber	14
						Ca (mg/l)	1160.0		PHPA		Bioside	1
						Cl (mg/l)	80000.0		Sawdust	185	MSDS	
						MBT	22.5		Soda Ash	14	pellets	
				1		Temp	27.8		Supervision		Day Cost	\$9,999
						XSPolymer			Mud Van	30	Well Cost	\$74,827
	losses Surfa		noie Estimat	es m5		asing Tests		ate			rifuge	
Fotal circu	lating Vol.	63.0			Last Cas	sing Test	01-0	oct-30	Underflow	Density	rifuge	
Fotal circu Foday losse	llating Vol. es down hole	63.0 28.0	Total hole	15.2	Last Cas Last BO	sing Test OP Test	01-0		Overflow D	Density Density	rifuge	
Fotal circu Foday losse Foday losse	llating Vol. es down hole es at surface	63.0	Total hole Total surf.	15.2 48.0	Last Cas Last B(Next Cas	sing Test OP Test sing Test	01-0	oct-30	Overflow E Flow Rate,	Density Density m3/min	rifuge	
Fotal circu Foday loss Foday loss	llating Vol. es down hole es at surface	63.0 28.0	Total hole	15.2 48.0	Last Cas Last B(Next Cas	sing Test OP Test	01-0	oct-30	Overflow D	Density Density m3/min	rifuge	
Fotal circu Foday loss Foday loss	llating Vol. es down hole es at surface l losses	63.0 28.0 0.0	Total hole Total surf. Cumulative	15.2 48.0	Last Cas Last BO Next Cas Next BO	sing Test OP Test sing Test OP Test	01-0 01-0	0ct-30 0ct-30	Overflow E Flow Rate, Operating	Density Density m3/min hours		
Fotal circu Foday losse Foday losse Foday tota	lating Vol. es down hole es at surface l losses We	63.0 28.0 0.0	Total hole Total surf. Cumulative kPa	15.2 48.0	Last Cas Last B(Next Cas Next B(Ho	sing Test OP Test sing Test	01-0 01-0	0ct-30 0ct-30	Overflow D Flow Rate, Operating	Density Density m3/min hours Total Gas F	rifuge	
Total circu Today losse Today losse Today tota Pump	llating Vol. es down hole es at surface l losses	63.0 28.0 0.0	Total hole Total surf. Cumulative	15.2 48.0	Last Cas Last BC Next Cas Next BC Ho Drag up	sing Test OP Test sing Test OP Test	01-0 01-0	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg	Density Density m3/min hours Total Gas F ground		
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	llating Vol. es down hole es at surface l losses We Strokes	63.0 28.0 0.0 Il Control - Pressure	Total hole Total surf. Cumulative kPa MACP	15.2 48.0 Depth	Last Cas Last B(Next Cas Next B(Ho	sing Test OP Test sing Test OP Test	01-0 01-0	0ct-30 0ct-30	Overflow E Flow Rate, Operating D Backg Conn	Density Density m3/min hours Total Gas F		
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	llating Vol. es down hole es at surface l losses We Strokes	63.0 28.0 0.0 Il Control - Pressure	Total hole Total surf. Cumulative kPa MACP	15.2 48.0 Depth	Last Cas Last BO Next Cas Next BO Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test de Condition	01-0 01-0 a kdaN & K i Torque	0ct-30 0ct-30	Overflow E Flow Rate, Operating D Backg Conn	Density Density m3/min hours Total Gas F ground ection		
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	llating Vol. es down hole es at surface l losses We Strokes	63.0 28.0 0.0 Il Control - Pressure 1120	Total hole Total surf. Cumulative kPa MACP	15.2 48.0 Depth	Last Cas Last BO Next Cas Next BO Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test ole Condition 38000	01-0 01-0 a kdaN & K i Torque	0ct-30 0ct-30	Overflow E Flow Rate, Operating D Backg Conn	Density Density m3/min hours Total Gas F ground ection rip		
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/C 2. Drill	63.0 28.0 0.0 Il Control - Pressure 1120	Total hole Total surf. Cumulative kPa MACP	15.2 48.0 Depth	Last Cast Last BC Next Cas Next BC Drag up Drag Dn Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test OP Test sing Test OP Test ole Condition 38000	01-0 01-0 a kdaN & K i Torque	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t	Density Density m3/min hours Total Gas F ground ection cip owl o Btm		
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/O 2. Drill 3. Ream	63.0 28.0 0.0 Il Control - Pressure 1120 Dut	Total hole Total surf. Cumulative kPa MACP 1742	15.2 48.0 Depth	Last Cast Last B(Next Cast Next B(Drag up Drag Up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs	01-0 01-0 h kdaN & K Torque 3500 0.25	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch	Density Density m3/min hours Total Gas F ground ection cip owl o Btm ecks		
Fotal circu Foday losse Foday losse Foday tota	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	63.0 28.0 0.0 Il Control - Pressure 1120 Dut	Total hole Total surf. Cumulative kPa MACP 1742 7.75	15.2 48.0 Depth	Last Cas Last B(Next Cas Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/	sing Test OP Test sing Test OP Test ole Condition 38000 Cut cut cut Cement	01-0 01-0 h kdaN & Ki Torque 3500	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1	Density Density m3/min hours Total Gas F ground ection cip owl o Btm ecks nud pumps	Readings (%)	
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C	63.0 28.0 0.0 Il Control - Pressure 1120 Dut	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50	15.2 48.0 Depth	Last Cas Last B(Next Cas Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (sing Test OP Test sing Test OP Test e Condition 38000 Cut ne Logs (Cement Out Cement	01-0 01-0 h kdaN & K Torque 3500 0.25	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety	Density Density m3/min hours Total Gas F ground ection cip owl o Btm ecks mud pumps Meeting		
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Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50	15.2 48.0 Depth	Last Cas Last B(Next Cas Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump (14. Nipple 15. Test B(sing Test OP Test sing Test OP Test ole Condition 38000 Cut the Logs //Cement Out Cement Up BOP OP & FIT	01-0 01-0 h kdaN & K Torque 3500 0.25	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond.	Total hole Total surf. Cumulative KPa MACP 1742 7.75 2.50 3.75	15.2 48.0 Depth	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple	sing Test OP Test sing Test OP Test ole Condition 38000 Cut the Logs //Cement Out Cement Up BOP OP & FIT	01-0 01-0 h kdaN & K Torque 3500 0.25	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Fotal circu Foday losse Foday losse Foday tota Pump RSPP #1	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50	15.2 48.0 Depth	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Sut ne Logs (Cement Out Cement Out Cement Up BOP OP & FIT rill	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Fotal circu Foday losse Foday tota Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & d 6. Trip 7. Rig Serv 8. Rig Reps	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50	15.2 48.0 Depth	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut the Logs //Cement Out Cement Up BOP OP & FIT	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Total circu Today losse Today losse Today tota Pump RSPP #1 RSPP #2 0:00-01:00	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00	15.2 48.0 Depth	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Sut ne Logs (Cement Out Cement Out Cement Up BOP OP & FIT rill	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Total circu Today losse Today losse Today tota Pump RSPP #1 RSPP #2 00:00-01:00 00:00-01:00 01:00-02:00	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	63.0 28.0 0.0 Pressure 1120 Dut t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Sut ne Logs (Cement Out Cement Out Cement Up BOP OP & FIT rill	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 00:00-01:00 01:00-02:00 12:00-04:00	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa) Wait on cerr) Run in hole, 0 Condition m	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air hent tag cement uud and drill	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Sut ne Logs (Cement Out Cement Out Cement Up BOP OP & FIT rill	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	0ct-30 0ct-30	Overflow E Flow Rate, Operating Backg Conn Th 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa) Wait on cem) Run in hole, 0 Condition m 5 Drilled from	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air ent tag cement tag cement uud and drill 1 242 m. to 2	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from 284 m.	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump (14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs /Cement Out Cement Out Cement Du BOP OP & FIT rill REMARKS	01-0 01-0 0 kdaN & K Torque 3500 0.25 0.75	ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection cip owl o Btm eccks nud pumps Meeting Tools /O cement	Readings (%)	
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Otal circu `oday losse `oday losse `oday tota `oday tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45 3:15-15:15 5:15-17:00	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & d 6. Trip 7. Rig Serv 8. Rig Repa) Wait on cem) Run in hole, 0 Condition m 5 Drilled from 5 Lost circulat	63.0 28.0 0.0 11 Control - Pressure 1120 Dut t Cond. ice air ment tag cement (mud and drill 1 242 m. to 2 tion @ 284 r f hole and ra ement truck	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump C 14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test de Condition 38000 Sut ne Logs (Cement Out Cement Up BOP DP & FIT rill REMARKS spotted LCM e	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Total circu Today losse Today losse Today tota Today tota Pump RSPP #1 RSPP #2 00:00-01:00 11:00-02:00 2:00-04:00 4:00-11:45 1:45-13:15 5:15-17:00 7:00-17:45	lating Vol. es down hole es at surface l losses We Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps 0 Wait on cerr 0 Run in hole, 0 Condition m 5 Drilled from 5 Drilled from 5 Dulled for or 5 Pulled on co	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air hent tag cement (ind and drill in 242 m. to 2 inion @ 284 n f hole and rg ement truck water, 6 m3	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump C 14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test de Condition 38000 Sut ne Logs (Cement Out Cement Up BOP DP & FIT rill REMARKS spotted LCM e	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Total circu Today losse Today losse Today tota Today tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45 1:45-13:15 3:15-15:15 7:15-17:00 7:00-17:45	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa 0 Wait on cem 0 Run in hole, 0 Condition m 5 Drilled from 5 Lost circulat 5 Pulled out o 9 Wait on cef 9 Pulled out of h	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air hent tag cement 4 uud and drill 1 242 m. to 2 tion @ 284 m f hole and ra f hole and ra sole	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump C 14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test de Condition 38000 Sut ne Logs (Cement Out Cement Up BOP DP & FIT rill REMARKS spotted LCM e	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Total circu Today losse Today losse Today tota Today tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45 1:45-13:15 3:15-15:15 7:15-17:00 7:00-17:45	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Reps) Wait on cerr) Run in hole,) Condition m 5 Drilled from 5 Dilled from 5 Dulled out on 5 Wait on cerr 9 Wait on cerr 9 Pulled out of h 9 Wait on cerr	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air u d and drill 1 242 m. to 2 icine (284 m) f hole and raz if hole and raz ice ament truck water, 6 m3 iole inent	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from 284 m. n. Drilled bli un in to 274 n . class A, 180	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump C 14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs /Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS spotted LCM e er seal and .5	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Cotal circu Coday losse Coday losse Coday tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45 1:45-13:15 3:15-15:15 7:45-18:30	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Reps) Wait on cerr) Run in hole,) Condition m 5 Drilled from 5 Dilled from 5 Dulled out on 5 Wait on cerr 9 Wait on cerr 9 Pulled out of h 9 Wait on cerr	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air u d and drill 1 242 m. to 2 icine (284 m) f hole and raz if hole and raz ice ament truck water, 6 m3 iole inent	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump C 14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs /Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS spotted LCM e er seal and .5	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Cotal circu Coday losse Coday losse Coday tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 4:00-11:45 1:45-13:15 3:15-15:15 7:45-18:30	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Reps) Wait on cerr) Run in hole,) Condition m 5 Drilled from 5 Dilled from 5 Dulled out on 5 Wait on cerr 9 Wait on cerr 9 Pulled out of h 9 Wait on cerr	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air inent tag cement 1 ud and drill 1 242 m. to 2 tion @ 284 m f hole and ra ement truck water, 6 m3 iole ent irculation af	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from 284 m. n. Drilled bli un in to 274 n . class A, 180	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump C 14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs /Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS spotted LCM e er seal and .5	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Readings (%)	
Total circu Today losse Today losse Today tota Pump RSPP #1 RSPP #2 00:00-01:00 01:00-02:00 02:00-04:00 11:45-13:15 13:15-15:15 15:15-17:00 7:00-17:45 13:45-18:30 8:30-24:00	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Our 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa 0 Wait on cen 0 Condition m 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled fr	63.0 28.0 0.0 11 Control - Pressure 1120 Dut t Cond. ice air hent tag cement of hud and drill icu and drill icu and a drill ic	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n class A, 180 ter drilling ou	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump C 14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs (Cement Out Cement Out Cement Out Cement Ut p BOP OP & FIT rill REMARKS spotted LCM e er seal and .5	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm ecks mud pumps Meeting 'Tools /O cement s	Contraction Readings (%) Image: Contraction of the second	
Total circu Today loss Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-01:00 01:00-02:00 02:00-04:00 11:45-13:15 13:15-15:15 15:15-17:00 17:00-17:45 17:45-18:30	lating Vol. es down hole es at surface l losses Wel Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 0 Wait on cent 0 Run in hole, 0 Condition m 5 Drilled from 5 Lost circulat 5 Pulled out o 0 Waited on c 5 Pulled out o 0 Waited on cent 5 Pulled out o 1 Waited on cent 7 Note: Lost cent 8 Note: Lost cent 9 Waited cent 1	63.0 28.0 0.0 11 Control - Pressure 1120 Dut t Cond. ice air hent tag cement of hud and drill icu and drill icu and a drill ic	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from 284 m. n. Drilled bli un in to 274 n . class A, 180	15.2 48.0 Depth 250	Last Cast Last BC Next Cast Next BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/ 13. Pump C 14. Nipple 15. Test BC 16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut ne Logs /Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS spotted LCM e er seal and .5	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75 0.75	bet-30 bet-30 ft/#	Overflow E Flow Rate, Operating J Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety J 22. Handle 23 Other W Total Hour nes.	Density Density Density m3/min hours Total Gas F ground ection cip owl o Btm ecks mud pumps Meeting 'O cement s m3 water.	Readings (%)	
Cotal circu Cotal circu Cotay losse Cotay losse Cotay tota Pump RSPP #1 RSPP #2 0:00-01:00 1:00-02:00 2:00-04:00 1:45-13:15 3:15-15:15 5:15-17:00 7:00-17:45 8:30-24:00 Cops:	lating Vol. es down hole es at surface l losses Strokes 35 1. Rig up/C 2. Drill 3. Ream 4. Drill Our 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa 0 Wait on cen 0 Condition m 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled from 5 Drilled fr	63.0 28.0 0.0 Il Control - Pressure 1120 Dut t Cond. ice air hent tag cement (ind and drill a 242 m. to 2 ind and drill a 242 m. to 2 ind and drill a 242 m. to 2 ind and drill a 242 m. to 3 ind and drill b 242 m. to 3 ind and drill b 242 m. to 3 ind and drill b 242 m. to 3 ind and drill ind 243 m. to 3 ind and drill ind and drill ind and drill ind and drill ind 284 m ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind ind 	Total hole Total surf. Cumulative kPa MACP 1742 7.75 2.50 3.75 0.50 0.00 @ 225 m. cement from :84 m. n. Drilled bli un in to 274 n class A, 180 ter drilling ou	15.2 48.0 Depth 250	Last Cast Last B(Next Cast Next B(Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump C 14. Nipple 15. Test B(16. BOP D	sing Test OP Test sing Test OP Test ole Condition 38000 Cut at Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS spotted LCM e er seal and .5 02 @ 287 m. Total Cost	01-0 01-0 1 kdaN & Ki Torque 3500 0.25 0.75 0.75	et-30 ect-30 ft/#	Overflow E Flow Rate, Operating Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other W Total Hour	Density Density m3/min hours Total Gas F ground ection rip owl o Btm tecks nud pumps Meeting ' Tools /O cement s	Contraction Readings (%) Image: Contraction 0.50 8.00 24.00	t

			Vulc	an Mi	ineral	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	v	Day:	13	•	Date:	02-No	ov-09
Depth:	242.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	ım # 11
-	a @ 0800 hrs:		tion							KB elev:	61.75	
	a Cement plu		~	_						KB - GL	6.30	
Bit #		Model IADC HCM 608	Serial No. 109973	In 242	Out	Metres	Hours	Nozzles 8 X 11.1	RPM 120	WOB kdaN 08-Oct	IODL	BGOR
3	311		109973	242				0 / 11.1	120	06-001		
		Pump 1	Pump 2	Drilling As	sembly:	Bit /121/8"]	NB stab. 2-2	30 mm DC.	121/8" mm sta	ab. XO. Jars	.1 230 mm D	C. 8 165 m
Model		PZ-11	PZ-11		semsiye		(12) State, 2 2		Pump Press			kPa
Liner	(mm)	165	165	BHA Leng	th:	151.00	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla	r O.D.		mm	Drill Pipe (O.D.		mm	
SPM		84	0	D.C. Annu	lar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocit	y:		m/sec	True Hydr	aulic HP:		kW	
		0							_			
	epth	SUR Drift	VEYS Azimuth	North	East	Time	MUD		Gel	MUD AD	DITIVES	
36.00	epui	0.75	ALIIIUUI	INOLUI	Last	Density	1105		Gei Caustic	1	CaC03 Percol	
68.00		0.75				Vis.	48		Salt	210	Sulphamic	2
109.00		0.25				pH	11.6		Kelzan	4	T-352	2
124.00	1	1	1	1	t	Fluid Loss	17.4	1	Cello	10	Defoamer	
162.00		1			İ	P.V.	15.0	1	Bicarb	6	2K-7	1
202.00		1.50				Y.P.	6.0		Kwickseal	11	Cal carb	
262.00	1	0.75			İ	Gel S.		İ	Drispac		Dyna det	
						Filter Ck			Desco	10	Walnut	
	1				1	Solids %	11.0	1	Barite		Lime Hydrated	1
	1				İ	Oil		1	Fiberseal	14	Dyna fiber	14
						Ca (mg/l)	920.0		PHPA		Bioside	1
						Cl (mg/l)	76000.0		Sawdust	14	MSDS	
						MBT	17.5		Soda Ash	40	pellets	
						Temp	0.0		Supervision		Day Cost	\$12,004
						XSPolymer			Mud Van	30	Well Cost	\$86,831
	d losses Surfa		nole Estimat	es m3		asing Tests	-	ate			rifuge	
	ulating Vol.	63.0	T-4-11-1	110.0		sing Test		Oct-30	Underflow I			
	ses down hole		Total hole	110.0		OP Test	01-0	Oct-30	Overflow D	ĩ		
Foday loss	ses at surface al losses	0.0	Total surf. Cumulative	22.0 132.0		sing Test OP Test			Flow Rate,n Operating h			
louay tota	ai 105505		Cumulative	132.0	TICAL D	OI Itst			Oper ating i	louis		
	We	ll Control -	kPa		Н	ole Condition	ı kdaN & K	ft/#	, r	Fotal Gas R	leadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg			
RSPP #1		1120	1742	250	Drag Dn		Torque		Conne			
RSPP #2					Hook Load	38000	3500)	Tr	ip		
				_				_				
	1. Rig up/O	Dut			9. Slip & O			_	17. Weld be			
	2. Drill		1.75		10. Survey		0.25	_	18. Wash to			
	3. Ream				11. Wireli	0		_	19. Flow ch			
	4. Drill Ou		0.50		12. Casing		0.50	_	20. Wk on n		0.50	
	5. Circ. &	Cond.	2.50		-	Out Cement		_	21. Safety M 22. Handle		0.50	
	6. Trip 7. Rig Serv	vice	7.00		14. Nipple 15. Test B			-	22. Handle 23 Other W		8.50	
	0		0.73	-	16. BOP D			-	Total Hours		21.75	
	8 Rig Ren		0.00		10. DOI D	// 111				,		
	8. Rig Rep											
	8. Rig Rep					REMARKS	.				21110	
):00-00:3	8. Rig Rep					REMARKS						
	5 1	nent	@ 279 m. D	rill cement to	o 286 m.	REMARKS	5	-				
0:30-03:0	0 Wait on cen	nent , tag cement										
0:30-03:0 3:00-04:0	0 Wait on cen 0 Run in hole	nent , tag cement tion,mix LCl	M pill,and dr	ill to 290 m.								
00:30-03:0 03:00-04:0 04:00-06:1 06:15-07:3	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe	nent , tag cement tion,mix LCl pill and pull opended dri	M pill,and dr ed out of hol	ill to 290 m. e.			5					
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 7:30-08:1	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen	nent , tag cement tion,mix LCl pill and pull opended dri nent truck	M pill,and dr ed out of hol ll pipe to 287	ill to 290 m. e. ⁷ m.	No returnes	;						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 07:30-08:1 98:15-09:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem	M pill,and dr ed out of hol ll pipe to 287	ill to 290 m. e. ⁷ m.	No returnes	;		-				
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 7:30-08:1 8:15-09:0 9:00-15:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent.	M pill,and dr ed out of hol ll pipe to 287 ent with LCl	ill to 290 m. e. 7 m. M material a	No returnes	; 1 with 1 m3 w						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 7:30-08:1 8:15-09:0 9:00-15:0 5:00-16:4	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer	M pill,and dr ed out of hol ll pipe to 287 ent with LC nent from 28	ill to 290 m. e. 7 m. M material a	No returnes	; 1 with 1 m3 w						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:30 7:30-08:1 8:15-09:0 9:00-15:0 5:00-16:4 6:45-17:1	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294	nent , tag cement tion,mix LCC pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne	M pill,and dr ed out of hol ll pipe to 287 ent with LC nent from 28	ill to 290 m. e. 7 m. M material a	No returnes	; 1 with 1 m3 w						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 7:30-08:1 8:15-09:0 9:00-15:0 5:00-16:4 6:45-17:1 7:15-18:3	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 5 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne nole	M pill, and dr ed out of hol Il pipe to 287 ent with LCI nent from 28 es.	ill to 290 m. e. 7 m. M material a 4 to 291 m.	No returnes	; 1 with 1 m3 w						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:30 7:30-08:1 8:15-09:00 9:00-15:0 5:00-16:4 6:45-17:1 7:15-18:3 8:30-19:3	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1 0 Run in hole	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne nole open ended	M pill, and dr ed out of hol Il pipe to 287 ent with LCI nent from 28 es.	ill to 290 m. e. 7 m. M material a 4 to 291 m.	No returnes	; 1 with 1 m3 w						
0:30-03:0 3:00-04:0 4:00-06:1 6:15-07:3 7:30-08:1 8:15-09:0 9:00-15:0 5:00-16:4 6:45-17:1 7:15-18:3 8:30-19:3 9:30-20:3	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Stun in hole 5 Drill to 294 0 Pull out of H 0 Run in hole 0 Run in hole 0 Wait on cen	nent , tag cement tion,mix LCl pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne ole open ended nent truck.	M pill, and dr ed out of hol Il pipe to 287 eent with LCl nent from 28 ess. drill pipe to 3	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m.	No returnes nd displaced Lost circulat	i with 1 m3 w	/ater.					
0:30-03:0 3:00-04:0 4:00-06:1. 6:15-07:3 7:30-08:1. 8:15-09:0 9:00-15:0 5:00-16:4. 6:45-17:1. 7:15-18:3 8:30-19:3 9:30-20:3 0:30-21:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1 0 Run in hole	nent , tag cement tion,mix LCl pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne ole open ended nent truck. Class A cem	M pill, and dr ed out of hol Il pipe to 287 eent with LCl nent from 28 ess. drill pipe to 3	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m.	No returnes nd displaced Lost circulat	i with 1 m3 w	/ater.					
0:30-03:0 03:00-04:0 03:00-04:0 14:00-06:1 16:15-07:3 17:30-08:1 18:15-09:0 19:00-15:0 5:00-16:4 6:45-17:1 7:15-18:3 8:30-19:3 9:30-20:3 0:30-21:0 1:00-22:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of H 0 Run in hole 0 Run in hole 0 Run in hole 0 Run in cen 0 Pump 6 m3	nent , tag cement tion,mix LCl pill and pull opended dri nent truck Class A cem nent. and drill cer m,no return nole open ended nent truck. Class A cem nole	M pill, and dr ed out of hol Il pipe to 287 eent with LCl nent from 28 ess. drill pipe to 3	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m.	No returnes nd displaced Lost circulat	i with 1 m3 w	/ater.					
0:30-03:0 03:00-04:0 03:00-04:0 14:00-06:1 16:15-07:3 17:30-08:1 18:15-09:0 19:00-15:0 5:00-16:4 6:45-17:1 7:15-18:3 8:30-19:3 9:30-20:3 0:30-21:0 1:00-22:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of I 0 Quin on cen 0 Run in hole 0 Quin to ncen 0 Quin on cen 0 Run in hole 0 Quin on cen 0 Quin	nent , tag cement tion,mix LCl pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne open ended nent truck. Class A cem ole nent.	M pill, and dr ed out of hol Il pipe to 287 nent with LCl nent from 28 es. drill pipe to 2 nent with LCl	ill to 290 m. e. 7 m. M material a i4 to 291 m. 287 m. M material a	No returnes nd displaced Lost circulat nd displaced	i with 1 m3 w	/ater.					
0:30-03:0 3:00-04:0 4:00-06:1. 6:15-07:3 7:30-08:1. 8:15-09:0 9:00-15:0 5:00-16:4. 6:45-17:1. 7:15-18:3 8:30-19:3 9:30-20:3 0:30-21:0 1:00-22:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 0 Pump 6 m3 0 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of I 0 Quin on cen 0 Run in hole 0 Quin to ncen 0 Quin on cen 0 Run in hole 0 Quin on cen 0 Quin	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returna ole open ended nent truck. Class A cem open ended nent truck. Class A cem nole nent. Note: Lost	M pill, and dr ed out of hol Il pipe to 287 nent with LCl nent from 28 es. drill pipe to 2 nent with LCl	ill to 290 m. e. 7 m. M material a i4 to 291 m. 287 m. M material a	No returnes nd displaced Lost circulat nd displaced	1 with 1 m3 w tion. 1 with 1 m3 w	/ater.					
00:30-03:0 03:00-04:0 14:00-06:1: 16:15-07:3(3) 17:30-08:1: 19:15-09:0 19:00-15:0 15:00-16:4; 16:45-17:1: 17:15-18:3(3) 19:30-20:3(2) 20:30-21:0 21:00-22:0 22:00-24:00 Fops:	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 5 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1 0 Run in hole 0 Wait on cen 0 Pump 6 m3 0 Pull out of 1 0 Run in cen 0 Pump 6 m3	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne nole open ended nent truck. Class A cem nole nent truck. Stass A cem nole nent. Note: Lost s today.	M pill, and dr ed out of hol Il pipe to 287 ment with LCI ment from 28 ess. drill pipe to 3 ment with LCI returnes @	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m. M material a 287 m whi	No returnes nd displaced Lost circulat nd displaced	l with 1 m3 w tion. l with 1 m3 w ut cement. @	/ater. /ater. 2 08:00 hrs					
00:30-03:0 03:00-04:0 03:00-04:0 04:00-06:1 06:15-07:3 07:30-08:1 08:15-09:0 09:00-15:0 15:00-16:4 16:45-17:1 17:15-18:3 19:30-20:3 20:30-21:0 21:00-22:0	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 5 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1 0 Run in hole 0 Wait on cen 0 Pump 6 m3 0 Pull out of 1 0 Run in cen 0 Pump 6 m3	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returna ole open ended nent truck. Class A cem open ended nent truck. Class A cem nole nent. Note: Lost	M pill, and dr ed out of hol Il pipe to 287 nent with LCl nent from 28 es. drill pipe to 2 nent with LCl	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m. M material a 287 m whi	No returnes nd displaced Lost circulat nd displaced	1 with 1 m3 w tion. 1 with 1 m3 w	/ater. /ater. 2 08:00 hrs	86,723	Weather:		5deg, Sunny.	
00:30-03:0 03:00-04:0 14:00-06:1: 16:15-07:3(3) 17:30-08:1: 19:15-09:0 19:00-15:0 15:00-16:4; 16:45-17:1: 17:15-18:3(3) 19:30-20:3(2) 20:30-21:0 21:00-22:0 22:00-24:00 Fops:	0 Wait on cen 0 Run in hole 0 Lost circula 5 Pump LCM 0 Run in hloe 5 Wait on cen 5 Wait on cen 5 Run in hole 5 Drill to 294 0 Pull out of 1 0 Run in hole 0 Wait on cen 0 Pump 6 m3 0 Pull out of 1 0 Run in cen 0 Pump 6 m3	nent , tag cement tion,mix LCI pill and pull opended dri nent truck Class A cem nent. and drill cer m,no returne nole open ended nent truck. Class A cem nole nent. Class A cem nole nent. Note: Lost s today.	M pill, and dr ed out of hol Il pipe to 287 ment with LCI ment from 28 ess. drill pipe to 3 ment with LCI returnes @	ill to 290 m. e. 7 m. M material a 4 to 291 m. 287 m. M material a 287 m whi	No returnes nd displaced Lost circulat nd displaced	d with 1 m3 w tion. d with 1 m3 w ut cement. @ Total Cost	/ater. /ater. 2 08:00 hrs	86,723	Weather: Mud Type Taken By:			t

-		Vl-										
Operation		vuic	an Investca	n Red Bro	ok #2		Day:	14		Date:	03-N	ov-09
-	300.0	mKB	Progress:	13.0	Drilling:	7.60	hrs ROP,	n/hr:	7.60	Rig:	Stoneha	
the next d	@ 0800 hrs:		tion							KB elev:	61.75	
	Cement plug			-	Q (~~			KB - GL	6.30	
Bit #	Size/Make			In 242	Out	Metres	Hours	Nozzles	RPM 120	WOB kdaN	IODL	BGOR
3	311	HCM 608	109973	242		1		8 X 11.1	120	1		
		Pump 1	Pump 2	Drilling As	sembly.	Bit /121/8"]	NB stah 2-2	30 mm DC	121/8" mm s	tah XO Jars	s,1 230 mm D	C 8 165 m
Model		PZ-11	PZ-11	Di liling As	sembry.	Dit / 121/6	ND Stab , 2-2	50 mm DC,	Pump Pres			kPa
Liner	(mm)	165	165	BHA Lengt	h:	233.00	m	Strap:		Board:	5,200	ili u
Stroke	(mm)	279	279	Drill Collar		200100	mm	Drill Pipe	0.D.	-	mm	
SPM	()	84	0	D.C. Annul		-	m/min	D.P Annul			m/min	
Vol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity	:		m/sec	True Hydr			kW	
								•			-	
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
36.00	1	0.75	ļ			Density	1105		Caustic	ļ	Percol	
68.00		0.5				Vis.	45		Salt	_	Sulphamic	2
109.00		0.25				pH	11.8		Kelzan	2	T-352	2
124.00	-	1				Fluid Loss	21.0		Cello	3	Defoamer	
162.00		1				P.V.	10.0		Bicarb	2	2K-7	2
202.00		1.50				Y.P.	3.5		Kwickseal		Cal carb	
262.00		0.75				Gel S.			Drispac	5	Dyna det	
						Filter Ck			Desco	-4	Walnut	
						Solids %	6.5		Barite	L	Lime Hydrate	
						Oil	1000 -		Fiberseal		Dyna fiber	14
						Ca (mg/l)	1080.0		PHPA	1	Bioside	1
	-					Cl (mg/l)	38000.0		Sawdust	36	MSDS	
						MBT	15.0		Soda Ash	2	pellets	
						Temp	22.0		Supervision	20	Day Cost	\$3,592
М	11 Cf-		l. E-44			XSPolymer		-	Mud Van	30	Well Cost	\$90,424
	l losses Surfa		iole Estimat	es mo		asing Tests		ate Oct-30	TI		rifuge	
	ulating Vol. ses down hole	35.0 30.0	Total hole	110.0		sing Test OP Test		oct-30	Underflow Overflow I			
	ses at surface	0.0	Total surf.	32.0		ising Test	01-0	CI-30	Flow Rate,	•		
Today tota		30.0	Cumulative	132.0		OP Test			Operating			
.									-18			
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas F	Readings (%)	1
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Back	ground	0.	00
RSPP #1	35	1120	1742	250	Drag Dn				Conr	nection	0.	00
RSPP #2					Hook Load	38000	3500		Т	rip	0.	00
								-				
	1. Rig up/C	Dut			9. Slip & C			-	17. Weld b			
	2. Drill		3.25		10. Survey			-	18. Wash t			
	3. Ream				11. Wireli	0		-	19. Flow ch			
	4. Drill Ou		2 50		12. Casing	,	1.25	-		mud pumps	0.50	
	5. Circ. &	cona.	3.50			Out Cement		-	21. Safety	-	0.50	
	6. Trip 7. Dia Som	iaa	<u>3.50</u> 0.75		14. Nipple 15. Test B	-		-	22. Handle 23 Other V		11.25	
	7. Rig Serv 8. Rig Rep		0.75		16. BOP D			-	25 Other v Total Hour		$\frac{11.25}{24.00}$	
	o. Kig Kepa	a11	0.00		10. DOI D	/1 111		-	10141 11001	.5	24.00	
						REMARKS						
00:00-04:1	5 Wait on cen	nent										
	0 Run in hole.		@ 273 m. D	rill cement to	287 m.							
08:00-10:0	0 Lost circulat	tion @ 287 r	n. Drill ceme	ent to 296 m.	No returnes	5. Drill to 300	m.No return	nes.				
	0 Mix and Pu				hole.No retu	urnes.						
12:30-13:3	0 Run in hloe	opended dri	ll pipe to 287	' m.								
	5 Wait on cen											
	0 Pump 6 m3		ent with LC	M material a	nd displaced	l with 1 m3 w	ater.					
	5 Wait on cen											
22:45-24:0	0 Run in hole	to 260m										
	No Incident	s today.										
Tops:		-	-		-		-	-	-	-	-	
Prev Cost	\$1,88	6,723	Today	\$40	,567	Total Cost	ĺ	27,290	Weather: Mud Type		deg, Heavy ra Polamer / sal	t
Foreman		ын w	'illiams		Rig Phone	1	09-649-710	U	Taken By:	теггу Ві	rooker / Shai	ie nalley

			Vulo	an Mi	ineral	s Daily	v Drill	ing R	eport			
Well: Depth:	303.0	Vulc mKB	an Investca Progress:	an Red Bro 3.0	ok #2 Drilling:	1.00	Day: hrs ROP,		7.60	Date: Rig:	04-No	ov-09 am # 11
Operation	@ 0800 hrs:	Wait on cen	nent plug		0		,			KB elev:	61.75	m.
the next da	a Drill out plu	ıg, Drill ahea	ıd.							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
3	311	HCM 608	109973	242				8 X 11.1	120			
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,			203mm DC,	
Model		PZ-11	PZ-11	DILL	4	222.00		64	Pump Pres		3,200	kPa
Liner	(mm)	165	165	BHA Lengt		233.00	m	Strap:	0.0	Board:		
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe			mm	
SPM Vol.	m ³ /min @ 95%	84 1.4300	0.0000	D.C. Annul Jet Velocity			m/min m/sec	D.P Annul			_m/min kW	
v 01.	m /min @ 95%	1.4300	0.0000	Jet velocity	y:		m/sec	True Hydr	aulic HF:		KVV	
		SUR	VEYS				MUD			MUD AI	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	16:19	1	Gel	65	CaC03	
36.00	1	0.75				Density	1080		Caustic		Percol	
68.00		0.5				Vis.	41		Salt	132	Sulphamic	4
109.00		0.25				pН	10.4		Kelzan	2	T-352	
124.00		1				Fluid Loss	26.0		Cello		Defoamer	
162.00		1				P.V.	9.0		Bicarb	Γ	2K-7	
202.00		1.50				Y.P.	3.5		Kwickseal	10	Cal carb	
262.00		0.75			İ	Gel S.	1/2/2.5	1	Drispac	Ì	Dyna det	
	1				1	Filter Ck	3.0	1	Desco	1	Walnut	
						Solids %	5.0		Barite	1	Lime Hydrate	d
						Oil			Fiberseal	1	Dyna fiber	
	1	İ	1	1	Ì	Ca (mg/l)	760.0	1	PHPA	1	Bioside	
					1	Cl (mg/l)	40000.0		Sawdust	25	MSDS	
						MBT	15.0		Soda Ash		pellets	
	1	İ		•	İ	Temp	25.6	1	Supervision	1	Day Cost	\$7,619
		Ì			l	XSPolymer		1	Mud Van	1	Well Cost	\$98,043
Mud	l losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	ulating Vol.	35.2			Last Ca	sing Test	01-0	Oct-30	Underflow	Density		
Today loss	es down hole	0.0	Total hole	110.0	Last B	OP Test	01-0	Oct-30	Overflow I	Density		
Today loss	es at surface	0.0	Total surf.	32.0	Next Ca	using Test			Flow Rate,	m3/min		
Today tota	al losses	30.0	Cumulative	132.0	Next B	OP Test			Operating	hours		
									-			
		ell Control -				ole Condition	1	.ft/#			Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque			ground	0.	
RSPP #1 RSPP #2	35	1120	1742	250	Drag Dn Hook Load	1 38000	3500			nection rip	0.0	
K511 #2					HOOK LOAU	30000	3500)	1	пр	0.	00
	1. Rig up/0	Jut		-	9. Slip & ("ut		-	17. Weld b	owl		
	2. Drill	Jui	3.75	-	10. Survey			_	17. Weid f			
	2. Drm 3. Ream		5.75	-	10. Survey 11. Wireli			_	10. Wash			
	4. Drill Ou	ıt		-	12. Casing	0	0.50	_		mud pumps		
	5. Circ. &		6.00	-		Out Cement		_	20. Willow 21. Safety		0.75	
	6. Trip		5.00	-	14. Nipple			_	22. Handle			
	7. Rig Serv	vice	0.75	-	15. Test B			-	23 Other V		7.25	
	8. Rig Rep		0.00	-	16. BOP E			_	Total Hour		24.00	
				-				-				
						REMARKS						
	0 Tag cement			•		, Drill cemen	t to 300m					
	5 Drill new h			sses recurred	1.							
	0 Mix, spot a											
	0 Trip out and					10001	2 1 .	14.1.0.5	, DOT	1 .11 .		
	5 Set cement	plug using 2i	m3 water ah	ead, 6m3 clas	ss"A" cemen	nt at 1800kg/r	n3, displace	with 1.2m3	water. POH o	arill pipe.		
13:15-18:00	0 WOC. 5 RIH to casii	na shoe weed	h down to T	OC at 272	Drill comer	t to 280m C	non acmart	ot cholcore V	VOC			
	0 Wait on cer	0	n uowii to 10	л at 2/3111.	Cemen	ii iu 209111. Ul	cen cement	at snakers. V	nuc.			
21.43-24:00	o wait oll cer	neiit.										
	No Incident	s today.										
Tops:												
Prev Cost	\$1,93	38,844	Today	\$39	,345	Total Cost	\$1,9	78,189	Weather:		oken Clouds y	
			n ~		D		00 < 10 =		Mud Type		Polamer / sal	
Foreman	B	ill Williams/	Don Campb	eil	Rig Phone		709-649-710	16	Taken By:	Terry B	rooker / Shai	ne Halley

		Vala				s Daily		0	-r	Doto:	05 N	ov 00
Well: Depth:	313.0	Vulc mKB	an Investca Progress:	n Red Bro 10.0	OK #2 Drilling:	1.00	Day: hrs ROP,		10.00	Date: Rig:	05-N Stoneha	
-			progress:		Drining:	1.00	ins kor,		10.00	KIg: KB elev:	61.75	
-	Drill out plu		•	5 10						KB - GL	6.30	-
Bit #	Size/Make			In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
3		HCM 608	109973	242				8 X 11.1	120			
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,	308mm stab	, XO, Jars,1	203mm DC,	8 165mm I
Iodel		PZ-11	PZ-11						Pump Pres	sure:	3,200	kPa
liner	(mm)	165	165	BHA Leng			m	Strap:		Board:		
troke	(mm)	279	279	Drill Colla		230.0	mm	Drill Pipe		127.0	_mm	
PM	3	84	0	D.C. Annu		. <u> </u>	m/min	D.P Annul			m/min	
ol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocit	y:		m/sec	True Hydr	raulic HP:		kW	
		CUD	VEYS				MUD			MUDAI	DDITIVES	
De	nth	Drift	Azimuth	North	East	Time	21:57	1	Gel	33	CaC03	
36.00	ptii	0.75	Azimuti	norm	Last	Density	1115		Caustic	55	Percol	
68.00		0.5				Vis.	34		Salt	19	Sulphamic	10
109.00		0.25				pН	12.0		Kelzan		T-352	
124.00		1				Fluid Loss	26.0		Cello	10	Defoamer	
162.00		1				P.V.	5.0		Bicarb		2K-7	
202.00		1.50				Y.P.	1.0		Kwickseal	10	Cal carb	
262.00		0.75				Gel S.	1/2/2.5		Drispac	4	Dyna det	
						Filter Ck	3.0		Desco		Walnut	
						Solids %	7.2		Barite		Lime Hydrate	d
						Oil			Fiberseal	4	Dyna fiber	16
						Ca (mg/l)	1320.0		PHPA		Bioside	
						Cl (mg/l)	50000.0		Sawdust	25	MSDS	
						MBT	10.0		Soda Ash		pellets	
				-		Temp	23.2		Supervision		Day Cost	\$5,880
Mad	1 Cf		hala Estimat			XSPolymer		-4-	Mud Van		Well Cost	\$103,924
			hole Estimat	es m3		asing Tests		ate	I la destitant		trifuge	
Fotal circul	s down hole	35.2 21.0	Total hole	110.0		sing Test OP Test		Oct-30 Oct-30	Underflow Overflow I			
	s at surface	0.0	Total surf.	32.0		sing Test) hrs	Flow Rate,	•		
oday total		30.0	Cumulative	153.0		OP Test		lov-09	Operating			
v									1 0			
	Wel	ll Control -	kPa		H	ole Condition	n kdaN & K	ft/#		Total Gas I	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg	ground	0.	00
RSPP #1	35	1120	1742	250	Drag Dn				Conn	ection	0.	00
RSPP #2					Hook Load	38000	3500)	T	rip	0.	00
						~		-		_		
	1. Rig up/O	ut			9. Slip & (_	17. Weld b			
	2. Drill		3.25		10. Survey 11. Wireli			-	18. Wash t			
	3. Ream 4. Drill Out				11. Wiren 12. Casing	0	1.00	-	19. Flow ch	nud pumps		
	5. Circ. & (2.25			Out Cement		-	20. VK off 1 21. Safety		1.25	
	6. Trip		7.50		13. 1 ump 14. Nipple			-	21. Safety 22. Handle	-	1.20	
	7. Rig Serv	ice	0.50		15. Test B	1		-	23 Other W		8.25	
	8. Rig Repa		0.00		16. BOP E			_	Total Hour		24.00	
	-											
						REMARKS	5					
	Wait on cem											
			o 291m.No re									
			295 m. No ret									
			nd drill pipe t		Doomart 4	K and 10 10 of	NoC area	nt at 10001-	m2 diart-	with 1 ?	Inton DOIL	ill ning
	Trip out of h		ater, 7.3m3 N	haxxCem N	r cement,4 9	% cac12,10 %	a nac ceme	ni at 1900kg	mo, uispiace	with 1m3 w	vater. POH dr	in pipe.
			et BOP drill v	with crew u	Vell secure ?	7 sec						
	Run in hole,			min ciew. W	en secure 2	,						
		0	n to 303 m. F	ull returnes								
1:30-14:45			om 303 m to 3		circulation.							
			of hole. Fund									
4:45-15:45			nd drill pipe t									
4:45-15:45 5:45-18:45					cement,4 % o	cac12,10 % N	laC cement	at 1900kg/m	3, displace w	ith 2m3 wat	er. POH drill	pipe.
4:45-15:45 5:45-18:45 8:45-19:45	Run in hole	olug, 2m3 w						-				-
4:45-15:45 5:45-18:45 8:45-19:45 9:45-21:00	Run in hole	-										
4:45-15:45 5:45-18:45 8:45-19:45 9:45-21:00 11:00-24:00	Run in hole Set cement p	ient.										
4:45-15:45 5:45-18:45 8:45-19:45 9:45-21:00 1:00-24:00	Run in hole Set cement p Wait on cem No Incidents	ent. s today.					•					
4:45-15:45 5:45-18:45 8:45-19:45 9:45-21:00	Run in hole Set cement p Wait on cem	ent. s today.	Today	\$31	1,792	Total Cost	\$2,0	09,981	_ Weather: Mud Type		deg, Light sno Polamer / sal	

Woll-		171-				s Daily		0	Port	Data	07 N	NY 00
Vell: Depth:	321.0	Vulc mKB	an Investca Progress:	n Red Bro 8.0	OK #2 Drilling:	1.00	Day: hrs ROP,		8.00	Date: Rig:	06-Ne Stoneha	
-	@ 0800 hrs:		0		Dining.	1.00	ms kor,		8.00	KIg. KB elev:	61.75	
-	Drill out plu			5 10						KB - GL	6.30	
	Size/Make	0,		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
3		HCM 608	109973	242				8 X 11.1	120			
	•								•			
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,	308mm stab	, XO, Jars,1	203mm DC, 8	8 165mm D
1odel		PZ-11	PZ-11						Pump Pres	sure:	3,200	kPa
liner	(mm)	165	165	BHA Leng		233.00	m	Strap:		Board:		
troke	(mm)	279	279	Drill Colla		230.0	mm	Drill Pipe		127.0	mm	
SPM	3	84	0	D.C. Annu			m/min	D.P Annul			m/min	
/ol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocit	y:		m/sec	True Hydr	raunc HP:	-	kW	
		SUD	VEYS				MUD			MUDAT	DITIVES	
De	nth	Drift	Azimuth	North	East	Time	21:57	1	Gel	55	CaC03	
36.00		0.75		110111	Lust	Density	1060		Caustic		Percol	
68.00		0.5				Vis.	39		Salt		Sulphamic	3
109.00		0.25				pН	12.0		Kelzan	2	T-352	
124.00		1				Fluid Loss	26.0		Cello	25	Defoamer	
162.00		1				P.V.	6.0		Bicarb	3	2K-7	
202.00		1.50				Y.P.	2.5		Kwickseal	10	Cal carb	
262.00		0.75				Gel S.	1/2/2.5		Drispac	2	Dyna det	
						Filter Ck	3.0		Desco		Walnut	
						Solids %	3.8		Barite		Lime Hydrated	
					ļ	Oil	0.07.7	ļ	Fiberseal	4	Dyna fiber	16
						Ca (mg/l)	800.0		PHPA	25	Bioside	
						Cl (mg/l) MBT	17000.0 15.0		Sawdust Soda Ash	25 10	MSDS pellets	
						Тетр	15.0			10	Day Cost	\$7.262
						XSPolymer			Supervision Mud Van	1	Well Cost	\$7,263 \$111,188
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests		ate	lviuu van	Cent	rifuge	\$111,100
Fotal circul		35.2				sing Test		Dct-30	Underflow		g-	
	es down hole	65.0	Total hole	110.0		OP Test		Oct-30	Overflow I			
Foday losse	es at surface	0.0	Total surf.	32.0	Next Ca	sing Test	500) hrs	Flow Rate,	m3/min		
foday total	losses	65.0	Cumulative	218.0	Next B	OP Test	13-N	lov-09	Operating	hours		
									-			
	We	ll Control -				ole Condition	1	ft/#			Readings (%)	
		Pressure	MACP	Depth	Drag up		Torque			ground	0.0	
Pump	Strokes				Drag Dn		250			ection	0.0	
RSPP #1	Strokes 35	1120	1742	250	Hook Load	38000		N N	Т	rin		
RSPP #1			1742	230	Hook Load	38000	3500		Т	rip	0.0	
RSPP #1 RSPP #2	35	1120	1742	230			3500	-	17. Weld b	•		
RSPP #1 RSPP #2		1120	3.75	230	Hook Load 9. Slip & C 10. Survey	Cut	3500	- -		owl		
RSPP #1 RSPP #2	35 1. Rig up/C	1120		230	9. Slip & C	Cut	3500	- - -	17. Weld b	oowl to Btm		
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	1120 Dut	3.75	230	9. Slip & C 10. Survey 11. Wirelin 12. Casing	Cut ne Logs /Cement	3.75	 - - -	17. Weld k 18. Wash (19. Flow ch 20. Wk on (oowl to Btm necks mud pumps		
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C	1120 Dut	3.75		9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C	Cut ne Logs /Cement Out Cement	3.75	 - - - - -	17. Weld k 18. Wash t 19. Flow ch 20. Wk on t 21. Safety	oowl to Btm necks mud pumps Meeting	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip	1120 Dut t Cond.	3.75 1.00 7.25		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 	Cut ne Logs /Cement Out Cement Up BOP	3.75	- - - - - -	17. Weld k 18. Wash k 19. Flow ch 20. Wk on k 21. Safety 22. Handle	oowl co Btm necks mud pumps Meeting c Tools	1.00	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	1120 Dut t Cond. ice	3.75 1.00 7.25 0.75	230	 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	3.75	- - - - - - -	17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip	1120 Dut t Cond. ice	3.75 1.00 7.25		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	3.75	- - - - - - - -	17. Weld k 18. Wash k 19. Flow ch 20. Wk on k 21. Safety 22. Handle	oowl oo Btm necks mud pumps Meeting o Tools VO cement	1.00	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	1120 Dut t Cond. ice	3.75 1.00 7.25 0.75		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	3.75	-	17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps	1120 Dut t Cond. ice air	3.75 1.00 7.25 0.75		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	3.75	- - - - - - -	17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cen	1120 Dut t Cond. ice air	3.75 1.00 7.25 0.75 0.00		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	3.75	- - - - - - -	17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2 0:00-01:15 1:1503:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cent (Run in hole,	1120 Dut t Cond. ice air ment. tagg cement	3.75 1.00 7.25 0.75 0.00 @ 273 m.		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	3.75		17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2 0:00-01:15 1:1503:00 3:00-05:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cen	1120 Dut t Cond. ice air hent. tagg cement t from 273 n	3.75 1.00 7.25 0.75 0.00 	· · · · · ·	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	3.75	- - - - - - -	17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cent (Run in hole, Drill cement	1120 Dut t Cond. ice air hent. tagg cement t from 273 n mm hole fro	3.75 1.00 7.25 0.75 0.00 	· · · · · ·	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	3.75		17. Weld h 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other V	oowl oo Btm necks mud pumps Meeting o Tools VO cement	 	
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ, & C 6. Trip 7. Rig Serv 8. Rig Repa Wait on cent (Run in hole, Drille d 311 Trip out of H	1120 Dut t Cond. ice air nent. tagg cement t from 273 n mm hole fro nole.	3.75 1.00 7.25 0.75 0.00 	iull returnes 321 m. Lost	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut Cut Cement Out Cement Up BOP OP & FIT orill REMARKS	3.75	- - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	oowl to Btm necks mud pumps Meeting 2 Tools VO cement 's	 	pipe.
RSPP #1 RSPP #2 0:00-01:15 11:15-03:00 3:00-05:00 15:00-06:30 6:30-08:00 8:00-12:15 2:15-17:15	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement Drille d 311 Trip out of H Set cement J Wait on cen	t Cond. ice air hent. tagg cement t from 273 n mm hole fro toole. olug, 2m3 w	3.75 1.00 7.25 0.75 0.00 (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma	iull returnes 321 m. Lost	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut Cut Cement Out Cement Up BOP OP & FIT orill REMARKS	3.75	- - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	oowl to Btm necks mud pumps Meeting 2 Tools VO cement 's	<u> </u>	pipe.
RSPP #1 RSPP #2 0:00-01:15 1:1503:00 3:00-05:00 5:00-06:30 6:30-08:00 8:00-12:15 2:15-17:15 7:15-19:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement) Drille d 311 Trip out of H Set cement J Wait on cen Run in hole,	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. olug, 2m3 w hent. taged cement	3.75 1.00 7.25 0.75 0.00 (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma	ull returnes 321 m. Lost	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut Cut Cement Out Cement Up BOP OP & FIT orill REMARKS	3.75	- - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	oowl to Btm necks mud pumps Meeting 2 Tools VO cement 's	<u> </u>	pipe.
RSPP #1 RSPP #2 0:00-01:15 1:15-03:00 3:00-05:00 6:30-08:00 8:00-12:15 2:15-17:15 7:15-19:00 9:00-19:30	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement) Drill cement Drill cement Set cement j Wait on cen Run in hole, Drill cement	t Cond. ice air hent. tagg cement f from 273 n mm hole fro hole. polug, 2m3 w hent. taged cement t from 283 n	3.75 1.00 7.25 0.75 0.00 (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma	ull returnes 321 m. Lost	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut Cut Cement Out Cement Up BOP OP & FIT orill REMARKS	3.75	- - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	oowl to Btm necks mud pumps Meeting 2 Tools VO cement 's	<u> </u>	pipe.
RSPP #1 RSPP #2 0:00-01:15 11:15-03:00 3:00-05:00 06:30-08:00 19:30-08:00 10:30-08:00 10:30-08:00 10:30-08:00 10:3	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repair Wait on cen (Run in hole, Drill cement) Drill cement Drilled 311 Trip out of H Set cement Wait on cen Run in hole, Drill cement Drill cement Puiled out out	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. blug, 2m3 w hent. taged cement t from 283 n f hole.	3.75 1.00 7.25 0.75 0.00 @ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 289 m. N	ull returnes 321 m. Lost xxCem NP o	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut Cut Cement Out Cement Up BOP OP & FIT orill REMARKS	3.75	- - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	oowl to Btm necks mud pumps Meeting 2 Tools VO cement 's	<u> </u>	pipe.
RSPP #1 RSPP #2	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement) Drill cement Wait on cen Run in hole, Drill cement Wait on cen Run in hole, Drill cement Puiled out o Run in hole	t Cond. ice air hent. tagg cement f from 273 n mm hole fro hole. blug, 2m3 w hent. taged cement t from 283 n f hole. with open ei	3.75 1.00 7.25 0.75 0.00 ate 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	iull returnes 321 m. Lost xxCem NP c lo returnes to 287 m.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75	- - - - - - - - - - - - - - - - - - -	17. Weld F 18. Wash f 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace w	owl oo Btm necks mud pumps Meeting e Tools VO cement 's ith 2m3 wate		pipe.
RSPP #1 RSPP #2 00:00-01:15 01:15-03:00 03:00-05:00 05:00-06:30 06:30-08:00 18:00-12:15 12:15-17:15 12:15-17:15 19:00-19:30 9:00-19:30 9:00-19:30 9:00-22:00 22:00-23:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement) Wait on cen 1. Circle Construction (Run in hole, Drill cement) Wait on cen Run in hole, Drill cement Drill cement Pulled out o Run in hole Set cement	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. blug, 2m3 w hent. taged cemert t from 283 n f hole. with open ei blug,2m3 wa	3.75 1.00 7.25 0.75 0.00 ate 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	iull returnes 321 m. Lost xxCem NP c lo returnes to 287 m.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75	- - - - - - - - - - - - - - - - - - -	17. Weld F 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	owl oo Btm necks mud pumps Meeting e Tools VO cement 's ith 2m3 wate		pipe.
RSPP #1 RSPP #2 00:00-01:15 01:15-03:00 03:00-05:00 06:30-08:00 06:30-08:00 06:30-08:00 09:00-12:15 12:15-17:15 12:15-17:15 17:15-19:00 9:00-19:30 9:30-21:00 21:00-22:00 22:00-23:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ, & C 6. Trip 7. Rig Serv 8. Rig Repaired Wait on cem (Run in hole, Drille cement) Wait on cen Run in hole, Drille cement Wait on cen Run in hole, Drille cement Pulled out o Set cement J Trip out of H	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. blug, 2m3 w hent. tagged cement t from 283 n f hole. with open er blug,2m3 wa hole.	3.75 1.00 7.25 0.75 0.00 ate 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	iull returnes 321 m. Lost xxCem NP c lo returnes to 287 m.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75	- - - - - - - - - - - - - - - - - - -	17. Weld F 18. Wash f 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace w	owl oo Btm necks mud pumps Meeting e Tools VO cement 's ith 2m3 wate		pipe.
RSPP #1 RSPP #2 00:00-01:15 01:15-03:00 03:00-05:00 05:00-06:30 06:30-08:00 08:00-12:15 12:15-17:15 17:15-19:00 19:30-21:00 19:30-21:00 19:30-21:00 21:00-22:00 22:00-23:00 23:45-24:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cent (Run in hole, Drill cement) Wait on cent Run in hole, Drill cement Pulled out o Pulled out o Run in hole, Drill cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. blug, 2m3 w hent. tagged cemer t from 283 n f hole. with open er blug,2m3 wa hole. hent.	3.75 1.00 7.25 0.75 0.00 a (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	iull returnes 321 m. Lost xxCem NP c lo returnes to 287 m.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75	- - - - - - - - - - - - - - - - - - -	17. Weld F 18. Wash f 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace w	owl oo Btm necks mud pumps Meeting e Tools VO cement 's ith 2m3 wate		pipe.
RSPP #1 RSPP #2 00:00-01:15 01:15-03:00 03:00-05:00 05:00-06:30 06:30-08:00 08:00-12:15 12:15-17:15 17:15-19:00 19:00-19:30 19:00-19:30 19:00-22:00 21:00-22:00 21:00-23:00 23:00-23:45 23:45-24:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ, & C 6. Trip 7. Rig Serv 8. Rig Repaired Wait on cem (Run in hole, Drille cement) Wait on cen Run in hole, Drille cement Wait on cen Run in hole, Drille cement Pulled out o Set cement J Trip out of H	t Cond. ice air hent. tagg cement t from 273 n mm hole fro hole. blug, 2m3 w hent. tagged cemer t from 283 n f hole. with open er blug,2m3 wa hole. hent.	3.75 1.00 7.25 0.75 0.00 a (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	iull returnes 321 m. Lost xxCem NP c lo returnes to 287 m.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75	- - - - - - - - - - - - - - - - - - -	17. Weld F 18. Wash f 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace w	owl oo Btm necks mud pumps Meeting e Tools VO cement 's ith 2m3 wate		pipe.
RSPP #1 RSPP #2 0:00-01:15 11:15-03:00 3:00-05:00 0:5:00-06:30 0:5:00-06:30 0:5:00-06:30 0:5:00-06:30 0:5:00-06:30 0:5:00-02:00 9:30-12:15 9:30-12:00 9:30-12:00 11:00-22:00 2:00-23:00 3:00-23:45 3:45-24:00	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair Wait on cent (Run in hole, Drill cement) Wait on cent Run in hole, Drill cement Pulled out o Pulled out o Run in hole, Drill cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H Set cement Trip out of H	1120 Dut t Cond. ice air hent. tagg cement t from 273 m mm hole from tole. olug, 2m3 w hent. taged cement t from 283 m f hole. with open ei olug,2m3 wa hole, s today.	3.75 1.00 7.25 0.75 0.00 a (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma n to 283 m. N n to 289 m. N nd drill pipe f	ull returnes 321 m. Lost xxCem NP c lo returnes to 287 m. faxxCem NI	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	3.75 3.75 NaC cement 6 NaC @ 18	- - - - - - - - - - - - - - - - - - -	17. Weld I 18. Wash I 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace with Displaced with Weather:	owl oo Btm necks mud pumps Meeting o Tools WO cement 's ith 2m3 wate n 1.3 m3 wate		
RSPP #1 RSPP #2 0:00-01:15 1:15-03:00 3:00-05:00 5:00-06:30 6:30-08:00 8:00-12:15 2:15-17:15 7:15-19:00 9:00-19:30 9:30-21:00 1:00-22:00 2:00-23:00 3:00-23:45 3:45-24:00 `ops:	35 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa Wait on cen (Run in hole, Drill cement Wait on cen Run in hole, Drill cement Wait on cen Run in hole, Drill cement Pulled out o Run in hole, Drill cement Wait on cen Run in hole, Drill cement Wait on cen Run in hole, Drill cement Wait on cen Run in hole, Drill cement Wait on cen No Incidents	1120 Dut t Cond. ice air hent. tagg cement t from 273 m mm hole from tole. olug, 2m3 w hent. taged cement t from 283 m f hole. with open ei olug,2m3 wa hole, s today.	3.75 1.00 7.25 0.75 0.00 (@ 273 m. n to 313 m. F m 313 m to 3 ater,4m3 Ma ater,4m3 Ma nt @ 283 m. n to 289 m. N nd drill pipe f atter 7.3 m3 M	ull returnes 321 m. Lost xxCem NP c lo returnes to 287 m. faxxCem NI	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump d 14. Nipple 15. Test Bt 16. BOP D circulation.	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS cac12,10 % N	3.75 3.75 NaC cement 6 NaC @ 18	at 1900kg/m	17. Weld I 18. Wash I 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 3, displace with Displaced with	owl oo Btm necks mud pumps Meeting o Tools WO cement 's ith 2m3 wate n 1.3 m3 wate	1.00 6.50 24.00 er. POH drill)W.

Well:		Vulc	an Investca			s Daily	Day:	0	•	Date:	07-N	ov-09
Depth:	450.0	mKB	Progress:	129.0	Drilling:	9.25	hrs ROP,		13.95	Rig:	Stoneha	
-	@ 0800 hrs:				9.		,			KB elev:	61.75	
he next da	ę									KB - GL	6.30	
Bit #	Size/Make			In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
3	311	HCM 608	109973	242		208	21.9	8 X 11.1	110) 15-Jan		
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,		o, XO, Jars,1 2		
lodel inon		PZ-11 165	PZ-11 165	BHA Leng	+h.	233.00		Strong	Pump Pres		6,600	kPa
iner troke	(mm) (mm)	279	279	Drill Colla			m mm	Strap: Drill Pipe (0.0	Board: 127.0	mm	
PM	(11111)	84	0	D.C. Annul			m/min	D.P Annula			m/min	
ol.	m ³ /min @ 95%	1.4300	0.0000	Jet Velocity			m/sec	True Hydr		-	kW	
				•				•				
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	19:10		Gel	80	CaC03	
36.00		0.75				Density	1245		Caustic		Percol	
68.00		0.5				Vis.	38		Salt	270	Sulphamic	6
109.00	ł	0.25				pH Florid Loop	11.2		Kelzan	5	T-352	1
124.00 162.00		1				Fluid Loss P.V.	16.0 5.0		Cello Bicarb		Defoamer 2K-7	1
202.00		1.50				P.V. Y.P.	2.0		Bicarb Kwickseal	10	2K-7 Cal carb	
262.00		0.75				Gel S.	2.0			10		
356.00		1.25				Gel S. Filter Ck	2.0		Drispac Desco		Dyna det Walnut	
356.00 508.00	+	2.75				Filter CK Solids %	2.0		Desco Barite		Walnut Lime Hydrate	đ
500.00	1	2.10				Oil	1.5		Fiberseal		Dyna fiber	u
						Ca (mg/l)	1280.0		PHPA		Bioside	
						Cl (mg/l)	170000.0		Sawdust	70	MSDS	
						MBT	7.5		Soda Ash	10	pellets	
						Temp	27.3		Supervision		Day Cost	\$13,963
						XSPolymer			Mud Van	1	Well Cost	\$125,152
			hole Estimat	es m3		asing Tests		ate			rifuge	
	lating Vol.	70.2	T (11 1	110.0		sing Test		Oct-30	Underflow	•		
v	es down hole es at surface	65.0 0.0	Total hole Total surf.	110.0 32.0		OP Test sing Test		Oct-30) hrs	Overflow I Flow Rate.	ř		
oday tota		65.0	Cumulative	283.0		OP Test		ov-09	Operating			
		ll Control -	kPa		He	ole Condition	ı kdaN & K	ft/#		Total Gas R	eadings (%))
	We	_	MACP	Depth	Drag up	1	Torque		Back	ground	0.	08
Pump	We Strokes	Pressure			Drag Dn	1			Conr	nection	0.	
RSPP #1		Pressure							T		0.	00
RSPP #1		Pressure 1500	1570	330	Hook Load	42	7000		1	rip	01	
RSPP #1	Strokes 45	1500	1570	330			7000	-		<u> </u>		
RSPP #1	Strokes 45 1. Rig up/O	1500		330	9. Slip & C	Cut		- -	17. Weld I	bowl		
RSPP #1	Strokes 45 1. Rig up/C 2. Drill	1500	1570 12.50	330	9. Slip & (10. Survey	Cut	0.25	- - -	17. Weld I 18. Wash	oowl to Btm		
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream	1500 Dut		330	9. Slip & (10. Survey 11. Wirelin	Cut ne Logs		- - - -	17. Weld I 18. Wash 19. Flow cl	oowl to Btm hecks		
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	1500 Dut t	12.50	330	9. Slip & C 10. Survey 11. Wirelin 12. Casing	Cut ne Logs /Cement	0.25	- - - -	17. Weld I 18. Wash 19. Flow cl 20. Wk on	oowl to Btm hecks mud pumps		
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream	1500 Dut t		330	9. Slip & C 10. Survey 11. Wirelin 12. Casing	Cut ne Logs /Cement Out Cement	0.25	- - - - -	17. Weld I 18. Wash 19. Flow cl	oowl to Btm hecks mud pumps Meeting	0.50	
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	1500 Dut t Cond.	12.50 1.00	330	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump	Cut ne Logs /Cement Out Cement Up BOP	0.25	- - - - - -	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle	oowl to Btm hecks mud pumps Meeting		
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	1500 Dut t Cond. rice	12.50 1.00 1.00	330	 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 14. Nipple 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	1500 Dut t Cond. rice	12.50 1.00 1.00 0.75	330	 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpe 14. Nipple 15. Test Be 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps	1500 Dut t Cond. vice air	12.50 1.00 1.00 0.75 0.00		 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpe 14. Nipple 15. Test Be 	Cut ne Logs /Cement Out Cement Up BOP OP & FIT	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep.	1500 Dut t Cond. rice air	12.50 1.00 1.00 0.75 0.00 on Blind Ram	S.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump (14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT vrill	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep. 9 Wait on cen 5 Circulate co	1500 Dut t Cond. rice air nent. Function	12.50 1.00 1.00 0.75 0.00 0.00 0.00	s. lorides to 16	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill <u>REMARKS</u>	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Wait on cen 5 Circulate co 5 Tag cement	1500 Dut t Cond. rice air ment. Function multion multion	12.50 1.00 1.00 0.75 0.00 on Blind Ram I to increase c rill cement to	s. lorides to 16 288m. Wasl	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill <u>REMARKS</u>	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Wait on cen 5 Circulate co 5 Tag cement	1500 Dut t Cond. rice air ment. Function multion multion	12.50 1.00 1.00 0.75 0.00 0.00 0.00	s. lorides to 16 288m. Wasl	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill <u>REMARKS</u>	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps 0 Wait on cen 6 Circulate co 5 Circulate co 5 Tag cement 1 Drilled 311	1500 Dut t Cond. rice air ment. Function ndition muci at 269m. Dr mm hole from	12.50 1.00 1.00 0.75 0.00	s. lorides to 16 288m. Wasl	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill <u>REMARKS</u>	0.25	-	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps 0 Wait on cen 5 Circulate coo 5 Tag cement 1) Drilled 311 Boiler is on	1500 Dut t Cond. rice air nent. Function mdition muc at 269m. Dr mm hole fro for 17 hrs to	12.50 1.00 1.00 0.75 0.00	s. lorides to 16 288m. Wasl 50m. Functio	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump d 14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.25	- - - - - - - -	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps 0 Wait on cen 5 Circulate coo 5 Tag cement 1) Drilled 311 Boiler is on	1500 Dut t Cond. rice air nent. Function mdition muc at 269m. Dr mm hole fro for 17 hrs to	12.50 1.00 1.00 0.75 0.00	s. lorides to 16 288m. Wasl 50m. Functio	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump d 14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.25	- - - - - - - -	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Rep: 9) Wait on cen 5 Circulate co 5 Tag cement 1) Drilled 311 Boiler is on One Inciden	1500 Dut t Cond. rice air nent. Function mdition muc at 269m. Dr mm hole fro for 17 hrs to	12.50 1.00 1.00 0.75 0.00	s. lorides to 16 288m. Wasl 50m. Function pe got caugh	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump d 14. Nipple 15. Test B 16. BOP D	Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.25	- - - - - - - -	17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	oowl to Btm hecks mud pumps Meeting e Tools VO cement 's	0.50	cph.
RSPP #1 RSPP #2 0:00-09:30 9:30-10:15 0:15-13:45 3:45-24:00 `ops:	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep: 9 Wait on cen 5 Circulate co 5 Tag cement 9 Drilled 311 Boiler is on One Inciden \$2,04	1500 Dut t Cond. rice air ment. Function nuci at 269m. Dr mm hole fro for 17 hrs to ts today, De 5,576	12.50 1.00 1.00 0.75 0.00 on Blind Ram to increase of the increase	s. lorides to 16 288m. Wasl 50m. Functi- pe got caugh \$83	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test B 16. BOP D 50000 a down to TI on Annular.	Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS D @ 321m. D @ 321m.	0.25		17. Weld I 18. Wash 19. Flow cl 20. Wk on 21. Safety 22. Handlu 23 Other V Total Hour	powl to Btm hecks mud pumps Meeting e Tools VO cement rs 	0.50 8.00 24.00	t

Well:		Vulc	an Investca	n Red Bro	ok #2	v	Day:	19	•	Date:	08-N	ov-09
Depth:	834.0	mKB	Progress:	384.0	Drilling:	22.00	hrs ROP,		17.45	Rig:	Stoneha	
-	@ 0800 hrs:	Drill ahead	0		0		,			KB elev:	61.75	m.
he next da	Run Casing									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
3	311	HCM 608	109973	242		592	43	8 X 11.1	110	15-Jan		
		Pump 1	-	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,		, XO, Jars,1 2		
Iodel		PZ-11	PZ-11			222.00		<u><u>a</u>,</u>	Pump Pres		6,600	kPa
iner	(mm)	165		BHA Leng		-	m	Strap:	0.0	Board:		
troke PM	(mm)	279 90		Drill Colla D.C. Annu			mm m/min	Drill Pipe (D.P Annula			mm m/min	
ol.	m ³ /min @ 95%	1.5300	-	Jet Velocit			m/sec	True Hydr			kW	
01.		1.5500	0.0000	oce verocit	,.	72.0	mote	II ut IIyui	uune m	110 111	R / /	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	5:15	[Gel	40	CaC03	
36.00		0.75				Density	1250		Caustic		Percol	
68.00		0.5				Vis.	34		Salt	300	Sulphamic	10
109.00		0.25				pН	11.0		Kelzan		T-352	1
124.00		1				Fluid Loss	N/C		Cello		Defoamer	2
162.00		1				P.V.	5.0		Bicarb	10	2K-7	
202.00		1.50				Y.P.	3.0		Kwickseal		Cal carb	
262.00		0.75				Gel S.	1.5/3/4		Drispac	1	Dyna det	
356.00		1.25				Filter Ck	2.0		Desco		Walnut	
508.00		2.75				Solids %	1.5		Barite		Lime Hydrate	d
604.00		2				Oil			Fiberseal		Dyna fiber	
754.00		3				Ca (mg/l)	920.0		PHPA		Bioside	
						Cl (mg/l)	178000.0		Sawdust	15	Coronox	3
						MBT	7.5		Soda Ash		pellets	
						Temp XSPolymer	23.4		Supervision	1	Day Cost Well Cost	\$11,800
Mud	losses Surfa	co & Down	nole Estimate	ne m3	BOD & C	asing Tests		ate	Mud Van	Cent	rifuge	\$13,692
	lating Vol.	70.2	IOIC Estimate	115		sing Test		oct-30	Underflow		8	0.0
	es down hole	65.0	Total hole	110.0		OP Test		Oct-30	Overflow I			240
v	es at surface	0.0	Total surf.	32.0		sing Test		hrs	Flow Rate,	ĩ		0.0
oday tota	l losses	65.0	Cumulative	283.0		OP Test	13-N	ov-09	Combined	hours	18	3.0
			LD.		H	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%))
	We	ll Control -	kPa		D	1	Torque		Daala	ground	0.	08
Pump	We Strokes	ll Control - Pressure	MACP	Depth	Drag up	_			Баск	ground		
RSPP #1	Strokes	Pressure	MACP	-	Drag Dn	1			Conr	ection	0.	00
RSPP #1				Depth 330		1	7000		Conr		0.	
RSPP #1	Strokes 45	Pressure 1500	MACP	-	Drag Dn Hook Load	1 42		-	Conr	nection rip	0.	00
RSPP #1	Strokes 45 1. Rig up/O	Pressure 1500	MACP 1570	-	Drag Dn Hook Load 9. Slip & (1 42 Cut	7000	-	Conn T 17. Weld b	nection rip	0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill	Pressure 1500	МАСР	-	Drag Dn Hook Load 9. Slip & C 10. Survey	1 42 Cut		- -	Conn T 17. Weld b 18. Wash t	ection rip bowl to Btm	0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream	Pressure 1500 Out	MACP 1570	-	Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli	1 42 Cut ne Logs	7000	- - -	Conn T 17. Weld t 18. Wash t 19. Flow ch	ection rip oowl to Btm necks	0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 1500 Dut t	MACP 1570	-	Drag Dn Hook Load 9. Slip & O 10. Survey 11. Wireli 12. Casing	1 42 Cut ne Logs /Cement	0.75	- - -	Conn T 17. Weld b 18. Wash t 19. Flow ch 20. Wk on	ecction rip oowl to Btm necks mud pumps	<u>0</u> . 0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream	Pressure 1500 Dut t	MACP 1570	-	Drag Dn Hook Load 9. Slip & O 10. Survey 11. Wireli 12. Casing	1 42 Cut ne Logs /Cement Out Cement	0.75	-	Conn T 17. Weld t 18. Wash t 19. Flow ch	ecction rip oowl to Btm necks mud pumps Meeting	0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Pressure 1500 Dut t Cond.	MACP 1570	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump	1 42 Cut ne Logs /Cement Out Cement Up BOP	0.75	-	Conn T 17. Weld I 18. Wash 1 19. Flow ch 20. Wk on 21. Safety	ection rip oowl to Btm necks mud pumps Meeting e Tools	<u>0</u> . 0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 1500 Dut t Cond. ice	MACP 1570 22.00	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	0.75	-	Conn T 17. Weld t 18. Wash t 19. Flow cl 20. Wk on 21. Safety 22. Handle	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	<u>0</u> . 0.	00
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	Pressure 1500 Dut t Cond. ice	MACP 1570 22.00 0.75	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	1 42 Cut /Cement Out Cement Up BOP OP & FIT vrill	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75 0.00	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75 0.00	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75 0.00	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75 0.00	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps Drill from 4	Pressure 1500 Dut t Cond. ice air	MACP 1570 22.00 0.75 0.00	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps Drill from 4 Boiler is on	Pressure 1500 Dut t Cond. ice air 50m to 834r for 17 hrs to	MACP 1570 22.00 0.75 0.00 n. Function L day	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps Drill from 4	Pressure 1500 Dut t Cond. ice air 50m to 834r for 17 hrs to	MACP 1570 22.00 0.75 0.00 n. Function L day	330	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut /Cement Out Cement Up BOP OP & FIT brill REMARKS	0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement	0.0.0.	00
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & d 6. Trip 7. Rig Serv 8. Rig Rep: 0 Drill from 4 Boiler is on No Incident	Pressure 1500 Dut t Cond. rice air 50m to 834r for 17 hrs to s today, 8 ha	MACP 1570 22.00 0.75 0.00 n. Function L day zzards ID'd	330 PR and HC	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS aurveys @ 50	7000 0.75		Conn T 17. Weld b 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour	ection rip oowl to Btm necks mud pumps Meeting 2 Tools VO cement 'S	0.00	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & d 6. Trip 7. Rig Serv 8. Rig Rep: 0 Drill from 4 Boiler is on No Incident	Pressure 1500 Dut t Cond. ice air 50m to 834r for 17 hrs to	MACP 1570 22.00 0.75 0.00 n. Function L day	330 PR and HC	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	1 42 Cut /Cement Out Cement Up BOP OP & FIT brill REMARKS	7000 0.75	-	Conn T 17. Weld f 18. Wash f 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V	ection rip oowl to Btm necks mud pumps Meeting e Tools VO cement 'S -2d	0.0.0.	00 00

Well:		Vulo	an Investca			s Daily	Dav:	0	4	Date:	00. N	ov-09
Depth:	889.0	mKB	Progress:	55.0	Drilling:	12.25	hrs ROP,		4.49	Rig:		am # 11
			th Baker Atla		Dimme.	12.25	ms nor,		1.12	KB elev:	61.75	
-			essure test BC							KB - GL	6.30	
Bit #	Size/Make			In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
3		HCM 608	109973	242		592		8 X 11.1	110		0-0-No-A-X	
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab. 2-	230mm DC.	308mm stab	, XO, Jars,1	203mm DC.	8 165mm D
Iodel		PZ-11	PZ-11				,		Pump Pres		6,600	kPa
iner	(mm)	165	165	BHA Leng	th:	233.00	m	Strap:		Board:		•
Stroke	(mm)	279	279	Drill Colla	r O.D.	230.0	mm	Drill Pipe	0.D.	127.0	mm	•
SPM		90	0	D.C. Annu	lar Vel.:	44.0	m/min	D.P Annul	ar Vel.:	24.0	m/min	
/ol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocit	y:	72.0	m/sec	True Hydr	aulic HP:	110 HP	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	5:39	18:00	Gel		CaC03	
36.00		0.75				Density	1240	1210	Caustic		Percol	
68.00		0.5				Vis.	50	70	Salt	30	Sulphamic	10
109.00		0.25				pH	10.8	10.5	Kelzan	13	T-352	L
124.00		1				Fluid Loss	18.4	18.0	Cello	<u> </u>	Defoamer	
162.00		1				P.V.	15.0		Bicarb	24	2K-7	
202.00		1.50				Y.P.	7.5		Kwickseal		Cal carb	
262.00		0.75				Gel S.	3/9		Drispac	18	Dyna det	
356.00		1.25				Filter Ck	14.0		Desco		Walnut	
508.00		2.75				Solids %	0.3		Barite		Lime Hydrate	d
604.00		2				Oil			Fiberseal		Dyna fiber	
754.00		3				Ca (mg/l)	840.0		PHPA		Bioside	
850		4				Cl (mg/l)	184000.0		Sawdust		Coronox	1
						MBT	5.0		Soda Ash	8	pellets	
						Temp	23.7		Supervision		Day Cost	\$13,421
						XSPolymer			Mud Van	1	Well Cost	\$136,952
			hole Estimate	es m3		asing Tests		ate			rifuge	
	lating Vol.	70.2				sing Test		Oct-30	Underflow			0.0
v	es down hole	65.0	Total hole	110.0		OP Test		Oct-30	Overflow I	ě		.30
	es at surface	0.0	Total surf.	32.0		sing Test		hrs	Flow Rate,			0.0
Foday total	llosses	65.0	Cumulative	283.0	Next B	OP Test	13-N	ov-09	Combined	hours	36	5.0
		~ ~				~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~			1			
		ll Control -			-	ole Conditior		ft/#			Readings (%)	
	Strokes	Pressure	MACP	Depth	Drag up	1	Torque		-	ground		06
Pump			1570	870	Drag Dn	1				nection		00
RSPP #1	45	2025			Hook Load	56	10500	1	1 T	rip	0.	08
RSPP #1		2025	1570							r	•	
-	45		1570			°€		-	17 117-1-1-1	•		-
RSPP #1	45 1. Rig up/C				9. Slip & C		0.25	-	17. Weld h	powl		-
RSPP #1	45 1. Rig up/C 2. Drill		1570 		9. Slip & (10. Survey	7	0.25	- - -	18. Wash	oowl to Btm		-
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream	Dut			9. Slip & (10. Survey 11. Wireli	ne Logs	0.25	- - -	18. Wash 19. Flow cl	oowl to Btm necks		
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou)ut t	12.75		9. Slip & C 10. Survey 11. Wireli 12. Casing	ne Logs /Cement		- - - -	18. Wash (19. Flow cl 20. Wk on	oowl to Btm 1ecks mud pumps	0.50	
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C)ut t	4.25		9. Slip & C 10. Survey 11. Wirelit 12. Casing 13. Pump	ne Logs //Cement Out Cement		- - - -	18. Wash (19. Flow cl 20. Wk on 21. Safety	oowl to Btm necks mud pumps Meeting	0.50	- - - -
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	Dut t Cond.	<u> </u>		 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 	ne Logs //Cement Out Cement Up BOP		- - - - -	 18. Wash (19. Flow cl 20. Wk on 21. Safety 22. Handle 	oowl to Btm necks mud pumps Meeting	0.50	
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	Dut t Cond. ice	4.25		9. Slip & C 10. Survey 11. Wirelit 12. Casing 13. Pump	ne Logs /Cement Out Cement Up BOP OP & FIT		- - - - - -	 18. Wash (19. Flow cl 20. Wk on 21. Safety 22. Handle 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	Dut t Cond. ice	<u> </u>		 9. Slip & O 10. Survey 11. Wirelin 12. Casing 13. Pumper 14. Nipple 15. Test B 	ne Logs /Cement Out Cement Up BOP OP & FIT		- - - - - - - -	18. Wash t19. Flow cl20. Wk on21. Safety22. Handle23 Other W	oowl to Btm necks mud pumps Meeting e Tools VO cement	0.50	
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	Dut t Cond. ice	<u> </u>		 9. Slip & O 10. Survey 11. Wirelin 12. Casing 13. Pumper 14. Nipple 15. Test B 	ne Logs /Cement Out Cement Up BOP OP & FIT Or ill		-	18. Wash t19. Flow cl20. Wk on21. Safety22. Handle23 Other W	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP [#] 1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Reps	Dut t Cond. ice air	<u> </u>	JPR and HC	9. Slip & 0 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	ne Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS		-	18. Wash t19. Flow cl20. Wk on21. Safety22. Handle23 Other W	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repair 5. Drill from 8	Dut t Cond. ice air 34m to 8891	12.75 4.25 5.75 0.50 0.00		9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 6. Drill from 8 6 Circulate co	Dut t Cond. ice air 34m to 8891 ndition hole	12.75 4.25 5.75 0.50 0.00 m. Function U	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 6. Drill from 8 6 Circulate co	Dut t Cond. ice air 34m to 8891 ndition hole	12.75 4.25 5.75 0.50 0.00 m. Function U for logging. Y	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 6. Drill from 8 6 Circulate co	Dut t Cond. ice air 34m to 8891 ndition hole	12.75 4.25 5.75 0.50 0.00 m. Function U for logging. Y	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 6. Drill from 8 6 Circulate co	Dut t Cond. ice air 34m to 8891 ndition hole he hole to La	12.75 4.25 5.75 0.50 0.00 n. Function U for logging. og and run ca	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repaired 6 Drill from 8 6 Circulate co Pull out of the	Dut t Cond. ice air 34m to 889r ndition hole he hole to Lu for 3 hrs tod	12.75 4.25 5.75 0.50 0.00 n. Function U for logging. Y for logging and run ca	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 6 Drill from 8 6 Circulate co 9 Pull out of the Boiler is on	Dut t Cond. ice air 34m to 889r ndition hole he hole to Lu for 3 hrs tod	12.75 4.25 5.75 0.50 0.00 n. Function U for logging. Y for logging and run ca	Wiper trip to	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm necks mud pumps Meeting e Tools VO cement		
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Repa 5. Drill from 8 6. Circulate co 9. Pull out of the Boiler is on No Incidents	Dut t Cond. ice air 34m to 889r ndition hole he hole to Lu for 3 hrs tod	12.75 4.25 5.75 0.50 0.00 n. Function U for logging. Y for logging and run ca	Wiper trip to sing.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline	, ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS surveys @ 85	0 II. Circulate	-	 18. Wash 1 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour 	oowl to Btm tecks mud pumps Meeting e Tools VO cement 's		kph.
RSPP #1 RSPP #2	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Repa 5. Drill from 8 6. Circulate co 9. Pull out of the Boiler is on No Incidents	Dut t Cond. ice air 34m to 889r ndition hole he hole to L for 3 hrs tod s today, 7 ha	12.75 4.25 5.75 0.50 0.00 n. Function U for logging. ¹ og and run ca lay zzards ID'd	Wiper trip to sing.	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D R. Wireline o shoe. No o	ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS surveys @ 85 verpull, no fil	0 II. Circulate	increase Vis	18. Wash t 19. Flow cl 20. Wk on 21. Safety 22. Handle 23 Other V Total Hour to 70.	oowl to Btm necks mud pumps Meeting e Tools VO cement 's 	24.00	-

						s Daily		0	port			
Well:	000.0		an Investca			0.00	Day:		11 D 11/01	Date:		ov-09
Depth:	889.0 @ 0800 hrs:	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,	n/nr:	#DIV/0!	Rig: KB elev:	Stoneha 61.75	
-	Pressure test			ny and press	uie test					KB - GL	6.30	
Bit #			Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		-
3		HCM 608	109973	242	Out	592		8 X 11.1	110		0-0-No-A-X	
Ū						002	10	• • • • • •			0 0 110 11 1	0110 20
		Pump 1	Pump 2	Drilling As	sembly:	Bit /308mm	NB stab, 2-	230mm DC,	308mm stab	XO, Jars,1	203mm DC,	8 165mm D
Aodel		PZ-11	PZ-11	0	·		,	,	Pump Pres		6,600	kPa
Liner	(mm)	165	165	BHA Leng	th:	233.00	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla	r O.D.	230.0	mm	Drill Pipe ().D.	127.0	mm	
SPM		90		D.C. Annul	ar Vel.:		m/min	D.P Annula		24.0	m/min	
/ol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	y:	72.0	m/sec	True Hydr	aulic HP:	110 HP	kW	
						1			1			
P			VEYS	NT (1		T .)	MUD	1		MUD AL	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:37	1	Gel		CaC03	
36.00 68.00	<u> </u>	0.75 0.5	┟───┤			Density Vis.	1210 50		Caustic Salt		Percol Sulphomia	
109.00		0.5	+			vis. pH	11.0		Salt Kelzan	7	Sulphamic T-352	
124.00		1	┨───┤			Fluid Loss	17.0		Cello	,	1-352 Defoamer	
162.00		1	<u>├</u> ──┤			P.V.	12.0		Bicarb		2K-7	
202.00		1.50				Y.P.	7.0		Kwickseal		Cal carb	
262.00		0.75	╂───┤			Gel S.	2.5/9/14	1	Drispac	9	Dvna det	-
356.00		0.75	+			Filter Ck	1.0		Desco	2	Walnut	
508.00	+	1.70	<u>├</u> ──┤			Solids %	2.0		Desco Barite	35	Wainut Lime Hydrate	d
604.00		2.66	╂───┤			Oil	2.0		Fiberseal	55	Dyna fiber	-
754.00		5.1				Ca (mg/l)	1120.0		PHPA		Bioside	
850		6.7				Cl (mg/l)	145000.0		Sawdust	10	Coronox	2
880		7.1				MBT	5.0		Soda Ash	13	pellets	
			· · · · · ·			Temp	21.1		Supervision		Day Cost	\$7,647
						XSPolymer			Mud Van	1	Well Cost	\$158,021
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
otal circu	lating Vol.	106.0			Last Ca	sing Test	01-0	Oct-30	Underflow	Density	187	70.0
Foday loss	es down hole	0.0	Total hole	110.0	Last B	OP Test	01-0	Oct-30	Overflow I	Density	12	20
	es at surface	0.0	Total surf.	32.0		sing Test		hrs	Flow Rate,			0.0
Foday tota	l losses	0.0	Cumulative	283.0	Next B	OP Test	13-N	ov-09	Combined	nours	24	1.0
	¥7	L C 4 1	1-D-		TT	-1- C	. I.J. N 0 17	64 / 44		T-4-LC T) (0/)	
		ll Control -		Denth		ole Condition		11/#	Daala		eadings (%)	
D	C4 1	Pressure	MACP 1570	Depth 870	Drag up Drag Dn	1	Torque		· · · · ·	ground ection	0.	06
Pump DSDD #1	Strokes	2025		0/0	U		10500			rip	0.	
RSPP #1	Strokes 45	2025			Hook Load							~~
RSPP #1		2025	1570		Hook Load		10500		-	- P		
RSPP #1	45						11.00	-	17. Weld h	-		
RSPP #1					9. Slip & 0	Cut		-		owl		
RSPP #1	45 1. Rig up/C				9. Slip & (Cut		- - -	17. Weld h	owl o Btm		
RSPP #1	45 1. Rig up/C 2. Drill	Put			9. Slip & (10. Survey	Cut 7 ne Logs		- - -	17. Weld b 18. Wash t 19. Flow ch	owl o Btm		
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream	Put t			9. Slip & 0 10. Survey 11. Wireli 12. Casing	Cut 7 ne Logs	9.25	- - - -	17. Weld b 18. Wash t 19. Flow ch	owl o Btm lecks mud pumps	1.00	
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	Put t Cond.	1570 		 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 	Cut 7 ne Logs //Cement Out Cement Up BOP	9.25	- - - - -	 17. Weld b 18. Wash t 19. Flow cl 20. Wk on t 21. Safety 22. Handle 	owl o Btm necks mud pumps Meeting e Tools		
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	Dut t Cond. ice	1570 		 9. Slip & O 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 	Cut 7 ne Logs (/Cement Out Cement Up BOP OP & FIT	9.25	- - - - - -	17. Weld b 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V	owl o Btm necks mud pumps Meeting : Tools VO cement	1.00	
RSPP #1	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	Dut t Cond. ice	1570 		 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 	Cut 7 ne Logs (/Cement Out Cement Up BOP OP & FIT	9.25	- - - - - -	 17. Weld b 18. Wash t 19. Flow cl 20. Wk on t 21. Safety 22. Handle 	owl o Btm necks mud pumps Meeting : Tools VO cement		
-	45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	Dut t Cond. ice	1570 		 9. Slip & O 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 	Cut 7 ne Logs //Cement Out Cement Up BOP OP & FIT Drill	11.00 9.25 0.75	- - - - - -	17. Weld b 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other V	owl o Btm necks mud pumps Meeting : Tools VO cement	1.00	
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Wells Vulcan Investom Red Brook 72 Day: 22 Date: 11-Non-69 Operation 69 0800 hrs: Run Indue of 100 of diff add piper) Non-Role no. ROL, no. Factor, no.				Vulc	an Mi	inerals	5 Daily	y Drill	ing Re	eport			
Operating 0 BMD br: R.m. in bole to diff or (diff diff pipe) KE der. 61.75 m. Bit # Size/Male Made Luck Serial No. In Out Metree Hours Nozzles RPM WD Male I O D L B G O R Bit # Size/Male Social Nucl. Social Nucl. Social Nucl. Nozzles RPM WD Male I O D L B G O R Made Pamp Pamp Pamp Social Nucl.	Well:		Vulc				U		~	^	Date:	11-N	ov-09
the next of the limit alread to be interval to the set of the limit o	Depth:	889.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, 1	n/hr:	#DIV/0!	Rig:	Stoneha	am # 11
Bit # Size/Male Model Note Deright Actional Series (Actional Context of the series	Operation	@ 0800 hrs:	Run in hole	to drill out (drift drill pip	be)					KB elev:	61.75	m.
Image: Second	the next da	Drill ahead									KB - GL	6.30	m.
Model PZ-11 PZ-11 Stm HVDP Pump Pressure 6.00 kPa Stroke om 279 279 Drill Collar O.D. m model m	Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
Model PZ-11 PZ-11 Stm HVDP Pump Pressure 6.00 kPa Stroke om 279 279 Drill Collar O.D. m model m													
Model PZ-11 PZ-11 Stm HVDP Pump Pressure 6.00 kPa Stroke om 279 279 Drill Collar O.D. m model m			D 1	D	Derillin a Aa		216	Dit sub tala	duift auf VC) 27 165	m DC I. 1	21 165	DC
Liser mm Step: Dorch mm Stroke mm 727 Drift Collar O.D. mm	Model		-	-	0	•	210mm bit,	Bit sub, tele	drift sub, AC				
Stroke mm 279 279 279 Drill Collar O.D. mm Diff Collar O.D. mm Drill Page O.D. mm Vol. u*um or m 1530 0.0000 Jet Velocity: mv/min The Hydraulic HP: kW Vol. u*um or m 1530 0.0000 Jet Velocity: m/min The Hydraulic HP: kW Stroke Depth Drift Admuth North East Demsty Cleaning Counte Pered 56.00 68.00 0.75 Admuth North East Demsty Cleaning Counte Pered 56.00 1 Strokes Cleaning Counte Strokes Cleaning "><td></td><td>(mm)</td><td></td><td></td><td></td><td></td><td></td><td>m</td><td>Strap:</td><td>_ rump r res</td><td></td><td>0,000</td><td>ма</td></t<>		(mm)						m	Strap:	_ rump r res		0,000	ма
Ved. ="mm 0 v9v 1.5300 0.0000 Jet Velocity: m/sec True Hydraulic HP: kW SURVEYS MUD MUD ADDITIVES 36.00 0.75 image MuD Centing Cause Pered 56 36.00 0.75 image Part Finals Satt Suppandie Satt Suppandie 56 000.00 0.25 PH Image Cause Pered Cause Cause Pered Cause Pered Cause Cause Pered Cause Pered Cause Cause Cause Cause Cause <td< td=""><td></td><td></td><td></td><td></td><td>0</td><td></td><td>165.0</td><td>-</td><td>1</td><td>).D.</td><td>-</td><td>mm</td><td></td></td<>					0		165.0	-	1).D.	-	mm	
SIRVEYS MUD MUD MUD ADDTTVES Depth Drift Azimuh North East Time 6.37 Cd Carus Carus 68.00 0.75 Image Casuate Preed Casuate Preed Carus Salphamie Carus Ca	SPM		0	0	D.C. Annu	lar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
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T55.00 5.1 Ca (mg/t) PHPA Bioside 850 6.7 Cl (mg/t) Sordnat Coronax 880 7.1 MBT Sordnath Day Cost \$2.33 9 North Styper Mult Dosses Surface & Downhole Estimates m3 BOP & Casing Test 11-Nov-09 Uretrifve Density Centrifuge 10day tosses down hole 0.0 Total surf. 32.0 Next GoP Test 11-Nov-09 Overflow Density Total Gas Readings (%) 10day tosses at surface 0.0 Total surf. 32.0 Next BOP Test 10-Nov-09 Overflow Density Total Gas Readings (%) 10day total losses 0.0 Control - KPa Hole Condition Mah & Kt/# Total Gas Readings (%) Pump Strokes Pressure MACP Depth Drag up 1 Torque Background												-	d
850 6.7 Image: Cl (mg/l) Sardnath Correact 880 7.1 Image: Cl (mg/l) Sardnath peters 880 Image: Cl (mg/l) Sardnath peters Sardnath 1 Well Cost \$152,01 Image: Cl (mg/l) Sardnath 1 Well Cost \$152,01 Image: Cl (mg/l) Image: Cl (mg/l) Image: Cl (mg/l) 1 Out (mg/l) Image: Cl (mg/l) Image: Cl (mg/l) Image: Cl (mg/l) Image: Cl (mg/l) 1 Reserver Next Casing Test Date Contribute Sistex 1 Image: Cl (mg/l) 1 Reserver NACP Peter Hole Condition kdaN & Kfu/# Total Gas Readings (%)							-					,	
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	-	\$2,39	4,186	Today	\$20	1,357	Total Cost	\$2,59	5,543	Weather:	2	.5 deg, rainir	ıg.
Foreman Don Campbell Rig Phone 709-649-7106 Taken By: Terry Brooker / Shane Halley													
	Foreman		Don Ca	ampbell		Kig Phone		709-649-710	6	Taken By:	Terry B	rooker / Sha	ne Halley

			<u>v uic</u>	an Mi	nerals	<u>s Daily</u>	Drill	ing Re	eport			
Vell:		Vulc	an Investca	n Red Bro	ok #2		Day:	23		Date:	12-N	ov-09
epth:	899.0	mKB	Progress:	10.0	Drilling:	4.50	hrs ROP, 1	n/hr:	2.22	Rig:	Stoneh	am # 11
-			lating around	1 1200 densit	y mud					KB elev:	61.75	
	Chahge asse			_	a					KB - GL	6.30	-
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles		WOB kdaN	IODL	BGOR
4	216	GX-30DX	6065996	889		10	4.5	3 X 12/32	60	6		
		Pump 1	Pump 2	Drilling As	sembly	216mm hit	Rit sub tele	hrift sub XC	27m 165m	m DC, Jar, 1	21m 165mm	DC
Iodel		PZ-11	PZ-11	81m HWDF	•	21011111 011,	Dit sub, teles	unit 300, 740	Pump Pres		6,600	kPa
iner	(mm)	165	165	BHA Lengt		241.00	m	Strap:	- ump 1 105	Board:	0,000	in u
troke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.		mm	•
PM		78	0	D.C. Annul	ar Vel.:	105.0	m/min	D.P Annula	ar Vel.:	67.0	m/min	
'ol.	m ³ /min @ 95%	1.3200	0.0000	Jet Velocity	/:	118.0	m/sec	True Hydr	aulic HP:	298.0	kW	
									-			
			VEYS		I		MUD			MUD AD	1	n
De	pth	Drift	Azimuth	North	East	Time	11:00	18;00	Gel	42	CaC03	
36.00		0.75				Density	1010	1020	Caustic	24	Percol	
68.00		0.5				Vis. pH	47	45	Salt Kaluan	34	Sulphamic	
109.00 124.00		0.25				pH Fluid Loss	12.0 32.0	11.0	Kelzan Collo		T-352 Defermen	1
124.00		1				P.V.	32.0		Cello Bicarb		Defoamer 2K-7	1
202.00		1.50				r.v. Y.P.	6.0		Bicard Kwickseal		2K-7 Cal carb	
262.00		0.75				Gel S.	1.5/2/2.5				Cal carb Dvna det	
						Gel S. Filter Ck	0.5		Drispac Deceo	2		
356.00 508.00		0.64				Filter CK Solids %	0.5		Desco Barite	3 35	Walnut Lime Hydrate	d
604.00		2.66				Oil	1.0		Fiberseal		Lime Hydrate Dyna fiber	u
754.00		5.1				Ca (mg/l)	40.0		PHPA	-5	Bioside	
850		6.7				Cl (mg/l)	1200.0		Sawdust	36	Coronox	
880		7.1				MBT			Soda Ash		Mica med	5
897		7	teledrift			Тетр	19.0		Supervision		Day Cost	\$4,403
						XSPolymer			Mud Van	1	Well Cost	\$158,26
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests	Da	ite		Centr	rifuge	
otal circul	ating Vol.	75.9			Last Cas	sing Test	11-N	ov-09	Underflow	Density		
oday losse	s down hole	0.0	Total hole	110.0	Last B	OP Test	11-N	ov-09	Overflow D	ensity		
	s at surface	0.0	Total surf.	32.0		sing Test	25-N		Flow Rate,			
			Cumulative	283.0	Nevt R							
oday total	losses	0.0	Cullulative	205.0	TICAT D	OP Test	500 rota	iting hrs	Combined	iours		
l'oday total				203.0				0			oodings (%)	N
Foday total	We	ll Control -	kPa		Ho	le Condition	n kdaN & Ki	0		Total Gas R	eadings (%))
Pump				Depth	Ho Drag up	le Condition		0	Backg	Total Gas R round	eadings (%))
Pump RSPP #1	We	ll Control -	kPa		Ho	le Condition	n kdaN & Ki	0	Backg Conn	Total Gas R	eadings (%))
•	We Strokes	ll Control - Pressure	kPa MACP	Depth	Ho Drag up Drag Dn	le Condition 1 1	n kdaN & Ki Torque	0	Backg Conn	Total Gas R round ection	eadings (%))
Pump RSPP #1 RSPP #2	We Strokes	ll Control - Pressure 3250	kPa MACP	Depth	Ho Drag up Drag Dn	le Condition 1 1 56	n kdaN & Ki Torque	0	Backg Conn	Total Gas R round ection rip	eadings (%))
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/O 2. Drill	ll Control - Pressure 3250	kPa MACP	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	ole Condition 1 56 Sut	n kdaN & Kr Torque 10500	0	Backg Conn Tr 17. Weld b 18. Wash t	Total Gas R round ection rip owl o Btm	eadings (%))
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream	ll Control - Pressure 3250 Dut	kPa MACP 7075	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	le Condition 1 56 Cut	n kdaN & Ki Torque 10500 1.00	0	Backg Conn Ti 17. Weld b 18. Wash t 19. Flow ch	Total Gas R ground ection rip owl o Btm ecks	eadings (%))
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Il Control - Pressure 3250 Dut	kPa MACP 7075 7.75	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/	le Condition 1 56 Cut te Logs (Cement	a kdaN & K Torque 10500 1.00 0.25	0	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1	Total Gas R round ection ip owl o Btm ecks nud pumps)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C	Il Control - Pressure 3250 Dut	kPa MACP 7075 7.75 1.50	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C	le Condition 1 56 Cut he Logs (Cement Dut Cement	a kdaN & K Torque 10500 1.00 0.25	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety	Total Gas R round ection ip owl o Btm ecks nud pumps Meeting	eadings (%))
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	ll Control - Pressure 3250 Dut t Cond.	kPa MACP 7075 7.75 1.50 3.75	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP	n kdaN & Ki Torque 10500 1.00 0.25	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle	Total Gas R round ection ip owl o Btm ecks nud pumps Meeting	1.00	
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv	ll Control - Pressure 3250 Dut t Cond. ice	kPa MACP 7075 7.75 1.50 3.75 0.50	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple 15. Test B(le Condition 1 56 Cut te Logs (Cement Out Cement Up BOP OP & FIT	a kdaN & K Torque 10500 1.00 0.25	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00	
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	ll Control - Pressure 3250 Dut t Cond. ice	kPa MACP 7075 7.75 1.50 3.75	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple	le Condition 1 56 Cut te Logs (Cement Out Cement Up BOP OP & FIT	n kdaN & Ki Torque 10500 1.00 0.25	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv	ll Control - Pressure 3250 Dut t Cond. ice	kPa MACP 7075 7.75 1.50 3.75 0.50	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP OP & FIT rill	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & d 6. Trip 7. Rig Serv 8. Rig Rep	ll Control - Pressure 3250 Dut t Cond. ice air	kPa MACP 7075 7.75 1.50 3.75 0.50 3.75	Depth 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut te Logs (Cement Out Cement Up BOP OP & FIT	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep	ll Control - Pressure 3250 Dut t Cond. ice air	kPa MACP 7075 7.75 1.50 3.75 0.50 3.75 0.50 3.75	Depth 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP OP & FIT rill	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep	ll Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lir	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 3.75	Depth 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP OP & FIT rill	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repart Lay out cem Replace bro	Il Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lir HA. RIH to to	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 3.75	Depth 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP OP & FIT rill	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00)
Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 1. Lay out cem Replace bro Make up BF Slip and cut	ll Control - Pressure 3250 Dut t Cond. tice air ent stinger f ken drive lir IA. RIH to to	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 3.75	Depth 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut he Logs (Cement Out Cement Up BOP OP & FIT rill	1 kdaN & Ki Torque 10500 1.00 0.25 0.75	0	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools	1.00	
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:15 0:15-10:45 0:25-14:30	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa Lay out cem Replace bro Make up BH Slip and cut Accumulato Drill out plu	Il Control - Pressure 3250 Dut t Cond. ice air ent stinger f ken drive lin HA. RIH to to r test. Funct: rgs, float col	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75	Depth 898 898 rks 1. pocket to 88	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple 15. Test B(16. BOP D	le Condition 1 56 Cut le Logs (Cement Out Cement Up BOP OP & FIT rill REMARKS t BOP drill. '	1 kdaN & Ki Torque 10500 1.00 0.25 0.75 0.75	36sec.	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	Total Gas R round ection ip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00	
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 0:15-04:00 9:15-10:15 0:15-10:45 0:45-14:30 4:30-20:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa Lay out cem Replace bro Make up BH Slip and cut Accumulato Drill out plu Drill 216mm	Il Control - Pressure 3250 Dut t Cond. rice air ent stinger f ken drive lin HA. RIH to to r test. Funct rgs, float col n hole from	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75 0.50 3.75	Depth 898 898 vrks l. pocket to 88 OP drill. We	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	t BOP drill. '	In kdaN & Ki Torque 10500 1.00 0.25 0.75 0.75 well secure 3 on survey w/	it/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg.	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00	
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:15 0:15-10:45 0:15-10:45 0:45-14:30 4:30-20:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Repa Lay out cem Replace bro Make up BF Slip and cut Slip and cut Drill out plu Drill 216mm Formation in	Il Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lin tA. RIH to tu r test. Funct igs, float col n hole from integrity test	kPa MACP 7075 7075 7.75 1.50 3.75 0.50 3.75 orom the mast irom	Depth 898 898 orks 1. pocket to 88 OP drill. We d in use 102	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casingy 13. Pump (14. Nipple 15. Test B(16. BOP D	t BOP drill.	IkdaN & Ki 10500 10500 1.00 0.25 0.75 0.75 0.75 0.75	36sec. Feledrift @ 8	Backg Conn Ti 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 1 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s s	1.00 3.75 24.00 ular. = 1826KG/m	3
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:15 0:15-10:45 0:45-14:30 4:30-20:45 0:45-24:00	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 6. Rig Repa 7. Rig Serv 8. Rig Repa 1. Rig Serv 9. Rig Serv 8. Rig Repa 1. Stroke Stroke 8. Rig Repa 1. Stroke Stroke 8. Rig Repa 1. Stroke Stroke 8. Rig Repa 1. Stroke Stroke 8. Stroke Stroke 8. Stroke Stroke 8. Stroke Stroke 8. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 9. Stroke Stroke 8. Stroke Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 9. Stroke 1. Stroke 1. Stroke 1.	Il Control - Pressure 3250 Dut t Cond. ice air ent stinger f ken drive lin IA. RIH to tu r test. Funct igs, float col n hole from ntegrity test g. 250L incr	kPa MACP 7075 7.75 1.50 3.75 0.50 3.75 orom the mast icon motor kill lar, shoe and 899m Held B @ 892m. Mu ease. Close in	Depth 898 898 orks I. pocket to 88 OP drill. We d in use 102 n. SIDP 1400	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D 9m. Conduc 19m. Conduc 19m. Conduc 19m. conduc	t BOP drill.	IkdaN & Ki 10500 10500 1.00 0.25 0.75 0.75 0.75 0.75	36sec. Feledrift @ 8	Backg Conn Ti 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 1 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s s	1.00 3.75 24.00 ular. = 1826KG/m	3
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:15 0:15-10:45 0:45-14:30 4:30-20:45 0:45-24:00	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C	Il Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lin HA. RIH to to r test. Funct: rgs, float col n hole from ntegrity test g. 250L incr rrface, no sho	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 0.50 3.75 com the mast rom the mast rom the mast rom the mast rom the mast se on drawwo to 850m ion motor kill lar, shoe and g899m Held B @ 892m. Mu ease. Close in een on the tan	Depth 898 898 brks l. pocket to 88 oOP drill. We d in use 102 n. SIDP 1400 nks. SIDPP v	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test B(16. BOP D 16. BOP D 19m. Conduc 20 secure 81 0kg/m3 poly 0kg/m3 poly	le Condition 1 1 56 Cut he Logs (Cement Dut Cement Dut Cement Dut Cement DIP & FIT rill REMARKS t BOP drill. ' t BOP drill.' t BOP drill.'	kdaN & Ki 10500 1.00 0.25 0.75 0.75 0.75 0.75 0.75 0.75 0.75	36sec. Feledrift @ 8 Max surface ate out drille	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00 ular. = 1826KG/m	3
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:45 0:45-14:30 4:30-20:45 0:45-24:00	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 7. Rig Serv 8. Rig Rep 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 6. Trip 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 7. Rig Serv 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C 9. Circ. & C 8. Rig Rep 9. Circ. & C 8. Rig Rep 9. Circ. & C	Il Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lin HA. RIH to to r test. Funct: rgs, float col n hole from ntegrity test g. 250L incr rrface, no sho	kPa MACP 7075 7.75 1.50 3.75 0.50 3.75 orom the mast icon motor kill lar, shoe and 899m Held B @ 892m. Mu ease. Close in	Depth 898 898 brks l. pocket to 88 oOP drill. We d in use 102 n. SIDP 1400 nks. SIDPP v	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test B(16. BOP D 16. BOP D 19m. Conduc 20 secure 81 0kg/m3 poly 0kg/m3 poly	le Condition 1 1 56 Cut he Logs (Cement Dut Cement Dut Cement Dut Cement DIP & FIT rill REMARKS t BOP drill. ' t BOP drill.' t BOP drill.'	kdaN & Ki 10500 1.00 0.25 0.75 0.75 0.75 0.75 0.75 0.75 0.75	36sec. Feledrift @ 8 Max surface ate out drille	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00 ular. = 1826KG/m	3
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:15 0:15-10:45 0:45-14:30 4:30-20:45 0:45-24:00	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep 7. Rig Rep 8. Rig Serv 9. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Se	Il Control - Pressure 3250 Dut t Cond. tice air ent stinger f ken drive lir IA. RIH to tu r test. Funct gs, float col n hole from integrity test g. 250L incr rface, no shi ts today, Dri	kPa MACP 7075 7.775 7.75 1.50 3.75 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0	Depth 898 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelit 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D 16. BOP D 16. BOP D 17. Conduc 19. Conduc	le Condition 1 1 56 Cut he Logs Cement Out Cement Out Cement Up BOP DP & FIT rill REMARKS t BOP drill, ' sec. Deviation mer. Volume ensity 1020k d arcing on b	IkdaN & Ki 10500 10500 1.00 0.25 0.75 </td <td>B6sec. Feledrift @ 8 Max surface ate out drille</td> <td>Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S 8 hazzards II</td> <td>Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s</td> <td>1.00 3.75 24.00 ular. = 1826KG/m mix barite on</td> <td>- - - - - - - - - - - - - - - - - - -</td>	B6sec. Feledrift @ 8 Max surface ate out drille	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S 8 hazzards II	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00 ular. = 1826KG/m mix barite on	- - - - - - - - - - - - - - - - - - -
Pump RSPP #1 RSPP #2 0:00-00:15 0:15-04:00 4:00-0915 9:15-10:45 0:45-14:30 4:30-20:45 0:45-24:00	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep 7. Rig Rep 8. Rig Serv 9. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Serv 9. Rig Serv 8. Rig Se	Il Control - Pressure 3250 Dut t Cond. ice air eent stinger f ken drive lin HA. RIH to to r test. Funct: rgs, float col n hole from ntegrity test g. 250L incr rrface, no sho	kPa MACP 7075 7.75 7.75 1.50 3.75 0.50 3.75 0.50 3.75 com the mast rom the mast rom the mast rom the mast rom the mast se on drawwo to 850m ion motor kill lar, shoe and g899m Held B @ 892m. Mu ease. Close in een on the tan	Depth 898 898	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test B(16. BOP D 16. BOP D 19m. Conduc 20 secure 81 0kg/m3 poly 0kg/m3 poly	le Condition 1 1 56 Cut he Logs (Cement Dut Cement Dut Cement Dut Cement DIP & FIT rill REMARKS t BOP drill. ' t BOP drill.' t BOP drill.'	IkdaN & Ki 10500 10500 1.00 0.25 0.75 </td <td>36sec. Feledrift @ 8 Max surface ate out drille</td> <td>Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S</td> <td>Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s</td> <td>1.00 3.75 24.00 ular. = 1826KG/m</td> <td>- - - - - - - - - - - - - - - - - - -</td>	36sec. Feledrift @ 8 Max surface ate out drille	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour 397m, 7deg. pressure 700 rs method. S	Total Gas R round ection rip owl o Btm ecks nud pumps Meeting Tools s	1.00 3.75 24.00 ular. = 1826KG/m	- - - - - - - - - - - - - - - - - - -

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2	-	Day:	24		Date:	13-N	ov-09		
Depth:	948899.0	mKB	Progress:	49.0	Drilling:	4.50	hrs ROP, 1	n/hr:	10.89	Rig:	Stoneh	am # 11		
Operation	@ 0800 hrs:	Drill ahead								KB elev:	61.75	m.		
	Drill ahead									KB - GL	6.30			
Bit #	Size/Make		Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL			
4		GX-30DX	6065996	889		10		3 X 12/32	60		0-0-NO-A-	E-0-NO-BH		
5	216	HCD506Z>	7120914	899		49		3X10, 3X1	60		DG 010	a. 1		
M. 1.1		Pump 1	Pump 2	Drilling As						edrift sub, Po		-		
Model Liner		PZ-11 165	PZ-11 165	BHA Lengt		ing stab, 13n 245.76	m	Strap:	Pump Pres	sure: Board:	6,600	kPa		
Stroke	(mm) (mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (00	-	mm			
SPM	(mm)	80	0	D.C. Annul		112.0	m/min	D.P Annula			m/min			
Vol.	m ³ /min @ 95%	1.3600	0.0000	Jet Velocity		129.0	m/sec	True Hydra			kW			
, 01		1.0000	0.0000	occ verserij	•	12,10		11 de 113 di						
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	8:41	22:00	Gel		CaC03			
917.00	teledrift	7				Density	1200	1200	Caustic		Percol			
931.00	teledrift	6.5				Vis.	51	61	Salt		Sulphamic	8		
						pН	11.3	11.0	Kelzan	9	T-352	3		
						Fluid Loss	8.4	8.6	Cello		Defoamer	2		
						P.V.	13.0		Bicarb	15	2K-7			
						Ү.Р.	8.5		Kwickseal		Cal carb			
						Gel S.	3/4/5		Drispac	12	Dyna det			
						Filter Ck	1.0		Desco		Walnut			
						Solids %	1.3		Barite		Lime Hydrate	d		
						Oil			Fiberseal		Dyna fiber			
						Ca (mg/l)	280.0		PHPA	13	Bioside			
						Cl (mg/l)	7500.0		Sawdust		Coronox			
						MBT	2.5		Soda Ash	5	Mica med			
			teledrift			Temp	19.6		Supervision		Day Cost	\$13,296		
					202.0	XSPolymer	0.6		Mud Van	1	Well Cost	\$175,991		
	losses Surfa		iole Estimat	es m3		asing Tests		ate	~	Cent	rifuge			
Total circu	0	76.1	T (11 1	110.0		sing Test		ov-09	Underflow	•				
~	es down hole	0.0	Total hole	110.0		OP Test		ov-09	Overflow I	ě				
Today losse	es at surface	0.0	Total surf. Cumulative	32.0 283.0		sing Test OP Test		ov-09 ating hrs	Flow Rate, Combined					
Touay tota	105565	0.0	Cummanve	283.0	Next D	or rest	491 100	ating ins	Combineu	liouis				
	We	ll Control -	kPa		Ho	le Condition	kdaN & Ki	ft/#		Total Gas R	eadings (%)			
Pump	Strokes	Pressure	MACP	Depth	Drag up	1	Torque			ground	8	10		
RSPP #1	40	1950	5512	947	Drag Dr	1	Torque			ection		10		
RSPP #2														
	1. Rig up/O	Dut			9. Slip & C	Cut		-	17. Weld b	owl				
	2. Drill				10. Survey		0.50		18. Wash t	o Btm				
	3. Ream				11. Wirelin	ie Logs			19. Flow ch	necks				
	4. Drill Out	t	4.50		12. Casing	/Cement			20. Wk on 1	mud pumps				
	5. Circ. &	Cond.	6.75		13. Pump (-	21. Safety	0	0.75			
	6. Trip		7.50		14. Nipple	-			22. Handle					
	7. Rig Serv		0.50		15. Test BO				23 Other K		3.50			
	8. Rig Repa	air			16. BOP D	rill			Total Hour	'S	24.00			
00.00 05 15	Cincula	diana 1		0 Ch. (REMARKS		20510						
	Circulate an						k for pressui	e. 385 kPa.						
	Mix barite a Pull out of the			-										
	Make up "St		-											
	Drill ahead		•			choke line w	ith RV antif	reeze						
10.10 21100	Dini uncuu			ionn i unetic	,	enone mie v	iui it i uitii							
	No Incident today, 7 hazzards ID'd Please see report for Nov 12. FIT Details now included.													
Tops:														
Prev Cost	\$2,66	5,485	Today	\$47	,247	Total Cost	\$2,71	2,732	Weather:		-2 deg, fair.			
F		D C			D:- D	-	00 (40 710	<i>(</i>	Mud Type		Polamer			
Foreman		Don Ca	ampbell		Rig Phone		09-649-710	U	Taken By:	ierry Br	ooker / Sha	ne mailey		

			Vulc	an Mi	nerals	5 Daily	Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	25		Date:	14-N	ov-09		
Depth:	1095.0	mKB	Progress:	147.0	Drilling:	21.75	hrs ROP, 1	n/hr:	6.76	Rig:	Stoneha	am # 11		
-	@ 0800 hrs:	Drill ahead	0		0		,			KB elev:	61.75	m.		
the next da	Drill ahead									KB - GL	6.30	m.		
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR		
5	216	HCD506Z>	7120914	899		49	4.5	3X10, 3X1	60	6				
		Pump 1	Pump 2	Drilling As	•				-	edrift sub, Po		-		
Model		PZ-11	PZ-11		2, 209mm str	-			Pump Pres		5,889	kPa		
Liner	(mm)	165	165	BHA Lengt			m	Strap:		Board:				
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (mm			
SPM Vol.	m ³ /min @ 95%	80 1.3600	0.0000	D.C. Annul		112.0 129.0	m/min	D.P Annula			m/min kW			
V 01.	m /min @ 95%	1.5000	0.0000	Jet Velocity	•	129.0	m/sec	True Hydra	autic HF:	400HP	KVV			
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	epth	Drift	Azimuth	North	East	Time	6:51	20:00	Gel	MICD AD	CaC03			
917.00	teledrift	7			Luov	Density	1200	1180	Caustic		Percol			
931.00	teledrift	6.5				Vis.	55	61	Salt		Sulphamic			
973.00	teledrift	7				pН	10.6	10.0	Kelzan	3	T-352			
1014.00	teledrift	8				Fluid Loss	7.2	7.6	Cello		Defoamer			
1082.00	teledrift	8.5				P.V.	17.0		Bicarb		2K-7			
						Y.P.	13.0		Kwickseal		Cal carb			
	T					Gel S.	3.5/4/5	[Drispac		Dyna det			
						Filter Ck	1.0		Desco	1	Walnut			
						Solids %	1.3		Barite	850	Lime Hydrate	d		
						Oil			Fiberseal		Dyna fiber			
						Ca (mg/l)	320.0		PHPA		Bioside			
						Cl (mg/l)	7200.0		Sawdust		Coronox			
						MBT	2.5		Soda Ash		Mica med			
			teledrift			Temp	26.2		Supervision		Day Cost	\$13,296		
-						XSPolymer	0.7		Mud Van	1	Well Cost	\$175,991		
	losses Surfa		iole Estimat	es m3		asing Tests		ate		Centi	rifuge			
	batal circulating Vol. 82.2 Last Casing Test 11-Nov-09 Underflow Density oday losses down hole 0.7 Total hole 110.0 Last BOP Test 11-Nov-09 Overflow Density													
•	day losses at surface 0.0 Total surf. 32.0 Next Casing Test 25-Nov-09 Flow Rate,m3/min													
, i i i i i i i i i i i i i i i i i i i		0.0				0			/					
Today tota	TIOSSES	0.0	Cumulative	284.0	INEXT DO	OF Test	409101	aning his	Combined	lours				
	Wo	ll Control -	եթո		Но	le Condition	kdaN & K	ft/#		Total Gas R	oodings (%)			
Pump				Denth				LU <i>π</i>			_			
-	Pump Strokes Pressure MACP Depth Drag up 1 Torque Background 0.12 RSPP #1 41 2400 5512 1057 Drag Dn 1 Connection 0.10													
RSPP #2	0													
	SPP #2 Hook Load 57 4500 Trip 0.10													
	1. Rig up/C	Dut			9. Slip & C	ut		•	17. Weld b	owl				
	2. Drill		21.75		10. Survey		1.00		18. Wash t	o Btm				
	3. Ream				11. Wirelin	ne Logs			19. Flow ch	ecks				
	4. Drill Ou	t			12. Casing/	/Cement		_	20. Wk on 1	nud pumps				
	5. Circ. &	Cond.				Out Cement			21. Safety		0.50			
	6. Trip				14. Nipple				22. Handle					
	7. Rig Serv		0.75		15. Test BC				23 Other K					
	8. Rig Repa	air			16. BOP D	rill			Total Hour	s	24.00			
						DEMADIZO								
00.00 24.00) Drill from 9	19m to 1005	m with tolod	wift annuaria		REMARKS								
00:00-24:00	DIIII IIOIII 9	48111 10 1095	iii witii teleu	fift surveys.	Function An	liulai, LPK a	liu UPK.							
					· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			
	No Incident	today, 7 haz	zards ID'd P	lease see rej	port for Nov	12. FIT Det	ails now inc	cluded.						
Tops:	A =	0.002	T 1	*=*	007	T (1) C	A	0.00=	***			1.0.00		
Prev Cost	\$2,71	0,982	Today	\$78	,005	Total Cost	\$2,78	8,987	Weather:	+6, over	cast, East wi	nd @ 20		
Foreman		Don C	ampbell		Rig Phone		709-649-710	6	Mud Type Taken By:	Torry D.	Polamer ooker / Shai	ne Halley		
rorentan		DOILC	mpoen		Rig Phone		07-047-/10	U	Takell Dy:	Terry Br	ookei / Siial	ic mailey		

			Vulc	an Mi	inerals	5 Daily	v Drill i	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	26		Date:	15-N	ov-09
Depth:		mKB	Progress:	121.0	Drilling:	21.25	hrs ROP, r	n/hr:	5.69	Rig:	Stoneha	am # 11
-	@ 0800 hrs:									KB elev:	61.75	
	Drill ahead,	Ũ		_						KB - GL	6.30	
Bit #	Size/Make	Model IADC HCD506Z>	Serial No. 7120914	In 899	Out	Metres 317	Hours	Nozzles 3X10. 3X1	RPM	WOB kdaN 11	TODL	BGOR
5	210		7120914	099		317	40.75	3/10, 3/1	130	11		
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit	214mm NBS	5 212mm St	ring stab_tel	edrift sub, Po	onn DC 2121	mm String
Model		PZ-11	PZ-11	0	2, 209mm str				-		6,900	kPa
Liner	(mm)	165	165	BHA Lengt	h:	245.76	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe (127.0	mm	
SPM	2	80	0	D.C. Annul			m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.3600	0.0000	Jet Velocity	/ :	129.0	m/sec	True Hydr	aulic HP:	406HP	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7;28	20:00	Gel	MOD AD	CaC03	
917.00	teledrift	7				Density	1190	1195	Caustic		Percol	
931.00	teledrift	6.5				Vis.	65	66	Salt		Sulphamic	
973.00	teledrift	7				pH	11.5	11.0	Kelzan	2	T-352	
1014.00	teledrift	8				Fluid Loss	6.0	6.8	Cello		Defoamer	
1082.00	teledrift	8.5				P.V.	26.0		Bicarb		2K-7	1
1124.00	teledrift	8.5				Y.P.	13.0		Kwickseal		Cal carb	
1151.00	teledrift	9.00				Gel S. Filter Ck	4/5/5.5 0.5		Drispac	4	Dyna det Walnut	
1175.00	Wireline	8.87				Filter Ck Solids %	0.5		Desco Barite		Walnut Lime Hvdrate	d
						Oil	1.2		Fiberseal		Dyna fiber	u
						Ca (mg/l)	20.0		PHPA	6	Bioside	
						Cl (mg/l)	8700.0		Sawdust		Lignite	4
						MBT	2.5		Soda Ash	3	Alcomer	6
						Temp	28.3		Supervision		Day Cost	\$13,296
					DOD 8 C	XSPolymer	1.1		Mud Van	1	Well Cost	\$175,991
	losses Surfa		iole Estimat	es mo	BOP & Ca	8	Da 11 N		Underflow		rifuge	
Total circu	es down hole	94.4 0.7	Total hole	110.0	Last Cas Last B(ov-09 ov-09	Underflow Overflow I			
•	es at surface	0.0	Total surf.	32.0		sing Test		ov-09	Flow Rate,	ĩ		
Today total		0.0	Cumulative	284.0		OP Test		ting hrs	Combined			
	We	ll Control -	kPa		Ho	le Conditior	n kdaN & Ki	ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	2	Torque			ground		19
RSPP #1 RSPP #2	40	2250	5512	1200	Drag Dn Hook Load	2 60	6500			ection rip		71 10
K511 #2					HOOK LOAU	00	0500		1	пр	0.	10
	1. Rig up/C	Dut			9. Slip & C	ut			17. Weld b	owl		
	2. Drill		21.25		10. Survey		1.25	-	18. Wash t			-
	3. Ream				11. Wirelin	e Logs			19. Flow ch	iecks		
	4. Drill Ou				12. Casing/				20. Wk on 1			
	5. Circ. &	Cond.			13. Pump (-	21. Safety	0	0.50	-
	6. Trip 7. Rig Serv	ico	0.75		14. Nipple 15. Test BC	-		-	22. Handle 23 Other	Tools	0.25	-
	8. Rig Repa		0.75		16. BOP D				Z5 Other Total Hour	s	24.00	
	o. mg mp				10. DOI D			-	1000111001	5	21.00	-
						REMARKS						
00:00-24:00	Drill from 1	095m to 121	6m. Function	n LPR, Annu	lar, and UPR	on rig servi	ce.					
	No In 11	4. d 7. l										
Tops	No Incident	today, / haz	zaros ID'd									
Tops: Prev Cost	\$2,78	8.987	Today	\$29	,392	Total Cost	\$2.81	8,379	Weather:	+7 Ra	in, South wir	nd @ 10
		- /		Ψ Ξ γ	,- · =	0000	<i>4</i> - , 51	- /	Mud Type		Polamer	
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By:		ooker / Sha	ne Halley

Well: User: Protect in two processes 14.0 Diriting: 22.00 Processes 15.5 Right in two processes Standam in the Right in two processes Standam in the Right in two processes Standam in two processes<				Vulc	an Mi	nerals	5 Daily	v Drill	ing Re	eport					
Operating © 0800 hrs: [brill about] KR etc. EXB etc.	Well:		Vulca	an Investca	n Red Bro	ok #2		Day:	27		Date:	16-N	ov-09		
ene et uc, bril idead United Status ""><td>Depth:</td><td>1360.0</td><td>mKB</td><td>Progress:</td><td>144.0</td><td>Drilling:</td><td>22.00</td><td>hrs ROP, 1</td><td>n/hr:</td><td>6.55</td><td>Rig:</td><td>Stoneh</td><td>am # 11</td></th<>	Depth:	1360.0	mKB	Progress:	144.0	Drilling:	22.00	hrs ROP, 1	n/hr:	6.55	Rig:	Stoneh	am # 11		
Bit # Size/Male Size/Male Size/Male Size/Male Size/Male Duest Nucl. RTM WOB (Add) 10 L B G O R 5 216 (HCD5502 7120H d 890 461 77.6 Size/Male Size/Male 115 11 Model P2-11 F2-11 size/Male > <td></td> <td>Drill ahead</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>KB elev:</td> <td></td> <td></td>			Drill ahead								KB elev:				
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Tops: Total Cost \$2,819,499 Today \$61,278 Total Cost \$2,880,777 Weather: +3, West wind @ 15 Mud Type Polamer															
Tops: Total Cost \$2,819,499 Today \$61,278 Total Cost \$2,880,777 Weather: +3, West wind @ 15 Mud Type Polamer		No Incident	todav 8 haz	zards ID'd											
Prev Cost \$2,819,499 Today \$61,278 Total Cost \$2,880,777 Weather: +3, West wind @ 15 Mud Type Polamer	Tops:	. to meruellt	cour, o naz	Laido ID d											
	Prev Cost	\$2,81	9,499	Today	\$61	,278	Total Cost	\$2,88	80,777	Weather:	+3,	West wind	@ 15		
Foreman Don Campbell Rig Phone 709-649-7106 Taken By: Terry Brooker / Shane Halley	L		_	_						• •	_				
	Foreman		Don Ca	ampbell		Rig Phone		/09-649-710	6	Taken By:	Terry Br	ooker / Sha	ne Halley		

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2	-	Day:	28		Date:	17-N	ov-09		
Depth:	1516.0	mKB	Progress:	156.0	Drilling:	22.00	hrs ROP, 1		7.09	Rig:	Stoneha	am # 11		
Operation	@ 0800 hrs:	Drill ahead								KB elev:	61.75	m.		
the next day	Drill ahead									KB - GL	6.30			
Bit #			Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR		
5	216	HCD506Z>	7120914	899		617	95.6	3X10, 3X1	115	11				
		D 1	D	D		21 Course hit	214 ND(2 212		- Julife h Da	DC 212			
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As		ing stab, 13n				edrift sub, Po	7,900	hm String kPa		
Liner	(mm)	165	165	BHA Lengt			m	Strap:	- unp i res	Board:	7,700	ма		
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm			
SPM		80	0	D.C. Annul	ar Vel.:	112.0	m/min	D.P Annula	ar Vel.:	71.0	m/min			
Vol.	m ³ /min @ 95%	1.3600	0.0000	Jet Velocity	/:	129.0	m/sec	True Hydr	aulic HP:	406HP	kW			
D-	41-	Drift	VEYS	Mandh	East	Time	MUD 6:23	20:00	<u>a 1</u>	MUD AD				
917.00	pth teledrift	7	Azimuth	North	East	Density	0:23	20:00	Gel Caustic	1	CaC03 Percol			
931.00	teledrift	6.5				Vis.	56	61	Salt	1	Sulphamic			
973.00	teledrift	7				pH	10.8	10.5	Kelzan		T-352			
1014.00	teledrift	8				Fluid Loss	5.4	6.0	Cello		Defoamer			
1082.00	teledrift	8.5				P.V.	20.0		Bicarb		2K-7	1		
1124.00	teledrift	8.5				Y.P.	14.0		Kwickseal		Cal carb			
1151.00	teledrift	9.00				Gel S.	3/4/5		Drispac		Dyna det			
1175.00	Wireline	8.87				Filter Ck	0.5		Desco		Walnut			
1244.00	Wireline	9.07				Solids % Oil	1.2		Barite		Lime Hydrate	1		
1452.00	Wireline teledrift	8.87 9				Oli Ca (mg/l)	0.000 360.0		Fiberseal PHPA		Dyna fiber Bioside			
1432.00	leieumi	9				Cl (mg/l)	13500.0		Sawdust	40	Lignite			
						MBT	5.0		Soda Ash	10	Alcomer	5		
						Temp	28.1		Supervision		Day Cost	\$5,411		
						XSPolymer	0.9		Mud Van	1	Well Cost	\$220,017		
Mud	losses Surfa	ce & Downł	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Centr	rifuge			
Total circu	0	105.0				sing Test		ov-09	Underflow	•				
•	es down hole	3.2	Total hole	113.2		OP Test		ov-09	Overflow I	e e				
Today losse Today total	es at surface	10.0 13.2	Total surf. Cumulative	42.0 305.0		sing Test OP Test		ov-09 ating hrs	Flow Rate, Combined		0	FF		
Touay tota	108868	13.2	Cumulative	303.0	Next D	or rest	4031018	ung ms	Combined	llouis	0	11		
	We	ll Control -	kPa		Ho	le Condition	ı kdaN & Ki	ft/#		Total Gas R	eadings (%)			
Pump	Strokes	Pressure	MACP	Depth	Drag up	2	Torque			ground	8	11		
RSPP #1	40	2250	5512	1200	Drag Dn	2			Conn	ection	0.	89		
RSPP #2					Hook Load	60	6500		T	rip				
	1. Rig up/Out 9. Slip & Cut 17. Weld bowl													
	01	Dut	22.00		-		0.75	-						
	2. Drill 3. Ream		22.00		10. Survey 11. Wirelin		0.75	-	18. Wash t 19. Flow ch					
	4. Drill Ou	t			12. Casing	0		-		mud pumps				
	5. Circ. &				0	Out Cement		-	21. Safety		0.50			
	6. Trip				14. Nipple	Up BOP		-	22. Handle	0				
	7. Rig Serv		0.75		15. Test BO			_	23 Other					
	8. Rig Repa	air			16. BOP D	rill		-	Total Hour	S	24.00			
						REMARKS	·							
00.00-24.00	Drill from 1	360m to 151	6m Wire lir	e surveys at				n annular. H	PR and LIPR					
00.00-24.00		5001110 151	om. whe m	ie suiveys at	1341, and to	icum at 145	2m. runcuo	ii aiiiulai, Li	i K, and Of K					
	No Incident	today, 8 haz	zards ID'd											
Tops: Codr	oy @ 123m,			Falls 898m,	<u> </u>									
Prev Cost	\$2,88	0,777	Today	\$54	,231	Total Cost	\$2,93	5,008	Weather:		cast, West w	ind @ 10		
E		P ~			D' D'	-	00 (40 =10	<i>(</i>	Mud Type		Polymer	TT P		
Foreman		Don Ca	ampbell		Rig Phone	1	709-649-710	U	Taken By:	ierry Br	ooker / Sha	ne maney		

			Vulc	an Mi	inerals	5 Daily	Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	29		Date:	18-N	ov-09		
Depth:		mKB	Progress:	173.0	Drilling:	21.75	hrs ROP, 1	n/hr:	7.95	Rig:	Stoneha			
-	@ 0800 hrs:									KB elev:	61.75			
	Drill ahead	<u> </u>	Cantal Ma	T.,	04	Mataaa	II	Namlar	DDM	KB - GL	6.30			
Bit #	Size/Make	HCD506Z>	Serial No. 7120914	In 899	Out	Metres 790	Hours	Nozzles 3X10, 3X1		WOB kdaN 11	IODL	BGOK		
	210	1003002/	7120314	033		130	112.0	5/10, 5/1	115					
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	214mm NBS	5, 212mm St	ring stab, tele	edrift sub, Po	nn DC, 2121	nm String		
Model		PZ-11	PZ-11	stab, 9m DC	C, 209mm str	ing stab, 13n	n DC, Jar, 10)2m DC, 81n	Pump Press	sure:	7,900	kPa		
Liner	(mm)	165	165	BHA Lengt		-	m	Strap:		Board:				
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (-	mm			
SPM Vol.	m ³ /min @ 95%	90 1.5300	0.0000	D.C. Annul Jet Velocity		126.0	m/min m/sec	D.P Annula True Hydra		-	m/min kW			
V 01.	III /IIIII @ 93%	1.5500	0.0000	Jet velocity	· •	145.0	m/sec	II ue IIyui	aunt m.	515.0	K VV			
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	6:40	20:00	Gel		CaC03			
917.00	teledrift	7				Density	1205	1200	Caustic	1	Percol			
931.00	teledrift	6.5				Vis.	57	62	Salt		Sulphamic			
973.00	teledrift teledrift	7				pH Fluid Loss	10.7	10.5	Kelzan	4	T-352	2		
1014.00	teledrift	8.5				Fluid Loss P.V.	5.2 21.0	6.0	Cello Bicarb		Defoamer 2K-7			
1124.00	teledrift	8.5				Y.P.	14.0		Kwickseal		2K-7 Cal carb			
1124.00	teledrift	9.00	L	L		Gel S.	3/4/5		Drispac	3	Dyna det			
1175.00	Wireline	8.87				Filter Ck	0.5		Drispac Desco	5	Walnut			
1244.00	Wireline	9.07				Solids %	1.3		Barite	40	Lime Hydrate	1		
1323.00	Wireline	8.87				Oil	0.000		Fiberseal		Dyna fiber			
1452.00	teledrift	9				Ca (mg/l)	440.0		PHPA	3	Bioside			
1544	Wireline	9.28				Cl (mg/l)	13500.0		Sawdust	29	Lignite	3		
						MBT	7.5		Soda Ash	4	Alcomer	7		
						Temp XSPolymer	29.1 1.2		Supervision Mud Van	1	Day Cost Well Cost	\$6,408 \$220,017		
Mud	losses Surfa	ce & Downł	nole Estimat	es m3	BOP & C	asing Tests		ate	wuu van	Centr		\$220,017		
Total circu		103.0	lore Estimat			sing Test		ov-09	Underflow		nuge			
	es down hole	2.3	Total hole	113.2	Last B	U		ov-09	Overflow D					
Today losse	es at surface	5.0	Total surf.	42.0	Next Ca	sing Test		ating hrs	Flow Rate,	m3/min				
Today total	losses	7.3	Cumulative	312.0	Next B	OP Test	25-N	ov-09	Combined I	hours	0	FF		
	¥¥/-		L.D		TT.	1. C	I.J. N. O. IZ	6 4 /#		T-4-1 Car D				
Pump	Strokes	ll Control - Pressure	кга МАСР	Depth	Drag up	ole Condition 5	Torque	11/#		Total Gas R round	0	29		
RSPP #1	35 35	2120	5512	1551	Drag Up	5	Torque			ection		46		
RSPP #2				1001	Hook Load		10500			rip	0.			
	1. Rig up/Out 9. Slip & Cut 17. Weld bowl 2. Drill 21.75 10. Survey 0.75 18. Wash to Btm													
	2. Drill		21.75		10. Survey		0.75	-						
	3. Ream 4. Drill Ou	•			11. Wirelin 12. Casing	0		-	19. Flow ch					
	4. Drii Ou 5. Circ. & (0	Out Cement		-	20. Wk on 1 21. Safety		0.75			
	6. Trip				14. Nipple			-	21. Safety I 22. Handle					
	7. Rig Serv	ice	0.75		15. Test BO	OP & FIT		-	23 Other					
	8. Rig Repa	air			16. BOP D	rill		_	Total Hour	s	24.00			
						DEMADIZO								
00:00 24:00	Drill from 1	516m to 168	Om Wiro lin	o survous of		REMARKS		nual aboka l	ing POP dri	ll Wall soon	ra 00 caa			
00.00-24.00	Function UF			ie suiveys at	1344, Functi	on annuar, i			ine, bor un	II. WEII SECU	e 90 sec.			
	Tunenon er	rt, und Li It												
	No Incident													
	oy @ 123m,													
Prev Cost	\$2,93	5,008	Today	\$35	,243	Total Cost	\$2,97	0,251	Weather:	+4, Cle	ar, West win	nd @ 15		
Foreman		Don Co	ampbell		Rig Phone		709-649-710	6	Mud Type Taken By:	Terry Pr	Polymer ooker / Sha	ne Hallov		
roreman			mpoen		rug i none		07-0 7 7-/10	v	ranch Dy:	ieny br	JONCI / DIIA	in maney		

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	30		Date:	19-N	ov-09		
Depth:	1753.0	mKB	Progress:	64.0	Drilling:	6.75	hrs ROP, 1	m/hr:	9.48	Rig:	Stoneha	am # 11		
Operation	@ 0800 hrs:	Drill ahead								KB elev:	61.75	m.		
	Drill ahead	Ű						•		KB - GL	6.30			
Bit #	Size/Make		Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR		
5	-	HCD506Z>	7120914	899	1750		117	, -			8-3-CR-C-2	X-0-PN-PR		
6RR	216	GX-39DX	6065996	1750		3		3 X 12	70		DC A1A	0.1		
M 11		Pump 1	Pump 2	Drilling As	•					edrift sub, Po		-		
Model Liner		PZ-11 165	PZ-11 165	BHA Lengt	-	ring stab, 13r 245.76	m DC, Jar, IC	Strap:	- rump Pres	sure: Board:	7,900	kPa		
Stroke	(mm) (mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (מו	127.0	mm			
SPM	(mm)	90	0	D.C. Annul		126.0	m/min	D.P Annula			m/min			
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity		145.0	m/sec	True Hydr			kW			
					-									
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	6:36	23;30	Gel		CaC03			
917.00	teledrift	7				Density	1205	1230	Caustic	1	Percol			
931.00	teledrift	6.5				Vis.	59	66	Salt		Sulphamic			
973.00	teledrift	7				pН	10.0	10.0	Kelzan	2	T-352			
1014.00	teledrift	8				Fluid Loss	6.4	9.0	Cello		Defoamer	1		
1082.00	teledrift	8.5				P.V.	23.0		Bicarb		2K-7	2		
1124.00	teledrift	8.5				Y.P.	14.0		Kwickseal		Cal carb			
1151.00	teledrift	9.00				Gel S.	3.5/5/6		Drispac		Dyna det			
1175.00	Wireline	8.87				Filter Ck	0.5		Desco		Walnut			
1244.00	Wireline	9.07				Solids %	1.3		Barite	45	Lime Hydrate	1		
1323.00	Wireline	8.87				Oil			Fiberseal		Dyna fiber			
1452.00	teledrift	9				Ca (mg/l)	720.0		PHPA	4	Bioside			
1544.00	Wireline	9.28				Cl (mg/l)	17700.0		Sawdust	22	Lignite			
1714.00	teledrift	8.5				MBT	7.5		Soda Ash	3	Alcomer	3		
1737.00	Totco	8.85				Temp	21.3		Supervision		Day Cost	\$4,422		
M		0 D 1			DOD 8 C	XSPolymer	1.2		Mud Van	1	Well Cost	\$231,733		
	losses Surfa		iole Estimat	es m3		asing Tests		ate	T. 1. (1.		rifuge			
Total circu	0	110.0 0.0	Total hole	113.2		sing Test OP Test		ov-09 ov-09	Underflow Overflow I					
•	es down hole es at surface	0.0	Total surf.	42.0		sing Test		ating hrs	Flow Rate.	ĩ				
Today tota		0.0	Cumulative			OP Test		ov-09	Combined		0	FF		
2 out j totu	100000	0.0	cumular	012.0	T tent D	01 1000	2011	01 02	compilieu	iour o				
	We	ll Control -	kPa		Ho	ole Condition	ı kdaN & K	ft/#		Total Gas R	eadings (%))		
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		Backg	ground	0.	20		
RSPP #1	35	2560	5338	1750	Drag Dn	5			Conn	ection		46		
RSPP #2					Hook Load	71	4600		T	rip	1.	50		
	1. Rig up/C	Dut			9. Slip & C			-	17. Weld b					
	2. Drill		6.75		10. Survey		0.25	_	18. Wash t					
	3. Ream				11. Wirelin	0		-	19. Flow ch					
	4. Drill Ou 5. Circ. &		2.00		12. Casing	Out Cement		-	20. WK on 1 21. Safety	mud pumps Meeting	1.00			
	5. Circ. &	Conu.	13.25	-	13. Fump C 14. Nipple			-	21. Safety 22. Handle	0	1.00			
	7. Rig Serv	ice	0.75		15. Test BC	-		-	23 Other					
	8. Rig Rep			-	16. BOP D			-	Total Hour	s	24.00	-		
	8 P							-						
						REMARKS								
00:00-06:15	Drill from 1	689m to 175	0m. Teledrif	t survey at 1	714m. Func	tion annular.	ROP slowed	d to 0.1m/hr,	Circulate ou	t sample.				
06:15-11:45	5 Drop totco s	urvey @ 173	37, Pull out	of the hole to	o 1436m. Cal	lculated hole	fill 2.2, Mea	asured 1.9m3	. Run back t	o bottom,				
	circulate inc	rease densit	y to 1220											
	Pull out of t			drill while the	ripping. 60 se	ec to secure v	well. Functio	n Blind ram	s, Run in the	hole.				
23:30-24:00) Drill from 1	750 to 1753	m.											
	No Incident	today 7 haz	zards ID'd											
Tops: Code	roy @ 123m,			Falls 898m										
Prev Cost	\$2,97	-	Today		,104	Total Cost	\$3.01	8,355	Weather:	-3. Cle	ear, East win	d @ 10		
		/ -		+ 10	, .		+2,03	1	Mud Type		Polymer			
Foreman		Don Ca	ampbell		Rig Phone	2	709-649-710	6	Taken By:		ooker / Sha	ne Halley		
-									*	•		•		

Depth: 1980.0 mKR Progresses 55.0 Drilling: 11.25 hrs. Ref (r) Sourcham # 1 the next de Dhil abeat				Vulc	an Mi	nerals	5 Daily	Drill	ing Re	eport					
Operation @ 0800 hrs: Exit about No.2 No.2 No.2 Str. 61.7 60.8	Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	31		Date:	20-N	ov-09		
the of bill alsoid UNIX Second Seco	Depth:	1808.0	mKB	Progress:	55.0	Drilling:	11.25	hrs ROP, r	n/hr:	4.89	Rig:	Stoneha	am # 11		
Bit # Size/Male Size/Male Size/Male Size/Male Description Nuzzles RYM WOUR dots O.D. B G O K R 7 2161 (K-SOX) GoSS966 1776 1 4 5 1	Operation	@ 0800 hrs:	Drill ahead	-		-					KB elev:	61.75	m.		
BRR 216 CASOPX 0005996 1770 26 3 3 × 12 70 16 1-NO-A-E-N-O-PR Pump 1 Pump 2 Drilling Assembly: 216mm bit; 214mn NBS, 212mn String sub; telefirt sub; Porsure: 9,300 HP Liner me 165 165 BIA Length: 255.76 m Ning: Board 9,300 HP SPM 00 0 0 C.A unallar Vel. 900 m/min DP Annubar Vel. 63.0 mm Ning: 80.00 HP 900 m/min DP Annubar Vel. 63.0 m/m Wrin 0.0 12.0 m/m Wrin 0.0 12.0 m/m Wrin 0.0 12.0 m/m 12.0 m/m 12.0 12.0 m/m 12.0 12.0 m/m 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 12.0 <	the next da	Drill ahead									KB - GL	6.30	m.		
T 216 HC5052X 717426E Intel String Intel String Intel String Intel String String Description String Description String 70.00 tabind </td <td>Bit #</td> <td>Size/Make</td> <td>Model IADC</td> <td>Serial No.</td> <td>In</td> <td>Out</td> <td>Metres</td> <td>Hours</td> <td>Nozzles</td> <td>RPM</td> <td>WOB kdaN</td> <td>IODL</td> <td>BGOR</td>	Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR		
Promp 1 Promp 2 Defiling Assembly: Pril 1 tack, molecular principant and printerest and principant and principant and principant	6RR	216	GX-39DX	6065996	1750	1776	26	9	3X 12	70	16	1-1-NO-A-I	E-0-NO-PR		
Model PF-11 ""><td>7</td><td>216</td><td>HC505ZX</td><td>7174926</td><td>1776</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	7	216	HC505ZX	7174926	1776										
Liner som 165 165 BHA Length: 243.76 m Strap: Depth MUD			Pump 1	Pump 2	Drilling Ass	sembly:	216mm bit,	214mm NBS	S, 212mm St	ring stab, tel	edrift sub, Po	onn DC, 2121	nm String		
Stroke mm 977 279 DP:III Cellar O.D. 155.0 mm Dr:II Pipe O.D. If S.0 If S.0 If S.0 If S.0 If S.0 Dr:II Pipe O.D. If S.0 If S.	Model						-	n DC, Jar, 10	2m DC, 81r	Pump Pres	sure:	9,300	kPa		
SPM 9.0 0.C. Annular Vel: 99.0 m/min DP Annular Vel: 35.0 m/min Val. avine e-so 15300 0.0000 Jet velocity: 62.0 m/sec True Hydraulic HP: 35.10 m/min Val. m/me 64.5 23.00 6d. Cato 0 Cato 0 0 0 0 0 0 0 MDDTTVES 0		(mm)			0				-		-				
Vad. m/mm 0 400 1.5300 0.0000 Jet Velocity: 62.0 m/sec True Hydraulic HP: SHP kW SURVEYS MUD MUD MUD ADDITIVES Depth Drift Azimuth North East Time 6.45 22.00 Gd MUD ADDITIVES 971.00 leidedrift 6.5 - PH 11.7 10.0 Karan 1 7.32 - - PH 11.7 10.0 Karan 1 7.32 - - PH 1.1.7 10.0 Karan 1 7.32 - - - PL . 1.3 D <tdd< td=""><td></td><td>(mm)</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td></tdd<>		(mm)							-						
SURVEYS MLTD MLTD MLTD application Depth Derift Azimuth North East Time 64:5 22:00 6d Cacua [] 031:00 leidedrift 6.5 III Prest [] <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>•</td><td></td></t<>												•			
Depth Drift Azimuth North East Time 64:5 23:00 Gat Cacua Parel 931:00 leiddrft 6.5 Density 12:40 12:40 Casute 1 Parel Suphamic	Vol.	m³/min @ 95%	1.5300	0.0000	Jet Velocity	:	62.0	m/sec	True Hydr	aulic HP:	85HP	kW			
Depth Drift Azimuth North East Time 64:5 23:00 Gat Cacua Parel 931:00 leiddrft 6.5 Density 12:40 12:40 Casute 1 Parel Suphamic			CUD					MUD				DIDIUDO			
1917.00 leidedrift 7 Image: constraint of the second state state of the second state state of the second state s	D-	41-	r		N	East	Tt		22.00	a i	MUD AD				
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13:45-19:15 Run in the hole. Slip and cut. BOP drill. Well secure 90 sec 19:15-20:00 Change out swivel packing 20:00-20:15 Finish RIH. 20:15-24:00 Drill from 1776 to 1808m. Trip gas 8.39% No Incident today,8 hazzards ID'd Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Mud Type								culate out sa	imple.						
19:15-20:00 Change out swivel packing 20:00-20:15 Finish RIH. 20:15-24:00 Drill from 1776 to 1808m. Trip gas 8.39% No Incident today,8 hazzards ID'd Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost\$3,018,355 Today\$43,592 Total Cost\$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer	08:45-13:45	Pull out of t	he hole to ch	ange bit. No	tight spots. I	Function Blir	nd rams.								
20:00-20:15 Finish RIH. 20:15-24:00 Drill from 1776 to 1808m. Trip gas 8.39% No Incident today,8 hazzards ID'd Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer					ill. Well secu	ure 90 sec									
20:15-24:00 Drill from 1776 to 1808m. Trip gas 8.39% No Incident today,8 hazzards ID'd Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost\$3,018,355 Today\$43,592 Total Cost\$3,061,947 Weather: 0, rain, East wind @ 10Mud Type Polymer		0	swivel pack	ng											
No Incident today,8 hazzards ID'd Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost <u>\$3,018,355</u> Today \$43,592 Total Cost <u>\$3,061,947</u> Weather: 0, rain, East wind @ 10 Mud Type Polymer			776 to 1808	m Trin oas 8	39%										
Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer	20.12-27.00		, , 0 10 1000.	111p gas 0											
Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer															
Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer															
Tops: Codroy @ 123m, Ship Cove 885m, Spout Falls 898m, Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer															
Prev Cost \$3,018,355 Today \$43,592 Total Cost \$3,061,947 Weather: 0, rain, East wind @ 10 Mud Type Polymer		No Incident	today,8 hazz	zards ID'd											
Mud Type Polymer	Tops: Codr														
	Prev Cost	\$3,01	8,355	Today	\$43	,592	Total Cost	\$3,06	51,947	-			@ 10		
Foreman Don Campbell Rig Phone 709-649-7106 Taken By: Terry Brooker / Shane Halley			r ~			D' D'	-	00 640 -6-							
	roreman		Don Ca	ampoell		Kig Phone		09-049-710	0	Taken By:	Terry Bi	ooker / Sha	ne Halley		

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2	•	Day:	32		Date:	21-N	ov-09		
Depth:	1921.0	mKB	Progress:	113.0	Drilling:	22.40	hrs ROP, 1	n/hr:	5.04	Rig:	Stoneha	am # 11		
-	@ 0800 hrs:	Drill ahead								KB elev:	61.75			
	Drill ahead				-				1	KB - GL	6.30			
Bit #			Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR		
7	216	HC506ZX	7114926	1776		145	26.25	4X11, 3X1	70	15				
		Pump 1	Pump 2	Drilling As	sembly	216mm hit	214mm NB9	5 212mm St	ring stab tel	edrift sub, Po	nn DC 212	nm String		
Model		PZ-11	PZ-11	0		ing stab, 13n					9,300	kPa		
Liner	(mm)	165	165	BHA Lengt		0	m	Strap:	- ·	Board:	,			
Stroke	(mm)	279	279	Drill Collaı	: O.D.	165.0	mm	Drill Pipe ().D.	127.0	mm			
SPM		90	0	D.C. Annul			m/min	D.P Annula		-	m/min			
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	:	62.0	m/sec	True Hydra	aulic HP:	85HP	kW			
		SUD	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	6:28	20:00	Gel	MUDAD	CaC03			
917.00	teledrift	7			2407	Density	1235	1220	Caustic	3	Percol			
931.00	teledrift	6.5				Vis.	57	65	Salt		Sulphamic			
973.00	teledrift	7				pH	11.5	10.5	Kelzan	1	T-352			
1014.00	teledrift	8				Fluid Loss	5.6	5.8	Cello		Defoamer			
1082.00	teledrift	8.5				P.V.	24.0		Bicarb		2K-7	1		
1124.00	teledrift	8.5				Y.P.	13.0		Kwickseal		Cal carb			
1151.00	teledrift	9.00				Gel S.	2.5/4/5		Drispac	2	Dyna det			
<u>1175.00</u> 1244.00	Wireline Wireline	8.87 9.07				Filter Ck Solids %	1.0 8.7		Desco Barite	40	Walnut Lime Hydrate	3		
1323.00	Wireline	8.87				Oil	0.7		Fiberseal	40	Dyna fiber	5		
1452.00	teledrift	9				Ca (mg/l)	520.0		PHPA	2	Bioside			
1544.00	Wireline	9.28				Cl (mg/l)	16700.0		Sawdust		Lignite	2		
1714.00	teledrift	8.5				MBT	7.5		Soda Ash		Alcomer			
1737.00	Totco	8.85				Temp	28.3		Supervision		Day Cost	\$2,967		
1836.00	teledrift	8.5				XSPolymer	1.1		Mud Van	1	Well Cost	\$242,308		
	losses Surfa		10le Estimat	es m3		asing Tests		ate			rifuge			
Total circu	0	116.0 1.1	Total hole	113.2	Last Cas Last B(sing Test		ov-09 ov-09	Underflow Overflow D					
•	es down hole es at surface	4.0	Total surf.	42.0		sing Test		ting hrs	Flow Rate,	ř				
Today tota		0.0	Cumulative	319.0		OP Test		ov-09	Combined		0	FF		
	We	ll Control -	kPa		Ho	le Conditior	n kdaN & Ki	ft/#		Total Gas R	eadings (%)			
Pump	SPP #1 45 2600 5165 1908 Drag Dn 6 Connection 0.35													
RSPP #1	SPP #1 45 2600 5165 1908 Drag Dn 6 Connection 0.35 SPP #2 Hook Load 79 10500 Trip 8.39													
RSPP #2					Hook Load	79	10500		T	rıp	8.	39		
	1. Rig up/C	hut			9. Slip & C	hat.		-	17. Weld b	owl				
	2. Drill	ut	22.50		10. Survey	ui	0.25	-	17. Weld b 18. Wash t					
	3. Ream				11. Wirelin	ne Logs	0120	-	19. Flow ch					
	4. Drill Ou	t			12. Casing/	0		-	20. Wk on 1					
	5. Circ. &	Cond.			-	Out Cement		-	21. Safety		0.50			
	6. Trip		0.55		14. Nipple			-	22. Handle	Tools				
	7. Rig Serv		0.75		15. Test BC 16. BOP D			-	23 Other Total Hour		24.00			
	8. Rig Repa	411			10. DOF D	F111		-	Total Hour	5	24.00			
						REMARKS								
00:00-24:00) Drill from 1	808m to 192	1m. Function	n LPR and A	nnular. ROP	2.9m/hr, Tel	edrift survey	y @ 1836						
m ~ -	No Incident			F H 000										
-	roy @ 123m,	-				Total Cast	¢3.00	1 620	West	0	Wort'	1@ 10		
Prev Cost	\$3,06	1,947	Today	\$29	,692	Total Cost	\$3,09	1,639	Weather: Mud Type	U, sno	w, West win Polymer	u w 10		
Foreman		Don Ca	ampbell		Rig Phone	7	09-649-710	6	Taken By:	Terry Br	ooker / Sha	ne Hallev		
		2011 01				,	10			, D I				

			Vulc	an Mi	inerals	5 Daily	Drill	ing Re	eport					
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	33		Date:	22-N	ov-09		
Depth:	1949.0	mKB	Progress:	28.0	Drilling:	14.00	hrs ROP, 1		2.00	Rig:	Stoneha	am # 11		
Operation	@ 0800 hrs:	Drill ahead	0		0					KB elev:	61.75	m.		
the next day	Drill ahead	ГоTD								KB - GL	6.30	m.		
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR		
7	216	HC506ZX	7114926	1776	1935	159	32.75	4X11, 3X1	70	15	1-3-CT-T-X	K-0-CT-PR		
8RR	216	GX-30DX	6065996	1935		7.5		3X12	60	18				
		Pump 1	-	Drilling As	•				ring stab, tele			U		
Model		PZ-11	PZ-11			ing stab, 13n			Pump Press		9,300	kPa		
Liner	(mm)	165	165	BHA Lengt			m	Strap:	<u></u>	Board:				
Stroke	(mm)	279 90	279 0	Drill Collar		<u>165.0</u> 99.0	mm	Drill Pipe (127.0	mm			
SPM Vol.	m ³ /min @ 95%	1.5300	0.0000	D.C. Annul Jet Velocity			m/min m/sec	D.P Annula True Hydra		63.0 310.0	m/min kW			
v 01.	III /IIIII @ 93%	1.5500	0.0000	Jet velocity	•	117.0	III/Sec	II ue IIyui	aune m.	310.0	KVV			
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	7:07	20:00	Gel		CaC03			
1919.00	Teledrift	9				Density	1220	1220	Caustic	2	Percol			
						Vis.	63	66	Salt		Sulphamic			
						pН	11.5	11.0	Kelzan	8	T-352			
						Fluid Loss	5.2	5.3	Cello		Defoamer	1		
						P.V.	25.0		Bicarb		2K-7	2		
						Y.P.	15.0		Kwickseal		Cal carb			
						Gel S.	3/5.5/7		Drispac	4	Dyna det			
						Filter Ck	0.5		Desco		Walnut			
						Solids %	8.0		Barite		Lime Hydrate	2		
						Oil			Fiberseal		Dyna fiber			
						Ca (mg/l)	280.0		PHPA	4	Bioside			
						Cl (mg/l)	15300.0		Sawdust	2	Lignite	4		
						MBT	7.5		Soda Ash	4	Alcomer			
						Temp	25.8		Supervision		Day Cost	\$6,018		
					202.0.0	XSPolymer	1.1		Mud Van	1	Well Cost	\$248,326		
	losses Surfa		nole Estimat	es m3	BOP & Ca	5		ate			rifuge			
Total circu	0	120.5	T-4-1 b-1-	112.0		sing Test		ov-09	Underflow	•		50.0		
•	es down hole	0.0	Total hole Total surf.	113.2 42.0		OP Test		ov-09	Overflow D			80 0.0		
Today total	es at surface	0.0	Cumulative	328.0		sing Test OP Test		ting hrs ov-09	Flow Rate, Combined I			.5		
Today total	103303	0.0	Cumulative	520.0	INCAT DO	or rest	25-1	01-07	Combined	liours	1	.5		
	We	ll Control -	kPa		Ho	le Condition	kdaN & K	ft/#		Total Gas R	eadings (%)			
Well Control - kPa Hole Condition kdaN & Kft/# Total Gas Readings (%) Pump Strokes Pressure MACP Depth Drag up 5 Torque Background 0.10 RSPP #1 45 4775 5165 1949 Drag Dn 6 Connection 0.10														
RSPP #1 45 4775 5165 1949 Drag Dn 6 Connection 0.10														
RSPP #2														
								•	•					
	1. Rig up/O	Jut			9. Slip & C	ut		_	17. Weld b	owl				
	2. Drill		9.50		10. Survey		0.25	-	18. Wash t					
	3. Ream				11. Wirelin	0		-	19. Flow ch					
	4. Drill Ou				12. Casing/			-	20. Wk on 1					
	5. Circ. & (Cond.	4.50		13. Pump (-	21. Safety	0	0.75			
	6. Trip 7. Dia Sony	iaa	5.25		14. Nipple	-	2.00	-	22. Handle	TOOIS				
	7. Rig Serv		0.75		15. Test BC 16. BOP Dr		3.00	-	23 Other Total Hour		24.00			
	8. Rig Repa	111.			10. DUF D	riii		-	Total Hour	5	24.00			
						REMARKS								
00.00-07.15	Drill from 1	921m to 193	5 m Ron slov	wed to 1 m/h				vev @ 1919	m					
	Pull out of h					cot / initialiar.	rele di lit sui	(i) e 1)1)						
	Run in hole		,											
	Drill ahead	with bit 8RR	. Function L	PR.										
			1 1511											
T C -	No Incident			E-IL C OCC) P									
-	oy @ 123m,	-						2 424	Westher	2 1:2-4	alaar aast	ind @ 10		
Prev Cost	\$3,09	1,039	Today	\$30	,785	Total Cost	\$3,1 2	22,424	Weather: Mud Type	-5, light	clear, east w Polymer	mu w 10		
Foreman		Don Co	ampbell		Rig Phone	7	09-649-710	6	Taken By:	Terry R	ooker / Sha	ne Hallev		
		2011 0				,	., ., , 10	-	- unon by.	1011 ₃ DI				

			Vulc	an Mi	inerals	5 Daily	Drill	ing Re	eport					
Well:		Vulc	an Investca			V	Day:	U	-	Date:	23-N	ov-09		
Depth:	1965.0	mKB	Progress:	16.0	Drilling:	9.50	hrs ROP, 1	n/hr:	1.68	Rig:	Stoneha	am # 11		
Operation	@ 0800 hrs:	Wait on Wi	re line logger	S	-					KB elev:	61.75	m.		
the next da	Run Wirelin	e logs								KB - GL	6.30	m.		
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL			
8RR	216	GX-30DX	6055996	1935	1965	30	17	3X12	60	18	1-2-WT-I-F	E-0-NO-TD		
		Pump 1	Pump 2	Drilling As	-				ring stab, tel			-		
Model		PZ-11	PZ-11			ing stab, 13n			Pump Pres		9,300	kPa		
Liner	(mm)	165	165	BHA Lengt		-	m	Strap:		Board:				
Stroke	(mm)	279 90	279 0	Drill Collar D.C. Annul		165.0 99.0	mm m/min	Drill Pipe (127.0	mm			
SPM Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity		117.0	m/min m/sec	D.P Annula True Hydra		63.0 310.0	m/min kW			
v 01.	III /IIIII @ 93%	1.5500	0.0000	Jet velocity	•	117.0	m/sec	II ue IIyui	aunt m.	310.0	KVV			
		SUR	VEYS				MUD			MUD AD	DITIVES			
De	pth	Drift	Azimuth	North	East	Time	6:56		Gel	MOD AD	CaC03			
1919.00	Teledrift	9			Luov	Density	1220		Caustic	1	Percol			
1946.00	Teledrift	8.5				Vis.	60		Salt		Sulphamic			
						pН	10.9		Kelzan	9	T-352			
						Fluid Loss	5.6		Cello		Defoamer	1		
						P.V.	24.0		Bicarb		2K-7	2		
						Y.P.	15.0		Kwickseal		Cal carb			
						Gel S.	3.5/5/7		Drispac		Dyna det			
						Filter Ck	0.5		Desco		Walnut			
						Solids %	8.0		Barite	90	Lime Hydrate	1		
						Oil			Fiberseal		Dyna fiber			
						Ca (mg/l)	200.0		PHPA	5	Bioside			
						Cl (mg/l)	15500.0		Sawdust		Lignite	2		
						MBT	7.5		Soda Ash	7	Alcomer			
						Temp	31.1		Supervision		Day Cost	\$9,163		
						XSPolymer	1.1		Mud Van	1	Well Cost	\$257,490		
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Cent	rifuge			
Total circu	0	122.0				sing Test		ov-09	Underflow	•				
•	es down hole	3.9	Total hole	113.2		OP Test		ov-09	Overflow I	ĩ				
	es at surface	5.0	Total surf.	42.0		sing Test		ting hrs	Flow Rate,					
Today tota	losses	8.9	Cumulative	328.0	Next B	OP Test	25-N	ov-09	Combined	hours	0	FF		
	Wo	ll Control -	եթո		Но	ole Condition	kdaN & K	ft/#		Total Gas R	endings (%)			
Pump				Denth				107						
-	PumpStrokesPressureMACPDepthDrag up5TorqueBackground0.10RSPP #145477551651949Drag Dn6Connection0.10													
RSPP #2														
						.,				T				
	1. Rig up/O	Dut			9. Slip & C	Cut		-	17. Weld b	owl				
	2. Drill		14.00		10. Survey		0.25	-	18. Wash t	o Btm				
	3. Ream				11. Wirelin	ie Logs		-	19. Flow ch	ecks				
	4. Drill Out	t			12. Casing/	/Cement		-	20. Wk on 1	nud pumps				
	5. Circ. &	Cond.	0.75		13. Pump (-	21. Safety		0.50			
	6. Trip		7.75		14. Nipple			_	22. Handle	Tools				
	7. Rig Serv		0.75		15. Test BO			-	23 Other					
	8. Rig Repa	air			16. BOP D	rill		-	Total Hour	s	24.00			
						REMARKS								
	Drill from 1				R.									
	Circulate,ind		2	U	(DCl									
	Pull out of h					00 lana and 1	0000 1 10	min and O	V					
20.43-24:00	Pull wear bu	isning,set tes	st plug, ritess	LOSI DOP COI	nponents 100	оо кра and I	ооо кра 10	mm each. O	IX.					
	No Incident	today,8 hazz	zards ID'd											
Tops: Codr	oy @ 123m,			Falls 898m,	,									
Prev Cost	\$3,12		Today		,530	Total Cost	\$3,15	5,954	Weather:	+1, light	cloud, east v	vind @ 10		
									Mud Type		Polymer			
Foreman		Don Ca	ampbell		Rig Phone	2	709-649-710	6	Taken By:	Terry Bi	ooker / Sha	ne Halley		
												-		

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca			V	Day:	~	-	Date:	24-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1	n/hr:	#DIV/0!	Rig:	Stoneha	am # 11
Operation @			re line logger	s						KB elev:	63.40	
the next da _. F		0								KB - GL	6.30	
		Model IADC		In	Out	Metres	Hours	Nozzles		WOB kdaN		
8RR	216	GX-30DX	6055996	1935	1965	30	17	3X12	60	18	1-2-WT-I-F	2-0-NO-TD
I		Dump 1	Dump 2	Drilling Ag	ombly	216mm hit l	oit cub 2 165	mm DC Ia	l rs, 7 165 mm	DC 6 HW	D	
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembry:	210mm bit,	51t SUD, 5 105	mm DC, Ja	Pump Pres		9,300	kPa
Liner	(mm)	165	165	BHA Lengt	h۰	163.00	m	Strap:		Board:	9,500	ма
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (O.D.	127.0	mm	
SPM		90	0	D.C. Annul	ar Vel.:	99.0	m/min	D.P Annula		63.0	m/min	
Vol. r	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	/:	117.0	m/sec	True Hydr	aulic HP:	310.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
Dept		Drift	Azimuth	North	East	Time	6:56		Gel	35	CaC03	
1919.00	Teledrift	9				Density	1260		Caustic	1	Percol	
						Vis.	80		Salt	10	Sulphamic	
						pH Fluid Loss	10.9 5.6		Kelzan	12	T-352	1
						Fluid Loss P.V.	24.0		Cello Bicarb	7	Defoamer 2K-7	1 2
						т.v. Y.P.	20.0		Kwickseal	,	ZK-7 Cal carb	
						Gel S.	3.5/5/7		Drispac	2	Dyna det	
						Gel S. Filter Ck	0.5		Drispac Desco	4	Dyna det Walnut	
						Solids %	8.0		Desco Barite	144	Wainut Lime Hydrate	1
						Oil	0.0		Fiberseal	111	Dyna fiber	5
						Ca (mg/l)	200.0		PHPA	5	Bioside	
						Cl (mg/l)	15500.0		Sawdust		Lignite	2
						MBT	7.5		Soda Ash	7	Alcomer	
						Temp	31.1		Supervision		Day Cost	\$10,804
						XSPolymer	1.1		Mud Van	1	Well Cost	\$268,292
			nole Estimat	es m3	BOP & C	asing Tests	Da	ate		Cent	rifuge	
Total circula	0	122.0				sing Test		ov-09	Underflow	•		
Today losses		3.9	Total hole	113.2		OP Test		ov-09	Overflow D	•		
Today losses		5.0 8.9	Total surf.	42.0		sing Test		ting hrs ec-09	Flow Rate,		0	FF
Today total l	losses	0.9	Cumulative	328.0	Next D	OP Test	08-D	66-09	Combined	lours	0	ГГ
	We	ll Control -	kPa		He	ole Condition	ı kdaN & Ki	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque			round		10
RSPP #1	45	4775	5165	1949	Drag Dn	6			<u> </u>	ection		10
RSPP #2					Hook Load	79	5200		T	rip	2.	30
			_				_					
	. Rig up/C	Dut			9. Slip & C		1.00		17. Weld b			
	2. Drill				10. Survey				18. Wash t			
	3. Ream 4. Drill Ou				11. Wirelin	0		-	19. Flow ch			
	5. Circ. & (0.75		12. Casing	Out Cement			20. Wk on 1 21. Safety		0.75	
	5. Trip	conu.	2.00		14. Nipple				21. Safety	0	0.75	
	7. Rig Serv	ice	0.75		15. Test B	-	7.25	-	23 Other	10015	11.50	
	3. Rig Repa				16. BOP D			-	Total Hour	s	24.00	
						REMARKS						
00:00-03:00 0												
03:00-04:45 F												
04:45-12:30 F				ction test acc	cumulator.							
12:30-13:30 S 13:30-23:45 V			line									
23:45-24:00 F			n									
			-	ssure 20000	kpa., Total r	pressure loss	10000 kna	Pressure left	on accumula	ator 10500 ki	pa.	
		narge 1 min,			1							
		Ų ,		ifold 1500 k	pa low - 100	0 kpa high 10) min.					
									HCR valve,			
		ventor choke	line.Picked	up kelly and	pressure tes	ted upper and	d lower kelly	cock valves	s All test 140	0 kpa low -	10000 kpa hi	gh -
	l0 min.											
		today,2 hazz										
Tops: Codrog		-				T-41C :	\$a *a	4 222	W		1 1: 1 - 1	
Prev Cost	\$3,15	0,454	Today	\$37	,879	Total Cost	\$3,19	4,333	Weather:	-	+1, light clou	α.
Foreman		Bill W	illiams		Rig Phone	2	709-649-710	6	Mud Type Taken By:	Terry B	Polymer rooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:	36		Date:	25-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1		#DIV/0!	Rig:	Stoneha	
-	@ 0800 hrs:				21g.					KB elev:	63.40	
-	Run Wirelin		8-							KB - GL	6.30	
Bit #	Size/Make		Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	1	
8RR		GX-30DX	6055996	1935	1965	30	17	3X12	60		1-2-WT-I-E	
								1				
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	bit sub,3 165	mm DC, Ja	rs, 7 165 mm	DC. 6 HWI	DP.	
Model		PZ-11	PZ-11		·	`			Pump Pres	sure:	9,300	kPa
Liner	(mm)	165	165	BHA Lengt	th:	163.00	m	Strap:	-	Board:		
Stroke	(mm)	279	279	Drill Collar	r O.D.	165.0	mm	Drill Pipe).D.	127.0	mm	
SPM		90	0	D.C. Annul	ar Vel.:	99.0	m/min	D.P Annula	ar Vel.:	63.0	m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	y:	117.0	m/sec	True Hydr	aulic HP:	310.0	kW	
			VEYS	1	1		MUD			MUD AD	DITIVES	
	pth	Drift	Azimuth	North	East	Time	6:56		Gel		CaC03	
1919.00	Teledrift	9				Density	1260		Caustic		Percol	
						Vis.	80		Salt		Sulphamic	
						pH Florid Loop	10.9		Kelzan		T-352	
						Fluid Loss P.V.	5.6 24.0		Cello Bicorb	7	Defoamer 2K-7	
						P.V. Y.P.	24.0		Bicarb	/		
									Kwickseal		Cal carb	
						Gel S.	3.5/5/7		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	,
						Solids % Oil	8.0		Barite		Lime Hydrate	a –
						Ca (mg/l)	200.0		Fiberseal PHPA		Dyna fiber Bioside	
						Cl (mg/l)	15500.0		Sawdust		Lignite	
						MBT	7.5		Sawuust Soda Ash		Alcomer	
						Тетр	31.1		Supervision		Day Cost	\$324
						XSPolymer	1.1		Mud Van	1	Well Cost	\$268,818
Mud	losses Surfa	ce & Downl	ole Estimat	es m3	BOP & C	asing Tests		ate		Cent	rifuge	+====
Total circu		122.0				sing Test		ov-09	Underflow			
	es down hole	3.9	Total hole	113.2		OP Test		ov-09	Overflow D			
T. J	es at surface	5.0	Total surf.	42.0	Next Ca	sing Test	327rota	ating hrs	Flow Rate,	m3/min		
1 oday losse									a 11 11			
Today losse Today total	l losses	8.9	Cumulative	328.0	Next B	OP Test	08-D	ec-09	Combined	hours	Ol	FF
				328.0							-	
		8.9 Il Control -	kPa	328.0	Но	ole Condition				Total Gas R	Ol Readings (%)	
Today total Pump	We Strokes	ll Control - Pressure	kPa MACP	Depth	Ho Drag up	ole Condition 5			Backg	Total Gas R ground	Readings (%)	10
Today total Pump RSPP #1	We	ll Control -	kPa		Ho Drag up Drag Dn	ble Condition 5 6	n kdaN & K Torque	ft/#	Backg Conn	Total Gas R ground ection	teadings (%)	10 10
Today total Pump	We Strokes	ll Control - Pressure	kPa MACP	Depth	Ho Drag up	ble Condition 5 6	n kdaN & K	ft/#	Backg Conn	Total Gas R ground	Readings (%)	10 10
Today total Pump RSPP #1	We Strokes 45	ll Control - Pressure 4775	kPa MACP	Depth	Hook Load	ole Condition 5 6 79	n kdaN & K Torque	ft/#	Backg Conn Tr	Total Gas R ground ection rip	teadings (%)	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/O	ll Control - Pressure 4775	kPa MACP	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C	ole Condition 5 6 79 Cut	n kdaN & K Torque	ft/#	Backg Conn Ti 17. Weld b	Total Gas R ground ection rip owl	teadings (%)	10 10
Today total Pump RSPP #1	We Strokes 45	ll Control - Pressure 4775	kPa MACP	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	ble Condition 5 6 79 Cut	n kdaN & K Torque 5200	ft/#	Backg Conn Tr	Total Gas R ground ection rip owl o Btm	teadings (%)	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill	ll Control - Pressure 4775 Dut	kPa MACP	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	ole Condition 5 6 79 Cut ne Logs	n kdaN & K Torque	ft/#	Backg Conn Ti 17. Weld b 18. Wash t 19. Flow ch	Total Gas R ground ection rip owl o Btm ecks	teadings (%)	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill 3. Ream	ll Control - Pressure 4775 Dut	kPa MACP	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	ole Condition 5 6 79 Cut ne Logs	n kdaN & K Torque 5200	ft/#	Backg Conn Ti 17. Weld b 18. Wash t	Total Gas R ground ection rip owl o Btm ecks nud pumps	teadings (%)	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	ll Control - Pressure 4775 Dut	kPa MACP 5165	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	ble Condition 5 6 79 Cut ne Logs /Cement Dut Cement	n kdaN & K Torque 5200	ft/#	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1	Total Gas R ground ection rip owl o Btm ecks nud pumps Meeting	teadings (%) 0. 0. 2	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C	ll Control - Pressure 4775 Dut t Cond.	kPa MACP 5165	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP	n kdaN & K Torque 5200	ft/#	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on n 21. Safety	Total Gas R ground ection rip owl o Btm ecks nud pumps Meeting	teadings (%) 0. 0. 2	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	ll Control - Pressure 4775 Dut t Cond. ice	kPa MACP 5165 0.75 6.75	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP OP	n kdaN & K Torque 5200	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0. 0.50	10 10
Today total Pump RSPP #1	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	ll Control - Pressure 4775 Dut t Cond. ice	kPa MACP 5165 0.75 6.75	Depth	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP OP	n kdaN & K Torque 5200	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2	We Strokes 45 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 0 6. Trip 7. Rig Serv 8. Rig Reps	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 0 6. Trip 7. Rig Serv 8. Rig Reps	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa 9. Continued to Wait on wire	ll Control - Pressure 4775 Dut t Cond. ice air o run in hole e line logger	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa 9. Continued to Wait on wire	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa O Continued to Wait on wirel 7. Rig in wirel	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Reps O Continued to Wait on wirel 9 Run DSL- M	ll Control - Pressure 4775 Dut t Cond. ice air	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s.	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45 17:45-24:00	We Strokes 45 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 0 6. Trip 7. Rig Serv 8. Rig Repa 0 Continued to Wait on wire 1 Rig in wirel 9 Run DSL- M	ll Control - Pressure 4775 Dut t Cond. ice air o run in hole e line logger ine unit and IAC logs.	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s. run 1GR-CN	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D clean,and pu CAL logs.	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	a kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45 17:45-24:00 Tops: Codr	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa 0 Continued to Wait on wire Rig in wirel 9 Continued to 1 Wait on wire 1 Run DSL- M No incidents roy @ 123m,	ll Control - Pressure 4775 Dut t Cond. ice air o run in hole e line logger ine unit and IAC logs.	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s. run 1GR-CN	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D clean,and pu CAL logs.	ole Condition 5 6 79 Cut ne Logs //Cement Out Cement Up BOP OP rill REMARKS Ill out of hole	n kdaN & K Torque 5200 13.25	ft/# -	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50 24.00	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45 17:45-24:00	We Strokes 45 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 0 6. Trip 7. Rig Serv 8. Rig Repa 0 Continued to Wait on wire 1 Rig in wirel 9 Run DSL- M	ll Control - Pressure 4775 Dut t Cond. ice air o run in hole e line logger ine unit and IAC logs.	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s. run 1GR-CN	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D clean,and pu CAL logs.	ble Condition 5 6 79 Cut ne Logs /Cement Out Cement Up BOP DP rill REMARKS	n kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting ' Tools	Readings (%) 0. 0. 0. 0.50 2.50 24.00	10 10
Today total Pump RSPP #1 RSPP #2 00:00-08:00 08:00-10:30 10:30-17:45 17:45-24:00 Tops: Codr	We Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repa 0 Continued to Wait on wire Rig in wirel 9 Continued to 1 Wait on wire 1 Run DSL- M No incidents roy @ 123m,	ll Control - Pressure 4775 Dut t Cond. ice air o run in hole e line logger ine unit and IAC logs. s reported Ship Cove 8 4,333	kPa MACP 5165 0.75 6.75 0.25 to bottom,ci s. run 1GR-CN	Depth 1949	Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D clean,and pu CAL logs.	ble Condition 5 6 79 Cut he Logs /Cement Out Cement Out Cement Dut Cement P P P REMARKS Ill out of hole Total Cost	n kdaN & K Torque 5200 13.25	ft/#	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground ection rip owl o Btm eecks mud pumps Meeting Tools s	Readings (%) 0. 0. 0. 0.50 2.50 24.00	

			Vulc	an Mi	nerals	s Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	v	Day:	37	- mat	Date:	26-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1		#DIV/0!	Rig:	Stoneh	
Operation	@ 0800 hrs:		ne logs							KB elev:	63.40	
	Run Wirelin	0	~ ~							KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles		WOB kdaN		BGOR
8RR	216	GX-30DX	6055996	1935	1965	30	17	3X12	60	18	1-2-WT-I-F	C-0-NO-TD
		Pump 1	Pump 2	Drilling Ass	sembly.	216mm hit	nit sub 3 165	mm DC Iai	s 7165 mm	DC. 6 HWD)P	
Model		PZ-11	PZ-11	Di lilling Ass	sembry.	21011111 010,	511 Sub, 5 105	IIIII DC, Jai	Pump Pres		9,300	kPa
Liner	(mm)	165	165	BHA Lengt	h:	163.00	m	Strap:	r	Board:	,,	"
Stroke	(mm)	279	279	Drill Collar	· O.D.	165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM		90	0	D.C. Annul		99.0	m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	:	117.0	m/sec	True Hydra	aulic HP:	310.0	kW	
		CUD	VENC				MID				DITIVEC	
De	pth	Drift	VEYS Azimuth	North	East	Time	MUD 6:56		Gel	MUD AD	CaC03	
1919.00	Teledrift	9	Azimuti	norm	Last	Density	1255		Caustic		Percol	
1946.00	Teledrift	8.5				Vis.	84		Salt		Sulphamic	
						pН	11.4		Kelzan		T-352	
						Fluid Loss	5.0		Cello		Defoamer	
						P.V.	29.0		Bicarb		2K-7	
	ļ					Y.P.	20.0		Kwickseal		Cal carb	
						Gel S.	3.5/5/7		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	Ļ
						Solids %	8.0		Barite	38	Lime Hydrate	d
						Oil Ca (mg/l)	200.0		Fiberseal PHPA		Dyna fiber Bioside	
						Cl (mg/l)	15500.0		PHPA Sawdust		Lignite	
						MBT	7.5		Soda Ash		Alcomer	
						Temp	16.0		Supervision		Day Cost	\$1,483
						XSPolymer	1.1		Mud Van	1	Well Cost	\$270,101
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Centi	rifuge	
Total circu	0	116.0				sing Test		ov-09	Underflow	•		
v	es down hole	3.9	Total hole	113.2		OP Test		ov-09	Overflow D			
Today losse Today tota	es at surface	5.0 8.9	Total surf. Cumulative	42.0 328.0		sing Test OP Test		ting hrs ec-09	Flow Rate, Combined		0	FF
Today tota	TIUSSES	0.9	Cummative	526.0	INEXT D	OF Test	08-D	ec-09	Combined	liours	0	ГГ
	We	ll Control -	kPa		He	ole Condition	ı kdaN & Ki	ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque			round		10
RSPP #1	45	4775	5165	1949	Drag Dn	6				ection		10
RSPP #2					Hook Load	79	5200		Ti	rip	2.	30
								_				
	1. Rig up/C	Dut			9. Slip & C			_	17. Weld b			
	2. Drill				10. Survey			-	18. Wash t			-
	3. Ream 4. Drill Ou				11. Wirelin	0	23.75	-	19. Flow ch			-
	4. Drift Ou 5. Circ. &				12. Casing	Out Cement		-	20. Wk on 1 21. Safety		0.25	
	6. Trip	conu.			14. Nipple			-	21. Safety 22. Handle	0	0.40	
	7. Rig Serv	ice			15. Test B			-	23 Other			
	8. Rig Rep				16. BOP D	rill		-	Total Hour	s	24.00	-
								-				
						REMARKS						
00:00-24:00	Run wirelin	e logs.# 3 St	ar-Gamma. ‡	#4 RCOR s	idewall core	es.						
	No incidents	s reported										
•	oy @ 123m,	-	, .	,			-			-	-	
Prev Cost	\$3,22	1,563	Today	\$27,	,200	Total Cost	\$3,24	8,763	Weather:		+2, Cloud	
E		D	2112		D:- D		700 (40 = 1 *	(Mud Type		Polymer	
Foreman		Bill W	illiams		Rig Phone		709-649-710	0	Taken By:	Terry Br	ooker / Sha	ne Halley

			Vulc	<u>an</u> Mi	nerals	s Daily	<u>Drill</u>	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	v	Day:	38		Date:	27-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, r	n/hr:	#DIV/0!	Rig:	Stoneha	um # 11
Operation	@ 0800 hrs:	Circulate								KB elev:	63.40	m.
	r Pooh Run D									KB - GL	6.30	
Bit #	Size/Make			In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
8RR	216	GX-30DX	6055996	1935	1965	30	17	3X12	60	18	1-2-WT-I-E	-0-NO-TD
		Dump 1	Dump 1	Duilling Ag	ambles	216mm hit l	bit sub,3 165	mm DC Io	0 7 165 mm	DC 6 HWD	ND .	
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembry:	21011111 011,	bit sub,5 105	IIIII DC, Jai	Pump Pres			kPa
Liner	(mm)	165	165	BHA Lengt	h:	163.00	m	Strap:	1 ump 1 res.	Board:	7,500	ма
Stroke	(mm)	279	279	Drill Collar		165.0		Drill Pipe ().D.		mm	
SPM		90	0	D.C. Annul	ar Vel.:	99.0	m/min	D.P Annula	r Vel.:	63.0	m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	:	117.0	m/sec	True Hydra	aulic HP:	310.0	kW	
						-						
D			VEYS	N7 (1	F (787	MUD	1		MUD AD		
1919.00	e pth Teledrift	Drift 9	Azimuth	North	East	Time Dongity	6:56 1255		Gel		CaC03	
1946.00	Teledrift	9 8.5				Density Vis.	83		Caustic Salt		Percol Sulphamic	
1340.00	releanit	0.5				vis. pH	11.3		Kelzan		T-352	
	1					Fluid Loss	5.0		Cello		Defoamer	
	1					P.V.	30.0		Bicarb		2K-7	
						Y.P.	19.5		Kwickseal		Cal carb	
						Gel S.	3.5/5/7		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	
						Solids %	8.0		Barite		Lime Hydrate	d
						Oil			Fiberseal		Dyna fiber	
						Ca (mg/l)	240.0		PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust		Lignite	
						MBT	7.5 16.0		Soda Ash		Alcomer	¢100
						Temp XSPolymer			Supervision Mud Van	1	Day Cost Well Cost	\$180 \$270,281
Mud	l losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests	Da	ate	ividu v ali		rifuge	\$270,201
Total circu		116.0				sing Test	11-N	ov-09	Underflow			
Today loss	es down hole	3.9	Total hole	113.2	Last B	OP Test	23-N	ov-09	Overflow D	ensity		
, i i i i i i i i i i i i i i i i i i i	es at surface	5.0	Total surf.	42.0		sing Test	327rota		Flow Rate,			
Today tota	l losses	8.9	Cumulative	328.0	Next B	OP Test	08-D	ec-09	Combined	iours	Ol	Ŧ
					Н	le Condition	n kdaN & Ki	ft/#		Total Cas P		
	Wo	ll Control -	μ Ρ α		110	he conuntion						·
Pump		ll Control - Pressure		Denth	Drag un	5		i di li			eadings (%)	10
Pump RSPP #1	Strokes	Pressure	MACP	Depth 1949	Drag up Drag Dn	5	Torque		Backg	round	0.	
Pump RSPP #1 RSPP #2				Depth 1949	Drag up Drag Dn Hook Load	6			Backg Conn			10
RSPP #1	Strokes	Pressure	MACP	-	Drag Dn	6	Torque		Backg Conn	round ection	0.	10
RSPP #1	Strokes 45 1. Rig up/O	Pressure 4775	MACP	-	Drag Dn Hook Load 9. Slip & C	6 79 Cut	Torque		Backg Conn Ti 17. Weld b	round ection rip owl	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill	Pressure 4775	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey	6 79 Cut	Torque 5200		Backg Conn Tr 17. Weld b 18. Wash t	round ection rip owl o Btm	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream	Pressure 4775 Out	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	6 79 Cut ne Logs	Torque		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch	round ection rip owl o Btm ecks	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 4775 Dut	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	6 79 Cut ne Logs /Cement	Torque 5200		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r	round ection rip owl o Btm ecks nud pumps	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Pressure 4775 Dut	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump	6 79 Cut ne Logs /Cement Out Cement	Torque 5200		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 1	round ection rip owl o Btm ecks nud pumps Meeting	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 4775 Dut t Cond.	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	6 79 Cut ne Logs /Cement Out Cement Up BOP	Torque 5200		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r	round ection rip owl o Btm ecks nud pumps Meeting	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 4775 Dut t Cond. ice	MACP	-	9. Slip & C 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple	6 79 Cut ne Logs /Cement Out Cement Up BOP OP	Torque 5200		Backg Conn Ti 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.	10
RSPP #1	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	Pressure 4775 Dut t Cond. ice	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 4775 Dut t Cond. rice air	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & (6. Trip 7. Rig Serv 8. Rig Rep: 0 Run wirelin No incident:	Pressure 4775 Dut t Cond. rice air e logs.# 5 FN	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75		Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on r 21. Safety 22. Handle 23 Other	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep: DRun wirelin No incident: roy @ 123m,	Pressure 4775 Dut t Cond. ice air e logs.# 5 FN s reported Ship Cove 3	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill REMARKS	Torque 5200 23.75		Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 1 22. Handle 23 Other Total Hour	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25	10
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep: DRun wirelin No incident: roy @ 123m,	Pressure 4775 Dut t Cond. rice air e logs.# 5 FN	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill	Torque 5200 23.75	9,520	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	round ection rip owl o Btm ecks nud pumps Meeting Tools	0.25 0.25 24.00	10
RSPP #1 RSPP #2 00:00-24:00 Tops: Codn Prev Cost	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep: DRun wirelin No incident: roy @ 123m,	Pressure 4775 Out t Cond. ice air e logs.# 5 FN s reported Ship Cove 5 8,763	MACP 5165	1949	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bt 16. BOP D	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill REMARKS	Torque 5200 23.75 	9,520	Backg Conn Tr 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour Total Hour Weather: Mud Type	round ection rip owl o Btm ecks nud pumps Meeting Tools s	0.25 0.25 24.00 +2, Cloud Polymer	
RSPP #1 RSPP #2	Strokes 45 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 1 6. Trip 7. Rig Serv 8. Rig Rep: DRun wirelin No incident: roy @ 123m,	Pressure 4775 Out t Cond. ice air e logs.# 5 FN s reported Ship Cove 5 8,763	MACP 5165	1949	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	6 79 Cut ne Logs /Cement Out Cement Up BOP OP rill REMARKS	Torque 5200 23.75	9,520	Backg Conn T1 17. Weld b 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	round ection rip owl o Btm ecks nud pumps Meeting Tools s	0.25 0.25 24.00	

			Vulc	an Mi	ineral	s Daily	7 Drill	ing Re	eport			
Well:		Vulc	an Investca			v	Day:	0		Date:	28-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1	n/hr:	#DIV/0!	Rig:	Stoneh	am # 11
-	@ 0800 hrs:	POOH with	0		0		,			KB elev:	63.40	m.
-	POOH / DS									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		D 1	D 0	D 1111 A								
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	semply:				Pump Pres	CIIRO		kPa
Liner	(mm)	165		BHA Leng	th•		m	Strap:		Board:		ма
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe ().D.	127.0	mm	
SPM	()	90	0	D.C. Annu			m/min	D.P Annula		63.0	m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:	310.0	kW	
										-		
			VEYS		1		MUD	1		1	DITIVES	. <u> </u>
	pth	Drift	Azimuth	North	East	Time	6:56		Gel	10	CaC03	
1919.00	Teledrift	9				Density	1260		Caustic		Percol	
1946.00	Teledrift	8.5				Vis. pH	71 11.3		Salt		Sulphamic	
						рн Fluid Loss	5.4		Kelzan Cello		T-352 Defoamer	
					1	P.V.	28.0		Bicarb		2K-7	
						Y.P.	21.0		Kwickseal		Cal carb	
					1	Gel S.	4/7/8.5		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	
	1	-				Solids %	9.5		Barite		time Hydrate	5
						Oil	7.5		Fiberseal	33	Dyna fiber	
						Ca (mg/l)	220.0		PHPA		Bioside	
						Cl (mg/l)	5200.0		Sawdust		Lignite	
						MBT	7.5		Soda Ash		Alcomer	
						Temp	20.8		Supervision		Day Cost	\$3,713
						XSPolymer	1.1		Mud Van	1	Well Cost	\$273,245
	losses Surfa		nole Estimat	es m3		asing Tests	-	ate			rifuge	
Total circu	0	116.0	T (11 1	112.2		sing Test		ov-09	Underflow			
, i i i i i i i i i i i i i i i i i i i	es down hole es at surface	0.0	Total hole Total surf.	113.2 42.0		OP Test sing Test		ov-09 ating hrs	Overflow I Flow Rate.	•		
Today total		0.0	Cumulative	328.0		OP Test		ec-09	Combined		0	FF
rotay tota	103565	0.0	Cumulative	520.0	T(CAT D	01 1050	00 D		combined	nours	0	
	We	ll Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		Back	ground	0.	10
RSPP #1	45	4775	5165	1949	Drag Dn	6			Conr	nection	0.	10
RSPP #2					Hook Load	79	5200		Т	rip	0.	10
								-		_		
	1. Rig up/C	Dut			9. Slip & C			-	17. Weld I			
	2. Drill 3. Ream				10. Survey 11. Wirelin		2.00	-	18. Wash 19. Flow cl			-
	4. Drill Ou	t			12. Casing	0	2.00	-		mud pumps		
	5. Circ. &		3.00		0	Out Cement		-	20. VK off 21. Safety		1.00	
	6. Trip	cond.	11.25		14. Nipple			-	22. Handle		1.00	-
	7. Rig Serv	ice	0.75		15. Test B			-	23 DST		6.00	
	8. Rig Rep				16. BOP D	rill		-	Total Hou	rs	24.00	•
								=				_
						REMARKS						
	Complete L											
	Clean out tr											
15:00-24:00	DST # 1 (1:	555-1574 m)									
	No incidents	s reported										
-	oy @ 123m,											
Prev Cost	\$3,27	9,745	Today	\$30	,130	Total Cost	\$3,30	9,875	Weather		-2, Cloud/Ra	in
					D' P'	-	100 (10 =10	<i>(</i>	Mud Type		Polymer	
Foreman		Bill W	illiams		Rig Phone		709-649-710	0	Taken By:	I erry Bi	ooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	<u>Drill</u>	ing Re	eport			
Well:		Vulc	an Investca			v	Day:	0	-	Date:	29-N	ov-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1		#DIV/0!	Rig:	Stoneha	
	@ 0800 hrs:		0		0		,			KB elev:	63.40	m.
-	POOH / DS									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly:							
Model		PZ-11	PZ-11					<i>a</i> .	Pump Pres			kPa
Liner	(mm)	165	165	BHA Lengt			m	Strap:	2.0	Board:		
Stroke SPM	(mm)	279 90	279 0	Drill Collar D.C. Annul			mm m/min	Drill Pipe (D.P Annula		<u>127.0</u> 63.0	mm m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity			m/sec	True Hydr		310.0	kW	
V 01.	III / IIIII @ 95%	1.5500	0.0000	Jet velocity	y•		m/sec	II ue IIyui	aunt m.	510.0	KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:56		Gel	10	CaC03	
1919.00	Teledrift	9				Density	1265		Caustic		Percol	
1946.00	Teledrift	8.5				Vis.	69		Salt		Sulphamic	
						pН	11.3		Kelzan		T-352	
						Fluid Loss	5.4		Cello		Defoamer	
						P.V.	27.0		Bicarb		2K-7	1
						Y.P.	20.5		Kwickseal		Cal carb	
						Gel S.	4/7/8.5		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	
						Solids %	1.0		Barite	61	Lime Hydrate	d
						Oil			Fiberseal		Dyna fiber	
						Ca (mg/l)	220.0		PHPA		Bioside	
						Cl (mg/l)	15900.0		Sawdust		Lignite	
						MBT	7.5		Soda Ash		Alcomer	
						Temp	23.0		Supervision	1	Day Cost	\$2,434
Mud	losses Surfa	a la Downl	ala Estimat	ag m2	DOD & C	XSPolymer asing Tests	1.1	ate	Mud Van	1 Cont	Well Cost rifuge	\$275,679
Total circu		116.0	loie Estimat	es m5		sing Tests		ov-09	Underflow		muge	
	es down hole	0.0	Total hole	113.2		OP Test		ov-09	Overflow I			
	es at surface	0.0	Total surf.	42.0		sing Test		ting hrs	Flow Rate.	•		
Today tota		0.0	Cumulative	328.0		OP Test		ec-09	Combined		0	FF
	We	ll Control -	kPa		Ho	ole Condition	ı kdaN & K	ft/#		Total Gas F	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		Back	ground	0.	10
RSPP #1	45	4775	5165	1949	Drag Dn	6			Conr	nection	0.	10
RSPP #2					Hook Load	79	5200		Т	rip	0.	10
								-				
	1. Rig up/C	Dut			9. Slip & C			-	17. Weld h			
	2. Drill				10. Survey			-	18. Wash			
	3. Ream 4. Drill Ou	•			11. Wirelin 12. Casing	0		-	19. Flow cl			
	4. Drin Ou 5. Circ. &				0	Out Cement		-	20. WK on 21. Safety	mud pumps Meeting	0.75	
	6. Trip	conu.	7.50		14. Nipple			-	21. Safety 22. Handle	0	0.75	
	7. Rig Serv	ice	0.75		15. Test B			-	23 DST	. 10015	15.00	
	8. Rig Rep				16. BOP D			-	Total Hour	rs	24.00	
	8 T							-				
						REMARKS						
00:00-07:00) DST #1 (Fi	nal Shut In)										
	POOH and 1											
	5 DST #2 Mal	ke up interva	al and RIH									
19:15-24:00) DST # 2											
	No include	non-ort- J										
Tone: Code	No incidents roy @ 123m,		885m Snort	Falle 202								
Tops: Coar Prev Cost		<u>Ship Cove a</u> 9,875	Today		, 3,555	Total Cost	\$3.57	8,430	Weather:		+2, Cloudy	
1107 0031	φ3,30	,010	Louay	φ <i>22</i> 0	,,	i otar Cost	φ0,00		Mud Type		+2, Cloudy Polymer	
Foreman		Bill W	illiams		Rig Phone		709-649-710	6	Taken By:		ooker / Sha	ne Halley
					-				, v			

1			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well: Depth:	1965.0	Vulc mKB	an Investca Progress:			•	Day: hrs ROP, 1	41	#DIV/0!	Date: Rig:	30-No Stoneha	
	@ 0800 hrs:	POOH with	0		0		,			KB elev:	63.40	
	POOH / DS	0								KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
	+											
	1	Pump 1	Pump 2	Drilling As	sembly:	I	·	ı	ı	ı	I	
Model		PZ-11	PZ-11						Pump Pres			kPa
Liner	(mm)	165		BHA Lengt			m	Strap:	<u> </u>	Board:		
Stroke SPM	(mm)	279 90		Drill Colla D.C. Annul			mm m/min	Drill Pipe (D.P Annula		<u>127.0</u> 63.0	mm m/min	
Vol.	m ³ /min @ 95%	1.5300		Jet Velocity			m/sec	True Hydr		310.0	kW	
					, 						· · · ·	
			VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:56		Gel		CaC03	
1919.00	Teledrift	9				Density	1265		Caustic		Percol	
1946.00	Teledrift	8.5				Vis. pH	72		Salt Kelzan		Sulphamic T-352	
						pri Fluid Loss	5.4		Kelzan Cello	-	1-352 Defoamer	
						P.V.	28.0		Bicarb		2K-7	1
						Y.P.	20.5		Kwickseal		Cal carb	
						Gel S.	4/7/8		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	
						Solids %	1.0		Barite		Lime Hydrate	d
						Oil			Fiberseal		Dyna fiber	
						Ca (mg/l)	240.0		PHPA		Bioside	
						Cl (mg/l) MBT	16000.0 10.0		Sawdust Soda Ash		Lignite Alcomer	
						Тетр	22.0		Soda Ash Supervision		Alcomer Day Cost	\$101
						XSPolymer			Supervision Mud Van	1	Well Cost	\$275,780
Mud	l losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests		ate			rifuge	
	ılating Vol.	116.0				sing Test	11-N	ov-09	Underflow	Density		
	es down hole		Total hole	113.2		OP Test		ov-09	Overflow I			
	es at surface	0.0	Total surf.	42.0		sing Test		ating hrs	Flow Rate,			FF
Today tota	u iosses	0.0	Cumulative	328.0	Next B	OP Test	08-D	ec-09	Combined	nours	0	rr'
	We	ll Control -	kPa		Но	ole Condition	ı kdaN & Ki	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		Back	ground	8	10
RSPP #1	45	4775	5165	1949	Drag Dn	6			· · · · ·	ection		10
RSPP #2					Hook Load	79	5200		Т	rip	0.	10
	1 10				0 612 0 6				17			
	1. Rig up/C 2. Drill	Jut			9. Slip & C 10. Survey			-	17. Weld b 18. Wash t			
	2. Driff 3. Ream				10. Survey 11. Wirelin			-	18. wash 19. Flow ch			
	4. Drill Ou	t			12. Casing	0		-		mud pumps		
	5. Circ. &				0	Out Cement		-	21. Safety		0.75	
	6. Trip		7.50		14. Nipple	-		-	22. Handle	e Tools		
	7. Rig Serv		0.75		15. Test B			-	23 DST		15.00	
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	rs	24.00	
						REMARKS						
00:00-04:00	0 DST#2 Shu	t In										
	0 Unseat Pack		DST #2 -Reco	over fluid-re	corders							
	0 Make up DS		val changed s	so make up I	OST#3 for la	rger interval)		-	-		-
	5 RIH DST#3											
17:45-24:00		Ulana D'	Dama 1. 1	- 4-1								
Function Te	est Lower and	**	kams during	g tripping								
	No incident	S ICHUGIEG										
Tops: Code	No incident		885m. Snout	Falls 898m								
Tops: Codi Prev Cost	roy @ 123m,				, ,120	Total Cost	\$3,56	5,820	Weather:		+2, Rain	
•	roy @ 123m,	Ship Cove	885m, Spout Today			Total Cost	\$3,56	55,820	Weather: Mud Type		+2, Rain Polymer	
•	roy @ 123m,	Ship Cove 8 8,700					\$3,56 709-649-710	/	_			ne Halley

			Vulc	an Mi	inerals	s Daily	7 Drill	ing Re	eport			
Well:		Vulc	an Investca			Ľ	Day:	0	-	Date:	01-D	ec-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, 1		#DIV/0!		Stoneha	am # 11
-	@ 0800 hrs:	Make up te	st tools,DST	# 5	5		,			KB elev:	63.40	m
the next da	DST test # 5	5								KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		D 1	D 0									
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembly:				Pump Pres	CIIRO!		kPa
Liner	(mm)	165	165	BHA Leng	th•		m	Strap:	_rump ries	Board:		ма
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe ().D.	127.0	mm	
SPM	()	90	0	D.C. Annul			m/min	D.P Annula		63.0	m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocity	y:		m/sec	True Hydr	aulic HP:	310.0	kW	
			VEYS		1		MUD	-		MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:56		Gel		CaC03	
1919.00	Teledrift	9				Density	1265		Caustic		Percol	~
1946.00	Teledrift	8.5	1		1	Vis.	70		Salt	2	Sulphamic	-5
	+					pH Fluid Loss	11.2 5.6	+	Kelzan Cello	2	T-352 Defoamer	2
	-	<u> </u>				P.V.	29.0		Cello H. Perm	3	Defoamer 2K-7	4
	1	-			1	Y.P.	29.0	1	Polyseal	20	ZK-7 Cal carb	-
	1					Gel S.	4/8/8.5		Drispac	3	Dyna det	
						Gei S. Filter Ck	0.5		Drispac EnvirPlug	5	Dyna det Walnut	
	1		1		1	Solids %	1.0	1	Barite	5	Lime Hydrate	d
						Oil			Fiberseal	2	Dyna fiber	2
						Ca (mg/l)	240.0		PHPA	1	Lignite	1
						Cl (mg/l)	16000.0		Sawdust		Load. Chg	1
						MBT	10.0		Soda Ash	17	Pallets	65
						Temp	21.0		Supervision		Day Cost	\$7,452
						XSPolymer			Mud Van	1	Well Cost	\$283,232
	losses Surfa		hole Estimat	es m3		asing Tests	-	ate	TT 1 (1		rifuge	
Total circu	llating vol. es down hole	116.0 0.0	Total hole	113.2		sing Test OP Test		ov-09 ov-09	Underflow Overflow I			
v	es at surface	0.0	Total surf.	42.0		sing Test		ating hrs	Flow Rate,	•		
Today tota		0.0	Cumulative	328.0		OP Test		ec-09	Combined		0	FF
, , , , , , , , , , , , , , , , , , ,											1	
	We	ll Control -	kPa		Ho	ole Condition	n kdaN & K	ft/#		Total Gas F	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		, ,	ground	0.	
RSPP #1	45	4775	5165	1949	Drag Dn	6				nection	0.	
RSPP #2					Hook Load	79	5200		Т	rip	0.	10
	1 D'/()4			0 611- 0 6	N4		-	17 W.L.L			
	1. Rig up/C 2. Drill	Jui			9. Slip & C 10. Survey			-	17. Weld b 18. Wash (
	2. Drill 3. Ream				10. Survey 11. Wirelin			-	18. wash 19. Flow ch			
	4. Drill Ou	t			12. Casing	0		-		mud pumps		
	5. Circ. &				0	Out Cement		-	21. Safety		0.50	
	6. Trip		8.50		14. Nipple			_	22. Handle	0		
	7. Rig Serv		0.75		15. Test B			_	23 DST		14.25	
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	'S	24.00	
						DD1 (
00.00 02.00	DST#2 E	Shut I-				REMARKS	i					
) DST#3 Fina) Useat Packe		ST#3 Record	ver fluid - do	wnload reco	rders Rreak	down tools					
) DST#4, Ma											
		en Valve - F		. , und	0 Sarrace							
	DS1#4 - Of											
	DS1#4 - Op											
	DS1#4 - Op											
	No incident											
	No incident	Ship Cove	· •			T () C		200			2.6	
Tops: Codr Prev Cost	No incident		885m, Spout _ Today		, ,869	Total Cost	\$3,59	95,689	Weather:		-2, Snow	
Prev Cost	No incident	Ship Cove 5,820	Today		,869			,	Mud Type		Polymer	ne Halley
	No incident	Ship Cove 5,820	· •				\$3,59 709-649-710	,	_			ne Halley

			Vulc	an Mi	inerals	s Daily	v Drill i	ing Re	eport			
Well:		Vulc	an Investca			v	Day:	0	-	Date:	02-D	ec-09
Depth:	1965.0	mKB	Progress:		Drilling:		hrs ROP, r		#DIV/0!	Rig:		am # 11
-	@ 0800 hrs:		0	o Csg	8		,			KB elev:	63.40	
-	RIH, Circ ar		•	0	sing					KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
											-	
		Pump 1	Pump 2	Drilling As	sembly:							
Model		PZ-11	PZ-11	DILL				<i>a</i> ,	Pump Pres			kPa
Liner Stroke	(mm)	165 279	165 279	BHA Leng Drill Colla			m	Strap: Drill Pipe (<u>, n</u>	Board: 127.0		-
SPM	(mm)	90	0	D.C. Annul			mm m/min	D.P Annula			mm m/min	
Vol.	m ³ /min @ 95%	1.5300		Jet Velocity			m/sec	True Hydr			kW	
		110000	0.0000	occ verseri	,.			11 ut 11j ui		51010		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:56		Gel		CaC03	
1919.00	Teledrift	9				Density	1260		Caustic		Percol	
1946.00	Teledrift	8.5				Vis.	79		Salt		Sulphamic	
			ļ			pН	11.1		Kelzan		T-352	
						Fluid Loss	5.4		Cello		Defoamer	
						P.V.	31.0		H. Perm		2K-7	
						Y.P.	22.0		Polyseal		Cal carb	
						Gel S.	4/7/8.5		Drispac		Dyna det	
						Filter Ck	0.5		EnvirPlug		Walnut	
						Solids %	1.0		Barite	-	Lime Hydrate	d
						Oil	240.0		Fiberseal		Dyna fiber	
						Ca (mg/l) Cl (mg/l)	240.0 16400.0		PHPA Sawdust		Lignite Load. Chg	
						MBT	10400.0		Sawaust Soda Ash		Load. Ung Pallets	
						Тетр	18.1		Supervision		Day Cost	\$30
						XSPolymer	1.1		Mud Van	1	Well Cost	\$283,262
Mud	losses Surfa	ce & Downl	ole Estimat	es m3	BOP & C	asing Tests	Da	ate	indu vuli	Cent	rifuge	\$205,202
Total circu		116.0				sing Test	11-N	ov-09	Underflow		0	
Today losse	es down hole	0.0	Total hole	113.2	Last B	OP Test	23-N	ov-09	Overflow I	Density		
	es at surface	0.0	Total surf.	42.0		sing Test		ting hrs	Flow Rate,			
Today total	losses	0.0	Cumulative	328.0	Next B	OP Test	08-D	ec-09	Combined	hours	0	FF
								o. ///				
-		Il Control -				ole Condition		ft/#		Total Gas R		
Pump RSPP #1	Strokes 45	Pressure	MACP 5165	Depth 1040	Drag up	5	Torque			ground		10 10
RSPP #1 RSPP #2	45	4775	5105	1949	Drag Dn Hook Load	6 79	5200			ection rip		10
KSII #2					HOOK LOad	1)	5200		1	пр	0	10
	1. Rig up/C	Dut			9. Slip & C	Inf			17. Weld b	owl		-
	2. Drill				10. Survey				18. Wash t			-
	3. Ream				11. Wirelin			•	19. Flow ch	iecks		-
	4. Drill Ou	t			12. Casing	/Cement			20. Wk on	mud pumps		
	5. Circ. &	Cond.			13. Pump (Out Cement			21. Safety	Meeting	1.25	_
	6. Trip		6.75		14. Nipple				22. Handle	e Tools		-
	7. Rig Serv		0.50		15. Test BO				23 DST		15.50	-
	8. Rig Rep	air			16. BOP D	rill			Total Hour	S	24.00	-
						DEMADIZ						
00.00 03.00	POOH DST	#4				REMARKS						
	Handle Test		vnload record	lers								
	RIH extra 2				Load record	lers						
08:00-11:00			1 1	1 00.00	,							
11:00-22:00												
22:00-24:00	Unlach Pack	kers, POOH	with DST#5									
	No incidents											
-	oy @ 123m,											
Prev Cost	\$3,59	5,689	Today	\$23	,327	Total Cost	\$3,61	9,016	Weather:		-2, Cloudy	
Former		D211 11	illiam-		D:a D1	,	700 640 710	c	Mud Type		Polymer	no Holl
Foreman		DIII W	illiams		Rig Phone		709-649-710	U	Taken By:	Terry Br	ooker / Sha	ne maney

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well: Depth:		mKB	an Investca Progress:			U	Day: hrs ROP, 1	44	#DIV/0!	Date: Rig:	Stoneha	
-	@ 0800 hrs:		mm Csg							KB elev: KB - GL	<u>63.40</u> 6.30	
Bit #	Run Csg, Ci Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		m. BGOR
		D 1	D 0	D 111 1								
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembly:				Pump Pres	sure:		kPa
Liner	(mm)	165	165	BHA Leng	th:		m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe		127.0	mm	
SPM Vol.	m ³ /min @ 95%	90 1.5300	0.0000	D.C. Annul Jet Velocity			m/min m/sec	D.P Annula True Hydr		<u>63.0</u> 310.0	m/min kW	
, on	in / inin e 3070	1.5500	0.0000	ser veroen	,.		iii/See	II ue II y ui	uune III .	510.0	II.	
	_		VEYS				MUD			MUD AD	DITIVES	
1919.00	pth Teledrift	Drift 9	Azimuth	North	East	Time Density	15:00 1270		Gel Caustic		CaC03 Percol	
1946.00	Teledrift	8.5				Vis.	86		Salt		Sulphamic	
						pН	10.3		Kelzan		T-352	
						Fluid Loss P.V.	4.8 29.0		Cello H. Perm		Defoamer 2K-7	
						т.v. Y.P.	23.0		n. rerni Polvseal		ZK-7 Cal carb	
						Gel S.	5.5/9/11		Drispac		Dyna det	
						Filter Ck	0.5		EnvirPlug		Walnut	
						Solids % Oil	1.5		Barite		Lime Hydrate	d
						Ca (mg/l)	760.0		Fiberseal PHPA		Dyna fiber Lignite	
						Cl (mg/l)	22800.0		Sawdust		Load. Chg	
						MBT	10.0		Soda Ash		Pallets	
						Temp XSPolymer	20.8		Supervision Mud Van	1	Day Cost Well Cost	\$30 \$283,292
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & Ca	asing Tests		ate	vidu van		rifuge	φ205,272
Total circu	0	116.0				sing Test		ov-09	Underflow	•		
, v	es down hole es at surface	0.0	Total hole Total surf.	113.2 42.0		OP Test sing Test		ov-09 ating hrs	Overflow I Flow Rate,	•		
Today total		0.0	Cumulative	328.0		OP Test		ec-09	Combined		0	FF
Dumm		ll Control - Pressure	kPa MACP	Donth	Ho Drag up	ole Condition 5		ft/#	Pooly	Total Gas R ground	8) 10
Pump RSPP #1	Strokes 45	4775	5165	Depth 1949	Drag up Drag Dn	6	Torque		· · · · ·	ection		10
RSPP #2					Hook Load	79	5200			rip	48	.70
	1 Dia				0 512- 8 6	N4		-	17. Weld b			
	1. Rig up/C 2. Drill	Jui			9. Slip & C 10. Survey			-	17. Weid I 18. Wash (
	3. Ream		0.25		11. Wirelin	ne Logs		-	19. Flow ch			
	4. Drill Ou		6.00		12. Casing			-		mud pumps Mosting	0.75	
	5. Circ. & (6. Trip	Cond.	13.25		13. Fump v 14. Nipple	Out Cement Up BOP		-	21. Safety 22. Handle	0	0.75	
	7. Rig Serv		0.50		15. Test Bo	OP		-	23 DST		3.25	
	8. Rig Repa	air			16. BOP D	rill		-	Total Hour	s	24.00	
						REMARKS						
	POOH DST											
01:45-05:15 05:15-07:30	Handle Test	tools - Lay	out DST Too	ls								
	Make up Bit	, RIH, Circ	B.Ups at 940	,1380,1652,	1965m							
15:30-19:00	Circ and Co	ndition	•									
19:00-24:00	POOH - Lay	Down / Out	t Drill Pipe S	ideway for C	Casing							
	Function Te No incidents		nd Blind Rar	ns								
Tops: Codr	roy @ 123m,		885m, Spout	Falls 898m	,							
Prev Cost	\$3,61	9,316	Today	\$57	,609	Total Cost	\$3,67	6,925	Weather:		-2, Cloudy	
Foreman	В	ill Williams	s / Mike Smit	th	Rig Phone		709-649-710	6	Mud Type Taken By:		Polymer ooker / Sha	ne Halley

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport			
Well:		Vulc	an Investca	an Red Bro	ook #2		Day:	45		Date:	04-D	ec-09
Depth:	1965.0		Progress:	0.0	Drilling:	0.00	hrs ROP, 1	n/hr:	#DIV/0!	Rig:		am # 11
-	@ 0800 hrs:	••	n BOP's							KB elev:	63.40	
the next da Bit #	Tear Out Ri	0	Coniol No.	In	Out	Motrog	Houng	Nozzles	DDM	KB - GL WOB kdaN	6.30	
BIL#	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzies	RPM	WOB KOAN	TODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly:		1	1			1	
Model		PZ-11	PZ-11						Pump Pres			kPa
Liner	(mm)	165	165	BHA Leng			m	Strap:		Board:		-
Stroke SPM	(mm)	279 90	279 0	Drill Colla D.C. Annu			mm m/min	Drill Pipe (D.P Annula		<u>127.0</u> 63.0	_mm m/min	
Vol.	m ³ /min @ 95%	1.5300	0.0000	Jet Velocit			m/sec	True Hydr		310.0	kW	
1 011		10000	0.0000					11 uo 11, ui		01010		
		SUR	VEYS				MUD			MUD AD	DITIVES	
	pth	Drift	Azimuth	North	East	Time	0:00		Gel		CaC03	
920.00	Baker	6.94	68.45			Density	1270		Caustic		Percol	
1010.00	Baker Baker	7.83 8.67	70.38 75.48			Vis. pH	85 10.2		Salt	3	Sulphamic T-352	
1190.00	Baker	9.07	84.84			pri Fluid Loss	4.6		Kelzan Cello	3	1-352 Defoamer	
1280.00	Baker	9.18	96.15			P.V.	28.0		H. Perm		2K-7	
1370.00	Baker	9.31	106.98			Y.P.	23.5		Polyseal		Cal carb	
1460.00	Baker	9.23	115.65			Gel S.	6/9/11		Drispac	2	Dyna det	
1550.00	Baker	9.41	122.03			Filter Ck	0.5		EnvirPlug		Walnut	ļ
1640.00 1730.00	Baker Baker	8.03 8.44	122.18 119.15			Solids % Oil	1.5		Barite	160	Lime Hydrate	d
1820.00	Baker	8.71	118.95			Ca (mg/l)	740.0		Fiberseal PHPA		Dyna fiber Lignite	
1910.00	Baker	8.78	118.49			Cl (mg/l)	23100.0		Sawdust		Load. Chg	
1965.00	Baker	9.01	118.5			MBT	10.0		Soda Ash	11	Desco CF	1
						Temp	21.5		Supervision		Day Cost	\$8,551
						XSPolymer			Mud Van	1	Well Cost	\$291,842
	losses Surfa		ole Estimat	es m3		asing Tests	-	ate			rifuge	
Total circu	0	116.0	m (11 1	110.0		sing Test		ov-09	Underflow			
~	es down hole es at surface	0.0	Total hole Total surf.	113.2 42.0		OP Test sing Test	23-N	ov-09	Overflow I Flow Rate,	ĩ		
Today tota		0.0	Cumulative			OP Test	08-D	ec-09	Combined		0	FF
	We	ll Control -				-	n kdaN & Ki	ft/#			Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		· · · · ·	ground		10
RSPP #1 RSPP #2	45	4775	5165	1949	Drag Dn Hook Load	6 79	5200			ection rip		10 78
KOIT #2					HOOK LOad	17	5200		1	110	0.	10
	1. Rig up/C	Dut	2.75	=	9. Slip & C	Cut		=	17. Weld b	owl		-
	2. Drill			-	10. Survey			-	18. Wash t	to Btm		
	3. Ream			-	11. Wirelin	0	16.00	-	19. Flow ch			-
	4. Drill Ou		2.25	-	12. Casing		16.00	-		mud pumps	1.00	-
	5. Circ. & 6. Trip	Cona.	<u>3.25</u> 0.75	-	13. Fump v 14. Nipple	Out Cement Un BOP		-	21. Safety 22. Handle	0	1.00	-
	7. Rig Serv	ice	0.25	-	15. Test B	-		-	23 DST	. 10015		-
	8. Rig Rep			-	16. BOP D			-	Total Hour	s	24.00	-
00.00 01.00	POOU					REMARKS	5					
00:00-01:00	POOH	ushing - Saf	ety Meeting	with Crew /	Tong Hands							
	Run 178 mr											
16:30-18:45	Circulate an	d Condition	Mud									
					ers- Cement 1	78mm Casir	ıg					
21:00-24:00	Wait on Cer	nent - Start (Cleaning Tan	ıks - Rig out								
	Ran 151 its	177 8mm I-4	55 38 63 kg/r	nLT+C_C	using Landed	@ 1947.0 m	Marker Ioi	nt @ 1240.7	9 m RKB (I	D = 165.125	mm)	
	run ror ju	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	00 00100 Mg 1		und Lunded	e 171/10 III			/	001120)	
					Preflush, Pur				00 @ 1250k	g/m3 +0.9%	FL-5+2%A-	11+0.7% R3
					18 kg/m3 + 0.9							
					ment @ 1901	0		P + 0.4% FL	-5 + 0.5% CI	D-3 2		
				-	it, 4m3 Preflu , Annulas Sta		zei keturns.					
	Dump 1 lug	< 20.24 IIIS	2007, 2009	, i iouts field	, 1 muias Sta							
	No incident	s reported										
-	oy @ 123m,	Ship Cove										
Tops: Codr Prev Cost	oy @ 123m,		885m, Spout Today		, 3,775	Total Cost	\$3,76	5,700	Weather:		0, Sunny	
-	roy @ 123m, \$3,67	Ship Cove 8 6,925		\$88			\$3,76		Weather: Mud Type Taken By:		0, Sunny Polymer r ooker / Sha	ne Halley

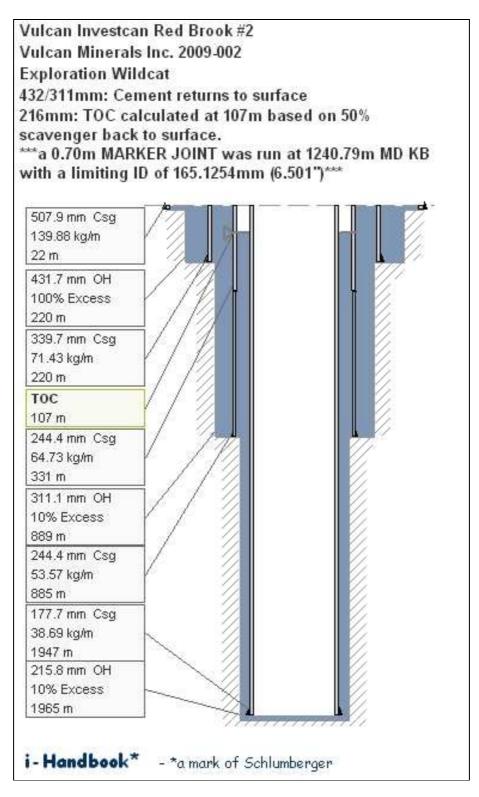
			Vulc	an Mi	inerals	5 Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2	•	Day:	46		Date:	05-D	ec-09
Depth:	1965.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, 1	n/hr:	#DIV/0!	Rig:		am # 11
	@ 0800 hrs:			ig						KB elev:	63.40	
	Tear Out Ri	-		T		34.4	1 77	NT 1	DDM	KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
	1	Pump 1	Pump 2	Drilling As	sembly:						1	
Model		PZ-11	PZ-11						Pump Pres			kPa
Liner	(mm)	165	165	BHA Lengt				Strap:	<u> </u>	Board:		
Stroke SPM	(mm)	279 90	279 0	Drill Colla D.C. Annul			 m/min	Drill Pipe (D.P Annula		<u> 127.0</u> 63.0	_mm m/min	
Vol.	m ³ /min @ 95%	1.5300	-	Jet Velocity			m/sec	True Hydr		310.0	kW	
								•			-	
			VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	0:00		Gel	1	CaC03	
920.00 1010.00	Baker Baker	6.94 7.83	68.45 70.38			Density Vis.	1265 64		Caustic Salt	1	Percol Sulphamic	
1100.00	Baker	8.67	75.48			v 13. pH	9.9		Kelzan		T-352	4
1190.00	Baker	9.07	84.84			Fluid Loss	6.2		Cello		Defoamer	
1280.00	Baker	9.18	96.15			P.V.	24.0		H. Perm	-3	2K-7	1
1370.00	Baker	9.31	106.98			Y.P.	15.0		Polyseal		Cal carb	
1460.00 1550.00	Baker Baker	9.23 9.41	115.65 122.03			Gel S. Filter Ck	3.5 0.5		Drispac EnvirPlug		Dyna det Walnut	
1640.00	Baker	8.03	122.03			Solids %	1.0		Barite	68	Desco CF	8
1730.00	Baker	8.44	119.15			Oil			Fiberseal		Corinox	4
1820.00	Baker	8.71	118.95			Ca (mg/l)	720.0		PHPA		Safe-Kote	3
1910.00	Baker	8.78	118.49			Cl (mg/l)	20100.0		Sawdust	14	Load. Chg	300
1965.00	Baker	9.01	118.5			MBT	7.5		Soda Ash		Desco CF	\$7.002
						Temp XSPolymer	20.4		Supervision Mud Van	1	Day Cost Well Cost	\$7,002 \$295,451
Mud	losses Surfa	ce & Downl	ole Estimat	es m3	BOP & Ca	asing Tests		ate	iniuu vun		rifuge	\$275,151
Total circu	lating Vol.	116.0			Last Ca	sing Test	11-N	ov-09	Underflow	Density		
	es down hole	0.0	Total hole	113.2		OP Test	23-N	ov-09	Overflow I			
·	es at surface	0.0	Total surf.	42.0		sing Test	00 D	ec-09	Flow Rate, Combined		0	FF
Today tota	TIOSSES	0.0	Cumulative	328.0	Next D	OP Test	08-D	60-09	Combined	nours	0	ГГ
	We	ll Control -	kPa		Ho	ole Conditio	n kdaN & K	ft/#		Total Gas F	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque		Backg	ground	0.	10
RSPP #1	45	4775	5165	1949	Drag Dn	6				ection		10
RSPP #2					Hook Load	79	5200		T	rip	0.	78
	1. Rig up/C	Dut	12.25		9. Slip & C	'nt		-	17. Weld b	owl		
	2. Drill	u	12120		10. Survey			-	18. Wash t			
	3. Ream		-		11. Wirelin	ne Logs	-	-	19. Flow ch	necks		
	4. Drill Ou				12. Casing			-		mud pumps	- 1.05	
	5. Circ. & 6. Trip	Cond.			13. Pump (14. Nipple		9.75	-	21. Safety 22. Handle	0	1.25	
	7. Rig Serv	ice	0.75		15. Test B	-	2.15	-	23 DST	1 0015		
	8. Rig Rep				16. BOP D			-	Total Hour	s	24.00	
								-				
00.00.10.00	0.6 / M /	Nº 1 D	DOD			REMARKS	5					
10:00-10:00	Safety Meetin Clean Hanger			ead								
	Tear out Rig				plies, Ship out	t 178 Csg / Le	ase Cleanup.					
	6	-	v	. 1	1	ý í	1					
	Mud Report i	s for Casing J	ob.									
	RIG REL	EASE DEC	2.05 2009	@ 23.591	nrs							
	<u>1110 IUD</u>			2 20.071								
	roy @ 123m,											
Prev Cost	\$3,76	5,700	Today	\$160	0,939	Total Cost	\$3,92	6,639	Weather:		0, Cloudy	
Foreman	R	ill Williams	/ Mike Smit	th	Rig Phone		709-649-710	6	Mud Type Taken By:		Polymer rooker / Sha	ne Hallev
- or cinali	D	, , mants	, mine only		-ug i none			~	runch Dy.	ICT y D	Joner / Blia	in maney

			Vulc	an Mi	inerals	5 Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Red Bro	ok #2		Day:			Date:	06-D	ec-09
Depth:		mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, 1	n/hr:	#DIV/0!	Rig:	Stoneha	
-	@ 0800 hrs: Complete T	•		ıg						KB elev: KB - GL	<u>63.40</u> 6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
		D 1	D 0									
Model		Pump 1	Pump 2	Drilling As	sembly:				Pump Pres	sure		kPa
Liner	(mm)			BHA Lengt	th:		m	Strap:	<u>- 1 ump 1 105</u>	Board:		hi u
Stroke	(mm)			Drill Colla				Drill Pipe (-	mm	
SPM	3, 1, 0, 050			D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%			Jet Velocity	y:		m/sec	True Hydr	aunc HP:		kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
						Density			Caustic		Percol	
-						Vis. pH			Salt Kelzan		Sulphamic T-352	
						Fluid Loss			Cello		Defoamer	
						P.V.			H. Perm		2K-7	
						Y.P.			Polyseal		Cal carb	
						Gel S. Filtor Ck			Drispac Emri-Disc		Dyna det Walnut	
	+					Filter Ck Solids %			EnvirPlug Barite		Walnut Desco CF	
						Oil			Fiberseal		Corinox	
						Ca (mg/l)			PHPA		Safe-Kote	
						Cl (mg/l)			Sawdust		Load. Chg	
						MBT Temp			Soda Ash		Desco CF Dav Cost	
						XSPolymer			Supervision Mud Van		Well Cost	\$295,451
Mud	losses Surfa	ce & Downł	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Cent		
Total circu	lating Vol.				Last Cas	sing Test	11-N	ov-09	Underflow	Density		
ř	es down hole		Total hole			OP Test	23-N	ov-09	Overflow D	ě		
Today loss Today tota	es at surface		Total surf. Cumulative			sing Test OP Test	00 D	ec-09	Flow Rate, Combined		0	FF
Today tota	TIOSSES		Cumulative		Next D	or rest	08-D	60-09	Combined	liours	0	ГГ
	We	ll Control -	kPa		Ho	le Condition	ı kdaN & Ki	ft/#		Total Gas R	eadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque		Backg	ground		
RSPP #1					Drag Dn					ection		
RSPP #2					Hook Load				1)	rip		
	1. Rig up/C	Dut			9. Slip & C	ut		-	17. Weld b	owl		
	2. Drill				10. Survey			-	18. Wash t			
	3. Ream				11. Wirelin	0		-	19. Flow ch			
	4. Drill Ou 5. Circ. &				12. Casing			-	20. Wk on 1			
	5. Circ. &	Conu.			13. Fump C 14. Nipple	Out Cement Up BOP		-	21. Safety 22. Handle	0		
	7. Rig Serv	rice			15. Test BO			-	23 DST			
	8. Rig Repa	air			16. BOP D	rill		-	Total Hour	s	0.00	
						DEMADIZO						
00.00-10.12	Tear out Rig					REMARKS						
	Scope down I	Derrick										1
10:45-20:15	Continue Tea	r out Rig										
	Lower Derric											
20:30-24:00	Continue Tea	r out Rig										
	Last Crew Ni	ght Shift com	pleted at 07:00) hrs, Dec 7, 2	.009							
	Rig on Hour	Rate of \$105/1	man hour									
	120 man hour	rs for Dec 6th										
Tope C-1	ov @ 177	Ship C (285m E 4	Falls 000-								
Tops: Codi Prev Cost	roy @ 123m, \$3.92	Ship Cove a 6,639	Today		,617	Total Cost	\$3.94	5,256	Weather:		Cloudy, -2	
	φ0,92	.,		ψιΟ	,=.		ΨĊŢ	,	Mud Type		u, 2	
Foreman		Mike	Smith		Rig Phone	2	09-649-710	6	Taken By:		ooker / Sha	ne Halley

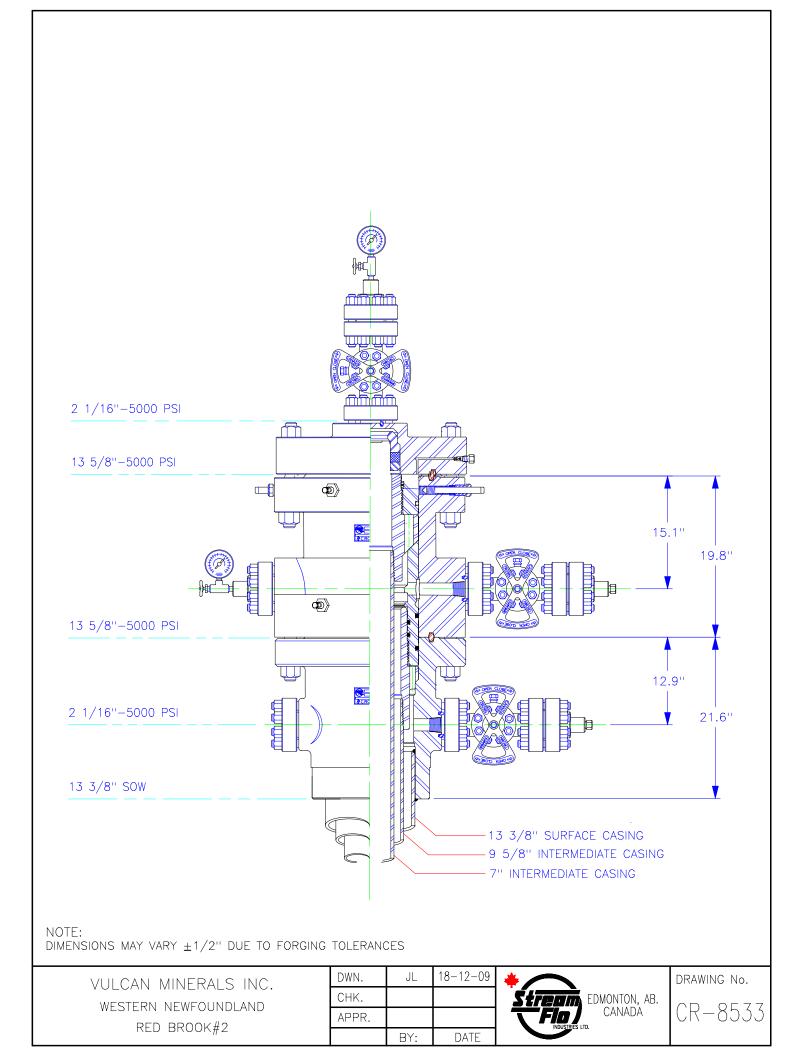
	Vulcan Minerals Daily Drilling Report											
Well: Depth: Operation	1965.0 @ 0800 hrs:	mKB	an Investca Progress:	0.0	Drilling:	0.00	Day: hrs ROP, 1		#DIV/0!	Date: Rig: KB elev:	07-Dec-0 Stoneham # 63.40 m.	
	De-Mobe -									KB - GL	6.30 m.	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODLBG	OR
		Pump 1	Pump 2	Drilling As	sembly:				D D			
Model				BHA Leng	d			64	Pump Pres		kPa	1
Liner Stroke	(mm)			Drill Collar			mm	Strap: Drill Pipe (<u>. n</u>	Board:	mm	
SPM	(mm)			D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%			Jet Velocity			m/sec	True Hydr			kW	
					, -							
		SURV	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
						Density			Caustic		Percol	
						Vis.			Salt		Sulphamic	
						pН			Kelzan		T-352	
						Fluid Loss			Cello		Defoamer	
						P.V.			H. Perm		2K-7	
	+					Y.P.			Polyseal		Cal carb	
						Gel S. Filton Ch			Drispac		Dyna det	
	-					Filter Ck Solids %			EnvirPlug Borito		Walnut	
						Solids % Oil			Barite Fiberseal		Desco CF Corinox	
	-		<u> </u>	<u> </u>		Ca (mg/l)			Fiberseal PHPA		Corinox Safe-Kote	
						Cl (mg/l)			Sawdust		Load. Chg	
						MBT			Soda Ash		Desco CF	
						Temp			Supervision		Day Cost	
						XSPolymer			Mud Van		•	295,451
Mud	l losses Surfa	ce & Downł	ole Estimat	es m3	BOP & C	asing Tests		ate		Cent	rifuge	
Total circu	ulating Vol.				Last Ca	sing Test	11-N	ov-09	Underflow	Density	0	
	es down hole		Total hole			OP Test	23-N	ov-09	Overflow I	•		
Today loss	ses at surface		Total surf.		Next Ca	sing Test			Flow Rate,	m3/min		
Today tota	al losses		Cumulative		Next B	OP Test	08-D	ec-09	Combined	hours	OFF	
	11/		LD.				1 1 1 0 77	e4 14			1. (0/)	
P		ll Control -		D (1		ole Condition	n kdaN & Ki	tt/#			leadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque			ground		
RSPP #1 RSPP #2					Drag Dn Hook Load					ection rip		
Koll #2					HOOK LOad				1	пр		
	1. Rig up/O	Dut	19.00		9. Slip & C	Inf		-	17. Weld b	owl		
	2. Drill	ut	17.00		10. Survey			-	18. Wash t			
	3. Ream				11. Wirelin			-	19. Flow ch			
	4. Drill Ou	t			12. Casing	0		-		mud pumps		
	5. Circ. &	Cond.			13. Pump	Out Cement		-	21. Safety	Meeting		
	6. Trip				14. Nipple	Up BOP		-	22. Handle	Tools		
	7. Rig Serv	ice			15. Test BO	OP		_	23 DST			
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	s	19.00	
						REMARKS						
	Continuing te	ar out of rig, (Day Crew O	nly) Sort - Pa	ck - Inventory	Equiptment of	n site					
19:00-24:00	Rig Watch											
	Adjustments	o Daily Cost	last 2 days ma	da by Shana I	L							
	See Corrected			de by bliane i	1.							
			ncluded in Co	sts.								
	Rig on Hour	-										
	-		Day Crew Or	ıly)								
	Night Securit	y provided fro	m 21:00-06:0	0 hrs								
The second second	0 100	all a f	0.7 0	E. II. 000								
-	roy @ 123m,	-				T-4-LC 4	¢2.00	1 400	Wasth		Clauda 0	
	¢2 04	5 256	Toder	£ 77	144							
Prev Cost	\$3,94	5,256	Today	\$36	,144	Total Cost	\$3,98	51,400	Weather:		Cloudy, 0	
Prev Cost Foreman	\$3,94	, 	Today Smith	\$36	,144 Rig Phone		53,98 709-649-710	<i>.</i>	Mud Type		cloudy, 0	allev

			Vulc	an Mi	inerals	5 Daily	v Drill	ing Re	eport			
Well: Depth: Operation @		mKB	an Investca Progress: at night	n Red Bro 0.0	ok #2 Drilling:	0.00	Day: hrs ROP, 1		#DIV/0!	Date: Rig: KB elev:	08-De Stoneha 63.40	m # 11
the next da _. T	<u>^</u>						<u>^</u>			KB - GL	6.30	
Bit # S	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly:							
Model					-			<i>a</i> .	Pump Pres			kPa
Liner Stroke	(mm)			BHA Leng Drill Collar			m mm	Strap: Drill Pipe (Board:	mm	
SPM	(mm)			D.C. Annul			m/min	D.P Annula			m/min	
Vol. m	n ³ /min @ 95%			Jet Velocity	y:		m/sec	True Hydra			kW	
Dont	th.		VEYS	North	Foot	Time	MUD		C.J.	MUD AD		
Dept	in	Drift	Azimuth	North	East	Time Density			Gel Caustic		CaC03 Percol	
						Vis.			Salt		Sulphamic	
						рН			Kelzan		T-352	
						Fluid Loss			Cello		Defoamer	
						P.V. Y.P.			H. Perm		2K-7	
						Y.P. Gel S.			Polyseal Drispac		Cal carb Dyna det	
						Filter Ck			EnvirPlug		Walnut	
						Solids %			Barite		Desco CF	
						Oil			Fiberseal		Corinox	
						Ca (mg/l) Cl (mg/l)			PHPA Sourduct		Safe-Kote	
						MBT			Sawdust Soda Ash		Load. Chg Desco CF	
						Temp			Supervision		Day Cost	
						XSPolymer			Mud Van		Well Cost	\$295,451
		ce & Downł	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Centr	rifuge	
Total circulat						sing Test		ov-09	Underflow			
Today losses Today losses			Total hole Total surf.			OP Test sing Test	23-N	ov-09	Overflow E Flow Rate,	•		
Today total lo			Cumulative			OP Test	08-D	ec-09	Combined		OI	Ŧ
				-								-
	Wel	ll Control -	kPa		Ho	ole Conditior	n kdaN & Ki	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up		Torque			ground		
RSPP #1 RSPP #2					Drag Dn Hook Load					ection rip		
K511 #2					1100K LUau				11	пр		
					9. Slip & C	'ut		-	17. Weld b	owl		
1.	. Rig up/O	ut										
2.	. Drill	out			10. Survey			-	18. Wash t	o Btm		
2. 3.	. Drill . Ream				10. Survey 11. Wirelin	ne Logs		-	18. Wash t 19. Flow ch	o Btm ecks		
2. 3. 4.	. Drill . Ream . Drill Out	t			 Survey Wirelin Casing 	ne Logs /Cement		- - -	18. Wash t 19. Flow ch 20. Wk on 1	o Btm ecks nud pumps		
2. 3. 4. 5.	. Drill . Ream . Drill Out . Circ. & (t		- - -	 Survey Wirelin Casing Pump (ne Logs /Cement Out Cement		-	18. Wash t 19. Flow ch	o Btm ecks nud pumps Meeting		
2. 3. 4. 5.	. Drill . Ream . Drill Out	t Cond.			 Survey Wirelin Casing 	ne Logs /Cement Out Cement Up BOP		- - - -	 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 2 	o Btm ecks nud pumps Meeting		
2. 3. 4. 5. 6. 7.	. Drill . Ream . Drill Out . Circ. & (. Trip	t Cond. ice			 Survey Wirelin Casing Pump (Nipple 	ne Logs /Cement Out Cement Up BOP OP		-	 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 2 22. Handle 	o Btm lecks nud pumps Meeting Tools	0.00	
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WELLBORE SCHEMATIC



Vulcan Investcan Red Brook #2 Final Well Report Appendix



Str.	QUOTATION TECHNICAL CROWN ENERGY PRODUCTS	• HEAD OFFICE MARKETING OFFICE INTERNATIONAL SALES, SERVICE 400 BOW VALLEY SQ. ONE SALES & SERVICE & MANUFACTURING 202-6th AVE. S.W. INDONESIA 4505 - 74th AVE CALGARY, AB UNITED KINGDOM EDMONTON, AB CANADA T2P 2R9 UNITED KINGDOM CANADA T6B 2H5 PHONE (403) 268-5531 U.S.A. PHONE (780) 468-6789 FAX (403) 266-3307 FAX (780) 469-7724
To:	VULCAN MINERLS INC 333 DUCKWORTH STREET	GRANDE PRAIRIE, AB BROOKS, AB PHONE (780) 532-1433 PHONE (403) 362-7600 FAX (780) 538-4191 FAX (403) 362-8329
Attn:	ST. JOHN'S NL CAN A1C 1G9	SLAVE LAKE, AB RED DEER COUNTY, AB RAINBOW LAKE, AB PHONE (780) 849-6100 PHONE (403) 346-2550 PHONE (780) 956-3655 FAX (780) 849-2264 FAX (403) 347-2022 FAX (780) 956-3690
Ref:	IERRI BROOKER	ESTEVAN, SK FT. ST. JOHN, BC EDSON, AB PHONE (306) 634-4719 PHONE (250) 785-9500 PHONE (780) 712-5505 FAX (306) 634-3287 FAX (250) 785-8139 FAX (780) 712-5542
Date:	FBD WELLHEAD September 09, 2009	FORT MCMURRAY, AB FORT NELSON, B.C. PHONE (780) 743-0744 PHONE (250) 775-6789 FAX (780) 743-8177 FAX (250) 775-6790

We are pleased to submit the following quotation: (QUOTATION SUBJECT TO TERMS HEREON)

			-
No.	Quantity	Description	
		TO NO REPERTING AND AND AND AND AND AND AND AND AND AND	
		PLEASE REFER TO QUOTE 81139 WHEN ORDERING	
		QUOTE 3: FULL BORE DRILL-THRU (FBD) WELLHEAD ASSEMBLY 346mm 34.5MPa x 338.7mm x 244.5mm x 177.8mm x 114.3mm - SWEET TRIM	
	-1.47	SECTION A: CASING HEAD HOUSING ASSEMBLY	
		THE REAL AND BOOK AND THE REAL AND A STATE OF A REAL AND A STATE OF A REAL AND A STATE AND A REAL	
1	1	STREAM-FLO CROWN CASING HEAD CC-29 13-5/8 5000 X 13-3/8 SOW W/ TEST SEAL C/W 2 - 2-1/16 5000 STUDDED SIDE OUTLET W/ 1-1/2 SHARP-V VRT SPECIAL FOR USE W/ FBD100 WELLHEAD API 6A LUDD-NL PSL-2 PR2 Part : CC9-CH135X1338SOWSV-10-2	
2	1	STREAM-FLO CROWN CASING HANGER MANDREL C9FBD 13-5/8 NOM X 9-5/8 LONG CSG BOX BOTTOM X 10.5-2-ACME LH STUB LIFT THREAD 9-5/8 NOM X 6.00 EFFECTIVE LENGTH SLICK EXTENDED NECK 8.69 DIA THRU BORE 10-5/8 DIA X 6.75 LG TONGING NECK & FOUR FLUTES API 6A LDD PSL-2 PR1 *TOOL C9FBD-RT105X958LTC-00* Part : C9FBD-CH13X958LTC-00-2	
3	1	STREAM-FLO CROWN PACKOFF BUSHING FBD 13-5/8 NOM X 9-5/8 CSG J-SLOTS S-SEALS ON OD FS CSG SEALS FOR USE WITH 3/5000 PSI FBD SPOOL & CC-29 HEAD (W/FBD TOLS) 8.69 BORE 26 LG API 6A LDD-NL PSL-2 PR1 *REF RUNNING TOOL FBD-RT11* Part : FBD-PB13X958-00-2	
4	1	GATE VALVE 2-1/16 API 5000 FLANGED ENDS T-36 TRIM API 6A LAA PSL-1 Part : 2G-52SB50-T36-OS	
5	1	FLANGE COMPANION 2-1/16 5000 X 2 LP API 6A LUDD-NL PSL-1 Part : CF-25X2LP-1-00	
6	1	STREAM-FLO CROWN FLANGE BLIND 2-1/16 5000 API 6A LUDD-NL PSL-1 Part : BF-25	

TERMS: NET 30 DAYS. A SERVICE CHARGE OF 1.5% (18% PER ANNUM) CHARGED ON OVEROUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECIALTY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING ITEM) MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER 0.E.M'S ARE SUBJECT TO THEIR ACTUAL RESTOCKING CHARGE. EQUIPMENT RETURNED FOR CREDIT THAT REQUIRES DISASSEMBLY MAY BE SUBJECT TO A TRAR DOWN CHARGE. EXPENDABLE ITEMS SUCH AS INING GASKETS, NIPPLES AND BOLTINGS USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY, TEST AND PAINT CHARGES OR SHIPPING CHARGE.



Quote No: 0000081139



CROWN ENERGY PRODUCTS

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7	1	BULL PLUG 2 LP XXH TAPPED 1/2 NPT CSA 44W		
		Part : BP-2X12XXH		
8	1	PIPE PLUG 1/2 NPT HEX HEAD ASTM A105 FORGED STEEL IML Part : PP-12		
	and the second second			
9	3	RING GASKET R-24 MILD STEEL Part : RG-R24MS		
	900000 i a			
10	8	STUD 7/8 9UNC X 6 LONG ASTM A320 L7 LOW TEMPERATURE SERVICE Part : S-L7-78X6		
11	16	NUT 7/8 9UNC ASTM A194 2H STANDARD SERVICE Part : N-2H-78		

		SECTION B: INTERMEDIATE CASING SPOOL ASSY		
12	1	STREAM-FLO CROWN INTERMEDIATE HEAD FBD 13-5/8 5000 STUDDED BOTTOM X 13-5/8 5000 2-1/16 5000 STUDDED SIDE OUTLET W/1-1/2 SHARP-V VRT (10) P L/SCREWS IN BOTTOM FLANG IN TOP FLANGE 13.50 BORE 26.25 LG NACE CLASS III BOLTING (L7 STUDS IN BOTTOM FLG) AF PR1 Part : FBD-IH135X135SVPB-00-2	GE & (16) P L/SCREWS	
13	1	STREAM-FLO CROWN CASING HANGER MANDREL CUFBD 13 X 7 LC BOX BOTTOM X 8.125-2 LI THREAD 7 NOM X 6.00 EFFECTIVE LENGTH SLICK EXTENDED NECK 6.38 DIA THRU BORE 8 DI/ TONGING NECK & FOUR FLUTES 600000 LBS MAX LOAD *RUNNING TOOL C9FBD-RT8125X7LT0 PSL-2 PR1 Part : CUFBD-CH13X7LTC20-00-2	A X 5.88 LONG	
14	1	STREAM-FLO CROWN PACKOFF BUSHING STANDARD FBD 13 NOM X 7 SLICK EXTENDED NEC J-SLOTS DUAL S-SEALS & FS CASING SEALS FOR USE WITH CUFBD MANDREL HANGER & CU SHOULDER 6.44 BORE 24.78 OVERALL LENGTH *RUNNING TOOL FBD-RT11* API 6A LUDD-NL F Part : FBD-PB13X7-00-2	PROFILE LOAD	
15	1	GATE VALVE 2-1/16 API 5000 FLANGED ENDS T-36 TRIM API 6A LAA PSL-1 Part : 2G-52SB50-T36-OS		
16	2	FLANGE COMPANION 2-1/16 5000 X 2 LP API 6A LUDD-NL PSL-1		
17	2	BULL PLUG 2 LP XXH TAPPED 1/2 NPT CSA 44W Part : BP-2X12XXH		

TERMS: NET 30 DAYS. A SERVICE CHARGE OF 1.5% (18% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECIALTY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING TIEM) MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER O.E.M'S ARE SUBJECT TO THEIR ACTUAL RESTOCKING CHARGE. CUPIENT HEURINED FOR CREDIT THAT REQUIRES DISASSEMBLY MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. EXPENDABLE ITEMS SUCH AS RING GASKETS, NIPPLES AND BOLTINGS USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY, TEST AND PAINT CHARGES OR SHIPPING CHARGES.





CROWN ENERGY PRODUCTS

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-		Page 3 of 6 of Qu	Die No. : Ul	00081139
18	2	PIPE PLUG 1/2 NPT HEX HEAD ASTM A105 FORGED STEEL IML Part : PP-12		
19	1	NEEDLE VALVE 1/2 ANGLE MALE X FEMALE 10000 PSIG WP CARBON STEEL Part : NV-12ANG		
20	1	PRESSURE GAUGE 0-5000 PSI 1/2 CONNECTION 316SS TUBE 4-1/2 FACE LIQUID FILLED SERIES 901 Part : GAU-5M		
21	1	CASING VENT ASSEMBLY 2 LP C/W BALL VALVE Part : CV-2LP		
22	3	RING GASKET R-24 MILD STEEL Part : RG-R24MS		
23	8	STUD 7/8 9UNC X 6 LONG ASTM A320 L7 LOW TEMPERATURE SERVICE Part : S-L7-78X6		
24	16	NUT 7/8 9UNC ASTM A194 2H STANDARD SERVICE Part : N-2H-78		
25	1	RING GASKET BX-160 MILD STEEL Part : RG-BX160MS		
		SECTION C: PRODUCTION CASING SPOOL ASSEMBLY		
26	1	STREAM-FLO CROWN INTERMEDIATE HEAD FBD 13-5/8 5000 STUDDED BOTTOM X 13-5/8 5000 FLANGE TOP C/W 2-1/16 5000 STUDDED SIDE OUTLET W/1-1/2 SHARP-V VRT (10) P L/SCREWS IN BOTTOM FLANGE & (16) P L/SCRE IN TOP FLANGE 13.50 BORE 26.25 LG NACE CLASS III BOLTING (L7 STUDS IN BOTTOM FLG) API 6A LDD-NL PSL-2 PR1 Part : FBD-IH135X135SVPB-00-2	M/S	
500				
27	1	NON-STOCK PARTS SALES Part : NCN PARTS		
		CASING HANGER MANDREL CUFBD 13 X 4-1/2 LC BOX BTM W/ SLICK EXTENDED NECK X LONG TONGING NECK & FLUTED BODY, LUDD-NL PSL-2 PR1		
28	1	STREAM-FLO CROWN PRIMARY PACKOFF FBD 13 NOMINAL X 4 1/2 CASING FOR USE WITH CU PROFILE HEAD & CC-21 SLIPS FOR USE WITH 3/5000 PSI RWP FBD SPOOLS ONLY API 6A DD-NL L-U PSL-2 PR2 Part : FBD-PP13X412L-00-2		64
				/

TERMS. NET 30 DAYS. A SERVICE CHARGE OF 1.5% (18% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECIALTY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING ITEM) MAY BE SUBJECT TO A 100% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER 0.E.M'S ARE SUBJECT TO A 15% ACTUAL RESTOCKING CHARGE. EQUIPMENT RETURNED FOR CREDIT THAT REQUIRES DISASSEMBLY MAY BE SUBJECT TO A TEAR DOWN CHARGE. EXPENDABLE ITEMS SUCH AS RING GASKETS, NIPPLES AND BOLTINGS USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY, TEST AND PAINT CHARGES OR SHIPPING CHARGES.





CROWN ENERGY PRODUCTS

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29	1	GATE VALVE 2-1/16 API 5000 FLANGED ENDS T-36 TRIM API 6A LAA PSL-1 Part : 2G-52SB50-T36-OS	
30	2	FLANGE COMPANION 2-1/16 5000 X 2 LP API 6A LUDD-NL PSL-1 Part : CF-25X2LP-1-00	
31	2	BULL PLUG 2 LP XXH TAPPED 1/2 NPT CSA 44W Part : BP-2X12XXH	
32	2	PIPE PLUG 1/2 NPT HEX HEAD ASTM A105 FORGED STEEL IML Part : PP-12	
33	1	NEEDLE VALVE 1/2 ANGLE MALE X FEMALE 10000 PSIG WP CARBON STEEL Part : NV-12ANG	
34	1	PRESSURE GAUGE 0-5000 PSI 1/2 CONNECTION 316SS TUBE 4-1/2 FACE LIQUID FILLED SERIES 901 Part : GAU-5M	
35	3	RING GASKET R-24 MILD STEEL Part : RG-R24MS	
36	8	STUD 7/8 9UNC X 6 LONG ASTM A320 L7 LOW TEMPERATURE SERVICE Part : S-L7-78X6	
37	16	NUT 7/8 9UNC ASTM A194 2H STANDARD SERVICE Part : N-2H-78	
38	1	RING GASKET BX-160 MILD STEEL Part : RG-BX160MS	
		SECTION D: CAPPING FLANGE ASSEMBLY	
39	1	STREAM-FLO CROWN CASING CAP ASSY 13-5/8 5000 X 2-1/16 5000 STUDDED UP 10.88 CP SECONDARY PREP 6.00 CSG CUTOFF API 6A LDD-NL PSL-1 Part : CF-135X25-CP	
40	1	GATE VALVE 2-1/16 API 5000 FLANGED ENDS T-36 TRIM API 6A LAA PSL-1 Part : 2G-52SB50-T36-OS	
41	1	FLANGE COMPANION 2-1/16 5000 X 2 LP API 6A LUDD-NL PSL-1 Part : CF-25X2LP-1-00	

TERMS: NET 30 DAYS. A SERVICE CHARGE OF 1.5% (18% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECIALTY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING ITEM) MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER O.E.M'S ARE SUBJECT TO A 15% ACTUAL RESTOCKING CHARGE. EQUIPMENT RETURNED FOR CREDIT THAT REQUIRED DISASSEMBLY MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. EXUPMENT ACTUAL RESTOCING CHARGE. EQUIPMENT RETURNED FOR CREDIT THAT REQUIRED DISASSEMBLY MAY BE SUBJECT TO A 15% USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY, TEST AND PAINT CHARGES OR SHIPPING CHARGES.





CROWN ENERGY PRODUCTS

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1		
42	1	BULL PLUG 2 LP XXH TAPPED 1/2 NPT CSA 44W Part : BP-2X12XXH
43	1	NEEDLE VALVE 1/2 STRAIGHT MALE X FEMALE 10000 PSIG WP CARBON STEEL Part : NV-12STR
44	1	PRESSURE GAUGE 0-5000 PSI 1/2 CONNECTION 316SS TUBE 4-1/2 FACE LIQUID FILLED SERIES 901 Part : GAU-5M
45	2	RING GASKET R-24 MILD STEEL Part : RG-R24MS
46	8	STUD 7/8 9UNC X 6 LONG ASTM A320 L7 LOW TEMPERATURE SERVICE Part : S-L7-78X6
47	16	NUT 7/8 9UNC ASTM A194 2H STANDARD SERVICE Part : N-2H-78
48	1	RING GASKET BX-160 MILD STEEL Part : RG-BX160MS
49	12	STUD 1-5/8 8UN X 12-1/2 LONG ASTM A320 L7 LOW TEMPERATURE SERVICE Part : S-L7-158X1212
50	24	NUT 1-5/8 8UN ASTM A194 2H STANDARD SERVICE Part : N-2H-158

51	1	NON-STOCK PARTS SALES Part : NCN PARTS **** FOR BELOW CASING HANGER **** CHARGES FOR HALLMARK TUBULARS TO CUT, THREAD & SUPPLY CASING. 2 PIECES, 8 FT LENGTH FOR 9-5/8" & 7" CUSTOMER SPECIFIC WEIGHT AND GRADE

TERMS: NET 30 DAYS. A SERVICE CHARGE OF 1.5% (18% PER ANNUM) CHARGED ON OVERDUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITHOUT THE WRITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECILITY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING ITEM) MAY BE SUBJECT TO A 10% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER O.E.M'S ARE SUBJECT TO THEIR ACTUAL RESTOCKING CHARGE. EQUIPMENT RETURNED FOR CHEDIT THAT REQUIRES DISASSEMBELY MAY BE SUBJECT TO A 100% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER O.E.M'S ARE SUBJECT TO THEIR USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY. TEST AND PAINT CHARGES OR SHIPPING CHARGES.





CROWN ENERGY PRODUCTS

Page 6 of 6 of Quote No. : 0000081139

	DELIVERY: CURRENTLY (1) COMPLETE SYSTEM IN STOCK, ADDITIONAL FBD SYSTEM(S) 8 WEEKS EX-WORKS EDMONTON AB, AFTER RECEIPT & ACCEPTANCE OF PURCHASE ORDER PRICES ARE VALID FOR 30 DAYS PAYMENT TERMS: NET 30 DAYS	
	PRICES EXCLUDE GST AND/OR PST SHIPPING POINT: FOB STREAM-FLO PLANT, EDMONTON, ALBERTA. SALES REP: RUSS GARDINER (403) 269-5531	
	rgardiner@streamflo.com	
	and and a subscription of the second structure of the second region of the second second second second second s Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second	
6		

TERMS: NET 30 DAYS. A SERVICE CHARGE OF 1.5% (1% PER ANUM) CHARGED ON OVERDUE ACCOUNTS. NO PRODUCT MAY BE RETURNED FOR CREDIT WITTEN CONSENT OF AN AUTHORIZED SFI EMPLOYEE. ALL STANDARD NEW AND REMANUFACTURED GOODS RETURNED MAY BE SUBJECT TO A 15% RESTOCKING CHARGE. SPECIALTY EQUIPMENT (CONSIDERED TO BE A NON-STOCKING ITEM) MAY BE SUBJECT TO A 100% RESTOCKING CHARGE. PRODUCTS PURCHASED FROM OTHER O.E.M'S ARE SUBJECT TO THEIR ACTUAL RESTOCKING CHARGE. EQUIPMENT RETURNED FOR CREDIT THAT REQUIRES DISASSEMBLY MAY BE SUBJECT TO A TEAR DOWN CHARGE. EXPENDABLE ITEMS SUCH AS RING GASKETS, NIPPLES AND BOLTINGS USED IN ASSEMBLY ARE NON-RETURNABLE. CREDIT WILL NOT BE ISSUED ON ASSEMBLY. TEST AND PAINT CHARGES OR SHIPPING CHARGES.



LIST OF	TEST SAMPLE	CYL	INDERS FOR RED BROOK#2				
					Methane	Ethane	Total Organic
REDBROO	OK #2			Date	(%)	(%)	Sulphur (ppm)
DST#1	1555-1574 m		AGAT#04001075 (Initial GTS) caught at manifold	28-Nov-09	80%	5%	-
DST#1	1555-1574 m		AGAT#05003561 (Bottom hole sampler)	28-Nov-09	80%	5%	20.5
DST#2	1360-1383 m		AGAT#05005092 (Bottom hole sampler)	29-Nov-09	82%	4%	1.7



EXTENDED GAS ANALYSIS

Container Identification

4001075

]								
	Ор	erator Nar	ne						La	boratory N	umber
	VULCAN	MINERA	ALS INC	•				09E375947D			
Unique Well Identi	Well Name										
NOT AVAILAB	LE			VU	LCAN IN	VESTCA	N REDBF	ROOK#2			
Field or A	rea			Pool or Zo	ne			Sa	mpler's Co	mpany	
			١		ABLE			HOL	LAND TE	STERS	
Well License	Ele	evation		Test Type	Test No.			Name of	f Sampler		
	KB m 62.00	GRD m	56.00								
Test Interval or	Perfs mKB		Samplin	ng Point			Separator	Reservoir	Source	Sampled	Received
1555.0 - 1574.0			NOT AV	AILABLE	Pres	sure (kPa)			65	65	40
mKB					Te	emperature			4	4	21
Date Sampled	Date Rece	ived	Date	Analyzed	Date	Reported		Entered B	у	Certifie	d By
Nov 28, 2009	Dec 15, 2	2009	Dec	18, 2009	Dec	18, 2009	9	Binh Nguy	/en	Binh Ng	guyen
				Other I	nformation						
		(INI	ITIAL GT	S) CAUGH	Τ ΑΤ ΜΑ	NIFOLD	DST 1A				

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

	Mole F	raction	LIQUID	
COMPONENT	As Received	Air & Acid Gas Free	VOLUMES mL / m ³	
Hydrogen	0.00233	0.00233		
Helium	0.00131	0.00131		
Nitrogen	0.12442	0.12442		
Carbon Dioxide	0.00000	0.00000		
Hydrogen Sulfide	0.00000	0.00000		
Methane	0.80413	0.80413		
Ethane	0.04904	0.04904	174.2	
Propane	0.01273	0.01273	46.8	
Isobutane	0.00115	0.00115	5.0	
n-Butane	0.00306	0.00306	12.9	
Isopentane	0.00049	0.00049	2.4	
n-Pentane	0.00073	0.00073	3.5	
Hexanes	0.00037	0.00037	1.9	
Heptanes+	0.00023	0.00023	1.3	
TOTAL	1.00000	1.00000	248.1	

Gross Heating Value MJ/m³ 15 °C and 101.325 kPa

Moisture Free	Moisture and Acid		
(MJ/m ³)	Gas Free (MJ/m ³)		
35.66	35.66		

Calculated Relative Density Calculated Density C7+ Fraction (kg/m³) Moisture Free Moisture Free

728.5	

Calculated pseudo critical properties

As Sam	oled	Acid Gas Free		
Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)	
4438.90	191.36	4438.90	191.36	

Calculated molecular weight

0.650

(g/mol)				
Total Sample	C7+ Fraction			
18.82	101.85			

Calculated C5+ Vapour Pressure (kPa abs) 98.84

Field H2S (ppm)

Laboratory H2S (ppm)

0.00

Constants taken from the most recent editions of GPA TP-17 and GPA 2145 have been used to calculate the physical properties of the gas. This analysis was performed based on method GPA 2286.



0.00





PROPERTIES OF C6+ FRACTION

File No. 09E375947D

VULCAN MINERALS INC.

UWI / LSD NOT AVAILABLE

BOILING POINT RANGE (°C)	SUMMARY	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL/m ³)
36.2+	Hexanes+ (C6+)	0.00060	597	0.00060	3.2904
98.6+	Octanes+ (C8+)	0.00010	101	0.00010	0.5948
125.8+	Nonanes+ (C9+)	0.00002	22	0.00002	0.1266
150.9+	Decanes+ (C10+)	0.00000	0	0.00000	0.0000
174.3+	Undecanes+ (C11+)	0.00000	0	0.00000	0.0000
196.00+	Dodecanes+ (C12+)	0.00000	0	0.00000	0.0000
216.4+	Tridecanes+ (C13+)	0.00000	0	0.00000	0.0000
235.6 - 270.7	Tetradecanes+ (C14+)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	GROUPINGS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m ³)
68.9 - 98.6	Heptanes (C7)	0.00013	126	0.00013	0.7475
98.6 - 125.8	Octanes (C8)	0.00008	80	0.00008	0.4682
125.8 - 150.9	Nonanes (C9)	0.00002	22	0.00002	0.1266
150.9 - 174.3	Decanes (C10)	0.00000	0	0.00000	0.0000
174.3 - 196.00	Undecanes (C11)	0.00000	0	0.00000	0.0000
196.00 - 216.4	Dodecanes (C12)	0.00000	0	0.00000	0.0000
216.4 - 235.6	Tridecanes (C13)	0.00000	0	0.00000	0.0000
235.6 - 253.6	Tetradecanes (C14)	0.00000	0	0.00000	0.0000
253.6 - 270.69	Pentadecanes (C15)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	RELEVENT COMPONENTS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m ³)
49.28	Cyclopentane	0.00013	131	0.00013	0.6364
68.73	n-Hexane	0.00016	159	0.00016	0.8725
71.83	Methylcyclopentane	0.00000	0	0.00000	0.0000
80.06	Benzene	0.00001	< 10	0.00001	0.0232
80.78	Cyclohexane	0.00001	12	0.00001	0.0615
99.24	2,2,4-Trimethylpentane	0.00000	< 10	0.00000	0.0280
100.94	Methylcyclohexane	0.00002	21	0.00002	0.1117
110.61	Toluene	0.00002	20	0.00002	0.0882
136.16	Ethylbenzene	0.00000	0	0.00000	0.0000
138.33; 139.09	m&p-Xylene	0.00000	< 10	0.00000	0.0151
144.42	o-Xylene	0.00000	< 10	0.00000	0.0232
169.34	1,2,4-Trimethylbenzene	0.00000	0	0.00000	0.0000







EXTENDED GAS ANALYSIS

Container Identification

5003561

			1								
	Ор	erator Nai	me						La	boratory N	umber
VULCAN MINERALS INC.							0	9E375947	Έ		
Unique Well Identi	fier	Well Name									
NOT AVAILABI	LE			VUL	CAN IN	/ESTCA	N REDBF	ROOK#2			
Field or Ar	rea			Pool or Zor	ne			Sa	mpler's Co	mpany	
			Ν	NOT AVAILA	BLE			HOL	LAND TE	AND TESTERS	
Well License	Ele	Elevation Test Type Test No. Name of Sampler									
	KB m 62.00	GRD m	56.00								
Test Interval or	Perfs mKB		Samplin	g Point	7		Separator	Reservoir	Source	Sampled	Received
1555.0 - 1574.0			NOT AVA	AILABLE	Pres	sure (kPa)			742	742	100
mKB		-11	Temperature					21	21	21	
Date Sampled	Date Recei	ved	d Date Analyzed Date Reported			Entered By Certified		d By			
Nov 28, 2009	Dec 15, 2	009	Dec	18, 2009	Dec	18, 2009)	Binh Nguyen Binh		Binh Ng	guyen
				Other In	formation						
			BOTT	OM HOLE S	SAMPLE	R. DST	1B				

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

	Mole F	LIQUID	
COMPONENT	As Received	Air & Acid Gas Free	VOLUMES mL / m ³
Hydrogen	0.00240	0.00240	
Helium	0.00127	0.00127	
Nitrogen	0.12212	0.12212	
Carbon Dioxide	0.00000	0.00000	
Hydrogen Sulfide	0.00000	0.00000	
Methane	0.80260	0.80260	
Ethane	0.04766	0.04766	169.3
Propane	0.01205	0.01205	44.2
Isobutane	0.00122	0.00122	5.3
n-Butane	0.00357	0.00357	15.0
Isopentane	0.00216	0.00216	10.6
n-Pentane	0.00249	0.00249	12.0
Hexanes	0.00150	0.00150	7.8
Heptanes+	0.00096	0.00096	5.7
TOTAL	1.00000	1.00000	270.0

Gross Heating Value MJ/m³ 15 °C and 101.325 kPa

	Moisture and Acid Gas Free (MJ/m ³)			
36.38	36.38			

Calculated Relative Density Calculated Density C7+ Fraction (kg/m³) Moisture Free Moisture Free

C		
lculate	d pseudo	critica

715.2	

Calculated	pseudo	critical	properties
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As Samp	oled	Acid Gas Free		
Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)	
4433.86	192.91	4433.86	192.91	

(

Calculated molecular weight

0.66

(g/mor)						
Total Sample	C7+ Fraction					
19.11	100.32					

99.28

Calculated C5+

Vapour Pressure (kPa abs)

Field H2S (ppm)

Laboratory H2S (ppm)

0.00		

Constants taken from the most recent editions of GPA TP-17 and GPA 2145 have been used to calculate the physical properties of the gas. This analysis was performed based on method GPA 2286.



0.00





PROPERTIES OF C6+ FRACTION

File No. 09E375947E VULCAN MINERALS INC.

UWI / LSD NOT AVAILABLE

BOILING POINT RANGE (°C)	SUMMARY	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL/m ³)
36.2+	Hexanes+ (C6+)	0.00246	2457	0.00246	13.4866
98.6+	Octanes+ (C8+)	0.00030	302	0.00030	1.7710
125.8+	Nonanes+ (C9+)	0.00002	24	0.00002	0.1458
150.9+	Decanes+ (C10+)	0.00000	0	0.00000	0.0000
174.3+	Undecanes+ (C11+)	0.00000	0	0.00000	0.0000
196.00+	Dodecanes+ (C12+)	0.00000	0	0.00000	0.0000
216.4+	Tridecanes+ (C13+)	0.00000	0	0.00000	0.0000
235.6 - 270.7	Tetradecanes+ (C14+)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	GROUPINGS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m ³)
68.9 - 98.6	Heptanes (C7)	0.00066	657	0.00066	3.9068
98.6 - 125.8	Octanes (C8)	0.00028	278	0.00028	1.6252
125.8 - 150.9	Nonanes (C9)	0.00002	24	0.00002	0.1458
150.9 - 174.3	Decanes (C10)	0.00000	0	0.00000	0.0000
174.3 - 196.00	Undecanes (C11)	0.00000	0	0.00000	0.0000
196.00 - 216.4	Dodecanes (C12)	0.00000	0	0.00000	0.0000
216.4 - 235.6	Tridecanes (C13)	0.00000	0	0.00000	0.0000
235.6 - 253.6	Tetradecanes (C14)	0.00000	0	0.00000	0.0000
253.6 - 270.69	Pentadecanes (C15)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	RELEVENT COMPONENTS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m ³)
49.28	Cyclopentane	0.00067	667	0.00067	3.2494
68.73	n-Hexane	0.00053	525	0.00053	2.8830
71.83	Methylcyclopentane	0.00000	< 10	0.00000	0.0219
80.06	Benzene	0.00001	< 10	0.00001	0.0360
80.78	Cyclohexane	0.00013	128	0.00013	0.6703
99.24	2,2,4-Trimethylpentane	0.00003	27	0.00003	0.1875
100.94	Methylcyclohexane	0.00011	109	0.00011	0.5864
110.61	Toluene	0.00005	49	0.00005	0.2206
136.16	Ethylbenzene	0.00000	< 10	0.00000	0.0155
138.33; 139.09	m&p-Xylene	0.00001	< 10	0.00001	0.0435
144.42	o-Xylene	0.00000	0	0.00000	0.0000
169.34	1,2,4-Trimethylbenzene	0.00000	0	0.00000	0.0000







EXTENDED GAS ANALYSIS

Container Identification

5005092

	O	perator Na	ime							La	boratory N	umber
VULCAN MINERALS INC.								0	9E375947	7F		
Unique Well Identifier												
NOT AVAILABI	.E	VULCAN INVESTCAN REDBROOK#2										
Field or Area Pool or Zone Sampler's Company												
			١	NOT AVAILA	BLE				HOLLAND TESTERS			
Well License	EI	Elevation Test Type Test No.			lo.		Name of Sampler					
	KB m 62.00	GRD m	56.00									
Test Interval or	Perfs mKB		Samplin	ng Point	7		Se	eparator	Reservoir	Source	Sampled	Received
1360.0 - 1383.0			NOT AV	AILABLE	P	ressure (kl	Pa)			1780	1780	600
mKB						Temperat	ure			19	19	21
Date Sampled	Date Rece	eived	ived Date Analyzed Date Reported		Entered By Ce		Certifie	d Bv				
Nov 29, 2009	Dec 15, 2	2009		18, 2009		Dec 18, 2009			Binh Nguyen		,	
				Other In	format	on						
			BOT	TOM HOLE	SAMP	LER . D	ST 2					

* Results relate only to the items tested

Note: Sampling Point, Unique Well Identifier and/or Pool or Zone information was unavailable at time of reporting. This information is integral to AGAT's WebFLUIDs, a comparison, history and trending analysis system.

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0.00

	Mole F	LIQUID	
COMPONENT	As Received	Air & Acid Gas Free	VOLUMES mL / m ³
Hydrogen	0.00045	0.00045	
Helium	0.00168	0.00168	
Nitrogen	0.11023	0.11023	
Carbon Dioxide	0.00000	0.00000	
Hydrogen Sulfide	0.00000	0.00000	
Methane	0.82254	0.82254	
Ethane	0.04379	0.04379	155.6
Propane	0.01395	0.01395	51.3
Isobutane	0.00187	0.00187	8.2
n-Butane	0.00352	0.00352	14.8
Isopentane	0.00063	0.00063	3.1
n-Pentane	0.00080	0.00080	3.9
Hexanes	0.00040	0.00040	2.1
Heptanes+	0.00014	0.00014	0.8
TOTAL	1.00000	1.00000	239.7

Gross Heating Value MJ/m³ 15 °C and 101.325 kPa

Moisture Free	Moisture and Acid				
(MJ/m ³)	Gas Free (MJ/m ³)				
36.27	36.27				

Calculated Relative Density Calculated Density C7+ Fraction (kg/m³) Moisture Free Moisture Free

0.645	
Calculate	d pseudo c

716.9

Calculated pseudo critical properties As Sampled Acid Gas Free			
As Sam	bled	Acid Gas	Free
pc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)

 4457.51
 192.41
 4457.51
 192.41

Calculated molecular weight

(9/1	1101)
Total Sample	C7+ Fraction
18.69	101.79

Vapour Pressure (kPa abs)

Calculated C5+

Field H2S (ppm)

Laboratory H2S (ppm)

0.00

Constants taken from the most recent editions of GPA TP-17 and GPA 2145 have been used to calculate the physical properties of the gas. This analysis was performed based on method GPA 2286.







PROPERTIES OF C6+ FRACTION

File No. 09E375947F

Company

VULCAN MINERALS INC.

UWI / LSD NOT AVAILABLE

BOILING POINT RANGE (°C)	SUMMARY	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL/m ³)
36.2+	Hexanes+ (C6+)	0.00054	541	0.00054	2.9526
98.6+	Octanes+ (C8+)	0.00004	40	0.00004	0.2560
125.8+	Nonanes+ (C9+)	0.00001	< 10	0.00001	0.0550
150.9+	Decanes+ (C10+)	0.00001	< 10	0.00001	0.0369
174.3+	Undecanes+ (C11+)	0.00000	0	0.00000	0.0000
196.00+	Dodecanes+ (C12+)	0.00000	0	0.00000	0.0000
216.4+	Tridecanes+ (C13+)	0.00000	0	0.00000	0.0000
235.6 - 270.7	Tetradecanes+ (C14+)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	GROUPINGS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL/m ³)
68.9 - 98.6	Heptanes (C7)	0.00010	102	0.00010	0.5932
98.6 - 125.8	Octanes (C8)	0.00003	32	0.00003	0.2009
125.8 - 150.9	Nonanes (C9)	0.00000	< 10	0.00000	0.0181
150.9 - 174.3	Decanes (C10)	0.00001	< 10	0.00001	0.0369
174.3 - 196.00	Undecanes (C11)	0.00000	0	0.00000	0.0000
196.00 - 216.4	Dodecanes (C12)	0.00000	0	0.00000	0.0000
216.4 - 235.6	Tridecanes (C13)	0.00000	0	0.00000	0.0000
235.6 - 253.6	Tetradecanes (C14)	0.00000	0	0.00000	0.0000
253.6 - 270.69	Pentadecanes (C15)	0.00000	0	0.00000	0.0000
BOILING POINT RANGE (°C)	RELEVENT COMPONENTS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL/m ³)
49.28	Cyclopentane	0.00015	148	0.00015	0.7197
68.73	n-Hexane	0.00017	174	0.00017	0.9558
71.83	Methylcyclopentane	0.00000	0	0.00000	0.0000
80.06	Benzene	0.00001	< 10	0.00001	0.0352
80.78	Cyclohexane	0.00001	< 10	0.00001	0.0493
99.24	2,2,4-Trimethylpentane	0.00001	12	0.00001	0.0857
100.94	Methylcyclohexane	0.00001	< 10	0.00001	0.0334
110.61	Toluene	0.00000	< 10	0.00000	0.0200
136.16	Ethylbenzene	0.00000	0	0.00000	0.0000
138.33; 139.09	m&p-Xylene	0.00000	0	0.00000	0.0000
144.42	o-Xylene	0.00000	0	0.00000	0.0000
169.34	1,2,4-Trimethylbenzene	0.00000	< 10	0.00000	0.0206





Certificate of Analysis

CLIENT NAME: VULCAN MINERALS INC.

PROJECT NO:

AGAT WORK ORDER: 09C375947

ATTENTION TO: SHANE HALLEY

Trace Sulphur Analysis (GC/SCD) - Gas									
SAMPLE TYPE: Gas	SAMPLE	ID: 05003561	DATE RECEIVED: Dec 15, 2009						
DATE SAMPLED: Nov 28, 2009				DATI	E REPORTED:				
SAMPLE DESCRIPTION: VULCAN INV	ESTCAN RED	BROOK#2; DST	1B						
PARAMETER	UNIT	RESULT	G/S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED		
Hydrogen Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009		
Carbonyl Sulphide	ppm (v/v)	2.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Methyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Ethyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Dimethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009		
Carbon Disulphide	ppm (v/v)	18.4		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
iso-Propyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
tert-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
n-Propyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Methyl Ethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009		
s-Butyl Mercaptan/Thiophene	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
iso-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Diethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
n-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
tert-Butyl Methyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009		
Dimethyl Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009		
Diethyl Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Total Unidentified Sulphur Compounds	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		
Total Organic Sulphur	ppm (v/v)	20.5		0.1	Dec 18, 2009	ΥH	Dec 15, 2009		

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard

Field Hydrogen Sulphide : Not Available.

Identification based on retention time relative to standards.

All compounds quantified as ideal gases. Carbonyl sulphide quantified using its standard response factor, all other compounds quantified using Hydrogen sulphide's response factor.

Total organic sulphur includes compounds with chromatographic retention up to and including that of ethyl disulphide.

Certified By:

Applestanost

AGAT CERTIFICATE OF ANALYSIS (V1)

AGAT Laboratories is accredited to ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA) and/or Standards Council of Canada (SCC) for specific tests listed on the scope of accreditation. AGAT Laboratories (Mississauga) is also accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for specific drinking water tests. Accreditations are location and parameter specific. A complete listing of parameters for each location is available from www.cala.ca and/or www.scc.ca. The tests in this report may not necessarily be included in the scope of accreditation. Page 1 of 3

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Certificate of Analysis

CLIENT NAME: VULCAN MINERALS INC.

PROJECT NO:

AGAT WORK ORDER: 09C375947

ATTENTION TO: SHANE HALLEY

Trace Sulphur Analysis (GC/SCD) - Gas												
SAMPLE TYPE: Gas	SAMPLE	ID: 05005092										
DATE SAMPLED: Nov 29, 2009				DAT	E REPORTED:							
SAMPLE DESCRIPTION: VULCAN INVESTCAN REDBROOK#2; DST 2												
PARAMETER	UNIT	RESULT	G/S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED					
Hydrogen Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Carbonyl Sulphide	ppm (v/v)	1.7		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Methyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Ethyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Dimethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Carbon Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
iso-Propyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
tert-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
n-Propyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Methyl Ethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
s-Butyl Mercaptan/Thiophene	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
iso-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Diethyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
n-Butyl Mercaptan	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
tert-Butyl Methyl Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Dimethyl Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Diethyl Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Total Unidentified Sulphur Compounds	ppm (v/v)	<0.1		0.1	Dec 18, 2009	YH	Dec 15, 2009					
Total Organic Sulphur	ppm (v/v)	1.7		0.1	Dec 18, 2009	YH	Dec 15, 2009					

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard

Field Hydrogen Sulphide : Not Available.

Identification based on retention time relative to standards.

All compounds quantified as ideal gases. Carbonyl sulphide quantified using its standard response factor, all other compounds quantified using Hydrogen sulphide's response factor.

Total organic sulphur includes compounds with chromatographic retention up to and including that of ethyl disulphide.

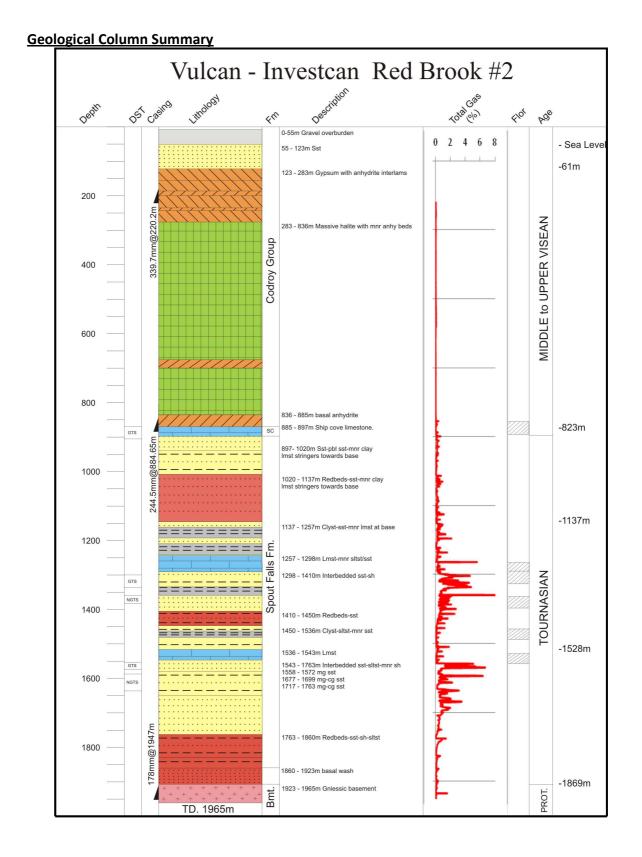
Certified By:

Applestanost

Page 3 of 3

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Vulcan Investcan Red Brook #2 Final Well Report Appendix **Geological Report**

on

VULCAN INVESTCAN RED BROOK# 2

(FTD 1965 m)

November 23, 2009



Prepared For: Patrick Laracy

VULCAN MINERALS INC.

Prepared By: J. Michael Smith

JDS CONSULTANTS

<u>403-589-4998 (c)</u>

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VULCAN INVESTCAN RED BROOK # 2 was drilled during the fall of 2009 within the north eastern section of the Bay St. George Basin, located in the south western area of the province of Newfoundland, Canada. (Carboniferous Age, 355-300 million Years).

The well was located apx 2 km west of the Robinson Outport main intersection and 3 km north on the old railway bed. Vulcan Minerals Inc. was the Primary contractor / operator with Stoneham # 11 (telescopic triple) the drilling company contracted for the project.

This well abstract is intended as a drilling - time summary verses a detailed "geological summary". Geology information - interesting "zones" will be noted. Please see Geologic Striplog for a detailed Geologic Well Summary. Depositional environment, Tectonic events, Structural interpretation and "timelines" are not discussed. Please read the publication from the Newfoundland Department of Mines and Energy, (1983), complied by Ian Knight titled "Geology of the Carboniferous Bay St. George Sub basin, Western Newfoundland.

Vulcan Investcan Red Brook # 2 was spudded on October 21, 2009 at 00:00 hrs.

510 mm (20 inch) casing was preset at apx 29 m KB prior to the rig on location.

432 mm Surface hole was drilled down to 220 meters. Minor to no seepages through the upper 55 meters of a Glacial Till Gravel. A very weakly cemented Reddish Sandstone was intersected from 55 - 123 meters. Gypsum was penetrated at 123 meters to Casing point at 220 meters. Lost Circulation at 173 meters (no returns) within a drill break. The bit was POOH and the pipe RIH open ended and a High Viscosity pill was pumped sealing the zone. Drilling continued to 212 meters. Operations were halted for 60 hours as the rig waited for Surface Casing to arrive from the mainland. Drilling continued down to 220 meters. The first attempt at running the 340 mm Casing failed as the Casing became stuck at apx 150 meters. When the casing was POOH, a partial Centralizer was left in hole. A clean out was completed and drilling an additional 0.5 meters milled up the steel at the bottom of the hole. The second attempt at running the 340 mm Surface Casing was successful. A high viscosity LCM pill was pumped at 170 m RIH. Casing was cemented with no problems. Plug down on October 28th at 0700 hrs.

Surface equipment including BOP"s were rigged up and pressure tested with no problems. The remote unit for the BOP"s in the dog house was not working and the operation was stalled for 18 hours waiting for a computer Tech to arrive from Alberta.

311 mm Intermediate hole was drilled out from 220.2 meters on October 31st at 06:30 hrs. A Formation Integrity Test was done at 229 meters. Drilling continued but at 239 meters, circulation was lost. Drilling continued to 242 meters. A 4 m3 high viscosity LCM plug was pumped and the well bore was top filled to squeeze the pill into the lost zone.

The LCM pill did not hold and a 6 m3 Cement Plug was pumped sealing the zone.

Drilling continued from 242 meters and circulation was again lost at 284 m on November 1st. Nine (9) Cement Plugs were pumped over the following five days. It was assumed that losses were occurring at the top of a Salt Zone and was confirmed by later wire line logs. As each plug was drilled out, circulation was quickly lost in new formation ? or in the plug being drilled out. Hole depth was 303 meters when the final 9th plug was displaced. The lost zone was assumed from apx 283 - 291 m. The last 4 plugs were pumped with the drill pipe at 287 meters. Generally there was no cement below apx

290 meters indicating that the pumped cement flowed into the lost zone and not filling the bottom of the hole. After the 9th cement plug was pumped and prior to drillout, the mud system was saturated with salt. The theory was, that the saturated salt mud would not erode the salt around the cement, causing the cement plug to loose integrity and losses continuing. It was evident that the 7-8 cement plugs were holding better and it is not known if it was the saturated drilling mud or the 9th cement plug itself that finally sealed the zone.

Drilling continued from 303 meters with no mud losses. 100% Massive Salt was intersected from 327 to 836 meters (509 m thick). A basal Anhydrite was present from 836 - 885 meters. Top of the Ship Cove was intersected at 885 meters and Casing Point was called at 889 meters.

Three Logging runs were completed by Baker Hughes with no problems in apx eleven (11) hours.

245 mm Intermediate Casing was RIH and cemented with no problems. Wait on Cement (WOC) on November 11th at 0300 hrs.

216 mm Main Hole was drilled out on November 12th at 14:45 hrs. Bedded very fine calcareous Sandstones and silty Limestone were encountered to 898 meters. A drill break from apx 888 - 889.5 meters was flow checked and it was evident that there was a steady but very slow influx. A upper medium very good quality Sandstone was penetrated. The influx was circulated up to surface but there was no gas to surface. The influx appeared to possible be water with some trapped dissolved gas. Mud weight was increased to 1200 kg/m3 to make the well static. The tricone was POOH and a PDC with stabilizers were RIH in order to increase penetration and hold the hole angle at seven degrees.

The 216 mm PDC drilled ahead from 889 meters on November 13th and was POOH at 1750 meters on November 19th. The PDC bit run averaged over 7 m/hr (861 m/118 hrs). ROP varied from a high of 30 m/hr down to 2 m/hr based on formation. Several interesting Gas shows with over 500 units of gas was observed in Sandstones. The Sequence within the Spout Falls consisted of Sandstones - Redbeds, localized Limestones and minor grey to greenish grey Shales. Of particular Geological Interest would be a Limestone Unit from 1255- 1270 meters that had traces of oil staining - and two Sandstone Units from 1300-1340 meters and 1558 - 1573 meters that had good gas shows with the mud weight at 1200 kg/m3. (See Striplog for complete details).

The PDC was POOH due to Zero ROP at 1750 meters. The center of the PDC was Cored out. In Hindsight, it was believed that the PDC probably self destructed as the formation did not change. At the time, because of the cored out PDC, it was uncertain what rock was penetrated to destroy the bit. A Tricone was RIH and drilling continued at a much slower ROP. Cutting samples indicated the formation had not changed and nothing in the samples indicated the formation could of damaged the PDC. Because of the slow ROP within Redbeds down to 1.5 m/hr, the Tricone was POOH at 1776 meters and a new PDC was RIH to maximize penetration rate.

The new PDC drilled ahead on November 20th from 1776 meters and was POOH at a depth of 1935 meters after drilling through a granite detrital ? and apx 5 meters into the granite basement proper. A rerun tricone was RIH and drilled ahead in the granite basement at apx 1.6 m/hr to a Final Total Depth of 1965 meters on November 23, 2009 at 10:30 hrs.

Forty eight (48) hours were lost waiting on the Baker Hughes Loggers to arrive from Ontario. A wiper trip and pressure testing of all surface equipment was performed during the down time.

Baker Hughes (Atlas) Loggers were rigged up on November 25th at 11:00 hrs. A total of 6 Runs were made with a total logging time of 63 hours. There were no issues or lost time during the logging job. The following logging runs were completed with no problems.

1) HDIL-DGR(DSL)-SP-ZDL-CN-XY Cal

2) DSI-XMAC (Sonic)

3) STAR/DIP/IMAGER (Picture of well bore)

4) RCOR (Rotary Sidewall Coring tool)

5) FMT (Formation Pressure Testing)

6) ZVSP-GR (Zero Offset Vertical Seismic Profile) (9 hrs lost waiting on Water Pit)

Logging was completed on November 28th and a Wiper / Clean out trip was completed prior to DST"s. Trip Gas from wiper only 31 units with MW = 1260 kg.

Holland Testers, out of Ontario were responsible for the DST"s. Operations commenced on November 28th at 13:30 hrs and were completed on December 3rd at 07:00 hrs. A total of 5 DST"s were completed in a total Rig time of 113.5 hrs hours.

The Following DST"s were completed:

DST#1 1556 - 1574 m (23.5 hours) Gas to surface on Main Flow. DST#2 1360 - 1383 m (23.0 hours) DST#3 1297 - 1338 m (21.5 hours) Gas to Surface on Main Flow DST#4 1587 - 1641 m (22.5 hours) DST#5 872 - 908 m (24.0 hours) Gas to Surface on Main Flow

The Bit was RIH for a clean out trip and to circulate out gas from the DST intervals prior to running casing. Gas was Circulated out of the hole from the following Depths:

945 m - DST#5 -1411 u (C1=1296u / C3=115u)1380 m - DST #2+#3 -4870 u (C1=4563u / C3=307u)1652 m - DST #1+#4 -2258 u (C1=2094u / C3=163u)1965 m - FTD -4290 u (C1=4022u / C3=268u)

The Drill String was POOH and laid down prior to Casing.

Main Hole Casing (177.8 mm) was RIH on December 4th and the casing was cemented and set at 1947.0 m, with no problems. WOC at 21:00 hrs December 4th, 2009.

Rig release on December 05, 2009 at 23:59 hrs.

Well Information				
Operator: Well Name: Location: UWI: Pool: Field: State / Province: Country: License Number: Well Status:	Vulcan Minerals In Vulcan Investcan F Robinsons, NL Red Brook 2 Undefined Red Brook Newfoundland Canada ADW 2009-116-03-01 Cased for Gas	-		
5	Hole Type: Ver Latitude: 347345 m(NAD 27) 70125 m (NAD 27)	tical	Fault Indicator: Longitude:	
Bottom Hole Co-ordina	ites Latitude:		Longitude:	
N / S: E / W:				
Kelly Bu	round Elevation: ushing Elevation: Flange Elevation:	57.10 Kelly Bus 61.75	Reference: shing to Ground: Cut (-): Fill (+):	6.20 0.00
Total Depth Drille		Measured Depth 1,965.00True Vertical Depth 1,950.41		
101	al Depth Logger:	1,952.20	1,9	37.77
Miscellaneous Depths	Plugback Depth:	Wate	r Depth Referenc	
	Sidetrack Depth:		Water Dept	h:
	Sidetrack Depth: oneham # 11 ec 5, 2009 @ 23:00		d Date: Oct 21	, 2009 @ 00:00
Drilling Contractor: St Rig Release Date: De	oneham # 11	Spu	d Date: Oct 21	, 2009 @ 00:00
Drilling Contractor: St Rig Release Date: De Cores # Formation	oneham # 11	Spu Total Dept	d Date: Oct 21 h Date: Nov 23	, 2009 @ 00:00 , 2009 @ 10:30
Drilling Contractor: St Rig Release Date: De Cores # Formation	oneham # 11	Spu Total Dept Interval	d Date: Oct 21 h Date: Nov 23	, 2009 @ 00:00 , 2009 @ 10:30
Drilling Contractor: St Rig Release Date: De Cores # Formation Casing Summary	oneham # 11 ec 5, 2009 @ 23:00	Spu Total Dept Interval Lande	d Date: Oct 21 h Date: Nov 23 Cut	, 2009 @ 00:00 5, 2009 @ 10:30 Recovered %
Drilling Contractor: St Rig Release Date: De Cores # Formation Casing Summary Casing Type	oneham # 11 ec 5, 2009 @ 23:00 Casing Size	Spu Total Dept Interval Lande	d Date: Oct 21 h Date: Nov 23 Cut d Depth	, 2009 @ 00:00 , 2009 @ 10:30 Recovered % Hole Size

Vulcan Minerals Inc. UWI Red Brook 2

Vulcan Investcan Red Brook 2 Robinsons, NL Page 2-1

Logging Sum	nmary		
Company	Engineer	Total Depth (MD)	Logging tools
Baker Hughes	Demriti Shkolnikov	889.00	Duel Laterlog-Gamma Ray-Caliper DLL-GR (883.9-220 m)
			Conpensated Z-Densilog-Compensated Neutron-Gamma Ray-XY Caliper ZDL-CN-GR-XY Cal (888 - 20.0
			Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 m
	J.House / R. Neupa	1,965.00	Zero Offset Vertical Seismic Profile / Gamma VSP 1955 - 885 (Surface Casing)
			Formation Tester FMT
			Rotary Sidewall Coring RCOR / GR 1945 - 890 Cut 31 cores / Rec 31 cores
			STAR DIP / IMAGER 1950 - 885 m
			Cross-Multipole Array AcousticLog / Gamma Ray / Caliper XMAC-GR / DSI 1952.0 - 800 m
			Compentated Z-Densilog / Compensated Newtron / Induction / Gamma Ray / XY Cal HDIL-GR(DSL)-ZDL-CN-CCAL 1956.7 - 885 m

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Oct 21, 09	55.00		6.00		Spud Well 00:00 hrs Oct 21, 2009 Drill 432 mm Surface hole from 17 meters. Drill through to morning at 55 m
Oct 22, 09	173.00	118.00	20.00	5.9	Drill ahead 432 mm Surface hole 22:00 hrs - 154 m POOH for wiper trip, change BHA, RIH MD = 154 m 00:30 hrs - Wash clean 140-154 m 00:45 hrs - Drill - ream 154 - 173 m 07:00 hrs - Lost Circulation
Oct 23, 09	212.00	39.00	11.50	3.4	07:00 hrs - Lost Circ, Pipe stuck apx 1hr from gravel falling in, Pull free and POOH, RIH open ended with pipe and spot 4 m3 high vis sawdust pill. 12:30 hrs - Pick up bit - RIH 14:30 hrs - Wash 121 - 173 m 15:30 hrs - Drill ahead from 173 m MD = 202 m 03:00 hrs - 212 m, Circ and Condition
Oct 24, 09	212.00	0.00	0.00	0.0	Circ and Condition Mud 08:15 hrs - POOH 11:00 hrs - Wiper trip 16:00 hrs - Wait on Casing to arrive to rig MD = 212 m Wait on Casing
Oct 25, 09	212.00	0.00	0.00	0.0	Wait on Casing to arrive from Mainland
Oct 26, 09	215.00	3.00	0.70	4.3	Wait on Casing MD = 212 m 04:00 hrs - RIH with bit 05:00 hrs - Unload Casing and Strap for TD 06:15 hrs - Drill ahead 432 mm Surface hole to casing depth
Oct 27, 09	220.00	5.00	1.50	3.3	Drill 215-220 m, Circ and condition hole prior to Csg 08:30 hrs - POOH for Csg 13:30 hrs - Run 340 mm H-90 Casing, Trouble screwing together casing - Weld several Joints as required. RIH 147 m - Unable to push Casing into hole - Work Casing (tight from 100 m) MD = 220 m 01:00 hrs - POOH / 340 mm Csg - Cut welds on Casing joints to POOH 05:30 hrs - RIH with bit - 8 inch collar, Wash and circ to bottom 08:00 hrs - Circ and condition hole prior to second Casing attempt.

Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Oct 28, 09	220.00	0.00	0.00	0.0	RIH - Clean out trip 08:30 - POOH to 100 m 09:00 hrs - Wash and ream back to bottom 12:00 hrs - POOH for Casing 14:30 hrs - Run 340 mm Surface Casing 20:00 hrs - Spot pill at 171 m, RIH 22:30 hrs - On Bottom with Casing - circulate MD = 220 m, Cement Casing 01:00 hrs - WOC 02:30 hrs - Cut casing - pressure test manifold 07:00 hrs - Weld Bowl - Pressure test surface equiptment
Oct 29, 09	220.00	0.00	0.00	0.0	WOC 09:30 hrs - Cut casing to remove diverter 13:00 hrs - Cut Casing to height - prep and Weld on Bowl 17:00 hrs - Allow bowl to cool to 100F. MD = 220 m Nipple up - Build BOP's 08:00 hrs - Complete install of BOP's.
Oct 30, 09	220.00	0.00	0.00	0.0	08:00 hrs - Complete install of BOP's 11:00 hrs - Pressure test accumultor 12:30 hrs - Start pressure testing BOP's 23:00 hrs - Finish Pressure testing BOP's - Install Wear Bushing MD = 220 m Install Flow T - Line 04:00 hrs - Make up Stab - Bit - BHA + RIH 07:00 hrs - Wait on Accumulator Tech from Alberta for Rig repair.
Oct 31, 09	229.00	9.00	1.00	9.0	Wait on Tech to arrive from Calgary MD = 220 m 02:00 hrs - Tech on location - re set / correct programing ? computer on accumulators 04:30 hrs - Tag Float - Drill out Cement 06:15 hrs - Drill out Shoe - Drill ahead 311 mm Int Hole 07:30 hrs - Circ for Leakoff test @ 229 m 08:00 hrs - FIT @ 2000 kPa surface pressure

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 1, 09	257.00	28.00	4.00	7.0	FIT 08:30 Drill ahead 311 Int Hole 10:00 hrs - 242 m - Lost Circ at apx 239 meters (No Returns) Mix LCM Plug - Top Fill, Mix 2nd LCM plug - Top Fill 13:45 hrs - POOH and RIH Hole open ended with pipe 18:20 hrs - Pump 6 m3 Cement 17:25 hrs - WOC MD = 242 m 01:30 hrs - Make up PDC Bit - RIH 02:00 hrs - Circ and Condition 03:30 hrs - Tag Cmt 229.5 m - Drill cmt 04:15 hrs - Drill ahead from 242 m
Nov 2, 09	287.00	30.00	4.50	6.7	Drill ahead 311 mm hole in Anhydrite ? 11:45 hrs - 284 m - Lost Circ at 283 m, No Returns, Pump 2 LCM Pills. Drill Blind 284 - 286 m, POOH 14:00 hrs - RIH Open ended - Wait on Cement truck 17:00 hrs - Pump 6 m3 cement plug with LCM (no returns) @ 286 m 17:30 - WOC MD = 284 m 01:00 hrs - RIH / bit 02:45 hrs - Hit cmt apx 280 m, drill hard cmt, lost Circ after Cmt at 286 m, drill blind 286-290 m, Pump LCM Pill, POOH 07:00 hrs - RIH open ended and wait on Cmt Truck

Daily Drilling Summary

Date	Depth	Progress	Rotating	Avg.	Daily Operational Summary
			Hours	<u>P.R.</u>	
Nov 3, 09	294.00	7.00	1.00	7.0	07:00 hrs - Wait on Cement Truck 08:30 hrs - Pump 6m3 Cement Plug at 290 m 09:00 hrs - WOC 15:00 hrs - RIH with bit 16:15 hrs - Drill cement from 285 m? 16:45 hrs - Drill ahead - Lost Circ below cmt, Drill blind 290-294 m 17:15 hrs - POOH - Wait on Cmt Truck, RIH open ended 21:00 hrs - Pump 6 m3 cement 21:30 hrs - POOH - WOC MD = 294 m RIH - Tag cmt at 273 m 05:45 hrs - Drill cmt from 273 m (Out of Pill Tank only) 07:20 hrs - Lost Circ in Cement plug # 2 286 -288 m. 08:00 hrs - Confirm depth - Start transfer of water to rig for drilling
Nov 4, 09	303.00	9.00	0.70	12.9	

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 5, 09	303.00	0.00	0.00	0.0	Pump LCM Slug, POOH and Wait on Cement Truck 11:30 hrs - Pump 6 m3 Cmt plug 12:00 hrs - POOH - WOC 18:00 hrs - RIH / Bit - Tag cmt @ 273 m - drill cmt to 289 m 21:40 hrs - Losses - Pos green Cmt ? - WOC MD = 303 m, Mix LCM Pill 00:30 hrs - Drill 289-291 m, No returns, Build volumn in tanks, Drill 291-295 m 02:30 hrs - Lost 17 m 3, POOH, Wait on BJ Cementers, RIH Open ended 04:30 hrs - Cement 8m3 Plug #6 with BJ Cementers 05:00 hrs - WOC, POOH
Nov 6, 09	322.00	19.00	2.00	9.5	WOC 11:45 hrs - RIH - Tag Cmt top at 280 m, Drill Cmt 280-303 m full Rtns. Drill from 303-305 m and make Cnx. 15:00 hrs - Drill with losses after cnx, 305-313 m - No Rtns, Pump LCM Slug and Trip Bit - RIH open ended 19:30 hrs - Pump 8m3 cmt / BJ 20:00 hrs - WOC MD = 313 m 01:30 hrs - Make up Bit - RIH, Tag Cmt Top at 273 m, Drill Cmt 273 - 283 m, Drill Hard Cmt 283 - 288 m, No Cmt - some stringers from 288 - 313 m 05:00 hrs - Drill 313 - 319 m 06:00 hrs - Cnx at 319 m, Drill ahead and Lost Circ after cnx, Drill No Rtns 319 - 322 m 07:00 hrs - POOH for Cmt Plug - RIH Open Ended
Nov 7, 09	322.00	0.00	0.00	0.0	RIH, Wait on BJ, Safety Meeting prior to cementing, Wait on BJ Repairs 11:00 hrs - Pump 4 m3 Cmt Plug # 8 / Pipe at 287 m 11:30 hrs - WOC 17:00 hrs - RIH / bit - No Rtns, Top of Cmt Stringers at 283 m, No Rtns 19:45 hrs - POOH and RIH open ended to 287 m 22:15 hrs - Pump 7m3 Cmt Plug # 9 22:30 hrs - POOH / WOC MD = 322 m 08:00 hrs - WOC - RIH with bit.

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 8, 09	545.00	223.00	14.00		RIH / WOC 10:30 hrs - Tag cement 269 m and drill solid Cement to 288 m, Drill and wash to bottom 13:45 hrs - Drill ahead formation from 322 m (No Losses) MD = 449 m Drill through to morning. Massive salt at shakers.
Nov 9, 09	864.00	319.00	22.00	14.5	Drill ahead in Salt at apx 25 m/hr MD = 835 m Drill through to morning in Anhydrite at apx 4 m/hr
Nov 10, 09	889.00	25.00	6.00	4.2	Drill ahead 311 mm Int Hole 12:45 hrs - 881 m, Circ and check samples 14:15 hrs - 889 m, Casing Point, Circ and POOH for Wiper 18:15 hrs - Circ on Bottom, Raise Vis for Logging 21:00 hrs - POOH for Logging, Lay down DC's - Stabs. MD = 889 m 01:00 hrs - Rig to and Log # 1 (DSI-XMAC-GR) 05:45 hrs - Rig to and Log # 2 (ZDL-CN-GR-XY Cal) 07:00 hrs - Completing Run # 2
Nov 11, 09	889.00	0.00	0.00	0.0	
Nov 12, 09	889.00	0.00	0.00	0.0	07:00 hrs - Install Seal Assembly. tighten and Pressure Test 11:00 hrs - Set up / Pressure test 23:00 hrs - RIH with Drill pipe used to cement plugs MD = 889 m 05:30 hrs - Make up BHA - RIH
Nov 13, 09	899.50	10.50	4.90	2.1	Make up BHA - RIH, Slip and cut, etc, Drill out shoe - cmt 14:45 hrs - Drill out 216 main hole 16:30 hrs - 892 m, FIT 17:15 hrs - Drill ahead 20:00 hrs - 889.5 m, 1.5 m drill break, Flow Check - well not static, Circ out influx, NGTS 22:15 hrs - Shut in well - mix barite MD = 889.5 m Continue to mix barite and check well (not static)
Nov 14, 09	990.00	90.50	11.00	8.2	Increase MW = 1200 kg/m3 10:35 hrs - Well Static, POOH for BHA 15:00 hrs - Pick up new BHA, PDC - Stabs, RIH 18:45 hrs - Drill ahead 216 mm Main hole / PDC MD = 949 m Drill through to morning

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 15, 09	1,129.00	139.00	22.00	6.3	Drill ahead last 24 hours MD = 1094 m Drill through to morning
Nov 16, 09	1,255.00	126.00	22.00	5.7	Drill ahead last 24 hours MD = 1216 m Drill through to morning at apx 6 m/hr
Nov 17, 09	1,415.00	160.00	22.00	7.3	Drill ahead last 24 hours MD = 1360 Drill through to morning at apx 8 m/hr
Nov 18, 09	1,547.00	132.00	22.00	6.0	Drill ahead last 24 hours MD = 1516 m Drill through to morning
Nov 19, 09	1,750.00	203.00	21.00	9.7	Drill ahead 216 mm Main hole MD = 1672 m Drill through cln SS at apx 15 m/hr 05:30 hrs - 1750 m Possible plugged nozzel - ROP dropped to zero Circ 06:45 hrs - POOH to check PDC.
Nov 20, 09	1,776.00	26.00	8.50	3.1	POOH 09:15 hrs - Bit at 1200 m, Well bore not taking enough fluid, RIH and Circ BU - TG = 158 u 12:00 hrs - Well Static, POOH for Bit, (PDC Cored out) - RIH / Tricone 22:30 hrs - Drill ahead 216 mm hole / Tricone MD = 1753 m 08:00 hrs - 1776 m - POOH to pick up PDC due to poor ROP at 2 m/hr in Redbeds.
Nov 21, 09	1,862.00	86.00	10.00	8.6	POOH / Tricone and RIH with PDC to drill up Redbeds 20:30 hrs - Drill ahead 216 mm main hole at apx 10 m/hr TG = 839 units (early) MD = 1808 m Drill through to morning
Nov 22, 09	1,935.00	73.00	22.00	3.3	Drill ahead last 24 hours MD = 1921 m Drill through to morning, slowing down to 1.3 m/hr Circ to POOH
Nov 23, 09	1,960.00	25.00	13.00	1.9	07:30 hrs - POOH / PDC and RIH with Tricone 16:30 hrs - Drill ahead with Tricone MD = 1949 m Drill through to morning at apx 1.5 m/hr in Granite Basement

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 24, 09	1,965.00	5.00	3.00	1.7	Drill ahead 10:30 hrs FTD well 1965 meters. Circ and Condition - Incr MW from 1220 to 1240 kg for tripping. 15:30 hrs - POOH and Lay out BHA 20:00 hrs - Wait on Loggers 23:00 hrs - Pressure Test MD = 1965 m 07:00 hrs - Wait on Loggers - Pressure test
Nov 25, 09	1,965.00	0.00	0.00	0.0	Pressure test / Wait on Loggers RIH to shoe / Wait on Loggers 23:30 hrs - RIH and Circ, TG = 29 u (MW = 1240) 03:00 hrs - POOH 08:00 hrs - OOH, Wait on Loggers
Nov 26, 09	1,965.00	0.00	0.00	0.0	Wait on Loggers 11:00 hrs - Rig up Loggers RUN #1 - HDIL-GR-CN-ZDL-XY Cal 17:45 hrs - RUN #2 - DSI-XMAC MD = 1965 m 00:15 hrs - RUN #3 - STAR / DIP IMAGER
Nov 27, 09	1,965.00	0.00	0.00	0.0	07:00 hrs - Run # 3 STAR/DIP IMAGER (Picture image) 12:00 hrs - Run # 4 RCOR (Sidewall Cores) MD = 1965 02:00 hrs - Recover Cores 02:30 hrs - Run # 5 FMT (Pressure Tester
Nov 28, 09	1,965.00	0.00	0.00	0.0	02:00 hrs - Recover Sidewall cores 02:30 hrs - Run # 5 - FMT 16:00 hrs - Run # 6 - VSP MD = 1965 m 02:00 hrs - Logging Completed - (63 hrs total) 02:30 hrs - RIH for cleanout 07:00 hrs - Circ on Bottom prior to DST's
Nov 29, 09	1,965.00	0.00	0.00	0.0	Circ and Condition on bottom after logging 09:00 hrs - POOH 13:30 hrs - Rig in Tester and Make up DST # 1 21:46 hrs - DST # 1 (1555-1574 m) 00:30 hrs - Final Shut in (6 hours) 06:30 hrs - Unseat Packer and POOH / DST #1

Daily Drilling Summary

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Nov 30, 09	1,965.00	0.00	0.00	0.0	07:00 hrs - POOH with DST # 1 10:30 hrs - Recover fluid and samples from bottom hole sampler Service and break down tools 13:00 hrs - DST # 2 - RIH tailpipe, Make up test interval and RIH 19:00 hrs - DST # 2 Initial Preflow - Valve open 21:40 hrs - Final Shut In MD = 1965 m 03:40 hrs - Un Seat packer and POOH 07:30 hrs - Recover fluid and sample from Bottom hole sampler
Dec 1, 09	1,965.00	0.00	0.00	0.0	DST#2 Handle test tools and recover fluid 10:00 hrs - DST # 3 Make up tools - load recorders 11:30 hrs - DST# 3 Interval increased - Re make up test tools and load recorders, RIH 17:35 hrs - DST # 3 Open Valve 20:45 hrs - DST # 3 Open Valve 20:45 hrs - Final Shut in MD = 1965 m 02:45 hrs - Unseat DST#3 and POOH 06:30 hrs - Recover fluids and down load recorders 07:30 hrs - DST # 4 - make up tools
Dec 2, 09	1,965.00	0.00	0.00	0.0	Make up DST # 4 10:15 hrs - RIH with DST # 4 13:48 hrs - Open Valve - Preflow 16:30 hrs - Final Shut in 22:45 hrs - Unseat Packer - POOH with DST # 4 MD = 1965 m 03:00 hrs - Recover fluid and download recorders 05:00 hrs - RIH 26 stnd pipe 06:00 hrs - Make up DST # 5, Load recorders 08:00 hrs - RIH DST #5
Dec 3, 09	1,965.00	0.00	0.00	0.0	RIH for DST#5 (880-908 m) 11:04 hrs - Open Valve for DST #5 14:45 hrs - Final Shut in 20:45 hrs - Unseat packers and POOH wet (830 m fluid in pipe) MD = 1965 m 01:45 hrs - Handle test tools, download recorders, service and clean, Lay down Test tools 05:00 hrs - POOH tail pipe 07:00 hrs - Make up Bit / BHA - RIH for Cleanout prior to Casing.

Daily Drilling Summary

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Dec 4, 09	1,965.00		0.00	0.0	RIH for Cleanout Circ at 945 m, 1392 m, 1652m, 1965 m 15:30 hrs - Circ on Bottom 19:00 hrs - POOH Sideways fro Casing MD = 1965 m 02:00 hrs - Rig to run 177.8 mm Casing
Dec 5, 09	1,965.00		0.00	0.0	Run 177.8 mm Casing 16:30 hrs - Circ Casing on Bottom 18:45 hrs - Cement Casing 21:00 hrs - WOC (Start cleaning tanks - etc) MD = 1965 m Tear out Rig

Casing Type	Casing Size	Casing Landed @	Hole Size
Surface	339.7	220.20	432.0
Intermediate	244.5	884.65	311.0
Production	177.8	1,947.00	216.0

Bit #	Make	Туре	Size	Depth In	Depth	Made	Hours	Avg.		I.A.D.C. Bit Condition							
				-	Out			P.	Ι	0	MDC	Loc	В	G	ODC	RP1	RP2
1	Reed	17T11	432.0	17.0	220.0	203.0	37.75	5.38									
2	Hughes	GT-CS1	311.0	220.0	242.0	22.0	2.50	8.80									
3	Hughes	TN1593	311.0	242.0	889.0	647.0	53.50	12.09	0	0	NO	А	0		NO	LOG	
4	Hughes	GX-30DX	216.0	889.0	899.0	10.0	4.25	2.35	0	0	NO	А	0		NO	BHA	
5	Hughes	HCD506Z	216.0	899.0	1,750.0	851.0	117.75	7.23	8	3	CR	Ν	0		CC	PR	
RR4	Hughes	GX-30DX	216.0	1,750.0	1,776.0	26.0	7.50	3.47	1	1	NO	А	0		NO	PR	
6	Hughes	HC505ZX	216.0	1,776.0	1,935.0	159.0	32.75	4.85	1	3	СТ	Т	0		СТ	PR	
7rr	Hughes	GX30DX	216.0	1,935.0	1,965.0	30.0	16.00	1.88	2	1							

** For more detailed Bit Information refer to Bit Record **

Total Rotating Hours: 272.00

Logging Suite Number: Wireline Logging Company: District: Witness:	1 Baker Hughes Sarnia Michael SMith		Engineer: Unit Number:	Demriti S 4126	Shkolnikov
Was Pressure Control Equipm Was the Logging Job Mechan		No No	Maximum Devi Hole Size:	ation:	6.800 ° 311.0
Total Lost Time: Loggers' Total Down Time: Total Job Time (From Rig up t	o Rig down):	0.00 0.00 11.00			

	Measured Depth	True Vertical Depth
Casing Depth Driller	220.20	220.20
Casing Depth Logger	220.20	220.20
Total Depth Driller (Tally)	889.00	889.00
Total Depth Driller (Strap or SLM)		

General Remarks: 3 runs required No Problems Good fast smooth job. Good Crews Logging Run #: 1 Date: Nov 9, 2009

Mud Resistivity (Rm): 0.07 @ 21.0° Mud Resistivity (Rm): 0.07 @ 19.9° Maximum Temperature: 19.9° Mud Filtrate Resistivity (Rmf): 0.06 @ 21.0° Source (Rmf): Calculated Mud Cake Resistivity (Rmc): 0.08 @ 21.0° Source (Rmc): Calculated Logging Run Information Nov 10, 2009 Source (Rmc): Calculated Logging Tools: Nov 10, 2009 880.90 (MD) 880.90 (TVD) Logging Tools: Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 m Mod Calculated Hole Conditions: Excellent	Drilling Fluid Type Fluid Density:	: Sat Salt Po 1240.0	ly Viscosit	y:	69	pH:	10.8	Fluid Loss:	18.4		
Mud Filtrate Resistivity (Rmf): 0.06 @ 21.0 ° Source (Rmf): Calculated Mud Cake Resistivity (Rmc): 0.08 @ 21.0 ° Source (Rmc): Calculated Logging Run Information Date on Bottom: Nov 10, 2009 Total Depth Logger: 880.90 (MD) 880.90 (TVD) Logging Tools: Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 m Remarks: No Problems (4.75 hrs)				-		M	.				
Mud Cake Resistivity (Rmc): 0.08 21.0° Source (Rmc): Calculated Logging Run Information Date on Bottom: Nov 10, 2009 Total Depth Logger: 880.90 (MD) 880.90 (TVD) Logging Tools: Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 m Remarks: No Problems (4.75 hrs)				-			•				
Logging Run Information Date on Bottom: Nov 10, 2009 Total Depth Logger: 880.90 (MD) 880.90 (TVD) Logging Tools: Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 m Remarks: No Problems (4.75 hrs.)		,	0.06	@	21.0 °	Sourc	ce (Rmf):	Calculated			
Date on Bottom:Nov 10, 2009Total Depth Logger:880.90 (MD)880.90 (TVD)Logging Tools:Cross Multipole Array Acoustilog - Gamma Ray- Digital Sprectalog-Cal XMAC-DSI-GR 220-881 mRemarks:No Problems (4.75 hrs)	Mud Cake Resistiv	/ity (Rmc):	0.08	@	21.0 °	Sourc	ce (Rmc):	Calculated			
XMAC-DSI-GR220-881 mRemarks:No Problems (4.75 hrs)	Date on Bottom: Nov 10, 2009										
	Logging Tools:		•		og - Gamm	a Ray- Dig	ital Sprecta	log-Cal			
Hole Conditions: Excellent	Remarks:	No Problems (No Problems (4.75 hrs)								
	Hole Conditions:	Excellent									

Logging Run #: 2 Date: Nov 9, 2009

Drilling Fluid Type Fluid Density:	e: Sat Salt Po 1240.0	ly Viscosit	y:	69	pH:	10.8	Fluid Loss:	18.4		
Mud Resistivity (R Mud Resistivity (R	•	0.07 0.07	@ @	21.0 º 19.1 º	Mavir	num Temp	erature: 19.9 °			
Mud Resistivity (N Mud Filtrate Resist Mud Cake Resistiv	stivity (Rmf):	0.06 0.08	@ @ @	21.0 ° 21.0 °	Sourc	ce (Rmf): ce (Rmc):	Calculated Caculated			
Logging Run Information										
Date on Bottom: Total Depth Logge	Nov 10, 200 887.70 (I	09 MD)		887.70	(TVD)					
Logging Tools:	Conpensated 2 ZDL-CN-GR-X	•			leutron-Ga	mma Ray-≻	(Y Caliper			
Remarks:	No Problems (No Problems (2.25 hrs)								
Hole Conditions:	: Excellent									

Logging Run #: 3 Date: Nov 9, 2009

Drilling Fluid Type:	• •							
Fluid Density:	1240.0	Viscosi	ty:	69	pH:	10.8	Fluid Loss:	18.4
		0.07		04.0.0				
Mud Resistivity (Rr	n):	0.07	@	21.0 °				
Mud Resistivity (Rm) @ BHT:		0.07	@	19.9 °	Maxir	erature: 19.9 °		
Mud Filtrate Resist	ivity (Rmf):	0.06	@	21.0 °	Sourc	ce (Rmf):	Calculated	
Mud Cake Resistivi	ity (Rmc):	0.08	@	21.0 °	Sourc	ce (Rmc):	Calculated	
Logging Run Inf Date on Bottom: Total Depth Logger	Nov 10, 20 883.90 (09 MD)		883.90	(TVD)			
	Duel Laterlog- DLL-GR (883		y-Ca	liper				
Remarks:	No Problems (2.75 hrs)							
Hole Conditions:	Excellent							

Logging Suite Number: Wireline Logging Company: District: Witness:	2 Baker Hughes OH Nisku Michael Smith		Engineer: Unit Number:	J.House / I E6555	R. Neupane
Was Pressure Control Equipment Utilized: Was the Logging Job Mechanically Assisted:		No No	Maximum Dev Hole Size:	ation:	9.000 ° 216.0
Total Lost Time: Loggers' Total Down Time: Total Job Time (From Rig up t	o Rig down):	0.00 0.00 63.00			

	Measured Depth	True Vertical Depth
Casing Depth Driller	884.60	884.60
Casing Depth Logger	885.00	885.00
Total Depth Driller (Tally)	1,965.00	1,950.41
Total Depth Driller (Strap or SLM)		

General Remarks: 6 Runs Total No Hole Problems No Tool Problems 9 hours between FMT - VSP Logs to improve access to Water Pit for VSP.. Great Crews Logging Run #: 1 Date: Nov 25, 2009

Drilling Fluid Data

Drilling Fluid Type	e: Polymer V	Vater Based						
Fluid Density:	1260.0	Viscosi	t y:	80	pH:	11.2	Fluid Loss:	4.8
Mud Desistivity (D	(ma).	0.30	@	23.4 °				
Mud Resistivity (R			-					
Mud Resistivity (R	(m) @ BHT:	0.30	@	23.4 °	Maxim	num Tempe	rature: 23.5 °	
Mud Filtrate Resis	tivity (Rmf):	0.24	@	23.4 °	Sourc	e (Rmf):	calculated	
Mud Cake Resistiv	vity (Rmc):	0.36	@	23.4 °	Sourc	e (Rmc):	calculated	
Logging Run Information								
Date on Bottom:		Nov 25, 200	29					
Total Depth Logge	er:	1,952.20 (MD)		1,952.20	(TVD)		
Logging Tools:	Compentated Z-Densilog / Compensated Newtron / Induction / Gamma Ray / XY Cal HDIL-GR(DSL)-ZDL-CN-CCAL 1956.7 - 885 m							
Remarks:	No Problems 7.75 hours for	• •		n bottom				

Hole Conditions: Excellent

Logging Run #: 2 Date: Nov 25, 2009

Drilling Fluid Type	e: Polymer						
Fluid Density:		Viscosity:		pH:	Fluid Loss:		
Mud Desistivity/F)	@	0				
Mud Resistivity (F	•						
Mud Resistivity (F	Rm) @ BHT:	@	0	Maximum Tempe	rature: ⁰		
Mud Filtrate Resis	stivity (Rmf):	@	0	Source (Rmf):			
Mud Cake Resisti	vity (Rmc):	@	0	Source (Rmc):			
				· · · ·			
Logging Run Ir	nformation						
Date on Bottom:		Nov 25, 2009					
Total Depth Logg	er:	(MD)		(TVD)			
Logging Tools:	XMAC-GR / D	Cross-Multipole Array AcousticLog / Gamma Ray / Caliper XMAC-GR / DSI 1952.0 - 800 m					
Remarks:	6.25 hours for	log					
Hole Conditions:	Excellent						

Logging Run #: 3 Date: Nov 25, 2009

Drilling Fluid Data

Drilling Fluid Type: Polymer Fluid Density:	Viscosity:		pH:	Fluid Loss:
Mud Resistivity (Rm): Mud Resistivity (Rm) @ BHT: Mud Filtrate Resistivity (Rmf): Mud Cake Resistivity (Rmc):	@ @ @	0 0 0	Maximum Temperatu Source (Rmf): Source (Rmc):	r e: 27.4 °
Logging Run Information				
Date on Bottom: Total Depth Logger:	Nov 26, 2009 1,950.00 (MD)		1,950.00 (TVD)	

Remarks: 12.0 hours for log

STAR DIP / IMAGER

1950 - 885 m

Hole Conditions: Excellent

Logging Tools:

Logging Run #: 4 Date: Nov 25, 2009

Drilling Fluid Type	e: Polymer						
Fluid Density:		Viscosity:		pH:	Fluid Loss:		
Mud Desistivity (D		0	0				
Mud Resistivity (R		@					
Mud Resistivity (R	(m) @ BHT:	@	0	Maximum Tempera	oture:		
Mud Filtrate Resis	tivity (Rmf):	@	0	Source (Rmf):			
Mud Cake Resistiv	vity (Rmc):	@	0	Source (Rmc):			
Logging Run Information							
Date on Bottom:		Nov 26, 2009					
Total Depth Logge	er:	(MD)		(TVD)			
Logging Tools:	Rotary Sidewall Coring RCOR / GR 1945 - 890 Cut 31 cores / Rec 31 cores						
Remarks:	14.5 hours for Logging Run						
Hole Conditions:	Excellent						

Logging Run #: 5 Date: 5 Nov 25, 2009

Drilling Fluid Type	e: Polymer				
Fluid Density:		Viscosity:		pH:	Fluid Loss:
Mud Resistivity (F	Rm):	@	o		
Mud Resistivity (F		@	0	Maximum Temp	erature: ⁰
Mud Filtrate Resis	stivity (Rmf):	@	0	Source (Rmf):	
Mud Cake Resisti	vity (Rmc):	@	0	Source (Rmc):	
Logging Run Ir Date on Bottom: Total Depth Logge		Nov 27, 2009 (MD)		(TVD)	
Logging Tools:	Formation Tes FMT	ster			
Remarks:	5 hours for Lo	g			
Hole Conditions:		le / good seats			

Logging Run #: 6 Date: Nov 25, 2009

Drilling Fluid Type	e: Polymer						
Fluid Density:		Viscosity:		pH:	Fluid Loss:		
Mud Resistivity (F	(m).	@	0				
Mud Resistivity (F	-	@	0	Maximum Tempe	orature: 0		
Mud Filtrate Resis	•	@	0	Source (Rmf):			
Mud Cake Resisti	• • •	@	0	Source (Rmc):			
	vity (itilic).						
Logging Run Information							
Date on Bottom:		Nov 27, 2009					
Total Depth Logge	er:	(MD)		(TVD)			
Logging Tools:	Zero Offset Vertical Seismic Profile / Gamma VSP 1955 - 885 (Surface Casing)						
Remarks:	2 Geo phones / GR 10.0 hours for Logging run.						
Hole Conditions:	Excellent						

<u>VULCAN INVESTCAN</u> <u>REDBROOK# 2</u>

DST REPORT

-For-



Compiled for

Patrick Laracy Vulcan Minerals Inc

-By-

Michael Smith JDS Consultants 403-589-4998

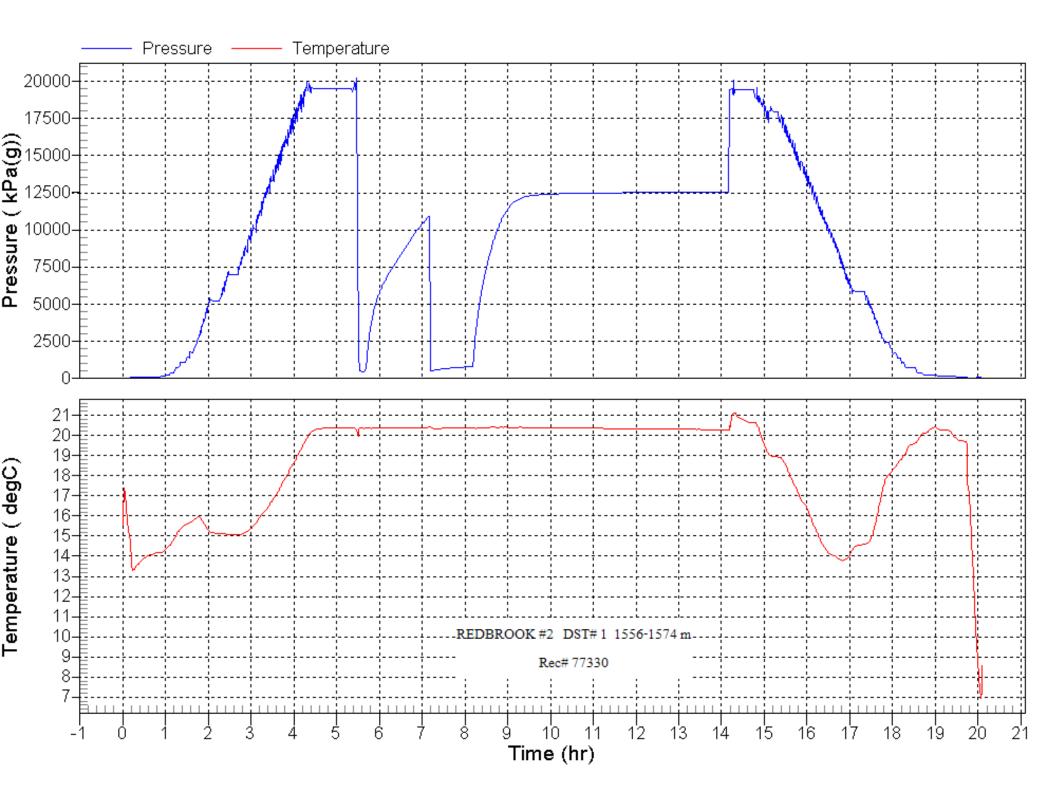
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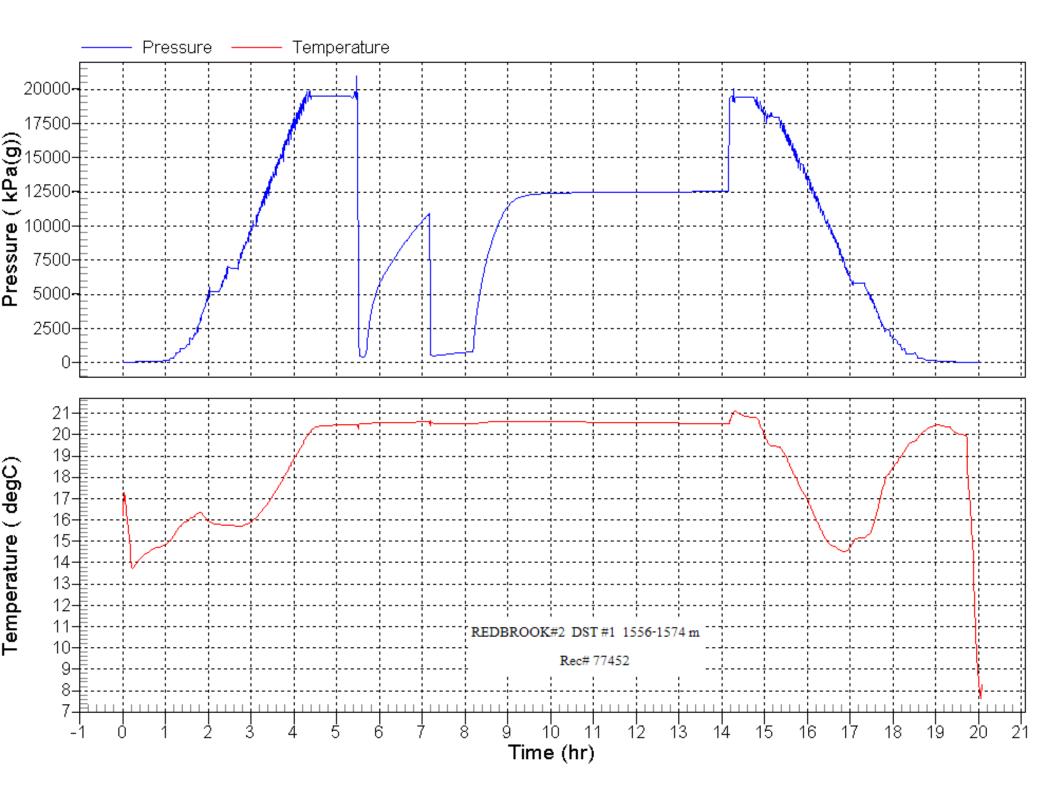
							-	
Run #: Test #: Test Company: Representative: Unit #: Test Type:	1 1 Holland Test Dale Holland Conventional		Clo: Rep	e: run: sed Chamber Co presentative: . Elevation:	mpany:	Nov 28, 2 n/a n/a 61.75	2009	
Formations Test	ed	From the: To the:		out Falls ?				
Test Interval: F		5.00 (MD) 5.00 (TVD)		1,574.00 (MD) 1,574.00 (TVD)	(19.00) (19.00)			
Total Depth:	1,965	5.00 (MD)		1,965.00 (TVD)	(At the	time of ti	he Test)	
String Configuration:Drill Pipe - Collars Recorder above tool Upper Packer Depth 1555.0 m Inside Recorder with 1.2 m perfs Lower Packer Depth 1574.1 m Recorder below Tool 391 meters Tail pipe to bottomDrilling Fluid Type and Properties:MW = 1265 VIS = 69 pH = 11.2 WL = 5.4 FC = 0.5 mmCushion Type / Amount:No Cushions								
Hole Condition: Bottom Hole Ter	nperature:	Excel 20.5 °		ol Chased Distand	ce:		Mud Drop:	0.0
Period	Intitial Pressure	Final Pressure	Times	Flow Descripti	on			
Initial Hydrostati	c 19,609.0							
Flow 1	396.0	433.0	10	Open for Prefl seconds. Stea			uff to bottom of p TS.	oail in 30
Shut-in 1	433.0	10,939.0	90					
Flow 2 Flow Details	423.0	742.0	60		GTS (Ga		ow immediately t ace) in 10 mins.	
Time / Pressu	re / Flow Rate	Measuremen	its	Choke Type	Orifice I	Diameter	Units of measu	irement
20 mins 11 kF 30 mins 19 kp 40 mins 35 kF 50 mins 50 kF 60 mins 65 kF	ba @ 4 deg - Pa @ 4 deg - Pa @ 4 deg -	71 m3/c 131 m3/c 182 m3/c 222 m3/c 257 m3/c	lay day day day	6" Pos	3.18		m³/day	
Flow Rate thro	uch Curfood M							

Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-1

Positive Choke with 8/64 inch (3.175 mm) inside diameter. 257 m3/day = 9 mcf / day						
Shut-in 2	742.0	12,506.0	360			
Final Hydro	ostatic	19,431.0				
Recovery: 54 meters Gasified Mud Fluid sample caught at 41, 13 and 1.5 meters above tool Analyses: Gas collected in Bottom Hole Sampler Cos Sample # ACAT 04001075 (Initial flow CTS) + ACAT 05003561(Bettem hole sampler)						
Remarks:	Gas Sample # AGAT 04001075 (Initial flow GTS) + AGAT 05003561(Bottom hole sampler) Remarks: Excellent Mechanical Test - No Problems Gas to Surface in 10 minutes after start if Initial Flow					

5 meters fill on bottom





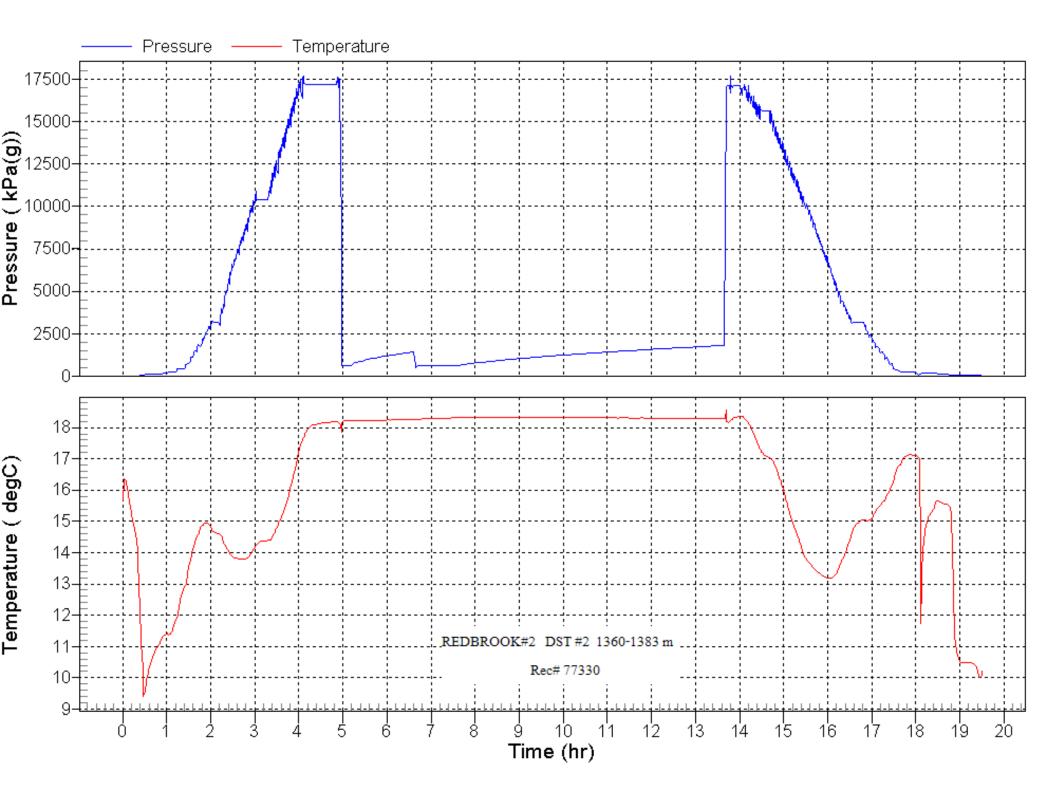
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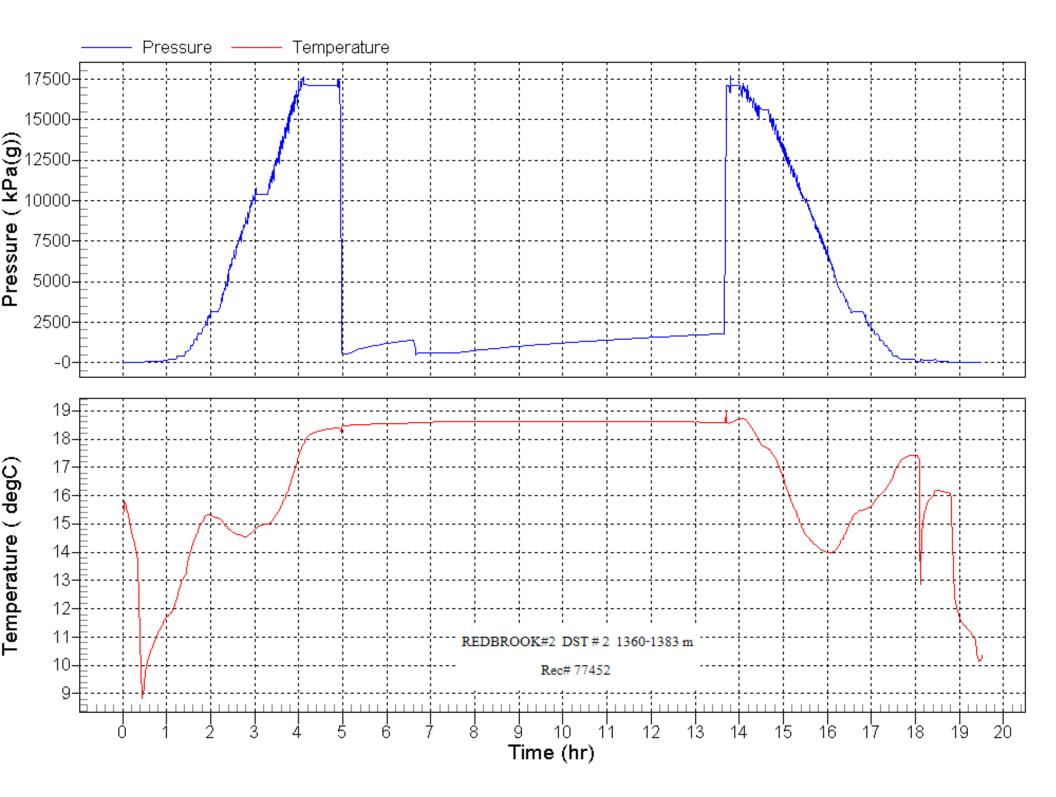
							orago orino:	
Run #: Test #: Test Company: Representative Unit #: Test Type:			Rep		ompany:	Nov 28, 20 n/a 61.75	009	
Formations Tes	sted	From the To the:		ut Falls				
· · · · · ·		.00 (MD) .00 (TVD)		1,383.00 (MD) 1,383.00 (TVD)	(23.00) (23.00)			
Total Depth:	1,965	.00 (MD)		1,965.00 (TVD)	(At the	e time of the	e Test)	
String Configur Drilling Fluid Ty Cushion Type / Hole Condition: Bottom Hole Te	/pe and Proper Amount:	Recc Uppe Insid Lowe Recc 582.4 ties: MW VIS = pH = WL = FC =	e Record er Packe order bel 4 meters = 1265 = 69 11.2 = 5.4 0.5 mm ushions llent	ove tool r Depth 1359.2 n der with 5.18 m po r Depth 1382.6 m ow Tool Tail pipe to botto	erfs 1 om		Mud Drop:	0.0
Period	Intitial	Final	Times	Flow Descripti	ion		•	
i enou	Pressure	Pressure		i ion Doccupa				
Initial Hydrostat	tic 17,248.0							
Flow 1	559.0	564.0	10	Open for Prefl inches in bubb			ouff increasing tes.	to 8
Shut-in 1	564.0	1,414.0	90					
Flow 2 Flow Details	466.0	613.0	60		•		tial Puff increas inutes then slow	•
Time / Press	ure / Flow Rate	Measuremei	nts	Choke Type	Orifice	Diameter	Units of measu	urement
No GTS (Ga	s to Surface)							
Shut-in 2	613.0	1,788.0	360					

Vulcan Minerals Inc. UWI Red Brook 2

			•				
Final Hydro	ostatic 17,084.0						
Recovery:	27 meters Drilling Mud						
	Fluid samples caught at 13 m, 1.5 meters above tool.						
Analyses:	(1) Bottom hole Sampler (#05005092)						
Analyses.							

Remarks: Good Mechanical Test - No problems





Storage Units:	Metric

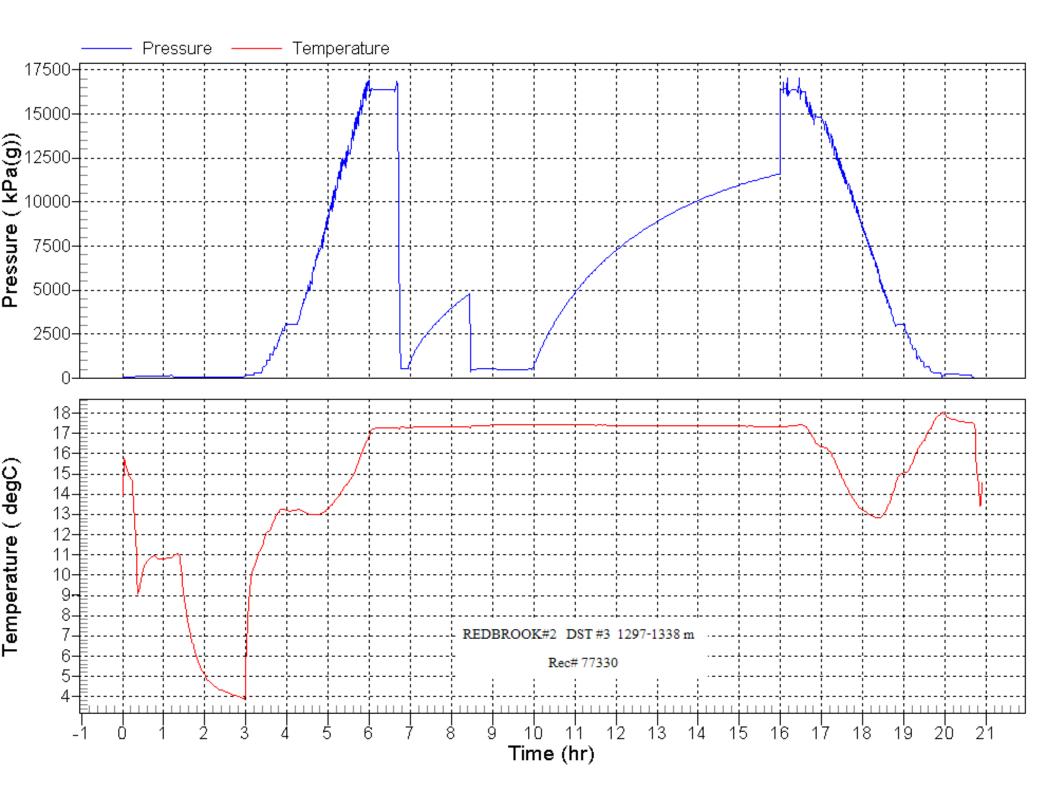
							torage office.	
Run #: Test #: Test Company: Representative: Unit #: Test Type:	3 1 Holland Teste Dale Holland Conventional		Clo Rep	e: srun: sed Chamber Co presentative: 5. Elevation:	mpany:	Nov 30, 2 n/a n/a 61.75	2009	
Formations Test	ed	From the: To the:	Spo	out Falls				
Test Interval: F F		00 (MD) 00 (TVD)	То: То:	1,338.00 (MD) 1,338.00 (TVD)	(41.00) (41.00)			
Total Depth:	1,965	.00 (MD)		1,965.00 (TVD)	(At the	time of ti	he Test)	
String Configura Drilling Fluid Typ Cushion Type / A Hole Condition: Bottom Hole Ter	be and Propert	Upper Inside Lower Recor 626.9	der ab Packe Recor Packe der be meters 1265 69 11.2 5.4 0.5 mm shion ent	ove tool er Depth 1297.2 m der with 9.45 m pe er Depth 1338.1 m low Tool s Tail pipe to botto	m		Mud Drop:	0.0
	•							0.0
Period	Intitial Pressure	Final Pressure	nmes	Flow Description	on			
Initial Hydrostation	c 16,525.0							
Flow 1	493.0	509.0	10	Open for Prefl 1 minute. Stea			puff to bottom o	of pail in
Shut-in 1	509.0	4,767.0	90					
Flow 2 Flow Details	341.0	476.0	90	pail immediate	ely decrea steady b	asing to we	nitial puff to botto eak initial blow. <i>A</i> ghout. Gas to Su	After 10
Time / Pressu	re / Flow Rate M	<i>Aeasurement</i>	ts	Choke Type	Orifice	Diameter	Units of measu	urement
80 mins 1.25 85 mins 2.74 90 mins 4.48	kPa @ 1 deg	35.8 m3/day		6" Pos.	3.18		m³/day	
Flow Rate thro Positive Choke				e				

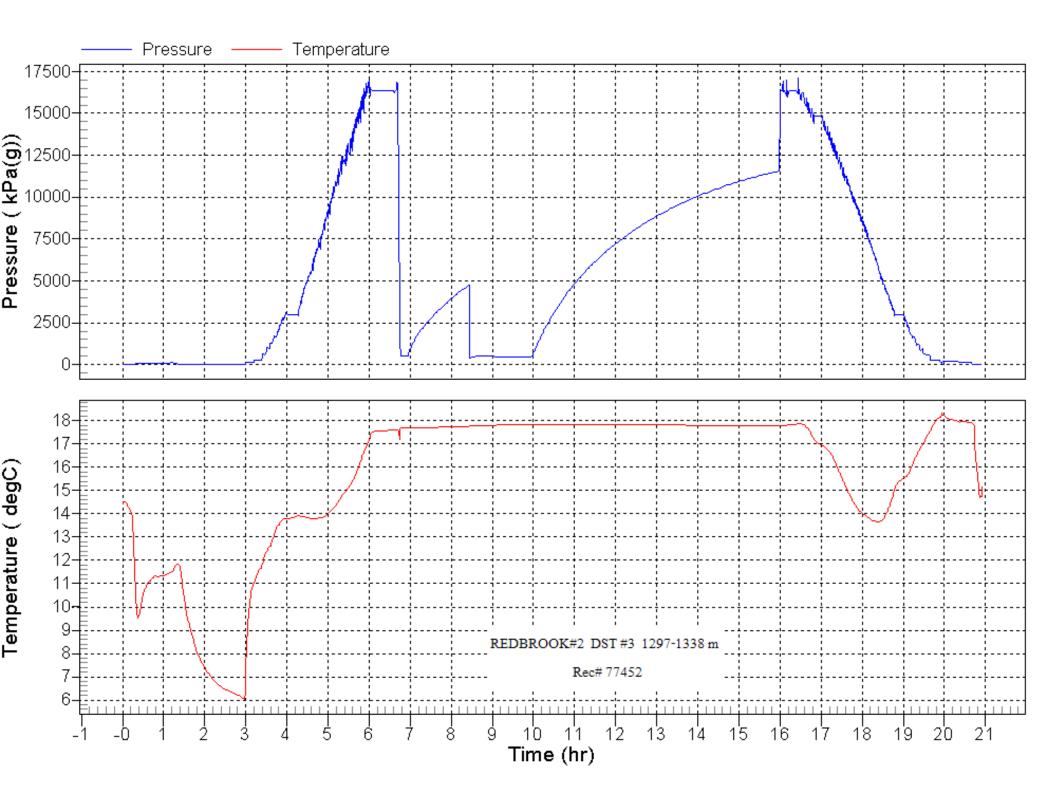
Vulcan Minerals Inc. UWI Red Brook 2

Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-5

diameter.						
Shut-in 2	476.0	11,562.0	360			
Flow Detail	S					
Time / Pres	sure / Flow Rate	Measureme	nts	Choke Type	Orifice Diameter	Units of measurement
	ntinuing to build Final Shut in sh			5		
Final Hydrosta	atic	16,411.0				
Recovery: 1	0 meters drilling	mud				
	luid sample cau as present in Bo				rs available to take	sample

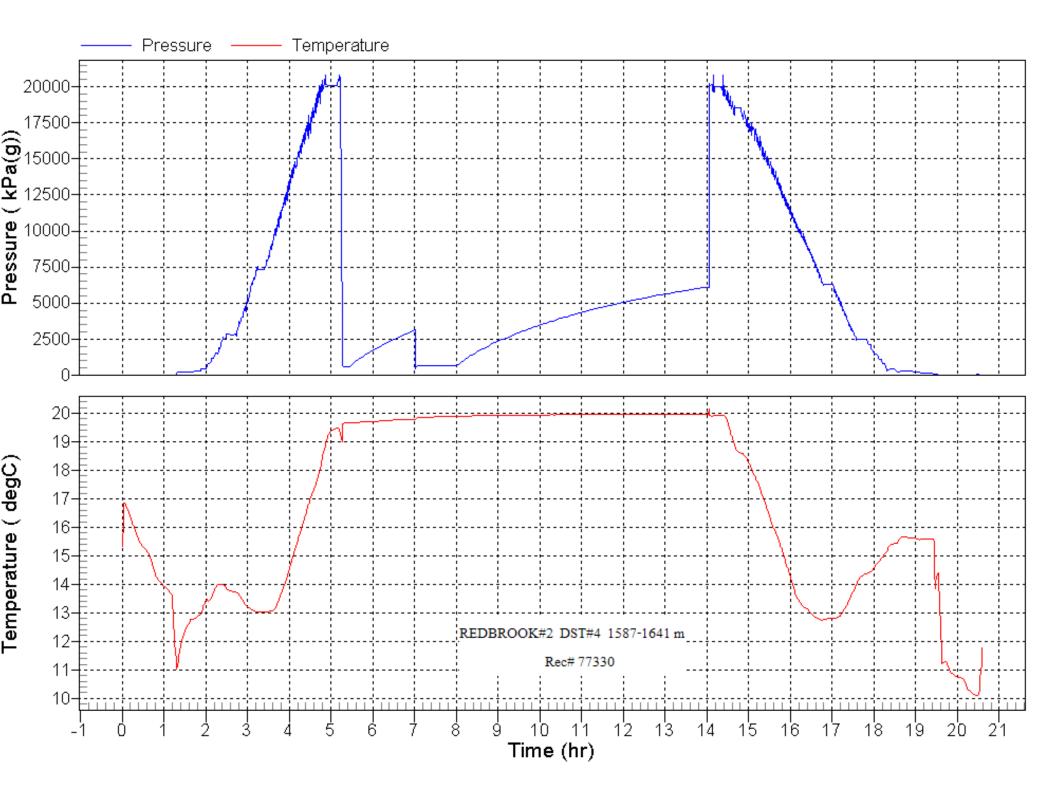
 Gas to Surface but no test cylinders available to take sample.
 Remarks: Good Sucessful Mechanical Test Indications at end of 60 minute main flow of potential gas to surface. Main flow extended to 90 minutes with Gas to Surface in 75 minutes. Charts indicate longer Shut In Required.

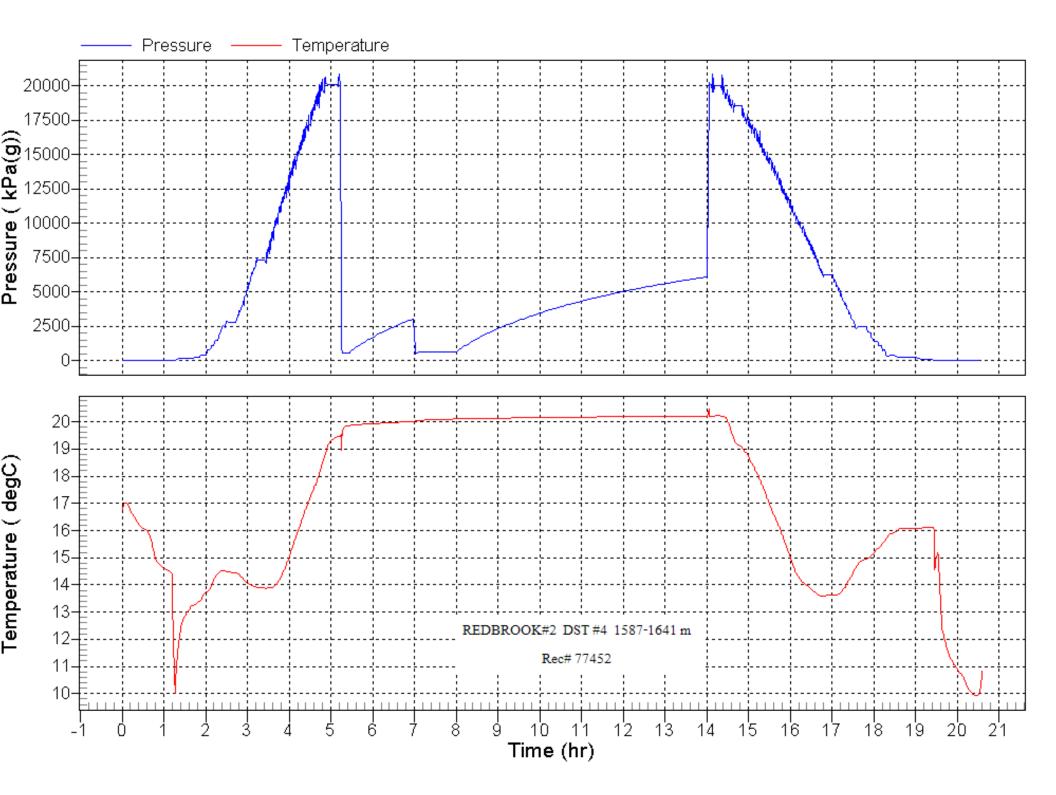




Storage	Units:	Metric

									storage offics.	
Run #: Test #: Test Compa Representa Unit #: Test Type:	tive:	4 1 Holland T Dale Holl Conventio		dle	Clo Rej	te: srun: osed Chamber Co oresentative: 3. Elevation:	mpany:	Dec 01, 2 n/a n/a 61.75	2009	
Formations	s Teste	ed		m the: the:		out Falls				
Test Interva			587.00 (587.00 (1	,	To: To:	1,641.00 (MD) 1,641.00 (TVD)	(54.00) (54.00)			
Total Depth	n:	1	,965.00 (MD)		1,965.00 (TVD)	(At the	time of t	he Test)	
Drilling Flui Cushion Ty Hole Condit Bottom Hole	vpe / An	mount:		Upper Inside Lower Recor 324.0 MW = VIS = PH = FC = 0 No Cu Excell	Packa Reco Packa der be meter 1265 69 11.2 5.4 0.5 mr ishion ent To	ol Chased Distan	erfs m m ce:		Mud Drop:	0.0
Period		Intitia Pressu		nal ssure	Times	Flow Descripti	on			
Initial Hydro	ostatic									
Flow 1		674.	0 54	45.0	10	On valve oper minutes, stead			bottom of pail ir as to surface.	n 3
Shut-in 1		545.	0 3,09	93.0	90					
Flow 2		380.	0 64	40.0	60	On valve oper			puff to bottom of	
									veak by 10 mins o surface.	, then
Shut-in 2		640.	0 6,0	97.0	360	20 seconds. D				, then
Shut-in 2 Final Hydro	ostatic	640.	0 6,09 19,90		360	20 seconds. D				, then





Storage Units: Metric

		וט		n rest kep	on	Storage Units:	Metric
Run #: Test #: Test Company: Representative: Unit #: Test Type:	5 1 Holland Test Dale Holland Conventiona	1	Repr		mpany:	Dec 02, 2009 n/a n/a 61.75	
Formations Teste	ed	From the To the:	=	ut Falls			
		2.00 (MD) 2.00 (TVD)	To: To:	908.00 (MD) 908.00 (TVD)	(36.00) (36.00)		
Total Depth:	1,96	5.00 (MD)	,	1,965.00 (TVD)	(At the	time of the Test)	
String Configurat Drilling Fluid Typ Cushion Type / A Hole Condition: Bottom Hole Tem	e and Prope mount:	Recc Uppe Insid Lowe Recc 1056 rties: MW VIS = pH = WL = FC =	e Record er Packer order belo .85 mete = 1265 = 69 11.2 = 5.4 0.5 mm Ilent T's in a r	ve tool Depth 871.8 m ler with 4.88 m pe Depth 908.15 m	ttom seats.	Mud Drop:	0.0
Period	Intitial	Final	Times	Flow Description	on		
Initial Hydrostatic	Pressure 11,072.0	Pressure					
Flow 1	5,456.0	6,566.0	10			strong initial puff to bottom bughout, no gas to surface	
Shut-in 1	6,566.0	10,317.0	90				
Flow 2	10,317.0	7,230.0	125			ak initial puff to bottom of p ng throughout. Gas to surf	
Flow Details	/ -				•		
Time / Pressure GTS rate was n			nts	Choke Type	Orifice	Diameter Units of measu	irement
Shut-in 2	10,256.0	10,354.0	360				
	,						

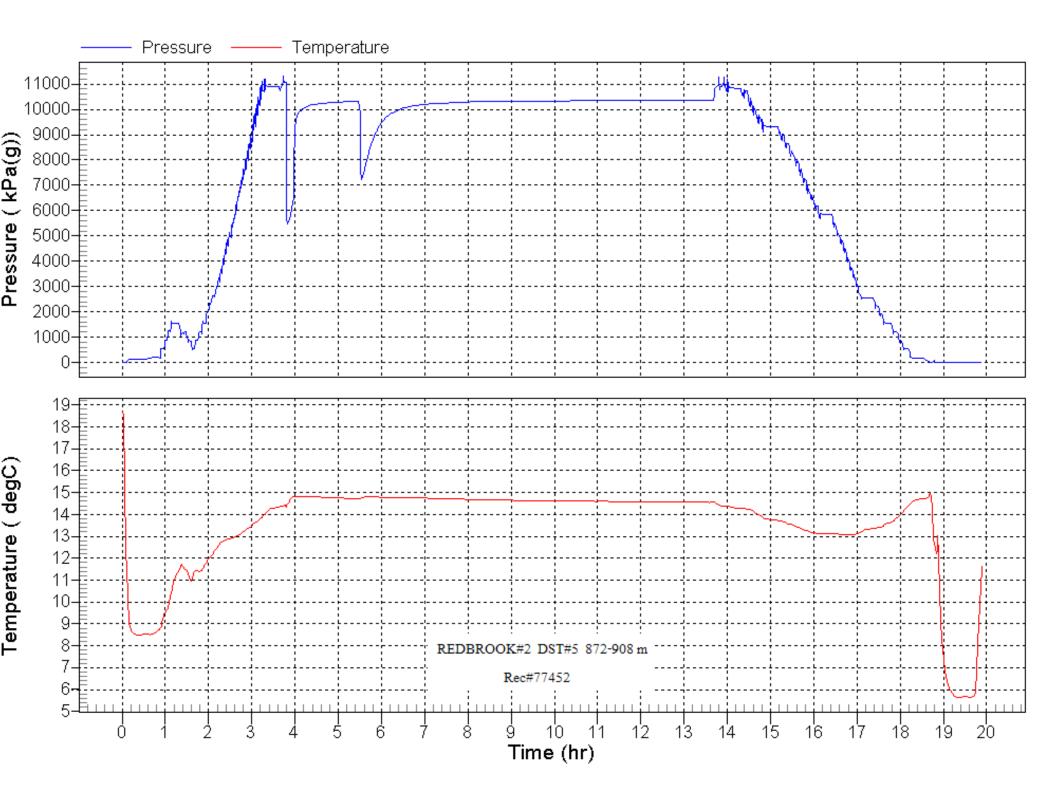
Vulcan Minerals Inc. UWI Red Brook 2

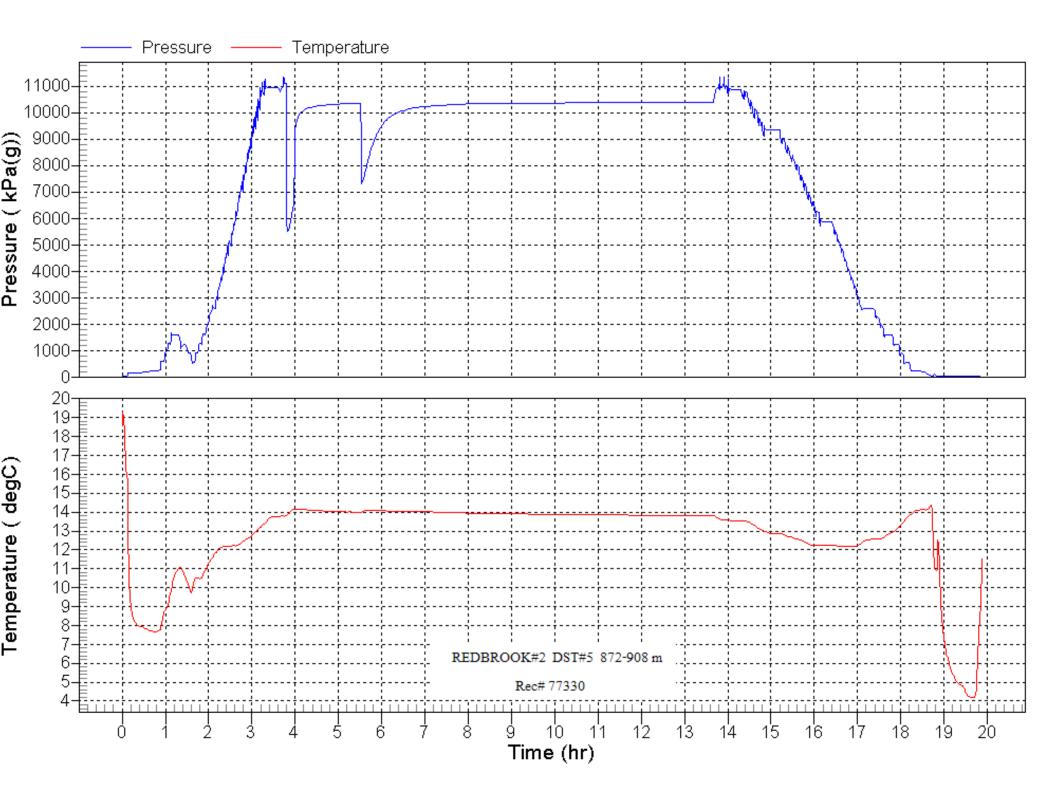
Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-8

	Storage	Units:	Metric
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		_			eterage ermer	
Final Hydro	ostatic	10,908.0				
Recovery:	830 m Gasi Fluid Samp		m, 400 m, 1.5 m abov	e tools.		
Analyses:		0	. ,			
Remarks:	Good test (,	with absolute perfection	on and safety. Dal	e Holland and the Rig	crews

The 5 DST's were completed with absolute perfection and safety. Dale Holland and the Rig crews worked great together with optimun efficiency. There were zero issues throughout the Testing period.





					OLLAN /heatley, C			5 LTD. 1-519-825-3	680		
				N MINE INVEST				Rep. <u>M.R.</u> #2_	Bicc h	hillmas	
	Interv	al <u>/555-</u>	1579	Total Dep	th <u>1965</u>	F	ormation	<u>_SPour</u>	FALLS	9	_
		Number		·			ester	K.DAU	: HOUA.	10	_
				adae C	ONFEUT	Dolgi K	K. B. Eleva	ation $\underline{-63^{\circ}}$	Grour	nd Elevation 57.1	
	Test	ate N	DUB	DARE 2	8 2000	> F		le Temperature			•
	10012	/ullo <u>////</u>	<u>t Se test</u>	C 2 Ivan Marina - Para	0,0001	-					-
RECOVERY	:54		etres Tot etres of	al Fluid				_	Sample SAMPL	r #; # ED AT:	_
	54	 Me	etres of	GASIF	TED D	Rulin	to Fe	and		. Metr	es
	~/				-					41:00 Metr	
			etres of							13.00 Metr	
-			etres of							1.524 Metr	
				Kindab	To R	N			Borray		
	1100	E	Gard		the second second second second second second second second second second second second second second second s			REFLOW		TOOL TALLY	901
REMARKS:		<u> </u>	PICC P							PO Sub 305	
PAIR	INITAC	<u>- Ful-</u>	6,71		OF PA			STEAD		Der XOver <u>0305</u>	
THROUG	thout	Nº 6	4; Ta	·····	k, OA			N STRO		Recorder_ (= 52.4	
BLOW,7	te Bon	où of	· PAI	(parks	JANY,	GAS TO	<u>Ə Saki</u>	AcciNI	<u>0'041 21</u> 1	Shut-in 1,650	
	9			GAS	READINGS	3				Sampler 1:000	
TIME	DDEOO		ORIFI		TIME	00500	TEND	ORIFICE	RATE	Sampler	·
min.	PRESS kPa	TEMP C			TIME	PRESS kPa	TEMP	mm	m3/d	Hydraulic L: 720	
20	424	$\rightarrow t$ —	3.17				ļ			Jars 2030	
<u>~</u>	92	-9	2817							MRecord	
5	10	eî	1.07	- 132						E/Record	-
30	-17	<u> </u>	2.64	5 131					+	Temp Rec	
40	35	Ý	3.17	5 182						By-pass	
50	50	1	3.19	5 222.						Safety Jt 660	
		4		1220						Packer 2r500	
60	65	4	13 i 7	5 257	_		I			Packer 21195	
Gas Sample		21075			ent to	1.1				Upper Packer depth 1535 0	28
Gas Measur	ed by: FC	DOR M	ANif		Positive	- Cheka	L.				
DOWNHOL	E PRESSUR	E DATA (K	PAG)	Test Times:	PF [2]	_ ISN <u>90</u>	vo	_60_ FSI	N <u>360</u>	Packer 305	
Recorder Nu	umber	1109	7		· · · ·	773	10 17	17452	251726	Perfs 1/219	
Recorder Ra		3275	i			6895		8950	59110	By-pass	
Clock Hour -		24	<u> </u>			EMI		EMP	24	M / Record 829	
Depth - Metr	res	1542.1	06	·		1557	1921	557.447	1518.70	E/Record <u>627</u> X Over <u>305</u>	
Position of										DC 13-530	
Pressure Po		FLUI		INSIDE	INSIDE	OUTS	IDE	OUTSIDE	OUTSIDE	X Over	
Initial Hydros								19609		Blank 305	—
Start First Flo	······································							1054		Packer 33	
End First Flo First Shut-In								433	5	Lower Packer depth	T3l
Start Second								1185			
End Second		1			İ			742		Packer	
Second Shut								2506		Packer <u>2.500</u>	
Start Third F	low (H)									Perfs <u>660</u>	
End Third Fl										Recorder / 324	
Third Shut-Ir							·	12000		X Over <u>305</u>	
Final Hydros								17431		DP / DC 383.36	
TEST IS:				Misi		<u></u>	-	6 3	Satisfactory	X Over <u>305</u>	
Started in ho	ole @ 7	15		ened tool @ ∡	•		it of hole (· · · · · · · · · · · · · · · · · · ·	2	Bullnose <u>-6/0</u>	
DP size (mm	n)		Wei	ght (kg/m)		Ma	ain hole si	ze (mm) 🟒	5.90	Total depth (965,000)	
DP length (m	n)		_ DC	size ID (mm)		D0	above to	ool (m)	9.01	Total Interval 19.08	
Mud weight ((kg/m3)		Visc	: (s/L)		W	ater loss (cm3)	*	Total Tail Pipe 390 560	L
	UBBER SIZE			5.85				19:0	5		Hr

			DLLAND heatley, Ont	_	_		680		
Custor	ner VULC	ANMINE	RACS	Cu	stomer F	Rep. M.R.	BILL UL	MiciAms	
	n Vulo								
Interval	1360-13	3 Total Dept	h_1965	Fo	rmation_	SPO	UT FA	us	
Test Nu	AND								
Test Ty	Test Type DUAL STRAMUE ContraNALK. B. Elevation 63.4 Ground Elevation 57.1								
Test Da	ato <u>NOUE</u>	MBER 2º	1-30,20	<u>р</u> 9 Во	ttom Hole	e Temperature	(C)	8.5	
RECOVERY: 27	Metres To	otal Fluid					Sampler	* <u>COY</u> ;*	
	Metres of						SAMPLE	ED AT:	
27	Metres of	DRice	inty F	ins				Metres	
							<u> </u>	<u>1.524</u> Metres	
	Metres of							Metres	
	Metres of						<u> </u>	Metres	
	SKID	OR TO					BOTTOM	HOLE SAMA CABOVE TOOL	
REMARKS: <u>FIAD</u>	11/2 m		N BOTTO					TOOL TALLY	
WITH WEAD	K INITA				-			PO Sub <u>a 305</u>	
BY END OF	PRE FLOR	J . Out	UACUR C	PANI	HAS.	URAL	IN MAL	BBY XOver 305	
PUFF INCR	EASING !	10 1611 1	N BAI	BUL	SM	N 141	N	Recorder 13524	
Scarry Dren	EASING T	Provel GAS	READINGS	No	GA	P 772 (ALAGE	Shut-in	
				-700					
TIME PRESS min. kPa	TEMP ORII		TIME	PRESS kPa	TEMP C	ORIFICE	RATE m3/d	Sampler Hydraulic 720	
				Ma	•			Jars 2.030	
								WRecord	
	<u>`</u>		+					E/Record	
								Temp Rec	
								By-pass	
								Safety Jt _ 660	
								Packer <u>2,500</u>	
Gas Samples: # A6/	T 0500	5092 s	ent to			4		Packer 2, 195	
Gas Measured by:								Upper Packer depth <u>1359:5</u> /	
DOWNHOLE PRESSURE	DATA (KPAG)	Test Times:	PF 10	ISN 90) vo	60 FS	N 360	Packer 305	
Recorder Number	11077			197732		77452	25726	Perfs	
Recorder Range	32.151			6895	OF	8950	59110	By-pass	
Clock Hour -Emp	24			Em	P	EMP	- 24	M / Record	
Depth - Metres	1346.53			1365	61	1365.912	1386.861	E/Record <u>12329</u> X Over <u>305</u>	
Position of								X Over <u>6305</u> DP/SC <u>13,530</u>	
Pressure Port	FLUID	INSIDE	INSIDE	OUTSI		OUTSIDE	OUTSIDE	X Over <u>305</u>	
Initial Hydrostatic (A)						7248		Blank 305	
Start First Flow (B) End First Flow (B1)			· · · · · · · · · · · · · · · · · · ·			559		Packer 1.330	
First Shut-In (C)		· · · · · · · · · · · · · · · · · · ·				7277		Lower Packer depth 1382 501	
Start Second flow (D)			******	1		466			
End Second flow (E)						613			
Second Shut-In (F					$- \Pi$	788		Packer 3.500 Perfs 0.505	
Start Third Flow (H)	<u> </u>			<u> </u>				Recorder 1.524	
End Third Flow (I)	 			- <u> </u>				X Over305	
Third Shut-In (J) Final Hydroststic (G				1 .		7084		DP 575.70	
TEST IS:	<u>l</u>	Misr	un:				Satisfactory	X Over 0305	
Started in hole @5	15 ~	ened tool @	1900	#	of hole @	08		Bullnose	
DP size (mm)		əight (kg/m)	31,90		n hole siz		5,90	Total depth	
	111 1 4 1		60				1.01		
DP length (m)		C size ID (mm) _	179		above to		5 4	Total Interval <u>23:091</u> Total Tail Pipe <u>582:399</u>	
Mud weight (kg/m3)	A ()	sç (s/L) X			er loss (c				
PACKER RUBBER SIZE	(MM)	<u>6.05</u>	BOTTOM HO	DLE COKE	(MM)	<u> </u>		Tool Make up Time 2.0 Hr	

Customer Val. CAN MidLANS Coutomer Pap. M.R. BALL WalkANS Honeya [23] Test Number THEM Formation Science	HOLLAND TESTERS LTD. R.R. #3 Wheatley, Ontario N0P 2P0 1-519-825-3680								
Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Test Fold THREE Metres of Metres of Metres of Test Number Number Test Number Test Number Test Number Test Number Number Number Number Number Number Number Number Number Number Number Number Numer Number Number Number Number Number Number Number Nu	Location NULCAN INVESTICAN RED BROCK #2								
Tost Type Rule C. STR: NOLLS: C.S.J.: Extrato: Appl. R. Berwatton: Ground Elevation: St7.1 Test Data NUOCEAR BLES 3: 2: 2: 2: 9 Bottom Hole Tomperature (0) (17.17) RECOVERY: ID Metres Total Fluid Sampler # 2:: 9 Sampler # 2:: 9									
Test Date Ald Wiscondized 3.0., 2 = 0.9 Bottom Hole Temperature (0) [7:1] RECOVERY: ID Metres of Dirit Ling All Ling Statute Sampler # 0.0.1 # ID Metres of Dirit Ling All Ling Statute Sampler # 0.0.1 # Sampler # 0.0.1 # ID Metres of Dirit Ling All Ling Statute Metres of Sampler # 1000 TALLY Note Sampler # 1000 TOOL TALLY ID DOI IAL Ling Official Tally of Cadavard To Ling All All Talls									
RECOVERY: ID Matters of ID // (L/ //2) Sampler # GCY : # ID Matters of ID // (L/ //2) SAMPLED AT: SAMPLED AT: ID Matters of ID // (L/ //2) Matters of ID // (L/ //2) SAMPLED AT: Matters of ID // (L/ //2) Matters of ID Matters of ID // (L/ //2) CA FOR ALL (IN // ID // (L/ //2) C/ (L/ //2) C/ (L/ //2) C/ (L/ //2) PO Sub // (S/ C/ //2) CA FO // (L/ //2) C/ (L/ //2) C/ (L/ //2) C/ (L/ //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2)									
Image: Amount of the second of the	Test Date <u>IVOUCMBER 30</u> , 2009 Bottom Hole Temperature (C)								
ID Metres of Inters Inters Inters Inters Inters Inters Inters Inters Metres Metres of Metres of Metres Metres Metres Metres Metres Metres of Metres of Metres Metres Metres Metres Metres of Metres of Metres Metres Metres Metres Metres of Metres of Metres Metres Metres Metres DA UAL UIC OFFAIL MAL UIC OFFAIL MAL UIC OFFAIL MAL UIC OFFAIL Metres Metres GA IT O Suck Ander AT 75 mm/m - CAS READINGS Sampler 1000									
Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of REMARKS: OPEAU F OAL PACE CALL WITH WEAR ALTER OPANON Postor D. SOTTOM OF PARCY PARCED INTERVISE INTERVISE OFFICE POSUB C 3(05) Postor 205 O.F. PARCE AND ALLY DECADARY TO WINK STEADY TARGE OPANON POSUB C 3(05) Postor 205 C.F. PARCE AT TSMIN' CAS READINGS Sampler 1:000 Sampler TIME PRESS TEMP ORIFICE RATE Sampler 1:000 SUT 12:57 3:29 Imm Ride C mm Metres of Metres SUT 12:57 3:175 3:29 Imm Ride C Parce Sampler 1:000 Sampler 1:172 3:173 Signer 1:000 Parce									
Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of TO BoitToom OF PAIL Intral, STEARY THE act for Boit of Poston Col TO BoitToom OF PAIL Intral, STEARY THE act for Boit of Poston Col CA: TO LOCAN HAO STEARY INTRA ACT BODY Poston Col Poston Col CA: TO LOCAN HAO STEARY INTRA ACT BODY Poston Col Poston Col CA: TO LOCAN HAT THME PRESS Sampler 1:020 Ga: TO LOCAN HAT THME PRESS TEMP Press Sampler 1:020 G: 2:174 I 1:75 3:474 I 1:75 Issent act Col Sampler Issent act Col Gas Measured by: Image Sampler Issent act Col Paker 2:0.5 Press 3:0.5 DOWNNOLE PRESSURE DATA (KPAG) Tent Times: PF (O ISN 90 V0 '90 FSN 360 Press <td></td> <td></td>									
Metres of Metres REMARKS: OPEN: For Pack Counce (U):THE (U)EAK. IN ITHE Public Counce (D) Posub									
REMARKS: OPE-NJ F.C.R. PALE FLOOD CUTTH LUBARK Invited Full TO Soft Con. OL All V CD JALUE OPE-NIL INV I Mund. STEADY INVITUL Public TO Ballowing TO Sallowing TO Sallowing TO Sallowing To Sallowing To Sallowing To Sallowing To Sallowi									
REMARKS: OPE_N F.O.F. $PALC$ $OUTH$ $UVACLE$ $IMUN$ $STEADY$ $TMIC$ $Palch$ $TMIN$ $STEADY$ $TMIC$ $Palch$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$ $TMIN$ $STEADY$									
TC BC/TC/M 0/L PAIL PAIL PAIL POSD 205 CN PALL OPE PAIL FORMACATALY POSD	DEMADKS OPEN FOR POECIAN WITH WEAK INTER PULL								
ON JALUE Offen HAD STECOLS INUTRL Field TO Batternov OF PALL INMEDIATLY DECRIMING TO UDIAE AFTE To Batternov Beorder 1.524 OF PALL INMEDIATLY DECRIMING TO UDIAE AFTE Beorder 1.524 GA TO SULA TATALY DECRIMING TO UDIAE AFTE Beorder 1.524 TIME PRESS TEMP ORFICE RATE TIME PRESS TEMP ORFICE Batternov 1.650 Sondard min kPa O mmd mmd Batternov 1.600 Sampler 1.000									
Diff Diff <thdiff< th=""> Diff Diff <thd< td=""><td></td><td>206</td></thd<></thdiff<>		206							
C.A: TO JLAGGAGE AT 75: A1, A1' CAS READINGS Sampler 1:000 TIME PRESS TEMP ORIFICE RATE TIME PRESS TEMP ORIFICE RATE min. KPa C mm m3d mm M3d Jars 1:000 g:0 1:20 1:20 1:175 23:4 mm mm Mare g:0 1:20 1:175 25:4 1:175 25:4 mm Mare g:0 1:20 1:175 25:4 1:175 25:4 mm Mare g:0 1:175 2:175 2:175 1:00 Mare ERecord g:0 1:175 2:175 1:00 Mare Bass Saley 1:00 g:0 1:175 1:01 1:00 Packer 2:195 Packer 2:00 g:0 1:151 1:00 1:01 1:01 Packer 2:05 Packer 2:05 Packer 2:05 Packer 2:05 Packer 2:05 Packer 2:05 Packer 1:05 Packer		Recorder 10 524							
TIME PRESS TEMP ORIFICE RATE TIME PRESS TEMP ORIFICE RATE Sampler Hydraulic 1/12.0 \$C 1.025 1.075 23.175 23.175 23.175 1.020 MRecord Lars 1.020 \$C 1.075 35.9 1.015 35.9 1.020 MRecord EPRecord	GAT TO SURFACE AT 75MIN, GAS READINGS								
min. kPa C mm m3/d min kPa C mm m3/d Hydraulic 1/12.0 g 5 2.774 1 3.775 23.9	TIME PRESS TEMP ORIFICE BATE TIME PRESS TEMP ORIFICE BATE								
0 0 1									
G 3 2.779 7 3.253 Effective G0 4.43 7.75 4550 Effective By-pass Gas Samples: #	80 1.25 1 3.175 23.9	Jars 030							
90 4.48 1 3.735 45.40 Temp Rec Effectord 90 4.48 1 3.735 45.40 Temp Rec Temp Rec 90 4.48 1 3.755 45.40 Temp Rec Temp Rec 90 4.49 1 4.49 1 4.60 Temp Rec Temp Rec 90 Gas Samples: #	85 2.174 1 2.175 35.8	M/Record							
By-pass By-pass Gas Samples: #									
Gas Samples: #	<u>40</u> <u>4.48</u> <u>1</u> <u>5.05</u> <u>45.0</u>								
Gas Samples: #		A							
Gas Samples: #		100							
Gas Measure by									
DOWNOLE PRESSURE DATA (KPAG) rest times: PF_10ISN	Gas Measured by:								
Hecorder Number // 0.7/7 // 1320 // 7/72 25/746 By-pass Recorder Range 3.4 // 157 // 13017-52 13017-52		A 11.13							
Recorder Farige 34151 05175C 05175									
Otics Hold *Enip Imp Enip Imp Enip ""><td></td><td></td></th<>									
Position of Pressure Port FLUID INSIDE INSIDE OUTSIDE OUTSIDE OUTSIDE OUTSIDE OUTSIDE OUTSIDE DET DC IT > 080 Initial Hydrostatic (A) 1 1 1 505 Blank 305 Blank 305 Blank 305 Blank 305 Blank 305 Packer 1 5000 Packer 1 5000 Packer 1 5000 <td></td> <td></td>									
Pressure Port FLUID INSIDE INSIDE OUTSIDE OUTSIDE OUTSIDE OUTSIDE OUTSIDE DEPDC DTPOC DT		X Over <u>6305</u>							
Initial Hydrostatic (A) Image: Application of the system of the sys		DET DC _2 17, 080							
Start First Flow (B) Image: Constraint of the system	Initial Hydrostatic (A)								
Liter Histrich (D) Lower Packer depth [335:700] Start Second flow (D) 341 Packer2150 End Second flow (E) 417:67 Packer2150 Second Shut-In (F 417:67 Packer2500 Start Third Flow (H) 115:62 Packer2500 Start Third Flow (H) Packer2500 Packer2500 End Third Flow (I) Packer2500 Packer2500 Final Hydroststic (G	Start First Flow (B)	1 200							
Start Second flow (D) 341 Packer 150 End Second flow (E) 4171,2 Packer 2:500 Second Shut-In (F 11562 Packer 2:500 Start Third Flow (H) 11562 Perfs 3:658 End Third Flow (I) 11562 Perfs 3:658 End Third Flow (I) 11562 Perfs 3:658 Final Hydroststic (G 11562 DP /**C 616:617 TEST IS: Misrun; Satisfactory X Over 6305 DP size (mm) 0pened tool @ 1738 Out of hole @ 0645 DP size (mm) 0pened tool @ 1738 Out of hole @ 0645 DP size (mm) 1091: 816 DC size ID (mm) DC above tool (m) 15:40 Total Interval 40:908									
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Second Shut-In (F II562 Packer ISC Start Third Flow (H) II562 Perfs 3±658 End Third Flow (I) Recorder 1±502 Perfs 3±658 End Third Flow (I) II II Second Shut-In Second Shut-I									
Start Hild Flow (I) Recorder 1:52.4 End Third Flow (I) X Over 6.30.5 Third Shut-In (J) Image: Started in hole @ Image: Started @ Image: Started @									
End Third Filow (1) X Over # 30.5 Third Shut-In (J) I (2411 DP / C 616:67 Final Hydroststic (G I (2411 DP / C 616:67 TEST IS:									
Final Hydroststic (G IC IC DP / C 616: 67 TEST IS:									
TEST IS:									
Started in hole @O Opened tool @S 0 ut of hole @O <									
DP size (mm) 114									
DP length (m)	2 in the second is a second se								
PACKER RUBBER SIZE (MM) 96.85 BOTTOM HOLE COKE (MM) 19.05 Tool Make up Time 200 Hr									

			DLLANI heatley, Or			LTD. 1-519-825-3	8680	
Loca Inter Test Test	omer <u>V44C4</u> tion <u>V44C4</u> val <u>1587-16</u> Number <u>F0</u> Type <u>0644</u> Date <u>06060</u>	AN INU II_Total Dept UR STRADACE	1 <u>257<i>CA</i></u> h_ <u>1965</u> (0	F TENTION	ormation ester	<u>BROOK</u> <u>500</u> K-DACC ation <u>63</u>	H2 UT FAC Hour	AND Ind Elevation <u>ST 1</u>
RECOVERY: 20	RECOVERY: Metres Total Fluid Sampler #							
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	Metres o	f DRILL	1.09	_ prili	2		<u></u>	/3 Metres
		of						Metres
		of						Metres
								Above Tool
REMARKS: WEAK 3 MIN, STU UALUE OPE IN 20 SEC.	EADY TH N MAD S DECREASI	Rough our TRONG 11 NG TO U.	T, NOG	AS TO PULE TO EAK BY	50 6 BC 101	TOM OI	ON	Shut-in 3 6 20
THROugh OUT				2 er Cl			1	Sampler
TIME PRESS min. kPa		IFICE RATE	TIME	PRESS kPa	TEMP C	ORIFICE	RATE m3/d	Sampler Hydraulic/ 7,20
								Jars 2 • 030
				· · · · · ·				M/Record
								E/Record
				-				Temp Rec
								By-pass Safety Jt 610
								Packer 2,500
Gas Samples: #	·	 : Se	ent to		L	-	4	Packer
Gas Measured by:		······································						Upper Packer depth 1586. 145
DOWNHOLE PRESSUR	RE DATA (KPAG)	Test Times:	PF /(?)	ISN 90	vo	60 FS	N <u>360</u>	Packer
Recorder Number	11077	1	<u> </u>		130	77452	25726	Perfs <u>9,144</u>
Recorder Range	32751			689		68950	39110	By-pass
Clock Hour -Emp	15174.821			1. C. A. A. A.		EMP	1124000	M / Record / 829
Depth - Metres Position of	1214:00			1596	<u>304</u> 1	598.804	1647371	X Over 0305
Pressure Port	FLUID	INSIDE	INSIDE	OUTS	IDE	OUTSIDE	OUTSIDE	DELDC 40. 110
Initial Hydrostatic (A)				_		20254		X Over <u>c 305</u>
Start First Flow (B)						674		Blank 305
End First Flow (B1						545		Packer <u>1,330</u> Lower Packer depth <u>1640:978</u>
First Shut-In (C) Start Second flow (D)						3093 380		
End Second flow (E)						640		Packer 1:150
Second Shut-In (F						6097		Packer $3:500$ Perfs $3:430$
Start Third Flow (H)				_				Perfs
End Third Flow (I) Third Shut-In (J)								X Over305
Final Hydroststic (G					1	19963		DP/50 315.19
TEST IS:		Misru	un;				Satisfactory	X Over <u>6305</u>
Started in hole @	015_0	pened tool @	1338	Ou	t of hole		300	Bulinose 610
DP size (mm)	1	/eight (kg/m)	31.90	Ma	in hole s	ize (mm) <u>21</u>	5.90	Total depth
DP length (m)		C size ID (mm) _	<u> </u>	DC	above to	ool (m)	1.83	Total Interval 54.233
Mud weight (kg/m3)		isc (s/L)	79		ater loss (214	Total Tail Pipe 324.021
PACKER RUBBER SIZ	е(мм) ГУ	6-85	BOTTOM H	OLE COKE	E (MM)	19	-05	Tool Make up Time // Hr

		HC R.R. #3 Wh	DLLANI neatley, Ol				680	
Locati Interv Test N Test 1	on <u>/ (1)</u> al <u>8472 - 90</u> lumber <u>Fi</u> lype <u>) (14</u> 1	N MINE CAN 1 DS_Total Dept UE STRADDC MBER 2	NUES 1961 E Con	TCAN S F	ormation ester B. Elevat	60 BH SH K.D.4 ion 63	<u>20012</u> 11 ⁰ 5 C. <u>CE HOL</u> 24 Groun	12. 22. 24. 12. 14. 15. 14. 14. 14. 14. 14. 14. 14. 14
RECOVERY: <u>330</u> 	Metres o Metres o Metres o Metres o Metres o Metres o	1 4	iks l	UPTE	R			#
REMARKS: OPEN TO BUTTON NO GAS TO INITAL PUFF THROUGH OUG	OF DA SURFACE TO BO	REFLOW, IC IN 3 E. ON C MTOM OF SUN (ACGAS	O SEC DALUI PAIL	- STU E OPE ININ	N HI	Theory DO WE SLOWLY		Above Tool TOOL TALLY PO Sub <u>\$305</u> De XOver <u>305</u> Recorder <u>/ 524</u> Shut-in <u>/ 526</u> Sampler
TIME PRESS min. kPa	-	FICE RATE m3/d	TIME min	PRESS kPa	TEMP C	ORIFICE	RATE m3/d	Sampler Hydraulic/, 72_0 Jars2, 030 WRecord E/Record Temp Rec By-pass
Gas Samples: # Gas Measured by: DOWNHOLE PRESSUR	, ````````````````````````````````	; Se	nt to	isn 90) vo	/25″ FSN	360	Packer 2.195 Packer 2.195 Upper Packer depth <u>8.16816</u> Packer <u>6.305</u>
Recorder Number Recorder Range Clock Hour -Emp Depth - Metres Position of Pressure Port	110 77 32 757 32 757 859 872 FLUID	INSIDE	INSIDE	689 Em	608 8	717452 8950 2000 771913	25726 5910 24 920:641 OUTSIDE	Perfs <u>4:877</u> By-pass M / Record E / Record <u>1:829</u> X Over <u>305</u> *B*/ DC <u>27:050</u>
Initial Hydrostatic (A) Start First Flow (B) End First Flow (B1) First Shut-In (C) Start Second flow (D) End Second flow (E)						072 5456 566 7317 7230 0256		X Over 0305 Blank 0305 Packer 1:330 Lower Packer depth 905.152 Packer 1:50 Dacker 2:500
Second Shut-In (F Start Third Flow (H) End Third Flow (I) Third Shut-In (J) Final Hydroststic (G TEST IS:		Misru	ın;			0908	Satisfactory	Packer $2,500$ Perfs 334 Recorder $1,524$ X Over 305 DP 550 $104(,920)$ X Over 205
DP size (mm) <u>114</u> DP length (m) 745 7	F w <u>518</u> du 1260 vi	eight (kg/m) C size ID (mm) sc (s/L) 6 - 85	<u>1106</u> 31.90 60 179 воттом н	0 Ma DC Wa	it of hole @ ain hole siz above too ater loss (c (MM)	e (mm)1 hl (m)	30 5,90 5,46 ,4 ,4 05	Bullnose <u>• b(0</u> Total depth <u>965.000</u> Total Interval <u>36.336</u> Total Tail Pipe <u>1056.848</u> Tool Make up Time <u>2.0</u> Hr

Deviation / Directional Survey Report

Directional Drilling Company: Directional Drillers: Measured While Drilling (MWD) Hands:	
Survey Type:	magnetic
Survey Mode:	wireline
Survey Date:	Nov 27, 2009
Survey Calculation Method:	minimum curvature
Target Azimuth:	100.00 °
Dog Leg Severity Characteristic:	30.00

Survey Tie-In Information

Tie-In Co-Ordinantes Latitude: Longitude: N / S: E / W:

Measured	T.V.D.	Drift	Azimuth	+N / -S	+E / -W	Vertical	DogLeg
Depth		Angle (º)	(º)	Distance	Distance	Section	Severity
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00

Kick-Off (Whipstock) Information

Kick-Off Co-Ordinantes Latitude: Longitude:

N/S:

E/W:

Measured	T.V.D.	Drift	Azimuth	+N / -S	+E / -W	Vertical	DogLeg
Depth		Angle (º)	(º)	Distance	Distance	Section	Severity

Remarks: Surveys Surface - 890 meters from Totco Teledrift. Surveys 890 - FTD from Baker Hughes Wireline Logs.TVD Calculated based on average trend at bottom section of hole at apx 100 degs. Bottom hole location Estimate only.

Survey Points

Storage Units:

M	etric	

Measured Depth	T.V.D.	Drift Angle (º)	Azimuth (º)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
36.00		0.750					
109.00		0.250					
162.00		1.000					
202.00		1.500					
262.00		0.750					
356.00		1.250					
508.00		2.750					
604.00		2.000					
754.00		3.000					
850.00		6.700					
890.00	887.77	7.020	65.97	22.17	49.73	45.13	0.24
950.00	947.31	7.210	69.99	24.96	56.62	51.43	0.27
1,070.00	1,066.20	8.410	72.37	30.19	72.06	65.72	0.31
1,160.00	1,155.17	8.950	81.96	33.16	85.27	78.21	0.51
1,250.00	1,244.05	9.220	91.82	33.91	99.41	92.01	0.53
1,340.00	1,332.93	8.940	103.94	32.00	113.40	106.12	0.64
1,430.00	1,421.80	9.270	113.10	27.47	126.86	120.16	0.49
1,520.00	1,510.60	9.500	120.62	20.84	139.92	134.17	0.42
1,610.00	1,599.47	8.660	121.51	13.52	152.08	147.43	0.28
1,700.00	1,688.50	8.140	120.35	6.76	163.36	159.70	0.18
1,790.00	1,777.54	8.640	117.73	0.39	174.84	172.12	0.21
1,880.00	1,866.47	9.060	118.23	-6.10	187.07	185.29	0.14
1,965.00	1,950.41	9.010	118.50	-12.45	198.81	197.95	0.02

Drilling Fluid Type:	Gel Chem Surface	From:	0	To:	220
Drilling Fluid Type:	Saturated Salt / Poly	From:	220	To:	889
Drilling Fluid Type:	PHPA Polymer	From:	889	To:	1,965

Company:	JDS Consultants								
Geologist:	Michael Smith (403-589-4998)								
Work Performed	From:	Oct 23, 2009	То:	Dec 03, 2009					
Depths Logged	From:	17.0	То:	1,965.0					
Remarks:									

Formation Top Summary

61.75

57.10

Kelly Bushing Elevation: Ground Elevation: **Casing Flange Elevation:**

Group <i>Formation</i> Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
Gravel		0.00		0.00		0.00	
Codroy Group	233.00	53.00	53.00	53.00	53.00	8.75	
Ship Cove	760.00	885.00	885.00	885.00	885.00	-823.25	
Spout Falls	807.00	897.00	894.72	897.00	894.72	-832.97	
Anguille Group	1700.00					-1638.25	
Anguille Basal Wash		1860.00	1846.71	1860.00	1846.71	-1784.96	
Gneissic Basement	2250.00	1923.00	1908.93	1923.00	1908.93	-1847.18	
FTD	2200.00	1965.00	1950.41	1962.20	1947.64	-1885.89	

** All Depths measured from Kelly Bushing Elevation **

SAMPLE DESCRIPTIONS

Geologist Comments regarding visual / microscopic porosity estimates:

The estimates of porosity / cementation in the Sidewall Cores and Cuttings during the drilling operation of the Red Brook #2 well are based on the Geologists System and Methods, developed during the drilling of the McCully Gas Field in New Brunswick, and adopted for Vulcan Minerals in order to remain consistent within the Carboniferous Basin as a whole.

To avoid confusion with terminology over the Porosity estimates for the Sidewall Cores and Cuttings recorded in the sample descriptions - The following definitions should be reviewed.

<u>Porosity Estimates Criteria:</u> Sample / Sidewall Core Descriptions and Porosity Estimates are generally recorded under an x10 power magnification. The Well Site geologist used an x20 power magnification for the Red Brook #2 well. Maximum magnification of x45 power was used as required but as a general "rule of thumb" - any visual porosity not seen with an x20 magnification would be considered ineffective.

<u>Visual Porosity</u>: Naturally occurring "holes" within the rock matrix or generally – between or besides touching grains that can be seen with the naked eye - or up to and including an x20 magnification. Also would include secondary "after the fact" porosity generally found in Carbonates but also possible within clastics such as Sandstone – Siltstones resulting from fracturing, digenesis or leaching.

<u>Effective Porosity</u>: The volume of rock that would be filled by Recoverable Oil and or Gas. For the Red Brook #2 well, the stated effective porosity is for possible Gas, as generally, effective gas porosity would be higher than effective oil porosity. Effective Porosity does not always equal visible porosity but visible porosity is generally effective. Effective porosity as qualified in this report would also include an educated unseen porosity estimate.

<u>Ineffective Porosity</u>: The volume of rock that is occupied by "hidden" porosity such as Clays, Argillaceous material such as Shale clasts, grains, laminae, and or other material such as a weaker cemented silica silty matrix. Although the Neutron Porosity Tool would record this hidden porosity, the physical characteristics of the "fill" material would not be capable of holding gas within its volume and/or incapable of liberating gas, and could be considered as non Recoverable porosity.

Total Porosity: Visual porosity including Effective + Ineffective porosity. (Generally Neutron Logging Tool)

<u>Grain Relief / Cementation</u>: The Relief of the rock / grains / cuttings / sidewall cores is generally inversely proportional to the cementation. High Relief cuttings generally required weaker cement and/or compaction, and the matrix of the rock will break and/or fracture prior to the quartz grains. Low Relief cuttings are generally very well cemented, resulting in much lower total porosity. The cement is generally silica or calcite/dolomite. The rock with the estimated low relief will be observed to break through the grains as the cement is harder / tougher and the lower stress point would be the quartz grains verses the matrix/cement. High relief can also be observed in cuttings with high ineffective porosity due to the intergranular volume being filled by clays, silica material, argillaceous / shale, pyrobitumen or any other "filling" material.

1

- 5.0 to 38.0 Gravel Till
 - (13.0) Assorted pebbles from screens and washed samples, muddy clay component? larger cobbles to possible boulders based on drillers information.

38.0 to 40.0 SANDSTONE

- (2.0) Coarse to very coarse loose clean Sandstone? varied quartz, lithic, feldspathic angular to subrounded to rounded grains, possible not from interval and bagged filled off depth.
- 40.0 to 53.0 Gravel
 - (13.0) Loose clean? probable clay infilling, assorted pebbles, varied colored Sandstone, off white to grey to micaceous, some igneous, lithic hard siliceous, varied, probably cobbles with some boulders? assumed based on drillers comments.

53.0 to 70.0 SANDSTONE

(17.0) Coarse to upper coarse, loose, varied colored quartz to lithics, varied Sandstone lithics, white, red, cream, grey, black micaceous, abundant white to translucent quartz, fractured to angular to subrounded, abundant rounded, probable pebbles to some cobbles?, uniform with depth. Apparent boulder at 61 meters based on Drill rate (torque).



70.0 to 90.0 <u>SANDSTONE</u>

(20.0) Medium to upper coarse, loose, clean, probably some clay infilling, varied colored quartz, predominately white, opaque, grey, abundant varied lithics, cream to grey to reddish, abundant black igneous with black mica to white quartz anorthorsite ?.

90.0 to 105.0 SANDSTONE

(15.0) Loose, medium to coarse to very coarse, no cement, assuming reddish clay matrix infilling, clean washed sands predominately quartz, opaque, white, translucent, abundant reddish feldspars, abundant varied lithics, reddish, whitish micaceous igneous lithics, some shale?, minor cherty, siliceous, overall slightly reddish brown samples when dried, bagged samples muddy red, uniform with depth.

105.0 to 123.0 SANDSTONE

(18.0) As above, loose, medium to coarse to very coarse, predominately quartz, opaque, white, translucent, abundant stained orange to reddish, abundant lithics, greyish shale?, to crystalline quartz to micaceous igneous, minor greenish, some limonite altered siliceous sandstone to igneous fragments, overall reddish brown color to dried bulk sample, assuming reddish clay rich matrix to infilling, uniform with depth.



123.0 to 135.0 GYPSUM to ANHYDRITE

(12.0) Off white chalky amorphous to microcrystalline Anhydrite with very abundant to predominately opaque, semi translucent to slightly grayish crystalline to tabular Gypsum, minor quartz grains, ROP slowdown at top of zone, uniform with depth.



135.0 to 155.0 <u>GYPSUM</u>

(20.0) Off white microcrystalline chalky very clean to micro sucrosic Anhydrite grading with depth to predominately Gypsum, semi translucent medium to coarse crystalline tabular to rhombs semi opaque massive crystals to fragments, very uniform, very soft, uniform with depth. Brownish sawdust in samples.

155.0 to 173.0 <u>GYPSUM</u>

(18.0) Pure clean semi translucent crystalline to tabular gypsum, very soft, predominately crystals, very uniform, see photo, uniform / depth.

173.0 to 175.0 SANDSTONE ? to Probable GYPSUM

(2.0) Identical to Sandstone from up hole, Lost circulate at 173 meters, Pipe stuck apx 1 hour, POOH and RIH with open ended drill pipe and spot high viscosity plug with sawdust. Assuming Sandstone from up hole, Losses from probably dissolved to karst erosional surface? or possible underground water flow as per original Well on location.

175.0 to 185.0 <u>GYPSUM</u>

(10.0) Predominately off white to semi translucent clean, massive crystalline to tabular Gypsum, good trace colored quartz grains decreasing to trace rounded medium quartz grains with depth, possible within gypsum?, or cavings up hole from healing losses from 173 meters.

185.0 to 200.0 <u>GYPSUM</u>

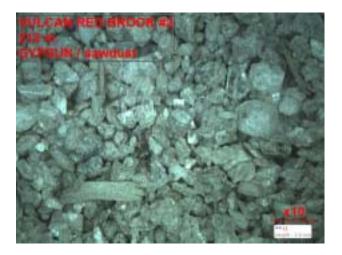
(15.0) Off white to crystalline, semi translucent massive Gypsum, tabular to crystalline crystals, slightly dirty overall?, abundant Sawdust to LCM washed from samples, no sands to no quartz, uniform with depth.

200.0 to 212.0 GYPSUM

(12.0) Off white to semi translucent to opaque crystalline to tabular crystals, massive, very soft, no sands, no apparent chalky anhydrite, uniform with depth. (ROP break from 2003-2006 meters could possible be some Salt?, no losses and no indications in samples.

212.0 to 220.0 GYPSUM

(8.0) Off white to semi translucent, massive, soft, very clean, crystalline tabular crystals, uniform with depth. POOH for Surface Casing. (340 mm Casing Set 220.2 m)



- 220.0 to 235.0 GYPSUM
 - (15.0) Off white to semi translucent, clean, pure crystalline to crystals, minor chalky amorphous anhydrite with depth, uniform.
- 235.0 to 242.0 LOST CIRCULATION
 - (7.0) No Sample, Lost Circulation (no returns) at 239 meters, drill to 242 meters, attempt several high viscosity LCM plugs, RIH and cement open ended to plug Lost Zone.
- 242.0 to 245.0 <u>GYPSUM?</u>
 - (3.0) 95% Cement in samples, No indications of Salt.
- 245.0 to 255.0 GYPSUM to ANHYDRITE
 - (10.00) Off white to semi translucent micro to coarsely crystalline, very clean, with interlaminated to bedded Anhydrite (60%), off white, chalky, soft, amorphous, clean, trace very slightly brownish red micro laminations?, uniform with depth, Appears that PDC is balling up in Anhydrite.

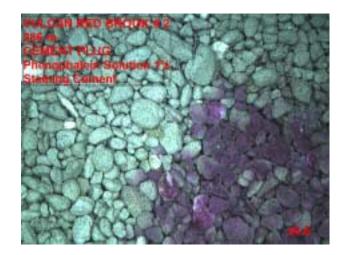


255.0 to 270.0 ANHYDRITE

- (15.0) Chalky off white, massive, blocky to lumpy, soft, non calcareous, amorphous, less than 10% semi translucent crystalline Gypsum, uniform with depth, PDC possible balling up, overall ROP apx 8 m/hr.
- 270.0 to 280.0 <u>ANHYDRITE</u>
 - (10.0) Off white, massive, amorphous, very soft, chalky, "ground up powder lumps" with crystalline semi translucent micro to fine fragments, Gypsum?, assuming predominately Anhydrite due to chalky character of samples verses upper crystalline unit assumed Gypsum.
- 280.0 to 284.0 ANHYDRITE to Possible SALT?
 - (4.0) Lost Circulation at 283 meters, No Returns, Drill break 15 m/hr, Pump LCM Slug, POOH for Cement at 286 meters. Plug Held, Lost Circulation past plug.

284.0 to 303.0 LOST CIRCULATION – NO SAMPLES

(19.0)



- 303.00 to 305.0 GYPSUM to ANHYDRITE?
 - (2.0) Very poor sample, 99% Cement, trace off white soft chalky to microcrystalline Anhydrite? with several crystalline semi translucent Gypsum crystals only.
- 305.0 to 313.0 NO RETURNS

(8.0)

- 313.0 to 322.0 NO RETURNS
 - (9.0) No Formation cuttings, Cement over shakers prior to Lost Circulation, trace Gypsum with Anhydrite in samples
- 322.0 to 327.0 ANHYDRITE with GYPSUM
 - (5.0) 95-99% Grey Cement in samples, trace white chalky Anhydrite to microcrystalline to semi translucent crystalline crystals. (Slow ROP)

327.0 to 350.0 SALT

- (23.0) Massive Salt at shakers, Samples bagged directly off shakers and not washed, white to semi translucent, opaque, clean, slightly cubic crystalline, rounded edges due to erosion in hole, Drilling with saturated Salt mud system.
- 350.0 to 360.0 SALT with Possible ANHYDRITE
 - (10.0) Predominately Salt, off white to semi translucent, opaque, abundant softer chalky white Anhydritic fragments, minor dirty grey Cement fragments, possible cavings?.

360.0 to 400.0 SALT

(40.0) Off white, massive, amorphous, blocky, minor semi translucent only, uniform with depth, ROP 18-24 m/hr steady.



- 400.0 to 450.0 <u>SALT</u>
 - (50.0) Uniform with depth, as above, continued to bag samples directly off shakers, no washing, amorphous, massive, whitish blocky, abundant semi translucent, abundant "Polymer" in samples reacting with salt, rubber like, Uniform ROP apx 20 m/hr.
- 450.0 to 500.0 <u>SALT</u>
 - (50.0) Samples bagged directly off of Shakers to preserve Salt, white, massive, uniform, white chalky powdered to semi translucent amorphous, blocky, steady uniform ROP with depth. (possible slightly anhydritic component?)

500.0 to 550.0 <u>SALT</u>

(50.0) Bagged directly off shakers, white, massive, blocky, abundant white powdery amorphous, clean, opaque to rare semi translucent, uniform ROP with depth up to 25 m/hr.



550.0 to 600.0 <u>SALT</u>

(50.0) Off white to opaque, massive, general amorphous, blocky to lumpy, structure less, abundant chalky? powdery, cleaner more massive to coarse with depth, Good uniform ROP increasing to apx 25 m/hr with depth.



- 600.0 to 650.0 <u>SALT</u>
- (50.0) Massive Salt at shakers, cleaner overall (Less to No Polymer in samples) predominately opaque, whitish, massive, amorphous, minor slightly chalky, ROP 25 to 30 m/hr, Uniform with depth.
- 650.0 to 690.0 SALT

(40.0) Off white, massive, blocky, amorphous, clean, uniform, crystalline, very uniform, ROP 25-30 m/hr.

- 690.0 to 740.0 <u>SALT</u>
- (50.0) Slight color change from white to very slightly mottled off white to cream, apparent clean, blocky, massive, amorphous, abundant slightly opaque, minor semi translucent, minor chalky powder, continued coarser fragments, Good ROP up to 30 m/hr, uniform with depth, No Fluorescence, no cut.
- 740.0 to 780.0 SALT
- (40.0) Very light cream to very slightly whitish buff, massive, amorphous, blocky, opaque, abundant slightly powdery due to drilling, massive coarser overall, uniform with depth, Continued ROP apx 25 m/hr.

780.0 to 810.0 SALT

(30.0) Off white to very slightly cream overall to very light buff (larger fragment when broken are white), continued larger massive, amorphous fragments to abundant powdered to finer fragments, uniform with depth, continued steady ROP apx 20 m/hr.



- 810.0 to 838.0 <u>SALT</u>
- (28.0) Overall slightly cream to light buff, massive, amorphous, blocky to abundant powdery, clean? probably becoming slightly harder ?, move massive with depth, grading to anhydrite?, based on ROP only.
- 838.0 to 849.0 <u>ANHYDRITE</u>
- (11.0) Predominately powdery to liquid mush at shakers, (samples not washed at shakers to preserve cuttings), minor fragments chalky white, soft to medium to darker grey, massive, hard, PDC milling Anhydrite, No fluorescence, instant weak pale yellow cut, becoming stronger over time, slight petroleum smell to cuttings.(Overall calcareous samples with petroleum smell when acid added).



849.0 to 862.0 <u>ANHYDRITE</u>

- (13.0) As above, predominately light grayish powdery mush at shakers due to PDC ?, washed and dried samples are overall slightly grayish, drying to an off white, minor to no fragments, dried clumps to aggregate of smaller anhydrite grains, overall chalky texture, minor salt cavings?, No florescence, instant bright white cut becoming a mottled pale yellow over time, continued slight petroleum smell to samples, no evidence of staining, no visible oil, ROP apx 4 m/hr. Slight possible gas show of 35 units at 856 meters. MW = 1250. (Overall calcareous samples).
- 862.0 to 870.0 LIMESTONE with ANHYDRITE
- (8.0) Over all dried samples slightly greyish, minor very light grayish buff, massive, amorphous to silty texture, minor fragments cryptocrystalline, darker grey, argillaceous in part, Marlstone to apparent micro Wackestone fragments, predominately off white, chalky, soft, very calcareous, anhydritic in part ?, assuming bedded Limestone to Anhydrite, No fluorescence, instant pale weaker whitish cut becoming very slightly pale yellowish over time, better overall fragments, no staining.

870.0 to 875.0 <u>ANHYDRITE</u>

(5.0) Off white, clean, massive, very calcareous component, microcrystalline to rare very slightly microsucrosic, predominately amorphous, very soft, with 10-20% darker grayish dirty Limestone, thin laminations or cavings.

875.0 to 881.0 <u>ANHYDRITE?</u>

(6.0) Massive thick gumbo clay like at shakers, Pure white, massive, soft, sticky, no fragments, very slightly calcareous only, does not dissolve in hot acid, (initially binding off shaker), Dries very poorly but rock hard. ROP down to 2.5 m/hr but increased FOB to 15000 dN and ROP increased to apx 7 m/hr. No Fluorescence no cut. Mud has turned brown since hitting this stick anhydrite.



881.0 to 885.0 ANHYDRITE with minor LIMESTONE?

(4.0) Off white, massive, very soft, sticky at shakers, dried samples predominately soft, chalky, moderate to very calcareous in part, abundant microcrystalline to minor cryptocrystalline opaque, apparent soft very calcareous Silty Limestone laminations?, anhydritic in part, some silty anhydrite, slower steady ROP, no gas, very slightly mineral fluorescence, instant pale whitish grading to slightly pale yellow cut over time in Anhydrite, (silty to calcareous fragments to grading to anhydritic Limestone.

Ship Cove: 885.00 MD, 885.00 TVD, -823.25 SSL

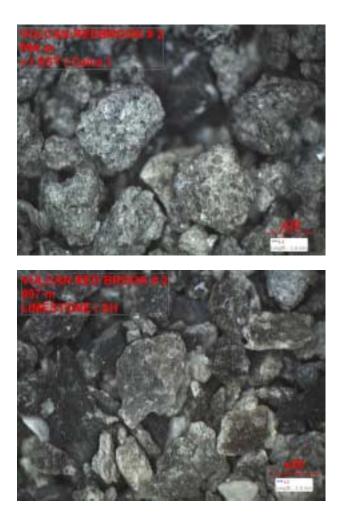
885.0 to 889.0 LIMESTONE to MARLSTONE

(4.0) Mudstone, (1A), mottled of white to very slightly buff, massive, slightly silty quartz, very calcareous, soft, minor microcrystalline buff fragments, silty to micro Wackestone laminations, also interlaminated darker grey to grey black argillaceous, dirty Marlstone, cryptocrystalline to microcrystalline, no stain, several silty fragments with very pale dull fluorescence, weak instant cut, abundant soft chalky calcareous Anhydrite, instant pale white cut, Drill break up to 12 m/hr, minor Gas show of 35 units with MW = 1250. POOH For Logging and Casing.



889.0 to 898.0 LIMESTONE with interbedded SANDSTONE

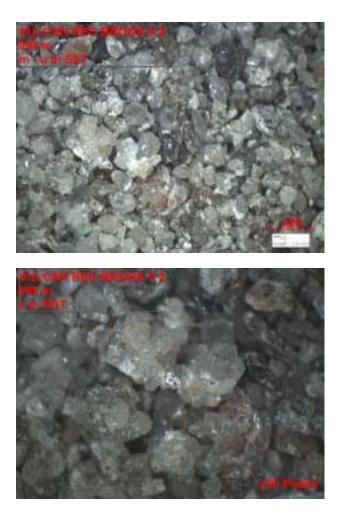
 Buff to slightly brownish, cryptocrystalline, massive, blocky, very silty, slightly argillaceous, Marlstone, interbedded with Sandstone, off white, very fine, quartz, translucent, good trace white mica, trace black argillaceous to carbonaceous? specks, calcareous, slightly chalky, massive, blocky, moderate cemented, easily crushable, slow ROP, trace to no gas only, slight weak white cut to Sandstone, moderate fast pale yellowish white cut on Limestone.



Spout Falls: 898.00 MD, 898.00 TVD, -836.25 SSL

898.0 to 899.5 <u>SANDSTONE</u>

(1.5) Off white, loose, upper medium, quartz, translucent, opaque, trace yellowish, pinkish, trace greenish black mica, rare orange feldspars, moderate well sorted, subrounded to abundant rounded, overall slightly calcareous component, predominately very weakly cemented, very high relief clean (no matrix) grain supported, with visible porosity up to 0.15 mm between grains, abundant secondary recrystallization on quartz, also high relief fragments with chalky white clay infilling, some lower relief calcareous, tighter, assuming streaky effective porosity up to 10%, No fluorescence, no cut. Well Shut In for influx, Kick circulated out, No Gas to Surface.



899.50 to 910.0 PEBBLE SANDSTONE

(10.5) Lower to upper medium loose to weakly cemented clean quartz Sandstone, as above, medium to high relief, very slightly calcareous, minor secondary recrystallization, trace pinpoint porosity, with coarser quartz to feldspars, lithics, grading to increasing coarser to pebble Quartz Sandstone, translucent, opaque, pinkish, abundant reddish to pinkish feldspars, tan to cream to grey cherty pebbles, greenish to greyish lithics, abundant upper medium clean moderate sorted quartz, subrounded, apparent slightly calcareous to chalky matrix, weakly cemented, very poorly sorted, subangular to subrounded, interlaminated varied Sands to pebble Sandstone, very ragged ROP overall, minor trace gas background only, no florescence, no cut.



910.0 to 924.0 SANDSTONE

(14.0) Loose, off white, medium to lower coarse, predominately quartz, opaque, translucent, minor yellowish to rose, purple, very slightly calcareous, apparent chalky matrix to cement, weakly cemented, moderate well sorted, subrounded to rounded, less than 5% coarser fractured pebbles, varied colored quartz, yellowish to pinkish, cherty tan to grey, pinkish orange feldspars, minor fragments are very high relief, no chalky matrix, 7-9% matrix porosity to white chalky filled fragments with no effective porosity, rare fragments greenish clay infilling, minor slightly carbonaceous? very fine calcareous Sandstone to silty laminations?, overall uniform with depth, ROP apx 15 m/hr, minor upper gas show of 50 units, no fluorescence, no cut.

924.0 to 933.0 PEBBLE SANDSTONE

(9.0) Loose, off white to very light grey?, medium to upper coarse quartz matrix, opaque, translucent, moderate well sorted, subrounded to rounded, as above, apparent slightly chalky matrix, very weakly cemented, with 15-20% very coarse to fractured pebbles of quartz, opaque, white, pinkish, yellowish, varied cherty fragments, greyish, minor pinkish feldspars, minor assorted greenish to grayish lithics, trace white limestone fragments, slower ROP down to 6 m/hr, minor gas shows only to apx 50 units, No fluorescence, no cut.

933.0 to 945.0 SANDSTONE

(12.0) Loose, off white, upper medium to lower coarse, quartz, opaque, translucent, trace orange to pinkish only, moderate well sorted, subrounded to rounded, very weakly cemented, chalky white matrix infilling destroyed by drilling?, minor very coarse pinkish to orange fractured fragments to pebbles only, no Gas, ROP up to 20 m/hr, no fluorescence, no cut, uniform with depth.

945.0 to 951.0 SANDSTONE

(6.0) As above, loose, medium to lower coarse quartz, opaque, translucent, moderate well sorted, subrounded to rounded, assuming chalky matrix infilling, weakly cemented, possible increasing calcareous cement with depth, trace varied colored fractured very coarse fragments, floating pebbles?, no fluorescence, no cut.

951.0 to 960.0 REDBEDS Interbedded with SANDSTONE

(9.0) Loose, lower to upper medium, quartz, opaque, translucent, (no staining), very chalky white appearance, minor fragments chalky white to very light greenish clay infilling, very weakly cemented, samples overall slightly reddish, Mud at shakers changed from very light grey white to red, assuming interbedded with softer sandy to silty? redbeds to red Claystones, coarser floating pebbles, yellowish to pinkish quartz to cherty gray to black tan, minor lithics, or possible thinner coarse laminations to bedding, varied ROP from 12 to 5 m/hr indicating bedded softer Clays to redbeds (PDC Balling up?) to chalky coarser white clay rich Sands, no fluorescence, no cut, trace gas decreasing to no gas with depth.

960.0 to 972.0 Chalky SANDSTONE with Redbeds?

(12.0) Off white to very white chalky, very fine to upper medium loose Sandstone, quartz, opaque, translucent, poorer sorted, subangular to subrounded to rounded, very weakly cemented, white clay rich with overall moderate calcareous component to dried sample, minor localized greenish clay infilling, minor floating varied colored pebbles? to coarse quartz, pinkish to yellow, assorted grayish to blackish lithics to cherty, probably softer interbedded reddish Claystone?, (washed to destroyed by drilling ?), very ragged ROP from 3 to 12 m/hr, assuming PDC balling up in softer chalky beds, no fluorescence, no cut.



972.0 to 980.0 Chalky SANDSTONE

(8.0) Loose, off white, fine to upper medium, coarse quartz, opaque, white, semi translucent, very chalky overall samples with calcareous component, abundant increasing coarser to fractured pebbles with depth, orange to yellowish, minor lithics, weakly cemented, chalky, no indications of redbeds but drilling mud is red at shakers, possible some softer Claystone with Redbed interlams to bedding?, as above, slower drilling from PDC balling? or increased coarseness of quartz, no gas, no florescence, no cut.

980.0 to 990.0 <u>SANDSTONE</u>

(10.0) Loose, fine to upper medium to lower coarse, quartz, opaque, translucent, minor orange, very chalky overall samples with calcareous component, as above, quartz, opaque, semi translucent, moderate sorted, subrounded to rounded, weakly cemented, very uniform samples, poorly drying samples, abundant polymer in samples, minor very coarse only, trace gas, no fluorescence, no cut.

990.0 to 1000.0 SANDSTONE

(10.0) Loose, fine to upper medium grading to upper medium to lower coarse, quartz, opaque, white, translucent, minor yellowish to pinkish, rare rose, minor pinkish feldspars, trace black to greyish lithics, chalky residual clays on quartz grains, minor floating fractured very coarse to small pebbles, weakly cemented, calcareous component to dried samples, rare fragments well cemented, siliceous, trace greenish silty to semi waxy marine green clay fragments, moderate sorted quartz, subrounded to rounded, minor subangular, varied ROP 12 to 4 m/hr, Slower ROP clay rich with PDC balling or harder better cemented sands?, no gas, no fluorescence, no cut.

1000.0 to 1010.0 SANDSTONE with CLAYS ?

(10.0) Loose, fine to upper medium, as above, quartz, opaque, white, translucent, minor pinkish, rose, weakly cemented, chalky, overall calcareous component, increasing apparent chalky fragments with depth, off white, soft to very firm, non to local very calcareous, some apparent clean white Limestone fragments, possible thin laminations?, trace greenish clays, massive fragments to micro green clay infilling around orange brown quartz grains, rare blackish lithics, trace greenish silty clays?, non calcareous, moderate hard, siliceous, appear increase silty to clay ? fragments with depth, siliceous, non calcareous, some coarser quartz to trace feldspars, lithics, overall ROP very poor at apx 2 m/hr, decreased Sandstone, increasing reddish clays at shakers, No conglomerate in samples, zero gas, no florescence, no cut.

1010.0 to 1020.0 Pebble SANDSTONE

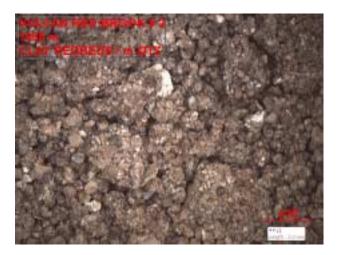
(10.0) Loose, lower to upper medium to lower coarse grading to coarse to very coarse, fractured coarse to pebbles, medium quartz, translucent, white, opaque, well sorted, subrounded to rounded, with intermixed varied colored quartz, white, translucent, pink, yellow, lithic green, yellow, feldspathic well cement siliceous Sandstone lithics, very light to dark grey, yellow, green quartz to cherty fragments, microcrystalline to cryptocrystalline, trace chalky white to harder whitish tripolitic chert ?, white cryptocrystalline Limestone lithics to thin laminations ?, increase ROP with depth, gas show 75 units at 1014 metes, no fluorescence, no cut.

1020.0 to 1030.0 SANDSTONE REDBEDS

(10.0) Red muddy at shakers, red clays washed out of dried samples. loose, fine to upper medium with minor lower coarse, quartz, opaque, slightly stained red translucent, minor yellow, 5% fractured very coarse to possible pebbles, light to dark grey lithic, translucent to white quartz, trace pinkish feldspars, mottled pink grey lithics, rare softer chalky white matrix fragments with reddish stained quartz, overall dirty clay rich Sandstone, poorer ROP probable red Claystone to Shale (low torque), minor gas shows from top of drill breaks, no fluorescence, no cut, uniform / depth.

1030.0 to 1045.0 REDBEDS to SANDSTONE

- (15.0) Reddish brown, loose, very red brown muddy samples and red clays at shakers, lower to upper medium to lower coarse, minor fractured quartz pebbles?, quartz, opaque, translucent with general slight reddish staining, minor yellowish, moderate well sorted, subangular to subrounded with minor upper medium to coarse rounded, very weakly cemented, clay matrix, non to very slightly calcareous, slower ROP due to clay rich intervals (PDC spinning to balling up), uniform with depth, no fluorescence, no cut
- 1045.0 to 1060.0 REDBEDS to Pebble SANDSTONE
- (15.0) Very thick muddy at shakers, red muddy bagged samples, loose, medium to lower coarse to abundant fractured pebbles, quartz, opaque, white, translucent to reddish stained, moderate sorted, subangular to subrounded to rounded, fractured lithics, grayish, blackish, translucent quartz, grey to yellow cherty fragments, overall reddish chalky muddy matrix throughout, very slightly calcareous, no fluorescence, no cut, uniform with depth.
- 1060.0 to 1075.0 REDBEDS to SANDSTONE
- (15.0) Very muddy samples, loose, lower to upper medium, quartz, opaque, translucent, reddish stained from clays, moderate sorted, subrounded to subangular, abundant rounded, minor coarser black to grayish lithics, subrounded to rounded, minor fractured, apparent red clay rich, moderate calcareous component, rare to no fragments, weakly cemented with clay matrix, as above.
- 1075.0 to 1100.0 REDBEDS with SANDSTONE
- (25.0) Very muddy, thick red clays at shakers, 90%+ of sample lost when washed and dried due to clays. Remainder of sample loose quartz, fine to upper medium to lower coarse, opaque, translucent, reddish stained from clays, moderate sorted, subangular to rounded, minor black to grey lithics, trace shaly fragments, minor to 5% increasing white chalky clays, very slightly calcareous, minor floating lithic to quartz pebbles?, assuming varied red Clay Rich bedding with loose Quartz to very weakly cemented Sands. (Slow ROP had low torque indicating probable rich Clays and PDC spinning and balling up), minor trace gas only from slightly cleaner sandy intervals, no florescence, no cut.

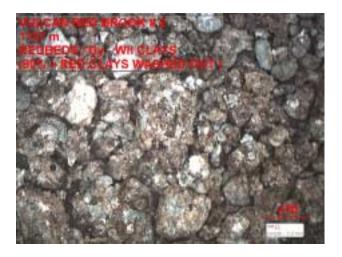


1100.0 to 1120.0 REDBEDS

Heavy red gumbo clays at shakers, (very hard to wash bagged samples off shakers), 90% plus bagged samples lost while washing and drying for vials. Remainder of sample loose quartz, fine to upper medium to lower coarse, subangular to rounded, opaque, translucent, reddish stained, 1-3% apparent white slightly chalky very calcareous clays to Limestone, assuming thin laminations within reddish clays to sandstone, Slower ROP from Clay rich intervals (low torque), Varied ROP due to clay content ? minor floating greenish black lithics, rounded quartz, trace harder red shale fragments, some pebbles to thinner coarser sorted laminations to bedding?, overall samples slightly calcareous, no fluorescence, no cut.

1120.0 to 1137.0 REDBEDS to CLYSTONE?

(17.0) As above, predominately red clays at shakers lost while washing samples, loose quartz, fine to upper medium to lower coarse with minor black to greenish lithic pebbles, very coarse quartz, opaque, white, translucent, red stained, ragged ROP, slower drilling within Clay rich beds, 1-3% white very calcareous Siltstone to very fine Sandstone to silty Limestone?, assuming thin laminations to bedding with clay redbeds, very hard to wash samples, 90% plus lost while washing and drying samples for vials, overall moderate calcareous dried samples, no fluorescence, no cut, minor gas shows from cleaner sands?, Gas show 113 units at 1126 metes with MW = 1200.



1137.0 to 1143.0 CLAYSTONE

- (6.0) Off white, soft, chalky, very calcareous, (stable in water), slow ROP under 2 m/hr (PDC balling to spinning on clays), loose colored Quartz to red shale fragments, no gas.
- 1143.0 to 1152.0 CLAYSTONE with SANDSTONE ?
 - (9.0) Very muddy samples, lighter reddish, clays 90% plus washed out ?, died samples predominately off white soft chalky very calcareous clays?, loose quartz, opaque, white, translucent, stained red, minor reddish to greenish Shales to firmer Claystone, non calcareous, better ROP up to 20 m/hr indicating less clays or clay rich Sandstone, no gas, no fluorescence, no cut.

1152.0 to 1163.0 Interbedded SANDSTONE with CLAYSTONE

- (11.0) Soft mushy muddy light greyish samples, 90% lost at shakers and washing samples, dried samples grayish to whitish chalky clays with loose quartz, fine to upper medium, opaque, translucent, rare trace rose, trace reddish stained, no solid fragments, Ragged ROP with faster ROP up to 20 m/hr with spiky Gas shows under 75 units, no fluorescence, no cut.
- 1163.0 to 1170.0 CLAYSTONE
 - (7.0) Muddy poor samples, as above, loose quartz, Clays destroyed by PDC and washed out. Dried samples overall very light grey, abundant white chalky fragments, calcareous component, no solid fragments, Slower ROP indicating Clays?.
- 1170.0 to 1185.0 CLAYSTONE with SANDSTONE
 - (15.0) Very poor runny thinner muddy samples, (very little grit at shakers, bagged samples predominately soft mushy clays?, 95% plus of bagged sample washed out, very poor drying. Dried samples predominately whitish non to very calcareous Clays?, remaining loose quartz, fine to upper medium, More apparent redbeds, possible better sand at 1184 meters, Gas show of 137 units, no fluorescence, no cut.
- 1185.0 to 1195.0 CLAYSTONE with SANDSTONE
- (10.0) Continued very muddy samples, as above, 90% of bagged sample lost while washing and drying, abundant white soft calcareous clay?, loose fine to upper medium quartz, opaque, translucent, rare rose, minor red stained, rare very coarse, moderate sorted, subangular to rounded, minor trace reddish to greenish shale lithic fragments, 1195 meter sample has several Sandstone fragment, medium, weakly cemented, pyritic, better ROP apx 9 m/hr, no fluorescence, no cut.

1195.0 to 1210.0 CLAYSTONE with SANDSTONE

(15.0) As above, continued grey white chalky at shakers, (Drilling mud red), 90% of sample lost or washed out, residual loose quartz, fine to upper medium, rare lower coarse, opaque, white, translucent, trace rose, rare stained red, minor trace reddish to greenish Shale fragments, rare trace fine Sandstone, greenish white, friable, competent, siliceous, no sandstone fragments, abundant softer calcareous chalky clays? in dried samples, (destroyed by drilling?), no fluorescence, no cut.

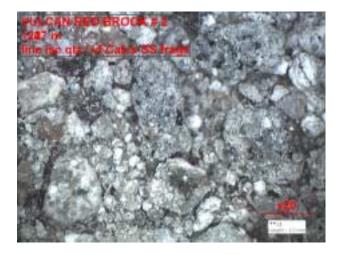


1210.0 to 1223.0 CLAYSTONE with SANDSTONE

(13.0) As above, predominately slower drilling 4-5 m/hr, continued very mushy chalky, Bagged Samples from 1221 meters and deeper very light greyish white, thicker chalky gumbo clay like, dried samples chalky white calcareous fragments to lumps with loose quartz, fine to medium, assorted, moderate sorted, subangular to subrounded, no fragments, No gas.

1223.0 to 1233.0 SANDSTONE

(10.0) Thick chalky off white to very light grey white gumbo clay in sample bags, 90% of sample washed out to lost, dried samples, loose, quartz, well sorted, subangular to subrounded, minor medium only, chalky to calcareous matrix?, minor very fine Sandstone fragments, very slightly greenish white, calcareous, weakly cemented, friable, assuming better cleaner weak cemented calcareous Sandstone, ROP up to 15 m/hr, trace gas only, no fluorescence, no cut.



- 1233.0 to 1240.0 SANDSTONE with CLAYS
 - (7.0) As above, continued very chalky gumbo to sticky clays at shakers, dried samples chalky white calcareous lumpy to fragments, loose quartz, predominately fine, well sorted, subangular to subrounded, no harder Sandstone fragments, slower ROP apx 8 m/hr.
- 1240.0 to 1248.0 CLAYSTONE
 - (8.0) Very white chalky sticky clays in sample bags, predominately dried white chalky clays (calcareous) in samples, loose quartz, as above, fine, slower ROP apx 3 m/hr.
- 1248.0 to 1257.0 CLAYS with SANDSTONE to trace LIMESTONE
 - (9.0) Continued white chalky gumbo clay rich sample bags, Cuttings at shakers very chalky white with greenish clays within soft fragments, dried samples predominately dried calcareous whitish clays?, trace very fine to medium weakly cemented calcareous Sandstone, apparent minor microcrystalline to cryptocrystalline Limestone fragments, thin laminations, predominately loose fine to medium quartz, rock destroyed by PDC drilling, Slower ROP overall apx 5 m/hr, Samples indicate with more visible fragments that the rock may be becoming more competent. No Gas, no fluorescence, no cut.

1257.0 to 1265.0 LIMESTONE

(8.0) Muddy chalky thick clay samples at shakers, dried samples predominant Limestone Mudstone, (1A), off white, chalky, to cryptocrystalline, softer, silty to very fine to fine quartz component in part, quartz clastic grains decreasing with depth to cleaner chalky mudstone, to cryptocrystalline very slightly buff white, Slow ROP apx 3 m/hr, 5% quartz decreasing with depth, no fluorescence, trace spotted weak pale white cut, no visible porosity, tight, no gas.



1265.0 to 1268.0 LIMESTONE

(3.0) Mudstone, (1A), off white, chalky, massive, soft to abundant harder amorphous to cryptocrystalline, light tan to buff, abundant white silty slightly chalky mudstone, several fragments very slight blotchy light oil staining within a micro sucrosic matrix, (pale white fluorescence, slow blooming yellow white cut), overall 30% pale white cut, (chalky fragments stronger white cut), no loose quartz, Survey Gas of 562 units but possible from fracture?.



1268.0 to 1272.0 LIMESTONE

(4.0) Mudstone, (1A), off white, massive, blocky, softer, chalky, clean, minor trace silty only with interlams harder cryptocrystalline light buff, grading with depth to predominately chalky, ROP up to apx 15 m/hr, no fluorescence, trace only v pale white cut.

1272.0 to 1278.0 Marlstone grading to LIMESTONE

(6.0) Lighter grey dirty silty Limestone, minor grayish shales, no cut, grading with depth to cleaner continued Mudstone, (1A), off white, chalky to apx 10% off white to very slightly tan cryptocrystalline interlams, minor slightly dirty marly laminations throughout?, no fluorescence, lower cleaner chalky Mudstone slow weaker pale residual yellow white cut., no visible porosity.

1278.0 to 1287.0 LIMESTONE

(9.0) Mudstone, (IA), predominately off white, chalky in part, massive, blocky, firm, local very slightly silty, trace black rounded argillaceous nodulars or possible pellets? up to 1 mm, minor harder cryptocrystalline interlams, slightly buff, massive, minor trace grayish calcareous shaly laminations?, uniform samples, overall very slightly grey color to dried samples throughout, Gas show 126 units at 1285 meters, possible fracture?, no fluorescence, 1284 to 1287 samples instant pale yellow white cut, some chalky fragments bright white, no visible staining, no apparent porosity, 2-3% inferred non effective.



1287.0 to 1298.0 LIMESTONE with minor Siltstone to Sandstone

(11.0) Mudstone, (1A), off white, abundant chalky, moderate clean, to minor cryptocrystalline greyish to light buff, overall slightly grey dirty sample, with depth increasing slightly argillaceous Marly? to silty laminations, minor lithic micro to fine Wackestone, possible some minor calcareous grayish laminations throughout, minor but increasing with depth interbedded to laminated silty to very fine very calcareous Sandstone, well cemented, 10-15% shaly with depth, good trace loose black rounded spherical argillaceous calcareous pellets up to 1.5 mm down to 0.2 mm within a well cemented clean to dirty silty Limestone, no fluorescence, weak residual pale white mottled cut.

1298.0 to 1302.0 SANDSTONE

(4.0) Loose, very fine to upper fine quartz Sandstone, minor fragments well cemented, quartz, opaque, translucent, rare trace lithics, very fine to Siltstone fragments, moderate calcareous with finer Sandstone to moderate to weaker cemented, low relief, no visible porosity from fragments, Increased ROP and Gas Show to 150 units indicate some weaker cemented Sands with porosity, minor upper medium to rare lower coarse quartz grains, abundant chalky to cryptocrystalline Limestone throughout, possible interlams ?, no fluorescence, rare spotted instant white yellow cut only from several Sandstone fragments, no staining.

1302.0 to 1311.0 SANDSTONE

(9.0) Loose, fine to medium to lower coarse quartz, opaque, white, semi translucent, rare rose, rare black lithic fragment, rare trace black shaly microlams?, chalky coating on coarser grains, minor chalky to cryptocrystalline Limestone, abundant softer chalky calcareous fragments to lumps, rare trace pyrite specks, minor very fine to silty fragments, well cemented, calcareous in part, assuming laminations within weaker cemented Sandstone, ROP up to 12 m/hr, Gas Show up to 456 units, Slight Oil Smell to samples when washed and dried, no staining, trace fluorescence and cut from Limestone fragments, overall bright fast residual cut to samples.



1311.0 to 1323.0 CLAYSTONE with SANDSTONE

- (12.00) Thick white clays, very muddy sticky at shakers, dried samples predominately loose quartz, fine to upper medium to coarse, quartz, opaque, white, translucent, trace rose, rare reddish, rare trace lithic, moderate poor sorted, subangular to subrounded to well rounded, weakly cemented, chalky material very calcareous throughout, slower ROP indicating possible PDC spinning, no fluorescence, no cut, uniform / depth.
- 1323.0 to 1329.0 SANDSTONE
 - (6.0) Loose quartz, fine to upper medium, minor coarse, as above, poorly sorted, subangular to rounded, abundant chalky white very calcareous material to clays?, very weakly cemented, very slight Oil Smell to 1323 sample, no fluorescence, very slow residual cut, becoming brighter yellow white cut throughout softer chalky material, Gas show1325 meters of 454 units.
- 1329.0 to 1341.0 SANDSTONE
- (12.0) Chalky muddy white to light grey sticky clays? at shakers and bagged samples, 80% of sample washed out, Dried samples loose quartz, fine to medium to lower coarse, quartz, opaque, white, semi translucent, rare rose, trace slightly orange, trace black lithics, poorer sorted, subangular to rounded, abundant coarser fragments with chalky white coating, assuming chalky calcareous matrix, trace fragments Sandstone, very fine to fine, semi crystalline, clean, calcareous in part, quartz, trace lithic, weaker cemented, abundant chalky material, very calcareous, no fluorescence, trace spotted within chalky softer fragments with instant bright yellow white cut (less than 0.1%), no staining, Gas shows up to 482 units, ROP apx 12 m/hr.

1341.0 to 1353.0 SHALE with MARLSTONE ?

(12.0) Medium grey muddy sticky bagged samples, Dried samples predominately mottled light grey, moderate soft, silty with moderate calcareous component, interlaminated with softy silty Marlstone to abundant cleaner off white very calcareous Siltstone to silty limy Mudstone?, rare trace speckled pyrite within argillaceous clays to Shale, uniform samples, becoming increasing argillaceous to shaly with depth, no fluorescence, minor yellow white cut from chalky white fragments (cavings?), No gas, decreasing to low background of apx 60 units.



1353.0 to 1362.0 SHALE

(9.0) Very muddy sticky medium grey bagged samples and muddy clays at shakers, dried samples predominately medium to lighter grey Shale, massive, amorphous, platy, abundant lighter grey very slightly semi waxy, non calcareous, rare silty, minor slightly calcareous overall, abundant softer slightly chalky to calcareous dirty Marlstone to calcareous Claystone to Shales?, abundant light grey, mottled silty calcareous laminations?, Over all shaly with depth, no fluorescence, minor spotted yellow white cut from whiter chalky fragments, with depth overall residual slow but brighter yellow white cut over time, No Gas, ROP down to 4 m/hr in basal shale.



1362.0 to 1370.0 SANDSTONE

- (8.0) Chalky white bagged muddy samples, dried samples loose quartz, fine to upper medium to abundant coarse, grading finer with depth, opaque, white, translucent, no fragments, abundant soft chalky calcareous material to clays?, abundant dried lumpy sandy fragments, no fluorescence, instant white cut from chalky fragments becoming brighter over time, Gas show 195 units.
- 1370.0 to 1378.0 SHALE with SANDSTONE
 - (8.0) White chalky muddy bagged samples, As above, decreasing coarse sands, apparent finer to possible very fine to silty, general loose quartz, abundant very chalky white calcareous lumpy dried fragments, minor Shale, calcareous, mottled to more massive non calcareous, residual yellow white cut over time.
- 1378.0 to 1380.0 REDBEDS
 - (2.00) Red brown muddy bagged samples, dried samples loose quartz, fine to very coarse, opaque, translucent, minor softer red brown argillaceous silty fragments, abundant white chalky calcareous fragments, minor interlaminated grayish to greenish gray shales, no fluorescence, no cut.



1380.0 to 1384.0 SANDSTONE

- (4.0) Chalky white to light grey muddy samples, Dried samples loose quartz, fine to coarse, opaque, translucent, chalky white matrix?, very calcareous, moderate poor sorted, subangular to rounded, no fragments, no fluorescence, minor instant pale yellow white cut through chalky fragments, overall whitish residual cut.
- 1384.0 to 1393.0 <u>REDBEDS</u>
 - (9.00) Very thick red muddy samples, Dried samples abundant red brown argillaceous slightly silty shales?, minor greyish to slightly greenish grey shale interlams, abundant softer chalky white fragments, loose quartz, very fine to medium, possible thinner chalky Sandstone laminations to thin bedding.

1393.0 to 1402.0 SANDSTONE

(9.0) Chalky white muddy clay ? Bagged samples, Dried samples loose quartz, medium to coarse, opaque, translucent, abundant chalky soft calcareous material to matrix?, appears to be grading finer with depth, no fluorescence, instant bright yellow white cut throughout soft chalky fragments, decreasing with depth, weaker gas show apx 120 units.

1402.0 to 1420.0 REDBEDS

(18.0) Red brown muddy samples, Interlaminated red brown silty Shales, argillaceous, slightly calcareous only to more calcareous silty, abundant very fine to upper medium chalky Sandstone?, thinly laminated?, abundant chalky white calcareous fragments, minor Siltstone, of white to very slightly greenish white, calcareous, well cemented, no fluorescence, minor white pale cut through out very chalky fragments., uniform ROP apx 8 m/hr, no gas.

1420.0 to 1440.0 Interbedded REDBEDS with SANDSTONE

(20.0) Muddy red at shakers and bagged samples, 90% of red clays washed out, dried samples, predominant loose, fine to minor medium, quartz, opaque, translucent, white, abundant chalky white calcareous matrix?, minor very fine to silty fragments, off white to very light greenish grey, calcareous, clean, abundant red brown silty to argillaceous Shale, non to very slightly calcareous only, Uniform ROP, No Gas, no fluorescence, no cut, minor cut from chalky white fragments only.



1440.00 to 1450.0 SANDSTONE with REDBEDS

(10.00) Lighter reddish brown grading to light grayish muddy bagged samples with depth. Loose quartz, fine to medium to coarse, quartz, opaque, translucent, poor sorted, subangular to subrounded to rounded, abundant white chalky material on grains, abundant chalky very calcareous fragments to matrix? throughout interval, minor interbedded Redbeds, red brown, massive, amorphous, platy, argillaceous, slightly silty, slightly calcareous only, minor trace grayish shale fragments, trace fragments only, very fine to silty off white to very slightly greenish white, quartz, clean, calcareous, well cemented, rare weakly cemented medium quartz Sandstone, crystalline in part, slightly calcareous, Overall ROP slowing down due to chalkier matrix ?, no fluorescence, trace spotted yellow white slow cut from chalky fragments only, no gas.

1450.0 to 1465.0 CLAYSTONE with SANDSTONE

(15.0) White chalky sticky clay (with greenish laminations?) at shakers, 90% of sample Washed out, dried samples very chalky, off white, very calcareous with loose fine to medium quartz, opaque, translucent, white, as above, no fragments, moderate sorted, subangular to subrounded, slower ROP apx 7m/hr, assuming due to overall increasing chalky material to matrix, some clay redbeds, uniform with depth, no gas, no fluorescence, no cut.

1465.0 to 1483.0 CLAYSTONE with LIMESTONE?

(18.0) Very white chalky at shakers, 90% plus calcareous clays? or with soft LIMESTONE ?, washed out, PDC destroying formation?, upper loose sandy quartz with chalky matrix?, fine to medium grading to 90% soft chalky very calcareous white lumpy fragments?, minor medium to coarse loose quartz, lower Torque through slower ROP intervals, no gas, no fluorescence, localized instant yellow white cut on chalky fragments.



1483.0 to 1486.0 REDBEDS

- (3.0) Red muddy sample, Reddish Brown, massive, amorphous to silty, blocky, firm, non to local moderate calcareous fragments, minor grayish fragments non calcareous, abundant softer chalky white material, minor loose quartz from grey white sands.
- 1486.0 to 1495.0 CLAYSTONE
 - (9.0) Off white to very light grey thick muddy samples to clay rich at shakers, dried samples predominately off white chalky lumpy powdery very calcareous clay?, trace no quartz, no gas, minor weaker spotted whitish cut on chalky fragments.

1495.0 to 1505.0 CLAYSTONE to LIMESTONE? with minor SILTSTONE - SANDSTONE

(10.0) Off white chalky clay rich samples, 90% of clays and samples washed out, dried samples predominately off white chalky very calcareous lumpy clays?, minor to localized fine to medium chalky Sandstone?, no gas, no fluorescence, instant pale white cut grading over time to brighter yellow white within chalky fragments.

1505.0 to 1520.0 CLAYS with LIMESTONE? with minor SILTSTONE

(15.0) Sample bags filled with off white to light grey very thick clays, 90% of sample lost and washed out. Dried samples predominately off white chalky soft lumpy Clays?, local interbedded very slightly greenish grey calcareous moderate firm Siltstone, minor thin redbeds, probably minor very chalky calcareous fine to medium clay rich Sandstone throughout, uniform samples, no to trace gas only, no fluorescence, overall moderate slow but brighter white to slightly yellow white cut to chalky fragments, 1512 sample has increased duller yellow to yellow white cut to chalky powdery fragments.



1520.0 to 1527.0 REDBEDS

(7.0) Red brown thick muddy samples, 75% of red clays washed out and lost, Dried samples red brown argillaceous to silty shales? non to minor calcareous, increasing calcareous with depth, becoming mottled red brown with increasing white clays interlaminated, possible minor grayish basal clays, no sands, no gas.



1527.0 to 1536.0 CLAYSTONE to minor LIMESTONE?

(9.0) Muddy white chalky calcareous clay rich samples, as above, predominately off white chalky soft lumpy calcareous clays?, minor firmer fragments Limestone?, minor overall slower moderate bright white cut, no gas.



1536.0 to 1544.0 LIMESTONE to CLAYSTONE?

- (8.0) Off white very soft chalky Bagged samples. Dried samples off white, soft blocky fragments, very calcareous, trace fragments Limestone, off white, very slightly grayish white, cryptocrystalline, harder, massive, 2-3% silty component, ROP down to 3 m/hr, no Gas, no fluorescence, very weak pale white residual cut.
- 1544.0 to 1551.0 LIMESTONE with CLAYSTONE? with minor SANDSTONE
 - (7.0) Muddy white clay sticky samples. Dried samples predominant off white chalky fragments, very calcareous, clean, massive? minor cryptocrystalline off white to very light grey white Limestone fragments, (non to very fine sandy to silty), trace loose fine to medium rounded quartz, possible very weak cemented poor sorted chalky calcareous Sandstone fragments (or from drying to clumping of powder/grains?), trace very slightly greenish Siltstone, calcareous in part, rare white loose mica flakes, trace darker greenish fragments with micro black mica flakes, with depth, slightly dirtier silty Limestone to very calcareous matrix supported siltstone to very fine sandstone, possible minor argillaceous black Shaly silty laminations? no gas, no fluorescence, weak pale residual cut.

1551.0 to 1558.0 REDBEDS with SANDSTONE

(7.0) Red and green to grey Shales interlaminated with greenish micaceous Siltstone to very fine Sandstone, abundant chalky very calcareous, grading with depth to loose fine to medium rounded to subrounded quartz, very calcareous chalky samples, slower basal ROP possible red to grey shales interlaminated with calcareous very fine slightly dirty Sandstone to Siltstone, continued overall very chalky white thick muddy samples, No Gas, no fluorescence, no cut.

1558.0 to 1566.0 SANDSTONE

(8.0) Light grey very muddy thick calcareous chalky? samples, Dried samples loose quartz, fine to medium with minor coarse, subrounded to rounded, grains with partial chalky white coating, no fractured grains, good coarse loose white mica flakes, minor very fine to silty fragments only, off white to very slightly greenish, calcareous, trace several quartz fragments, translucent, weakly cemented, no apparent clay, Gas show 511 units, no fluorescence, no staining, no cut.



1566.0 to 1572.0 SANDSTONE

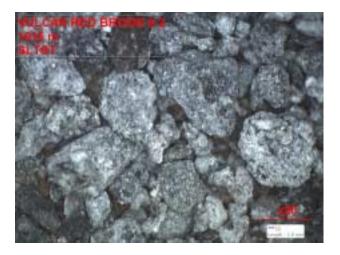
- (6.0) As above, very light grey chalky muddy clay? rich sample bags, Cuttings at shakers light grayish, mushy, clay like with greenish grey streaking. Dried samples loose quartz, fine to medium, subrounded to rounded, no fractured quartz, chalky coating on grains, calcareous chalky white fragments, possible slightly finer than above, no fluorescence, slow residual yellow white cut, Gas Shows 672 units.
- 1572.0 to 1586.0 SILTSTONE with SANDSTONE
 - (14.0) Medium gray muddy sticky bagged samples, muddy grey at shakers, dried samples loose, silt to very fine to minor fine, grayish overall, slightly calcareous, minor off white chalky, very uniform ROP slightly slowing with depth, minor dirty argillaceous moderate cemented fragments, silt to very fine, non calcareous, overall very uniform samples, steady ROP, very constant torque, background gas steady decreasing with depth, no fluorescence, some residual very slow yellow white cut.

1586.0 to 1593.0 SILTSTONE with SHALE

(7.0) Darker grey muddy samples, dried samples medium grey argillaceous to dirty siliceous to slightly calcareous, firm, mottled medium grey, local slightly chalky with depth, minor grayish shale fragments, minor softer slightly brownish chalky, becoming clean to more calcareous, chalky with depth, some very fine to fine quartz laminations?, no fluorescence, no cut (only cut from chalky white fragments).

1593.0 to 1596.0 CLAYSTONE to Chalky LIMESTONE?

- (3.0) Off white muddy samples, predominant dried chalky off white very calcareous fragments, no quartz ?, minor cleaner Siltstone to very fine Sandstone, non to slightly calcareous, micromicaceous, very calcareous sample, Gas show of 640 units, Nothing in samples to support show, no fluorescence, no cut. Possible Connection Gas?
- 1596.0 to 1610.0 SILTSTONE
- (14.0) Medium grey muddy samples, dried samples very light grey, off white, slightly dirty, quartz, good trace white micromicaceous, firm, blocky, easily crushable, general very slightly calcareous only, does not dissolve in acid, good argillaceous component, uniform with depth, moderate calcareous powdered dry samples, no florescence, no cut.
- 1610.0 to 1615.0 SILTSTONE
 - (5.0) Off white chalky fragments, very calcareous, minor cleaner Siltstone fragments, off white, quartz, calcareous, trace micromicaceous, well sorted, semi crystalline, slightly chalky only, no fluorescence, no cut, Gas show 200 units.
- 1615.0 to 1625.0 <u>SILTSTONE</u>
 - (10.0) Medium grey muddy sticky clay rich bagged samples, 90% lost and washed away. Dried samples very light grey micaceous Siltstone, non calcareous, argillaceous, dirty with interlaminated cleaner off white micaceous calcareous Siltstone, lower basal Shale, greenish grey, massive, amorphous, non calcareous, with interlaminated to bedded cleaner Siltstone, no fluorescence, no cut.



1625.0 to 1632.0 SILTSTONE

(7.0) Very light grey to very slightly greenish grey, soft to friable, quartz, micromicaceous, slightly chalky to calcareous, abundant interlaminated very calcareous with minor calcareous, minor shale interlams, no gas, no fluorescence, no cut.

1632.0 to 1638.0 SANDSTONE

(6.0) Lighter grey muddy sample, loose quartz, fine to medium to very coarse, quartz, opaque, white, semi translucent, rare very slightly cream orange, moderate poor sorted, subrounded to rounded, some indications of chalky matrix, rare trace weakly cemented fragments, clean, quartz, grain support, siliceous with interstitial clay infilling, minor chalky calcareous fragments, trace slightly dirty Siltstone to greenish grey shales as above, Gas show 317 units at 1637 meters, no fluorescence, no cut.



1638.0 to 1650.0 <u>SILTSTONE</u>

(12.0) Lighter grey, mottled, quartz, very slightly argillaceous, minor slightly calcareous, micromicaceous, firm, competent but friable, interlaminated with cleaner calcareous Siltstone to very fine clean Sandstone to minor chalky Sandstone as above, possible minor silty Shales, no florescence, no cut.

1650.0 to 1657.0 <u>SILTSTONE</u>

(7.0) Mottled lighter grey, slightly argillaceous, non to slightly calcareous, micromicaceous, interbedded with cleaner calcareous Siltstone, grading to very fine Sandstone, quartz, micromicaceous, minor varied micromicaceous Siltstone, possible minor softer shales, abundant loose quartz, very fine to coarse, possible minor interlaminated chalky Sandstone, no fluorescence, no cut.



1657.0 to 1668.0 SILTSTONE

(11.0) As above, interlaminated slightly argillaceous micromicaceous Siltstone and cleaner calcareous Siltstone, micromicaceous, minor possible very light greenish grey shale laminations, continued loose quartz, minor chalky white fragments, slower ROP, no gas, assuming tighter to no sands, no florescence, no cut.

1668.0 to 1671.0 SANDSTONE

- (3.0) Loose, fine to upper medium, minor coarse, quartz, semi translucent, opaque, white, trace rose, rare slightly orange, no visible fragments, no visible cement, clean, poor sorted, subrounded to rounded, abundant fractured grains indicating some stronger cement, no clay matrix ?, Gas show 355 units, no fluorescence, no cut, no staining.
- 1671.0 to 1674.0 REDBEDS
 - (3.0) Red brown, clay rich, dried samples predominately loose quartz, very fine to medium, trace lithics, abundant firmer silty to argillaceous red brown fragments, slightly non calcareous.

1674.0 to 1685.0 SANDSTONE

(11.0) Very light grey muddy bagged samples, (good samples), Loose Quartz, fine to upper medium to coarse, quartz, translucent, minor opaque, trace slightly orange, minor trace possible pinkish orange feldspars, trace white coarse mica, moderate poor sorted, subangular to subrounded, minor fractured grains, very clean, no apparent matrix, no fragments, possible minimum chalky component?, (some fragments with apparent traces white chalky coating), no florescence, no cut.



1685.0 to 1698.0 SANDSTONE

(13.0) Loose quartz, fine to upper medium to coarse, minor very fine, quartz, translucent, opaque, minor trace slightly orange to yellow, very slightly creamy orange, possible feldspars, trace white mica, no apparent lithics, no fragments, moderate poorer sorted, subangular to subrounded, minor rounded, minor fractured grains, no visible cemented, no gas, no fluorescence, no cut. Average ROP apx 15 m/hr steady.

1698.0 to 1707.0 REDBEDS

(9.0) Very muddy red clay rich sample bags, 95% of clays washed out of samples, minor to 5% red brown silty to argillaceous competent firm fragments, sample bags becoming lighter reddish to reddish grey with depth to 1713 sample, Dried samples predominately loose quartz, fine to medium to minor coarse (finer than above), opaque, translucent, rare trace very slightly creamy orange, trace coarse white mica, rare rose, no fragments, no visible cement, clean, possible some chalky component, no gas, no fluorescence, no cut.

1707.0 to 1720.0 SANDSTONE

Lighter grey muddy samples, very good overall samples, loose, fine to coarse, translucent, opaque, trace orange, possible trace feldspar grain, good trace white coarse mica, moderate poor sorted, subangular to subrounded, rare rounded, minor fractured grains, no visible cement. Steady ROP apx 15 -18 m/hr, uniform with depth, no gas, no fluorescence, no cut.

1720.0 to 1742.0 SANDSTONE

(22.0) Loose, medium to coarse to very coarse, quartz, translucent, opaque, trace orange, possible trace feldspars?, moderate poor sorted, subangular to subrounded, minor rounded, minor to increasing fractured coarser quartz, no visible cement, no gas, no fluorescence, no cut, uniform ROP with depth.

1742.0 to 1750.0 SANDSTONE

(8.0) Slowdown in ROP from 15 m/hr to 7 m/hr, Loose quartz, fine to medium to very coarse opaque, translucent, rare trace rose, trace creamy orange, minor trace coarse white mica, moderate poor sorted, subangular to subrounded to minor rounded, abundant fractured coarse quartz, no fragments, no visible cement, minor quartz grains with trace greenish clay?, overall clean, no gas, no fluorescence, no cut. POOH to check PDC. (Nothing in samples to explain change in ROP)



1750.0 to 1755.0 REDBEDS with SANDSTONE

(5.0) Red brown muddy bagged samples, 90% of clays washed out, dried samples red brown to interlaminated grey to greenish grey competent Shales, siliceous to very slightly calcareous only, continued cleaner loose fine to upper medium to coarse quartz grains as above, no fluorescence no cut.

1755.0 to 1764.0 SANDSTONE

(9.0) Loose, fine to coarse to very coarse to predominately very coarse with depth, quartz, translucent, opaque, rare trace slightly stained reddish cream, no lithics, moderate poorly to moderate sorted with depth, subangular to subrounded to minor rounded, minor fractured very coarse quartz, no visible fragments, no cement?, minor apparent chalky white coatings, trace white very firm chalky fragments, non calcareous, possible tripolitic chert?, or matrix, no gas, no fluorescence, no cut. (ROP up to 8 m/hr with tricone).



1764.0 to 1773.0 SANDY REDBEDS

(9.0) Red brown bagged samples, very clay rich, 90% washed out, dried samples predominately loose fine to medium quartz, (powder coatings on grains from red clays), abundant soft clay material, non calcareous, weakly cemented, with depth minor greyish black shales to slightly greenish grey shales, trace greenish matrix infilling around some cleaner white to translucent sand to quartz, 1773 sample has minor greyish black argillaceous fine cemented sands, good trace white clean coarse quartz, minor white chalky fragments, no gas, no florescence, no cut.

17733.0 to 1776.0 REDBEDS

(3.0) Very red brown muddy samples, predominately red brown shaly fragments, silty, non calcareous, massive, with interlaminated greyish shales, POOH to run PDC (Poor ROP at 2 m/hr).

1776.0 to 1794.0 <u>REDBEDS</u>

(18.0) Muddy red brown samples, heavy clays, 50% washing out, dried samples predominately loose quartz, fine to upper medium, minor coarse, opaque, translucent, reddish stained to minor orange, possible minor orange feldspars, trace lithics?, moderate sorted, subangular to subrounded, minor rounded, no fragments, weakly cemented, interbedded clay rich Sandstone to sandy Shale to Siltstone, slightly to local moderate calcareous decreasing to slightly calcareous only with depth.



1794.0 to 1810.0 REDBEDS

- (16.0) As above, argillaceous silty competent weakly cemented clay rich Siltstone to silty to sandy Shale, loose quartz, fine to upper medium to rare coarse, non calcareous, rare Sandstone fragments, minor interlaminated fine to medium greenish clay rich Sandstone and cleaner siliceous medium to coarse cleaner Sandstone, less than 10% greyish to slightly greenish grey Shales to sandy Shale, very uniform with depth, no gas, ROP 10-12 m/hr steady.
- 1810.0 to 1825.0 <u>REDBEDS</u>
- (15.0) Red brown clay rich sample bags, 50% washed out, dried samples as above, predominant red brown silty non calcareous fragments to bedding, interlaminated with minor clay rich sands to cleaner weakly cemented greenish clay infilling, continued minor greyish Shales to minor marine green semi waxy Shale to clays, continued very uniform with depth, no gas.

1825.0 to 1837.0 TRANSITION ZONE

(12.0) Redbeds as above, interbedded with very hard massive greenish black to off white siliceous very fine Sandstone to Siltstone, some fragments with red silty lithics within siliceous greenish white Sandstone, minor bedded coarser white siliceous well cemented Sandstone ?, some apparent cherty lithics, reddish to grayish, black, minor trace orange feldspars grains, good trace white chalky siliceous fragments, Ragged ROP from 18 to 4 m/hr, trace gas show only.

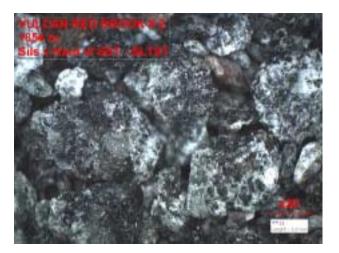
1837.0 to 1847.0 SILTSTONE to SANDSTONE

(10.0) Massive, mottled greyish black to slightly overall greenish black crystalline Siltstone to very fine Sandstone, very very hard, siliceous, non crushable, angular fractured fragments, quartz, opaque, white, black lithics to siliceous argillaceous matrix, extremely well cemented, interbedded with very hard crystalline siliceous whiter to cleaner very fine Sandstone to Siltstone, very uniform with depth.



1847.0 to 1858.0 SILTSTONE to SANDSTONE

(11.0) As above, mottled greenish grey to whitish black, to abundant lighter off white, cleaner, interbedded to laminated siliceous very hard crystalline very well cemented Siltstone to very fine Sandstone, quartz, lithics to black argillaceous matrix?, siliceous cemented, minor trace cherty to coarser fragments from above?, very uniform samples, no gas, no fluorescence, no cut.



1858.0 to 1867.0 REDBEDS

(9.0) Moderate red brown samples, Most softer clays washed out?, very intermixed, red brown silty shale to redbeds to red stained very fine to fine siliceous Sandstone to mottled greenish white to intermixed reddish to greenish poor sorted moderate well cemented Sandstone, trace grayish hard siliceous fine sandstone, trace coarser green black lithic? to crystalline feldspars granite? lithics, 40% chalky siliceous fragments, white to mottled stained to some greenish red, no gas.

1867.0 to 1871.0 TRANSITION ZONE?

(4.0) Continued lighter red brown samples, predominately chalky siliceous fragments, white to red stained, intermixed, abundant loose fine to medium quartz throughout and within chalky fragments due to drying?, assorted grayish black silty lithics to mottled reddish sandy, very slight trace gas only, ROP apx 8 m/hr.

1871.0 to 1882.0 SANDSTONE

(11.0) Predominately off white chalky siliceous fragments to lumpy powdered, soft streaky abundant greenish to minor reddish, minor quartz, fine to medium, opaque, translucent, some softer fragments, trace black metallic lustre specks to micro laminations?, minor mottled greenish to very slightly greenish to white fragments, quartz, feldspars?, moderate weakly cemented, rare harder cemented fragments, possible lithics?, floating fragments within a chalky siliceous Claystone or chalky Sandstone?, Slower ROP under 3 m/hr, no gas.



1882.0 to 1885.0 REDBEDS

(3.0) Reddish brown samples, clays washed out, remaining sample predominately chalky off white fragments with greenish streaky to mottled appearance, intermixed to sheared appearance, abundant harder fragments, quartz, white to opaque, feldspars to creamy orange to whitish, some fragments with greenish clay infilling, siliceous, assuming some floating pebbles to lithic fragments, better ROP within Redbeds.

1885.0 to 1892.0 SANDSTONE

(7.0) Overall very slightly pinkish cream white color, predominately chalky white fragments to soft greenish mottled chalky fragments, abundant harder very slightly creamy orange blocky angular feldspars to rare trace blocky mottled greenish pink sandy fragments, very poorly sorted, quartz, feldspars, white to greenish chalky siliceous matrix, moderate cemented, varied Sandstone laminations or lithic fragments? slower ROP down to 2 m/hr.

1892.0 to 1905.0 REDBEDS with SILTSTONE to SANDSTONE

(13.0) Red brown to light grey samples bags, Interbedded Redbeds to silty Shale (red clays predominately washed out) interbedded with chalky to slightly dirty off white to slightly greenish Siltstone to weakly cemented fine to medium off white Sandstone, 30-40% chalky white non calcareous to siliceous fragments, abundant loose quartz, subangular to rounded to coarse fractured, minor whitish to pinkish feldspars, some fragments with greenish matrix, overall sands apparent crystalline but friable, weakly cemented, some apparent lithics, mottled greenish to pinkish, possible some lithic pebbles or coarser fragments, trace gas only



1905.0 to 1915.0 SANDSTONE?

(10.0) Lighter grey sample bags, 50% soft chalky siliceous fragments throughout samples, loose fine to medium quartz, subangular to angular to some fractured, trace fine to lower medium Sandstone fragments, greenish white clay matrix, with rounded to subrounded quartz, pink feldspars, minor coarser weakly cemented quartz Sandstone, slightly greenish matrix, possible black mica, apparent softer chalky greenish white Siltstone.



1915.0 to 1922.0 SILTSTONE to SANDSTONE?

- (7.0) 50% soft chalky white non calcareous fragments, assorted softer mottled greenish white intermixed? Siltstone? chalky, siliceous, quartz to lithic to feldspars? grains, chalky to non calcareous matrix?, also fine to medium mottled Sandstone, rounded quartz to pink feldspars within chalky white to slightly greenish clay matrix, increase coarser pebbles? to larger fractured lithics, quartz, orange pink feldspars, rare trace black mica, Slower ROP due to hardness or probably chalkier matrix (PDC dulling?).
- 1922.0 to 1931.0 SANDSTONE / Granite Detritial ?
 - (9.0) 40% soft chalky off white fragments, minor fragments of Sandstone, poorer sorted greenish to whitish, quartz, opaque, white with reddish pink subrounded feldspars to minor angular plagioclase?, cleaner off white chalky? matrix to abundant greenish clay to silty matrix to cement, increasing angular to fractured quartz, opaque to translucent to greenish, minor black to greenish lithics, trace orange feldspars to possible plagioclase, Slower ROP down to 2 m/hr, Assuming chalky white to greenish clay rich matrix with poorer sorted laminated fine to coarser Sandstone?, some softer chalky Siltstone?, minor firmer "granite" type fractured lithic? pebbles.



Basement: 1,931.00 MD, 1,931.00 TVD, -1,869.25 SSL

1931.0 to 1935.0 GNEISSIC BASEMENT

- (4.0) ROP down to 1.3 m/hr with PDC, continued as above, 50% chalky white non calcareous fragments, assorted minor weaker cemented? Sandstone, minor coarser quartz, black to greenish igneous lithics?, overall finer to smaller fragments, (no coarse fragments at shakers other than red to green fissile thin cavings from hole, POOH at 1935 meters due to slow ROP.
- 1935.0 to 1945.0 GNEISSIC BASEMENT
- (10.0) Clean samples, overall slightly greenish color to samples when wet, medium to coarse to very coarse fractured angular fragments, predominately quartz, translucent to opaque, greenish, minor pinkish quartz to feldspars, trace black mafic minimum, trace black mica, ROP apx 2 m/hr with tricone.
- 1945.0 to 1960.0 GNEISSIC BASEMENT
 - (15.0) Overall lighter green colour to samples when wet, fractured to angular medium to very coarse to pebble quartz, opaque, translucent, greenish, pinkish feldspars, black mica, possible minor black mafics, ROP slowing down to 1.5 m/hr.
- 1960.0 to 1965.0 GNEISSIC BASEMENT
 - (5.0) Over all greenish bulk sample, very clean not muddy, Dried samples fractured quartz, white light grey opaque, greenish, pinkish?, with abundant light orange feldspars?, some white plagioclase, minor black mafic, rare trace white mica, ROP apx 1.5 m/hr.



Well FTD at 1965.0 meters on November 23, 2009 at 1030 hrs.

DateNov 26, 2009Run No1Top Depth890.0Base Depth1945.0GeologistMichael Smith

Service Company Tool Type Cores Requested Cores Obtained Cores Lost Baker Hughes / Baker Atlas RCOR 30 31 0

Geologist Comments regarding visual / microscopic porosity estimates:

The estimates of porosity / cementation in the Sidewall Cores and Cuttings during the drilling operation of the Red Brook # 2 well are based on the Geologists System and Methods, developed during the drilling of the McCully Gas Field in New Brunswick, and adopted for Vulcan Minerals in order to remain consistent within the Carboniferous Basin as a whole.

To avoid confusion with terminology over the Porosity estimates for the Sidewall Cores below and Rock Cuttings recorded in the sample descriptions - The following definitions should be reviewed.

<u>Porosity Estimates Criteria:</u> Sample / Sidewall Core Descriptions and Porosity Estimates are generally recorded under an x10 power magnification. The Well Site geologist used an x20 power magnification for the Red Brook#2 well. Maximum magnification of x45 power was used as required but as a general "rule of thumb" - any visual porosity not seen with an x20 magnification would be considered ineffective.

<u>Visual Porosity</u>: Naturally occurring "holes" within the rock matrix or generally – between or besides touching grains that can be seen with the naked eye - or up to and including an x20 magnification. Also would include secondary "after the fact" porosity generally found in Carbonates but also possible within clastics such as Sandstone – Siltstones resulting from fracturing, digenesis or leaching.

<u>Effective Porosity</u>: The volume of rock that would be filled by Recoverable Oil and or Gas. For the Red Brook #2 Well, the stated effective porosity is for possible Gas, as generally, effective gas porosity would be higher than effective oil porosity. Effective Porosity does not always equal visible porosity but visible porosity is generally effective. Effective porosity as qualified in this report would also include an educated unseen porosity estimate.

<u>Ineffective Porosity</u>: The volume of rock that is occupied by "hidden" porosity such as Clays, Argillaceous material such as Shale clasts, grains, laminae, and or other material such as a weaker cemented silica silty matrix. Although the Neutron Porosity Tool would record this hidden porosity, the physical characteristics of the "fill" material would not be capable of holding gas within its volume and/or incapable of liberating gas, and could be considered as non Recoverable porosity.

Total Porosity: Visual porosity including Effective + Ineffective porosity. (Generally Neutron Logging Tool)

<u>Grain Relief / Cementation</u>: The Relief of the rock / grains / cuttings / sidewall cores is generally inversely proportional to the cementation. High Relief cuttings generally required weaker cement and/or compaction, and the matrix of the rock will break and/or fracture prior to the quartz grains. Low Relief cuttings are generally very well cemented, resulting in much lower total porosity. The cement is generally silica or calcite/dolomite. The rock with the estimated low relief will be observed to break through the grains as the cement is harder / tougher and the lower stress point would be the quartz grains verses the matrix/cement. High relief can also be observed in cuttings with high ineffective porosity due to the intergranular volume being filled by clays, silica material, argillaceous / shale, pyrobitumen or any other "filling" material.

1

Date	Nov 26, 2009
Run No	1
Top Depth	890.0
Base Depth	1945.0
Geologist	Michael Smith

Service Company Tool Type Cores Requested Cores Obtained Cores Lost Baker Hughes / Baker Atlas RCOR 30 31 0

Core # 1 Recovered 90% 890.00 m

Laminated MARLSTONE - LIMESTONE with Shale

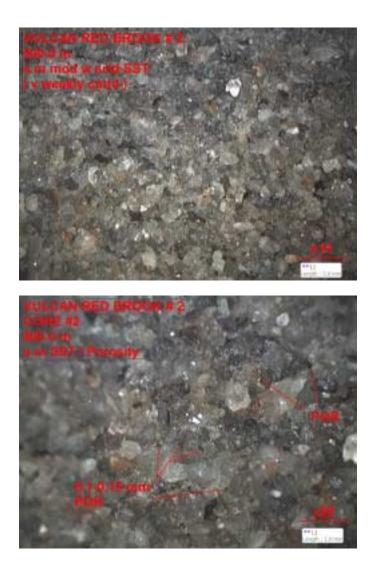
Mudstone, (1a), fresh fractured surface very light mottled buff grey, microcrystalline, overall core light grayish, micro laminated silty Limestone with dirtier argillaceous Marlstone - micro argillaceous laminations, moderate calcareous, hard, well cemented but fragments crushable, some calcareous - dolomitic cleaner microcrystalline (silty) deposited sorted blebs within laminations, thicker calcareous shale laminae parallel to core axis, (5 mm), no fluorescence, no cut, 4-5% hidden, 1-2% effective porosity, CNCSS 12.1%, PZSS -2.7%, Gamma 54 API.



Core # 2 Recovered 70% 900.00 m

SANDSTONE

Medium grey, lower - upper medium with minor lower coarse, quartz, opaque, whitish to minor semi translucent, 2-5% slightly orange to minor apparent feldspars, minor black lithics, rare trace medium - coarse greenish clay clasts, very weakly consolidated - apparent cement, non calcareous, grain supported, moderate sorted, subangular - subround, very clean, no visible clays, extremely high relief on broken core end, no fluorescence, no cut, 3-5% visible very clean deep pore throats between quartz grains, 0.1-0.15 mm irregular diameter, 15-20% overall porosity, 12-15% effective, CNCSS 16.5%, PZSS 12.3%, Gamma 36 API.



Core # 3 Recovered 100% 1945.00 m

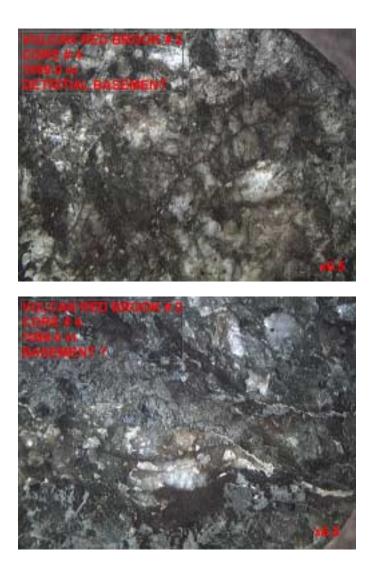
GNEISSIC BASEMENT

Massive tombstone, quartz, plagioclase, feldspars, minor black mafic to black mica. (22 minutes to cut core). CNCSS 11.3%, PZSS - 2.4% Gamma 81 API.



Core # 4 Recovered 80% 1899.00 m DETRITAL BASEMENT?

Mottled light greenish, massive tombstone, very hard, crystalline quartz, plagioclase, minor black mafic - mica, trace subrounded black metallic magnetite, some hematite fracturing, massive igneous basement or possible some breccia with detrital ?, CNCSS 13.1%, PZSS -0.3%, Gamma 84 API.



Core # 5 Recovered 75% 1761.60 m SANDSTONE

Mottled light greenish, medium - very coarse - pebble rounded to angular quartz, opaque, white, trace very slightly orange, grain supported with 100% soft light greenish non calcareous clay infilling matrix, very friable crumbly core, grain supported, very poorly sorted, no fluorescence, no cut, no visible porosity, 20% hidden matrix porosity, no effective porosity due to clays?, CNCSS 18.5%, PZSS 12.5%, Gamma 55 API.



Core # 6 Recovered 60% 1728.41 m

SANDSTONE

Mottled light greenish, fine - pebble quartz, opaque, white, semi translucent, rare trace black lithic to very slightly orange quartz? friable, weakly consolidated - light greenish clay matrix - cement, non calcareous, very poorly sorted, subangular - subrounded to rounded to angular quartz, slightly more compact and less clay than 1761 meter core, moderate high relief due to softness of matrix, no fluorescence, no cut, no visible porosity, 15-18% hidden matrix porosity, 1% effective? CNCSS 16.7%, PZSS 8.6%, Gamma 51 API.



Core # 7 Recovered 80% 1691.95 m

SANDSTONE

Mottled light grey, medium - very coarse, quartz, opaque grayish, white, translucent, minor very slightly orange, minor traces plagioclase?, clean, non calcareous, weakly cemented with white chalky? clay infilling matrix, grain support, moderately sorted, subangular - subrounded to rounded, rare trace white mica flakes, rare very slightly greenish clay, high relief, very friable coarse visual texture, possible trace pinpoint porosity,12-15% hidden porosity, 3-4% effective due to clays?, no fluorescence, *instant bright yellow mottled cut across core, possible micro pyrobitumen through higher micro porosity?*, CNCSS 15.6%, PZSS 10.8%, Gamma 57 API.



Core # 8 Recovered 20% 1669.00 m

SANDSTONE

Mottled very slightly greenish grey (poor sample), medium - coarse - small pebble, quartz, opaque off white, semi translucent, very light pinkish orange quartz, minor feldspars?, very slightly creamy white with parallel striations, clean, one larger argillaceous clast?, vitreous black, argillaceous, microscopic (x45) black vitreous secondary crystal growth?, (possible pyrobitumen?) within larger mass, rare trace black lithic only, grain support, subangular - subrounded to rounded, (note very angular orange crystals in photo), non calcareous, weaker consolidated, whitish clay matrix infilling, rare trace greenish clay, abundant quartz grain to grain contact, no fluorescence, no cut, 8 -10% hidden porosity due to clays, very friable high relief, possible 3-4% effective?, Gas show 355 units, CNCSS 15.4%, PZSS 10.3%, Gamma 67 API.



Core # 9 Recovered 45% 1667.79 m

SANDSTONE

Mottled lighter grey, medium - very coarse to pebbles, quartz, opaque, grayish - white, semi translucent, some orange, minor possible orange pinkish feldspars, possible trace white plagioclase, moderate clean, white and very light greenish clay matrix infilling, very weakly cemented, very friable, non calcareous, trace greenish silty small pebble clasts, minor trace slightly brownish dirty ? inclusions with possible very lightly oil stained?, no fluorescence, <u>weaker slow moderate yellow white cut over time, possible minor micro pyrobitumen within finer micro porosity?</u>, very high relief, very rough friable visual texture, poorer core sample, no visible porosity, 15-20% hidden porosity, 3-5% inferred effective, CNCSS 15.2%, PZSS 10.3%, Gamma 79 API.



Core #10 Recovered 100% 1638.05 m

SANDSTONE

Mottled salt and pepper off white, lower - upper medium with coarse - small floating pebbles, quartz, opaque, white, semi translucent, minor orange, trace black lithics, foliated black micaceous, rare trace coarser white mica, moderate well cemented, 7-10% calcareous component, crystalline texture, clean, possible minor chalky white clay only, grain supported, moderate relief, core broken through and around quartz grains, no visible porosity, 6-9% hidden porosity, 2-3% inferred effective, no fluorescence, no cut, CNCSS 16.2%, PZSS 9.9%, Gamma 79 API.



Core # 11 Recovered 90% 1593.58 m SANDSTONE

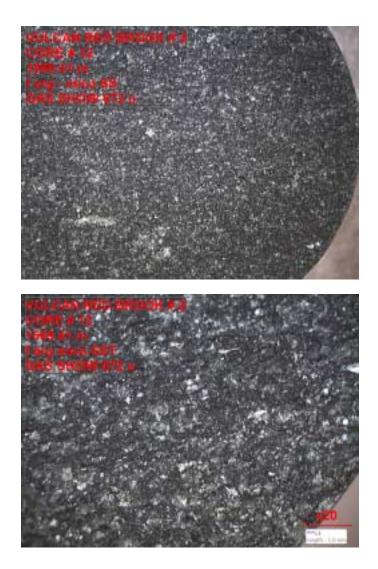
Lighter grey, fine - medium, quartz, opaque, semi translucent, possible trace plagioclase only, 1-2% orientated - foliated black mica, trace random coarser white mica, moderate well cemented, siliceous component, non calcareous, no apparent clay infilling, grain supported, subangular - subround, moderate relief with apparent micro streaky higher - very high relief, minor apparent micro secondary quartz recrystallization, 2-3% micro - pinpoint irregular visible porosity, deep clean pore throats, core breaks around and through quartz grains, no staining, no fluorescence, no cut, 8-10% overall porosity, 7-8% effective, CNCSS 18.1%, PZSS 10.8%, Gamma 61 API.



Core # 12 Recovered 100% 1569.41 m

SANDSTONE

Darker - medium grey, fine, quartz, opaque, greyish, rare translucent, 5% black foliated mica , 1% white mica, (foliated aligned mica appears to be apx 80 degs to bedding laminations?), predominately argillaceous shaly matrix support, moderate sorted quartz, subangular - subrounded, non calcareous, competent - solid core, no fluorescence, no cut, Gas show 672 units, no visible porosity, 15-18% hidden non effective porosity due to argillaceous matrix, 1% effective?, CNCSS 20.3%, PZSS 13.5%, Gamma 107 API.



Core # 13 Recovered 100% 1565.62 m

SANDSTONE

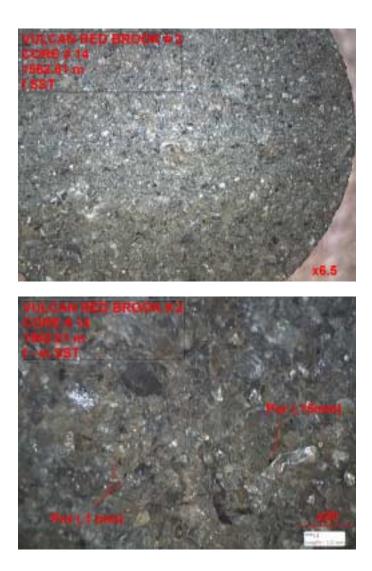
Medium Grey, lower - upper fine, quartz, opaque, slightly greyish, some translucent, rare trace rose, very slightly yellow, less than 1% black foliated mica, good trace white mica, cleaner with no argillaceous shaly matrix, rare trace - no lithics, moderate sorted, subangular - subrounded, moderate cemented, non calcareous, predominately grain supported, apparent light grayish clay infilling, moderate high relief, rough visual texture to sample, no fluorescence, no cut, no visible porosity, 12-15% hidden porosity, 2-3% inferred effective porosity, CNCSS 17.0%, PZCC 11.5%, Gamma 86 API.



Core # 14 Recovered 80% 1562.81 m

SANDSTONE

Lighter grey, fine, minor lower medium, rare trace floating very coarse rounded, quartz, opaque, light grey, translucent, trace very slightly yellow, no lithics, good trace white medium mica, no black mica, moderate cemented, non calcareous, grain supported, very light grey to very slightly greenish grey matrix infilling, moderate sorted, subangular - subrounded, moderate high relief, overall rough visual texture to core, core broken around and through some grains, no fluorescence, no cut, 1% micro - pinpoint porosity up to 0.15 mm, clean deep irregular pore throats between quartz grains, 10-12% hidden porosity due to clay matrix, 3-4% effective?, CNCSS 16.5%, PZSS 13.0%, Gamma 63 API.



Core # 15 Recovered 100% 1560.00 m

SANDSTONE

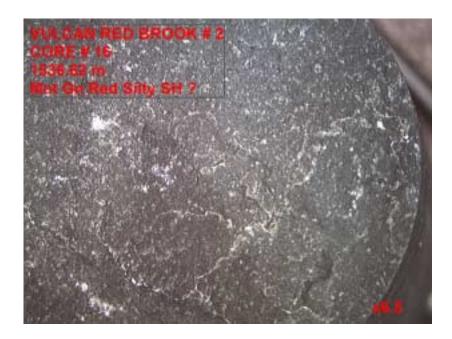
Medium grey, lower - upper fine with minor medium, abundant very fine matrix, quartz, opaque, greyish, translucent, rare trace rose, no lithics, minor foliated black mica, minor trace white mica, overall weakly laminated, very fine - fine very slightly dirty slightly micaceous within cleaner upper fine - minor medium slightly calcareous, grain supported, moderate sorted, subangular - subrounded, minor - 5% white clay infilling, matrix appears to be more siliceous - silty?, slightly calcareous, moderate cemented, moderate relief, core breaks through coarser quartz grains, moderate rough visual texture to core, no fluorescence, no cut, Gas show 511 units, no visible porosity, 8-10% hidden porosity, 3-4% inferred effective, CNCSS 23.8%, PZSS 14.5%, Gamma 85 API.



Core # 16 Recovered 100% 1536.62 m

<u>SHALE</u>

Lighter greenish grey with mottled reddish, massive moderate competent core, non calcareous, silty to some very fine loose quartz, amorphous, uniform, Core Cut off Depth?, CNCSS 4.1%, PZSS -3.5%, Gamma 16 API.



Core #17 Recovered 100% 1464.6 m

SANDSTONE

Lighter grey, fine - medium matrix with coarse - small pebbles, speckled pink, quartz, opaque, translucent, good trace slightly orange, trace pinkish orange feldspars, minor trace darker grey argillaceous lithics, trace pyrite, well cemented, crystalline, siliceous with 5-10% calcareous component, hard, massive, moderate poorer sorted, finer quartz matrix, minor white clay?, grain supported, lower relief, core broken through quartz grains, no fluorescence, no cut, no visible porosity, 4-5% hidden porosity, 1-2% effective?, tight, CNCSS 12.7%, PZSS 9.9%, Gamma 58 API.



Core #18 Recovered 90% 1414.02 m

<u>REDBEDS</u>

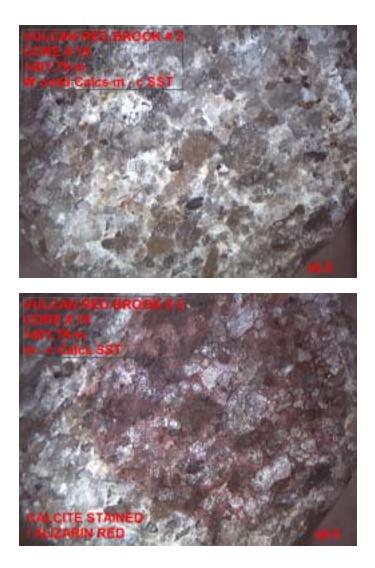
Lighter reddish brown, very fine - silt, argillaceous, massive, moderate well consolidated, quartz, whitish, reddish stained, translucent, minor possible feldspars, minor black lithics, argillaceous reddish - grayish matrix, siliceous with calcareous component, uniform, no fluorescence, no cut, no visible porosity, no effective porosity, CNCSS 20.0%, PZSS 13.2%, Gamma 73 API.



Core #19 Recovered 100% 1401.79 m

SANDSTONE

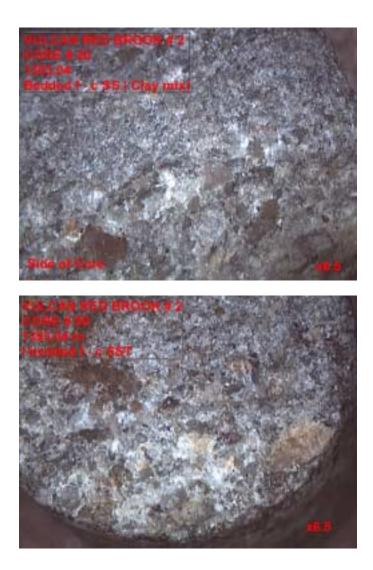
Lighter grey - off white, fine - medium - coarse - very coarse, small pebbles, quartz, opaque, whitish, greyish to slightly creamy orange, minor trace feldspar?, minor assorted colored lithics, very well cemented, hard, massive, 15-20% calcareous, grain to matrix supported, poorer sorted, subangular - angular - rounded, no fluorescence, no cut, no visible porosity, no effective porosity due to calcite cement, tight, CNCSS 17.1%, PZSS 12.5%, Gamma 58 API.



Core #20 Recovered 90% 1393.04 m

SANDSTONE

Medium grey, finely bedded lower fine with medium to very coarse, quartz, opaque, light grayish, translucent, minor trace orange - creamy feldspars, clean, rare trace lithics, visible poorly sorted bedded coarse - fine layers, moderate well consolidated, minor - 10% white clay, non calcareous, overall 2-4% calcareous component, very poorly sorted core, subangular - subrounded, minor coarse rounded, no fluorescence, no cut, crystalline appearance, semi rough visual texture, moderate lower relief, no visible porosity, 6-8% hidden porosity, 2-3% inferred effective porosity, CNCSS 14.1%, PZSS 7.7%, Gamma 44 API.



Core #21 Recovered 40% 1376.81 m

Pebble SANDSTONE

Lighter grayish, lower medium - coarse - pebble, quartz, opaque grey, slightly semi translucent, minor slightly creamy grey, blackish grey lithics, very poorly sorted, angular - subangular - rounded, grain supported, moderate well cemented, 7-10% calcareous infilling with 5% white chalky? non calcareous clays, poor core sample, friable?, core breaks through grains, no fluorescence, no cut, no visible porosity, 12-15% hidden porosity, 1-2% effective due to clays - calcite matrix infilling, CNCSS 16.3%, PZSS 12.7%, Gamma 45 API.



Core # 22 Recovered 20% 1366.2 m

SANDSTONE

Excellent high porosity Sand, lighter grey, fine - very coarse, quartz, opaque, grayish, minor translucent, rare trace lithics, very weakly cemented, non calcareous, very friable, poor core sample due to friability, clean, rare apparent clay infilling, poorer sorted, subangular - subrounded, grain supported, Gas show 195 units, no fluorescence, *instant pale yellow even cut*, extremely high relief, very rough visual surface, 7-10% plus visual porosity, very clean very deep irregular pore throats (no blockage), no hidden porosity, 12-15% effective, CNCSS 14.8%, PZSS 8.5%, Gamma 45 API.



Continued

Core # 22 Recovered 20% 1366.2 m

SANDSTONE

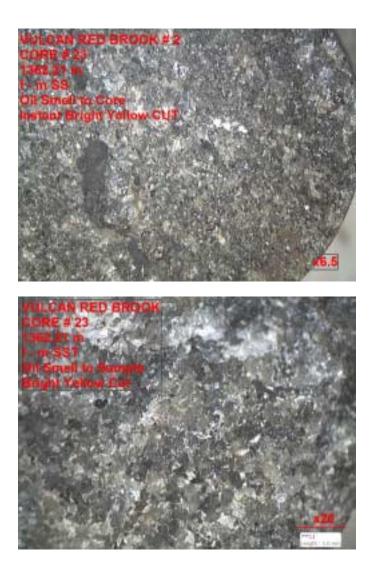
Excellent high porosity Sand, lighter grey, fine - very coarse, quartz, opaque, grayish, minor translucent, rare trace lithics, very weakly cemented, non calcareous, very friable, poor core sample due to friability, clean, rare apparent clay infilling, poorer sorted, subangular - subrounded, grain supported, Gas show 195 units, no fluorescence, *instant pale yellow even cut*, extremely high relief, very rough visual surface, 7-10% plus visual porosity, very clean very deep irregular pore throats (no blockage), no hidden porosity, 12-15% effective, CNCSS 14.8%, PZSS 8.5%, Gamma 45 API.



Core # 23 Recovered 75% 1362.21 m

SANDSTONE

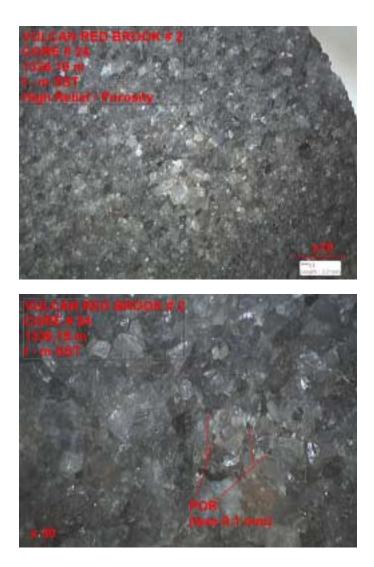
Lighter grey, fine - medium, quartz, opaque, light greyish, minor translucent, clean, possible trace plagioclase?, trace shale lithic fragments, trace pyrite - possible chalcopyrite, well cemented, siliceous?, 3-5% calcareous cement, minor - 5% chalky infilling, moderate sorted, subangular - subrounded - rounded, grain supported, moderate relief, core breaks predominately around quartz grains, <u>Oil smell to core, slight gas smell when acid added, instant bright yellow cut</u>, no visible porosity, 8-10% ineffective porosity, 2-3% inferred effective porosity, CNCSS 11.8%, PZSS 5.3%, Gamma 51 API.



Core # 24 Recovered 60% 1336.19 m

SANDSTONE

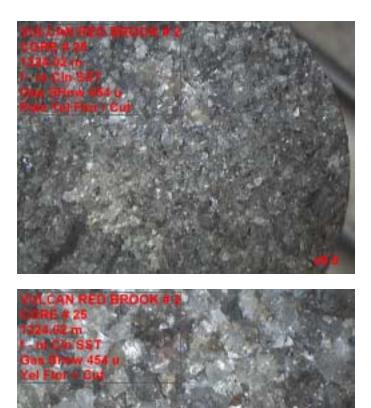
Light Grey, fine - medium, quartz, opaque grayish, some translucent, clean, trace - no lithics, minor trace medium - coarse black mica, rare white mica, grain supported, moderate sorted, subangular - subrounded, weakly cemented, 1-2% calcareous only, 2-3% clay infilling, moderate friable - firmer, no fluorescence, no cut, high relief, visual rough texture to core, Gas Show 482 units, 3-4% visible pinpoint to 0.1 mm porosity, clean deep irregular pore throats between quartz grains, 4-5% hidden, 8-9% effective porosity, CNCSS 20.4%, PZSS 11.2%, Gamma 50 API.



Core # 25 Recovered 50% 1324.02 m

SANDSTONE

Mottled lighter grey to slightly greyish white, fine - upper medium with minor lower coarse, quartz, opaque, greyish, rare whitish, trace very slightly creamy - yellow, trace translucent rose, trace black lithics, no mica, rare trace disseminated pyrite, moderate sorted, subangular - subrounded with some rounded, moderate cemented, siliceous?, 5-6% calcareous component, 1% very light greyish blue? clays only, competent, harder, high relief on broken core end, cement weaker as core broken around quartz grains, *blotchy yellow fluorescence, instant moderate bright yellow (whitish) mottled overall cut,* trace micro secondary quartz crystal growth, good 3-4% visible porosity, irregular clean deep pore throats between quartz grains under 0.1 mm, 3-4% hidden?, 6-7% effective porosity, CNCSS 16.3%, PZSS 6.8%, Gamma 49 API.



Continued

Core # 25 Recovered 50% 1324.02 m

SANDSTONE

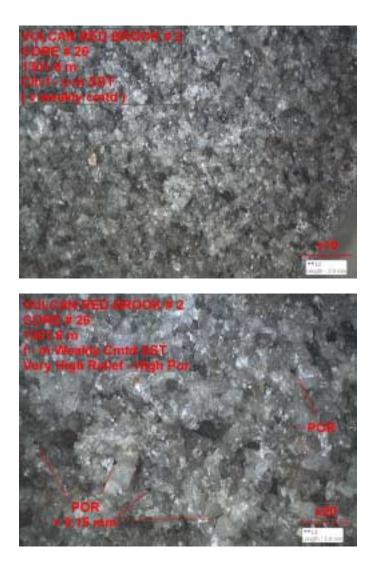
Mottled lighter grey to slightly greyish white, fine - upper medium with minor lower coarse, quartz, opaque, greyish, rare whitish, trace very slightly creamy - yellow, trace translucent rose, trace black lithics, no mica, rare trace disseminated pyrite, moderate sorted, subangular - subrounded with some rounded, moderate cemented, siliceous?, 5-6% calcareous component, 1% very light greyish blue? clays only, competent, harder, high relief on broken core end, cement weaker as core broken around quartz grains, *blotchy yellow fluorescence, instant moderate bright yellow (whitish) mottled overall cut,* trace micro secondary quartz crystal growth, good 3-4% visible porosity, irregular clean deep pore throats between quartz grains under 0.1 mm, 3-4% hidden?, 6-7% effective porosity, CNCSS 16.3%, PZSS 6.8%, Gamma 49 API.



Core # 26 Recovered 70% 1301.60 m

<u>SANDSTONE</u>

Very light grey, fine - upper medium, quartz, opaque, translucent, rare rose, trace black lithic only, rare trace disseminated micro pyrite blebs, very clean, abundant micro secondary - partial secondary quartz recrystallization - growths, moderate sorted, subangular - subrounded to rounded, grain supported, very weakly cemented, non calcareous, no clays, no fluorescence, no cut, Apx 200 unit Gas Show, extremely high relief, rough visual texture to core, no hidden porosity ?, 6-8% visible porosity with irregular visible voids averaging 0.1 mm, several voids up to .25 mm between quartz grains, 10-12% effective porosity, CNCSS 16.0%, PZSS 4.6%, Gamma 45 API.



Core # 27 Recovered 100% 1283.05 m <u>MARLSTONE – SHALE</u>

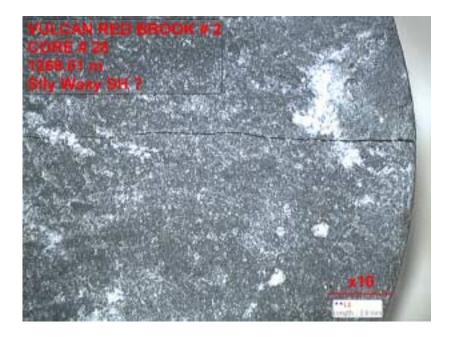
Medium grey, finely bedded to laminated very slightly calcareous shale with silty calcareous very dirty argillaceous Marlstone with black calcareous nodulars 0.2-0.5 mm diameter, hard massive well cemented, competent rock, no fluorescence, no cut, no visible, no effective porosity, CNCSS 27.7%, PZSS 1.1%, Gamma 74 API.



Core # 28 Recovered 90% 1269.01 m

<u>SHALE</u>

Lighter grey with very slight greenish tinge, massive, amorphous, microcrystalline? competent, well consolidated, calcareous component, semi waxy lustre under microscope, harder "clay" like, no fluorescence, no cut, no visible, no effective porosity, CNCSS 16.1%, PZSS 10.2%, Gamma 83 API.



Core #29 Recovered 90% 1266.0 m

SILTSTONE with MARLSTONE ?

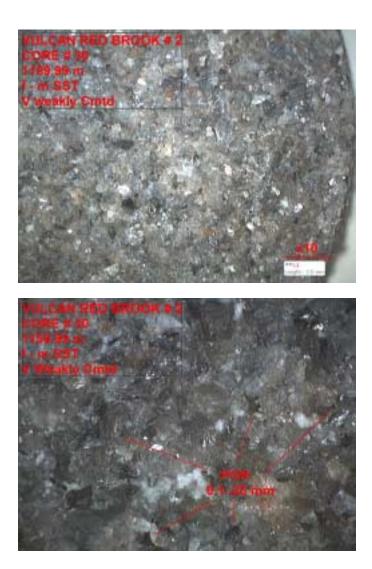
Lighter greyish to slightly off white with some slightly greenish grey argillaceous clay rich microlams, massive, amorphous, very silty, calcareous matrix, well consolidated, competent, no fluorescence, no cut, no visible porosity, 4-6% hidden, no effective porosity, CNCSS 12.0%, PZSS -1.4%, Gamma 53 API.



Core # 30 Recovered 100% 1159.99 m

SANDSTONE

Lighter grey, fine - medium, quartz, opaque, translucent, minor trace orange, trace black lithic, trace black - white mica, moderate sorted, subangular - subrounded, minor rounded, very weakly cemented, 7-10% whitish clay component, 3-5% calcareous?, grain supported, high relief, rough visual texture to core, core breaks easily around quartz grains, no fluorescence, no cut, 4-5% visible porosity,12-15% hidden porosity, 6-8% effective, CNCSS 16.6%, PZSS 9.7%, Gamma 39 API. (Note - Geologist spilt extra acid on sample resulting in higher apparent visual porosity due to calcite dissolved out between quartz grains).



Core # 31 Recovered 30% 1668.91 m

SANDSTONE (Re Cut of Core # 8)

Mottled very slightly greenish grey (poor sample), medium - coarse - small pebble, quartz, opaque off white, semi translucent, very light pinkish orange quartz, minor feldspars?, very slightly creamy white with parallel striations, clean, one larger argillaceous clast?, vitreous black, argillaceous, microscopic (x45) black vitreous secondary crystal growth?, (possible pyrobitumen?) within larger mass, rare trace black lithic only, grain support, subangular - subrounded to rounded, (note very angular orange crystals in photo), non calcareous, weaker consolidated, whitish clay matrix infilling, rare trace greenish clay, abundant quartz grain to grain contact, 8-10% hidden porosity due to clays, very friable high relief, possible 3-4% effective?, Gas show 355 units, no fluorescence, no cut, CNCSS 15.4%, PZSS 10.0%, Gamma 63 API.



END OF CORE DESCRIPTIONS

VULCAN INVESTCAN RED BROOK # 2

END OF GEOLOGICAL WELLSITE REPORT

(SEE WELLSITE STRIPLOGS)

PREPARED FOR PATRICK LARACY

VULCAN MINERALS INC

DECEMBER 2009

Author

J. Michael Smith

JDS CONSULTANTS

(403-589-4998)

(A full copy of the log is on the CD accompanying this report)

(hardcopies of all logs were submitted with this report and full digital copies are included on the accompanying CD)

<u>VULCAN INVESTCAN</u> <u>REDBROOK# 2</u>

DST REPORT

-For-



Compiled for

Patrick Laracy Vulcan Minerals Inc

-By-

Michael Smith JDS Consultants 403-589-4998

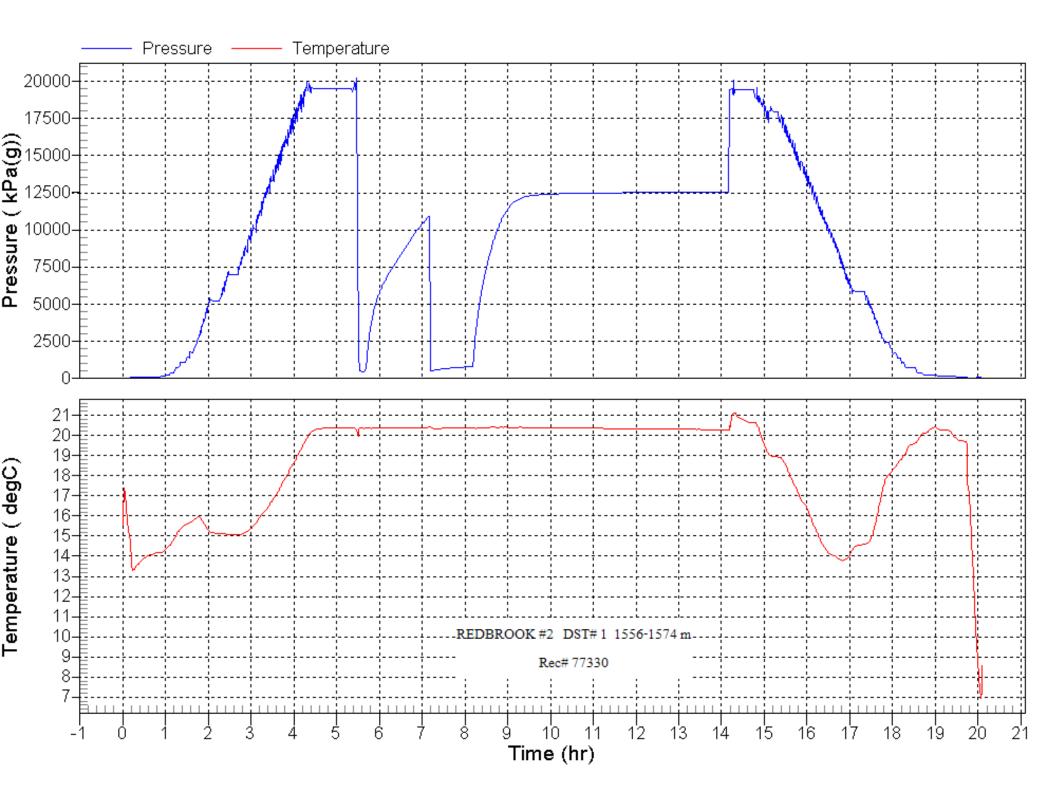
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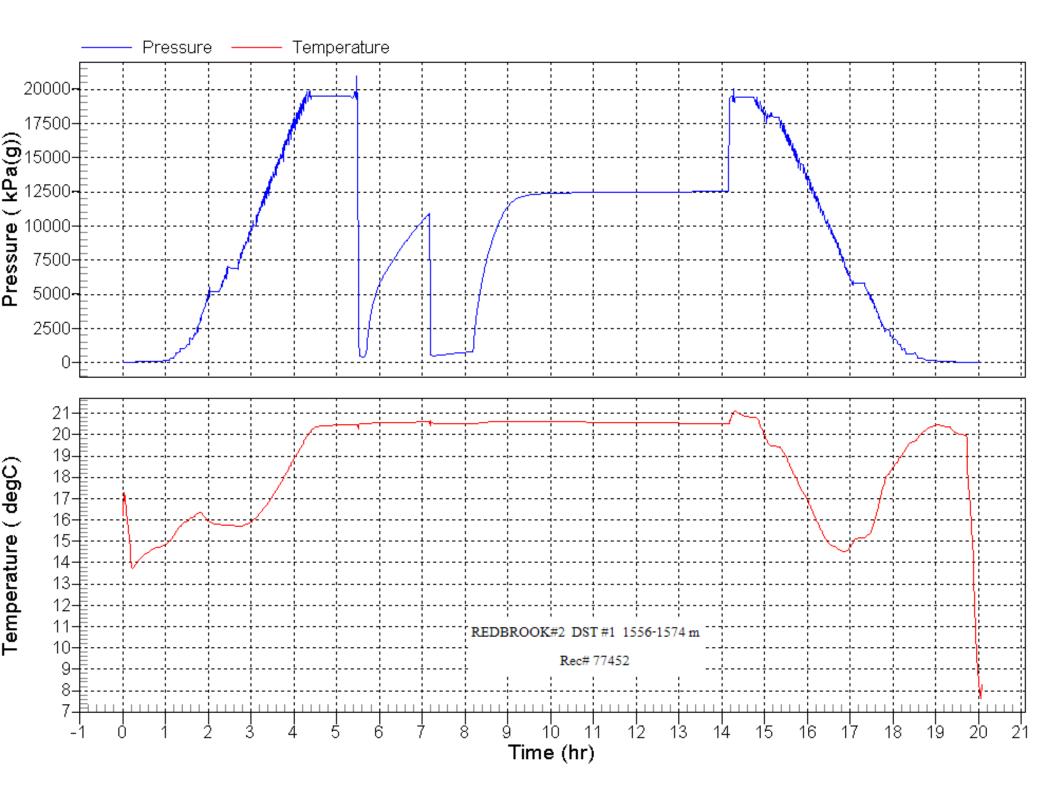
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Run #: Test #: Test Company: Representative: Unit #: Test Type:	1 1 Holland Test Dale Holland Conventiona	l	Clo: Rep	e: run: sed Chamber Co presentative: . Elevation:	mpany:	Nov 28, 2 n/a n/a 61.75	2009	
Formations Test	ed	From the: To the:		out Falls ?				
Test Interval: F		5.00 (MD) 5.00 (TVD)		1,574.00 (MD) 1,574.00 (TVD)	(19.00) (19.00)			
Total Depth:	1,965	5.00 (MD)		1,965.00 (TVD)	(At the	time of t	he Test)	
String Configuration:Drill Pipe - Collars Recorder above tool Upper Packer Depth 1555.0 m Inside Recorder with 1.2 m perfs Lower Packer Depth 1574.1 m Recorder below Tool 391 meters Tail pipe to bottomDrilling Fluid Type and Properties:MW = 1265 VIS = 69 pH = 11.2 WL = 5.4 FC = 0.5 mmCushion Type / Amount:No Cushions								
Hole Condition: Bottom Hole Ter	nperature:	Excel 20.5 °		ol Chased Distand	ce:		Mud Drop:	0.0
Period	Intitial Pressure	Final Pressure	Times	Flow Descripti	on			
Initial Hydrostati	c 19,609.0							
Flow 1	396.0	433.0	10	Open for Prefl seconds. Stea			uff to bottom of p TS.	pail in 30
Shut-in 1	433.0	10,939.0	90					
Flow 2 Flow Details	423.0	742.0	60		GTS (Ga		ow immediately t ace) in 10 mins.	
Time / Pressu	re / Flow Rate	Measuremer	nts	Choke Type	Orifice I	Diameter	Units of measu	urement
20 mins 11 kF 30 mins 19 kp 40 mins 35 kF 50 mins 50 kF 60 mins 65 kF	a @ 4 deg - Pa @ 4 deg - Pa @ 4 deg -	71 m3/0 131 m3/0 182 m3/0 222 m3/0 257 m3/0	day day day	6" Pos	3.18		m³/day	
Flow Rate thro	ugh Surface M	lanifold with 6	lingh					

Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-1

diameter	Choke with 8/64 ind ay = 9 mcf / day	ch (3.175 mr	m) inside			
Shut-in 2	742.0	12,506.0	360			
Final Hydro	ostatic	19,431.0				
Recovery: Analyses:	Gas collected in E	ght at 41, 13 Bottom Hole S	I Contraction of the second second second second second second second second second second second second second			
Remarks:	Gas Sample # AGAT 04001075 (Initial flow GTS) + AGAT 05003561(Bottom hole sampler) Excellent Mechanical Test - No Problems Gas to Surface in 10 minutes after start if Initial Flow					

5 meters fill on bottom





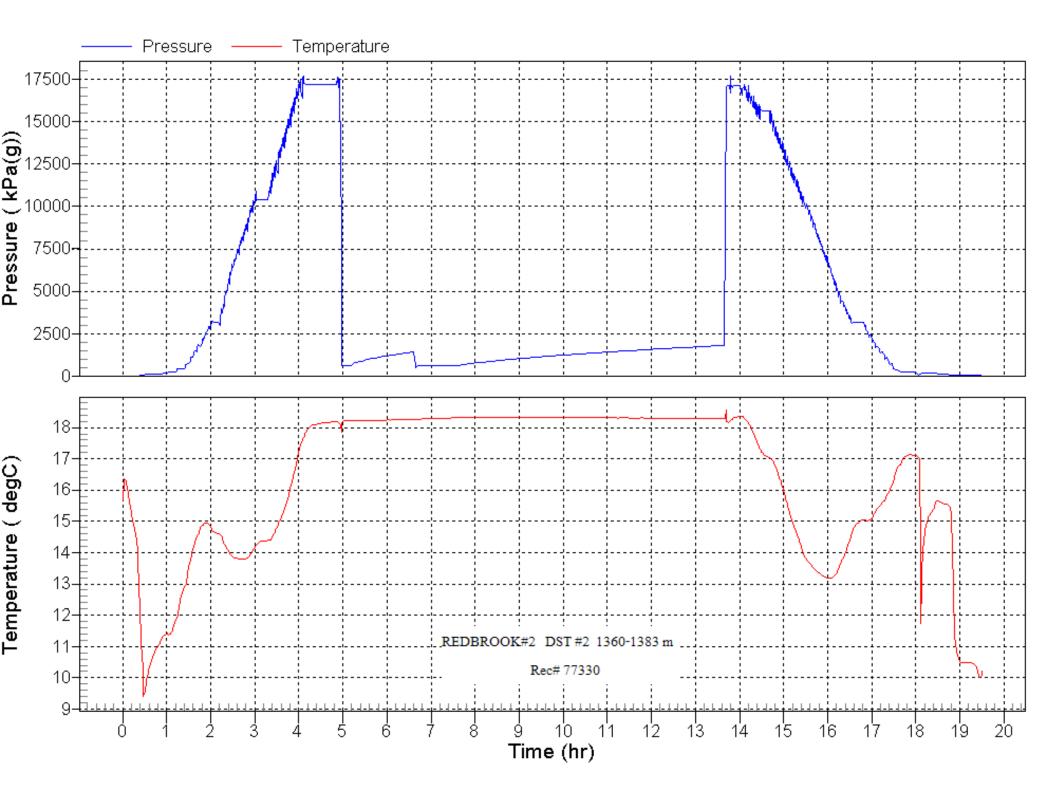
Storage Ur	its:	Metric
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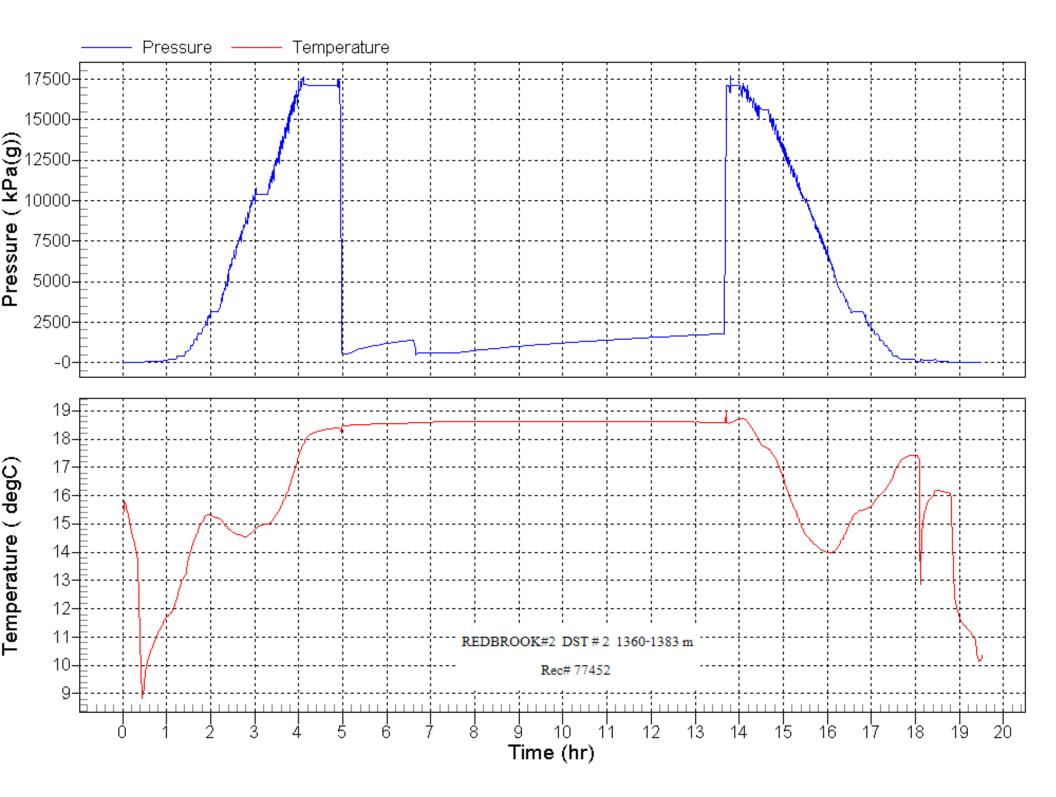
							orago orino:	
Run #: Test #: Test Company: Representative Unit #: Test Type:			Rep		ompany:	Nov 28, 20 n/a 61.75	009	
Formations Tes	sted	From the To the:		ut Falls				
· · · · · · ·		.00 (MD) .00 (TVD)		1,383.00 (MD) 1,383.00 (TVD)	(23.00) (23.00)			
Total Depth:	1,965	.00 (MD)		1,965.00 (TVD)	(At the	e time of the	e Test)	
String Configuration:Drill Pipe - Collars Recorder above tool Upper Packer Depth 1359.2 m Inside Recorder with 5.18 m perfs Lower Packer Depth 1382.6 m Recorder below Tool 582.4 meters Tail pipe to bottomDrilling Fluid Type and Properties:MW = 1265 VIS = 69 pH = 11.2 WL = 5.4 FC = 0.5 mmCushion Type / Amount:No CushionsHole Condition:Excellent							0.0	
Bottom Hole Te	Intitial	18.5 ° Final	Times	Flow Descripti	ion		Mud Drop:	
i enou	Pressure	Pressure		i ion Doccupa				
Initial Hydrostat	tic 17,248.0							
Flow 1	559.0	564.0	10	Open for Prefl inches in bubb			ouff increasing tes.	to 8
Shut-in 1	564.0	1,414.0	90					
Flow 2 Flow Details	466.0	613.0	60		•		tial Puff increas inutes then slov	•
Time / Press	ure / Flow Rate	Measuremei	nts	Choke Type	Orifice	Diameter	Units of measu	urement
No GTS (Ga	s to Surface)							
Shut-in 2	613.0	1,788.0	360					

Vulcan Minerals Inc. UWI Red Brook 2

			•	
Final Hydro	ostatic 17,084.0			
Recovery:	27 meters Drilling Mud			
	Fluid samples caught at 13 m, 1.5 meters abo			
Analyses:	(1) Bottom hole Sampler (#05005092)			
Analyses.				

Remarks: Good Mechanical Test - No problems





Storage Units:	Metric

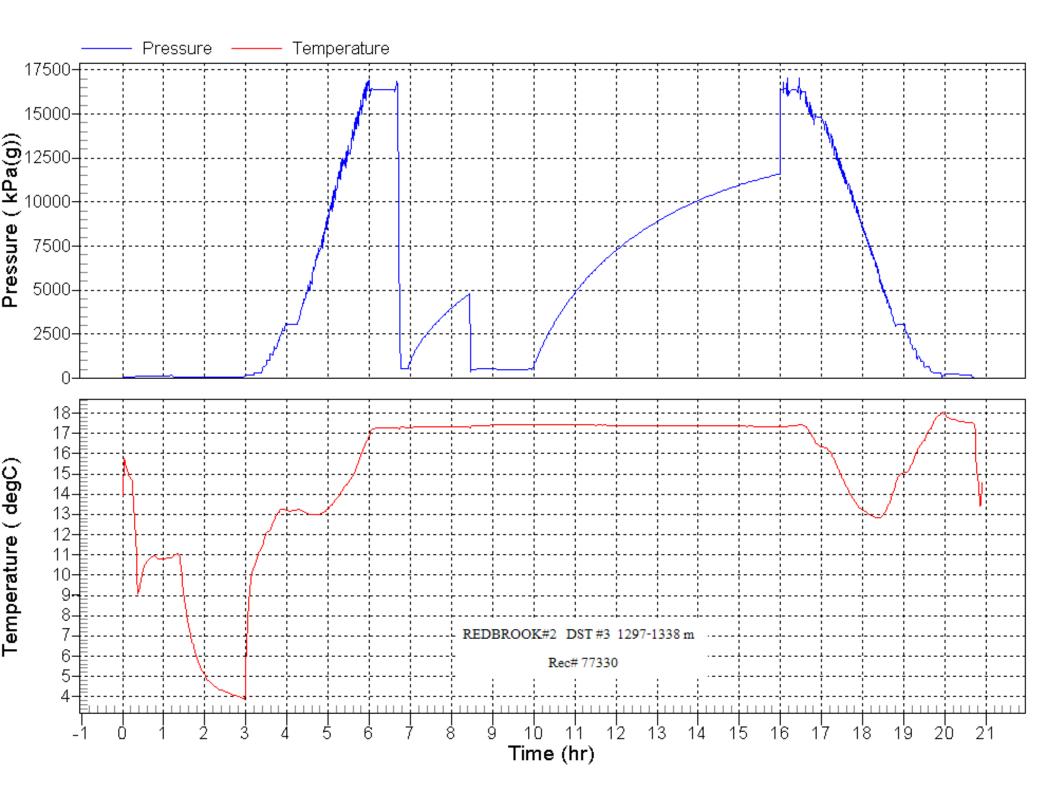
							torage office.	
Run #: Test #: Test Company: Representative: Unit #: Test Type:	3 1 Holland Teste Dale Holland Conventional		Clo Rep	e: srun: sed Chamber Co presentative: 5. Elevation:	mpany:	Nov 30, 2 n/a n/a 61.75	2009	
Formations Test	ed	From the: To the:	Spo	out Falls				
Test Interval: F F		00 (MD) 00 (TVD)	То: То:	1,338.00 (MD) 1,338.00 (TVD)	(41.00) (41.00)			
Total Depth:	1,965	.00 (MD)		1,965.00 (TVD)	(At the	time of ti	he Test)	
String Configuration:Drill Pipe - Collars Recorder above tool Upper Packer Depth 1297.2 m Inside Recorder with 9.45 m perfs Lower Packer Depth 1338.1 m Recorder below Tool 626.9 meters Tail pipe to bottomDrilling Fluid Type and Properties:MW = 1265 VIS = 69 pH = 11.2 WL = 5.4 FC = 0.5 mmCushion Type / Amount:No CushionHole Condition:Excellent							0.0	
Bottom Hole Ter	•	17.7 °		ol Chased Distance			Mud Drop:	0.0
Period	Intitial Pressure	Final Pressure	nmes	Flow Description	on			
Initial Hydrostation	c 16,525.0							
Flow 1	493.0	509.0	10	Open for Prefl 1 minute. Stea			puff to bottom o	of pail in
Shut-in 1	509.0	4,767.0	90					
Flow 2 Flow Details	341.0	476.0	90	pail immediate	ely decrea steady b	asing to we	nitial puff to botto eak initial blow. <i>A</i> ghout. Gas to Su	After 10
Time / Pressu	re / Flow Rate M	<i>Aeasurement</i>	ts	Choke Type	Orifice	Diameter	Units of measu	urement
80 mins 1.25 85 mins 2.74 90 mins 4.48	kPa @ 1 deg	35.8 m3/day		6" Pos.	3.18		m³/day	
Flow Rate thro Positive Choke				e				

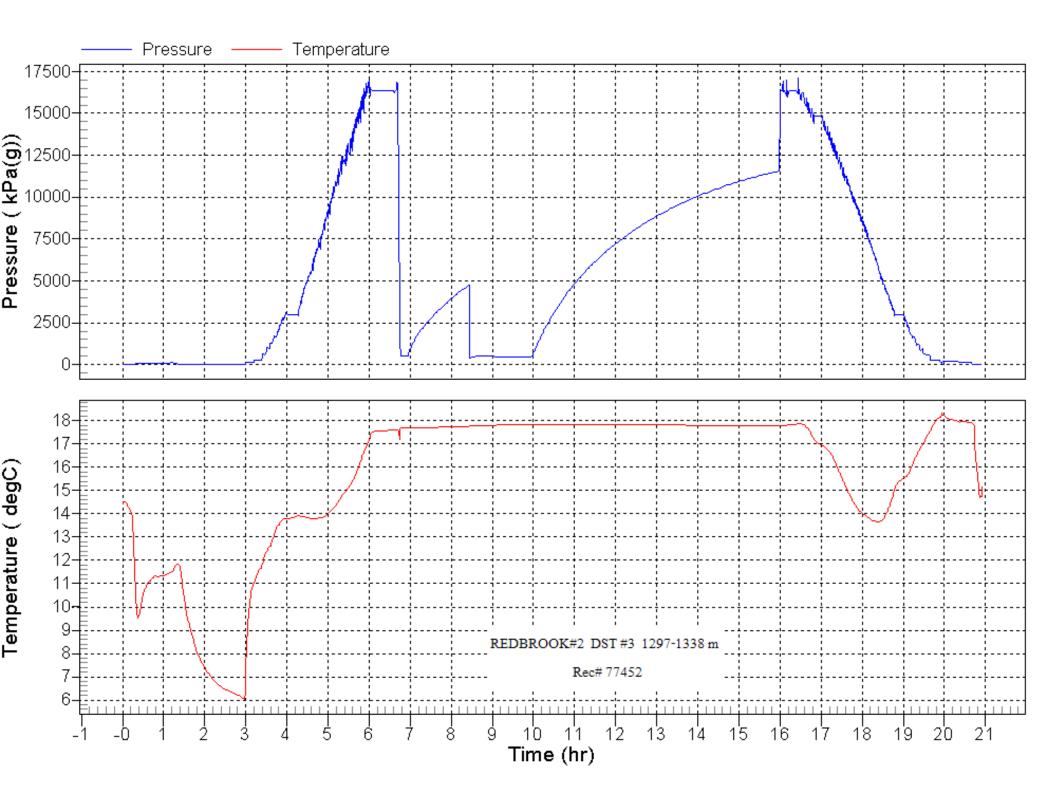
Vulcan Minerals Inc. UWI Red Brook 2

Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-5

diameter.						
Shut-in 2	476.0	11,562.0	360			
Flow Detail	S					
Time / Pres	sure / Flow Rate	Measureme	nts	Choke Type	Orifice Diameter	Units of measurement
	ntinuing to build Final Shut in sh			5		
Final Hydrosta	atic	16,411.0				
Recovery: 1	0 meters drilling	mud				
	luid sample cau as present in Bo				rs available to take	sample

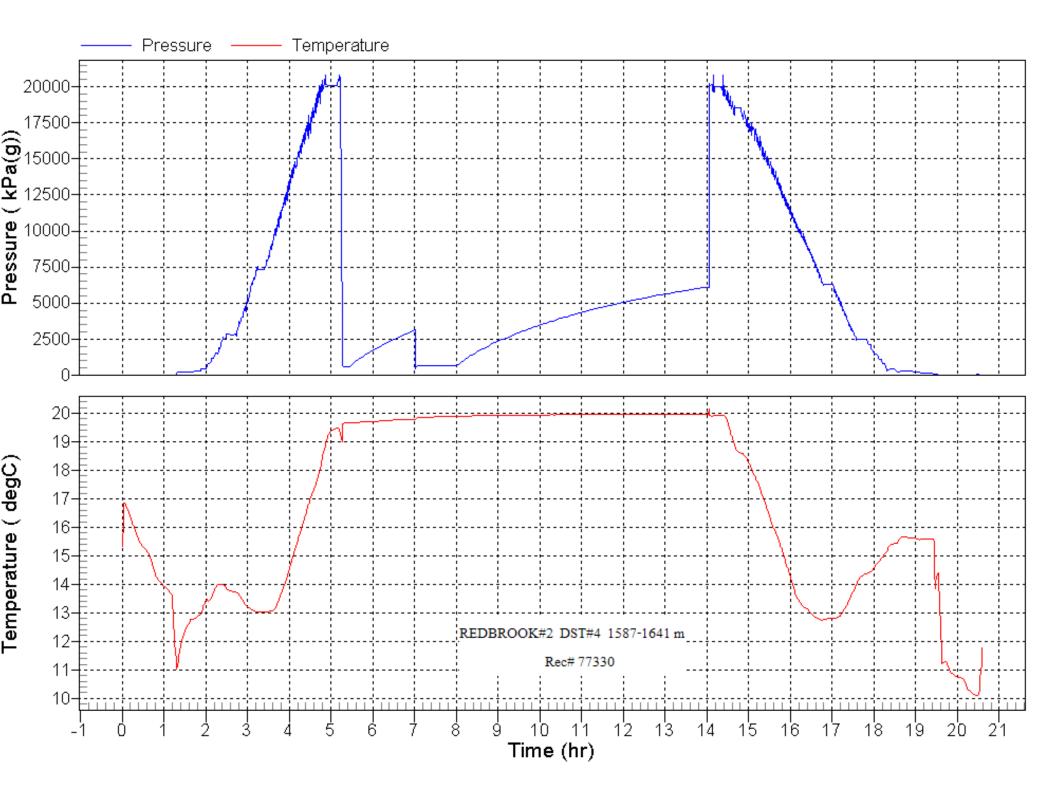
 Gas to Surface but no test cylinders available to take sample.
 Remarks: Good Sucessful Mechanical Test Indications at end of 60 minute main flow of potential gas to surface. Main flow extended to 90 minutes with Gas to Surface in 75 minutes. Charts indicate longer Shut In Required.

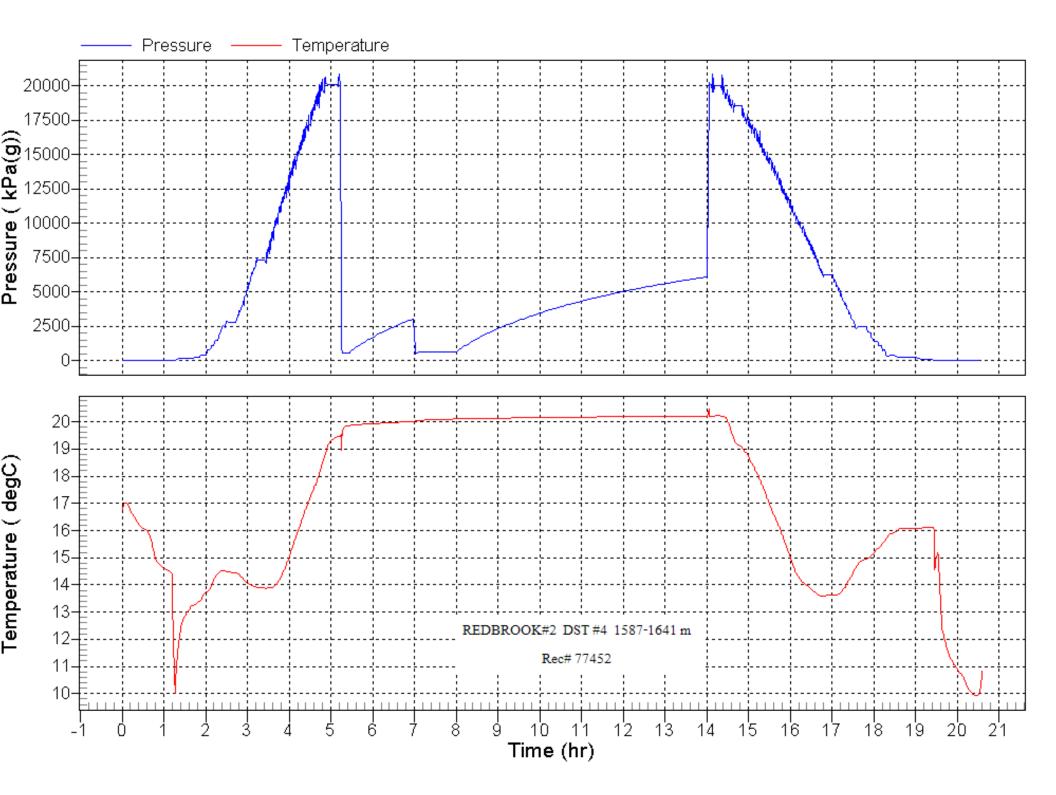




Storage	Units:	Metric

									storage offics.	
Run #: Test #: Test Compa Representa Unit #: Test Type:	tive:	4 1 Holland T Dale Holl Conventio		dle	Clo Rej	te: srun: osed Chamber Co oresentative: 3. Elevation:	mpany:	Dec 01, 2 n/a n/a 61.75	2009	
Formations	s Teste	ed		m the: the:		out Falls				
Test Interva			587.00 (587.00 (1	,	To: To:	1,641.00 (MD) 1,641.00 (TVD)	(54.00) (54.00)			
Total Depth	n:	1	,965.00 (MD)		1,965.00 (TVD)	(At the	time of t	he Test)	
String Configuration: Drill Pipe - Collars Recorder above tool Upper Packer Depth 1586.7 m Inside Recorder with 9.14 m perfs Lower Packer Depth 1640.97 m Recorder below Tool 324.0 meters Tail pipe to bottom Drilling Fluid Type and Properties: MW = 1265 VIS = 69 pH = 11.2 WL = 5.4 FC = 0.5 mm Cushion Type / Amount: No Cushion Hole Condition: Excellent Bottom Hole Temperature: 20.1 °										
Period		Intitia Pressu		nal ssure	Times	Flow Descripti	on			
Initial Hydro	ostatic									
Flow 1		674.	0 54	45.0	10	On valve oper minutes, stead			bottom of pail ir as to surface.	n 3
Shut-in 1		545.	0 3,09	93.0	90					
Flow 2		380.	0 64	40.0	60	On valve oper			puff to bottom of	
									veak by 10 mins o surface.	, then
Shut-in 2		640.	0 6,0	97.0	360	20 seconds. D				, then
Shut-in 2 Final Hydro	ostatic	640.	0 6,09 19,90		360	20 seconds. D				, then





Drill Stem Test Report

Storage Units: Metric

		וס		n rest kep	on	Storage Units:	Metric
Run #: Test #: Test Company: Representative: Unit #: Test Type:	5 1 Holland Tes Dale Holland Conventiona	1	Repr		mpany:	Dec 02, 2009 n/a n/a 61.75	
Formations Teste	ed	From the To the:	=	ut Falls			
		2.00 (MD) 2.00 (TVD)	To: To:	908.00 (MD) 908.00 (TVD)	(36.00) (36.00)		
Total Depth:	1,96	5.00 (MD)	,	1,965.00 (TVD)	(At the	time of the Test)	
String Configurat Drilling Fluid Typ Cushion Type / A Hole Condition: Bottom Hole Terr	e and Prope	Recc Uppe Insid Lowe Recc 1056 rties: MW VIS = pH = WL = FC =	e Record er Packer order belo .85 mete = 1265 = 69 11.2 = 5.4 0.5 mm Ilent T's in a r	ve tool Depth 871.8 m er with 4.88 m pe Depth 908.15 m	ttom seats.	Mud Drop:	0.0
Period	Intitial	Final	Times	Flow Description	on		
Initial Hydrostatic	Pressure : 11,072.0	Pressure					
Flow 1	5,456.0	6,566.0	10			strong initial puff to bottom bughout, no gas to surface	
Shut-in 1	6,566.0	10,317.0	90				
Flow 2	10,317.0	7,230.0	125			ak initial puff to bottom of p ng throughout. Gas to surf	
Flow Details	/ _			.			
Time / Pressur GTS rate was r			nts	Choke Type	Orifice	Diameter Units of measu	rement
Shut-in 2	10,256.0	10,354.0	360				
		-					

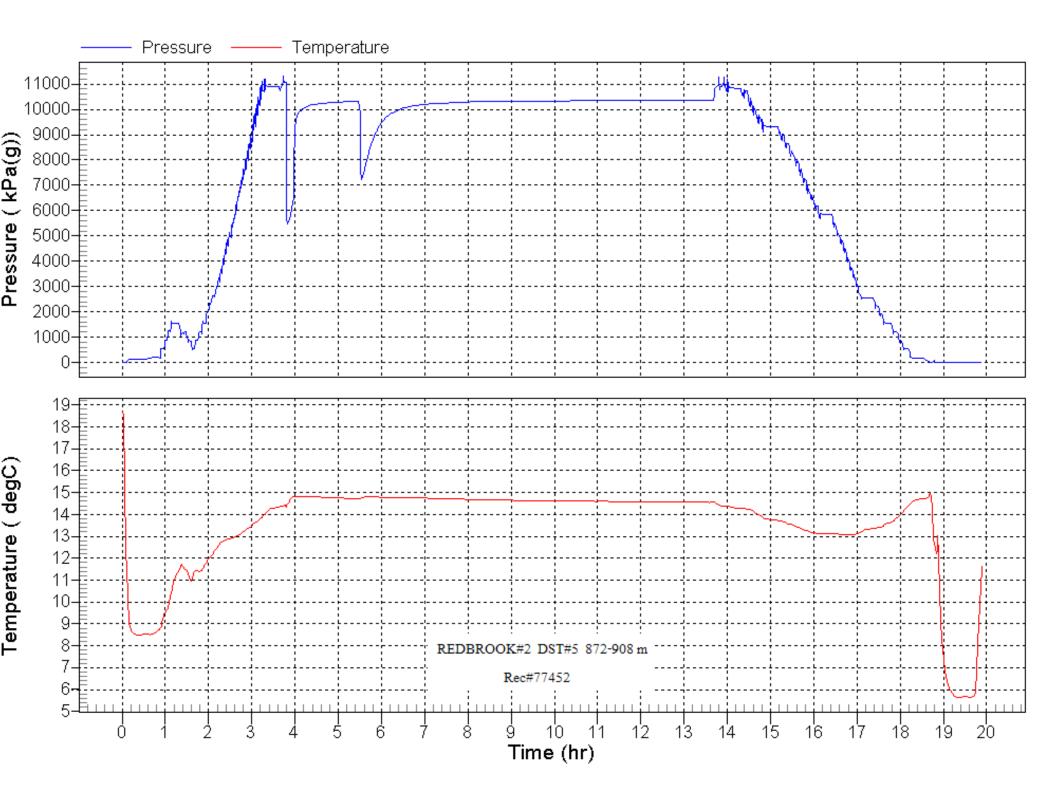
Vulcan Minerals Inc. UWI Red Brook 2

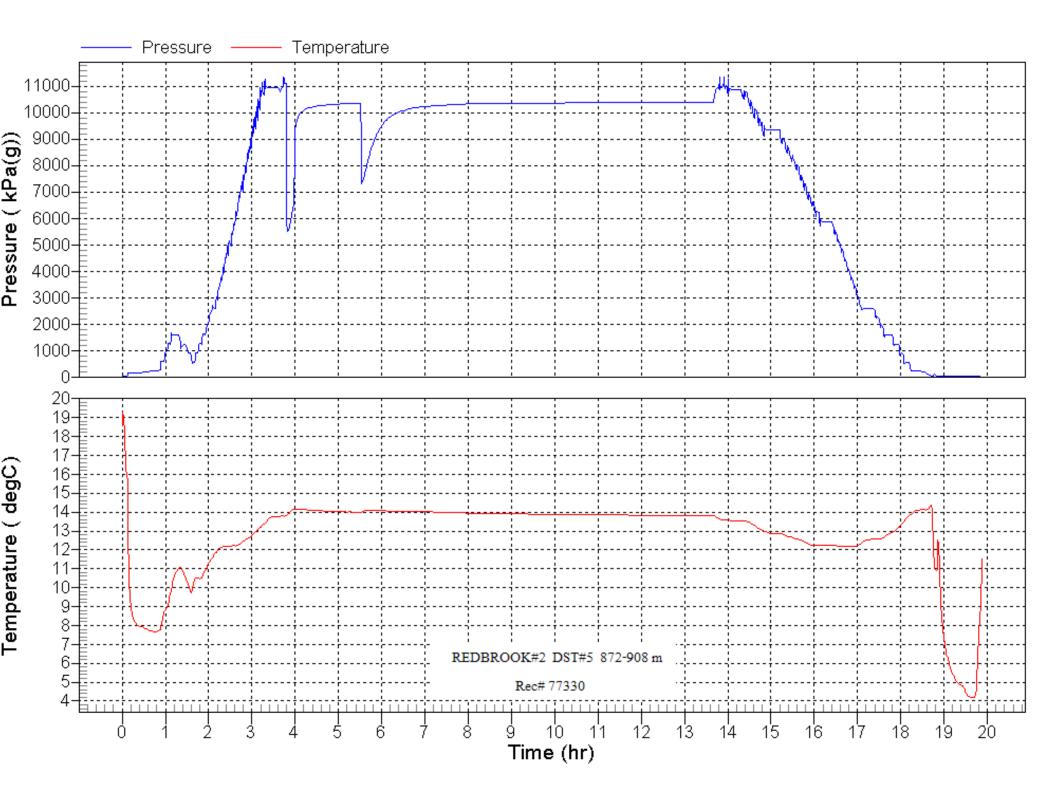
Vulcan Investcan Red Brook 2 Robinsons, NL Page 10-8

	Storage	Units:	Metric
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		_			eterage ermer	
Final Hydro	ostatic	10,908.0				
Recovery:	830 m Gasi Fluid Samp		m, 400 m, 1.5 m abov	e tools.		
Analyses:		0	, ,			
Remarks:	Good test (,	d with absolute perfection	on and safety. Dal	e Holland and the Rig	crews

The 5 DST's were completed with absolute perfection and safety. Dale Holland and the Rig crews worked great together with optimun efficiency. There were zero issues throughout the Testing period.





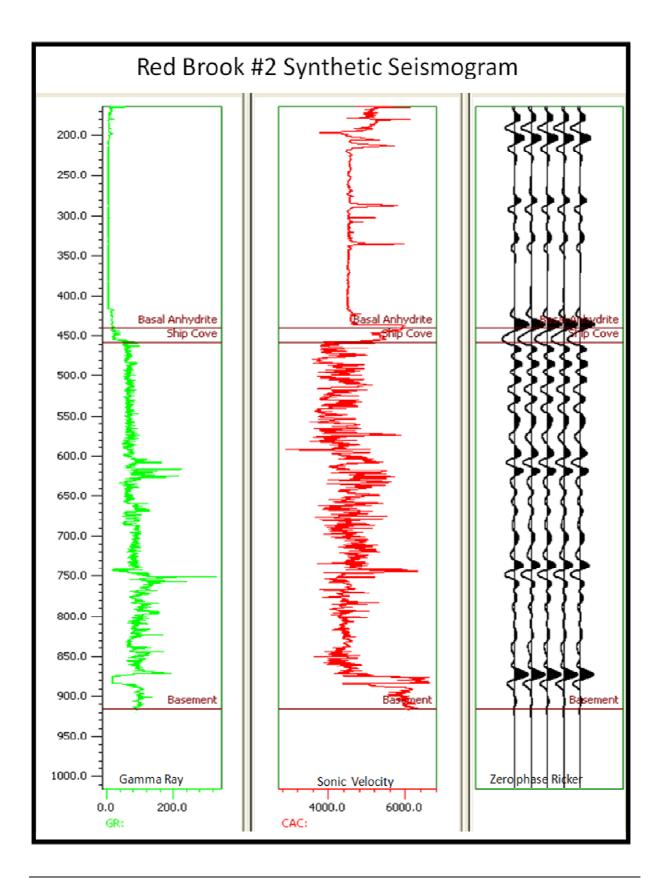
					OLLAN /heatley, C			LTD. 1-519-825-3	680		
				N MINE INVEST				Rep. <u>M.R.</u> #2_	Bicc h	hillmas	
	Interv	al <u>/555-</u>	1579	Total Dep	th <u>1965</u>	F	ormation	<u>_SPour</u>	FALLS	9	_
		Number		·			ester	K.DAU	: HOUA.	10	_
				adae C	ONFEUT	Dolgi K	K. B. Eleva	ation $\underline{-63^{\circ}}$	Grour	nd Elevation 57.1	
	Test	ate N	DUB	DARE 2	8 2000	> F		le Temperature			•
	10012	/ullo <u>////</u>	<u>t Se test</u>	C 2 Ivan Marina - Para	0,0001	-					-
RECOVERY	:54		etres Tot etres of	al Fluid				_	Sample SAMPL	r #; # ED AT:	_
	54	 Me	etres of	GASIF	TED D	Rulin	to Fe	and		. Metr	es
	~/				-					41:00 Metr	
			etres of							13.00 Metr	
-			etres of							1.524 Metr	
				Kindab	To R	N			Borray		
	1100	E	Gard		the second second second second second second second second second second second second second second second s			REFLOW		TOOL TALLY	901
REMARKS:		<u> </u>	PICC P							PO Sub 305	
PAIR	INITAC	<u>- Ful-</u>	6,71		OF PA			STEAD		Der XOver <u>0305</u>	
THROUG	thout	Nº 6	4; Ta	·····	k, OA			N STRO		Recorder_ (= 52.4	
BLOW,7	te Bon	où of	· PAI	(parks	JANY,	GAS TO	<u>Ə Saki</u>	AcciNI	<u>0'041 21</u> 1	Shut-in 1,650	
	9			GAS	READINGS	3				Sampler 1:000	
TIME	DDEOO		ORIFI		TIME	00500	TEND	ORIFICE	RATE	Sampler	·
min.	PRESS kPa	TEMP C			TIME	PRESS kPa	TEMP	mm	m3/d	Hydraulic L: 720	
20	424	$\rightarrow t$ —	3.17				ļ			Jars 2030	
<u>~</u>	92	-9	2817							MRecord	
5	10	eî	1.07							E/Record	—
30	-17	<u> </u>	2.64	5 131					+	Temp Rec	
40	35	Ý	3.17	5 182						By-pass	
50	50	1	3.19	5 222.						Safety Jt 660	
		4		1220						Packer 2r500	
60	65	4	13 i 7	5 257	_		I			Packer 21195	
Gas Sample		21075			ent to	1.1				Upper Packer depth 1535 0	28
Gas Measur	ed by: FC	DOR M	ANif		Positive	- Cheka	L.				
DOWNHOL	E PRESSUR	E DATA (K	PAG)	Test Times:	PF [2]	_ ISN <u>90</u>	vo	_60_ FSI	N <u>360</u>	Packer 305	
Recorder Nu	umber	1109	7		· · ·	773	10 17	17452	251726	Perfs 1/219	
Recorder Ra		3275	i			6895		8950	59110	By-pass	
Clock Hour -		24	<u> </u>			EMI		EMP	24	M / Record 829	
Depth - Metr	res	1542.1	06	·		1557	1921	557.447	1518.70	E/Record <u>627</u> X Over <u>305</u>	
Position of										DC 13-530	
Pressure Po		FLUI		INSIDE	INSIDE	OUTS	IDE	OUTSIDE	OUTSIDE	X Over	
Initial Hydros								19609		Blank 305	—
Start First Flo	······································							1054		Packer 33	
End First Flo First Shut-In								433	5	Lower Packer depth	T3l
Start Second								1185			
End Second		+			İ			742		Packer	
Second Shut								2506		Packer <u>2.500</u>	
Start Third F	low (H)									Perfs <u>660</u>	
End Third Fl										Recorder / 324	
Third Shut-Ir							·	12000		X Over <u>305</u>	
Final Hydros								17431		DP / DC 383.36	
TEST IS:				Misi		<u></u>	-	6 3	Satisfactory	X Over <u>305</u>	
Started in ho	ole @ 7	15		ened tool @ ∡	•		it of hole (· · · · · · · · · · · · · · · · · · ·	2	Bullnose <u>-6/0</u>	
DP size (mm	n)		Wei	ght (kg/m)		Ma	ain hole si	ze (mm) 🟒	5.90	Total depth (965,000)	
DP length (m	n)		_ DC	size ID (mm)		D0	above to	ool (m)	9.01	Total Interval 19.08	
Mud weight ((kg/m3)		Visc	: (s/L)		W	ater loss (cm3)	*	Total Tail Pipe 390 560	L
	UBBER SIZE		- · -	5.85				19:0	5		Hr

			DLLAND heatley, Ont	_	_		680	
Custor	ner VULC	ANMINE	RACS	Cu	stomer F	Rep. M.R.	BILL UL	MiciAms
	n Vulo							
Interval	1360-13	3 Total Dept	h_1965	Fo	rmation_	SPO	UT FA	us
Test Nu	umber	00		Te	ster	K. DAC		AND
Test Ty	pe DUAL	STRAPPUE	CONVENTI	ONAL K.	B. Elevat	tion <u>63</u>	<u>Ý</u> Groun	d Elevation
Test Da	ato <u>NOUE</u>	MBER 2º	1-30,20	<u>р</u> 9 Во	ttom Hole	e Temperature	(C)	8.5
RECOVERY: 27	Metres To	otal Fluid					Sampler	* <u>COY</u> ;*
	Metres of						SAMPLE	ED AT:
27	Metres of	DRice	inty F	ins				Metres
							<u> </u>	<u>1.524</u> Metres
	Metres of							Metres
	Metres of						<u> </u>	Metres
	SKID	OR TO					BOTTOM	HOLE SAMA CABOVE TOOL
REMARKS: <u>FIAD</u>	11/2 m		N BOTTO					TOOL TALLY
WITH WEAD	K INITA				-			PO Sub <u>a 305</u>
BY END OF	PRE FLOR	J . Out	UACUR C	PANI	HAS.	URAL	IN MAL	BBY XOver 305
PUFF INCR	EASING !	10 1611 1	N BAI	BUL	SM	N 141	N	Recorder 13524
Scarry Dren	EASING T	Provel GAS	READINGS	Na	GA	P 772 (ALAGE	Shut-in
				-700				
TIME PRESS min. kPa	TEMP ORII		TIME	PRESS kPa	TEMP C	ORIFICE	RATE m3/d	Sampler Hydraulic 720
				Ma	•			Jars 2.030
								WRecord
	<u>`</u>		+					E/Record
								Temp Rec
								By-pass
								Safety Jt _ 660
								Packer <u>2,500</u>
Gas Samples: # A6/	T 0500	5092 s	ent to			4		Packer 2, 195
Gas Measured by:								Upper Packer depth <u>1359:5</u> /
DOWNHOLE PRESSURE	DATA (KPAG)	Test Times:	PF 10	ISN 90) vo	60 FS	N 360	Packer 305
Recorder Number	11077			197732		77452	25726	Perfs
Recorder Range	32.151			6895	OF	8950	59110	By-pass
Clock Hour -Emp	24			Em	P	EMP	- 24	M / Record
Depth - Metres	1346.53			1365	61	1365.912	1386.861	E/Record <u>12329</u> X Over <u>305</u>
Position of								X Over <u>6305</u> DP/SC <u>13,530</u>
Pressure Port	FLUID	INSIDE	INSIDE	OUTSI		OUTSIDE	OUTSIDE	X Over <u>305</u>
Initial Hydrostatic (A)						7248		Blank 305
Start First Flow (B) End First Flow (B1)			· · · · · · · · · · · · · · · · · · ·			559		Packer 1.330
First Shut-In (C)		· · · · · · · · · · · · · · · · · · ·				272		Lower Packer depth 1382 501
Start Second flow (D)			******	1		466		
End Second flow (E)						613		
Second Shut-In (F					$- \Pi$	788		Packer 3.500 Perfs 0.505
Start Third Flow (H)	<u> </u>			<u> </u>				Recorder 1.524
End Third Flow (I)	 			- <u> </u>				X Over305
Third Shut-In (J) Final Hydroststic (G				1 .		7084		DP 575.70
TEST IS:	<u>l</u>	Misr	un:				Satisfactory	X Over 0305
Started in hole @5	15 ~	ened tool @	1900	#	of hole @	08		Bullnose
DP size (mm)		əight (kg/m)	31,90		n hole siz		5,90	Total depth
	111 1 4 3		60				1.01	
DP length (m)		C size ID (mm) _	179		above to		5 4	Total Interval <u>23:091</u> Total Tail Pipe <u>582:399</u>
Mud weight (kg/m3)	A ()	sç (s/L) X			er loss (c			
PACKER RUBBER SIZE	(MM)	<u>6.05</u>	BOTTOM HO	DLE COKE	(MM)	<u> </u>		Tool Make up Time 2.0 Hr

Customer Val. CAN MidLANS Coutomer Pap. M.R. BALL WalkANS Honeya [23] Test Number THEM Formation Science	HOLLAND TESTERS LTD. R.R. #3 Wheatley, Ontario N0P 2P0 1-519-825-3680	
Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Test Number THREE Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Metres of Test Fold THREE Metres of Metres of Metres of Test Number Number Test Number Test Number Test Number Test Number Number Number Number Number Number Number Number Number Number Number Number Numer Number Number Number Number Number Number Number Nu	Location NULCAN INVESTICAN RED BROCK #2	
Tost Type Rule C. STR: NOLLS: C.S.J.: Extrato: Appl. R. Berwatton: Ground Elevation: St7.1 Test Data NUOCEAR BLES 3: 2: 2: 2: 9 Bottom Hole Tomperature (0) (17.17) RECOVERY: ID Metres Total Fluid Sampler # 2:: 9 Sampler # 2:: 9		
Test Date Ald Wiscondized 3.0., 2 = 0.9 Bottom Hole Temperature (0) [7:1] RECOVERY: ID Metres of Dirit Ling All Ling Statute Sampler # 0.0.1 # ID Metres of Dirit Ling All Ling Statute Sampler # 0.0.1 # Sampler # 0.0.1 # ID Metres of Dirit Ling All Ling Statute Metres of Sampler # 1000 TALLY Note Sampler # 0.0.1 # ID Dirit Ling Of Ling All Ling Ling All Ling		
RECOVERY: ID Matters of ID // (L/ //2) Sampler # GCY : # ID Matters of ID // (L/ //2) SAMPLED AT: SAMPLED AT: ID Matters of ID // (L/ //2) Matters of ID // (L/ //2) SAMPLED AT: Matters of ID // (L/ //2) Matters of ID // (L/ //2) Matters of ID // (L/ //2) Matters of ID // (L/ //2) Matters of ID Matters of ID // (L/ //2) Matters of ID // (L/ //2) Matters of ID // (L/ //2) Matters of ID // (L/ //2) CA FOR ALL (IN // ID // (L/ //2) C/ (L/ //2) C/ (L/ //2) C/ (L/ //2) PO Sub // (S/ C/ //2) CA FO // (L/ //2) C/ (L/ //2) C/ (L/ //2) C/ (L/ //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) PO Sub //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2) Sampler //2)		
Image: Amount of the second of the	Test Date <u>IVOUCMBER 30</u> , 2009 Bottom Hole Temperature (C)	
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ZERO OFFSET VSP & ACOUSTIC LOG CALIBRATION

REPORT

for

Vulcan Minerals Inc.

Well: Vulcan Investcan Red Brook #2 Field: St. George Basin Location: Canada

Report Status: Authors:	Final Zhiqia
Reviewer:	Nichc
Date:	Dece

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In the processing and interpretation of the data, VSF usion employees have relied on experience and have exercised their best judgment. However, since all interpretations are opinions based on inferences from acoustical or other measurements, we cannot and we do not guarantee the accuracy or the correctness of any interpretations. As such, we shall not be liable for any loss, damages or expenses resulting from reliance on such interpretation.

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1 ACQUISTION AND PROCESSING

1.1 INTRODUCTION

Baker Atlas conducted a Zero Offset VSP Survey (ZVSP) for **Vulcan Minerals Inc.** in their **Vulcan Investcan Red Brook #2** well, located in St. George basin field, Canada.

The objectives of the VSP survey were to:

- Provide time-depth information
- Calibrate the acoustic log
- Generate a VSP corridor stack

At the time of the survey, the well had been drilled to depth of 1,955 m and cased to a depth of 885 m. All measured depths are referenced to the Kelly Bushing (*KB.*) elevation of 63.4 m above MSL. The ground elevation at the wellhead was 57.1 m above mean sea level.

The well had a maximum deviation of 9.53° at 1,515 m. KB. A well deviation survey report was used to correct the wireline measured depths to true vertical depth. A copy of the deviation survey is included as Enclosure 1B in the back of this report. The display of the deviation survey is included (Figure 2A).

Table 1 is a summary of the survey acquisition information.

Table 1: Survey information

Run #	Survey Type	Depth Range from KB	# Levels	# of files	Tool	# Receivers
1	VSP	100 – 1,955 m	120	598	ASR	2 Level MLR



1.2 DATA ACQUISITION

The survey began at 15:58 *hrs* on November 27, 2009 and was finished at 00:47 *hrs* on November 28, 2009.

The source used for both runs of the ZVSP survey was 500 cu. In. H-Rack airgun array. The array was positioned at an offset of 63.97 m from the wellhead at a bearing of 125 deg. from North. The gun array was submerged at a depth of 0.5 m below ground level. The ground elevation of the source was 57.1 m above MSL. A reference hydrophone was positioned 1.4 m from the gun source array. The reference hydrophone was used for the time break correction and to monitor the source signature.

A 3-component, 2 level, ASR downhole receiver array was used to record the survey. The intertool spacing was 15 m.

At the start of the survey, the wireline depth sensor was zeroed at the KB elevation and the tool was lowered down the well. As the tool was lowered down the well, it was stopped at a number of depths to check the equipment performance and depth control before reaching TD. The tool was stopped at 800, 1820, and 1850 m. KB going down the well until reaching a maximum depth of 1955 m. KB. VSP recording then proceeded as the geophone was raised to the shallowest station depth of 100 m. KB.

Data was gathered at 120 downhole receiver stations. There were a total of 598 files acquired during the survey. Data was recorded for 5 seconds using a one millisecond sampling rate.

The VSP survey configuration is shown on Figure 2. Enclosure 1 contains the Field Engineer's reports for the survey.

For depth correlation, a gamma-ray wireline tool was placed at the top of the array tool to check on the geophone depth locations. As the receiver descends into the borehole, measurements are taken periodically using the gamma ray tool. Readings from the original wireline gamma ray and the receiver gamma ray are correlated. If a difference between the two gamma ray readings is found, the geophone tool depth is corrected to the original gamma-ray log depth. This ensures that the borehole seismic data will depth tie the wireline logs.



1.3 DATA PROCESSING

1.3.1 - Edit and Stack Raw Data

The three component digital data were reformatted and displayed. To determine the true digital start time, the true reference signal traces were examined and their onset times were picked. Each downhole geophone trace was subsequently shifted by the first break arrival time of its corresponding true reference trace. These arrival times were then corrected by 3.13 ms to compensate for the instrument (gun) delay. Each downhole geophone trace was subsequently shifted by the first break time value of the corresponding reference hydrophone trace. This shift will reference the downhole geophone traces to the depth of the source.

The downhole geophone traces for each depth level were edited as necessary and then stacked using a median summation algorithm. First break times were picked for each stacked trace. *Enclosure 5* displays the stacked raw data (3-component) for the VSP survey.

The vertical component was used for VSP processing and velocity analysis.

The accuracy of the depth sensor was checked by comparing the first-break times of the same levels occupied during the down and up runs of the tool and between runs. The time agreement was found to be acceptable. For consistency, the data occupied during the down trip of the tool was not used in any of the computations.

1.3.2 - Velocity Survey Computations

The observed first break times at each depth were converted to vertical times and then referenced to the seismic reference datum (SRD) of ground level using a correction velocity of 1,500 m/sec. These time-depth pairs were then used as the input data for the velocity survey computations. The computed average, RMS, and interval velocities are listed in Section 2 and displayed in *Enclosure 2*. The geophone levels not used in the computations are denoted on the time / depth listing by an asterisk and on the display by a small red box on the average/interval velocity track.

1.3.3- Acoustic Log Calibration

The input log data consisted of acoustic, density, caliper and gamma ray logs over the interval of 202.4 - 1,954.9 m measured depth below KB.

Prior to performing the acoustic log calibration, the VSP data are edited to remove levels affected by noise or casing arrivals. The data are then interactively examined during the calibration routine to check the first arrival times and ensure that no anomalous data are used.

For the log calibration, the acoustic log is integrated to produce a depth-indexed time log. The difference between the corrected checkshot time of the shallowest checkshot level (within the logged interval) and the corresponding log derived time is computed and the time log is then shifted by adding this value to all values of the acoustic time log. This will force the acoustic log to time tie the checkshot time at the depth of the first checkshot.

At each checkshot depth the time difference (drift) between the checkshot times and the acoustic times are computed. Calibration points are selected at discrete depth levels. The depths of these calibration points are chosen using two criteria. The first is that the calibration points divide the drift curve into intervals that contain approximately linear drift. The second is that the calibration points occur at a depth where a velocity contrast (typically formation boundaries) already exists. Choosing the calibration point at an area that exhibits a velocity change insures that no new (calibration generated) velocity contrasts are created. The calibration points used in the acoustic calibration are indicated with a triangular mark on the drift curve displayed in *Enclosure 2*.

Over each calibration interval, a constant time shift for each log sample is computed using the linear drift curve slope value. This constant time is added to all acoustic log values over the calibration interval. This effectively shifts the acoustic log over the calibration interval to match the check shot generated velocity values. This process is done over each calibration interval on the acoustic log. The calibrated log is then re-integrated and a residual drift curve is computed using the same methodology discussed above. The residual drift curve is shown in *Enclosure 2*.

Sections 2.1, 2.2, 2.3, & 2.4 contain the tabulated depth-time and velocity tables. Sections 3.1 & 3.2 contain the acoustic log calibration details.

The calibrated acoustic log corrected to TVD is supplied in digital form as an ascii file on the accompanying CD.

1.3.4 - ZVSP Processing

Spherical Divergence Correction

A compensation for amplitude decay due to spherical divergence was applied to the stacked vertical component data using an exponential gain function of $T^{**1.8}$ (where T is the recorded time).

A display of the gained VSP total wavefield is shown in *panel 1* of *Enclosure 3*.

An F-K spectral analysis display of the gained VSP total wavefield is shown as Figure 3.

There is a strong tube wave present in the data set. This has largely been attenuated using a 11-trace dip median filter. Data after tube wave attenuation are shown on *panel 2 of Enclosure 3* and in F-K spectral analysis display as Figure 4.

Wavefield Separation

The upcoming and downgoing wavefields were separated using a median filter. The VSP total wavefield was time aligned using the direct arrival time of each trace. This time shift will align the compressional P downgoing wavefield. A constant 200 ms shift is then applied to ensure that no data is lost when the time shifts are removed.

An 11-trace median filter was applied to the aligned VSP total wavefield. This filter will pass the downgoing wavefield. The downgoing wavefield is then arithmetically subtracted from the total wavefield. This subtracted dataset will contain the upcoming P waves, as well as any residual wave energy and noise.

A zero phase 10(18)-80(36) Hz (dB/Oct) bandpass filter was applied to the downgoing and residual upcoming wavefield.

The downgoing wavefield after wavefield separation is shown in *panel 3* of *Enclosure 3*.

The residual upcoming wavefield after wavefield separation is shown in *panel 5* of *Enclosure 3*. *Residual Upcoming Wavefield Enhancement*

The residual upcoming wavefield is time aligned to two-way time. A 3-trace median filter was applied to the upcoming wavefield to remove unwanted wave modes and unwanted residual energy left in the dataset after the wavefield separation.

A zero phase 10(18)-80(36) Hz (dB/Oct) bandpass filter was applied to the enhanced upcoming wavefield. The upcoming wavefield is shown in *panel 7* of *Enclosure 3*.

VSP Downwave Deconvolution

VSP downwave deconvolution is a deterministic process. Because the downgoing wavetrain can be isolated from the VSP dataset, the reflectivity response of the earth at the well location is known for the VSP source wavelet. The downgoing VSP wavetrain contains the direct arrival source wavelet followed by multiple arrivals. Every event that follows the direct arrival is a downgoing multiple reflection.

The deconvolution process will analyze the downgoing wavetrain and compute an operator that will collapse a user specified portion of the downgoing wavetrain to a unit spike. This operator is then applied to the upcoming waves. The VSP downwave deconvolution will shape the input source wavelet to zero phase and collapse upcoming multiple reflections generated above the depth of the deepest receiver.

A 500 ms operator was used to collapse the downgoing wavetrain to a unit spike. A zero phase 10(18)-80(36) Hz (dB/Oct) bandpass filter was applied to the deconvolved data. The deconvolved downgoing and upcoming wavefields are shown in *panel 4* and *panel 8* of *Enclosure 3*.

Datum Correction

The upcoming wavefield data was time corrected to seismic datum using a correctional velocity of 1,500 m/sec.

Post Deconvolution Median Filter

A 3-trace median filter is applied to the datum corrected upcoming waves. This filter will remove random high frequency noise generated by the deconvolution process. A zero phase 10(18)-80(36) Hz (dB/Oct) bandpass filter was applied to the median filtered upcoming wavefield. The post deconvolution median filtered upcoming wavefield is shown in *panel 9* of *Enclosure 3*.

Corridor Mute and Stack

A narrow time window close to the first arrival time on each trace was carefully chosen. The time window is designed to include only traces whose reflection character is similar enough to be included in the stack and is kept relatively short to exclude long travel path reflections. The data that lies outside of the stacking corridor is muted. The display of the corridor window is shown in *panel 10* of *Enclosure 3*.



The data in this time window is then stacked to generate a single VSP corridor stack trace. This stacked trace is repeated 16 times for visual clarity and represents the seismic response at the wellbore. The corridor stack, normal and reverse polarity, is shown in *panel 11* and *panel 12 of Enclosure 3*.

Bandpass filters of 10(18)-80(36), 10(18)-60(36), 10(18)-50(36), 10(18)-40(36), 10(18)-30(36) and 10(18)-20(36) Hz (dB/Oct) were applied to the corridor stack data. Displays of the corridor stacks for both normal and reversed polarities at six frequency bands are included on *Enclosure* 4 at 5 in/sec (Corridor Stack Display).

Polarity

VSP data after deconvolution, normal polarity shows a positive reflection coefficient as a peak. This corresponds to SEG convention.

1.4 ACQUISITION PARAMETERS

Client: Well: Location: Survey Type: Date Survey Completed: Wireline Contractor: Casing:	Vulcan Minerals Inc. Vulcan Investcan Red Brook #2 Canada Zero Offset VSP 28 November, 2009 Baker Atlas 339.7 mm from 0 to 220.2 m MDKB 244.5 mm from 0 to 885 m MDKB
Total Depth:	1,955 m MDKB
Elevations: Kelly Bushing Elevation: Ground Elevation at Wellhead: Seismic Datum:	63.4 m above sea level 57.1 m above mean sea level Ground level
Recording System: Type: Format: Record Length: Sample Rate:	VSProwess RCD 5 seconds 1 msec
Geophone Geophone Type: Total Number of Levels Occupied Shallowest Geophone Level: Deepest Geophone Level: Quality of Geophone Breaks:	3-component, 2 level ASR : 120 levels 100 m (K.B.) 1,955 m (K.B.) fair to good
Source: Type: Source Elevation: Source Depth: Source Location:	500 cu. in. H-Rack Airgun 57.1 m above mean sea level 0.5 m below ground elevation 63.97 m from wellhead with azimuth 125°N
Personnel: Seismic Observer: Client Representative:	M. Smith Phonse Fagan

2 VELOCITY SURVEY COMPUTATIONS

2.1 VELOCITY SURVEY

CLIENT WELL AREA CONTRACTOR SURVEY DATE SURVEY UNITS RCVR REF. ELEVATION DATUM ELEVATION KB ELEVATION WELL GROUND ELEVATION DATUM CORRECT. VELOCITY SOURCE TYPE GEOPHONE TYPE SAMPLE RATE WELL CASING

VULCAN MINERALS INC. VULCAN INVESTCAN RED BROOK #2 CANADA BAKER ATLAS 28 NOV 09 М 63.40 M ABOVE SEA LEVEL 57.10 M ABOVE SEA LEVEL 63.40 M ABOVE SEA LEVEL 57.10 M ABOVE SEA LEVEL 1500.00 M /SEC AIR GUN ANALOG 1.00 MSEC 339.7 MM FROM 0 TO 220.2 M 244.5 MM FROM 0 TO 885 M

VULCAN MINERALS INC. WELL

VULCAN INVESTCAN RED BROOK #2

2.2 DIRECTIONAL SURVEY CONTRACTOR

CONTRACTOR SURVEY DATE REFERENCE ELEVATION BAKER ATLAS 28 NOV 09 63.40 M ABOVE SEA LEVEL

MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
0.00	0.00	0.00	0.00
890.00	888.33	45.71	29.66
895.00	893.29	45.95	30.22
900.00	898.26	46.18	30.77
905.00	903.22	46.42	31.33
910.00	908.19	46.64	31.88
915.00	913.15	46.87	32.44
920.00	918.11	47.09	33.00
925.00	923.08	47.32	33.56
930.00	928.04	47.54	34.13
935.00	933.00	47.76	34.70
940.00 945.00	937.96 942.92	47.98 48.20	35.28 35.86
950.00	942.92	48.42	36.44
955.00	952.84	48.63	37.03
960.00	957.80	48.85	37.63
965.00	962.76	49.06	38.22
970.00	967.72	49.29	38.82
975.00	972.68	49.51	39.43
980.00	977.64	49.74	40.04
985.00	982.60	49.96	40.65
990.00	987.55	50.18	41.27
995.00	992.51	50.41	41.90
1000.00	997.46	50.63	42.53
1005.00 1010.00	1002.42 1007.37	50.86 51.09	43.16 43.80
1015.00	1012.32	51.32	44.44
1020.00	1017.28	51.55	45.09
1025.00	1022.23	51.77	45.75
1030.00	1027.18	51.99	46.41
1035.00	1032.13	52.22	47.07
1040.00	1037.08	52.45	47.74
1045.00	1042.03	52.68	48.41
1050.00	1046.98	52.91	49.09
1055.00	1051.93	53.15	49.77
1060.00	1056.87	53.37	50.46
1065.00 1070.00	1061.82 1066.77	53.60 53.82	51.15 51.85
1075.00	1071.71	54.04	52.55
1080.00	1076.66	54.25	53.25
1085.00	1081.60	54.46	53.96
1090.00	1086.55	54.66	54.68
1095.00	1091.49	54.85	55.40
1100.00	1096.43	55.04	56.13
1105.00	1101.38	55.23	56.86
1110.00	1106.32	55.42	57.60
1115.00	1111.26	55.60	58.34
1120.00	1116.20 1121.14	55.77	59.09 59.84
1125.00	1121.14	55.94	59.04

MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
1130.00 1135.00 1140.00 1145.00 1150.00 1150.00 1155.00 1160.00 1170.00 1175.00 1175.00 120.00 120.00 120.00 120.00 1210.00 1225.00 1220.00 1235.00 1240.00 1255.00 1250.00 1255.00 1260.00 1255.00 1265.00 1270.00 1275.00 1280.00 1285.00 1290.00 1295.00 1300.00 1315.00 1300.00 1315.00 1325.00 1300.00 1355.00 1340.00 1355.00 1360.00	1126.08 1131.02 1135.96 1140.90 1145.84 1150.78 1155.72 1160.66 1165.59 1170.53 1175.47 1180.41 1185.35 1190.28 1195.22 1200.16 1205.10 1210.03 1214.97 1219.91 1224.84 1229.78 1234.72 1239.65 1244.59 1244.59 1244.59 1244.59 1244.59 1244.59 1244.59 1244.59 1254.46 1259.39 1264.33 1269.27 1274.20 1279.14 1284.08 1289.02 1293.96 1298.90 1303.84 1308.78 1313.72 1318.67 1323.61 1328.55 1333.49 1338.43 1343.36 1348.30 1353.24	56.10 56.26 56.40 56.54 56.79 56.90 57.00 57.10 57.19 57.28 57.36 57.43 57.50 57.62 57.62 57.62 57.68 57.73 57.77 57.80 57.82 57.83 57.83 57.83 57.83 57.73 57.77 57.80 57.73 57.77 57.80 57.73 57.77 57.80 57.73 57.73 57.73 57.73 57.73 57.73 57.73 57.73 57.68 57.73 57.73 57.73 57.68 57.73 57.73 57.73 57.68 57.73 57.62 57.73 57.73 57.68 57.777 57.73 57.68 57.62 57.77 57.73 57.68 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.77 57.73 57.68 57.62 57.55 57.47 57.55 57.47 57.38 57.64 56.64 56.64 56.64 56.64 56.64 56.64 56.64 56.64 56.74 56.78 56.64 55.83 55.64 55.43 55.21 54.99	60.60 61.36 62.12 62.88 63.65 64.41 65.18 65.96 66.74 67.51 68.29 69.07 69.86 70.64 71.43 72.21 73.00 73.79 74.58 75.37 76.16 76.96 77.76 78.56 79.36 80.16 80.95 81.75 82.54 83.34 84.13 84.92 85.70 86.46 87.21 87.96 88.71 89.46 90.21 90.96 91.71 92.46 93.22 93.97 94.73 95.49 96.25
1365.00 1370.00 1375.00 1380.00 1385.00 1390.00	1358.17 1363.11 1368.04 1372.97 1377.91 1382.84 1397.77	54.76 54.52 54.29 54.04 53.79 53.53	97.02 97.80 98.57 99.34 100.11 100.88
1395.00 1400.00 1405.00 1410.00 1415.00	1387.77 1392.71 1397.64 1402.57 1407.51	53.26 52.98 52.69 52.39 52.09	101.66 102.43 103.18 103.94 104.68



MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
(M) 1420.00 1425.00 1425.00 1430.00 1435.00 1445.00 1450.00 1455.00 1460.00 1465.00 1475.00 1475.00 1495.00 1505.00 1505.00 1510.00 1515.00 1520.00 1535.00 1535.00 1540.00 1545.00 1555.00 1560.00 1575.00 1570.00 1575.00 1585.00 1585.00 1585.00 1590.00 1595.00 1600.00 1605.00 1610.00 1615.00 1620.00 1635.00 1640.00 1645.00 1655.00 1655.00 1655.00 1640.00 1645.00 1655.00 1655.00 1655.00 1655.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1645.00 1640.00 1640.00 1645.00 1640	(M) 1412.44 1417.38 1422.31 1427.25 1432.18 1437.12 1442.05 1446.99 1451.92 1456.86 1461.79 1466.73 1471.66 1476.59 1481.53 1486.46 1491.39 1496.32 1501.25 1506.18 1511.12 1516.05 1520.98 1525.91 1530.84 1535.78 1540.71 1545.64 1555.51 1560.44 1565.38 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1575.25 1580.18 1585.12 1590.06 1595.00 1599.95 1604.89 1609.84 1614.78 1619.73 1624.68 1629.63 1634.59 1639.54 1644.49 1649.45 1654.40 1659.35 1664.30		
1680.00 1685.00 1690.00 1695.00	1669.26 1674.21 1679.16 1684.11	31.79 31.43 31.07 30.71	140.59 141.18 141.78 142.39
1700.00 1705.00	1689.06 1694.01	30.35 29.99	142.99 143.61

MEASURED DEPTH VERTICAL DEPTH NORTH-SOUTH COORDINATE NORTH = + EAST-WETE EAST (M) (M) (M) (M) (M) 1710.00 1698.96 29.63 144.23 1715.00 1703.90 29.27 144.86 1725.00 1703.80 28.56 146.13 1730.00 1718.74 28.20 146.71 1745.00 1728.63 27.49 148.74 1745.00 1738.52 26.80 149.38 1755.00 1743.46 26.10 150.71 1760.00 1738.52 26.80 149.38 1755.00 1743.46 26.10 150.71 1765.00 1763.24 25.05 152.69 1775.00 1763.24 25.05 152.63 1775.00 1763.24 25.05 152.63 1795.00 1778.07 24.01 155.31 1780.00 1778.72 23.30 155.97 1805.00 1797.95 22.25 156.63				
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1760.00	1748.41	26.10	150.71
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1815.00 1802.79 22.22 157.96 1820.00 1807.73 21.86 158.62 1825.00 1812.67 21.48 159.29 1830.00 1817.61 21.11 159.96 1835.00 1822.56 20.73 160.62 1840.00 1827.50 20.36 161.29 1845.00 1832.44 19.99 161.95 1850.00 1837.38 19.60 162.62 1855.00 1842.32 19.22 163.28 1860.00 1847.26 18.83 163.95 1865.00 1852.20 18.45 164.63 1870.00 1857.14 18.07 165.31 1875.00 1862.07 17.69 166.00 1880.00 1871.95 16.93 167.38 1890.00 1876.89 16.54 168.07 1895.00 1881.82 16.16 168.75 1900.00 1891.70 15.40 170.10 1910.00 1896.65 15.02 170.77 1915.00 1901.59 14.66 171.44 1920.00 1906.53 14.28 172.12 1930.00 1911.47 13.16 174.17 1940.00 1926.28 12.78 174.86	1805.00	1792.90	22.95	156.63
1820.00 1807.73 21.86 158.62 1825.00 1812.67 21.48 159.29 1830.00 1817.61 21.11 159.96 1835.00 1822.56 20.73 160.62 1840.00 1827.50 20.36 161.29 1845.00 1832.44 19.99 161.95 1850.00 1837.38 19.60 162.62 1855.00 1842.32 19.22 163.28 1860.00 1847.26 18.83 163.95 1865.00 1852.20 18.45 164.63 1870.00 1857.14 18.07 165.31 1875.00 1862.07 17.69 166.00 1880.00 1871.95 16.93 167.38 1895.00 1876.89 16.54 168.07 1895.00 1891.70 15.40 170.10 190.00 1891.70 15.40 170.10 1910.00 1901.59 14.66 171.44 1920.00 1901.59 14.28 172.12 1925.00 1911.47 13.91 172.80 1930.00 1916.40 13.53 173.48 1935.00 1921.34 13.16 174.17 1940.00 1926.28 12.78 174.86				
1825.00 1812.67 21.48 159.29 1830.00 1817.61 21.11 159.96 1835.00 1822.56 20.73 160.62 1840.00 1827.50 20.36 161.29 1845.00 1832.44 19.99 161.95 1850.00 1837.38 19.60 162.62 1855.00 1842.32 19.22 163.28 1860.00 1847.26 18.83 163.95 1865.00 1857.14 18.07 165.31 1875.00 1857.14 18.07 165.31 1875.00 1862.07 17.69 166.00 1880.00 1867.01 17.31 166.69 1885.00 1871.95 16.93 167.38 1890.00 1876.89 16.54 168.07 1895.00 1891.70 15.40 170.10 1910.00 1896.65 15.02 170.77 1915.00 1901.59 14.66 171.44 1920.00 1906.53 14.28 172.12 1925.00 1911.47 13.91 172.80 1930.00 1916.40 13.53 173.48 1930.00 1921.34 13.16 174.17 1940.00 1926.28 12.78 174.86				
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1835.00 1822.56 20.73 160.62 1840.00 1827.50 20.36 161.29 1845.00 1832.44 19.99 161.95 1850.00 1837.38 19.60 162.62 1855.00 1842.32 19.22 163.28 1860.00 1847.26 18.83 163.95 1865.00 1852.20 18.45 164.63 1870.00 1857.14 18.07 165.31 1875.00 1867.01 17.31 166.69 1880.00 1871.95 16.93 167.38 1890.00 1876.89 16.54 168.07 1895.00 1881.82 16.16 168.75 1900.00 1891.70 15.40 170.10 1910.00 1901.59 14.66 171.44 1920.00 1901.59 14.28 172.12 1925.00 1911.47 13.91 172.80 1930.00 1926.28 12.78 174.86				
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1855.00 1842.32 19.22 163.28 1860.00 1847.26 18.83 163.95 1865.00 1852.20 18.45 164.63 1870.00 1857.14 18.07 165.31 1875.00 1862.07 17.69 166.00 1880.00 1867.01 17.31 166.69 1885.00 1871.95 16.93 167.38 1890.00 1876.89 16.54 168.07 1895.00 1881.82 16.16 168.75 1900.00 1886.76 15.78 169.43 1905.00 1891.70 15.40 170.10 1910.00 1896.65 15.02 170.77 1915.00 1901.59 14.66 171.44 1920.00 1906.53 14.28 172.12 1930.00 1916.40 13.53 173.48 1935.00 1921.34 13.16 174.17 1940.00 1926.28 12.78 174.86	1845.00	1832.44	19.99	161.95
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1895.001881.8216.16168.751900.001886.7615.78169.431905.001891.7015.40170.101910.001896.6515.02170.771915.001901.5914.66171.441920.001906.5314.28172.121925.001911.4713.91172.801930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86	1885.00			
1900.001886.7615.78169.431905.001891.7015.40170.101910.001896.6515.02170.771915.001901.5914.66171.441920.001906.5314.28172.121925.001911.4713.91172.801930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86	1890.00		16.54	168.07
1905.001891.7015.40170.101910.001896.6515.02170.771915.001901.5914.66171.441920.001906.5314.28172.121925.001911.4713.91172.801930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86				
1910.001896.6515.02170.771915.001901.5914.66171.441920.001906.5314.28172.121925.001911.4713.91172.801930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86				
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1925.001911.4713.91172.801930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86				
1930.001916.4013.53173.481935.001921.3413.16174.171940.001926.2812.78174.86				
1940.001926.2812.78174.86				
1950.00 1942.10 11.78 176.86				
	TA20.00	1942.10	11./8	1/0.80

VULCAN MINERALS INC. WELL

VULCAN INVESTCAN RED BROOK #2

2.3 SOURCE / RECEIVER GEOMETRY TABLE

RECEIVER REFERENCE ELEVATION = 63.40 M ABOVE SEA LEVEL SOURCE / RECEIVER COORDINATES ARE REFERENCED TO WELLHEAD SOURCE / RECEIVER (S-R) OFFSET IS PLAN VIEW

----- RECEIVER ----- OFFSET

MEASURED DEPTH	VERT. DEPTH	X COORD.	Y COORD.	ELEV	DEPTH	X COORD.	Y COORD.	(S-R)
(DGM) (M)	(M)	(M)	(M)	(ES) (M)	(DS) (M)	(M)	(M)	(M)
100.0 115.0 200.0 215.0 230.0 245.0 260.0 275.0 290.0 305.0	99.8 114.8 199.6 214.6 229.6 244.5 259.5 274.5 289.5 304.4	3.3 3.8 6.7 7.2 7.7 8.2 8.7 9.2 9.7 10.2	5.1 5.9 10.3 11.0 11.8 12.6 13.4 14.1 14.9 15.7	57.1 57.1 57.1 57.1 57.1 57.1 57.1 57.1	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7	-52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4	70.1 71.0 76.2 77.1 78.0 79.0 79.9 80.8 81.7 82.6
320.0 335.0 350.0 365.0 380.0 395.0 410.0 425.0	319.4 334.4 349.3 364.3 379.3 394.3 409.2 424.2	10.7 11.2 11.7 12.2 12.7 13.2 13.7 14.2	16.4 17.2 18.0 18.7 19.5 20.3 21.1 21.8	57.1 57.1 57.1 57.1 57.1 57.1 57.1 57.1	0.5 0.5 0.5 0.5 0.5 0.5 0.5	-36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7	-52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4	83.6 84.5 85.4 86.3 87.2 88.1 89.1 90.0
440.0 455.0 470.0 485.0 500.0 515.0 530.0 545.0	439.2 454.1 469.1 484.1 499.1 514.0 529.0 544.0	14.7 15.2 15.7 16.2 16.7 17.2 17.7 18.2	22.6 23.4 24.1 24.9 25.7 26.5 27.2 28.0	57.1 57.1 57.1 57.1 57.1 57.1 57.1 57.1	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7	-52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4	90.9 91.8 92.7 93.7 94.6 95.5 96.4 97.3
560.0 575.0 590.0 605.0 620.0 635.0 650.0 665.0	558.9 573.9 588.9 603.9 618.8 633.8 648.8 663.8	18.719.219.720.220.721.221.722.2	28.8 29.5 30.3 31.1 31.8 32.6 33.4 34.2	57.1 57.1 57.1 57.1 57.1 57.1 57.1 57.1	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7	-52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4	98.2 99.2 100.1 101.0 101.9 102.8 103.8 104.7
680.0 695.0 710.0 725.0 740.0 755.0 770.0 785.0 800.0 815.0 830.0 845.0	678.7 693.7 708.7 723.6 738.6 753.6 768.6 783.5 798.5 813.5 828.4 843.4	22.7 23.2 23.7 24.2 24.7 25.2 25.7 26.2 26.7 27.2 27.7 28.2	34.9 35.7 36.5 37.2 38.0 38.8 39.5 40.3 41.1 41.9 42.6 43.4	57.1 57.1 57.1 57.1 57.1 57.1 57.1 57.1	0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7 -36.7	-52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4 -52.4	105.6 106.5 107.4 108.3 109.3 110.2 111.1 112.0 112.9 113.9 114.8 115.7
860.0 875.0	858.4 873.4	28.7 29.2	44.2 44.9	57.1 57.1	0.5	-36.7 -36.7	-52.4 -52.4	116.6 117.5

RECEIVER			SOURCE				OFFSET	
MEASURED DEPTH	VERT. DEPTH		Y COORD.	ELEV	DEPTH	X COORD.	Y COORD.	(S-R)
(DGM)				(ES)	(DS)			
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
890.0	888.3	29.7	45.7	57.1	0.5		-52.4	118.4
905.0	903.2	31.3	46.4	57.1	0.5	-36.7	-52.4	120.0
920.0	918.1	33.0	47.1	57.1	0.5	-36.7	-52.4	121.5
935.0	933.0	34.7	47.8	57.1	0.5	-36.7	-52.4	123.0
950.0	947.9	36.4	48.4	57.1	0.5	-36.7	-52.4	124.6
965.0	962.8	38.2	49.1	57.1	0.5		-52.4	126.1
980.0	977.6	40.0	49.7	57.1	0.5	-36.7	-52.4	127.8
995.0	992.5	41.9	50.4	57.1	0.5	-36.7	-52.4	129.4
1010.0 1025.0	1007.4	43.8 45.8	51.1	57.1	0.5		-52.4	131.1 132.9
1025.0	1022.2 1037.1	45.8	51.8 52.5	57.1 57.1	0.5 0.5	-36.7 -36.7	-52.4 -52.4	132.9
1055.0	1051.9	49.8	53.2	57.1	0.5	-36.7	-52.4	134.0
1070.0	1066.8	51.8	53.8	57.1	0.5		-52.4	138.3
1085.0	1081.6	54.0	54.5	57.1	0.5	-36.7	-52.4	140.1
1100.0	1096.4	56.1	55.0	57.1	0.5	-36.7	-52.4	142.0
1115.0	1111.3	58.3	55.6	57.1	0.5	-36.7	-52.4	143.9
1130.0	1126.1	60.6	56.1	57.1	0.5	-36.7	-52.4	145.7
1145.0	1140.9	62.9	56.5	57.1	0.5	-36.7	-52.4	147.6
1160.0	1155.7	65.2	56.9	57.1	0.5	-36.7	-52.4	149.4
1175.0	1170.5	67.5	57.2	57.1	0.5		-52.4	151.2
1190.0 1205.0	1185.3 1200.2	69.9 72.2	57.4 57.6	57.1	0.5 0.5	-36.7 -36.7	-52.4 -52.4	153.0 154.8
1205.0	1200.2	72.2	57.6	57.1 57.1	0.5		-52.4 -52.4	
1235.0	1229.8	77.0	57.8	57.1	0.5		-52.4	158.3
1250.0	1244.6	79.4	57.8	57.1	0.5	-36.7	-52.4	160.0
1265.0	1259.4	81.8	57.7	57.1	0.5	-36.7	-52.4	161.7
1280.0	1274.2	84.1	57.5	57.1	0.5	-36.7	-52.4	163.3
1295.0	1289.0	86.5	57.2	57.1	0.5	-36.7	-52.4	164.8
1310.0	1303.8	88.7	56.8	57.1	0.5	-36.7	-52.4	166.3
1325.0	1318.7	91.0	56.3	57.1	0.5		-52.4	167.7
1340.0 1355.0	1333.5	93.2 95.5	55.8 55.2	57.1	0.5 0.5	-36.7 -36.7	-52.4	169.1 170.5
1370.0	1348.3 1363.1	95.5	55.2	57.1 57.1	0.5	-36.7	-52.4 -52.4	170.5
1385.0	1377.9	100.1	53.8	57.1			-52.4	173.2
1400.0		102.4	53.0	57.1	0.5		-52.4	174.5
1415.0	1407.5	104.7	52.1	57.1	0.5	-36.7	-52.4	175.8
1430.0	1422.3	106.9	51.2	57.1	0.5	-36.7	-52.4	177.1
1445.0	1437.1	109.1	50.2	57.1	0.5	-36.7	-52.4	178.3
1460.0	1451.9	111.3	49.2	57.1	0.5	-36.7	-52.4	179.5
1475.0	1466.7	113.5	48.1	57.1	0.5	-36.7	-52.4	180.7
1490.0 1505.0	1481.5 1496.3	115.6 117.8	47.0	57.1	0.5 0.5	-36.7	-52.4 -52.4	181.9
1520.0	1490.3	120.0	45.8 44.6	57.1 57.1	0.5	-36.7 -36.7	-52.4	183.1 184.2
1535.0	1525.9	122.1	43.3	57.1	0.5	-36.7	-52.4	185.4
1550.0	1540.7	124.2	42.0	57.1	0.5	-36.7	-52.4	186.5
1565.0	1555.5	126.2	40.7	57.1	0.5	-36.7	-52.4	187.7
1580.0	1570.3	128.3	39.4	57.1	0.5	-36.7	-52.4	188.8
1595.0	1585.1	130.3	38.2	57.1	0.5	-36.7	-52.4	190.0
1610.0	1599.9	132.3	37.0	57.1	0.5	-36.7	-52.4	191.1
1625.0	1614.8	134.1	35.8	57.1	0.5	-36.7	-52.4	192.3
1640.0 1655.0	1629.6 1644.5	135.9 137.7	34.7 33.6	57.1 57.1	0.5 0.5	-36.7 -36.7	-52.4 -52.4	193.3 194.4
1670.0	1659.3	137.7	32.5	57.1	0.5	-36.7	-52.4	194.4
1685.0	1674.2	141.2	31.4	57.1	0.5	-36.7	-52.4	196.6
1700.0	1689.1	143.0	30.4	57.1	0.5	-36.7	-52.4	197.8
1715.0	1703.9	144.9	29.3	57.1	0.5	-36.7	-52.4	199.1
1730.0	1718.7	146.8	28.2	57.1	0.5	-36.7	-52.4	200.4

RECEIVER					OFFSET			
MEASURED DEPTH	VERT. DEPTH	X COORD.	Y COORD.	ELEV	DEPTH	X COORD.	Y COORD.	(S-R)
(DGM)				(ES)	(DS)	()		(
(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
1745.0	1733.6	148.7	27.1	57.1	0.5	-36.7	-52.4	201.8
1760.0	1748.4	150.7	26.1	57.1	0.5	-36.7	-52.4	203.2
1775.0	1763.2	152.7	25.0	57.1	0.5	-36.7	-52.4	204.6
1790.0	1778.1	154.6	24.0	57.1	0.5	-36.7	-52.4	206.0
1805.0	1792.9	156.6	23.0	57.1	0.5	-36.7	-52.4	207.5
1820.0	1807.7	158.6	21.9	57.1	0.5	-36.7	-52.4	209.0
1835.0	1822.6	160.6	20.7	57.1	0.5	-36.7	-52.4	210.4
1850.0	1837.4	162.6	19.6	57.1	0.5	-36.7	-52.4	211.9
1865.0	1852.2	164.6	18.5	57.1	0.5	-36.7	-52.4	213.4
1880.0	1867.0	166.7	17.3	57.1	0.5	-36.7	-52.4	215.0
1895.0	1881.8	168.8	16.2	57.1	0.5	-36.7	-52.4	216.6
1910.0	1896.7	170.8	15.0	57.1	0.5	-36.7	-52.4	218.1
1925.0	1911.5	172.8	13.9	57.1	0.5	-36.7	-52.4	219.7
1940.0	1926.3	174.9	12.8	57.1	0.5	-36.7	-52.4	221.4
1955.0	1941.1	176.7	11.8	57.1	0.5	-36.7	-52.4	222.9

VULCAN MINERALS INC. WELL

VULCAN INVESTCAN RED BROOK #2

2.4 TIME / DEPTH INFORMATION TABLE

ALL TIMES ARE ONE-WAY TIMES * = NOT USED IN VELOCITY COMPUTATIONS

DATUM ELEVATION 57.10 M ABOVE SEA LEVEL DATUM CORRECT. VELOCITY 1500.00 M /SEC

MEASURED GEOPHONE	RAW TIME	SRC-REC DIST.	COS(I)	TIME	CORRECTION	VERTICAL TIME
DEPTH	PICK	PLAN-VIEW		COS	DATUM	
(DGM)		(SRC_REC)				(TGD)
(M)	(MS)	(M)		(MS)	(MS)	(MS)
100.0	52.2	70.1	0.799	-10.5	0.3	42.0
115.0	58.0	71.0	0.836	-9.5	0.3	48.8
200.0	76.9	76.2	0.930	-5.4	0.3	71.8
215.0	79.8	77.1	0.938	-5.0	0.3	75.2 *
230.0	82.3	78.0	0.944	-4.6	0.3	78.0 *
245.0 260.0	85.0 87.8	79.0 79.9	0.949 0.953	-4.3 -4.1	0.3 0.3	81.0 * 84.1
275.0	91.0	80.8	0.953	-3.9	0.3	87.4 *
290.0	94.2	81.7	0.961	-3.9	0.3	90.9 *
305.0	97.2	82.6	0.964	-3.5	0.3	94.0 *
320.0	100.1	83.6	0.966	-3.4	0.3	97.1
335.0	103.1	84.5	0.968	-3.3	0.3	100.2 *
350.0	106.1	85.4	0.970	-3.2	0.3	103.3 *
365.0	109.3	86.3	0.972	-3.1	0.3	106.5 *
380.0	112.2	87.2	0.974	-3.0	0.3	109.6
395.0	115.4	88.1	0.975	-2.9	0.3	112.9 *
410.0	118.6	89.1	0.976	-2.8	0.3	116.1 *
425.0	121.9	90.0	0.978	-2.7	0.3	119.5 *
440.0	125.2	90.9	0.979	-2.7	0.3	122.9
455.0	128.4	91.8	0.980	-2.6	0.3	126.1 *
470.0	131.4	92.7	0.980	-2.6	0.3	129.1 *
485.0	134.6	93.7	0.981	-2.5	0.3	132.4 *
500.0 515.0	137.7 141.1	94.6 95.5	0.982 0.983	-2.5 -2.4	0.3 0.3	135.6 139.0 *
530.0	141.1 144.1	96.4	0.983	-2.4	0.3	142.1 *
545.0	147.5	97.3	0.983	-2.4	0.3	145.5 *
560.0	150.7	98.2	0.985	-2.3	0.3	148.7
575.0	153.9	99.2	0.985	-2.3	0.3	151.9 *
590.0	157.1	100.1	0.986	-2.3	0.3	155.2 *
605.0	160.2	101.0	0.986	-2.2	0.3	158.3 *
620.0	163.5	101.9	0.986	-2.2	0.3	161.6
635.0	166.8	102.8	0.987	-2.2	0.3	165.0 *
650.0	170.0	103.8	0.987	-2.2	0.3	168.2 *
665.0	173.4	104.7	0.988	-2.2	0.3	171.6 *
680.0	176.6	105.6	0.988	-2.1	0.3	174.8
695.0	180.1	106.5	0.988	-2.1	0.3	178.3 *
710.0	183.4	107.4	0.988	-2.1	0.3	181.6 *
725.0	186.7	108.3	0.989	-2.1	0.3	184.9 *
740.0 755.0	189.8 193.2	109.3	0.989 0.989	-2.1 -2.1	0.3	188.0 191.5 *
770.0	196.6	110.2 111.1	0.989	-2.1	0.3 0.3	194.9 *
785.0	200.1	112.0	0.990	-2.0	0.3	198.3 *
800.0	203.5	112.9	0.990	-2.0	0.3	201.8 *
815.0	206.9	113.9	0.990	-2.0	0.3	205.2 *
830.0	209.6	114.8	0.990	-2.0	0.3	207.9 *
845.0	212.3	115.7	0.991	-2.0	0.3	210.7 *



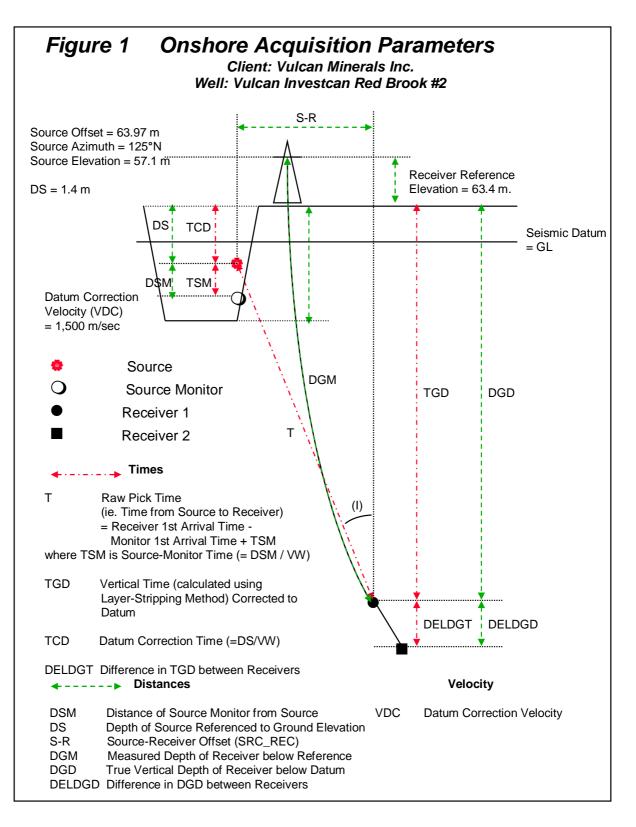
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MEASURED GEOPHONE	RAW TIME	SRC-REC DIST.	COS(I)	TIME COR	RECTION	VERTICAL TIME
DEPTH (DGM)	PICK	PLAN-VIEW (SRC_REC)		COS	DATUM	(TGD)
(M)	(MS)	(M)		(MS)	(MS)	(MS)
860.0	215.1	116.6	0.991	-2.0	0.3	213.4
875.0 890.0	217.9 220.8	117.5 118.4	0.991 0.991	-2.0 -2.0	0.3 0.3	216.3 * 219.2 *
905.0	220.8	120.0	0.991	-2.0	0.3	223.1 *
920.0	228.0	121.5	0.991	-2.0	0.3	226.3
935.0	232.4	123.0	0.991	-2.0	0.3	230.7 *
950.0	235.7	124.6	0.991	-2.0	0.3	234.0 *
965.0 980.0	239.5 242.5	126.1 127.8	0.991 0.991	-2.1 -2.1	0.3 0.3	237.8 * 240.8
995.0	242.5	127.8	0.991	-2.1	0.3	240.8 *
1010.0	249.4	131.1	0.992	-2.1	0.3	247.6 *
1025.0	253.4	132.9	0.992	-2.1	0.3	251.6 *
1040.0	256.2	134.6	0.992	-2.2	0.3	254.4
1055.0	259.7	136.4	0.992	-2.2 -2.2	0.3	257.8 *
1070.0 1085.0	263.1 266.8	138.3 140.1	0.992 0.992	-2.2	0.3 0.3	261.2 * 264.8 *
1100.0	270.2	142.0	0.992	-2.3	0.3	268.3
1115.0	273.9	143.9	0.992	-2.3	0.3	272.0 *
1130.0	277.2	145.7	0.992	-2.3	0.3	275.2 *
1145.0	281.1	147.6	0.992	-2.4	0.3	279.1 *
1160.0 1175.0	284.8 288.2	149.4 151.2	0.992 0.992	-2.4 -2.4	0.3 0.3	282.7 286.1 *
1190.0	291.2	153.0	0.992	-2.4	0.3	289.1 *
1205.0	294.3	154.8	0.992	-2.4	0.3	292.2 *
1220.0	297.4	156.6	0.992	-2.5	0.3	295.3
1235.0	301.0	158.3	0.992	-2.5	0.3 0.3	298.8 *
1250.0 1265.0	304.0 306.9	160.0 161.7	0.992 0.992	-2.5 -2.5	0.3	301.8 * 304.7 *
1280.0	309.9	163.3	0.992	-2.5	0.3	307.7
1295.0	313.1	164.8	0.992	-2.6	0.3	310.9 *
1310.0	316.2	166.3	0.992	-2.6	0.3	313.9 *
1325.0 1340.0	319.7 323.1	167.7 169.1	0.992 0.992	-2.6 -2.6	0.3 0.3	317.4 * 320.9
1355.0	326.4	170.5	0.992	-2.6	0.3	324.1 *
1370.0	329.8	171.8	0.992	-2.6	0.3	327.5 *
1385.0	333.1	173.2		-2.6	0.3	330.8 *
1400.0	336.0	174.5	0.992		0.3	333.7
1415.0 1430.0	339.3 342.7	175.8 177.1	0.992 0.992	-2.6 -2.7	0.3 0.3	337.0 * 340.4 *
1445.0	346.2	178.3	0.992	-2.7	0.3	343.9 *
1460.0	349.2	179.5	0.992	-2.7	0.3	346.9
1475.0	352.4	180.7	0.992	-2.7	0.3	350.0 *
1490.0	355.2	181.9	0.992	-2.7	0.3	352.9 *
1505.0 1520.0	358.5 361.8	183.1 184.2	0.993 0.993	-2.7 -2.7	0.3 0.3	356.1 * 359.5
1535.0	365.1	185.4	0.993	-2.7	0.3	362.7 *
1550.0	368.1	186.5	0.993	-2.7	0.3	365.8 *
1565.0	371.4		0.993	-2.7	0.3	369.0 *
1580.0 1595.0	374.6 377.9	188.8 190.0	0.993 0.993	-2.7 -2.7	0.3 0.3	372.2 375.6 *
1610.0	381.2		0.993	-2.7	0.3	378.8 *
1625.0	384.9	192.3	0.993	-2.7	0.3	382.5 *
1640.0	388.1	193.3	0.993	-2.7	0.3	385.7
1655.0	391.7	194.4	0.993	-2.7	0.3	389.3 *
1670.0 1685.0	394.8 398.2		0.993	-2.7 -2.7	0.3 0.3	392.4 * 395.8 *
1700.0	401.4	196.6 197.8	0.993 0.993	-2.7	0.3	399.0
	-			-		



MEASURED GEOPHONE DEPTH (DGM)	RAW TIME PICK	SRC-REC DIST. PLAN-VIEW (SRC REC)	COS(I)	TIME COP	RRECTION DATUM	VERTICAL TIME (TGD)
(M)	(MS)	(M)		(MS)	(MS)	(IGD)
<pre>(M) 1715.0 1730.0 1745.0 1760.0 1775.0 1790.0 1805.0 1820.0 1835.0 1850.0 1850.0</pre>	(MS) 404.9 408.1 411.4 414.8 418.5 422.1 425.8 428.7 431.4 433.8 436.2	(M) 199.1 200.4 201.8 203.2 204.6 206.0 207.5 209.0 210.4 211.9 213.4	0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993 0.993	(MS) -2.8 -2.8 -2.8 -2.8 -2.8 -2.8 -2.8 -2.8	(MS) 0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	(MS) 402.5 * 405.7 * 408.9 * 412.3 416.0 * 419.6 * 423.3 * 426.2 428.9 * 431.2 * 433.7 *
1865.0 1880.0 1895.0 1910.0 1925.0 1940.0 1955.0	436.2 438.9 441.4 444.0 446.6 449.2 451.7	213.4 215.0 216.6 218.1 219.7 221.4 222.9	0.993 0.993 0.993 0.993 0.993 0.993 0.993	-2.9 -2.9 -2.9 -2.9 -2.9 -3.0 -3.0	0.3 0.3 0.3 0.3 0.3 0.3 0.3 0.3	433.7 * 436.3 438.8 * 441.4 * 444.0 * 446.6 449.0

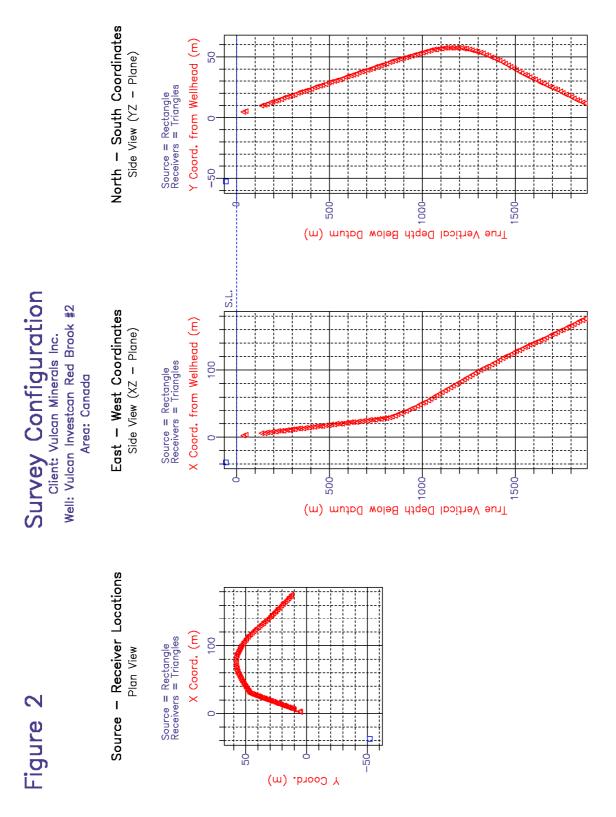


3. LIST OF FIGURES



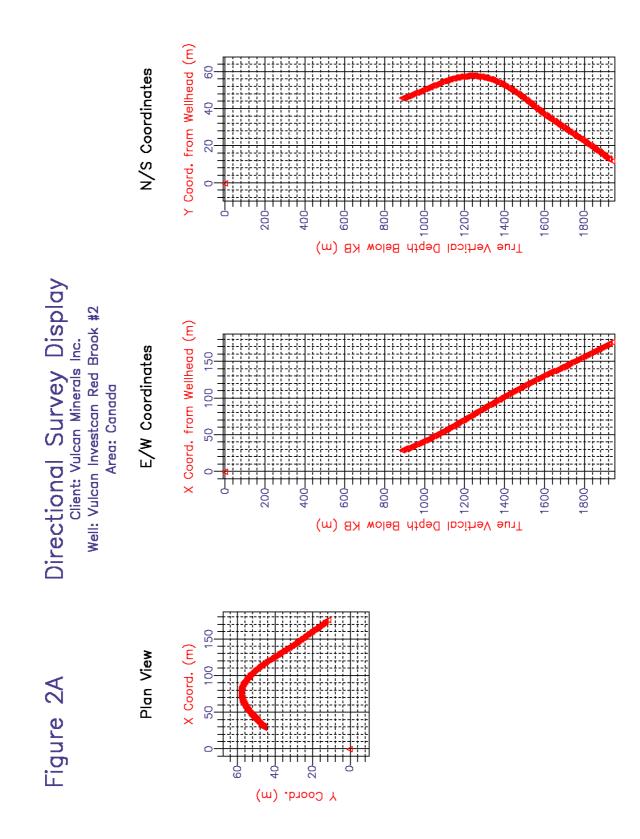


A Baker Hughes - CGGVeritas Company

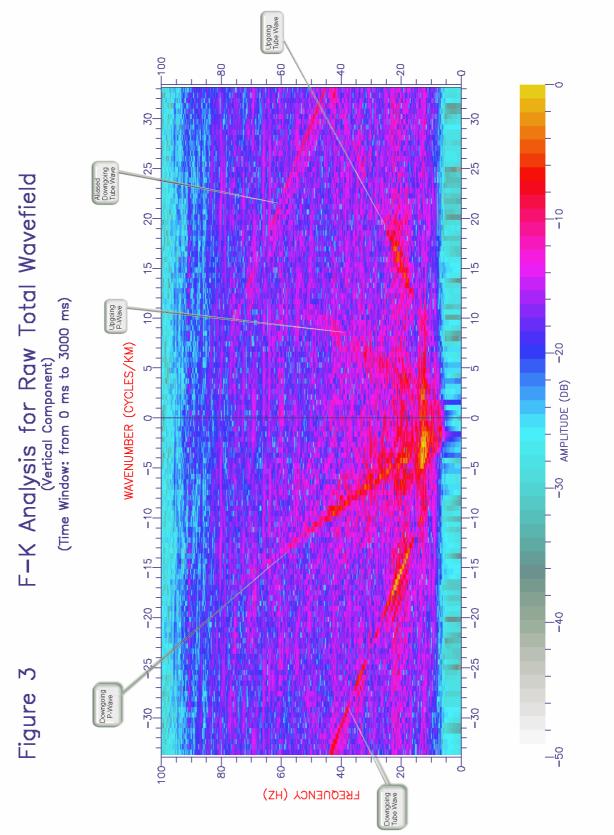


VSFusion

A Baker Hughes - CGGVeritas Company

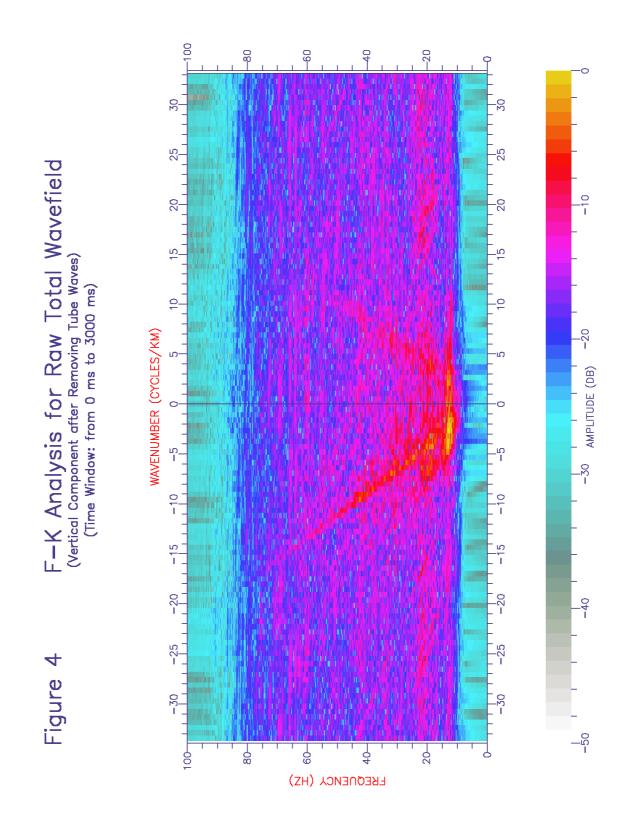


VSFusion



A Baker Hughes - CGGVeritas Company

VSFusion



A Baker Hughes - CGGVeritas Company



Vulcan Investcan Red Brook #2: Drilling Operations

	Resid	dence	
Week	NL	Other	Total
1	20	2	22
2	19	6	25
3	17	11	28
4	17	2	19
5	17	2	19
6	18	6	24
7	17	9	26
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0

Average number of workers on site each week	23
Percentage of workers residents of NL	76.7%
Percentage of workers non-residents of NL	23.3%

Week		1: 16	0ct - 22 Oct				2: 2	23 Oct - 29 O	oct	
Position	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total
Project Manager / Engineer	1	5			1	1	5			1
Supervisors	1	7	1	3	2	1	7			1
Rig Mangers	1	7			1	1	7			1
Drillers	2	7			2	2	7			2
Floorhands	7	7	1	7	8	7	7	1	7	8
Geologists					0			1	7	1
Mud Loggers					0					0
MWD/Directional					0					0
Wireline Logging					0					0
Cementing					0			3	4	3
Testing					0					0
Casing Handling					0			1	4	1
Administration	1	4			1	1	3			1
Security	1	7			1	1	7			1
Heavy Equipment Operators	2	5			2	1	3			1
Welders & Helpers	2	3			2	2	4			2
Fuel Hauler	1	1			1	1	4			1
Winterization	1				0					0
Waste Disposal	1	1			1	1	3			1
Total	20		2		22	19		6		25

Week		3: 3	0 Oct - 5 No	V		4: 6 Nov - 12 Nov				
Position	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total
Project Manager / Engineer	1	5			1	1	5			1
Supervisors	0	0			0	0	0	1	7	1
Rig Mangers	1	3	1	7	2	1	7			1
Drillers	2	7			2	2	7			2
Floorhands	7	7			7	7	7			7
Geologists			1	7	1			1	7	1
Mud Loggers					0					0
MWD/Directional					0					0
Wireline Logging			3	4	3					0
Cementing			3	5	3					0
Testing					0					0
Casing Handling			2	3	2					
Administration	1	4			1	1	2			1
Security	1	7			1	1	7			1
Heavy Equipment Operators	1	2			1	1	3			1
Welders & Helpers	1	4	1	5	2	1	2			1
Fuel Hauler	1	3			1	1	4			1
Winterization					0					0
Waste Disposal	1	5			1	1	3			1
Total	17		11		28	17		2		19

Week		5:1	13 Nov - 19 N	lov		6: 20 Nov - 26 Nov					7: 27 Nov - 4 Dec				
Position	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total	NL Residents	# of Days Worked	Non- NL Residents	# of Days Worked	Total
Project Manager / Engineer	1	5			1	1	5			1	1	5			1
Supervisors	0	0	1	7	1	1	7	0	0	1	1	7	0	0	1
Rig Mangers	1	7			1	1	2	1	5	2	0	0	1	7	1
Drillers	2	7			2	2	7			2	2	7			2
Floorhands	7	7			7	7	7			7	7	7			7
Geologists			1	7	1			1	7	1			1	7	1
Mud Loggers					0					0					0
MWD/Directional					0					0					0
Wireline Logging					0			4	3	4			4	2	4
Cementing					0					0			2	3	2
Testing					0					0			1	5	1
Casing Handling															
Administration	1	2			1	1	1			1	1	1			1
Security	1	7			1	1	7			1	1	7			1
Heavy Equipment Operators	1	2			1	1	2			1	1	2			1
Welders & Helpers	1	3			1	1	2			1	1	1			1
Fuel Hauler	1	4			1	1	2			1	1	1			1
Winterization	1				0					0					0
Waste Disposal	1	2			1	1	1			1	1	5			1
Total	17		2		19	18		6		24	17		9		26

Well: Vulcan Investcan Red Brook #2 Well Cost Summary (All funds in CAD)

Category	Cost
	(48 days)
Pre-spud costs	\$ 338,833
Rig/Camp Mob/Demob	\$ 249,653
Site to Site move costs	\$ 223,378
Rig-up/down costs	\$ 125,209
Drilling - Rat/Mouse hole & Cellar	\$ 108,748
Fuel & Boiler	\$ 84,020
Crew Travel & Subsistence	\$ 84,700
Drilling - day work	\$ 660,845
Drilling Bits & BHA	\$ 225,964
Drilling - mud, chemicals	\$ 390,711
Casing	\$ 201,528
Casing Handling	\$ 56,145
Cementing Services	\$ 123,032
Wellhead	\$ 144,798
Welding	\$ 18,886
Trucking and hauling (no rig move)	\$ 93,216
Safety services / Security	\$ 31,710
Drill stem testing	\$ 37,540
Logging	\$ 397,630
Solids,Fluids & Waste Disposal	\$ 126,179
Drilling supervision- wellsite	\$ 72,513
Geological supervision- wellsite	\$ 45,050
Equipment Rental	\$ 200,393
Pason and Gas detection	\$ 48,714
Pipe & collar inspection	\$ 15,500
Overhead Costs	\$ 58,102
Consulting Services-PreDrilling	\$ 42,000
Consulting Services-Engineering/PM	\$ 144,033
Travel & Subsistence	\$ 17,572
Accomodation Expense	\$ 2,675
Geological office work	\$ 75,200
Maps, Other Office Misc.	\$ 562
Inventory	\$ 137,735
Total	\$ 4,582,775

Vulcan Investcan Red Brook #2 Final Well Report Appendix



October 16, 2009

Mr. Patrick Laracy, President Vulcan Minerals Inc. 333 Duckworth Street St. John's, NL, A1C 1G9

Dear Mr. Laracy:

RE: Drilling Program Approval and Authority to Drill a Well for Vulcan - Investcan Red Brook #2, Permit 03-107

Please find attached the following executed documents pertaining to the subject well drilling operations:

(1) Drilling Program Approval (DPA 2009-116-03); and

(2) Authority to Drill a Well (ADW 2009-116-03-01).

These documents contain attached conditions. Please ensure that they are prominently displayed at the wellsite at all times.

If you have any questions please call Keith Hynes at 729-7188. Thank you for your interest in western Newfoundland and good luck with your exploration efforts.

Yours sincerely,

Pierre Tobin Associate Deputy Minister Energy

c. File



Government of Newfoundland and Labrador Department of Natural Resources Energy Branch

AUTHORITY TO DRILL A WELL - APPLICATION

Pursuant to sections 8 and 9 of the Petroleum and Natural Gas Act (R.S.N.L. 1990, c. P-10) and in compliance with section 29 of the Petroleum Drilling Regulations, (CNR 1150/96) Vulcan Minerals Inc.

hereby applies for Authority to Drill a Well to be known as Vulcan Investcan Red Brook #2

using the equipment and procedures described in the well program dated October 12th ,20 09

Permit, Licence or Lease to which this Program applies: Exploration Permit # 03-107

Area: Western Newfoundland		
Field/Pool: Bay St. George Basir	1	Long: Northing: 5347345 m
Drilling Rig: Stoneham Drilling	Rig #11	Lat: Easting: 370125 m
Rig Type: Tele-triple kelly rig		THE PROPERTY OF THE PARTY OF TH
		RT 🔀 KB 🗆 RF61.75 m T.D.: 2200 m
Drilling Contractor: Stoneham D	riling	G.L.: 55.45 m TVD: 2200 m
HOSTERISKES	MATES	TARGET HORIZONS
Spud Date: 20-Sept-2009 Oct	Well Cost:5M	Vertical well targets; Fischells Brook, Anguille Grp
Days on Location: 50		

EVALUATION PROGRAM

	Ten-metre sample intervals: During high ROP rates	Conventional cores at: N/A	
Ì	Five-metre sample intervals: 20 - 2200 m	Densilog, GR, Sonic, Resist, Neutron, Caliper and DST Logs and Tests: if required	
	Canned sample intervals: N/A	Logs and resus. if required	

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m)	Cementing Program
340	71.43	H-40	215	Class G. 1.87 SG: see attached ADW doc for full details
	\$	USRYSN	WORLDWINE MER	CHARLEN 79 CONSTRUCTED ADW SECRETARIAN SECRETARIAN
178	38.7	J-55	1300	Class G, 1.90 SG: see attached ADW doc for full details
TV: COS	RUNNASS			

Other Equipment:

The undersigned operator's Representative hereby declares that, to the best of the Representative's knowledge, the information contrained

AUTHORIZATION

herein and in the attached detailed program is true, accurate and complete.

Signed: Òģ erator's Representative

Date: 16-0.7-09

Whereas the Minister of Natural Resources has jurisdiction under the *Petroleum Drilling Regulations*, ("the Regulations"). In accordance with section 32 of the Regulations, the operator named in the Application is authorized to undertake the proposed well program described above subject to the following conditions:

1. This Authorization shall be prominently displayed at the well sita at all times during which operations are being conducted;

2. Copies of all logs and well test data shall be submitted to the director by the operator promptly after their aquistition;

3. The operator shall comply with all conditions of the Drilling Program Approval No. 2009 - 116 - 03 under which the above well is to be drilled;

4. No change in the well program hereby approved may be made unless it is first approved by the director in writing;

5. This Authorization is conditional on the operator commencing drilling within 120 days of the effective Authorization date; and

6. The operator shall comply with such other conditions as are appended to this Authorization.

Signed:

0 2.16/09 Effective Date:

vised: March, 2008 FRM-63

Authority to Drill a Well No. 2009-116-03-01

AUTHORITY TO DRILL A WELL #2009-116-03-01 OTHER CONDITIONS

- 1. The Operator shall, prior to commencement of major site operations, ensure that an approved Operator's representative is on site to supervise all site operations.
- 2. The Operator shall ensure that the well is drilled in a prudent and reasonable manner, consistent with good oilfield practices and with due consideration for the safety of personnel, property and the environment.
- 3. Notwithstanding condition #3 of the Authorization (see previous page), the Operator shall comply with the requirements of the *Petroleum Drilling Regulations, (CNR 1150/96)* (the Regulations) unless the Operator has received written approval from the Director to deviate from the Regulations.
- 4. The Operator shall be liable for its actions and the actions of its agents, contractors, employees and any others acting under the Operator's authority in drilling the well.
- 5. The Operator's liability for the actions of its agents, contractors, employees and any others acting under the Operator's authority in drilling the well does not limit any liability that those agents, contractors, employees or others acting under the Operator's authority may have to the Operator.
- 6. The Operator shall ensure that all necessary approvals have been acquired from other government agencies and other rights holders, in respect of access to and use of land for the purpose of the drilling and testing operations, and disposal of all materials.
- 7. The Operator shall attorn to the jurisdiction of the courts of the Province of Newfoundland and Labrador.
- 8. Prior to spud, the Operator shall ensure a rig and site inspection, equivalent to the CAODC Drilling Rig Pre-spud Inspection Checklist, is completed by the wellsite supervisor and rig manager and the rig is completely operational and the inspection checklist is submitted to the Department.
- 9. Prior to commencing drilling operations out of the conductor, the Operator shall ensure the PVT system and fluid returns monitoring system have been installed, inspected and are operational. In addition, gas monitoring equipment (H₂S, HC's and LEL) and industry approved respiratory protective equipment is available on site, has been properly inspected and is ready for use.

- 10. Prior to commencing drilling operations out of the surface casing, the Operator shall ensure the Blow-out Preventer system and manifold has been installed, inspected, pressure tested and is completely operational. In addition, the operator shall ensure a drilling rig Blow-out Prevention Equipment checklist, equivalent to the CAODC checklist, is completed and submitted to the Department.
- 11. A summary report of all operations performed during this phase of drilling, normally referred to as the daily drilling report and daily geological reports, shall be submitted on a daily basis.
- 12. The DST details, including a downhole tool schematic, as well as surface testing equipment details and layout, must be submitted for approval prior to carrying out those operations.
- 13. The details of any completion program must be submitted for approval prior to carrying out those operations.
- 14. Where the well is to be terminated, a termination program must be submitted for approval prior to carrying out those operations. As per section 122 of the Regulations, a termination record signed by the operator's representative must be submitted within 21 days of the rig release date.
- 15. The Operator shall provide the Director with a videotape, or photographs showing the final condition of the drillsite.
- 16. Prior to the end of drilling operations, the Operator shall provide a legal survey of the site acceptable to the Director to confirm the location of the well.
- 17. Prior to the end of drilling operations, the Operator shall provide a copy of the ADW document corrected for discrepancies and grammatical errors to the Director.
- 18. The Operator shall, prior to commencement of drilling operations, supply to the Department a security deposit in total for the amount of \$155,000 to ensure abandonment, reclamation, and reporting requirements are met. The security deposit secures the Operator's commitments to comply with the *Petroleum and Natural Gas Act*, the regulations under this Act and the terms and conditions of the Vulcan-Investcan Red Brook #2 Authority to Drill a Well and Drilling Program Approval.
- 19. The Minister may use the security deposit to compensate the Province for any losses, costs, demands or other charges that the Province incurs as a result of licensee's non-compliance with the *Petroleum and Natural Gas Act*, the regulations under this Act and the terms and conditions of the Vulcan-Investcan Red Brook #2 Authority to Drill a Well and Drilling Program Approval.

- 20. The submission of a security deposit and any usage of that deposit by the Minister shall not limit or restrict the liability of the licensee for its actions or the actions of its agents, contractors, employees and other acting under the licensee's authority, or limit or restrict the licensee's obligation to indemnify the Province pursuant to the *Petroleum and Natural Gas Act* and the regulations under that Act..
- 21. If, during the exploration and drilling activities, all or part of the security deposit is expended by the Minister pursuant to this section, the licensee shall, on request by the Director, provide further security so that the security deposit is replenished to its original amount.
- 22. The security deposit or any unexpended balance shall be refunded without interest to the applicant after all of the Operator's obligations listed herein are completed.

October 16, 2009



Government of Newfoundiand and Labrador Department of Natural Resources Energy Branch

DRILLING PROGRAM APPROVAL - APPLICATION

Pursuant to sections 8 and 9 of the Petroleum and Natural Gas Act(1,), Vulcan Minerals Inc.
as operator on behalf of Vulcan Minerials Inc Investcan , holding a
subsisting licence, permit or lease issued pursuant to the Petroleum Regulations(2), namely; Exploration Permit # 03-107
(licence, permit, or lease #)
hereby applies for approval to conduct a drilling program using the drilling rig Stonetam Drilling #11
and equipment and procedures described in the detailed program dated . OCTOB cm_ 12, 2009
The undersigned operator's Representative hereby declares that, to the best of the operator's knowledge, the
information contained herrin and in the attached detailed program is true, accurate and complete.
Signed: 12 arace, Deter Aug 14/09.
APPROVAL
Pursuant to sections 8 and 9 of the Petroleum and Natural Gas Act, the operator named in the Application is hereby
authorized to conduct the proposed drilling program subject to the following conditions:
1. This Drilling Program Approval shall, unless otherwise extended or terminated, expire upon the day of Deroset, 20 09
2. This Authorization shall be prominently displayed at the well site at all times during which operations are being conducted;
3. Evidence of financial responsibility, as required pursuant to Section 14 of the Petroleum Drilling Regulations (3), shall be provided by the operator to the Minister of Natural Resources;
4. The operator shall use the equipment and procedures described in the detailed program dated unless a change in the equipment or procedures is approved in writing by the Director, and
5. The operator shall comply with such other conditions as are appended to this Approval.
Signed: Lite Contraction Date: 0 A. 16 07
Drilling Program Approved No. <u>2009-116-03</u>

(1) - (R.S.N.L. 1990, c. P-10)

(2) - CNR 1151/96

(3) - CNR 1150/96

Revised January 2007 FRM-64

DPA1150a.wpd

SCHEDULE "A" <u>TO</u> DRILLING PROGRAM APPROVAL #2009-116-03 OTHER CONDITIONS

- 1. Notwithstanding condition #4 of the Approval (see previous page), the Operator shall comply with the requirements of the *Petroleum Drilling Regulations (CNR 1150/96)* (the Regulations) unless the Operator has received written approval from the Director to deviate from the Regulations.
- 2. Pursuant to Section 154 of the Regulations, the director shall release to the public, general information including the name, classification, location, identity of the drilling contractor and rig used by the Operator, depth and operational status of the drilling program.
- 3. It is a condition of approval of this DPA that the Operator, pursuant to Section 88 of the Regulations, shall submit tour sheets to the director on a weekly basis.
- 4. It is a condition of approval of this DPA that the Operator, pursuant to Section 52(2)(a) of the *Petroleum Regulations*, (CNR1151/96) provide to the director at the end of the well a benefits monitoring report as well as a cost summary report showing AFE costs, costs to date and variances for all major cost categories.
- 5. The Operator shall, prior to commencement of drilling operations, supply to the Department a security deposit in total for the amount of \$155,000 to ensure abandonment, reclamation, and reporting requirements are met. The security deposit secures the Operator's commitments to comply with the *Petroleum and Natural Gas Act*, the regulations under this Act and the terms and conditions of the Vulcan-Investcan Red Brook #2 Authority to Drill a Well and Drilling Program Approval.
- 6. The Minister may use the security deposit to compensate the Province for any losses, costs, demands or other charges that the Province incurs as a result of licensee's non-compliance with the *Petroleum and Natural Gas Act*, the regulations under this Act and the terms and conditions of the Vulcan-Investcan Red Brook #2 Authority to Drill a Well and Drilling Program Approval.
- 7. The submission of a security deposit and any usage of that deposit by the Minister shall not limit or restrict the liability of the licensee for its actions or the actions of its agents, contractors, employees and other acting under the licensee's authority, or limit or restrict the licensee's obligation to indemnify the Province pursuant to the *Petroleum and Natural Gas Act* and the regulations under that Act.
- 8. If, during the exploration and drilling activities, all or part of the security deposit is expended by the Minister pursuant to this section, the licensee shall, on request

by the Director, provide further security so that the security deposit is replenished to its original amount.

9. The security deposit or any unexpended balance shall be refunded without interest to the applicant after all of the Operator's obligations listed herein are completed.

October 16, 2009



Government of Newfoundland and Labrador Department of Natural Resources Mines Branch Mineral Lands Division

October 6, 2009

E090172

David Walsh Vulcan Minerals Inc. 333 Duckworth St. St. John's, NL A1C 1G9

Dear Mr. Walsh:

Re: Exploration Approval (1 DDH) & Notification Work (Geology) for Vulcan Minerals Inc. on the Robinsons #1 (aka Red Brook) Property, NTS 12B/07 Licences 012669M

Your proposed exploration program submitted in compliance with Section 5(4) of the *Mineral Act* has been reviewed and approved.

The following conditions apply to your approval:

- 1. The proponent must comply with any other Provincial and Federal Act or Regulation, or obtain all permits that may be required in connection with the exploration activity.
- 2. All personnel must comply with the *Mineral Regulations*, in particular sections 41 45 and section 46 which refers to the "Guidelines for Exploration and Construction Companies".
- 3. You are required to provide the Mineral Lands Division with:
 - a. 24 hour prior notification of mobilizing equipment to the project area;
 - b. two day prior notification of completion of the exploration activity;
 - c. a brief monthly update of the progress of your exploration program;
- 4. As per section 12(2) of the Mineral Act, when exploration work is to take place on private land or upon land where a legal or equitable interests are held, the licencee will obtain prior written permission and forward copies to the department.
- 5. The proponent must abide by Section 28(4) of the Petroleum Drilling Regulations. Also, the proponent must ensure that the proper precautions are taken when drilling into a salt horizon.
- 6. You are directed to obtain permission from Frank Turner (Tel: 709-635-3851), Parks and Natural Areas Division to use the Newfoundland and Labrador T'Railway Provincial Park for the purposes of accessing or gaining access to your exploration program.
- 7. If trees have to be cut to access the sites then you are advised to contact the nearest Natural Resources, Forest Resources Branch, local office to obtain a cutting permit before starting your exploration program.
- 8. You are required to abide by the conditions referenced in your Water Use Licence. Upon receipt of WUL, the Notification of Acceptance of the licence must be returned to the Water Rights Section of the Department of Environment and Conservation. Also, the water use report "Appendix B of the licence" must be completed and filed within thirty (30) days of the completion of the mineral exploration activities.
- 9. Pursuant to Section 106 of the *Wildlife Regulations*; "A person shall not operate an aircraft, motor vehicle, vessel, snow machine or all-terrain vehicle in a manner that will harass any wild life."
 - a. Companies are advised not to over-fly caribou if possible or to maintain an altitude of 300 metres over concentrations of caribou.

Natural Resources Building, 50 Elizabeth Avenue, P.O. Box 8700, St. John's, NL, Canada, A1B 4J6, Facsimile (709) 729-6782 www.gov.nf.ca/mines&en/

- b. Under no circumstances should nesting raptors be approached, not even for a "harmless" look. The startle effect that helicopters have on nesting raptors can be detrimental and therefore either a 600m horizontal buffer from cliff faces or an altitude of 300 metres must be observed.
- c. The breeding and brood rearing periods (May15 August 31) are considered critical to the Harlequin Duck, and disturbance should be minimized. During this critical period and a 300 metre horizontal buffer above ground level must be observed when crossing river valleys.
- d. You are advised to use snowmobiles responsibly in a manner that will not disturb, harass or harm any animal life you encounter.
- 10. Please be advised on the provisions of the *Historic Resources Act*, protecting archaeological sites and artifacts, and procedures to be followed in the event that either are found:
 - a A person who discovers an archaeological object in, on or forming part of the land within the province shall report the discovery forthwith to the Minister stating the nature of the object, the location where it was discovered and the date of the discovery.
 - b No person other than one to whom a permit has been issued under this Act, who discovers an archaeological object shall move, destroy, damage, deface, obliterate, alter, add to, mark or in any other way interfere with, remove, or cause to be removed from the province that object.
 - c The property in all archaeological objects found in, on or taken from the land within the province, whether or not these objects are in the possession of Her Majesty is vested in Her Majesty.

Should any archaeological remains be encountered, such as stone, bone or iron tools, concentrations of bone, charcoal or burned rock, fireplaces, house pits and/or foundations, activity in the area of the find must cease immediately and contact should be made with the Provincial Archaeologist in St. John's (729-2462) as soon as possible.

Copies of the *Historic Resources Act*, and information on archaeology in the province may be obtained from the Provincial Archaeology office upon request.

11. This approval is due to expire on December 31, 2009.

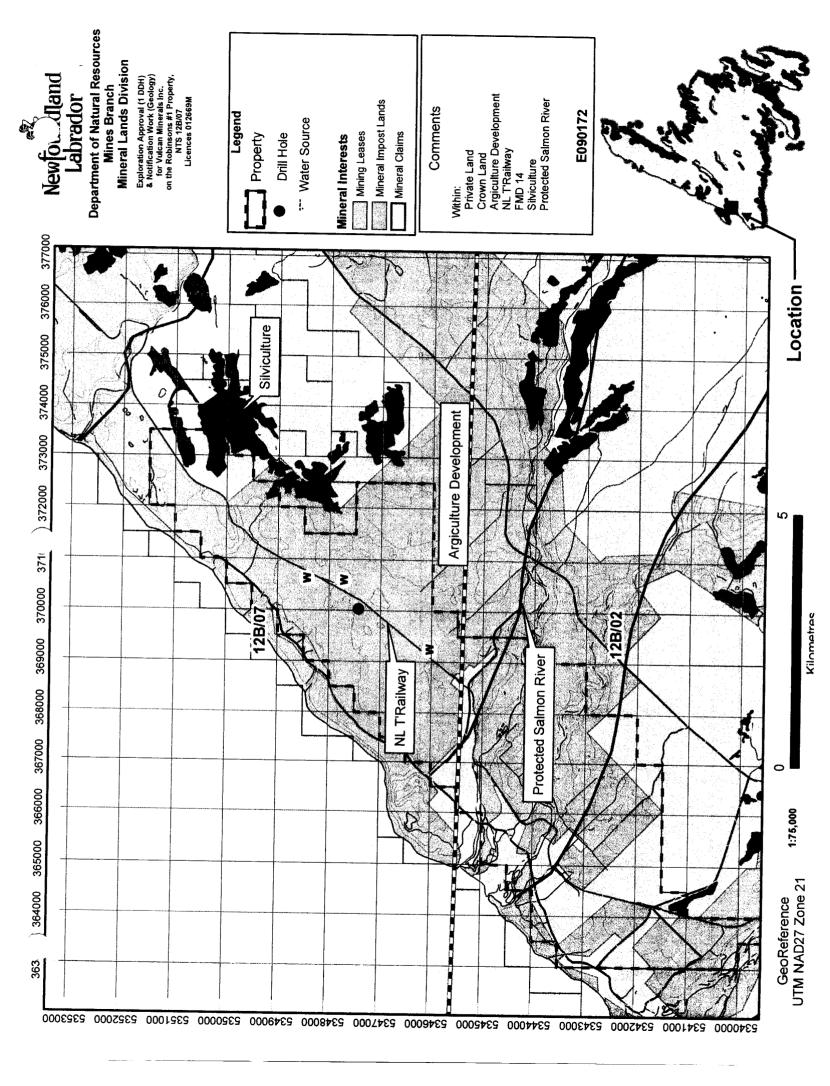
If you have any questions concerning this, please contact Heather Hickman, Geologist, Exploration Approval and Land Use, at 729-6408.

Regards,

Kenneth C.M. Andrews, P. Geo. Director, Mineral Lands Division

c: Jim Hinchey, Manager of Mineral Rights Jamie Kennedy, Forestry

Natural Resources Building, 50 Elizabeth Avenue, P.O. Box 8700, St. John's, NL, Canada, A1B 4J6, Facsimile (709) 729-6782 www.gov.nf.ca/mines&en/





FILE No.: 3014503 FOLDER RSN: 148591 PEOPLE RSN: 66447 PROPERTY RSN: 89500 GIS No.: 10089485

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

RENEWAL OF LICENCE TO OCCUPY 129224

WHEREAS Licence to Occupy 129224 issued by the Crown on September 26, 2006 under the authority of Section 6 of the Lands Act for the purpose of Oil Exploration;

AND WHEREAS VULCAN MINERALS INC. is the present holder of the said Licence as registered in the Registry of Crown Titles for the Province of Newfoundland & Labrador;

AND WHEREAS the said Licence to Occupy 129224 expired on September 26, 2009;

AND WHEREAS VULCAN MINERALS INC. made application for a renewal of the said Licence to Occupy.

NOW KNOW YOU ALL BY THESE PRESENTS:

The Minister of Environment and Conservation hereby renews the said Licence to Occupy for a further term of 3 years commencing on September 26, 2009;

SUBJECT TO the terms and conditions of Schedules B and C in the original Licence to Occupy 129224 and also subject to the terms and conditions in Schedules B and C attached hereto.

YIELDING AND PAYING in advance the set rental fees during the said term of this licence.

PROVIDED that the said Licence to Occupy dated September 26, 2006, except to the extent modified by these present shall continue in full force and effect.

SIGNED by the Licence Holder Oct A.D. 2007 on the **Bas**of ence Hold

SIGNED by the Minister of Environment and Conservation on the B^{H} day of COTBER A.D. 2009

Minister of Environment and Conservation

- 1. The Licence does not authorize the Licence Holder to enter upon private land, to dispute private claims to land, or to obstruct any public right-of-way.
- 2. The Licence does not convey the right to extract any minerals including, limestone, granite, slate, marble, gypsum, marl, clay, sand, gravel, peat, coal, natural gas, petroleum or salt from or under the demised premises.
- 3. The Licence Holder shall pay and discharge all taxes and charges that may be levied by any Municipal, Provincial or Federal authority on or in respect to the demised premises.
- 4. The Licence constitutes the approval of the Lands Branch, Department of Environment and Conservation only and does not waive the required consent of other government departments or agencies.
- 5. The Licence Holder shall indemnify and save harmless the Minister against any loss, cost or damage resulting directly or indirectly from the Licence Holders use or occupation of the demised premises, and the Licence Holder shall remain liable for all improvements carried out on the demised premises in the event the Licence is cancelled or not renewed.
- 6. The Licence Holder shall display on the demised premises and in a conspicuous manner a sign containing the Licence number.
- 7. The demised premises shall be kept neat and tidy to the satisfaction of the Minister.
- 8. Disposal of garbage on the demised premises or underwater is not acceptable and shall be burned in an acceptable manner or disposed of at an approved waste disposal site.
- 9. The Licence is subject to the condition that the demised premises shall be holden upon, under and subject to all other regulations and conditions of the *Lands Act*, Chapter 36 of the Statutes of Newfoundland and Labrador, 1991, as amended, and to such regulations as are now in force or which may at any time hereafter be made by law.
- 10. Should the Licence Holder, the heirs, executors, administrators and assigns default in the performance of any of the provisions herein contained, the Minister may give thirty (30) days notice for the termination of this Licence, and upon the expiration of the thirty (30) days, this Licence shall cease and the Licence Holder shall forthwith vacate the demised premises.
- 11. In the event the Licence is cancelled or not renewed, the Licence Holder shall remove all buildings, structures and personal property from the demised premises and restore the demised premises to the satisfaction of the Minister of Government Services and the Minister of Environment and Conservation within ninety (90) days from the date of cancellation or expiration. Should the Licence Holder fail to comply with this condition, the Minister may remove or demolish all buildings, structures and personal property remaining on the demised premises and restore the demised premises in any manner the Minister sees fit, and the costs incurred by the Minister in the removal or demolition and restoration of the demised premises shall be recovered from the Licence Holder as a debt due to the Minister. Furthermore, the indemnity contained in Condition 5 of this Licence shall remain in full force and effect until all structures and property are removed or demolished and the demised premises is restored to the satisfaction of the Minister of Government Services and the Minister of Environment and Conservation.

- 12. If during the term of the Licence the Minister requires the demised premises for any reason the Licence may be terminated after thirty (30) days written notice and the Licence Holder shall have the demised premises restored to the satisfaction of the Minister of Government Services and the Minister of Environment and Conservation and the Licence Holder shall indemnify and save harmless the Minister against any loss, cost or damage resulting directly or indirectly from the Licence Holders use, occupation or restoration of the demised premises.
- 13. The failure of the Crown to insist upon strict performance of any of the covenants and provisos contained in this Licence shall not be deemed a waiver of any rights or remedies that the Crown may have or a waiver of any subsequent breach or default.
- 14. The Licence Holder shall permit access to the demised premises at all times by Officers authorized by law or by the Minister.
- 15. This Licence shall be governed by and construed in accordance with the laws of the Province of Newfoundland and Labrador.

SCHEDULE C

LTO OIL EXPLORATION

- 1. The Licence Holder shall develop the demised premises within a period of three (3) years.
- 2. The demised premises shall be used solely for the purpose of storage of equipment for oil and gas production.
- 3. The use of the demised premises will, for its intended purpose, be subject to and in accordance with all Provincial Acts and Regulations respecting environmental control.
- 4. This Licence constitutes approval of the Lands Branch, Department of Environment and Conservation, only and does not waive the required consent of other Government Departments or Agencies.
- 5. This Licence does not authorize the Licence Holder to erect any permanent buildings on the demised premises.
- 6. All onsite fuel storage must be approved by the Government Service Centre.
- 7. All waste material produced on site must be disposed of at an approved waste disposal site, with permission of the owner/operation, on a weekly basis.
- 8. A plan approved by the Government Service Centre to handle any hazardous waste must be in place before development can proceed.
- 9. Prior to any development taking place, a plan review must be carried out by the Government Service Centre to insure compliance with the Buildings Accessibility Regulations and the Fire and Life Safety Codes.
- 10. Any water supply or sewage disposal installations must be approved by the Government Service Centre.
- 11. The Licence Holder is not permitted to access the site by All-Terrain Vehicles excepted in accordance with the Motorized Snow Vehicles and All-Terrain Vehicles Regulations. Contravention of the Regulations shall constitute grounds to revoke the Licence.
- 12. The issuance of this Licence does not commit Government to the issuance of a Licence for the purposes of constructing a designated access trail pursuant to the Lands Act and the Motorized Snow Vehicles and All-Terrain Vehicles Regulations.
- 13. Pursuant to subsection 7(1) of the Lands Act, a reservation fifteen (15) metres wide, is to be maintained around all waterbodies and the Licence Holder covenants and agrees that:
 - a. the Licence does not authorize the Licence Holder to occupy the said reservation.
 - b. cutting of trees or development of any type on this reservation is prohibited unless an application to develop is duly processed and approved by the Minister.



October 16, 2009

Shane Halley Drilling Project Manager Vulcan Minerals Inc. 333 Duckworth Street St. John's, NL A1C 1G9

Dear Mr. Halley:

RE: Casing Ram Waiver Request

In the September 10th submission of the Red Brook #2 Authority to Drill a Well document, you applied for exemption under Section 56, which states:

"An operator shall ensure that a blowout preventer system is installed on the wellhead consisting of at least one annular preventer and one ram-type preventer fitted with rams to fit the casing while running intermediate and production casing."

You stated in your waiver request that:

- The use of casing rams is not consistent with onshore industry practice.
- No new hole is being made during casing operations nor is there a risk of swabbing as there is no tripping out of the hole.
- The annular preventer is designed to seal around the casing if a kick did occur during casing operations.

When the following additional factors are taken into account:

- Depending on the Class of BOP utilized, Class III or Class IV, two or three rams would be available. With only two rams available modifications to add a third would involve major expense and time to complete;
- Setting a bridge plug, then opening the BOP to change the ram as well as associated pressure testing involves additional expense and time and is not risk free;
- Two barriers to well flow, drilling fluid hydrostatic head and annular BOP, are available when running casing;

The main risk is with unnecessarily surging the well with excessive casing running speeds and breaking down a formation. Lost circulation could result in a well control situation. Care and attention to ensure appropriate casing running speeds will prevent this from happening.

Your casing ram requirement is waived using Section 34 (1)(b) Equivalent standards and exemptions. Specifically, the exemption would be based on this section which states that the Director may:

(b)"grant an exemption from any requirement in these regulations in respect of equipment, methods, measures or standards, where the director is satisfied with the level of safety, protection of the environment and conservation of petroleum resources that will be achieved without compliance with that requirement."

Yours sincerely,

Kith Kynt

Keith Hynes, P. Eng. Director Petroleum Engineering



...exploring for petroleum and minerals in Canada... Searching new areas for large deposits...

6-March-2009

Parks and Natural Areas Division Department of Environment and Conservation 33 Reid's Lane Deer Lake, NL A8A 2A3

Re: Temporary Access to Worksite via Newfoundland T'Railway Provincial Park

Mr. Stephen Hodgett,

Vulcan Minerals would like to apply for access to a temporary work site via the Newfoundland T'Railway Provincial Park. This temporary work site has been approved and permitted by the Department of Environment and Conservation Crown Lands Registry (reference 129150) as a drilling locations for Vulcan Minerals. The access to the work site is located near Robinsons (see attached map).

Depending on when we secure a rig we may require access as early as 20-May-09, however it is possible that Vulcan may drill another well before this one, in which case the access would not be required until 15-July-09. The temporary work site would be used for approximately four to five weeks. The types of vehicles that would be used during that period would be:

- Transport trucks to mobilize and demobilize the equipment at the beginning and end of the project.
- Personal vehicles of the crew at 7am and 7pm each day.
- Fuel delivery truck once every second day.
- Water delivery truck once every second day.

Sincerely,

Shane Hailey Project Manager of Petroleum Exploration Vulcan Minerals Inc.



Map above shows the Red Brook #1 location, the Trailway access point and the nearby communities of Robinsons and Heatherton for reference