

FINAL WELL REPORT

Revision:	Version 1
Operating Company:	Vulcan Minerals Inc.
Partner Company:	Investcan Energy Corp.
Well Name:	Vulcan Investcan Robinsons #1
Rig:	Stoneham Drilling Rig #11
Field:	Bay St. George Basin, Permit #03-106
Location:	Western Newfoundland, Canada
Submission Date:	19-Feb-2010
Revised On:	N/A

Prepared by:	Reviewed by:
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Date:	Date:



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1 Introduction (2.2)

The Vulcan Investcan Robinsons #1 well was drilled by Vulcan Minerals Inc. (Vulcan) (pursuant to a 50/50 joint venture with Investcan Energy Corp.) to test the hydrocarbon potential of the Ship Cove, Friars Cove and Snakes Bight formations. The targets were chosen using substructure seismic data in an area that has a proven petroleum system (based on consistent oil and gas shows in the area). This exploratory oil and gas well is located about 15 km due east of the community of Robinsons, in the Bay St. George area of western Newfoundland.

The well spudded on June 31st, 2009 using Stoneham Drilling's Rig #11, drilled to 3560 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. None of the tests flowed gas to surface though there was sweet dry gas recovered from three of the five downhole test chambers. Well 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.

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 Robinsons #1

Operator - Vulcan Minerals Inc.

Partner - Investcan Energy Corp.

Permit - Exploration Permit #03-106

Contractor - Stoneham Drilling

Drilling Rig - Rig #11

Location - NAD 27, UTM Zone 21;

Northing 5 343 073.761m, Easting 379 782.967m



4 Difficulties and Delays (2.5)

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

- There were sticking problems running the 508mm conductor casing which necessitated pulling out the partially run casing and performing a clean out trip. The casing was rerun successfully to bottom by the rig crew.
- The 340mm surface casing was run 70m deeper than planned as the formations came in deeper than expected.
- Extra time was required to nipple up the BOPs (before the 311mm section) because they were shipped in separate pieces during the ocean transport.
- Increased formation hardness dropped the average ROP from 84 m/day down to 50 m/day from 1800-2063.5 mMD KB (311mm section TD).
- While drilling the 311mm and 216mm sections there were several bit trips to change out PDCs with tri-cone insert bits after the ROP of the PDC dropped to near-zero in conglomerate layers.
- Two mis-run DSTs were attempted on August 18th and 19th. No useful data was acquired.
- Three days of downtime were attributed to a failed Kelly swivel while drilling the 216mm section.

5 Drilling Operations (3.0)

- 5.1 Ground Elev. 159.24 m (ref. MSL)
 - KB Elev. 6.24 m (ref. GL)
- 5.2 Total Depth 3560 meters MD KB/ 3548.55 meters TVD KB
- 5.3 Spud Date 1230 hrs, Jun. 31st, 2009
- 5.4 TD Date 1500 hrs, Oct. 2nd, 2009
- 5.5 Rig Release 1400 hrs, Oct. 15th, 2009
- 5.6 Well Status well is suspended with 177.8mm casing set to 3547.6 meters.
- 5.7 Hole Size and Depths
 - Conductor
 Surface
 Intermediate
 Main
 Drilled 508 mm hole to 88 m
 Drilled 340 mm hole to 829 m
 Drilled 244.5 mm hole to 2063.5 m
 Drilled 177.8 mm hole to 3560 m

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5.0 Drilling Operations (continued)

5.8 Bit records

There were a total of 31 bit runs during the well. See Appendix #2 for details.

5.9 Casing and Cementing Record

- Conductor

Ran 508mm, 139.9kg/m, X-56 to 88m KB. Cemented with 27.7 t Class "A" + 3% CaCl @ 1871 kg/m3. Full return to surface.

- Surface

Ran 339.7mm, 90.8 kg/m, K-55 casing to 829m KB. Cemented with 63.5 t Class "G" + 3% CaCl @ 1600 kg/m3. Returns to surface.

- Intermediate

Ran 244.5 mm, 64.7 kg/m L-80 casing to 2058.5m KB.

Cemented with 48t Fill-Lite (w/1.3% R-3 Retarder & 1% A-11 Accelerator) + 10.1 t Class "G" w/.4% FL @ 1901 kg/m3

No cement to surface. Estimated TOC at 529m.

- Production

Ran 177.8 mm, 38.7 kg/m L-80 casing to 3547.6m KB Cemented with 18.2t Fill-Lite (w/ 1.2% R-3 Retarder) + 11t Class "G" w/2% Micrsil @1901kg/m3

No cement to surface. Calculated TOC at 1522m.

a 0.53m MARKER JOINT was run at 1056m MD KB with a limiting ID of 165.1254mm (6.501")

5.10 Sidetracked Hole

There were no sidetracks during the well.

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5.0 Drilling Operations (continued)

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			Туре		
	[m]	[mm]			kg/m3
Conductor Pipe	88	660.4	Gel-Chem Water Based Mud	46-105	1065-1095
Surface Casing	829	444.5	Gel-Chem Water Based Mud	63-76	1065-1120
Intermediate Casing	2063.5	311.15	Polymer Water Based Mud	41-69	1005-1095
Production Casing	3560	215.9	Polymer Water Based Mud	24-71	1070-1140
			Water with Oxygen Scavanger,		
			Biocide, Filming Amine		
Completion	3560	177.8	and Caustic Soda		1000

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 Kicks

There were no kicks.

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5.0 Drilling Operations (continued)

5.15 Formation Leak-Off Tests

A FIT was performed on 26-July-2009; 6800 Kpa at surface with a hole depth of 840m and mud weight of 1005 kg/m3 for a calculated gradient of 17.95 kpa/m.

A FIT was performed on 23-August-2009; 11000Kpa at surface with a hole depth of 2061.48m and mud weight of 1110 kg/m3 for a calculated gradient of 16.2 kpa/m.

5.16 Time Distribution

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

5.17 Deviation Plot

Well deviation was a concern during drilling and Schlumberger Oilfield Service's Directional Drilling Services (PDM + MWD) were used while drilling from 83-1037m and 2103-3543m. The well angle was maintained below 6.5 degrees until 3186m when it was decided to let the well drift in order to maximize ROP and minimize motor sliding. The final projected inclination was 13.24 degrees at 3560m resulting in a 129.9m horizontal displacement from the vertical plan in the NW direction. A full survey listing and deviation plot is included 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 as 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 and are being stored in Vulcan's St. John's office.

6.1 Sidewall cores

Twenty nine (29) 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.

6.2 Hydrocarbon Shows

The well encountered natural gas shows over a gross interval of approximately 1290 meters (net approximately 20% sandstone) with very good correlation of increased shows with sandstone beds. This is the first deep well in the Bay St. George basin and has proven the existence of a thick natural gas charged section. 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 is shown below:

Hole size	Logging Depth		Services Run
	Start	Stop	
311.15 mm	2063	829	INDUCTION/GR/Caliper/SP
311.15 mm	2063	829	DENSITY/NEUTRON/GR/X-Y CAL
311.15 mm	2063	829	SONIC
311.15 mm			Zero Offset Vertical Seismic Profile
215.9 mm	3560	2063	INDUCTION/GR/Caliper/SP
215.9 mm	3560	2063	DENSITY/NEUTRON/GR/X-Y CAL
215.9 mm	3560	2063	SONIC
215.9 mm			Zero Offset Vertical Seismic Profile w/ Gamma Ray
215.9 mm			Rotary Sidewall Coring
215.9 mm			ForMation Tester (Pressure tester)
215.9 mm	3560	2063	STAR DIP/IMAGER

7.2 Drill Stem Tests

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

DST	Hole size	Test	Testing D	epth mMD	Result
#		Туре	Тор	Bottom	
		Inflate Bottom			Failed Test - Unable to seat Tool /
1	311.15 mm	Hole	2012.9	2063.5	Packers
					Failed Test - Unable to seat Tool /
2	311.15 mm	Inflate Straddle	872	901	Packers
		Conventional			
3	215.9 mm	Straddle	2963	2990	Successful Test- No gas to surface
4	215.9 mm	Conventional Straddle	2574	2640	Partial Communication around bottom packer indicated. No Initial Shut-In Recorded.
		Conventional			Failed test due to leaking upper
5	215.9 mm	Straddle	2517	2572	packer



8 Synthetic Seismograms

The synthetic seismogram for Robinsons #1 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.

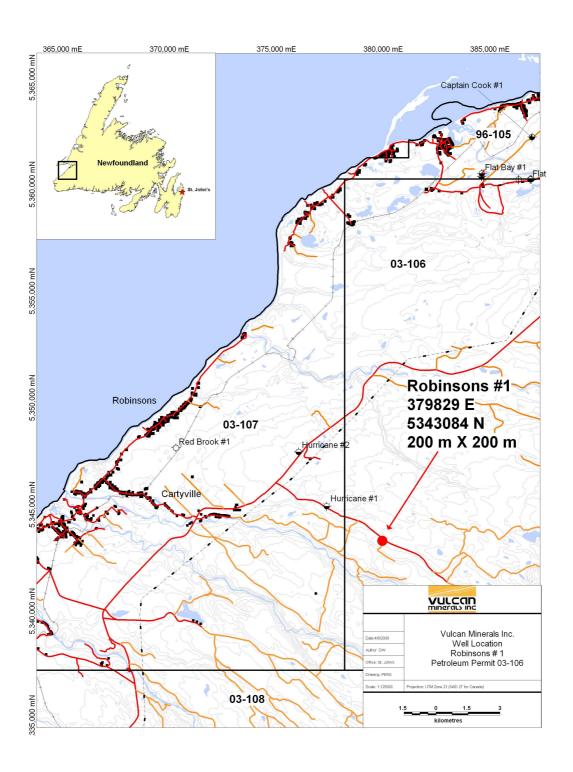
12 Drilling costs

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

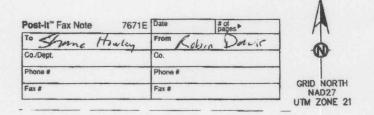
13 Approvals

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

I LINDIA I.	WELL LOCA	TION WA	P AND DE	VIATION	JORVET



SCHEDULE "B"





COORDINATES DERIVED FROM CONTROL MONUMENT NUMBER 84G4163 HAVING UTM COORDINATES N 5344131.911 E 363992.416 AND AN ELEVATION OF 42.58

LEGEND

CONTROL MONUMENT
CAPPED IRON BAR
IRON BAR (EXISTING)
WELL CASE

R.DAVIS SURVEYS LTD. FILE NUMBER 9066 JUNE 5, 2009

LEASE NO.

SCALE 1: 2000



Schlumberger

Robinson #1 MWD-STD+INCL Only to 3560 m Survey Report

Report Date: October 23, 2009
Client: Vulcan Minerals Inc
Field: Bay St. George Basin

Structure / Slot: Robinsons #1 / Slot 1
Well: Robinsons # 1
Borehole: Original Hole

UWI/API#:

Survey Name / Date: Robinson #1 MWD-STD+INCL Only to 3560 m / July 16, 2009

Tort / AHD / DDI / ERD ratio: 87.969° / 222.18 m / 4.808 / 0.063 Grid Coordinate System: NAD27 UTM Zone 21N

Location Lat/Long:

Location Grid N/E Y/X: N 5343073.761 m, E 379784.967 m

Grid Convergence Angle: -1.20759609°
Grid Scale Factor: 0.99977759

Survey / DLS Computation Method: Minimum Curvature / Lubinski

Vertical Section Azimuth: 45.000°

Vertical Section Origin: N 0.000 m, E 0.000 m

TVD Reference Datum: RKB

TVD Reference Elevation: 175.3 m relative to MSL Sea Bed / Ground Level Elevation: 169.000 m relative to MSL

 Magnetic Declination:
 -20.261°

 Total Field Strength:
 52886.734 nT

 Magnetic Dip:
 69.454°

 Declination Date:
 September 15, 2009

Magnetic Declination Model: BGGM 2009
North Reference: Grid North
Total Corr Mag North > Grid North: -19.053°

Local Coordinates Referenced To: Well Head

Comments	Measured Depth	Inclination	Azimuth Grid	Sub-Sea TVD	TVD	Vertical Section	NS Grid North	EW Grid North	DLS	Northing	Easting
	(m)	(deg)	(deg)	(m)	(m)	(m)	(m)	(m)	(deg/30 m)	(m)	(m)
SHL	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	5343073.76	379782.97
Totco Provide by Client	23.00	1.00	85.39	-152.30	23.00	0.15	0.02	0.20	1.30	5343073.78	379783.17
Totco provide by Client	50.00	1.00	85.39	-125.31	49.99	0.51	0.05	0.67	0.00	5343073.81	379783.64
Totco provide by client	83.00	2.00	85.39	-92.32	82.98	1.17	0.12	1.53	0.91	5343073.88	379784.50
	103.36	2.62	85.39	-71.97	103.33	1.79	0.19	2.35	0.91	5343073.95	379785.32
	131.01	3.06	89.51	-44.36	130.94	2.80	0.25	3.72	0.53	5343074.01	379786.68
	158.44	3.03	90.02		158.33	3.84	0.25	5.17	0.04	5343074.01	379788.14
	185.36	3.81	90.09	9.91	185.21	4.97	0.25	6.78	0.87	5343074.01	379789.75
	212.92	3.51	84.82	37.41	212.71	6.27	0.33	8.54	0.49	5343074.09	379791.50
	234.43	3.70	81.38	58.88	234.18	7.33	0.49	9.88	0.40	5343074.25	379792.84
	254.23	3.38	79.08	78.64	253.94	8.33	0.70	11.08	0.53	5343074.46	379794.05
	268.64	3.39	74.50	93.02	268.32	9.05	0.89	11.91	0.56	5343074.65	379794.87
	282.12	3.34	70.79	106.48	281.78	9.75	1.13	12.66	0.50	5343074.89	379795.63
	295.43	3.33	68.34	119.77	295.07	10.46	1.40	13.39	0.32	5343075.16	379796.35
	308.96	3.31	70.62	133.28	308.58	11.17	1.67	14.12	0.30	5343075.43	379797.09
	323.03	3.48	66.48	147.32	322.62	11.93	1.98	14.90	0.64	5343075.74	379797.86
	337.43	3.45	67.35	161.69	336.99	12.74	2.32	15.70	0.13	5343076.08	379798.66
	350.99	3.34	66.57	175.23	350.53	13.48	2.63	16.44	0.26	5343076.39	379799.40
	364.29	3.27	65.40	188.51	363.81	14.20	2.94	17.14	0.22	5343076.70	379800.10
	377.43	3.04	64.16	201.63	376.93	14.88	3.25	17.79	0.55	5343077.01	379800.76
	391.66	2.10	63.34	215.84	391.14	15.48	3.53	18.37	1.98	5343077.29	379801.33
	405.24	1.93	62.40	229.42	404.72	15.94	3.75	18.79	0.38	5343077.51	379801.75
	419.00	2.30	57.78	243.17	418.47	16.43	4.00	19.23	0.89	5343077.76	379802.19
	432.77	2.75	56.51	256.92	432.22	17.02	4.33	19.74	0.99	5343078.09	379802.70
	446.38	3.30	56.87	270.51	445.81	17.73	4.73	20.34	1.21	5343078.49	379803.30
	460.67	3.73	55.31	284.78	460.08	18.59	5.22	21.07	0.92	5343078.98	379804.03
	474.04	4.25	59.39	298.11	473.41	19.49	5.72	21.85	1.33	5343079.48	379804.81
	487.33	4.53	62.68	311.37	486.67	20.47	6.21	22.74	0.85	5343079.97	379805.70
	500.97	4.71	61.72	324.96	500.26	21.52	6.72	23.71	0.43	5343080.48	379806.67
	514.76	5.20	66.64	338.70	514.00	22.64	7.24	24.78	1.41	5343081.00	379807.75
	529.05	5.51	68.68	352.93	528.23	23.87	7.74	26.02	0.76	5343081.50	379808.98
	542.90	5.95	66.58	366.71	542.01	25.15	8.27	27.30	1.06	5343082.03	379810.26
	556.44	6.27	64.04	380.17	555.47	26.50	8.87	28.60	0.93	5343082.63	379811.56
	570.53	5.61	62.11	394.19	569.49	27.89	9.53	29.90	1.47	5343083.29	379812.87
	584.01	4.65	56.72	407.61	582.91	29.05	10.14	30.94	2.39	5343083.90	379813.90
	597.01	4.12	41.78		595.87	30.03	10.78	31.70	2.89	5343084.54	379814.66
	610.61	4.03	49.91		609.44	31.00	11.45	32.39	1.29	5343085.21	379815.35
	624.10	3.94	50.43	447.60	622.90	31.93	12.05	33.11	0.22	5343085.81	379816.07
	638.29	3.85	51.16	461.75	637.05	32.89	12.66	33.85	0.22	5343086.42	379816.81
	652.34	3.67	52.60		651.07	33.80	13.23	34.58	0.43	5343086.99	379817.54
	665.87	3.32	48.38		664.58	34.62	13.75	35.22	0.96	5343087.51	379818.17
	679.36	2.95	41.05	502.75	678.05	35.36	14.27	35.73	1.21	5343088.03	379818.69
	695.52	2.47	22.98		694.19	36.10	14.91	36.14	1.81	5343088.67	379819.10
	706.77	2.45	11.17		705.43	36.52	15.37	36.29	1.35	5343089.12	379819.24
	720.73	2.30	5.30		719.38	36.99	15.94	36.37	0.61	5343089.70	379819.33
	732.34	2.20	359.19		730.98	37.32	16.39	36.39	0.67	5343090.15	379819.35
	761.95	2.49	13.66		760.56	38.27	17.59	36.53	0.67	5343091.34	379819.49
	775.58	2.54	20.28		774.18	38.79	18.16	36.71	0.65	5343091.91	379819.66
	789.59	2.17	34.13		788.18	39.34	18.67	36.96	1.45	5343092.42	379819.92
	806.75	2.27	52.58		805.33	39.99	19.14	37.41	1.26	5343092.90	379820.37
	831.82	1.90	55.22		830.38	40.89	19.68	38.15	0.46	5343093.44	379821.11
	001.02	1.50	00.22	555.00	550.50	40.03	15.00	50.15	0.70	00 10000.74	0.0021.11

	844.74	1.94	49.10	667.99	843.29	41.32	19.95	38.49	0.48	5343093.70	379821.45
	858.31	1.59	47.20	681.56	856.86	41.74	20.23	38.80	0.78	5343093.98	379821.76
	872.27	1.65	48.30	695.51	870.81	42.13	20.49	39.10	0.15	5343094.25	379822.05
	885.85	1.75	43.89	709.09	884.39	42.54	20.77	39.38	0.36	5343094.53	379822.34
	899.79	1.63	45.42	723.02	898.32	42.95	21.06	39.67	0.28	5343094.82	379822.63
	913.43	1.69	38.27	736.65	911.95	43.34	21.36	39.94	0.47	5343095.11	379822.89
	927.28	1.48	33.18	750.50	925.80	43.72	21.67	40.16	0.55	5343095.42	379823.12
	941.20	1.58	38.06	764.41	939.71	44.09	21.97	40.38	0.35	5343095.72	379823.34
	954.57	1.57	32.11	777.78	953.08	44.45	22.27	40.59	0.37	5343096.03	379823.55
	968.34	1.30	36.91	791.54	966.84	44.79	22.55	40.78	0.64	5343096.31	379823.74
	982.51	1.49	28.75	805.71	981.01	45.12	22.84	40.97	0.58	5343096.60	379823.93
	995.79	1.54	28.78	818.99	994.29	45.46	23.15	41.14	0.11	5343096.91	379824.09
	1009.85	1.59	35.30	833.04	1008.34	45.83	23.48	41.34	0.39	5343097.23	379824.30
	1023.38	1.29	32.18	846.57	1021.87	46.17	23.76	41.53	0.69	5343097.51	379824.49
Last MWD Svy 12 1/4" Section	1036.69	1.55	29.83	859.87	1035.17	46.49	24.04	41.70	0.60	5343097.80	379824.66
	1100.00	1.00	29.83	923.17	1098.47	47.85	25.26	42.40	0.26	5343099.02	379825.36
	1170.00	0.25	29.83	993.16	1168.46	48.58	25.93	42.78	0.32	5343099.68	379825.74
	1265.00	1.00	29.83	1088.15	1263.45	49.58	26.82	43.30	0.24	5343100.58	379826.25
	1362.00	1.25	29.83	1185.14	1360.44	51.42	28.48	44.24	0.08	5343102.23	379827.20
	1456.00	1.00	29.83	1279.12	1454.42	53.20	30.08	45.16	0.08	5343103.83	379828.12
	1648.00	1.50	29.83	1471.07	1646.37	57.24	33.71	47.24	0.08	5343107.47	379830.20
	1702.00	1.50	29.83	1525.05	1700.35	58.61	34.94	47.95	0.00	5343108.69	379830.90
	1801.00	1.25	29.83	1624.02	1799.32	60.90	37.00	49.13	0.08	5343110.75	379832.09
	1907.00	1.25	29.83	1730.00	1905.30	63.13	39.00	50.28	0.00	5343112.76	379833.24
	2054.00	2.00	29.83	1876.94	2052.24	67.16	42.62	52.35	0.15	5343116.37	379835.31
	2103.00	2.00	29.83	1925.91	2101.21	68.81	44.10	53.20	0.00	5343117.86	379836.16
Ot t MAND O											
Start MWD Svy False DLS, prior to	2157.00 2211.36	2.50 4.46	29.83 289.25	1979.87 2034.16	2155.17 2209.46	70.85 71.08	45.94 47.67	54.26 52.85	0.28 3.03	5343119.69 5343121.42	379837.21 379835.81
AZM	2266.45	6.22	288.83	2089.01	2264.31	68.83	49.34	48.00	0.96	5343123.09	379830.96
	2295.75	6.49	289.19	2118.13	2293.43	67.41	50.40	44.94	0.28	5343124.15	379827.89
	2309.42	6.30	289.08	2131.71	2307.01	66.75	50.90	43.50	0.42	5343124.65	379826.46
	2323.33	5.27	287.41	2145.55	2320.85	66.12	51.34	42.17	2.25	5343125.09	379825.13
	2336.99	4.90	285.00	2159.16	2334.46	65.54	51.67	41.01	0.94	5343125.42	379823.96
	2350.08	5.23	289.47	2172.20	2347.50	65.00	52.02	39.90	1.18	5343125.77	379822.86
	2364.18	4.98	287.38	2186.24	2361.54	64.44	52.42	38.71	0.66	5343126.16	379821.67
	2378.64	4.72	287.74	2200.65	2375.95	63.87	52.78	37.55	0.54	5343126.53	379820.51
	2391.38	4.38	285.07	2213.35	2388.65	63.39	53.07	36.58	0.94	5343126.82	379819.54
	2405.14	4.24	281.30	2227.07	2402.37	62.85	53.31	35.57	0.69	5343127.06	379818.53
	2418.82	4.17	280.28	2240.72	2416.02	62.28	53.49	34.59	0.22	5343127.24	379817.55
	2432.99	4.31	281.00	2254.85	2430.15	61.69	53.69	33.56	0.32	5343127.44	379816.52
	2446.36	4.07	278.63	2268.18	2443.48	61.13	53.86	32.60	0.66	5343127.60	379815.56
	2459.80	4.49	278.67	2281.58	2456.88	60.54	54.01	31.60	0.94	5343127.75	379814.56
	2473.38	4.61	275.37	2295.12	2470.42	59.87	54.14	30.54	0.64	5343127.89	379813.50
	2487.56	4.72	280.17	2309.25	2484.55	59.18	54.29	29.39	0.86	5343128.04	379812.35
	2500.86	4.72	277.54	2322.51	2497.81	58.53	54.46	28.31	0.49	5343128.21	379811.27
	2514.52	4.15	276.56	2336.13	2511.43	57.88	54.59	27.26	1.26	5343128.34	379810.23
	2528.81	3.83	277.08	2350.38	2525.68	57.27	54.71	26.28	0.68	5343128.46	379809.24
	2541.93	3.49	279.51	2363.48	2538.78	56.77	54.83	25.45	0.85	5343128.58	379808.41
	2556.18	3.64	277.66	2377.70	2553.00	56.24	54.96	24.57	0.40	5343128.71	379807.53
	2569.27	4.40	280.61	2390.76	2566.06	55.70	55.11	23.67	1.80	5343128.86	379806.63
	2582.84	4.63	281.44	2404.28	2579.58	55.11	55.31	22.62	0.53	5343129.06	379805.58
	2597.24	3.61	285.82	2418.65	2593.95	54.56	55.55	21.61	2.22	5343129.30	379804.58
	2610.98	2.96	290.90	2432.36	2607.66	54.21	55.80	20.87	1.55	5343129.55	379803.83
	2610.96		290.90	2432.36	2620.85	53.96		20.87		5343129.84	379803.03
		3.21					56.09		1.03		
	2638.93	3.73	291.92	2460.27	2635.57	53.65	56.46	19.41	1.29	5343130.21	379802.37
	2652.53	4.30	289.22	2473.83	2649.13	53.26	56.80	18.52	1.32	5343130.55	379801.48
	2665.21	4.54	286.11	2486.48	2661.78	52.81	57.09	17.59	0.80	5343130.84	379800.55
	2678.97	2.99	299.35	2500.21	2675.51	52.45	57.42	16.75	3.85	5343131.17	379799.71
	2692.92	2.23	308.98	2514.14	2689.44	52.32	57.77	16.22	1.88	5343131.52	379799.19
	2706.24	2.89	304.53	2527.45	2702.75	52.23	58.12	15.75	1.55	5343131.87	379798.71
	2720.92	3.58	300.85	2542.11	2717.41	52.05	58.57	15.05	1.47	5343132.32	379798.01
	2734.01	3.79	299.61	2555.17	2730.47	51.84	58.99	14.32	0.51	5343132.74	379797.28
	2761.60	4.14	276.55	2582.69	2757.99	50.98	59.56	12.54	1.76	5343133.30	379795.50
	2775.45	4.80	273.20	2596.50	2771.80	50.28	59.64	11.46	1.54	5343133.39	379794.43
	2789.61	4.00	272.27	2610.62	2785.92	49.55	59.70	10.38	1.70	5343133.45	379793.34
	2802.43	2.69	278.45	2623.42	2798.72	49.07	59.76	9.63	3.18	5343133.51	379792.60
	2817.22	2.62	281.99	2638.19	2813.49	48.68	59.88	8.96	0.36	5343133.63	379791.92
	2830.18	3.28	282.71	2651.13	2826.43	48.32	60.02	8.31	1.53	5343133.77	379791.27
	2843.25	3.78	292.41	2664.18	2839.48	47.95	60.27	7.54	1.78	5343134.02	379790.51
	2857.80	4.33	300.96	2678.69	2853.99	47.63	60.74	6.63	1.68	5343134.48	379789.60
	2871.65	3.44	300.81	2692.51	2867.81	47.41	61.22	5.82	1.93	5343134.96	379788.79
	2885.27	3.80	298.31	2706.10	2881.40	47.18	61.64	5.08	0.87	5343135.39	379788.04
	2899.02	3.83	296.90	2719.82	2895.12	46.90	62.06	4.27	0.21	5343135.81	379787.23
	2912.43	3.94	298.78	2733.20	2908.50	46.63	62.49	3.46	0.38	5343136.24	379786.43
							-				

2926.39	2.87	301.29	2747.14	2922.44	46.42	62.90	2.74	2.32	5343136.65	379785.71
2940.21	1.74	289.91	2760.95	2936.25	46.25	63.15	2.25	2.63	5343136.90	379785.22
2953.98	2.62	280.76	2774.71	2950.01	45.98	63.28	1.74	2.06	5343137.03	379784.71
2966.91	3.62	287.62	2787.62	2962.92	45.63	63.46	1.07	2.47	5343137.21	379784.03
2980.69	3.49	294.09	2801.37	2976.67	45.28	63.76	0.27	0.92	5343137.51	379783.23
2994.76	3.31	306.56	2815.42	2990.72	45.07	64.18	-0.45	1.62	5343137.93	379782.52
3008.46	3.64	305.91	2829.09	3004.39	44.94	64.67	-1.12	0.73	5343138.42	379781.85
3021.91	4.27	302.63	2842.51	3017.81	44.76	65.19	-1.89	1.49	5343138.94	379781.08
3035.44	5.23	301.46	2855.99	3031.29	44.51	65.79	-2.84	2.14	5343139.53	379780.13
3048.91	6.04	302.28	2869.40	3044.70	44.21	66.48	-3.96	1.81	5343140.23	379779.01
3063.35	6.03	302.98	2883.76	3059.06	43.89	67.30	-5.24	0.15	5343141.05	379777.73
3076.72	5.58	305.53	2897.06	3072.36	43.63	68.06	-6.36	1.16	5343141.81	379776.61
3090.57	5.16	310.13	2910.85	3086.15	43.47	68.86	-7.38	1.30	5343142.60	379775.59
3104.38	5.08	311.11	2924.60	3099.90	43.38	69.66	-8.32	0.26	5343143.40	379774.65
3117.81	5.58	308.46	2937.98	3113.28	43.26	70.45	-9.28	1.24	5343144.20	379773.69
3131.54	5.56	301.69	2951.64	3126.94	43.03	71.22	-10.36	1.44	5343144.96	379772.61
3145.49	5.61	300.79	2965.52	3140.82	42.71	71.92	-11.52	0.22	5343145.67	379771.44
3158.75	5.88	300.52	2978.72	3154.02	42.38	72.60	-12.67	0.61	5343146.35	379770.30
3172.05	5.95	303.15	2991.95	3167.25	42.07	73.32	-13.83	0.63	5343147.07	379769.14
3186.28	6.82	301.53	3006.09	3181.39	41.72	74.17	-15.17	1.87	5343147.91	379767.80
3200.41	8.09	299.04	3020.10	3195.40	41.25	75.09	-16.75	2.78	5343148.83	379766.22
3213.77	9.09	297.82	3033.31	3208.61	40.68	76.04	-18.51	2.28	5343149.78	379764.46
3227.96	9.77	295.82	3047.31	3222.61	39.95	77.09	-20.58	1.60	5343150.83	379762.39
3241.40	9.68	295.88	3060.55	3235.85	39.21	78.08	-22.63	0.20	5343151.82	379760.35
3254.57	8.45	295.57	3073.56	3248.86	38.52	78.98	-24.50	2.80	5343152.72	379758.48
3268.54	7.96	295.42	3087.39	3262.69	37.86	79.84	-26.30	1.05	5343153.58	379756.68
3282.21	8.68	296.62	3100.91	3276.21	37.22	80.70	-28.07	1.63	5343154.45	379754.90
3295.66	8.87	297.37	3114.20	3289.50	36.58	81.64	-29.90	0.49	5343155.38	379753.07
3309.34	8.44	296.90	3127.73	3303.03	35.95	82.57	-31.73	0.96	5343156.32	379751.24
3323.39	8.65	296.00	3141.62	3316.92	35.29	83.50	-33.60	0.53	5343157.25	379749.37
3337.46	9.54	295.14	3155.52	3330.82	34.55	84.46	-35.61	1.92	5343158.21	379747.37
3352.25	10.07	293.74	3170.09	3345.39	33.66	85.50	-37.90	1.18	5343159.25	379745.07
3365.50	10.92	294.18	3183.12	3358.42	32.79	86.48	-40.11	1.93	5343160.23	379742.87
3378.04	11.37	295.70	3195.42	3370.72	31.96	87.51	-42.30	1.29	5343161.25	379740.67
3391.88	11.49	294.96	3208.99	3384.29	31.04	88.68	-44.78	0.41	5343162.42	379738.19
3406.35	12.16	295.58	3223.15	3398.45	30.04	89.95	-47.46	1.41	5343163.69	379735.51
3419.41	11.97	296.52	3235.92	3411.22	29.15	91.15	-49.92	0.63	5343164.89	379733.06
3433.19	11.99	295.97	3249.40	3424.70	28.23	92.41	-52.48	0.25	5343166.15	379730.50
3448.17	11.67	295.77	3264.06	3439.36	27.23	93.75	-55.25	0.65	5343167.49	379727.73
3460.80	12.14	296.30	3276.42	3451.72	26.38	94.89	-57.59	1.15	5343168.63	379725.39
3474.10	12.36	297.12	3289.42	3464.72	25.50	96.16	-60.11	0.63	5343169.90	379722.87
3488.23	12.19	296.14	3303.23	3478.53	24.55	97.51	-62.79	0.57	5343171.25	379720.19
3501.86	12.25	296.75	3316.55	3491.85	23.63	98.79	-65.38	0.31	5343172.53	379717.61
3516.01	12.57	299.21	3330.37	3505.67	22.74	100.22	-68.06	1.31	5343173.96	379714.92
3529.26	12.68	299.17	3343.30	3518.60	21.95	101.63	-70.59	0.25	5343175.37	379712.39
3542.55	12.92	298.08	3356.26	3531.56	21.12	103.04	-73.17	0.77	5343176.78	379709.81
3560.00	13.24	296.68	3373.25	3548.55	19.93	104.86	-76.68	0.77	5343178.60	379706.30

Survey Type: Definitive Survey

Last Svy Proj to TD

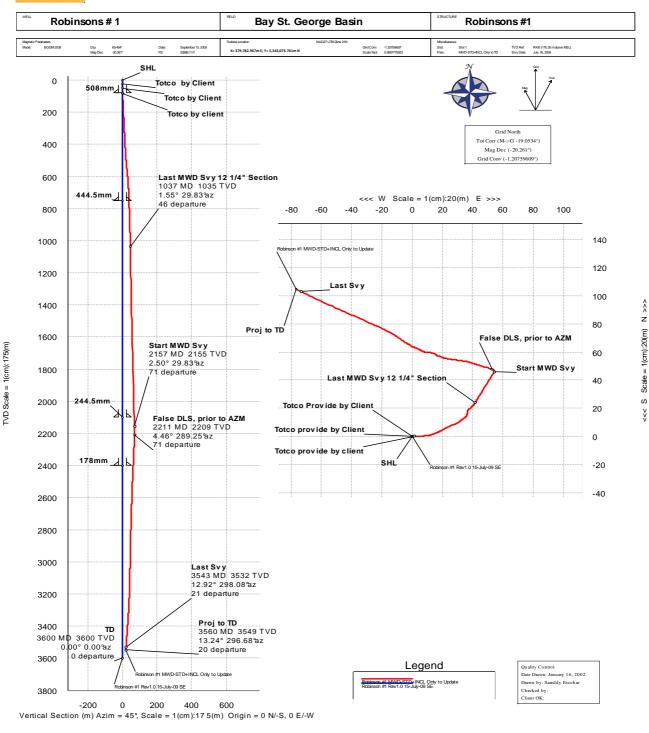
Survey Error Model: SLB ISCWSA version 24 *** 2-D 95.00% Confidence 2.4477 sigma

Surveying Prog:			
MD From (m)	MD To (m)	EOU Freq Survey Tool Type	Borehole -> Survey
0.00	6.30	Act-Stns SLB_INC-ONLY-Depth Only	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m
6.30	83.00	Act-Stns SLB_INC-ONLY	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m
83.00	1036.69	Act-Stns SLB_MWD-STD	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m
1036.69	2103.00	Act-Stns SLB_INC-ONLY	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m
2103.00	3542.55	Act-Stns SLB_MWD-STD	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m
3542.55	3560.00	Act-Stns SLB_BLIND+TREND	Original Hole -> Robinson #1 MWD-STD+INCL Only to 3560 m



Vulcan Minerals Inc

Schlumberger

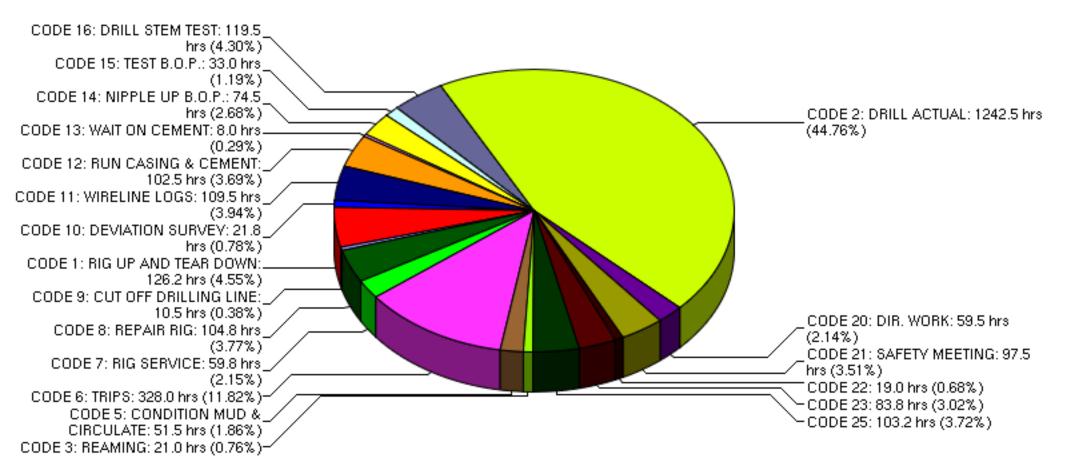


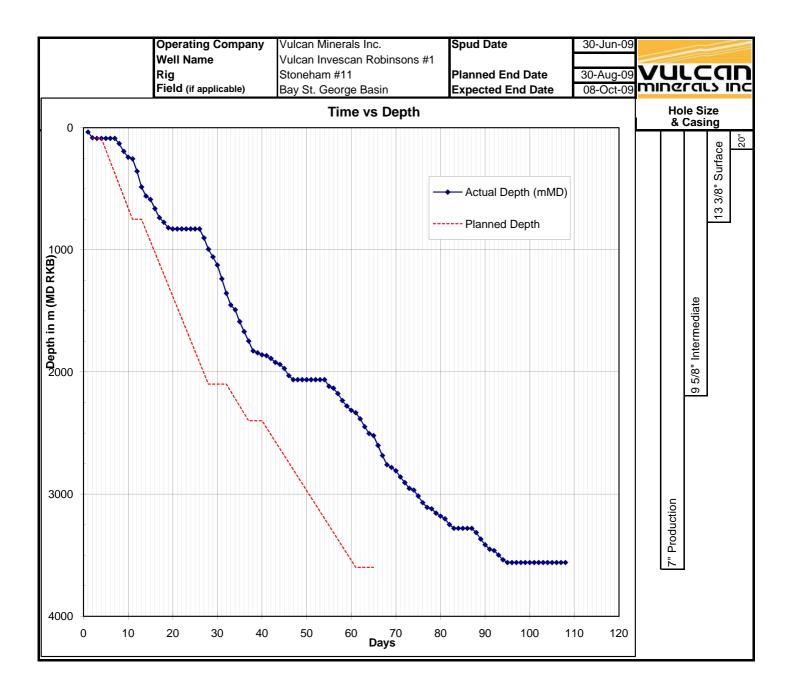


Final Well Report Appendix

Daily Drilling Reports Time Breakdown

Well name: VULCAN INVESTIGAN ROBINSONS #1 Spud Date: Jun 30,2009 Operator: Vulcan Minerals Inc. Release Date: Oct 15,2009 Contractor: Stoneham Drilling Inc. From Date: Jun 15,2009 To Date: Oct 15,2009 Rig: Stoneham 11





Time vs Depth Data

Operating Company	Vulcan Minerals Inc.	Spud Date	30-Jun-09 Planned End Date	30-Aug-09
Well Name	Vulcan Invescan Robinsons #1	To Date	Expected End Date	08-Oct-09
Rig	Stoneham #11			
Field (if applicable)	Ray St. George Basin			

Plan										
Operation	Planned Time	Planned Depth								
Spud 26" conductor	2	85								
20" Casing & Cementing	4	85								
Drill to 13 3/8" casing pt	11	750								
Casing and cementing	13	750								
Drill to 9 5/8" casing pt	28	2100								
Logging	30	2100								
Casing and cementing	32	2100								
Drill to 7" casing pt	37	2400								
Logging	38	2400								
Casing and cementing	40	2400								
Drill to 4 1/2" casing pt	61	3600								
Logging	62	3600								
Casing and cementing	63	3600								
Move rig	65	3600								

	Actual		
Operation	Date	Actual Time (days)	Actual Depth (mMD)
Spud 17 1/2" pilot	30-Jun-09	1 2	36
Drilling 17 1/2" pilot	01-Jul-09		83
Opening up to 26"	02-Jul-09	3	88
Problems running 20"	03-Jul-09	4	88
26" clean-out trip	04-Jul-09	5	88
Ran 20" casing	05-Jul-09	6	88
Install Divertor	06-Jul-09	7	88
Pressure Testing	07-Jul-09	8	131
Drilling 17 1/2" Controlled Drilling 17 1/2"	08-Jul-09	9	194
	09-Jul-09	10	242
Drilling 17 1/2" hole	10-Jul-09	11	255
POOH for directional tools Drilling 17 1/2" hole	11-Jul-09	12	357
	12-Jul-09	13	486
Drilling 17 1/2" hole	13-Jul-09	14	560
POOH to change BHA	14-Jul-09	15	588
Drilling 17 1/2" hole	15-Jul-09	16	663
Drilling 17 1/2" hole POOH to change bit	16-Jul-09	17	737
	17-Jul-09	18	775
Drilling 17 1/2" hole POOH to run casing	18-Jul-09	19	820
	19-Jul-09	20	829
Casing	20-Jul-09	21	829
Cementing and cut divertor	21-Jul-09	22	829
Nippling up BOPS	22-Jul-09	23	829
Nippling up BOPS	23-Jul-09	24	829
Nippling up BOPS	24-Jul-09	25	829
Pressure Testing	25-Jul-09	26	829
RIH 12 1/4" BHA- drilling	26-Jul-09	27	903
Drilling	27-Jul-09	28	995
POOH to change to PDC	28-Jul-09	29	1058
Drilling	29-Jul-09	30	1125
Drilling	30-Jul-09	31	1238
Drilling	31-Jul-09	32	1356
POOH to change PDC	01-Aug-09	33	1452
Drilling Drilling	02-Aug-09	34	1491
	03-Aug-09	35	1588
Drilling	04-Aug-09	36	1670
Drilling POOH to chng PDC to Insert	05-Aug-09	37	1747
	06-Aug-09	38	1828
POOH to chng Insert for PDC	07-Aug-09	39	1843
POOH to chng PDC to Insert	08-Aug-09	40	1860
Drilling	09-Aug-09	41	1867
Drilling Drilling	10-Aug-09	42	1889
	11-Aug-09	43	1922
POOH for bit- Insert	12-Aug-09	44	1938
Drilling Drilling	13-Aug-09	45	1971
	14-Aug-09	46	2030
TD section- dummy trip	15-Aug-09	47	2063.5
Wireline logs (2 trips)	16-Aug-09	48	2063.5
VSP, clean out trip and testing	17-Aug-09	49	2063.5
DST#1failed	18-Aug-09	50	2063.5
DST#2failed	19-Aug-09	51	2063.5
Running casing Running Casing and Cement	20-Aug-09	52	2063.5
	21-Aug-09	53	2063.5
Cement and Pressure Test	22-Aug-09	54	2063.5
FIT; Drilling 8.5" section Drilling, POOH due to low ROP (bit ringe	23-Aug-09	55	2117
	24-Aug-09	56	2133
Drilling 8.5" section Drilling	25-Aug-09	57	2177
	26-Aug-09	58	2234
Drilling	27-Aug-09	59	2279
POOH to change bit and pickup Direction	28-Aug-09	60	2314
Drilling	29-Aug-09	61	2334
Drilling Drilling	30-Aug-09	62	2384
	31-Aug-09	63	2448
Drilling	01-Sep-09	64	2504
Tripped out to change PDC to insert	02-Sep-09	65	2521
Drilling	03-Sep-09	66	2602
Drilling POOH to change back to Insert due to lo	04-Sep-09	67	2685
	05-Sep-09	68	2760
Drilling	06-Sep-09	69	2782
Drilling	07-Sep-09	70	2809
Drilling	08-Sep-09	71	2859
Drilling Drilling	09-Sep-09	72	2906
	10-Sep-09	73	2953
POOH to change bit	11-Sep-09	74	2967
Drilling	12-Sep-09	75	3016
Drilling	13-Sep-09	76	3070
Drilling POOH to change bit	14-Sep-09	77	3109
	15-Sep-09	78	3120
Drilling	16-Sep-09	79	3156
POOH to change to insert	17-Sep-09	80	3180
Drilling	18-Sep-09	81	3202
Drilling Drilling	19-Sep-09	82	3249
	20-Sep-09	83	3280
POOH for rig repair	21-Sep-09	84	3280
Waiting on Swivel Waiting on Swivel	22-Sep-09	85	3280
	23-Sep-09	86	3280
Waiting on Swivel	24-Sep-09	87	3280
Trip in, Drilling	25-Sep-09	88	3315
Drilling	26-Sep-09	89	3368
Drilling Drilling- POOH for bit	27-Sep-09	90	3415
	28-Sep-09	91	3451
RIH- Drilling	29-Sep-09	92	3462
Drilling	30-Sep-09	93	3499
Drilling	01-Oct-09	94	3538
Drilling- Well TD, POOH On surface, Waiting on Baker	02-Oct-09	95	3560
	03-Oct-09	96	3560
Run VSP Run Imager and Pressure tool	04-Oct-09	97	3560
	05-Oct-09	98	3560
Run RCOR and wiper trip	06-Oct-09	99	3560
DST#3	07-Oct-09	100	3560
DST#3 & RIH DST#4	08-Oct-09	101	3560
DST#4	09-Oct-09	102	3560
DST#4 & RIH DST#5	10-Oct-09	103	3560
DST#5 and POOH	11-Oct-09	104	3560
Run 7" casing	12-Oct-09	105	3560
Cementing and begin tear-out	13-Oct-09	106	3560
Rig-down	14-Oct-09	107	3560
	15-Oct-09	108	3560
Rig-down	13-001-09	100	3300
Innroyed By			_

Prepared By	S. Halley	Approved By	
Date	15-Dec-09	Date	

Bit Run Summary Vulcan Investcan Robinsons #1

Run	No.	Size (mm)	Mfr	Туре	IADC	Serial No.	Depth Out (mMD)	Depth Drilled (m)	Hours	ROP (m/hr)	Weight	RPM	Date Run
1	1	660	SMITH	XR+C		MR1995			1.5		3	160	2009-Jun-30
2	1	455	SMITH	SDGH		ER8679	82	82	21.5	3.81	02/10	160	2009-Jun-30
3	2	660	SMITH	XR+C		MR1995	53	53	6.5	8.15	5	160	2009-Jul-01
4	2RR	660	SMITH	XR+C		MR1995	82	82	12.75	6.43	06/10	170	2009-Jul-01
5	2RR	660	SMITH	XR +C		MR1995			20.25		3	200	2009-Jul-04
6	3	455	REED	T41C		ND0530	223	135	38.5	3.51	05/06	185	2009-Jul-08
7	3	455	REED	T41C		ND0530	253	165	48.5	3.4	02/08	150/185	2009-Jul-09
8	4	455	REED	T51C		DT2849	559	306	56.5	5.42	15/18	60	2009-Jul-13
9	4RR	445	REED	T51C		DT2849	775	522	119.25	4.38	18/25	30/35	2009-Jul-16
10	3RR	445	REED	T41C		ND0530	829	54	20.5	2.63	18/23	30	2009-Jul-18
11	<u>6</u>	311	HUGHES	GX-28DX	527	5160463	1058	229	50.75	4.51	12/19	30/50	2009-Jul-27
12	7	311	HUGHES	HC506ZX		7011417	1491	433	89.5	4.84	10/14	80/100	2009-Aug-01
13	8	311	HUGHES	HCM506ZX		7006301`	1796	305	79	3.86	10/13	55/70	2009-Aug-05
14	8	311	HUGHES	HCM506ZX		7006301	1843	352	92.25	3.82	08/15	55/75	2009-Aug-06
15	<u>9</u>	311	HUGHES	HR53DDX		6040255	1860	17	13.25	1.28	08/14	45/50	2009-Aug-08
16	<u>10</u>	311	HUGHES	HC506Z		7213027	1867	7	6.5	1.08	07/12	50	2009-Aug-08
17	RR11	311	HUGHES	HR53DDX		6040255	1934	67	38.25	1.75	10/19	50/55	2009-Aug-11
18	<u>12</u>	311	REED	M4188ZDH	527	CK4615	2063	129	59.25	2.18	0/20	45/85	2009-Aug-15
19	RR12	311	REED	M4188ZDH	527	CK4615	2063	0	0				2009-Aug-16
20	<u>13</u>	216	REED	DSX811M-A9		113204	2133	70	23.75	2.95	06/10	30/40	2009-Aug-23
21	14	216	HUGHES	MX30GDX	537	5139598	2314	181	85.25	2.12	02/18	45/115	2009-Aug-28
22	<u>15</u>	216	HUGHES	HC506ZX		7114737	2508	194	77	2.52	04/08	35	2009-Sep-01
23	<u>16</u>	216	REED	R30APDH	537	CW7148	2761	253	69.75	3.63	14/16	35/47	2009-Sep-05
24	<u>17</u>	216	HUGHES	HC505ZX		7116166	2803	42	13.75	3.05	05/06	30	2009-Sep-06
25	<u>18</u>	216	HUGHES	MX-30GDX		6063824	2967	164	77	2.13	13/40	12/40	2009-Sep-10
26	19	216	REED	R30APDH	537	AP6465	3110	143	62.5	2.29	13/14	40	2009-Sep-14
27	20	216	HUGHES	HC506ZX		7116724	3180	70	41	1.71	03/05	25/30	2009-Sep-17
28	21 22	216	HUGHES	GX-38CDX	547	5135908	3284	104	53.25	1.95	10/15	30/60	2009-Sep-21
29		216	REED	R34MPDH	547	AN2958	3451	167	80.75	2.07	06/14	30/43	2009-Sep-28
30	<u>23</u>	216	HUGHES	GX-44GDX	617	6067291	3560	109	64.75	1.68	15	50/63	2009-Oct-02
31	RR	216	HUGHES	GX-44GDX	617	6067291	3560	0	0				2009-Oct-12

APPENDIX 3: DA	AILY REP	ORTS		
Vulcan Investcan Rob Final Well Report Ap				

			Vulc	an M	ineral	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	1		Date:	30-Jı	un-09
Depth:	36.0	mKB	Progress:	26.0	Drilling:	8.50	hrs ROP,	m/hr:	3.00	Rig:	Stoneham # 11	
Operation	@ 0800 hrs	: Surveying a	fter drilliing	444 mm pile	ot hole to 56	mKB	_			KB elev:	175.30	m.
										KB - GL	6.30	
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		ARKS
1	444	SDGH	ER8619	10.0		26.0	8.50	3 x 15.9	100 - 170	2-5000	Purchase	ed RR bit
								1				
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Bit Sul	o, 2-230 mm	DC, 438 mn	1 string stab.	1 pony 230 n	nm collar.1-2	203 mm DC
Model		PZ-11	PZ-11	ľ	•				Pump Pres		1000	kPa
Liner	(mm)	152	165	BHA Leng	th:		m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla		230.0	mm	Drill Pipe			mm	
SPM	2	110		D.C. Annular Vel.:			_m/min	D.P Annul			m/min	
Vol.	(m³/min)	1.87	l	Jet Velocit	y:		_m/sec	Hydraulic	HP:		kW	
		SUR	VEYS				MUD			MUD AI	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	19:00		Gel	50	<u> </u>	
	.00	1.00				Density	1025		Caustic	1		
50	.00	1.00				Vis.	41		Envirofloc			
						pН	8.5		Kelzan			
		-	-			W.L.	16.0		Cello			
						P.V. Y.P.	10.0 4.5		Bicarb	1		
						Gel S.	3.5 / 8 / 10		Alcomer Drispac R			
						Filter Ck	2.0		Desco Desco			
						Solids %	16.0		Barite			
						Oil	0.000		Lignite			
									Primaseal			
									SAPP			
									Soda Ash	2	- ~	
									Sawdust	2	Day Cost Well Cost	\$1,841
	T	luid Invento	rw.			<u> </u>	Dec	silter	Mud Van	ander		\$1,991 rifuge
Daily Oil		Tara Invento	Cum. Oil	1	Underflow	Density	Des	, iiici	Des	anuci		00+
Daily Wate	r		Cum. Wate		Overflow I	•						20
Daily Gas			Cum. Gas		Flow Rate,	, l/min					1	.5
Mud Lost			Cum. Mud		Operating	hours					11	1.0
					_				_		_	
Core:		_ Size/Type:		T41-	Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			_ Times: Times:					
D51.		_ Zone.		- Interval.			_ Innes.					
	1. Rig up/	Out	7.50	=	9. Cut Dri	ill Line		= =	17. Plug B	Back		=
	2. Drill		8.50	=	10. Survey		1.00	=	18. Squeez			=
	3. Ream			=	11. Wireli			=	19. Fishin	-		=
	 Core Circ. & 	Cond	0.50	=	12. Casing 13. WOO	g/Cement	2.25	=	20. Direct		1.00	=
	6. Trip	Conu.	0.30	-	13. WOO 14. Nipple	IIn ROP	2.23	=	21. Safety 22. Handl	_	3.00	=
	7. Rig Ser	vice	0.25	=	15. Test B	-		=	23	c roots	3.00	=
	8. Rig Rep			=	16. Drillste		-	=	Total Hou	rs	24.00	-
								_				-
				<u> </u>		REMARK	S					
		es and pop val l on verificati		<u> </u>		n Chuddal	155 mm hc1-	@ 20 I.m-	12.20 bm f-	om 10 mVD		
		28 M pumpe						@ 30 Julie	12.30 1118. 110	OIII 10 IIIKD		
		_ ^ ^				•	- 405.					
	Drilled 455 mm hole from 28 M to 36 M. in a mix of competant sands and silts											
	survey unit borrowed from St. Johns was modified to run on wireline by rig crews.											
		picking-up I										
		imates and de reg pick-up r						V hook-up A	IGAPI			
Daily Cost:			5,775	ok uie iuggt	Cumulativ			v 1100k-up <i>F</i> 8,164	Weather:	Plus 12	- 25, light wi	ind, clear
,				-					Mud Type		Gel-Chem	.,
Foremen	Bi	ll Williams &	& Hale Yard	lley	Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Halley

	Vulcan Minerals Daily Drilling Report												
Well:		Vulc	an Investo				Day:		-	Date:	01-J	ul-09	
Depth:	21.0	mKB	Progress:	47 / 11	Drilling:	14.50	hrs ROP,		4.00	Rig:	Stoneham # 11		
Operation	@ 0800 hrs	: Drilling	g 660 mm co	nductor hole	to 53 md @	6+ m/hr	_			KB elev:	175.30	m.	
										KB - GL	6.30		
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR	
1	444	SDGH	ER8619	10.0	83.0	73.0	21.50	3 x 15.9	100 - 170	2-10,000	1-3-SS-G-5	-I-WT-BHA	
2	660	VII. C	MD 1005	10.0	21.0	11.0	1.50	2 14 2 . 10	100 170	2.5.000	D 1	1 DD 1.7	
2	660	XH+C	MR1995	10.0	21.0	11.0	1.50	3x14.3+19	100 - 170	2-5,000	Purchase	ed RR bit	
		Pump 1	Pump 2	Drilling As	sembly:	Bit / Sub 2	-230 mm DC	7. 438 mm st	ah 1 nony 23	80 mm DC 2	2-203 mm DO	7. 165 mm F	
Model		PZ-11	PZ-11		··· , ·			.,	Pump Pres		3000	kPa	
Liner	(mm)	152	165	BHA Leng	th:		m	Strap:		Board:		•	
Stroke	(mm)	279	279	Drill Colla		230/203/16	5 mm	Drill Pipe (O.D.		mm	='	
SPM		70	70	D.C. Annu			m/min	D.P Annul			m/min		
Vol.	Vol. (m³/min) 2.20 Jet Velocity:m/sec Hydraulic HP:										_kW		
		CIID	VEYS				MIID			MIDAT	DITIVE		
Do	pth	Drift	Azimuth	North	East	Time	0:00		Gel	65	DDITIVES		
	.00	1.00	AZIMUU	HOTEL	Last	Density	1065		Caustic	0.5			
	.00	1.00				Vis.	46		Envirofloc				
						pН	8.5		Kelzan				
						W.L.	13.0		Cello				
						P.V.	14.0		Bicarb				
					1	Y.P.	7.5	<u> </u>	Alcomer				
						Gel S.	3.5 / 8.5 / 10	0	Drispac R				
						Filter Ck Solids %	2.0 4.0		Desco Barite				
						Oil	n/a		Lignite				
						<u> </u>	11/4		Primaseal				
									SAPP				
									Soda Ash				
									Sawdust		Day Cost	\$2,367	
	_								Mud Van	2	Well Cost	\$4,358	
D II OII	ŀ	luid Invento	. *	1	** * **	5 1	Des	silter	Desa	ander		rifuge	
Daily Oil Daily Wate			Cum. Oil Cum. Wate		Underflow							00+	
Daily Wate	er		Cum. Gas		Overflow I Flow Rate							.5	
Mud Lost			Cum. Mud		Operating							0.0	
		ı		ı			1						
Core:		Size/Type:			Zone:		In:		Out:		Recovery:		
DST:		Zone:		Interval:			Times:		_		_		
DST:		Zone:		Interval:			Times:						
	1 Dia/	·O4		=	9. Cut Dri	111 T : a	-	=	17 Dl D	la als		=	
	 Rig up/ Drill 	Out	14.50	=	10. Survey		0.75	=	17. Plug B 18. Squeez			-	
	3. Ream		11.50	=	11. Wireli		0.75	=	19. Fishing		-	=	
	4. Core			=	12. Casing			=	20. Direct			=	
	5. Circ. &	Cond.	0.75	= =	13. WOO	-		- -	21. Safety	Meeting	0.75	- -	
	6. Trip		3.50	_	14. Nipple	-		_	22. Handle		2.00	_	
	7. Rig Ser		1.00	_	15. Test B			_		and-off Mtg		=	
	8. Rig Rep	pair	0.25	-	16. Drillst	em Test		_	Total Hour	rs	24.00	_	
						REMARK	C						
Drilled ahea	nd with 444	mm pilot bit	ran gel swee	ns and starte	d second pu								
		ated hole clea						. laid down d	rill collars a	nd 444 m bit			
		or to installin											
Drilled ahea	from 10 r	n with bit #2	to 23 m		-		•			-			
	Bill Williams left this evening for days off. Dug shallow bermed pits at Hurricane location to store drill cuttings.												
Dug shallov	v bermed pi	ts at Hurrican	e location to	store drill c	uttings.								
-													
Shane: can	we please ge	et another 2-v	vay radio cha	arger and and	other radio a	nd for the me	otorman, or i	ust a base sta	ation the rig	manager can	use?		
Prev Cost		8,164	Today	-	7,640	Total Cost		5,804	Weather:		- 25, light wi	ind, clear	
			•	- -					Mud Type		Gel-Chem		
Foremen	Bi	ill Williams &	& Hale Yard	lley	Rig Phone		709-649-710)6	Taken By:	Terry B	rooker / Sha	ne Halley	

			Vulc	an M	ineral	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investo			'	Day:		-	Date:	02-J	ul-09
Depth:	88.0	mKB	Progress:	67.0	Drilling:	13.50	hrs ROP,		5.00	Rig:		am # 11
Operation	@ 0800 hr	s: Picking-up	tongs to run	508 mm cas	ing					KB elev:	175.30	
				_						KB - GL	6.30	
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR
2	660	XH+C	MR1995	10.0	88.0	78.0	15.00	3x14.3+19	100 - 170	2-11,000	1-1-W1-A-	-2-I-NO-TD
				l	<u> </u>	<u> </u>	1	II.	Į.			
		Pump 1	Pump 2	Drilling As	ssembly:	Bit / Sub, 2	-230 mm DC	C, 438 mm st	ab,1 pony 23	30 mm DC, 2	2-203 mm DO	C, 165 mm I
Model		PZ-11	PZ-11						Pump Pre	ssure:	4500	kPa
Liner	(mm)	152	165	BHA Leng	•	220/202/4	m	Strap:		Board:		-
Stroke	(mm)	279	279 70	Drill Colla D.C. Annu		230/203/16	_	Drill Pipe (D.P Annul			_mm	
SPM Vol.	(m³/min)	70	2.20	Jet Velocit			_m/min m/sec	Hydraulic			m/min kW	
V 01.	(III/IIIII)	1	2.20	jact velocit	.y•		III/SCC	11yur aunc	111 .	-	_ K * * *	
		SUR	VEYS				MUD			MUD AI	DDITIVES	
De	pth	Drift	Azimuth	North	East	Time	8:14	19:00	Gel	66		
	3.00	1.00				Density	1090	1090	Caustic	1		
	0.00	1.00				Vis.	68	95	Envirofloc			
87	7.00	2.25	-			pH W.L.	8.0 10.0	8.0	Kelzan Cello	1	-	
		+	 			P.V.	21.0		Bicarb			
						Y.P.	12.5		Alcomer			
						Gel S.	8 / 22 / 26		Drispac R			
						Filter Ck	2.5		Desco			
						Solids %	5.6		Barite			
						Oil	n/a		Lignite			
									Primaseal		-	
									SAPP Soda Ash			
									Sawdust	48	Day Cost	\$3,271
									Mud Van	1	Well Cost	\$7,629
]	Fluid Invento	ory				Des	silter	Des	ander	Cent	rifuge
Daily Oil			Cum. Oil		Underflow							00+
Daily Wate	er		Cum. Wate		Overflow 1							<u>5</u>
Daily Gas Mud Lost			Cum. Gas Cum. Mud		Flow Rate Operating							.5 3.0
Wide Eost			Cum. Muu		Operating	nours					10	5.0
Core:		_ Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			Times:				-	
DST:		Zone:		Interval:			Times:					
	1. Rig up	/Out		-	9. Cut Dri	ill I inc		-	17. Plug B	tack		-
	2. Drill	Out	13.50	-	10. Survey		-	_	18. Squeez			-
	3. Ream			=	11. Wireli	•		=	19. Fishin			=
	4. Core			_	12. Casing			_	20. Miscel	-	1.50	_
	5. Circ. 8	c Cond.	3.00	=	13. WOO			=	21. Safety	_	0.50	=
	6. Trip		4.25	=	14. Nipple	-		=	22. Handl			=
	7. Rig Sei		0.50	-	15. Test B 16. Drillst			_		land-off Mtg		_
	8. Rig Re	pair		=	10. Drillst	em rest	-	=	Total Hou	rs	24.00	=
						REMARK	S					
Drilled ahea	ad with 660	mm conducto	or hole. Clear	ned-out plug	ged trash pu			action line ai	r bag . Drille	ed to 88 md @	@ 18:15 hrs.	
		wiper tripped				ed, dropped	survey and tr	ripped out for	r 508 mm co	nductor.		
Laid down 2	230 mm dcs	s, removed bit	straps and r	emoved 660	mm bit.							
Prev Cost	φω	75 904	Todo	d F2	5 164	Total Cost	Ø1 A	21 069	Weather	, D1.	10 - 27, pt c	loudy
TIEV COST	49	75,804	Today	_	5,164	Total Cost	φ1,0.	31,968	Mud Type		Gel-Chem	iouuy
Foremen		Hale Y	ardley	-	Rig Phone		709-649-710)6	Taken By:		rooker / Sha	ne Halley

			Vul	an M	ineral	s Daily	y Drill	ing R	eport					
Well:		Vulc	an Investo				Day:			Date:	031	Tul-09		
Depth:	88.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,		0.00	Rig:	Stoneham # 11			
		s: Completing					,			KB elev:	175.30 m.			
Operation	e 0000 III.	s. Completing	, remstari or i	ioury tubic t	ina preparing	5 to run oack	III WILII OIL G	c ribit to cit	an noic	KB - GL	6.30			
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR		
Dit	SIEC	1 y pc	Deriui 110.	- 111	Out	17100103	Hours	TOZZICS	141 111	,, eight	TODE	DOOR		
		1				1				1				
		1	I	1	I	1	I	ı		1	1			
		Pump 1	Pump 2	Drilling As	sembly:									
Model		PZ-11	PZ-11						Pump Pre	essure:	4500	kPa		
Liner	(mm)	152	165	BHA Leng	th:		m	Strap:		Board:		**		
Stroke	(mm)	279	279	Drill Colla		230/203/165		Drill Pipe	O.D.		mm	_		
SPM		70	70	D.C. Annu	lar Vel.:		m/min	D.P Annul			m/min			
Vol.	(m³/min)		2.20	Jet Velocit			m/sec	Hydraulic		-	kW			
				1	•			•		-	-			
		SUR	VEYS				MUD			MUD AI	DDITIVES			
De	pth	Drift	Azimuth	North	East	Time	10:00	19:00	Gel	42				
	.00	1.00		İ		Density	1070	1080	Caustic		Ī			
	.00	1.00	Ì	İ	Ì	Vis.	52	100	Envirofloc		Ī			
	.00	2.25?	Ì	İ	Ì	pН	8.0	8.0	Kelzan		Ī			
						W.L.	13.0		Cello					
						P.V.	13.0		Bicarb					
						Y.P.	8.0		Alcomer					
						Gel S.	7		Drispac R					
						Filter Ck	3.0		Desco					
						Solids %	4.0		Barite					
						Oil	n/a		Lignite					
									Primaseal					
									SAPP					
									Soda Ash					
									Sawdust	48	Day Cost	\$1,752		
									Mud Van		Well Cost	\$9,381		
	I	Fluid Invento	ory				Des	silter	Des	sander	Cent	rifuge		
Daily Oil			Cum. Oil		Underflow									
Daily Wate	r		Cum. Wate		Overflow 1	•								
Daily Gas			Cum. Gas		Flow Rate									
Mud Lost			Cum. Mud		Operating	hours								
C		C! //T			7		T		0-4		D			
Core:		_ Size/Type:		Interval:	Zone:		In: Times:		Out:		Recovery:			
DST:							Times:							
DS1:		_ Zone:		- Intervar:			- Times:							
	1. Rig up/	/Out		=	9. Cut Dri	ill I inc		=	17. Plug l	Rook	-	_		
	2. Drill	Out	-	=	10. Survey		-	=		ze Cement	-	=		
	3. Ream		-	=	11. Wireli		-	-	19. Fishir		-	_		
	4. Core			=	12. Casing		15.00	_	20. Misce	_	6.00	_		
	5. Circ. &	c Cond.		=	13. WOO	y comen	15.00	_	21. Safety		0.50	_		
	6. Trip		1.50	-	14. Nipple	Up BOP	-	-	22. Hand	_		_		
	7. Rig Ser	rvice	0.50	=	15. Test B		-	=		Hand-off Mt	g 0.50	_		
	8. Rig Re		-	=	16. Drillst	em Test	-	=	Total Hou	,	24.00	_		
		-		_				_				_		
						REMARKS	S							
Completed t	the trip out	of hole and bi	it removal af	ter cutting st	raps and rep	airing bit car	riage.							
Removed ro	tary table -	and installed	false table re	equired 5 hor	ırs			-						
		f 508 mm AB												
		hung-up just l									, ,			
water flow from below conductor. Increasesed viscosity and by 14:30 made-up the 3rd joint to pound through cobbles that appeared to have scratched casing. Repaired circulating swedge and notched out false floor as conductor collars were snagging on it as they were worked through 1 hr														
U 1							- CC C				hr			
By 18:30 m	ade-up the	4th joint of co	onductor and	by midnight	had worked	it from abou	t 36 to 42 m	KB - progre	ss getting slo	ower.				
Duor Cast	¢1.0	21 060	То до	000	1 000	Total Cart	¢1 A	(1 0/10	Westh	. Di	10 27	laudu		
Prev Cost	\$1, 0	31,968	Today	- \$25	,080	Total Cost	\$1,00	61,048	Weather		Gel-Chem			
Foremen Hale Yardley Rig Phone							709-649-7106			Mud Type Gel-Chem Taken By: Terry Brooker / Shane Halley				
		IIIIC I	 -					-	Dy					

			Vulc	an Mi	ineral	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	5	_	Date:	04-J	ul-09
Depth:	88.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,	m/hr:	0.00	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs	: Rigging to	run 508 mm	conductor fo	or the second	time				KB elev:	175.30	m.
	ı				I	I	1			KB - GL	6.30	
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR
2RR	660	XH+C	MR1995	88	88			3x14.3+19	150 - 250	2-3,000	Clea	n-out
		1	<u> </u>						l			
		Pump 1	Pump 2	Drilling As	sembly:	660 mm bi	t, 657 mm NI	BS, 1-230 m	m dc, X/O, 2	2-203 mm D	C, X/O, 4-16	5 mm dc
Model		PZ-11	PZ-11		-				Pump Pres	ssure:	5000	kPa
Liner	(mm)	152		BHA Leng			m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla		230/203/16	_	Drill Pipe			_mm	
SPM Vol.	(m³/min)	70	70 2.20	D.C. Annu Jet Velocit			_m/min	D.P Annul			_m/min kW	
V 01.	(m/min)		2.20	Jet velocit	y:		m/sec	Hydraulic	nr:		_ K VV	
		SUR	VEYS				MUD			MUD AI	DDITIVES	
De	pth	Drift	Azimuth	North	East	Time	8:14		Gel	15		
23	.00	1.00				Density	1095		Caustic			
	.00	1.00				Vis.	105		Envirofloc			
83	.00	2.00				pH	8.5		Kelzan	1	ļ	
						W.L. P.V.	8.0 33.0	1	Cello	1		
						Y.P.	19.0		Bicarb Alcomer			
						Gel S.	12 / 16 / 20		Drispac R			
						Filter Ck	2.5		Desco			
						Solids %	6.0		Barite			
						Oil	n/a		Lignite			
									Primaseal			
							cold mud		SAPP			
							in tanks		Soda Ash Sawdust	6	Day Cost	\$1,188
									Mud Van	2	Well Cost	\$9,381
	F	luid Invento	ry				Des	silter	Desander			rifuge
Daily Oil			Cum. Oil		Underflow	Density						
Daily Wate	r		Cum. Wate		Overflow I							
Daily Gas Mud Lost			Cum. Gas		Flow Rate,							
Mud Lost			Cum. Mud		Operating	nours						
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Size/Type: Zone: Zone:		Interval:	-		Times:					
DST:		Zone:		Interval:			Times:					
	1 D: /	0.4		:	0 C (D)		-	=	15 DI D		-	=
	 Rig up/ Drill 	Out	-		9. Cut Dri 10. Survey		0.25	-	17. Plug B 18. Squeez			-
	3. Ream		7.00	:	11. Wirelin		0.23	=	19. Fishing			=
	4. Core				12. Casing	_	4.00	=	20. Miscel	_	7.00	=
	5. Circ. &	Cond.	1.00		13. WOO			- -	21. Safety	Meeting	0.50	- -
	6. Trip		1.00	:	14. Nipple	-		=	22. Handle		2.00	=
	7. Rig Ser		0.75	:	15. Test B			=		and-off Mt		=
	8. Rig Rep	pair		:	16. Drillsto	em Test		=	Total Hour	rs	24.00	=
						REMARK	S					
Continued to	o work and	pound in 508	mm conduct	or to 44 m,	not making a			ke with Terry	and elected	to pull cond	uctor and rea	m hole
•		down 4 joint						-	pull!			
	•	nd from 07:30										
		ire hole secti					rque spikes a	nd minor fin	e sands and g	gravel return	s at shaker	
23:15 No fill on bottom, resurveyed with wireline to confim 2 degree inclination. Mixed a 20 m3 pill to 1210 kg/m3 to spot at 25 mKB on the trip out for conductor to help stabilize that water sand for the 4+ hours it takes before conductor.											nductor	
is in the hole		ZIO KĘ/IIIJ IU	эрогат 2 <i>э</i> н	III ON UIC I	11p Out 101 CC	muucioi to I	cip satumze	mai water sa	101 tile 41	i nours it tak	001010 001	iducioi .
n ~ :		C1 0.40	m 1	A	1.202	m	ahar	00.251	***	5 1	10 27 :	1
Prev Cost	\$1,0	6 <u>1,048</u>	Today	\$47	,303	Total Cost	\$1,10	08,351	Weather: Mud Type		10 - 27,o'cast, Gel-Chem	, it rain
Foremen		Hale Y	ardley		Rig Phone		709-649-710	16	Taken By:		rooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport				
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	: 6		Date:	05-J	ul-09	
Depth:	88.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,	m/hr:	0.00	Rig:	Stoneh	am # 11	
Operation	@ 0800 hr	s: Weld coolir	ng on diverte	r flange, inst	alling rotary	table,				KB elev:	175.30		
			1	_						KB - GL		6.30 m.	
Bit	Size	Type	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR	
		l.		l	L	1	1	II.	l		l.		
		Pump 1		Drilling As	sembly:								
Model		PZ-11	PZ-11					a.	Pump Pre			kPa	
Liner Stroke	(mm)	152 279	165 279	BHA Leng Drill Colla		230/203/16	_m 5mm	Strap: Drill Pipe (<u> </u>	Board:	mm	-	
SPM	(mm)	70	70	D.C. Annu		230/203/10.	m/min	D.P Annul			m/min		
Vol.	(m³/min)	70	2.20	Jet Velocit			m/sec	Hydraulic			kW		
		· ·		1				5		-	= '''		
		SUR	VEYS				MUD	_		MUD AI	DDITIVES		
	pth	Drift	Azimuth	North	East	Time	8:26	17:30	Gel	5			
	3.00	1.00				Density	1130	1110	Caustic	1			
	0.00 3.00	1.00 2.00				Vis. pH	60 8.5	46 8.5	Envirofloc	1			
0.3		2.00				рн W.L.	10.0	0.3	Kelzan Cello	1	1		
						P.V.	21.0		Bicarb		t		
						Y.P.	10.0		Alcomer				
						Gel S.	3/5/7		Drispac R				
						Filter Ck	2.0		Desco				
						Solids %	8.0		Barite				
						Oil	n/a	1	Lignite				
							run csg	prior to cmt					
									SAPP Soda Ash	1			
		+							Sawdust	1	Day Cost	\$1,530	
									Mud Van	1	Well Cost	\$10,911	
		Fluid Invento	ry				Des	silter	Des	ander	Cent	rifuge	
Daily Oil			Cum. Oil		Underflow	Density							
Daily Wate	er		Cum. Wate		Overflow 1								
Daily Gas			Cum. Gas		Flow Rate								
Mud Lost			Cum. Mud	l .	Operating	nours							
Core:		Size/Type:			Zone:		In:		Out:		Recovery:		
DST:		Zone:		Interval:			Times:		_		_11000,013,1		
DST:		Zone:		Interval:			Times:						
				_				•					
				=				_				<u> </u>	
	1. Rig up	/Out		=	9. Cut Dri			_	17. Plug I			=	
	2. Drill			=	10. Survey		-	_	-	ze Cement	-	=	
	3. Ream4. Core			=	11. Wireli 12. Casing	_	8.50	=	19. Fishin 20. Misce	-	2.00	=	
	5. Circ. &	& Cond.	2.75	=	13. WOC	y cement	4.00	_	21. Safety		1.00	=	
	6. Trip		1.25	=	14. Nipple	Up BOP	1.00	_	22. Handl		2.00	-	
	7. Rig Se	rvice	0.75	-	15. Test B	-		_	23 Crew I	Iand-off Mt		-	
	8. Rig Re	epair		=	16. Drillst	em Test		_	Total Hou	rs	24.00	= =	
						DELL'S DEL	~						
Completed	mixing bor	ite pill, tripped	l out of holo	spotted 20	m3 of 1120 1	REMARKS		to help hold !	nack notenti	al water zono			
		rotary table ar			115 01 1120 F	rg/III3 barne	pm at 25 m	to help hold t	back potenti	ai water zone			
		etco X-56, 19			8.56 m to 88	mKB - circi	ulated last 4	joints down a	ınd landed b	y 16:15. Circ	ulated hole a	nd	
		water and 21.5											
of cement in	nside the co	nductor. CIP	@ 18:20 witl	h 10 m3 of n	nildly to wild	lly contamin							
		ating swedge											
Cut conduct	tor and wel	ded on flange	to install 20'	diverter sys	tem								
<u> </u>													
Prev Cost	\$1.	108,351	Today	\$79	,878	Total Cost	\$1.13	88,229	Weather	: Plus	8 - 17,o'cast,	lt rain	
	¥-9·	,	~ .j	_	,	0000	Ψ2,1	-,	Mud Type		Gel-Chem		
Foremen		Hale Y	ardley	_	Rig Phone		709-649-710)6	Taken By		rooker / Sha	ne Halley	

			Vulc	an M	ineral	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:		-	Date:	06-J	ul-09
Depth:	Name of the Control o			0.0	Drilling:	0.00	hrs ROP,		0.00	Rig:		am # 11
	@ 0800 hrs: Making-up surface BHA				.					KB elev:	175.30	
										KB - GL	6.30	
Bit	Size	Make IADO	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X	ND0530	88				11.9 / 2-15.9 / 19)			
		Pump 1		Drilling As	ssembly:	Bit, S.Sub,	2-230 DC, S	tab, 1-230 pc			3 DC, 12-16	
Model		PZ-11	PZ-11						Pump Pre			kPa
Liner	(mm)	152		BHA Leng	•	220/202/16	_m	Strap:	- D	_Board:		-
Stroke	(mm)	279		Drill Colla		230/203/16	_	Drill Pipe (mm	
SPM Vol.	(m³/min)			D.C. Annu Jet Velocit			_m/min m/sec	D.P Annula			m/min kW	
V 01.	(m/min)			jet velocit	.y.		III/Sec	Hydraulic l	nr;		KW	
		SHE	VEYS				MUD			MIDAD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	8:00	I	Gel	MODAL		
	3.00	1.00	112miutii	110111	Lust	Density	1080		Caustic			
	0.00	1.00			1	Vis.	48		Envirofloc		1	
	3.00	2.00				pН	8.5		Kelzan		i e	
						W.L.	9.5		Cello			
						P.V.	21.0		Bicarb			
						Y.P.	5.0		Alcomer			
						Gel S.	2/3/4		Drispac R			
						Filter Ck	2.0		Desco	2		
						Solids %	5.0		Barite	162		
						Oil	n/a		Lignite			
							Mud in		Primaseal			
							Tanks		SAPP			
									Soda Ash		D C 1	
									Sawdust	1	Day Cost Well Cost	\$7,290
		Fluid Invento	P***			<u> </u>	Dog	silter	Mud Van	ander		\$18,418 rifuge
Daily Oil		Fluid Invento	Cum. Oil	1	Underflow	Doneity	Des	SHICH	Des	anuci		50.0
Daily Wate	ar .		Cum. Wate		Overflow 1							00+
Daily Gas			Cum. Gas		Flow Rate							.4
Mud Lost			Cum. Mud		Operating	-						0.0
		•	!				1					
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			Times:		-			
DST:		Zone:		Interval:			Times:					
				=				=				=
	1. Rig up	/Out		-	9. Cut Dri			_	17. Plug B			_
	2. Drill			=	10. Survey	•		=	18. Squeez			_
	3. Ream			-	11. Wireli	_	-	_	19. Fishin	-		-
	4. Core 5. Circ. 8	R. Cond		=	12. Casing 13. WOC	g/Cement		_	20. Miscel		0.75	-
	6. Trip	x Cona.		-	13. WOC 14. Nipple	IIn ROD	21.75	_	21. Safety 22. Handl	-	0.75	-
	7. Rig Se	rvica	0.75	=	15. Test B	-	21.75	=		e 1001s land-off Mtg	0.75	=
	8. Rig Re		0.75	-	16. Drillst			_	Total Hour	-	24.00	-
	<u>.</u>	r		=				=				=
						REMARK	S					
Completed	welding an	d cooling dive	rter flange, ir	nstalled rota	ry table, inst			diverter.				
		r system with										
Installed flo	ow "T" & flo	ow line, hamm	ered-up dive	erter connect	tions, installe	ed accumulat	or lines to di	verter and HO	CR, installed	l 6" diverter l	ine	_
Pray Cost	¢1	188 220	Today	\$71	5 927	Total Cost	¢1 24	64 156	Weather	Dluc	8 - 17 o'cast	clear
Prev Cost	\$1,	188,229	Today	\$75	5,927	Total Cost	\$1,20	64,156	Weather:		8 - 17,o'cast, Gel-Chem	, clear
Prev Cost Foremen	\$1,		Today	\$75	5,927 Rig Phone		\$1,20 709-649-710	·	Weather: Mud Type Taken By		8 - 17,o'cast, Gel-Chem	

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	07-J	ul-09
Depth:				43.0	Drilling:	5.50	hrs ROP,		7.80	Rig:	Stoneha	am # 11
Operation	@ 0800 hr	s: Drill 455 m	m hole to 14	7 m with 4,0	000 dan and	fanning hole	to reduce an	gle build		KB elev:	175.30	m.
							_			KB - GL	6.30	
Bit	Size	Make IADO		In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X	ND0530	88		43	5.50	11.9 / 2-15.9 / 19	150+	6 - 10,000		
	<u> </u>									1		
		Pump 1	Pump 2	Drilling As	sembly:	Bit, S.Sub,	2-230 DC, S	tab, 1-230 pc	ony, 1-203 I	OC, Jars, 1-20	3 DC, 12-16	5 DC, 8 HW
Model		PZ-11	PZ-11	J			•		Pump Pre			kPa
Liner	(mm)	152	165	BHA Leng		116.66		Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		230/203/165	_	Drill Pipe			mm	
SPM	. 3	90	90= 2.40	D.C. Annu			_m/min	D.P Annul			m/min	
Vol.	(m³/min)		2.40	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	8:00		Gel			
23	.00	1.00				Density	1065		Caustic			
	.00	1.00				Vis.	76		Envirofloc			
	5.00	2.00				pН	10.5		Kelzan			
	5.00 0.00	2.00 3.00	-			W.L. P.V.	12.0 20.0	-	Cello	1		
130	J.00	3.00				Y.P.	8.0		Bicarb Alcomer			
						Gel S.	18/43/55		Drispac R			
						Filter Ck	2.5		Desco			
						Solids %	4.0		Barite			
						Oil	n/a		Lignite			
							cement		Primaseal			
		+					from drill ou		SAPP			
							Tioni arm ou	lt I	Soda Ash Sawdust		Day Cost	\$75
									Mud Van	1	Well Cost	\$18,418
		Fluid Invento	ry	L			Des	silter	ļ.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ander		rifuge
Daily Oil			Cum. Oil		Underflow	Density					106	50.0
Daily Wate	er		Cum. Wate		Overflow I							00+
Daily Gas			Cum. Gas		Flow Rate,							.4
Mud Lost			Cum. Mud		Operating	nours					12	2.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:	-		Times:		-		•	
DST:		Size/Type: Zone: Zone:		Interval:			Times:					
	1 Dia	/O4		-	0 C-4 D-	11 T :		-	17 Dha I) a al-		-
	1. Rig up. 2. Drill	Out	6.50	-	9. Cut Dri 10. Survey		0.25	=	17. Plug I	ze Cement	-	
	3. Ream		- 0.20	=	11. Wireli			=	19. Fishin			-
	4. Core			=	12. Casing	-	-	=	20. Misce	-		=
	5. Circ. 8	k Cond.	0.50	-	13. WOC	1.25			21. Safety Meeting 1.25			
	6. Trip			=	14. Nipple		6.25	=	22. Handl		5.50	
	7. Rig Sei		0.75	=	15. Test B		0.75	=.		Iand-off Mtg	·	.
	8. Rig Re	pair		=	16. BOP I	Prill	0.50	=	Total Hou	rs	24.00	-
						REMARKS	S					
Completed of	diverter ins	talation and di	iverter line, f	unctioned ar	nnular (30 se			ec to close)				
Made-up BI												
		er / casing pre									sed Terry tha	ıt
		ts were met. V		-			w "I" extensi	on to allow	tor higher fl	ow rate.		
		ent from 79 mo est to 500 kPa										
		om 91 m to 10		z.u 10 40t	- KI I I I I I I	iiiiiutes						
Survey.Held			- ***									
•		m to 131 m.										
Prev Cost	\$1,2	264,156	Today	\$11	3,256	Total Cost	\$1,37	77,412	Weather		lus 8 - 14,sun	iny
Foremen	11	lale Yardley	& Rill Will:	- nme	Rig Phone		709-649-710	6	Mud Type Taken By		Gel-Chem rooker / Sha	ne Hallow
r of chich	13	ant raruity (w Dill Willia	11113	Aug i none		/ Uノ-Uサフ*/1U	v	1 ancii Dy	. ICII y Di	OUNCI / BILA	не папсу

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ons #1		Day:	9		Date:	08-J	ul-09
				63.0				m/hr:	3.50	Rig:	Stoneh	am # 11
Operation	@ 0800 hr	s: Drill 455 m	m hole @204	4 m with 2 d	lan and fanni	ng hole to re	duce angle b	uild		KB elev:	175.30	m.
					_					KB - GL	6.30	
Bit	Size	Make IADO		In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X	ND0530	88		106	24.75	11.9 / 2-15.9 / 19	180+	2.5 da		
		Pump 1	Pump 2	Drilling As	ssembly:	Bit, S.Sub.	2-230 DC. S	tab. 1-230 pc	onv. 1-203 D	C. Jars. 1-20	03 DC, 12-16	5 DC. 8 HW
Model		PZ-11	PZ-11					,	Pump Pres			kPa
Liner	(mm)	152	165	BHA Leng	th:	198.51	m	Strap:		Board:		· _
Stroke	(mm)	279	279	Drill Colla		230/203/165	_	Drill Pipe			mm	
SPM		85	80	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m³/min)		2.58	Jet Velocit	y:		m/sec	Hydraulic	HP:		_kW	
		CUD	VEYS				MUD			MIIDAI	DDITIVES	
De	pth	Drift	Azimuth	North	East	Time	8:00		Gel	51	DITIVES	
	5.00	1.00	Azmuum	1101111	Last	Density	1070		Caustic	31		
	0.00	1.00				Vis.	54		Envirofloc			
83	3.00	2.00				pН	10.4		Kelzan			
	5.00	2.00				W.L.	12.9		Cello			
	0.00	3.00				P.V.	15.0	1	Bicarb	3		
	7.00	3.00				Y.P.	4.0	-	Alcomer	-		
	6.00 8.00	4.00 3.75				Gel S. Filter Ck	3.0		Drispac R	2		
190	5.00	3.73				Solids %	4.0		Desco Barite			
						Oil	n/a		Lignite			
									Primaseal			
									Sulfamic acid	7		
									Soda Ash			
									Sawdust	45	Day Cost	\$1,148
							D	•1.	Mud Van	1	Well Cost	\$18,831
D- 7 O7		Fluid Invento			TI. 1(1	D	Des	silter	Desa	ander		rifuge 10.0
Daily Oil Daily Wate) P	+	Cum. Oil Cum. Wate		Underflow Overflow I)60
Daily Gas	.1		Cum. Gas		Flow Rate.							0.0
Mud Lost			Cum. Mud		Operating							2.0
Core:		Size/Type: Zone: Zone:			Zone:		In:		Out:		Recovery:	
DST:		_ Zone:		Interval:			Times:					
DST:		Zone:		Interval:			Times:					
	1. Rig up	/Out			9. Cut Dri	ll Line		_	17. Plug B	ack		-
	2. Drill	, 0 40	18.25	-	10. Survey		1.25	=	18. Squeez			-
	3. Ream				11. Wireli			_	19. Fishing			•
	4. Core				12. Casing	/Cement		= =	20. Miscel	laneous		=
	5. Circ. &	& Cond.		=	13. WOC		-	=	21. Safety		0.50	=
	6. Trip		0.75		14. Nipple			-	22. Handle			-
	7. Rig Se		0.75	-	15. Test B 16. BOP D			_	23 Crew H Total Hour	and-off Mt	·	-
	8. Rig Re	epair	2.50	=	10. BOP L)FIII		=	Total Hour	rs	24.00	-
						REMARK	S					
04:30 Conti	rol Drilled	455 mm hole f	rom 131 m t	o147 m. W0	OB 4-6 da		-					
		m and repaire		e on mud pu	mps							
		control drilled			-	-	-		·	-	·	-
		and rig servic		101 ===	20.464							
		455 mm hole f	rom 160 m t	o184 m. W0)В 4-6 da							
20:30 Wire		455 mm hole f	rom 187 m t	0194 m W/	DB 2-3 da							
24.00 COM	or Drilled 4	+55 mm noie i	10HI 10/ HI U	0174 III. W	שט ב-ט ua							
Prev Cost	\$1,3	377,412	Today	\$28	3,899	Total Cost	\$1,40	06,311	Weather:	P	lus 8 - 14,sur	iny
L				.					Mud Type		Gel-Chem	
Foremen	H	lale Yardley	& Bill Willia	ıms	Rig Phone		709-649-710	6	Taken By:	Terry B	rooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinsons #1			Day:	10		Date:	09-Jul-09	
Depth:	Depth: 242.0 mKB		Progress:		Drilling:				2.60	Rig:	Stoneha	am # 11
Operation @ 0800 hrs: Pull out of I			ole to run di	rectional too	ols					KB elev:	175.30	
Bit	Size	Maka IADO	Carial No.	T _m	Out	Matuas	Hours	Norrles	DDM	KB - GL Weight	6.30	m. BGOR
3	444	Make IADO Reed - 415X		In 88	Out	Metres 106	24.75	Nozzles 11.9 / 2-15.9 / 19	RPM 180+	2.5 da	TODL	DGUK
	777	Recu - 41371	1100330	- 00		100	24.73	11.9 / 2-13.9 / 13	1001	2.5 da		
		Pump 1	Pump 2	Drilling As	sembly:	Bit, S.Sub,	2-230 DC, S	tab, 1-230 pc			3 DC, 12-16	
Model		PZ-11 152	PZ-11	BHA Leng	th.	198.51		Ctuons	Pump Pres	sure: Board:	8000	kPa
Liner Stroke	(mm)	279	165 279	Drill Colla		230/203/165	m	Strap: Drill Pipe (0 D	Doaru:	mm	•
SPM	()	85	80	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m ³ /min)		2.58	Jet Velocity	y:		m/sec	Hydraulic	HP:		kW	
D.	41.	SUR		N41.	T4	TP:	MUD		a 1		DITIVES	
	e pth 3.00	Drift 1.00	Azimuth	North	East	Time Density	8:00 1080		Gel Caustic	51		
	0.00	1.00				Vis.	61		Envirofloc			
83	3.00	2.00				pН	8.6		Kelzan			
	5.00	2.00				W.L.	18.0		Cello			
	0.00	3.00				P.V.	22.0	1	Bicarb	3		
	7.00 6.00	3.00 4.00				Y.P. Gel S.	7.0 2.5/61/70		Alcomer			
	8.00	3.75				Filter Ck	4.0		Drispac R Desco	2		
	2.00	2.50				Solids %	5.0		Barite			
224	4.00	3.00				Oil	n/a		Lignite			
									Primaseal			
									Sulfamic acid	7		
									Soda Ash Sawdust	45	Day Cost	\$3,231
									Mud Van	1	Well Cost	\$22,062
	F	luid Invento	ry			_	Des	silter		nder		rifuge
Daily Oil			Cum. Oil		Underflow	Density					171	0.0
Daily Wate	er		Cum. Wate		Overflow I							160
Daily Gas			Cum. Gas		Flow Rate,							0.0
Mud Lost			Cum. Mud		Operating	nours					1.2	2.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Size/Type: Zone: Zone:		Interval:			Times:		_		-	
DST:		Zone:		Interval:			Times:					
	1. Rig up/	Out			9. Cut Dri	ll Line		_	17. Plug B	ack		
	2. Drill		18.75		10. Survey	7	1.00	- -	18. Squeez	e Cement		
	3. Ream		2.50		11. Wirelin	_		_	19. Fishing	_		-
	4. Core 5. Circ. &	Cond			12. Casing 13. WOC	/Cement		-	20. Miscell		0.50	
	6. Trip	Conu.			13. WOC 14. Nipple	Un BOP		=	21. Safety 22. Handle	_	0.50	
	7. Rig Ser	vice	0.50		15. Test B	-		-		and-off Mtg	0.25	
	8. Rig Rep	pair	0.50		16. BOP D	Prill		-	Total Hour	's	24.00	
						DEMARK	,					
04:45 Contr	rol Drilled 4	55 mm hole f	rom 194 m t	o201 m WC		REMARKS	<u> </u>					
		and rig servic		0201 III. 11 C	D 1 0 da							
20:30 Contr	rol Drilled 4	55 mm hole f	rom 201 m t	o205 m. WC	OB 4-6 da							
		kelly gooser										
		55 mm hole f	rom 205 m t	o215 m. WC	OB 2-3 da							
14:30 Wire		nole from 215	m to226 m	WOB 7-8 d	a							
		on computer	10220 111.	., J. /-0 U	••							
19:00 Wire												
		n hole from 2				-	-	-	-	-	-	
24:00 Work	tight hole (@ 225-226 m.	Backream f	ree and clear	n up.							
Prev Cost	\$1.4	06,311	Today	\$28	,411	Total Cost	\$1.43	34,722	Weather:	Ρl	lus 8 - 14,sun	nv
5050					,				Mud Type		Gel-Chem	•
Foremen	H	ale Yardley a	& Bill Willia	ıms	Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Halley

			Vulc	an M	ineral	s Dail	y Drill	ing Ro	eport			
Well:		Vulc	an Investca				Day		-	Date:	10-J	Tul-09
Depth:	255.0	mKB	Progress:	13.0	Drilling:	9.00	hrs ROP,		1.30	Rig:	Stoneh	am # 11
Operation	@ 0800 hr	s: Work on mi	ud pumps							KB elev:	175.30	m.
										KB - GL	6.30	
Bit	Size	Make IAD(In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 1		2.5 da		
4	444	Reed - 515X	DT4829	253					120	12 da		
		Dumn 1	Pump 2	Drilling As	oomble:	Dir C Cub	2 220 DC S	tob 1 220 p	ony 1 202 D	C Iora 1 2	03 DC, 12-16	5 DC 9 H
Model		Pump 1 PZ-11	PZ-11	Dinning As	ssembly.	Dit, S.Suo,	2-230 DC, 3	11a0, 1-230 p	Pump Pres		8000	kPa
Liner	(mm)	152	165	BHA Leng	th•	198.51	m	Strap:	_ r ump r res	Board:		_KI a
Stroke	(mm)	279	279	Drill Colla		230/203/16	_	Drill Pipe	O.D.	_ Dour u.	mm	_
SPM	` '	85	80	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m³/min)		2.58	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
				_								
		SUR	VEYS				MUD			MUD Al	DDITIVES	
	pth	Drift	Azimuth	North	East	Time	8:00		Gel	24		
	.00	1.00			ļ	Density	1125	ļ	Caustic		1	_
	0.00	1.00				Vis.	61		Envirofloc		1	1
	2.26	2.00	00.20			pH	8.6		Kelzan		1	1
	3.36 1.01	2.62	88.30		1	W.L. P.V.	14.9 15.0	1	Cello	-	1	1
	3.44	3.06	88.30 88.10			Y.P.	7.0		Bicarb			
	5.36	3.03	88.88			Gel S.	2.5/49/88		Alcomer Drispac R			1
	2.92	3.51	83.61			Filter Ck	3.0		Desco Desco	1		-
	4.43	3.70	80.17			Solids %	7.5		Barite	1		
	4.23	3.38	77.87			Oil	n/a		Lignite			1
						Temp	46.8		Primaseal			
									Sulfamic acid	2		
									Soda Ash			
									Sawdust	66	Day Cost	\$1,655
									Mud Van	1	Well Cost	\$23,717
		Fluid Invento		1			Des	silter	Desa	ander		rifuge
Daily Oil			Cum. Oil		Underflow							10.0
Daily Wate Daily Gas	er		Cum. Wate		Overflow 1							060
Mud Lost			Cum. Gas Cum. Mud		Flow Rate Operating							2.0
iviuu Bost		<u> </u>	Cum intu	1	Operating	nours			1		17	2.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:	_		Times:		_		- '	
DST:		Zone:		Interval:			Times:					
			•									
				_				_			_	_
	1. Rig up	/Out		_	9. Cut Dri			_	17. Plug B			_
	2. Drill		9.25	_	10. Surve	•	0.25	_	18. Squeez			_
	3. Ream		1.00	=	11. Wireli	-		=	19. Fishin	-	2.50	_
	4. Core 5. Circ. &	R Cond	0.25	=	12. Casing 13. WOC	g/Cement		_	20. Miscel 21. Safety		2.50 0.75	_
	6. Trip	conu.	9.50	-	14. Nipple	In ROP		_	22. Handle	_	0.75	_
	7. Rig Se	rvice	0.50	=		OP & FIT		_		and-off Mt	σ	-
	8. Rig Re			_	16. BOP I			_	Total Hour		24.00	_
	Ü	-		_				_				_
						REMARK	S					
01:00 Work												
		and rig servic										
		455 mm hole f	rom 242 m t	o253 m. WC)B 4-6 da							
08:15 Cond		DIIA										
14:00 Trip o		BHA nake up direct	ional tools D	IH to 00								
		nake up direct s,RIH survey e		.11 to 90 m.								
		m hole from 2		m. WOR 15	da							
5 DII	III			, 02 13								
Prev Cost	\$2,4	458,834	Today	\$69),114	Total Cost	\$2,5	27,948	Weather:	F	lus 8 - 23,sur	nny
	,		·	_					Mud Type		Gel-Chem	•
Foremen	H	Iale Yardley	& Bill Willia	ams	Rig Phone	<u>: </u>	709-649-710)6	Taken By:		rooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport					
Well:		Vulc	an Investca	an Robinso	ons #1		Day:	12		Date:	11-J	ul-09		
Depth:	357.0	mKB	Progress:	102.0	Drilling:	18.00	hrs ROP,		5.60	Rig:	Stoneh	am # 11		
Operation	@ 0800 hrs	: Drilling ahe	ad @ 382 m		_					KB elev:	175.30	m.		
										KB - GL	6.30			
Bit	Size	Make IADC		In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR		
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 19		2.5 da				
4	444	Reed - 515X	DT4829	253					120	12 da				
		Pump 1	Pump 2	Drilling As	sembly.	Rit Motor	Float sub No	n Mag XO,N	IM MWD C	allar NM XC	9 5" NM D	C XO 1-8		
Model		PZ-11	PZ-11	Drining As	scinory.	Dit, Motor,	1 1041 340,110	ii wag AO,i	Pump Pres		15000	kPa		
Liner	(mm)	152	165	BHA Leng	th:	337.48	m	Strap:	F	Board:		"		
Stroke	(mm)	279	279	Drill Colla		230/203/16	_	Drill Pipe (O.D.	-	mm	-		
SPM		85	80	D.C. Annu	lar Vel.:		m/min	D.P Annul			m/min			
Vol.	(m ³ /min)		2.58	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW			
		SUR					MUD	T			DITIVES	T		
	pth 00	Drift	Azimuth	North	East	Time	8:00		Gel	34				
	.00	1.00				Density Vis.	1115 53		Caustic Envirofloc					
	.00	2.00				pH	8.6		Envirofioc Kelzan	2				
	3.36	2.62	88.30			W.L.	11.8		Cello	1				
	1.01	3.06	88.30			P.V.	15.0		Bicarb	-				
	3.44	3.03	88.10			Y.P.	5.0		Alcomer					
185	5.36	3.81	88.88			Gel S.	1.2/10/20		Drispac R					
	2.92	3.51	83.61			Filter Ck	2.0		Desco	1				
	4.43	3.70	80.17			Solids %	7.0		Barite					
	4.23	3.38	77.87			Oil	n/a		Lignite					
	3.64	3.39	73.29			Temp 52.8			Primaseal	2				
	2.12 5.43	3.34	69.58 67.17			1			Sulfamic acid	2				
	3.43 3.96	3.31	69.41						Soda Ash Sawdust	30	Day Cost	\$2,391		
	7.43	3.45	66.14						Mud Van	1	Well Cost	\$26,109		
331		Fluid Invento					Des	silter		ander		rifuge		
Daily Oil	_		Cum. Oil		Underflow	Density						10.0		
Daily Wate	er		Cum. Wate		Overflow I	•					10	060		
Daily Gas			Cum. Gas		Flow Rate,	, l/min					50	0.0		
Mud Lost			Cum. Mud		Operating	hours					12	2.0		
					_		_				_			
Core:		_ Size/Type:		7. 1	Zone:		_ In:		Out:		Recovery:			
DST: DST:		_ Zone:		Interval:			Times: Times:							
DS1:		_ Zone:		intervar:			- Times:							
	1. Rig up/	'Out		=	9. Cut Dri	ll Line		- -	17. Plug B	ack		=		
	2. Drill		18.00	=	10. Survey		0.25	=	18. Squeez			=		
	3. Ream		0.50	=	11. Wireli			=	19. Fishing	-		-		
	4. Core	C 1	0.25	_	12. Casing	/Cement		_		on mud pun		-		
	5. Circ. & 6. Trip	cona.	0.25	_	13. WOC	IIn DOD		_	21. Safety 22. Handle		0.50	-		
	7. Rig Ser	wice	0.75	=	14. Nipple 15. Test B			=		and-off Mtg		=		
	8. Rig Re		0.75	-	16. BOP D			=	Total Hour		24.00	-		
	or 10g 10g	P		-	10. 201 2			=	1000111001			=		
						REMARK	S							
		n hole from 2	64 m to290 i	m. WOB 15	da									
	0	in mud pump												
17:30 Drille														
		m @ 343 m.	346 m, and	350 m.										
22:00 Drille		ı. ıd in # 2 pumţ	and week -	ngl saams										
		n hole from 3			da									
			- 5 III (0337 I											
Prev Cost	\$2,5	27,948	Today	\$34	1,332	Total Cost	\$2,50	62,280	Weather:		lus 8 - 23,sur	nny		
Foremen	н	ale Yardley &	Mud Type Gel-Chem											

			Vulc	an M	ineral	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ons #1		Day:	13		Date:	12-J	ul-09
Depth:	468.0	mKB	Progress:	111.0	Drilling:	18.00	hrs ROP,		6.30	Rig:		am # 11
-	@ 0800 hrs	s: Drilling ahe			· ·		,			KB elev:	175.30	m.
_										KB - GL	6.30	m.
Bit	Size	Make IADO		In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 19		2.5 da		
4	444	Reed - 515X	DT4829	253		215	32.50		95	23 da		
		Pump 1	Pump 2	Drilling As	combly	Dit Motor	Float sub No	n Mag VO N	IM MWD C	ollar,NM XC) 0.5" NM D	C VO 1 8
Model		PZ-11	PZ-11	Dilling As	ssciiibiy.	Dit, Motor,	110at sub,110	ni iviag AO,i	Pump Pre		17000	kPa
Liner	(mm)	152	165	BHA Leng	th:	337.48	m	Strap:	1 ump 110	Board:	17000	- *** **
Stroke	(mm)	279	279	Drill Colla		230/203/16		Drill Pipe (O.D.		mm	•
SPM		95	95	D.C. Annu	lar Vel.:		m/min	D.P Annul	ar Vel.:		m/min	
Vol.	(m³/min)		3.01	Jet Velocit	y :		m/sec	Hydraulic	HP:		kW	
			VEYS	1			MUD				DITIVES	
	pth	Drift	Azimuth	North	East	Time	8:00	1	Gel	32	1	<u> </u>
	3.00	1.00				Density	1125		Caustic	1	1	
	0.00 3.00	1.00 2.00			1	Vis. pH	55 8.6	1	Envirofloc Kelzan	3	 	-
	3.36	2.62	88.30			рн W.L.	8.6		Kelzan Cello	3	1	
	4.29	3.27	64.19			P.V.	18.0		Bicarb	†	1	
	7.43	3.04	62.95			Y.P.	9.0		Alcomer			
391	1.66	2.10	62.13			Gel S.	3.5/12/18		Drispac R	2		
405	5.24	1.93	61.19			Filter Ck	1.5		Desco			
419	9.00	2.30	56.57			Solids %	7.5		Barite			
	2.77	2.75	55.30			Oil	n/a		Lignite			
	6.38	3.30	55.66			Temp 58.5			Primaseal			
	460.67 3.73 54.10							Sulfamic acid	l			
47/4	4.04	4.25	58.18						Soda Ash		D C 4	
									Sawdust Mud Van	1	Day Cost Well Cost	\$2,771 \$29,180
	T	Fluid Invento	rv				Dec	silter		ander	1	rifuge
Daily Oil	-	luiu invento	Cum. Oil	1	Underflow	Density	DC	SHICE	Des	ander		10.0
Daily Wate	er		Cum. Wate		Overflow l							060
Daily Gas			Cum. Gas		Flow Rate	•					50	0.0
Mud Lost			Cum. Mud		Operating	hours					12	2.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		_ Zone:		Interval:								
DST:		_ Zone:		Interval:			Times:					
	1. Rig up/	/Out		=	9. Cut Dri	ll Line		=	17. Plug H	Back		=
	2. Drill		17.50	=	10. Survey	7	1.75	=	_	ze Cement		=
	3. Ream			_	11. Wireli			_	19. Fishin	g		_
	4. Core			_	12. Casing	/Cement		_		on mud pun	3.50	_
	5. Circ. &	c Cond.		=	13. WOC			=	21. Safety		0.50	=
	6. Trip			=	14. Nipple	-		=	22. Handl			-
	7. Rig Sei		0.75	_	15. Test B			_		Iand-off Mtg		-
	8. Rig Re	pair		_	16. BOP 1	riii		_	Total Hou	rs	24.00	-
						REMARK	S					
03:30 C Dri	illed 455 mi	m hole from 3	57 m to375	m. WOB 15-	-22 da	REMINICI	9					
		/ head in mud										
05:45 Drille	ed to 380 m	1.										
		ads in mud pu	ımp									
	ed to 408 m											
		ad & seat in #				WOD 15 1	26.1.					
24:00 Drill	ed 455 mm	hole and accu	imulate suve	ys trom 408	m to 468 m.	WOB 15 - 2	26 da					
Prev Cost	\$2.5	666,083	Today	\$37	7,545	Total Cost	\$2.60	03,628	Weather	• D1	us 12 - 23,clo	oud
2101 0031	Φ290	0,000	Louay	_ φ31	,	Total Cost	φ2,00	,o#0	Mud Type		Gel-Chem	, 44
Foremen											ne Halley	

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	13-J	ul-09
Depth:	559.0	mKB	Progress:	91.0	Drilling:	18.00	hrs ROP,		4.80	Rig:		am # 11
Operation	@ 0800 hrs	s: Pull out of h	nole to dial u	p motor to 1	.5 deg.					KB elev:	175.30	m.
										KB - GL	6.30	
Bit	Size	Make IADO		In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 19		2.5 da		
4	444	Reed - 515X	DT4829	253		215	32.50		95	23 da		
		Pump 1	Pump 2	Drilling As	combly:	Dit Motor	Float sub No	n Mag VO N	IM MWD C	ollar,NM XC) 0.5" NM D	C VO 1 8
Model		PZ-11	PZ-11	Dining As	scindly.	Dit, MOIOI,	110at Sub,1NO	ni iviag AO,i	Pump Pre		17000	kPa
Liner	(mm)	152	165	BHA Leng	th:	337.48	m	Strap:	_r ump r re	Board:	17000	. KI a
Stroke	(mm)	279	279	Drill Colla		230/203/16	_	Drill Pipe	O.D.		mm	•
SPM		95	95	D.C. Annu	lar Vel.:	-	m/min	D.P Annul			m/min	
Vol.	(m³/min)		3.01	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
				_							_	
		SUR	VEYS				MUD			MUD AI	DITIVES	
	pth	Drift	Azimuth	North	East	Time	8:00		Gel	32		
	5.00	1.00				Density	1125	ļ	Caustic	1	.	ļ
	0.00	1.00				Vis.	55		Envirofloc			
	3.00	2.00	00.20			рН	8.6		Kelzan	3	1	
	3.36	2.62	88.30			W.L.	8.0	-	Cello	1	1	
	4.29 7.43	3.27 3.04	64.19 62.95			P.V. Y.P.	18.0 9.0		Bicarb Alcomer	+	1	
	1.66	2.10	62.13			Gel S.	3.5/12/18		Drispac R	2		
	5.24	1.93	61.19			Filter Ck	1.5		Desco	2		
	9.00	2.30	56.57			Solids %	7.5		Barite			
432	2.77	2.75	55.30			Oil	n/a		Lignite			
	7.33	4.53	61.47			Temp	67.1		Primaseal			
500	0.97	4.71	60.51						Sulfamic acid	l		
514	4.76	5.20	65.43						Soda Ash			
	9.05	5.51	67.47						Sawdust		Day Cost	\$2,771
542	2.90	5.95	65.37						Mud Van	1	Well Cost	\$29,180
	I	Fluid Invento					Des	silter	Des	ander		rifuge
Daily Oil			Cum. Oil		Underflow							10.0
Daily Wate	er	-	Cum. Wate		Overflow 1	•)60
Daily Gas Mud Lost		_	Cum. Gas Cum. Mud		Flow Rate, Operating						1	2.0
Muu Lost			Cuiii. Muu	•	Operating	Hours					1.	2.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:		•	Times:				_1000,017.	
DST:		Zone:		Interval:			Times:					
		_		•			_					
				_				_				
	1. Rig up/	/Out		_	9. Cut Dri	ll Line		_	17. Plug I	Back		_
	2. Drill		18.75	_	10. Survey		1.75	_	-	ze Cement		=
	3. Ream			=	11. Wireli	-		=	19. Fishin	-		=
	4. Core	. C 1		-	12. Casing	/Cement	-	_		on mud pun		-
	5. Circ. &	cond.		-	13. WOC14. Nipple	IIn DOD		_	21. Safety		0.50	=
	6. Trip7. Rig Ser	rvica	0.75	=	15. Test B	-		=	22. Handl	e 100is Iand-off Mtg		=
	8. Rig Re		0.73	-	16. BOP I			_	Total Hou		24.00	-
	or rug rec	Pull		-	10. DOI 1	71111		=	100011100	1.5	21100	=
						REMARK	S					
11:00 Drill	ed 455 mm	hole from 46	8 m to 527 m	n. WOB 26 d	la							
		/ head in muc	l pump									-
	ed to 527 m											•
		& valve in #	1 mud pump									
	ed to 529 m											
		ve & seat in #		va from 500	m to FFO	WOD 22	26 do					
24:00 Dfill	eu 455 mm	hole and accu	muate suve	ys from 529	111 to 359 m.	WOB 22 - 2	zo da					
Prev Cost	\$2.6	603,628	Today	\$16	5,481	Total Cost	\$2.60	50,109	Weather		Plus 21,clou	d
TTC COSt	φ24,0	05,020	1 ouay	φ+υ	,, 101	Total Cost	φ4,0.	,107	Mud Type		Gel-Chem	
Foremen												

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc		an Robinso		•	Day:			Date:	14-Jı	ul-09
Depth:	588.0	mKB	Progress:	29.0	Drilling:	7.50	hrs ROP,		3.80	Rig:	Stoneha	
Operation	@ 0800 hrs	s: Drilling ahe	ad @ 611 m				ŕ			KB elev:	175.30	m.
										KB - GL	6.30	m.
Bit	Size	Make IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight	IODL	BGOR
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 19		2.5 da		
4	444	Reed - 515X	DT4829	253		215	32.50		95	23 da		
		Down 1	Down 2	Duilling Ag		Dit Matan	-t-1-0 5"		4l. N M	VO NM	MWD Callan	NM VO 0
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembly:	Bit, Motor,	stab,9.5 pon	y conar, rioa	Pump Pres	_	MWD Collar, 17000	kPa
Liner	(mm)	152	165	BHA Leng	th·	342.84	m	Strap:	_1 ump 1 1cs	Board:	17000	KI a
Stroke	(mm)	279	279	Drill Collar		230/203/165		Drill Pipe () D	_Doaru.	mm	
SPM	(11111)	95	95	D.C. Annu		200/200/100	m/min	D.P Annul			m/min	
Vol.	(m ³ /min)		3.01	Jet Velocity			m/sec	Hydraulic			kW	
		•			,						-	
		SUR	VEYS				MUD			MUD AI	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	8:00		Gel	12		
	3.00	1.00				Density	1125		Caustic	2		
	0.00	1.00				Vis.	55		Envirofloc			
	3.00	2.00				pН	8.6		Kelzan	0		
	3.36	2.62	88.30			W.L.	8.0		Cello			
	4.29	3.27	64.19			P.V.	18.0		Bicarb			
	7.43	3.04	62.95			Y.P.	9.0		Alcomer			
	1.66	2.10	62.13			Gel S.	3.5/12/18		Drispac R	2		
	5.24	1.93	61.19			Filter Ck	1.5		Desco			
	9.00	2.30	56.57			Solids %	7.5		Barite			
	2.77	2.75	55.30			Oil	n/a		Lignite		-	
	7.33	4.53	61.47			Temp	43.2		Primaseal		-	
	2.90 6.44	5.95 6.27	65.37 62.83				mud static		Sulfamic acid			
	0.53	5.61	60.90				illuu static		Soda Ash	32	Day Cost	61.260
	4.01	4.65	55.51						Sawdust Mud Van	1	Well Cost	\$1,368 \$33,528
50		Fluid Invento					Des	silter		ander	Centr	
Daily Oil		1	Cum. Oil		Underflow	Density					171	
Daily Wate	er		Cum. Wate		Overflow 1						10	
Daily Gas			Cum. Gas		Flow Rate	, l/min					500	0.0
Mud Lost			Cum. Mud		Operating	hours					12	2.0
Core:	:	Size/Type: Zone: Zone:			Zone:		In:		Out:		Recovery:	
DST:	:	Zone:		Interval:			Times:					
DST:	:	Zone:		Interval:			Times:					
	1. Rig up	/O++		-	9. Cut Dri	II I inc		_	17. Plug B	ools		
	2. Drill	Out	7.50	-	10. Survey		3.75	=	17. Tiug B			
	3. Ream		0.75	-	11. Wireli		3.73	_	19. Fishing			
	4. Core			=	12. Casing	-		=		5 on mud pun	1.25	
	5. Circ. &	c Cond.	1.25	=	13. WOC	, coment		=	21. Safety	-	0.75	
	6. Trip		8.00	-	14. Nipple	Up BOP		-	22. Handle			
	7. Rig Sei	rvice	0.75	=	15. Test B	-	-	=	23 Crew H	and-off Mt	<u> </u>	
	8. Rig Re	pair		-	16. BOP I	Prill		-	Total Hour	rs	24.00	
01.20 51	1					REMARKS	S					
		o trip to dial u										
		Safety meeting										
	ctional work	,l,pick up strir	ig stab and p	ony collar								
	0 00	nwd tools and	wash to bot	tom from 57	0 m							
		hole and accu										
		ve & seat in #		Jo 110111 JJ7	to J/1 ill.							
		hole and accu		ys from 571	m to 588 m.							
				,								

Prev Cost	\$2,650,221	Today	\$38,199	Total Cost	\$2,688,420	Weather:	Plus 19,sunny
						Mud Type	Gel-Chem
Foremen	Hale Yardley & Bill Williams		Rig Pho	ne 709	-649-7106	Taken By:	Terry Brooker / Shane Halley

			Vul	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	: 16		Date:	15-J	ul-09
Depth:	663.0	mKB	Progress:	75.0	Drilling:	20.50	hrs ROP,		3.60	Rig:		am # 11
		s: Drilling ahe			211111191	20.00		, •	2.00	KB elev:	175.30	
operation		ov Brinning unio	uu c 007 11							KB - GL	6.30	
Bit	Size	Make IADO	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR
3	444	Reed - 415X		88	253	165	48.50	11.9 / 2-15.9 / 19		2.5 da		
4	444	Reed - 515X	DT4829	253		215	32.50		95	23 da		
	1		ı			ı	ı	ı				
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Motor,	stab,9.5" pon	y collar,Floa	t sub,Non M	ag XO,NM	MWD Collar	,NM XO, 9.
Model		PZ-11	PZ-11	1	•		•	•	Pump Pres			kPa
Liner	(mm)	152	165	BHA Leng	th:	342.84	m	Strap:	-	Board:		•
Stroke	(mm)	279	279	Drill Colla	r O.D.	230/203/163		Drill Pipe (O.D.	="	mm	-
SPM		95	95	D.C. Annu	lar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
Vol.	(m³/min)		3.01	Jet Velocity	y:		m/sec	Hydraulic !	HP:		kW	
											_	
		SUR	VEYS				MUD			MUD AI	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	8:00		Gel	2		
23	3.00	1.00				Density	1115		Caustic			
	0.00	1.00				Vis.	63		Envirofloc			
83	3.00	2.00				pН	9.2		Kelzan	0		
10	3.36	2.62	88.30			W.L.	12.8		Cello			
	54.29	3.27	64.19			P.V.	11.0		Bicarb			
	7.43	3.04	62.95			Y.P.	6.0		Alcomer			
						Gel S.	8/31/35		Drispac R	1		
			61.19			Filter Ck	2.0		Desco		ļ	
	9.00	2.30	56.57			Solids %	7.0		Barite			
	7.01	4.12	40.57			Oil	n/a		Lignite	1		
	0.61	4.03	48.70			Temp	64.4		Primaseal		ļ	
	24.10	3.94	49.22						Sulfamic acid			
	88.29	3.85	49.95						Soda Ash			
65	52.34	3.67	51.39						Sawdust		Day Cost	\$391
							_		Mud Van	1	Well Cost	\$33,919
		Fluid Invento					Des	silter	Desa	ander		rifuge
Daily Oil			Cum. Oil		Underflow							10.0
Daily Wat	er	+	Cum. Wate		Overflow I							060
Daily Gas Mud Lost			Cum. Gas Cum. Mud		Flow Rate,							2.0
Muu Lost			Cuiii. Muu	l .	Operating	Hours					1.2	2.0
Como		Ciza/Tymas			Zonos		In:		Out		Dagayanyı	
DCT	:	Zono:		Intervale	Zone:		Times:		Outi		Recovery:	
DST	:	Size/Type: Zone: Zone:		Interval			Times:					
DST	•	_ Zone.		_ IIItei vai.			- Times.					
	1. Rig up	/Out		_	9. Cut Dri	ll Line	-	_	17. Plug B	ack	-	-
	2. Drill		20.50	-	10. Survey		1.00	=	18. Squeez			-
	3. Ream			=	11. Wireli			=	19. Fishing			=
	4. Core			_	12. Casing	-	-	_		on mud pun	1.50	-
	5. Circ. 8	c Cond.		-	13. WOC	,		_	21. Safety	Meeting	0.25	-
	6. Trip			=	14. Nipple	Up BOP	-	=	22. Handle	e Tools		=
	7. Rig Ser	rvice	0.75	= _	15. Test B	OP & FIT		=" _	23 Crew H	and-off Mtg	3	=' _
8. Rig Repair					16. BOP I	Prill		=" _	Total Hour	rs.	24.00	=' _
			·				-					
						REMARKS	S					
		hole and accu		ys from 588	m to 609 m.							
		seat in # 1 pur hole and accu		us from 600	m to 640							
	nge head in i		imuiate suve	ys from 609	111 to 040 m.							
		hole and accu	ımıılate suve	vs from 640	m to 654 m							
		R valve in # 2		,,, 110111 0 4 0	t∪ ∪J+ III.							
		hole and accu		vs from 654	m to 663 m							
27111				,	500 111.							

Prev Cost	\$2,672,480	Today	\$50,333	Total Cost	\$2,722,813	Weather:	Plus 19,cloud
	<u></u>					Mud Type	Gel-Chem
Foremen	Hale Yardley	& Bill Williams	Rig Phor	ne 709	0-649-7106	Taken By:	Terry Brooker / Shane Halley

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc		an Robinso			Day:			Date:	16-J	ul-09
Depth:	737.0		Progress:	74.0	Drilling:	21.75	hrs ROP,		3.40	Rig:		am # 11
Operation	@ 0800 hrs	s: Drilling (rot	ating) ahead	@ 756 m w	ithout MWD	signal, tenta	ative casing	ΓD at 757 m		KB elev:	175.30	
D:4	C!	Make IADO	Carial Na	T	04	Matuan	TT a	Namilas	DDM	KB - GL	6.30	
Bit 3	Size 444	Make IADO Reed - 415X	ND0530	In 88	Out 253	Metres 165	Hours 48.50	Nozzles 11.9 / 2-15.9 / 19	RPM 180+	Weight 2.5 Kda	IODL	BGOR
4	444	Reed - 515X		253	233	484	105.25	3x 17.5/12.7	95 / 125	18-23 Kda		
				1								
26.11		Pump 1	_	Drilling As						MWD DC, X		
Model Liner	()	PZ-11 152	PZ-11 165	BHA Leng		342.84		DC, 8-HW Strap:	Pump Pre	ssure: Board:	17000	kPa
Stroke	(mm)	279	279	Drill Colla		230/203/165		Drill Pipe (O.D.	_ Doar u.	mm	
SPM		95	95	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m³/min)		3.01	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
Do	nth	SURV		Nouth	Foot	Time	MUD	l	G-1	MUD AL	DITIVES	
Dej	.36	Drift 2.62	Azimuth 88.30	North	East	Time Density	6:00 1120		Gel Caustic	1		
364		3.27	64.19			Vis.	61		Envirofloc	•		
	.66	2.10	62.13			pН	9.5		Kelzan	5		
419		2.30	56.57			W.L.	12.4		Cello			
610		4.03	48.70		1	P.V.	10.0	1	Bicarb		1	
665		3.67 3.32	51.39 47.17			Y.P. Gel S.	8.5 14.5/37/44		Newedge Drispac R	6 3		
679		2.95	39.84			Filter Ck	2.0		Desco	3		
706		2.45	9.96			Solids %	7.5		Barite			
						Oil	n/a		Lignite			
						Temp	68.1		PHPA	1		
									Sulfamic acid Soda Ash	1		
									Sawdust		Day Cost	\$3,481
									Mud Van	1	Well Cost	\$33,919
	I	Fluid Invento	ry			•	Des	silter	Des	ander	Cent	rifuge
Daily Oil			Cum. Oil		Underflow	•						50.0
Daily Wate	r		Cum. Wate		Overflow I							20
Daily Gas Mud Lost			Cum. Gas Cum. Mud		Flow Rate, Operating							0.0 1.0
							J.		E		_	
Core:		Size/Type: Zone: Zone:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			Times:					
DST:		Zone:		Interval:			Times:					
	1. Rig up/	'Out		=	9. Cut Dri	ll Line		=	17. Plug E	Back		:
	2. Drill		21.75	_	10. Survey	7	1.25	_	18. Squee	ze Cement		
	3. Ream			_	11. Wireli	-		_	19. Fishin	-		
	4. Core	Cond		-	12. Casing	/Cement		_		on mud pun		
	 Circ. & Trip 	Cona.		=	13. WOC14. Nipple	Un ROP		=	21. Safety 22. Handl		0.25	=
	7. Rig Sei	vice	0.75	=	15. Test B	-		=		land-off Mtg	2	:
	8. Rig Re			_	16. BOP I			_	Total Hou	rs	24.00	
00.00 00.0	0 D.::11- J.f	rom 663 - 687		-1:	- 1-11-	REMARKS		2 2/	.f1 @ 17	/ D		
00:00 - 08:0	0 Drilled I	rom 663 - 687	m with 1/2	sindes to dro	p note angle	With 18 - 23	KdaN WOB	, 3 m3/min o	or mua @ 17	mPa pressui	re	
08:00 - 16:0	0 Drilled al	head to 715 m	with contin	ued slides								
16:00 - 23:5	9 Drilled al	head to 737 m	in red-brow	n shales, silt	s & sands							
Minor diffic	ulties obtai	ning surveys										
Schlumber M	Motor: 5/6	4 stage mediui	n speed with	1.5 degree	setting and .	032 rev/l						
Prev Cost	\$2,7	22,813	Today	\$42	,919	Total Cost	\$2,76	65,732	Weather	:	Plus 19,cloud	i
Foremen	Н	ale Yardley &	& Bill Willia	ams	Rig Phone		709-649-710	16	Mud Type Taken By		Gel-Chem rooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo			<u> </u>	Day:		-	Date:	17-J	ul-09
Depth:	775.0	mKB	Progress:	38.0	Drilling:	14.00	hrs ROP,		2.70	Rig:	Stoneha	
Operation	@ 0800 hrs	: Drilling (sli	ding) ahead	@ 783 m - b	ack on botto	m @ 06:45 l				KB elev:	175.30	m.
			_							KB - GL	6.30	m.
Bit		Make IADO		In	Out	Metres	Hours	Nozzles	RPM	Weight		BGOR
4	444 Reed		DT4829	253	775	522	119.25	3x 17.5/12.7	95 / 125	18-23 Kda	2-3-RG-G-	6-2-SD-HR
5 (RR3)	444 Reed	T41C 415X	ND0530	775		484		2x17.5/11.9/19				
		Pump 1	Pump 2	Drilling As	sembly.	Rit Mtr st	ah 9 5" Short	DC Float su	h XO NM	MWD DC, X	O 95" NM	DC XO
Model		PZ-11	PZ-11					DC, 8-HW			-	kPa
Liner	(mm)	152	165	BHA Leng		342.84		Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla	r O.D.	230/203/165	mm	Drill Pipe	O.D.	_	mm	='
SPM		95	95	D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m³/min)		3.01	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
		CUD	VIEWO				MIID			MUDAT	DITINEC	
Do	epth	Drift	VEYS Azimuth	North	East	Time	6:00		Gel	MUD AL	DITIVES	<u> </u>
	3.36	2.62	88.30	NOLLII	Last	Density	1115		Caustic	1		
	4.29	3.27	64.19			Vis.	58		Envirofloc	-		
	1.66	2.10	62.13			pН	8.6		Kelzan	5		
419	9.00	2.30	56.57			W.L.	11.6		Cello			
	0.61	4.03	48.70			P.V.	10.0		Bicarb			
	2.34	3.67	51.39			Y.P.	8.5		Newedge	7		
	5.87 9.83	3.32 2.95	47.17 39.84			Gel S. Filter Ck	11/36/41		Drispac R	7		
	6.77	2.45	9.96			Solids %	7.0		Desco Barite			
700	0.77	2.43	7.70			Oil	n/a		Lignite			
						Temp	65.2		PHPA	1		
									Sulfamic acid	l		
									Soda Ash			
									Sawdust		Day Cost	\$4,393
		1 . 1 7					D	214	Mud Van	1	Well Cost	\$41,794
Daile Oil	r.	luid Invento	Cum. Oil	1	Tim double	Domait.	Des	silter	Des	ander		rifuge 30.0
Daily Oil Daily Wate	ar a		Cum. Wate		Underflow Overflow 1							220
Daily Gas			Cum. Gas		Flow Rate							0.0
Mud Lost			Cum. Mud		Operating						24	1.0
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			Times:					
DST:		Zone:		Interval:			Times:					
	1. Rig up/0	Out		-	9. Cut Dri	ll Line		_	17. Plug H	Back		-
	2. Drill	oui	14.50	=	10. Survey		1.00	=	_	ze Cement		=
	3. Ream			-	11. Wireli	ne Logs		_	19. Fishin	g		-
	4. Core			-	12. Casing	/Cement		=" =	20. Work	on mud pun	ıps	=: =:
	5. Circ. &	Cond.	1.25	=	13. WOC		-	=	21. Safety	_	0.25	=
	6. Trip		4.25	_	14. Nipple			_	22. Handl		0.75	-
	7. Rig Serv 8. Rig Rep		$\frac{0.50}{1.00}$	-	15. Test B 16. BOP I			_	Total Hou	land-off Mtg	24.00	-
	o. Kig Kep	an	1.00	-	10. DOI 1	/1 III		_	Total Hou	15	27.00	-
						REMARKS	S					
00:00 - 08:0	00 Drilled fr	om 737 - 756	m with 18	- 20 kdaN W	OB, 3 m3/m			ssure. Lost N	AWD signal	drilled ahead		
08:00 - 16:0	00 Drilled ah	ead to770 m	and worked	on pump								
	45 Drilled ah AWD tool an		in red-brow	n shales, silt	ts & sands ci	rc and trippe	d bit on hou	rs. A few mir	nor tight spo	ts hole gener	ally good	
Bit #3 rerun	n with 48.5 h	rs and excelle	ent condition	l								
Prev Cost	\$2,76	55,732	Today	\$54	l,175	Total Cost	\$2,8	19,907	Weather	: P1	us 14-9, driz	zle
Foremen	en Hale Yardley Rig Phone 709-649-7106 Mud Type Gel-Chem Taken By: Terry Brooker / Shane Halley											

Well: Valent Investera Robinsons #1 Day: 19 Date: Blad-1409				Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Depth	Well:		Vulc	an Investca	an Robinso	ns #1	<u> </u>	Dav:	19		Date:	18-J	ul-09
Rit Size/Make Make LAD Serial No. In Out Metree Hours Nozzles RPM WOR kink IO D L R O R	Depth:	820.0	mKB	Progress:	45.0	Drilling:	15.25			2.95	Rig:	Stoneha	am # 11
Bit Size/Make Make LOO Serial No. Dot Metres Hours Nozzles RPM WORkian O.D.L.B.G.O.R.	Operation	@ 0800 hrs	: Wiper trip @	g surface cas	sing TD of 8	29 m							
Section Sect	7011	[a. a	hr 1 7170		-			**		nn.	,		
	Bit	Size/Make	Make IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
	5 (RR3)	444 Reed	T41C 415X	ND0530	775		45	15.25	2x17.5/11.9/19	95 / 125	18 - 20		
Model	(1111)									70,700			
Model													
					_	•							
Stroke										Pump Pres		17000	kPa
SPM								-	-	O.D.	_boaru:	mm	-
SURVEYS		(iiiii)					200/200/100	-	-			_	
Depth	Vol.	(m ³ /min)		3.01	Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
Depth													
103.36					N 41	T = 4	TD*		1			DITIVES	ı
364.29 3.27					north	Last						 	
391.66						<u> </u>						 	
10.61											4		
Section Sect										1			
Section Size										1		<u> </u>	
Filter Ck						-				T T		 	
706.77													
775.60													
R89.60	73	2.30	2.20	359.20			Oil	n/a		Lignite			
Solds Ash Day Cost S3.294 Solds Ash Day Cost S3.294 Solds Ash Day Cost S45,084 Solds Ash S45,084 S64,084 S64							1						
Core Size/Type: Zone: In: Out: Recovery:													
Note Note	- 00	0.70	2.21	32.00								Day Cost	\$3.294
Daily Oil											1		
Daily Water Cum. Wate		F	luid Invento	ry				Des	silter	Desa	ander	Cent	rifuge
Daily Gas													
Nud Lost		er											
Core						•							
1. Rig up/Out			E.	•	•			J.		E			
1. Rig up/Out	Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
1. Rig up/Out	DST:		Zone:		Interval:			Times:					
2. Drill 15.25 10. Survey 0.50 18. Wash to Btm 0.50 3. Ream 11. Wireline Logs 19. Fishing 2.25 2.25 4. Core 12. Casing/Cement 20. Wk on mud pumps 2.25 2.25 2.25 2.25 2.25 2.25 2.25 2.2	DST:		Zone:		Interval:	-		Times:					
2. Drill 15.25 10. Survey 0.50 18. Wash to Btm 0.50 3. Ream 11. Wireline Logs 19. Fishing 2.25 2.25 4. Core 12. Casing/Cement 20. Wk on mud pumps 2.25 2.25 2.25 2.25 2.25 2.25 2.25 2.2													
2. Drill 15.25 10. Survey 0.50 18. Wash to Btm 0.50 3. Ream 11. Wireline Logs 19. Fishing 2.25 2.25 4. Core 12. Casing/Cement 20. Wk on mud pumps 2.25 2.25 2.25 2.25 2.25 2.25 2.25 2.2		1. Rig up/	Out		=	9. Cut Dri	ll Line		=	17. Plug B	ack		=
4. Core 12. Casing/Cement 20. Wk on mud pumps 2.25 5. Circ. & Cond. 13. WOC 21. Safety Meeting 22. Handle Tools 1.00 6. Trip 3.00 14. Nipple Up BOP 22. Handle Tools 1.00 7. Rig Service 0.50 15. Test BOP & FIT 23 Crew Hand-off Mtg 0.50 8. Rig Repair 16. BOP Drill 0.50 Total Hours 24.00 REMARKS		2. Drill		15.25	-	10. Survey	7	0.50	_	18. Wash	to Btm	0.50	_
5. Circ. & Cond. 6. Trip 3.00 14. Nipple Up BOP 7. Rig Service 8. Rig Repair 16. BOP Drill 16. BOP Drill 17. Service 18. REMARKS 18. October 19. Octo					-		-		_		-		_
6. Trip 7. Rig Service 8. Rig Repair 16. BOP Drill 15. Test BOP & FIT 16. BOP Drill 16. BOP Drill 17. REMARKS 18. October 18. Rig Repair 18. REMARKS 18. October 19. October			Cand		-		/Cement		_			2.25	-
7. Rig Service 8. Rig Repair 16. BOP Drill 10.50 15. Test BOP & FIT 16. BOP Drill 16. BOP Dril			Cona.	3.00	=		Un ROP		=	_	_	1.00	=
8. Rig Repair 16. BOP Drill 0.50 Total Hours 24.00 REMARKS 00:00 - 08:00 Completed R&R of MWD, tripped in hole good, washed to bottom no fill, patterned bit and drilled 775 - 784 m, worked on mud pumps 08:00 - 16:00 Drilled ahead to 803 m and worked on pump, held diverter BOP drill 16:00 - 17:45 Drilled ahead to 820 m in red-brown shales, silts & sands. Hit anhydrite @ 815 m. worked on mud pumps and conducted BOP drill Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem		-	vice		=		-		=				=
00:00 - 08:00 Completed R&R of MWD, tripped in hole good, washed to bottom no fill, patterned bit and drilled 775 - 784 m, worked on mud pumps 08:00 - 16:00 Drilled ahead to 803 m and worked on pump, held diverter BOP drill 16:00 - 17:45 Drilled ahead to 820 m in red-brown shales, silts & sands. Hit anhydrite @ 815 m. worked on mud pumps and conducted BOP drill Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem					-			0.50	_		_	·	_
00:00 - 08:00 Completed R&R of MWD, tripped in hole good, washed to bottom no fill, patterned bit and drilled 775 - 784 m, worked on mud pumps 08:00 - 16:00 Drilled ahead to 803 m and worked on pump, held diverter BOP drill 16:00 - 17:45 Drilled ahead to 820 m in red-brown shales, silts & sands. Hit anhydrite @ 815 m. worked on mud pumps and conducted BOP drill Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem													
08:00 - 16:00 Drilled ahead to 803 m and worked on pump, held diverter BOP drill 16:00 - 17:45 Drilled ahead to 820 m in red-brown shales, silts & sands. Hit anhydrite @ 815 m. worked on mud pumps and conducted BOP drill Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem	00.0000.0	00 C 1 1	1D0D .CM	WD (1 . 1 . 1			1.24 1 1.211	1775 704	1.1.	1	
16:00 - 17:45 Drilled ahead to 820 m in red-brown shales, silts & sands. Hit anhydrite @ 815 m. worked on mud pumps and conducted BOP drill Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem	00:00 - 08:0	JU Complete	a R&R of M	wD, tripped	in noie goo	a, wasnea to	bottom no I	ii, patterned	bit and drille	ea //5 - /84	m, worked o	n mua pump	os .
Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem	08:00 - 16:0	00 Drilled ah	ead to803 m	and worked	on pump, he	eld diverter E	OP drill						
Prev Cost \$2,819,907 Today \$40,275 Total Cost \$2,860,182 Weather: Plus 14-19, drizzle overcast Mud Type Gel-Chem		1.00 - 10.00 Diffied affect (0005 in and worked on pump, field divorter DoT drift											
Mud Type Gel-Chem	16:00 - 17:4	45 Drilled ah	ead to 820 m	in red-brow	n shales, silt	s & sands. F	lit anhydrite	@ 815 m. w	orked on mu	d pumps and	l conducted E	3OP drill	
Mud Type Gel-Chem													
Mud Type Gel-Chem													
Mud Type Gel-Chem													
Mud Type Gel-Chem													
	Prev Cost	\$2,81	19,907	Today	\$40	,275	Total Cost	\$2,80	60,182	_			overcast
	Foremen		Hala V	ardlev	=	Rig Phone		709-649-710)6				ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	20		Date:	19-J	ul-09
Depth:	829.0	mKB	Progress:	9.0	Drilling:	5.25	hrs ROP,	m/hr:	1.70	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs	Runining 33	39 mm casin	g to 240m -	slow going,	mud very thi	ick			KB elev:	175.30	m.
										KB - GL	6.30	
Bit	Size/Make	Make IAD(Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
5 (RR3)	444 Reed	T41C 415X	ND0530	775	829	54	20.50	2-17 5/11 0/10	95 / 125	18 - 20	1 1 W/T A	-4-2-RG-TD
3 (KK3)	444 Reed	141C 413A	ND0330	113	829	34	20.30	2x17.5/11.9/19	93 / 123	16 - 20	1-1-W 1-A-	4-2-KG-1D
				I	I		I	I	I	1		
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Mtr, sta	ab,9.5" Short	DC,Float su	b, XO, NM	MWD DC, X	O, 9.5" NM	DC,XO
Model		PZ-11	PZ-11	1-203 mm l	DC -Jars- 1-2	203 DC, X/O		n DC, 8-HW	Pump Pre	ssure:	17000	kPa
Liner	(mm)	152	165	BHA Leng		342.84	_	Strap:		Board:		_
Stroke	(mm)	279	279	Drill Colla		230/203/165	_	Drill Pipe (mm	
SPM Vol.	(m³/min)	95	95 3.01	D.C. Annu Jet Velocit			m/min m/sec	Hydraulic			m/min kW	
V 01.	(III / IIIIII)		3.01	jet velocit	y•		III/SCC	11yur aunc	111 .		KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	10:00	15:00	Gel			
	3.36	2.62	88.30			Density	1120	1120	Caustic			
	4.29	3.27	64.19			Vis.	81	125	Envirofloc			
	1.66 9.00	2.10 2.30	62.13 56.57			pH W.L.	8.0 24.5	9.5 16.4	Kelzan Cello			
	0.61	4.03	48.70			P.V.	10.0	16.4	Bicarb			
	2.34	3.67	51.39			Y.P.	19.5	34.0	Newedge			
66:	5.87	3.32	47.17			Gel S.	15/17/19	36/32/34	Drispac R			
	9.83	2.95	39.84			Filter Ck	4.0	2.0	Desco			
	6.77	2.45	9.96			Solids %	7.5	7.5	Barite			
	2.30	2.20	359.20			Oil	n/a 520.0	Ü				
	5.60 9.60	2.54	20.30			Ca (mg/l)		5700.0	PHPA Sawdust			
789.60 2.20 34.10 Cl (mg/l) 6200.0 806.70 2.27 52.60 MBT 62.5				62.5	62.5	Sawaast Soda Ash						
						Temp	54.8	54.8	Supervision	1	Day Cost	\$1,075
									Mud Van	1	Well Cost	\$46,163
	F	luid Invento	•				Des	silter	Des	ander		rifuge
Daily Oil			Cum. Oil		Underflow							80.0
Daily Wate Daily Gas	er		Cum. Wate Cum. Gas		Overflow I Flow Rate							0.0
Mud Lost			Cum. Mud		Operating							0.0
				l	· F · · · · · · · · · · · · · ·							
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:			Times:					
DST:		Zone:		Interval:			Times:					
	1. Rig up/	Out		-	9. Cut Dri	ill Line		_	17. Plug E	Back		_
	2. Drill		5.25	-	10. Survey	у		-	18. Wash			_
	3. Ream			_	11. Wireli			_	19. Fishin	-		_
	4. Core	<i>~</i> ,		-	12. Casing	g/Cement	1.50	_		mud pump		_
	5. Circ. &	Cond.	3.75	-	13. WOC	II. DOD		_	21. Safety	_	0.50	-
	6. Trip 7. Rig Ser	vico	10.75 0.50	-	14. Nipple 15. Test B	-		=	22. Handl	e 1001s Iand-off Mtg	0.75	-
	8. Rig Rep		0.50	-	16. BOP I			_	Total Hou	_	24.00	-
				-			-	=				-
						REMARKS						
		d to drill ahe	-	U		,		ump again , l	began wiper	trip		
		contamination	•					culated and	conditioned	Ca contamina	nted mud	
55.55 - 10.0	oo Circuiate	a agin noic (270 m, un	ped out to 2	in and th	Pred back III	noic and cil	caracca and	conditioned	Cu Comanilla	aca muu	
16:00 - 23:5	59 Tripped o	out for surfac	e casing; laid	l down 229 1	mm DC, rem	oved motor	and mud mo	tor held safe	ty meeting a	nd rigged to r	un 70 joints	of
339.7 mm s	surface casin	g and levelle	d rig		-		-	-		-	-	
Prev Cost	\$2,80	50,182	Today	\$37	,805	Total Cost	\$2,89	97,987	Weather	Plus 14-19,	mix of clear	, cld, drizzle
L				5					Mud Type		Gel-Chem	
Foremen		Hale Y	ardley		Rig Phone		709-649-710)6	Taken By	: Terry Bi	ooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	21		Date:	20-J	ul-09
Depth:	829.0	mKB	Progress:	0.0	Drilling:		hrs ROP,	m/hr:	_	Rig:	Stoneh	am # 11
	@ 0800 hrs	: Removing d	liverter flang	e off conduc	tor; preparin	ng to install s	urface casing	g bowl		KB elev:	175.30	
the next da		h	G	-	0.1		**		222	KB - GL	6.30	
Bit	Size/Make	Make IADO	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
24 2 2		Pump 1		Drilling As	sembly:				D D			1.00
Model Liner	()	PZ-11 152	PZ-11 165	BHA Leng	the		m	Strap:	Pump Pre	ssure: Board:		kPa
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe	O.D.	_Doaru.	mm	-
SPM				D.C. Annu	lar Vel.:		m/min	D.P Annul		-	m/min	
Vol.	(m ³ /min)			Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
		QV VD) (TID			14770 15	D.VIII.V.	
D,	epth	Drift	VEYS Azimuth	North	East	Time	MUD 20:30	1	Gel	14	CaC03	28
	3.36	2.62	88.30	North	East	Density	1100		Caustic	10	CaCus	20
	4.29	3.27	64.19			Vis.	56		Envirofloc	10		
	1.66	2.10	62.13			pН	8.7		Kelzan		Inventory	Correction
	9.00	2.30	56.57			W.L.	17.6		Cello			
	0.61	4.03 3.67	48.70 51.39			P.V. Y.P.	7.0		Bicarb			
	55.87	3.32	47.17			Gel S.	8 /15 / 17		Newedge Drispac R	6		
	9.83	2.95	39.84			Filter Ck	1.5		Desco	9		
70	6.77	2.45	9.96			Solids %	6.0		Barite			
	2.30	2.20	359.20			Oil	n/a		Lignite			
	75.60 89.60	2.54	20.30			Cl (mg/l)	120.0		PHPA	1 24		
	19.00 16.70	2.20 2.27	34.10 52.60			Cl (mg/l) MBT	4700.0 55.0		Sawdust Soda Ash	-34 25		
		2.27	02.00			Temp	38.6		Supervision	1	Day Cost	\$5,817
									Mud Van	1	Well Cost	\$51,980
	F	luid Invento	. *				Des	silter	Des	ander	Cent	rifuge
Daily Oil			Cum. Oil		Underflow							
Daily Wate Daily Gas	er		Cum. Wate		Overflow I Flow Rate							
Mud Lost			Cum. Mud		Operating							
		•	•	•			•		•		•	
Core	:	Size/Type:			Zone:		In:		Out:		Recovery:	
DST: DST:	:	Zone:		Interval:			Times:					
DST	·	_ Zone:		Intervar.			_ I lines:					
	1. Rig up/	Out		_	9. Cut Dri	ill Line		_	17. Plug B	Back		_
	2. Drill			_	10. Survey			_	18. Wash			_
	3. Ream	i~	1 25	=	11. Wireli	_	10 00	=	19. Fishin	-		=
	4. Level Ri 5. Circ. &	_	1.25 4.00	=	12. Casing 13. WOC	y/Cement	18.00	=	20. WK on 21. Safety	mud pump: Meeting	0.50	=
	6. Trip	Conu		_	14. Nipple	Up BOP		_	22. Handl	_		-
	7. Rig Ser	vice		- -	15. Test B	-			23 Crew H	land-off Mtg	0.25	-
	8. Rig Rep	oair		_	16. BOP I	Orill		_	Total Hou	rs	24.00	_
						REMARK	a					
00:00 - 08:	00 Complete	ed rig levellin	g and rigged	to and ran 3	340 mm surf			ing every 5 io	oints			
			-6				_, ,					
	00 Continue				<u> </u>	• 0						
	69 joints of 3		-		-							
	59 Ran casın ved circulatin									ed compatabil	ity of cemen	t blend
	CIP @ 00:30		•					cincin casilly	, at 22.30 IIIS	,		
could flush	out the cond	luctor and flo	w line.									
NOTE: Te	emperature (of drilling m	ud at the sh	aker box ha	s been adde	ed on this re	port going b	oack to day	11 @ 255 m	eters.		
D C	A. O.	07.007	T. 1	do:	0.46	m., 10	/h.m. n.	01.022	TT7 2		17.00	
Prev Cost	\$2,89	9 <u>7,987</u>	Today	\$93	3,946	Total Cost	\$2,99	91,933	Weather: Mud Type		lus 15-22, cle Gel-Chem	ear
Foremen		Hale Y	ardley	=	Rig Phone		709-649-710	06	Taken By:		ooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	y Drill	ing R	eport			
Well:		Vulc	an Investca	n Robinso	ns #1	_	Day:	22	_	Date:	21-J	ul-09
Depth:	829.0	mKB	Progress:	0.0	Drilling:		hrs ROP,		_	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs	: Welding 34	0 mm casing	bowl, stripp	ing surface	mud				KB elev:	175.30	m.
the next da	-									KB - GL	6.30	
Bit	Size/Make	Make IAD(Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly.							
Model		PZ-11	PZ-11	Dining As	sembly.				Pump Pres	sure:		kPa
Liner	(mm)	152	165	BHA Leng	th:		m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe	O.D.	_	mm	•
SPM				D.C. Annu	lar Vel.:		m/min	D.P Annul	ar Vel.:		m/min	
Vol.	(m³/min)			Jet Velocit	y:		m/sec	Hydraulic	HP:		kW	
			VEYS				MUD	T		MUD AD		
	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
	3.36 4.29	2.62 3.27	88.30 64.19			Density Vis.			Caustic			
	1.66	2.10	62.13			pH			Envirofloc Kelzan			
	9.00	2.30	56.57			W.L.			Cello			
	0.61	4.03	48.70			P.V.			Bicarb			
	2.34	3.67	51.39			Y.P.			Newedge			
665	5.87	3.32	47.17			Gel S.			Drispac R			
679	9.83	2.95	39.84			Filter Ck			Desco	3		
	6.77	2.45	9.96			Solids %			Barite			
	2.30	2.20	359.20			Oil			Lignite			
	5.60	2.54	20.30			Ca (mg/l)			PHPA			
	9.60	2.20	34.10			Cl (mg/l)			Sawdust	17		
800	6.70	2.27	52.60			MBT			Soda Ash	17	Don Cost	6071
						Temp			Supervision Mud Van	1	Day Cost Well Cost	\$971 \$52,980
	F	luid Invento	rv				Des	silter	1	ander		rifuge
Daily Oil	-		Cum. Oil		Underflow	Density	200	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	200		Cont	nuge
Daily Wate	er		Cum. Wate		Overflow l							
Daily Gas			Cum. Gas		Flow Rate	, l/min						
Mud Lost			Cum. Mud		Operating	hours						
Core:		Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		_ Zone:		Interval:			Times:					
DST:		Zone:		Interval:			Times:					
	1. Rig up/	Out		-	9. W/O W	oldor	6.00	_	17. Plug B	ook		-
	2. Drill	Out		-	10. Survey		0.00	=	18. Wash			•
	3. Ream			-	11. Wireli			_	19. Strippi		4.00	•
	4. Level Ri	ig		=	12. Casing	-	0.50	=		mud pumps		•
	5. Circ. &	Cond.			13. WOC		4.00	_	21. Safety	Meeting	0.50	_
	6. Trip				14. Nipple	Up BOP	8.75	=" =	22. Handle	e Tools		_
	7. Rig Ser				15. Test B			=		and-off Mtg		=
	8. Rig Rep	oair		-	16. BOP I	Orill		_	Total Hour	rs	24.00	-
						DELC: DY	7					
00.00 00.0	00 Complete	d companing	of 240 mm a	aging progg	ma tastad sa	REMARKS		autos WOC	and alasmad	partially set-u	n coment fre	
	-	xes. Cut cond				-		iules, WOC	and cleaned	partially set-u	ip cement ire	ш
								vers had hou	red out) and	rigged to stri	p mud	
		ud from 13:0			•					66	1	
-	•	nud and wait					_			owl		
				-								
Prev Cost	¢2 00	91,933	Today	¢21/	5,662	Total Cost	\$2.20	07,595	Weather:	ומ	us 15-22, cle	aar
i iev Cust	φ4,93	1,700	rouay	ф313	,,002	Total Cost	φ3,30	ل و ل و و و و و	Mud Type		Gel-Chem	/UI
Foremen		Hale Y	ardley	-	Rig Phone		709-649-710)6	Taken By:		ooker / Sha	ne Halley

Foremen

Well:				Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Depth	Well:		Vulc	an Investca	n Robinso	ns #1		Day:	23		Date:	22-J	ul-09
Operation 0 0 0000 hrss Rigging up BOPs, completing must stripping to allow time to mix polymer the next day RB + GI Sa.30 m.	Depth:	829.0								_	Rig:	Stoneh	am # 11
Bit # Size/Make Model Act Serial No. In	Operation	@ 0800 hrs:	: Rigging up	BOPs, comp	leting mud s		llow time to	mix polyme	r		KB elev:	175.30	m.
	the next da	ay		•	-						KB - GL	6.30	m.
	Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
Model Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-12 Pz-1	6	311			829								
Model Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-12 Pz-1													
Model Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-12 Pz-1													
Model Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-11 Pz-12 Pz-1			I n 4	l	75.00								
Liner	M . J.1				Drilling As	ssembly:				D D			LD.
Stroke Game 279 279 Drill Collar O.D. mm min Drill Pipe O.D. mm min					DUA Long	th.			Ctuons	_Pump Pre			KPa
D.C. Annular Vel: m/sec m/min D.P. Annular Vel: m/sec m/min Let Velocity: m/sec MUD MUD ADDITIVES Let Velocity: m/sec Hydraulic HP: Let Velocity: m/sec Hydraulic HP: Let Velocity: m/sec Hydraulic HP: Let Velocity: m/sec Hydraulic HP: Let Velocity: Let Veloci					_			_		O D	_board:	mm	-
SURVEY S		(mm)	21)	217	l .			_	-		-		
SURVEYS		(m³/min)						-			-		
Depth Drift Azimuth North East Time Cast C	, 023			l	000 (01001)	, .		111,500	11) ur uurie				
103.36			SUR	VEYS				MUD			MUD AD	DITIVES	
391.66 2.10 62.13 pH 9.5 Retrindec 10	De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
391.66										Caustic		Percol	2
149.00											10		
610.61								9.5			ļ		
Section									1		 		
Size Size								-	1	1	1		
Core Size/Type: Zone: Interval:										Ü			
706.77													
T32.30										1			
775.60													
Table							Ca (mg/l)	1160.0					
Temp Building Fresh Mud Vua	78	9.60	2.20	34.10				1450.0		Sawdust			
Building Fresh Mud Mud Van 1 Well Cost \$55,361	80	6.70	2.27	52.60			MBT			Soda Ash			
Fluid Inventory							Temp						\$3,410
Daily Oil								Ŭ					
Daily Water		F	luid Invento					Des	silter	Des	ander	Cent	rifuge
Daily Gas													
Nud Lost Cum. Mud Operating hours		er											
Core													
DST: Zone: Interval: Times:	Widd Dost			Cum. Muu		Operating	ilours						
DST: Zone: Interval: Times:	Core		Size/Type:			Zone:		In:		Out:		Recovery:	
DST: Zone: Interval: Times:	DST:		Zone:		Interval:	=	-	Times:		=			
2. Drill 10. Survey 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Stripping Mud 4. Level Rig 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 13. WOC 21. Safety Meeting 0.25 6. Trip 14. Nipple Up BOP 23.75 22. Handle Tools 7. Rig Service 15. Test BOP & FIT 23 Crew Hand-off Mtg 8. Rig Repair 16. BOP Drill Total Hours 24.00 7. REMARKS 7. O0:00 - 08:00 Strip surface mud and weld casing bowl 8. REMARKS 7. Strip surface mud and weld casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 7. Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 8. Strip drilling mud 8. Strip			Zone:		Interval:			Times:					
2. Drill 10. Survey 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Stripping Mud 4. Level Rig 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 13. WOC 21. Safety Meeting 0.25 6. Trip 14. Nipple Up BOP 23.75 22. Handle Tools 7. Rig Service 15. Test BOP & FIT 23 Crew Hand-off Mtg 8. Rig Repair 16. BOP Drill Total Hours 24.00 7. REMARKS 7. O0:00 - 08:00 Strip surface mud and weld casing bowl 8. REMARKS 7. Strip surface mud and weld casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 7. Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 8. Strip drilling mud 8. Strip													
2. Drill 10. Survey 18. Wash to Btm 3. Ream 11. Wireline Logs 19. Stripping Mud 4. Level Rig 12. Casing/Cement 20. Wk on mud pumps 5. Circ. & Cond. 13. WOC 21. Safety Meeting 0.25 6. Trip 14. Nipple Up BOP 23.75 22. Handle Tools 7. Rig Service 15. Test BOP & FIT 23 Crew Hand-off Mtg 8. Rig Repair 16. BOP Drill Total Hours 24.00 7. REMARKS 7. O0:00 - 08:00 Strip surface mud and weld casing bowl 8. REMARKS 7. Strip surface mud and weld casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 7. Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 7. Strip surface mud 8. Strip drilling mud 8. Strip									_				=
3. Ream		- ·	Out		-				_				-
4. Level Rig									_				=
5. Circ. & Cond. 6. Trip 14. Nipple Up BOP 23.75 22. Handle Tools 7. Rig Service 15. Test BOP & FIT 8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00 - 08:00 Strip surface mud and weld casing bowl 08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud			_		-		_		_				=
6. Trip			0		-	_	/Cement		_				-
7. Rig Service 8. Rig Repair 16. BOP Drill Total Hours REMARKS 00:00 - 08:00 Strip surface mud and weld casing bowl 08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem			Conu.		-		Un ROP	23.75	_	•	_	0.23	-
8. Rig Repair 16. BOP Drill Total Hours 24.00 REMARKS 00:00 - 08:00 Strip surface mud and weld casing bowl 08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem		-	vice		=			20110	=				=
REMARKS 00:00 - 08:00 Strip surface mud and weld casing bowl 08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem		-			-				_				-
00:00 - 08:00 Strip surface mud and weld casing bowl 08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem		•			-				_				-
08:00 - 16:00 Slowly allow casing bowl weld to cool to 40C from 15:00 nipple-up BOPs, continued to strip surface mud 16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem							REMARK	S					
16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost	00:00 - 08:0	00 Strip surfa	ace mud and	weld casing l	bowl								
16:00 - 23:59 Continued to install 346 mm, 35 mPa BOPs, and strip drilling mud Prev Cost	00.00 15	00 01 1 11		1114	14- 40C C	15 00	1	Da	14	1			
Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem	U8:UU - 16:0	oo Siowiy all	ow casing bo	owi weld to c	001 to 40C f	rom 15:00 ni	ippie-up BO	rs, continued	ı ıo strip surf	ace mud			
Prev Cost \$3,307,595 Today \$29,931 Total Cost \$3,337,526 Weather: Plus 15-20, clear Mud Type Gel-Chem	16:00 - 23:	59 Continued	l to install 34	6 mm 35 ml	Pa BOPs an	d strip drilli	ng mud						
Mud Type Gel-Chem	10.00 - 23	o, continued	. to moun Ja	, mm, <i>55</i> mi	DOI 3, an	a sarp armi							
Mud Type Gel-Chem													
Mud Type Gel-Chem													
Mud Type Gel-Chem					-								-
Mud Type Gel-Chem	<u></u>						_						
	Prev Cost	\$3,30	J7,595	Today	\$29	,931	Total Cost	\$3,3	57,526				ear
	Foremen		Hale V	ardlev	-	Rig Phone		709-649-710)6				ne Hallev

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	24	-	Date:	23Jı	ul-09
Depth:	829.0	mKB	Progress:	0.0	Drilling:		hrs ROP,		-	Rig:		am # 11
-	@ 0800 hrs:									KB elev:	175.30	
the next da			Ü							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
6	311 / HC	GX-28DX		829								
		527X										
				T.								
		Pump 1	-	Drilling As	sembly:							
Model		PZ-11	PZ-11						Pump Pres			kPa
Liner	(mm)	152	152	BHA Leng			m	Strap:	. D	Board:		•
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe (mm	
SPM Vol.	(m ³ /min)			D.C. Annu			m/min m/sec	D.P Annula			m/min kW	
V UI.	(m/mm)			Jet Velocit	y .		III/Sec	Hydraulic 1	nr:		KVV	
		SIID	VEYS				MUD			MIID AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	MOD		Gel	MUD AD	CaC03	
	3.36	2.62	88.30	1101 til	Last	Density	1005		Caustic		Percol	4
	4.29	3.27	64.19			Vis.	41		Envirofloc	16		
	1.66	2.10	62.13			pН	9.1		Kelzan	5		
	9.00	2.30	56.57			W.L.	18.4	İ	Cello			
610	0.61	4.03	48.70			P.V.	7.0		Bicarb			
652	2.34	3.67	51.39			Y.P.	4.0		Newedge			
665	5.87	3.32	47.17			Gel S.	1.5 / 2 / 2.5		Drispac	8		
679	9.83	2.95	39.84			Filter Ck	0.5		Desco			
	5.77	2.45	9.96			Solids %	0.0		Barite			
	2.30	2.20	359.20			Oil	0.000		Lignite			
	5.60	2.54	20.30			Ca (mg/l)	80.0		PHPA	3		
	9.60	2.20	34.10			Cl (mg/l)	1450.0		Sawdust			
806	5.70	2.27	52.60			MBT			Soda Ash			
						Temp			Supervision		Day Cost	\$10,423
	***						Building	Fresh Mud		1	Well Cost	\$66,784
D 11 011	F	luid Invento		ı	77 7 01	D 1:	Des	silter	Desa	ander	Centi	rifuge
Daily Oil			Cum. Oil		Underflow							
Daily Wate	er		Cum. Wate		Overflow I							
Daily Gas Mud Lost			Cum. Gas Cum. Mud		Flow Rate, Operating							
Muu Lost			Cuin, Muu		Operating	HOUI S						
Core		Siza/Tyna:			Zone		In:		Out:		Recovery:	
DST.		Zone:		Interval	_ Zone.		Times:	-	Out.		Recovery.	
DST:		Zone:		Interval:			Times:					
								-				
	1. Rig up/0	Out	2.50	=	9. W/O W	elder		=	17. Plug B	ack		-
	2. Drill			-	10. Survey	7		_	18. Wash	to Btm		•
	3. Ream			=	11. Wirelin	ne Logs		=	19. Strippi	ng Mud		•
	4. Level Rig	g		='	12. Casing	/Cement		= _	20. Wk on	mud pumps		-
	5. Circ. &	Cond.		=' =	13. WOC			_	21. Safety	Meeting	0.50	
	6. Trip			_	14. Nipple	Up BOP	20.00	_	22. Handle	e Tools		
	7. Rig Serv		0.50	_	15. Test B			_		and-off Mtg		
	8. Rig Rep	air		-	16. BOP D	Prill		_	Total Hour	rs .	24.00	
00.00.00.0	00 C	1	ND. '	1. 11. 11. 1		REMARKS						
00:00 - 08:0	00 Continued	to rig-up BC	JPS mstamn	g maividuai (components	and surip sur	race mud					
08:00 - 16:0	0 Continued	to rig-up RC	DPS installed	HCR OCI	V I&OKI	V & complet	ed mud strin	ning @ 10·3	0 continued	to mix polyn	ner mud for	
	e hole section		or o mataneo	nek, oel	v, rac one	v & complet	cu muu surp	ping @ 10.5	o, continued	to mix poryn	ner mud for	
	59 Spotted de		nanifold hoc	ked-up chok	e degasser:	and flair tank	lines					
2.30 23.0	pottou de	o and n		up onor	.,							
Total Surfac	ce mud stripp	ed / processo	ed = 130 m3	, Total surf	ace mud rem	naining on lo	cation - 175	m3, total soli	ids in offsite	storage 210	m3	
Prev Cost	\$3,33	37,526	Today	\$84	,773	Total Cost	\$3,42	22,299	Weather:	Plus 1	0-20, clear -	pt cldy
L				-	n				Mud Type		Gel-Chem	**
Foremen		Hale Y	ardley		Rig Phone	,	709-649-710	6	Taken By:	Terry Br	ooker / Sha	ne Halley

Foremen

			Vulc	an M	ineral	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ons #1		Day:	25		Date:	24-J	ul-09
Depth:	829.0	mKB	Progress:	0.0	Drilling:		hrs ROP,	m/hr:	=	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs	: Pressure tes	sting BOPs - I	having troub	ole with uppe	er kelly cock i	nstallation &	closing!		KB elev:	175.30	m.
the next da	<u> </u>									KB - GL	6.30	
Bit #		Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
6	311 / HC	GX-28DX		829								
		527X										
		Pump 1	Pump 2	Drilling As	sembly:							
Model		PZ-11	PZ-11	Ü	•				Pump Pre	ssure:		kPa
Liner	(mm)	152	152	BHA Leng	th:	-	m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla			mm	Drill Pipe (mm	
SPM				D.C. Annu			m/min	D.P Annul			m/min	
Vol.	(m³/min)			Jet Velocit	y :		m/sec	Hydraulic	HP:		kW	
		SUR	VEYS				MUD			MIID AT	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	MICD		Gel	MICD AL	CaC03	
	3.36	2.62	88.30	110111	Zuov	Density	1005		Caustic		Percol	3
36	4.29	3.27	64.19			Vis.	41		Envirofloc	3		
	1.66	2.10	62.13			pН	9.1		Kelzan	3		
	9.00	2.30	56.57			W.L.	18.4		Cello			
	0.61	4.03	48.70		-	P.V.	7.0		Bicarb		 	
	2.34 5.87	3.67	51.39 47.17			Y.P. Gel S.	4.0		Newedge	4		
	9.83	3.32 2.95	39.84			Filter Ck	0.5		Drispac Desco	4		
	6.77	2.45	9.96			Solids %	0.0		Barite			
	2.30	2.20	359.20			Oil	0.000		Lignite			
77	5.60	2.54	20.30			Ca (mg/l)	80.0		PHPA	2		
	9.60	2.20	34.10			Cl (mg/l)	1450.0		Sawdust			
80	6.70	2.27	52.60			MBT			Soda Ash	3		
						Temp	D '11'	E 1 M 1	Supervision	-	Day Cost	\$6,534
	Б	luid Invento					Building	Fresh Mud		ander	Well Cost	\$73,318 rifuge
Daily Oil	Г	luiu iliveliu	Cum. Oil		Underflow	Dancity	Des	onite1	Des	anuci	Centi	inuge
Daily Wat	er		Cum. Wate		Overflow I							
Daily Gas			Cum. Gas		Flow Rate.							
Mud Lost			Cum. Mud		Operating	hours						
Core	·	Size/Type:			Zone:		In:		Out:		Recovery:	
DST	<u> </u>	Zone:		Interval:			Times:					
DST		_ Zone:		interval:			Times:					
	1. Rig up/	Out level sul	2.25	-	9. W/O W	elder		_	17. Plug B	Back		-
	2. Drill			•	10. Survey	7		_	18. Wash	to Btm		_
	3. Ream				11. Wireli			- -	19. Strippi	ng Mud		-
		ig & Catwal	<u>k</u>	<u>-</u>	12. Casing	,		=		mud pumps		=
	5. Circ. &	Cond.			-	Out Cement		_	21. Safety	_	0.75	_
	6. Trip 7. Rig Ser	i	7.25	-	14. Nipple	-	6.00 5.25	=	22. Handl	e Tools land-off Mtg	0.50	=
	8. Rig Rep		0.50	-	15. Test B 16. BOP D		5.45	-	Total Hour		24.00	-
	o. Kig Kep	, and		=	10. DOI 1	71 111		=	Total Hou		24.00	=
						REMARKS						
00:00 - 08:	00 Continued	l to rig-up Bo	OPs adjusted	flow "T" an	d kill line to	accommodat		, began to pr	essure best b	olind rams an	d manifold	
						s were ready				bushing prior	r to trip in ho	ole -
_		•			_	ff the sub price	-			lle and marie	fold daga	or
						nches and blo ollar and rem					ioiu - degasse	CI
contoica De	or s, arpped	cat of note a	pamped c	oment plug	out of diffi C	Januaria relli	5.00 HOW 1	. 10110-10-10				
Prev Cost	\$3,42	22,299	Today	\$57	7,217	Total Cost	\$3,47	79,516	Weather		0-20, clear -	pt cldy
Foremen		Hole V	Yardley	-	Rig Phone		709-649-710	6	Mud Type Taken By:		Gel-Chem rooker / Sha	na Hallay
r or chieff		maie i	i ai uicy		Aug i none		· ロノーロ コ フー / 10	v	Taken by	. ICII y Di	. ounci / Bilă	ne maney

			Vulc	an M	ineral	s Daily	y Drill	ing R	eport			
Well:		Vulc	an Investca				Day:			Date:	251	ful-09
Depth:	829.0	mKB	Progress:	0.0	Drilling:		hrs ROP,		_	Rig:		am # 11
	@ 0800 hrs:					840 m - pren				KB elev:	175.30	
the next da		Dining 311	iiiiii iiiteiiiie	ditte noie	3 i m/m to	o to iii prep	10 40 111 111	amijanc		KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
6	311 / HC	GX-28DX	5160463	829	Out	Metres	Hours	3 x 17.5	IXI IVI	WOD Ruan	TODE	DUOK
0	311 / IIC		3100403	629				3 X 17.3	1	 	 	
	+	527X			-				<u> </u>	<u> </u>	<u> </u>	
	1	L			1				<u> </u>	<u> </u>	<u> </u>	
		D 1	D 2	Drilling As		Die Cala M	205	4-b El4	L VO NM	AWD DC V	O 0 5" NIM 1	DC VO
Model		Pump 1	Pump 2 PZ-11			203 DC, X/C				MWD DC, X	.U, 9.5 NM	
Liner		PZ-11				203 DC, X/C			Pump Pres		-	_kPa
	(mm)	152 279	152 279	BHA Leng Drill Colla			_m	Strap: Drill Pipe		Board:		=
Stroke SPM	(mm)	219	219	D.C. Annu		-	mm m/min	D.P Annul		-	_mm m/min	
Vol.	. 3						-				_m/mm kW	
VOI.	(m³/min)			Jet Velocit	y:		m/sec	Hydraulic	HP:	-	_Kvv	
		arra.					3 57 77			3.5775 1.7		
			VEYS		1	-	MUD	1		MUD AL	DDITIVES	I
	epth	Drift	Azimuth	North	East	Time	4005		Gel		CaC03	
	3.36	2.62	88.30			Density	1005		Caustic		Percol	
	4.29	3.27	64.19		1	Vis.	41		Envirofloc			ļ
	1.66	2.10	62.13		1	pН	9.1		Kelzan			ļ
	9.00	2.30	56.57		1	W.L.	18.4		Cello			ļ
	0.61	4.03	48.70			P.V.	7.0		Bicarb			
	2.34	3.67	51.39			Y.P.	4.0		Newedge			
	5.87	3.32	47.17			Gel S.	1.5 / 2 / 2.5		Drispac			
	9.83	2.95	39.84			Filter Ck	0.5		Desco			
	6.77	2.45	9.96			Solids %	0.0		Barite			
	2.30	2.20	359.20			Oil	0.000		Lignite			
	5.60	2.54	20.30			Ca (mg/l)	80.0		PHPA			
	9.60	2.20	34.10			Cl (mg/l)	1450.0		Sawdust			
80	6.70	2.27	52.60			MBT			Soda Ash			
						Temp			Supervision		Day Cost	
									Mud Van	1	Well Cost	\$73,393
	F.	luid Invento					Des	silter	Desa	ander	Cent	rifuge
Daily Oil			Cum. Oil		Underflow							
Daily Wate	er		Cum. Wate		Overflow 1							
Daily Gas			Cum. Gas		Flow Rate							
Mud Lost			Cum. Mud		Operating	hours						
Core:	·	Size/Type:			Zone:		In:		Out:		Recovery:	
DST:		Zone:		Interval:		-	Times:					
DST:	:	Zone:		Interval:			Times:					
								_				_
	1. Rig up/0	Out			9. W/O W			=	17. Plug B			_
	2. Drill				10. Survey			=	18. Wash			_
	3. Ream				11. Wireli			=.	19. Strippi			=
		g & Catwall	C		12. Casing			=.		mud pumps		=
	5. Circ. &	Cond.			-	Out Cement		_	21. Safety	_	0.50	_
	6. Trip		4.25		14. Nipple	-	7.25	=.	22. Handle		5.00	=
	7. Rig Serv	vice	0.50		15. Test B		6.00	_		and-off Mtg	·	_
	8. Rig Rep	air			16. BOP I	Drill		=	Total Hour	rs.	24.00	_
						REMARKS						
	00 Completed				-	-	-	ilve, inside E	BOP, Upper	pipe rams, ar	nnular	
	HCR, to 100											
	00 Completed											nctions
	Recharge time		· ·							~	d flare tank	
	59 Made-up d					surveys (temp	perature) on	trip on from	250m to 670	m		
Temperatu	re Readings:	250 m - 27 c	, 670 m - 27	c, 815 m - 2	28.5 c,							
M 134 :	5.62	0151	1 1 22	000 7								
	r: 5:6 3 stage				1.000	m 4 1 ~	AA	11 21 4	***	TP1 -	0.15	1
Prev Cost	\$3,47	79,516	Today	\$41	1,800	Total Cost	\$3,52	21,316	Weather:		0-15 wind, s	nowers
E		FT 1 *	7	-	D!_ P!		700 (40 710		Mud Type		Polymer	II''
Foremen		Haie Y	ardley		Rig Phone		709-649-710	U	Taken By:	1 erry B	rooker / Sha	ше папеу

			Vulc	an Mi	ineral	s Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investca	n Robinso	ns #1	•	Day:	27	-	Date:	26-J	ul-09
Depth:	903.0	mKB	Progress:	74.0	Drilling:	15.50	hrs ROP,		4.70	Rig:	Stoneh	am # 11
	@ 0800 hrs:	Driling 311		diate hole @	4+ m/hr to	938 m in anl	ydrite again			KB elev:	175.30	m.
the next da	ay	Ü								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
6	311 / HC	GX-28DX	5160463	829		74	15.50	3 x 17.5	70 + 45	12 - 16		
		527X										
		l n 1	D 4	ln		D': 0 1 14	205	. 1 171		MVD DC V	0.05"	20.10
Model		Pump 1		Drilling As			tr ,305 mm s 0,12-165 mm				O, 9.5" NM I	-
Model Liner		PZ-11 152	PZ-11 152	BHA Leng		230.00	<u>n</u>	Strap:	Pump Pres	sure: Board:	7500	kPa
Stroke	(mm)	279	279	Drill Colla		229/203/165	_	Drill Pipe	0 D	127.0	mm	•
SPM	(IIIII)	85	85	D.C. Annu		54.0	m/min	D.P Annul		45.0	m/min	
Vol.	(m³/min)	0.0	2.46	Jet Velocity		57.0	m/sec	Hydraulic			kW	
					<i>y</i> .			•			-	
		SUR	VEYS				MUD			MUD AL	DITIVES	
De	epth	Drift	Azimuth	North	East	Time			Gel		CaC03	
80	6.70	2.27	52.60			Density	1005		Caustic		Percol	
	1.80	1.90	55.22			Vis.	41		Envirofloc			
	4.70	1.96	49.10			pН	9.1		Kelzan			
	8.30	1.59	47.20		-	W.L.	18.4	-	Cello	1	 	
	2.30	1.65	48.30			P.V.	7.0		Bicarb			
88	66.00	1.75	43.89			Y.P. Gel S.	4.0 1.5 / 2 / 2.5		Newedge			
						Filter Ck	0.5		Drispac Desco			
						Solids %	0.0		Barite			
						Oil	0.000		Lignite			
						Ca (mg/l)	80.0		PHPA			
						Cl (mg/l)	1450.0		Sawdust			
						MBT			Soda Ash			
						Temp			Supervision	1	Day Cost	\$175
									Mud Van	1	Well Cost	\$68,744
	F	luid Invento					Des	silter	Desa	ander		rifuge
Daily Oil			Cum. Oil		Underflow							30.0
Daily Wate	er		Cum. Wate		Overflow I							000
Daily Gas			Cum. Gas		Flow Rate,							1.0
Mud Lost			Cum. Mud		Operating	nours					24	+.0
Core	:	Size/Tyne			Zone:		In:		Out:		Recovery:	
DST:					_ Zone.		Times:		_		_ recovery.	
		Zone:		Interval:			Times:					
		-		•			-					
				-				_				
	1. Rig up/0	Out			9. W/O W	elder		_	17. Plug B	ack		_
	2. Drill		15.00		10. Survey		1.25	=	18. Wash			-
	3. Ream				11. Wireli			=	19. Strippi	_		=
	4. Drill Ou		3.25	-	12. Casing			_		mud pumps		-
	5. Circ. & 6. Trip	Cona.	0.50		13. Pump	Out Cement		=	21. Safety 22. Handle	_	1.00	-
	7. Rig Serv	ice	0.75	-	15. Test B	-	1.25	=		and-off Mtg	0.50	-
	8. Rig Rep		0.75	-	16. BOP D		0.50	-	Total Hour	_	24.00	-
	or rug rup				10, 201 2			=	10001			-
						REMARKS	5					
00:00 - 08:0	00 Tripped in	hole, BOP d	rill, drilled o	ut from 01:0	00 - 04:15 an			with 33 degr	ees circulatii	ng temperatu	re	
	00 Conducted											n 300 kPa
~	op to 6500 kI			-							degrees	
	59 Drilling al				Brook course	e sands, mino	or torque spik	es, reduced	WOB to 14 l	kdaN		
BOP drill &	& discussion.	Circulating t	emperature t	o 43 C								
Tops: Code	roy Group 8	15 m. Shin C	ove limesto	ne 846 m. Fi	ischell's Bro	ok 870 m						
	.,oup o	, этр с										
Prev Cost	\$3,52	21,316	Today	\$26	,492	Total Cost	\$3,54	17,808	Weather:	Plus 1	0-15 wind, s	howers
				-					Mud Type		Polymer	
Foreman		Hale Y	ardley		Rig Phone		709-649-710	6	Taken By:	Terry B	rooker / Sha	ne Halley

			Vulc	an Mi	neral	s Daily	Drill	ing Re	eport			
Well:		Vulc		an Robinso			Day:			Date:	27-J	ul-09
Depth:	995.0	mKB	Progress:		Drilling:	20.25	hrs ROP, 1		4.50	Rig:	Stoneh	
-	@ 0800 hrs:									KB elev:	175.30	
the next da										KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
6	311 / HC	GX-28DX	5160463	829		166	35.75	3 x 17.5	70 Motor	16 - 20		
		527X							45 - 30			
		Pump 1	Pump 2	Drilling Ass							O, 9.5" NM I	OC, XO
Model		PZ-11	PZ-11			03 DC, X/O			Pump Pres		8500	kPa
Liner	(mm)	152	152	BHA Lengt			m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		229/203/165		Drill Pipe		127.0	mm	
SPM	2	85	85	D.C. Annul			m/min	D.P Annula		37.0	m/min	
Vol.	(m³/min)		2.46	Jet Velocity	':	57.0	m/sec	True Hydr	aunc HP:	312.0	kW	
		CLID	VEVC				MID			MIDAD	DITIVEC	
D.	epth	Drift	VEYS Azimuth	North	East	Time	9:00		Gel	MUD AD	CaC03	
	6.70	2.27	52.60	THOFUI	East	Density	1020	 	Gel Caustic	1	CaC03 Percol	
	1.80	1.90	55.22			Vis.	47		Envirofloc	1	Percoi Sulphamic	9
	4.70	1.96	49.10			pH	10.1		Kelzan	12	Saiphaillic	,
	8.30	1.59	47.20			W.L.	9.4		Cello			
	2.30	1.65	48.30			P.V.	10.0		Bicarb	6		
	6.00	1.75	43.89			Y.P.	10.5		Newedge	6		
89	9.80	1.63	45.42			Gel S.	3.5/4.5/5		Drispac	17		
91	3.40	1.69	38.72			Filter Ck	0.5		Desco			
92	7.30	1.48	33.18			Solids %	1.0		Barite			
94	1.20	1.58	38.06			Oil	0.000		Lignite			
95	4.60	1.57	32.11			Ca (mg/l)	520.0		PHPA	9		
96	8.30	1.30	36.90			Cl (mg/l)	2800.0		Sawdust			
						MBT	5.0		Soda Ash	12		
						Temp	42.0		Supervision		Day Cost	\$13,511
	_					ESPolymer	0.6		Mud Van	1	Well Cost	\$87,979
		luid Invento	ry	ı		ests		ate			rifuge	
	ılating Vol.		TD 4 11 1			sing Test		ul-09	Underflow			30.0
	es down hole		Total hole		Last B	OP Test	26-J	ul-09	Overflow I	•		005
Today tota	es at surface		Total surf. Cumulative						Flow Rate, Operating			.8 1.0
Touay tota	11 105505		Cumulative						Operating	110015	Δ.	+.0
Core		Size/Type:			Zone		In:		Out		Pacovary:	
DST		Zone.		Interval	Zone.		Times:		Out.	-	Recovery.	
DST:		Zone:		Interval:			Times:					
	1. Rig up/0	Out		-	9. W/O W	elder		-	17. Plug B	ack		•
	2. Drill		20.25	=	10. Survey		1.75	_	18. Wash t	o Btm	,	•
	3. Ream			=' =:	11. Wireli	ne Logs		='	19. Strippin	ng Mud		
	4. Drill Ou	t		_	12. Casing	/Cement		_	20. Wk on	mud pumps		
	5. Circ. &	Cond.				Out Cement		_	21. Safety		0.75	
	6. Trip			-	14. Nipple	-		_	22. Handle			
	7. Rig Serv		0.75	-	15. Test B			_		and-off Mtg		
	8. Rig Rep	air		=	16. BOP D	rill		_	Total Hour	S	24.00	
		DELLABETO	1									
00.00 00.0	00 Drilled ahe	REMARKS		5 5 A	.:41	1-4- 4						
00:00 - 08:0	JO DIIIIed and	eau moin 903	10 939 111 @	3.3 III/III V	vitii accuiiiu	iaieu sui veys						
08:00 - 16:0	00 Drilled ahe	ead to 966 m	@ 3 8 m/hr	with accumu	lated survey	75						
00.00 10.0	50 Billied une	244 to 700 m	C 5.0 m/m	with accama	iuteu sui ve j	5						
16:00 - 23:5	59 Drilled to	995 m @ 4.4	m/hr in gen	erally coarse	sands and c	lays with acc	umulated sur	rveys				
	day with full							•				
	n hole temper											
Tops: Cod	roy Group 81	15 m, Ship C	Cove limesto	ne 846 m, Fi	schell's Bro	ok 870 m	•					
Prev Cost	\$3,54	7,808	Today	\$58,	,789	Total Cost	\$3,60	06,597	Weather:		us 12-19 driz	zle
т.		** -	7 17	=	D' B'		100 (10 =1-		Mud Type		Polymer	TT ''
Foreman		Hale Y	ardley		Rig Phone		709-649-710	0	Taken By:	Terry Bi	ooker / Sha	ne Halley

Foreman

			Vulo	on Mi	norol	s Daily	, Drill	ing D	nort			
						s Daily			port	_		
Well:	1050.0			an Robinso		16.00	Day:		2.00	Date:		ul-09
Depth:	1058.0 @ 0800 hrs:	mKB	Progress:		Drilling:	16.00	hrs ROP,	m/nr:	3.90	Rig: KB elev:	Stoneh: 175.30	
the next da		Tripping no	ic with bit π	r - supping a	na cutting ii	nc @ /1/ m				KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
6	311 / HC	GX-28DX	5160463	829	1058	229	51.75	3 x 17.5	70 Motor	16 - 20		E-4-WT-PR
		527X							45 - 30			
7	311 / HC	HC506ZX	7011417	1058				6 X 11.1				
		M323										
		Pump 1		Drilling Ass						MWD DC, X	-	
Model		PZ-11	PZ-11			203 DC, X/O			Pump Pres		8500	kPa
Liner Stroke	(mm)	152 279	152 279	BHA Lengt Drill Collar		230.00 229/203/165	m	Strap: Drill Pipe (<u> </u>	Board: 127.0	mm	•
SPM	(mm)	85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m³/min @ 95%	65	2.46	Jet Velocity		57.0	m/sec	True Hydr		351.0	kW	
7 021			2.10	joer (electe)	-	57.0		1140 11,41				
		SUR	VEYS				MUD			MUD AD	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	9:15		Gel		CaC03	
98	32.50	1.49	28.75			Density	1035		Caustic	3	Percol	
	95.80	1.51	28.78			Vis.	55		Envirofloc		Sulphamic	
	09.80	1.59	35.30			pН	9.5		Kelzan	11	T-352	1
	23.40	1.29	32.18			W.L.	7.8		Cello		Defoamer	3
10	37.90	1.55	39.16			P.V.	14.0		Bicarb			
						Y.P. Gel S.	16.5 4.5/7/8		Newedge	5		
						Filter Ck	0.5		Drispac Desco	4		
						Solids %	2.0		Barite			
						Oil	0.000		Lignite			
						Ca (mg/l)	500.0		PHPA	8		
						Cl (mg/l)	4900.0		Sawdust	5		
						MBT	10.0		Soda Ash			
						Temp	44.2		Supervision		Day Cost	\$7,279
		0.70			2020	XSPolymer	0.3		Mud Van	1	Well Cost	\$95,258
	d losses Surfa		iole Estimat	es m3		asing Tests		ate	T. 1 C		rifuge	10.0
	ulating Vol. ses down hole	114.3 4.0	Total hole	4.0		sing Test OP Test		ul-09 ul-09	Underflow Overflow I			20.0
•	ses down noie ses at surface		Total surf.	2.8	Last D	Or Test	20-J	u1-09	Flow Rate,			.8
Today tota		6.8	Cumulative						Operating			2.0
J												
Core	:	Size/Type:			Zone:		In:		Out:		Recovery:	
DST	: : :	Zone:		Interval:			Times:		=		-	
DST	` <u> </u>	Zone:		Interval:			Times:					
	1 D:/	34			9. W/O W	.1.3		=	17 Dl D			
	1. Rig up/C 2. Drill	Jui	16.00	-	10. Survey		1.00	=	17. Plug B 18. Wash			
	3. Ream		10.00		11. Wireli		1.00	-	19. Strippin			
	4. Drill Ou	ıt			12. Casing			=		mud pumps		
	5. Circ. &		0.50		_	Out Cement		=	21. Safety		1.00	•
	6. Trip		3.75	-	14. Nipple	Up BOP		_	22. Handle	Tools	0.75	
	7. Rig Serv	ice	0.50	•	15. Test B	OP & FIT		=	23 Crew H	and-off Mtg	0.50	
	8. Rig Rep	air			16. BOP D	rill		=	Total Hour	'S	24.00	:
		DD1 5 / D27										
00.00 08.	00 Drilled ah	REMARKS		@ 4.1 m./hm.rr	ith aganmul	otod sumrovis	in Eighalla h	mools occurse	onds and als	****		
00.00 - 08.	00 Dillieu ali	zau mom 99.	10 1023 111 (≌ 4.1 III/III W	itii accuiiiui	ateu sui veys	III I ISHCHS U	TOOK COATSE S	salius aliu Cia	iys		
08:00 - 16:	00 Drilled ah	ead to 1051 i	n @ 4 m/hr v	with accumul	ated surveys	s and full rota	itions					
16:00 - 23:	59 Drilled to	1058 m @ 3.	9 m/hr @ 18	:30 circulate	d bottom ho	le sample and	d trip bit for	PDC and lay	down Schlu	mberger		
Max botto	m hole temper	rature to 48 c	legrees.									
Tops: Cod	lroy Group 8	15 m, Shin C	Cove limesto	ne 846 m. Fi	schell's Bro	ok 870 m						
-F 03u												
Prev Cost	\$3,60	6,597	Today	\$40	,943	Total Cost	\$3,64	17,540	Weather: Mud Type		lus 12-19 o/o Polymer	est
Foreman		Hale Y	ardley		Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Halley

Foreman

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1	•	Day:	30		Date:	29-J	ul-09
Depth:	1125.0	mKB	Progress:	67.0	Drilling:	13.00	hrs ROP,		5.15	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 5 +/- m	/hr to 1156 r	n					KB elev:	175.30	m.
the next da	ay									KB - GL	6.30	
Bit #	_	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
7	311 / HC	HC506ZX	7011417	1058		67	13.00	6 X 11.1	65 - 85	8 - 10		
		M323	1									
		Pump 1	Pump 2	Drilling As	combly:	Bit Sub Sl	nock Sub, 2-1	VM DC 308	mm etring et	tah YO		
Model		PZ-11	PZ-11		•),12-165 mm				9000	kPa
Liner	(mm)	152	152	BHA Lengt		230.00	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar	r O.D.	229/203/165	5 mm	Drill Pipe (O.D.	127.0	mm	-
SPM		85	85	D.C. Annul	lar Vel.:	45.0	m/min	D.P Annula	ar Vel.:	37.0	m/min	
Vol.	m ³ /min @ 95%		2.46	Jet Velocity	y:	71.0	m/sec	True Hydr	aulic HP:	351.0	kW	
_	_		VEYS	T	_		MUD	T		MUD AI	DITIVES	1
	epth	Drift	Azimuth	North	East	Time	9:15		Gel		CaC03	
	2.50	1.49	28.75			Density Vic	1050		Caustic	4	Percol	
	05.80 09.80	1.51	28.78 35.30			Vis. pH	59 8.5		Envirofloc Kelzan	5	Sulphamic T-352	
	23.40	1.39	32.18		 	W.L.	7.8		Cello	,	1-352 Defoamer	1
	37.90	1.55	39.16		<u> </u>	P.V.	17.0		Bicarb			1
	99.00	1.00	Wireline	Survey		Y.P.	18.5		Newedge	16		
				-		Gel S.	5/7.5/8		Drispac	7		
						Filter Ck	0.5		Desco			
						Solids %	3.0		Barite			
						Oil	0.000		Lignite			
						Ca (mg/l)	460.0		PHPA	21		
			ļ			Cl (mg/l) MBT	5200.0 12.5		Sawdust Soda Ash	6 13		
			1	1		Temp	34.2		Supervision	13	Day Cost	\$9,491
						XSPolymen			Mud Van	1	Well Cost	\$104,750
Mud	l losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests		ate			rifuge	4101,100
	ılating Vol.	115.4				sing Test		ul-09	Underflow			90.0
Today loss	es down hole	4.0	Total hole	8.0	Last Bo	OP Test	26-J	ul-09	Overflow I	Density	10)35
Today loss	es at surface	3.2	Total surf.	6.0		sing Test		tating hrs	Flow Rate,	m3/min		.8
Today tota	ıl losses	7.2	Cumulative	14.0	Next B	OP Test	8/9/2	009 ??	Operating	hours	24	4.0
		ll Control -		5202			n kdaN & K				Readings (%)	
Pump	Strokes	Pressure	MACP	6393	Drag up	4	Torque	8-10		ground		15
RSPP #1 RSPP #2	75 75	2557 2496			Drag Dn Hook Load					rip		15 37
KS11 π2	13	2470			HOOK LOAU	12				тър	0.	.51
	1. Rig up/C)nt		-	9. Slip & C	int	1.00	=	17. Plug B	ack		-
	2. Drill		13.00	-	10. Survey		0.50	_	18. Wash t		0.50	-
	3. Ream			-	11. Wirelin	ne Logs		_	19. Strippin	ng Mud		-
	4. Drill Ou	t		<u> </u>	12. Casing	/Cement		= =	20. Wk on	mud pumps		<u> </u>
	5. Circ. &	Cond.		=		Out Cement		=	21. Safety	_	0.50	=
	6. Trip	_	4.25	-	14. Nipple	-		_	22. Handle		3.00	-
	7. Rig Serv		0.75	-	15. Test BO			_		and-off Mtg		-
	8. Rig Rep	air		-	16. BOP D	TIII		_	Total Hour	rs	24.00	-
						REMARKS	3					
00:00 - 08:0	00 Completed	laying dow	n directional	tools, and m				t tripped in h	ole and slipt	ed and cut d	rilling line	
	•				•			••	• •		Ü	
08:00 - 16:0	00 Continued	to trip in ho	le and washe	d 20 m to bo	ottom - no un	dergauge ho	le Drilled ah	ead from 10:	30 from 105	8 - 1088 m @	@ 6 m/hr	
	59 Drilled to											ing to
Tone: Ced	roy Group 81	5 m Chin	ove limeste	no 846 m Es	scholl's D=s	ok 870 m						
Tops: Coa	roy Group 81	ıə m, smp C	ove nmesto	ne 040 m, F1	schen S DFO	UK O/U III						
Prev Cost	\$3,64	7,540	Today	\$52	,161	Total Cost	\$3,69	99,701	Weather:		Plus 12-26 cle	ar
Foreman		Hale Y	ardley	=	Rig Phone		709-649-710	16	Mud Type Taken By:		Polymer rooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	31	•	Date:	30-J	ul-09
Depth:	1238.0	mKB	Progress:	113.0	Drilling:	21.50	hrs ROP,		5.26	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 6 +/- m	/hr to 1275 r	n					KB elev:	175.30	m.
the next da	ay									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
7	311 / HC	HC506ZX	7011417	1058		180	34.50	6 X 11.1	80 - 105	10 - 13		
		M323										
				_								
		Pump 1	Pump 2	Drilling As				VM DC, 308				
Model		PZ-11	PZ-11					DC, 8-HWT	Pump Pres		10,000	kPa
Liner	(mm)	152	152	BHA Leng		230.00	m	Strap:	- D	Board:		-
Stroke	(mm)	279	279	Drill Collar D.C. Annul		229/203/165	_	Drill Pipe		127.0	mm	
SPM Vol.	m³/min @ 95%	85	85 2.46	Jet Velocity		45.0 71.0	m/min m/sec	D.P Annula True Hydr		37.0	m/min kW	
V 01.	m /min @ 95%		2.40	Jet velocit	y:	/1.0	III/Sec	True Hyur	aunc nr:	390.0	KW	
		CLID	VEYS				MUD			MIDAD	DITIVES	
D ₄	epth	Drift	Azimuth	North	East	Time	8:40		Gel	MIUD AL	CaC03	1
	32.50	1.49	28.75	North	Last	Density	1055		Caustic	3	Percol	
	95.80	1.49	28.78	†		Vis.	59		Envirofloc	,	Sulphamic	
	09.80	1.59	35.30			pH	10.0		Kelzan		T-352	
	23.40	1.29	32.18			W.L.	7.6		Cello		Defoamer	
	37.90	1.55	39.16			P.V.	17.0		Bicarb		2K-7	2
	99.00	1.00	Wireline	Survey		Y.P.	18.0		Newedge			
	68.00	0.25	"	"		Gel S.	5/7/8		Drispac			
						Filter Ck	0.5		Desco			
						Solids %	3.0		Barite	45		
						Oil	0.000		Lignite			
						Ca (mg/l)	20.0		PHPA	4		
						Cl (mg/l)	7100.0		Sawdust	4		
			•			MBT	10.0		Soda Ash	8		
						Temp	46.0		Supervision		Day Cost	\$3,719
						XSPolymer	0.6		Mud Van	1	Well Cost	\$108,469
N / J	l losses Surfa	ce & Downl	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Mud						cina Test	26.1	ul-09	Underflow	Density	170	0.00
	ılating Vol.	115.4			Last Ca	sing rest	∠0-J	u1-07	Chuchhow	Delibrej	170	50.0
Total circu Today loss	ulating Vol. ses down hole	1.5	Total hole	9.5	Last B	OP Test	26-J	ul-09	Overflow I	Density	10)25
Total circu Today loss Today loss	ulating Vol. ses down hole ses at surface	1.5 1.7	Total surf.	7.7	Last B Next Ca	OP Test sing Test	26-J 1000 ro	ul-09 tating hrs	Overflow I Flow Rate,	Density m3/min	10)25 .8
Total circu Today loss	ulating Vol. ses down hole ses at surface	1.5			Last B Next Ca	OP Test	26-J 1000 ro	ul-09	Overflow I	Density m3/min	10)25
Total circu Today loss Today loss	ulating Vol. ses down hole ses at surface al losses	1.5 1.7 3.2	Total surf. Cumulative	7.7	Last B Next Ca Next B	OP Test sing Test OP Test	26-J 1000 ro 8/9/2	tating hrs 009 ??	Overflow I Flow Rate,	Density m3/min hours	10 0 24)25 1.8 4.0
Total circu Today loss Today loss Today tota	ulating Vol. ses down hole ses at surface al losses We	1.5 1.7 3.2	Total surf. Cumulative	7.7	Last B Next Ca Next B	OP Test using Test OP Test OP Condition	26-J 1000 ro 8/9/2 n kdaN & K	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating	Density m3/min hours Total Gas F	10 0 24 Readings (%))25 .8 4.0
Total circu Today loss Today loss Today tota Pump	ulating Vol. ses down hole ses at surface al losses We Strokes	1.5 1.7 3.2 Il Control - Pressure	Total surf. Cumulative	7.7	Last B Next Ca Next B He Drag up	OP Test sing Test OP Test Description OP Test	26-J 1000 ro 8/9/2	tating hrs 009 ??	Overflow I Flow Rate, Operating	Density m3/min hours Total Gas F ground	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ulating Vol. ses down hole ses at surface al losses We Strokes 75	1.5 1.7 3.2 Il Control - Pressure 2550	Total surf. Cumulative	7.7	Last B Next Ca Next B Ho Drag up Drag Dn	OP Test sing Test OP Test Ole Condition 5 5 5	26-J 1000 ro 8/9/2 n kdaN & K	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas F ground ection	10 0 2 ² Readings (%))25 .8 4.0
Total circu Today loss Today loss Today tota Pump	ulating Vol. ses down hole ses at surface al losses We Strokes	1.5 1.7 3.2 Il Control - Pressure	Total surf. Cumulative	7.7	Last B Next Ca Next B He Drag up	OP Test sing Test OP Test Ole Condition 5 5 5	26-J 1000 ro 8/9/2 n kdaN & K	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas F ground	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ulating Vol. ses down hole ses at surface al losses We Strokes 75 75	1.5 1.7 3.2 Il Control - Pressure 2550 2500	Total surf. Cumulative	7.7	Last B Next Ca Next B He Drag up Drag Dn Hook Load	OP Test using Test OP Test De Conditio 5 5 75	26-J 1000 ro 8/9/2 n kdaN & K	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T	Density m3/min hours Total Gas F ground ection rip	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ulating Vol. ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C	1.5 1.7 3.2 Il Control - Pressure 2550 2500	Total surf. Cumulative kPa MACP	7.7	Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	OP Test sing Test OP Test OP Test ble Conditio 5 75 Cut	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T	Density m3/min hours Total Gas F ground ection rip	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ulating Vol. ses down hole ses at surface al losses We Strokes 75 1. Rig up/C 2. Drill	1.5 1.7 3.2 Il Control - Pressure 2550 2500	Total surf. Cumulative	7.7	Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & G 10. Survey	OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test Cut	26-J 1000 ro 8/9/2 n kdaN & K	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t	Density m3/min hours Total Gas F ground ection rip ack to Btm	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream	1.5 1.7 3.2 Il Control - Pressure 2550 2500	Total surf. Cumulative kPa MACP	7.7	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & 0 10. Survey 11. Wireli	OP Test using Test OP	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin	Density m3/min hours Total Gas F ground ection rip ack to Btm ng Mud	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Dut	Total surf. Cumulative kPa MACP 21.50	7.7	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & 0 10. Survey 11. Wireli 12. Casing	OP Test using Test OP Test OP Test OP Test OP Test Self-Self-Self-Self-Self-Self-Self-Self-	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on	Density m3/min hours Total Gas F ground ection rip ack to Btm ng Mud mud pumps	10 0 22 teadings (% 0.	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Dut	Total surf. Cumulative kPa MACP	7.7	Last B Next Ca Next B The state of the stat	OP Test using Test OP Test OP Test Dele Condition 5 5 75 Cut ne Logs // Cement Out Cement	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippi 20. Wk on 21. Safety	Density m3/min hours Total Gas F ground ection rip ack to Btm ng Mud mud pumps Meeting	10 0 2 ² Readings (%)	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Dut t Cond.	Total surf. Cumulative kPa MACP 21.50 0.25	7.7	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test sing Test OP Test OP Test De Condition 5 5 75 Cut ne Logs /Cement Out Cement Up BOP	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash (19. Strippi) 20. Wk on 21. Safety 22. Handle	Density m3/min hours Total Gas F ground ection rip ack to Btm ng Mud mud pumps Meeting Tools	10 0 24 deadings (%) 0. 0.	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out	Total surf. Cumulative kPa MACP 21.50	7.7	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & G 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test sing Test OP Test OP Test De Conditio 5 5 75 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	Density m3/min hours Total Gas F ground tection rip ack to Btm tog Mud mud pumps Meeting Tools and-off Mtg	10 0 24 deadings (%) 0. 0. 0.50	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out	Total surf. Cumulative kPa MACP 21.50 0.25	7.7	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test sing Test OP Test OP Test De Conditio 5 5 75 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash (19. Strippi) 20. Wk on 21. Safety 22. Handle	Density m3/min hours Total Gas F ground tection rip ack to Btm tog Mud mud pumps Meeting Tools and-off Mtg	10 0 24 deadings (%) 0. 0.	025 0.8 4.0 07
Total circu Today loss Today loss Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out	Total surf. Cumulative kPa MACP 21.50 0.25	7.7	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & G 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test sing Test OP Test OP Test De Conditio 5 5 75 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	Density m3/min hours Total Gas F ground tection rip ack to Btm tog Mud mud pumps Meeting Tools and-off Mtg	10 0 24 deadings (%) 0. 0. 0.50	025 0.8 4.0 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.7 3.2 Ill Control - Pressure 2550 2500 Out t Cond.	Total surf. Cumulative kPa MACP 21.50 0.25 0.75	6353	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP E	OP Test using Test OP	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ?? ft/# 8-10	Overflow I Flow Rate, Operating Backy Conn 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground election rip ack to Btm ng Mud mud pumps Meeting to Tools and-off Mtg	0.50 0.50	025 0.8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface al losses We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep	1.5 1.7 3.2 Ill Control - Pressure 2550 2500 Out t Cond.	Total surf. Cumulative kPa MACP 21.50 0.25 0.75	6353	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP E	OP Test using Test OP	26-J 1000 ro 8/9/2 n kdaN & K Torque	ul-09 tating hrs 009 ?? ft/# 8-10	Overflow I Flow Rate, Operating Backy Conn 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground election rip ack to Btm ng Mud mud pumps Meeting to Tools and-off Mtg	0.50 0.50	025 0.8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:0	ses down hole ses at surface al losses We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond.	Total surf. Cumulative kPa MACP 21.50 0.25 0.75	7.7 17.2 6353	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test using Test OP Test ole Conditio 5 5 75 Cut ne Logs //Cement Out Cement Up BOP OP & FIT Orill REMARKS	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 se sands and	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:00 - 16:0	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 d to 1192 m a	7.7 17.2 6353 6353 with 8-10 kg	Last B Next Ca Next B The state of the stat	OP Test using Test OP Test Sing Test OP Test OP Test Sing Test OP Test Sing	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 se sands and	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:00 - 16:0	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps 00 Drilled and	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 d to 1192 m a	7.7 17.2 6353 6353 with 8-10 kg	Last B Next Ca Next B The state of the stat	OP Test using Test OP Test Sing Test OP Test OP Test Sing Test OP Test Sing	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 se sands and	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:00 - 16:0	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 d to 1192 m a	7.7 17.2 6353 6353 with 8-10 kg	Last B Next Ca Next B The state of the stat	OP Test using Test OP Test Sing Test OP Test OP Test Sing Test OP Test Sing	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 se sands and	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:00 - 16:0	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 d to 1192 m a	7.7 17.2 6353 6353 with 8-10 kg	Last B Next Ca Next B The state of the stat	OP Test using Test OP Test Sing Test OP Test OP Test Sing Test OP Test Sing	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 se sands and	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:0 08:00 - 16:0 16:00 - 23:	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep 00 Drilled ahe	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air to dril aheace ead and surve	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 25 to 1157 m i to 1192 m a eyed in sandy	7.7 17.2 6353 with 8-10 ke and surveyed y red-beds to	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test sing Test OP Test OP Test OP Test OLUMBER TEST	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50	ul-09 tating hrs 009 ?? ft/# 8-10	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:0 08:00 - 16:0 16:00 - 23:	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air to dril aheace ead and surve	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 25 to 1157 m i to 1192 m a eyed in sandy	7.7 17.2 6353 with 8-10 ke and surveyed y red-beds to	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test sing Test OP Test OP Test OP Test OLUMBER TEST	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50	ul-09 tating hrs 009 ?? ft/# 8-10 clays @ 4.4	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg secasional 15+	0.50 0.50 24.00	025 0.8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:0 08:00 - 16:0 16:00 - 23::	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air to dril ahead ead and surve	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 25 to 1157 m at to 1192 m a eyed in sandy	7.7 17.2 6353 with 8-10 kd and surveyed y red-beds to	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & G 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test sing Test OP Test ole Conditio 5 5 75 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS RPM in coar WOB to 10-1 m/hr	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 See sands and 3 kdaN and 1	ul-09 tating hrs 009 ?? ft/# 8-10	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour m/hr with oc twith no ince	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg s creasional 15+	0.50 0.50 24.00 0.50 0.50 0.50 0.50 0.50 0.50 0.50	025 .8 4.0 07 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00 - 08:0 08:00 - 16:0 16:00 - 23:	ses down hole ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	1.5 1.7 3.2 Il Control - Pressure 2550 2500 Out t Cond. rice air to dril aheace ead and surve	Total surf. Cumulative kPa MACP 21.50 0.25 0.75 25 to 1157 m i to 1192 m a eyed in sandy	7.7 17.2 6353 with 8-10 kd and surveyed y red-beds to	Last B Next Ca Next B H Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test sing Test OP Test OP Test OP Test OLUMBER TEST	26-J 1000 ro 8/9/2 n kdaN & K Torque 0.50 See sands and 3 kdaN and 1	ul-09 tating hrs 009 ?? ft/# 8-10	Overflow I Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas F ground ection rip ack to Btm mg Mud mud pumps Meeting to Tools and-off Mtg s rease in torq	0.50 0.50 24.00	025 .8 4.0 07 07 07

			Vulc	an Mi	neral	s Daily	Drill	ing Re	port			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	32		Date:	31-J	ul-09
Depth:	1350.0	mKB	Progress:		Drilling:	21.50	hrs ROP, r		5.21	Rig:	Stoneh	
Operation	@ 0800 hrs:	Drillng ahea	ad @ 5+ m/h	r to 1385 m i	n Sprout Fa	lls - silty, san	dy shales			KB elev:	175.30	
the next da	<u> </u>									KB - GL	6.30	
Bit #	_	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
7	311 / HC	HC506ZX	7011417	1058		292	56.00	6 X 11.1	80 - 105	10 - 13		
		M323	1									
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, Sh	ock Sub. 2-N	MM DC, 308	mm string st	ab XO		
Model		PZ-11	PZ-11			203 DC, X/O					12,000	kPa
Liner	(mm)	152	152	BHA Lengt		230.00	m	Strap:	. •	Board:		
Stroke	(mm)	279	279	Drill Collar	· O.D.	229/203/165	mm	Drill Pipe ().D.	127.0	mm	
SPM		85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m ³ /min @ 95%		2.46	Jet Velocity	7:	71.0	m/sec	True Hydra	aulic HP:	468.0	kW	
		CLID	EZENZO.				MIID			MIDAD	DITIME	
D	epth	Drift	VEYS Azimuth	North	East	Time	MUD 9:15		Gel	MUD AL	CaC03	
	32.50	1.49	28.75	North	East	Density	1060		Caustic	2	Percol	
	95.80	1.51	28.78			Vis.	57		Envirofloc		Sulphamic	
	09.80	1.59	35.30			pH	9.5		Kelzan		T-352	
	23.40	1.29	32.18			W.L.	8.0		Cello		Defoamer	1
10	37.90	1.55	39.16			P.V.	16.0		Bicarb		2K-7	3
	99.00	1.00	Wireline	Survey		Y.P.	17.5		Newedge			
	68.00	0.25	"	"		Gel S.	4.5/7/8		Drispac			
12	65.00	1.00	"	"		Filter Ck	0.5		Desco			
						Solids % Oil	3.5 0.000		Barite			
						Ca (mg/l)	20.0		Lignite PHPA	7		
						Cl (mg/l)	7900.0		Sawdust	3		
			1			MBT	10.0		Soda Ash	11		
						Temp	47.4		Supervision		Day Cost	\$2,668
						XSPolymer	0.7		Mud Van	1	Well Cost	\$111,137
Muc	d losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	Da	ate		Cent	rifuge	
	ulating Vol.	131.0				sing Test		ul-09	Underflow			0.0
Todov loss		3.0	Total hole	12.5	Last B	OP Test	26-J	ul-09	Overflow I			20
	ses down hole											
Today loss	ses at surface	3.5	Total surf.	11.2		asing Test	1000 rot		Flow Rate,		0	
	ses at surface			11.2 23.7		OP Test		ating hrs 009 ??	Flow Rate, Operating		24	
Today loss	ses at surface al losses	3.5 6.5	Total surf. Cumulative		Next B	OP Test	8/9/20	009 ??		hours	24	.0
Today loss Today tota	ses at surface al losses We	3.5 6.5	Total surf. Cumulative	23.7	Next B	OP Test	8/9/20 n kdaN & K	009 ?? ft/#	Operating	hours Total Gas F	24 Readings (%)	.0
Today loss Today tota Pump	ses at surface al losses We Strokes	3.5 6.5 Il Control - Pressure	Total surf. Cumulative		Next B	OP Test ole Condition 5	8/9/20	009 ??	Operating Backs	hours Total Gas F ground	24 Readings (%) 0.	07
Today loss Today tota	ses at surface al losses We	3.5 6.5	Total surf. Cumulative	23.7	Next B H Drag up	OP Test ole Condition 5 5	8/9/20 n kdaN & K	009 ?? ft/#	Operating Backs Conn	hours Total Gas F	24 Readings (%)	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75	3.5 6.5 Il Control - Pressure 2800	Total surf. Cumulative	23.7	Next B H Drag up Drag Dn	OP Test ole Condition 5 5	8/9/20 n kdaN & K	009 ?? ft/#	Operating Backs Conn	hours Total Gas F ground ection	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75	3.5 6.5 Il Control - Pressure 2800 2750	Total surf. Cumulative kPa MACP	23.7	Next B H Drag up Drag Dn Hook Load	OP Test ole Condition 5 5 1 78	8/9/20 n kdaN & K	009 ?? ft/#	Operating Backs Conn	hours Total Gas F ground ection rip	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill	3.5 6.5 Il Control - Pressure 2800 2750	Total surf. Cumulative	23.7	Next B H Drag up Drag Dn Hook Load 9. Slip & 0 10. Survey	ole Condition 5 5 1 78	8/9/20 n kdaN & K	009 ?? ft/#	Backs Conn Ti 17. Plug B 18. Wash t	Total Gas F ground ection rip ack o Btm	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream	3.5 6.5 Il Control - Pressure 2800 2750	Total surf. Cumulative kPa MACP	23.7	H Drag up Drag Dn Hook Load 9. Slip & 0 10. Survey 11. Wireli	ole Condition 5 5 1 78 Cut 7 ne Logs	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin	Total Gas F ground ection rip ack o Btm ng Mud	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	3.5 6.5 Il Control - Pressure 2800 2750 Dut	Total surf. Cumulative kPa MACP	23.7	H Drag up Drag Dn Hook Load 9. Slip & 0 10. Survey 11. Wireli 12. Casing	OP Test ole Condition 5 5 78 Cut ne Logs	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backg Conn T. Plug B. 18. Wash t 19. Strippin 20. Wk on n	Total Gas F ground ection rip ack o Btm ng Mud mud pumps	24 Readings (%) 0. 0.	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	3.5 6.5 Il Control - Pressure 2800 2750 Dut	Total surf. Cumulative kPa MACP	23.7	Next B H Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump	OP Test Ole Condition 5 5 78 Cut In Logs Cement Out Cement	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backs Conn T. 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety	Total Gas F ground ection rip ack o Btm g Mud nud pumps Meeting	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50	23.7	Next B H Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	ole Condition 5 5 78 Cut In Logs Cement Out Cement Up BOP	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backs Conn T. 17. Plug B. 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools	24 Readings (%) 0. 0.	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	3.5 6.5 Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP	23.7	Next B H Drag up Drag Dn Hook Loac 9. Slip & 0 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test Ole Condition 5 5 78 Cut In Logs In Company In Logs In Log	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	22 Readings (%) 0. 0. 0. 0.50	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	3.5 6.5 Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50	23.7	Next B H Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test Ole Condition 5 5 78 Cut In Logs In Company In Logs In Log	8/9/20 1 kdaN & Ki Torque	009 ?? ft/#	Backs Conn T. 17. Plug B. 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	24 Readings (%) 0. 0. 0.	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	3.5 6.5 Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50	23.7	Next B H Drag up Drag Dn Hook Loac 9. Slip & 0 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test Ole Condition 5 5 78 Cut In Logs In Company In Logs In Log	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/#	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	22 Readings (%) 0. 0. 0. 0.50	07
Pump RSPP #1 RSPP #2	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50	6312	Next B Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50 0.75	23.7 6312 with 10-13 k	Next B Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond.	Total surf. Cumulative kPa MACP 21.50 0.75	23.7 6312 with 10-13 k	Next B Drag up Drag Dn Hook Loac 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 The Rig up/C The Drill The Rig Continued The Rig Con	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m	23.7 6312 with 10-13 k	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m	23.7 6312 with 10-13 k	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 The Rig up/C The Drill The Rig Continued The Rig Con	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m	23.7 6312 with 10-13 k	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 The Rig up/C The Drill The Rig Continued The Rig Con	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m	23.7 6312 with 10-13 k	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test ole Condition 5 5 1 78 Cut y ne Logs // Cement Out Cement Up BOP OP & FIT Drill REMARKS	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2 00:00 - 08: 08:00 - 16: 16:00 - 23:	Strokes T5 T5 The Rig up/C The Drill The Rig Continued The Rig Con	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air ead from 123 to dril aheace ead in sandy,	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m silty shales	23.7 6312 with 10-13 k @ 4.9 m/hr to 1350 @ 6.	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	ole Condition 5 5 78 Cut y ne Logs y/Cement Out Cement Up BOP OP & FIT Orill REMARKS S RPM in rec	8/9/20 n kdaN & Ki Torque 0.75	009 ?? ft/# 10+	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 24.00	07
Pump RSPP #1 RSPP #2 00:00 - 08: 08:00 - 16: 16:00 - 23:	Strokes T5 T5 T1. Rig up/C T2. Drill T3. Ream T4. Drill Ou T5. Circ. & T6 T7 T8. Rig Serv T8. Rig Reps T9 T9 T1. Rig Serv T9 T1. Rig Serv T1. Rig Serv T1. Rig Serv T2. Rig Serv T3. Rig Serv T4. Drilled ahe T5 T5 T6 T6 T7 T7 T7 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead ead in sandy,	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m 1 to 1315 m silty shales	23.7 6312 with 10-13 k @ 4.9 m/hr to 1350 @ 6.	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test Ole Condition 5 5 78 Cut y ne Logs y/Cement Out Cement Up BOP OP & FIT Orill REMARKS 05 RPM in recommendation of the properties of the	8/9/20 n kdaN & Ki Torque 0.75 d bed clays @	2 5.5 m/hr w	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.50 0.50 0.50 0.50 0.50 0.50	07
Pump RSPP #1 RSPP #2 00:00 - 08: 08:00 - 16: 16:00 - 23:	Strokes T5 T5 T1. Rig up/C T2. Drill T3. Ream T4. Drill Ou T5. Circ. & T6 T7 T8. Rig Serv T8. Rig Reps T9 T9 T1. Rig Serv T9 T1. Rig Serv T1. Rig Serv T1. Rig Serv T2. Rig Serv T3. Rig Serv T4. Drilled ahe T5 T5 T6 T6 T7 T7 T7 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air ead from 123 to dril aheace ead in sandy,	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m d to 1315 m silty shales	23.7 6312 with 10-13 k @ 4.9 m/hr to 1350 @ 6.	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	ole Condition 5 5 78 Cut y ne Logs y/Cement Out Cement Up BOP OP & FIT Orill REMARKS S RPM in rec	8/9/20 n kdaN & Ki Torque 0.75 d bed clays @	009 ?? 10+ 10+	Backs Conn Tr. Plug B 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm ag Mud mud pumps Meeting 'Tools and-off Mtg s	0.50 0.50 24.00 0.12-21 o/cast	07
Pump RSPP #1 RSPP #2 00:00 - 08: 08:00 - 16: 16:00 - 23:	Strokes T5 T5 T1. Rig up/C T2. Drill T3. Ream T4. Drill Ou T5. Circ. & T6 T7 T8. Rig Serv T8. Rig Reps T9 T9 T1. Rig Serv T9 T1. Rig Serv T1. Rig Serv T1. Rig Serv T2. Rig Serv T3. Rig Serv T4. Drilled ahe T5 T5 T6 T6 T7 T7 T7 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8 T8	3.5 6.5 Il Control - Pressure 2800 2750 Out t Cond. rice air to dril ahead ead in sandy,	Total surf. Cumulative kPa MACP 21.50 0.75 88 to 1277 m 1 to 1315 m silty shales	23.7 6312 with 10-13 k @ 4.9 m/hr to 1350 @ 6.	Next B H Drag up Drag Dn Hook Load 9. Slip & 6 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP I	OP Test Ole Condition 5 5 78 Cut In ELogs In Cement Out Cement Up BOP OP & FIT Orill REMARKS Dok 870 m, S Total Cost	8/9/20 n kdaN & Ki Torque 0.75 d bed clays @	0009 ?? ft/# 10+ 0009 ?? 2 5.5 m/hr w 2 4,300	Backs Conn Ti 17. Plug B 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground ection rip ack o Btm gg Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50 0.50 0.50 0.50 0.50	0 07 07 07

			Vulc	an Mi	neral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	33		Date:	01-A	ug-09
Depth:		mKB	Progress:		Drilling:	21.50	hrs ROP, 1	n/hr:	4.74	Rig:	Stoneha	
-	@ 0800 hrs:	Drillng ahea	ad @ 4+ m/h	r to 1475 m i	n Sprout Fal	lls - silty, san	dy shales			KB elev:	175.30	
the next da			C. LIN.	т	0.4	1 M 4	TT	NT 1	DDM	KB - GL	6.30	
Bit #	Size/Make 311 / HC	Model IADC HC506ZX	Serial No. 7011417	In 1058	Out	Metres 394	77.50	Nozzles 6 X 11.1	RPM 70-90	WOB kdaN 10 - 13	IODL	BGOR
/	311 / HC	M323	/01141/	1038		394	77.30	0 A 11.1	70-90	10 - 13		
		141323										
				l				l	l	l		
		Pump 1	Pump 2	Drilling Ass	sembly:	Bit, Sub, Sh	ock Sub, 2-N	M DC, 308	mm string st	ab XO		
Model		PZ-11	PZ-11	1-203 mm E	OC -Jars- 1-2	03 DC, X/O	,12-165 mm	DC, 8-HWT	Pump Press	sure:	12,000	kPa
Liner	(mm)	152	152	BHA Lengt	h:	230.00	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		229/203/165	mm	Drill Pipe (127.0	mm	
SPM	_	85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m ³ /min @ 95%		2.46	Jet Velocity	7:	71.0	m/sec	True Hydr	aulic HP:	468.0	kW	
		CEIDI	- 7E7E7C				MILID			MIDAD	DITTI	
D-	41-		VEYS	NI41-	E4	T:	MUD	İ	G 1	MUD AD	DITIVES	
	pth 2.50	Drift 1.49	Azimuth 28.75	North	East	Time Density	6:16 1065		Gel Caustic	3	CaC03 Percol	
	5.80	1.49	28.78			Vis.	61		Envirofloc	3	Sulphamic	
	9.80	1.59	35.30			pH	9.5		Kelzan		T-352	
	3.40	1.29	32.18			W.L.	8.1		Cello		Defoamer	1
	7.90	1.55	39.16			P.V.	19.0		Bicarb		2K-7	3
	9.00	1.00	Wireline	Survey		Y.P.	18.0		Newedge			
	8.00	0.25	"	"		Gel S.	4.5/7/8		Drispac			
126	5.00	1.00	"	"		Filter Ck	0.5		Desco			
136	0.00	1.25	"	"		Solids %	3.5		Barite			
145	6.00	1.00	"	"		Oil	0.000		Lignite			
						Ca (mg/l)	40.0		PHPA	9		
			ļ			Cl (mg/l)	8200.0		Sawdust	3		
			ľ	1		MBT	12.5		Soda Ash			
						Temp	49.4		Supervision		Day Cost	\$3,014
	1 C C	0 D 1	L E 4'4		DOD 0 C	XSPolymer		ate	Mud Van	1	Well Cost	\$114,151
N / J				es mə	BUP & C	asing Tests	D	ate		Cent	rifuge	
	losses Surfa			1	Lost Co	ging Toot	26.1	.1.00	Lindouflow	Donoite	17/	
Total circu	lating Vol.	139.6				sing Test		ul-09	Underflow D		174	
Total circu Today losse	lating Vol. es down hole	139.6 4.5	Total hole		Last B	OP Test	26-J	ul-09	Overflow D	ensity	10	55
Total circu Today losse Today losse	lating Vol. es down hole es at surface	139.6 4.5 4.3	Total hole Total surf.		Last B Next Ca	OP Test sing Test	26-J 1000 rot	ul-09 ating hrs	Overflow E Flow Rate,	Density m3/min	10	.8
Total circu Today losse	lating Vol. es down hole es at surface	139.6 4.5	Total hole		Last B Next Ca	OP Test	26-J 1000 rot	ul-09	Overflow D	Density m3/min	10	55
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	139.6 4.5 4.3	Total hole Total surf, Cumulative		Last B Next Ca Next B	OP Test sing Test	26-J 1000 rot 8/9/20	ul-09 ating hrs 009 ??	Overflow E Flow Rate, Operating	Density m3/min hours	10	55 .8 i.0
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	139.6 4.5 4.3 8.8	Total hole Total surf, Cumulative		Last B Next Ca Next B	OP Test sing Test OP Test	26-J 1000 rot 8/9/20	ul-09 ating hrs 009 ??	Overflow D Flow Rate, Operating	Density m3/min hours	10 0 24 Readings (%)	55 .8 i.0
Total circu Today losse Today losse Today total	lating Vol. es down hole es at surface l losses We	139.6 4.5 4.3 8.8	Total hole Total surf. Cumulative	32.5	Last B Next Ca Next B	OP Test using Test OP Test	26-J 1000 rot 8/9/20 n kdaN & K	ul-09 ating hrs 009 ??	Overflow E Flow Rate, Operating D	Density m3/min hours Total Gas R	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface l losses Wel	139.6 4.5 4.3 8.8 Il Control -	Total hole Total surf. Cumulative	32.5	Last B Next Ca Next B He Drag up	OP Test using Test OP Test OP Condition 5 5	26-J 1000 rot 8/9/20 n kdaN & K	ul-09 ating hrs 009 ??	Overflow E Flow Rate, Operating Backg	Density m3/min hours Total Gas R ground	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 75 75	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative	32.5	Last B Next Ca Next B He Drag up Drag Dn	OP Test using Test OP Test OP Condition 5 5	26-J 1000 rot 8/9/20 n kdaN & K	ul-09 ating hrs 009 ??	Overflow E Flow Rate, Operating Backg	Density m3/min hours Total Gas R ground ection	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses Wel Strokes 75 75 1. Rig up/O	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative kPa MACP	32.5	Last B Next Ca Next B Drag up Drag Dn Hook Load	OP Test sing Test OP Test De Condition 5 5 81	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ??	Overflow L Flow Rate, Operating l Backg Conn To	Density m3/min hours Total Gas R ground ection rip	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses Wel Strokes 75 75 1. Rig up/O 2. Drill	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative	32.5	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey	OP Test using Test OP Test OP Test Ole Condition 5 5 81	26-J 1000 rot 8/9/20 n kdaN & K	ul-09 ating hrs 009 ??	Overflow L Flow Rate, Operating I Backg Conn Tr 17. Plug Ba 18. Wash t	Density m3/min hours Total Gas R ground ection rip ack o Btm	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	strokes T5 T1. Rig up/O 2. Drill T3. Ream	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative kPa MACP	32.5	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	OP Test using Test OP Test OP Test OP Test OP Set OP Test OP Set OP Test OP Te	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ??	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Strippin	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	strokes The stroke	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative kPa MACP	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	OP Test using Test OP	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ??	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on n	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps	10 0 24 teadings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	strokes The strokes Strokes Strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The strokes The stroke strokes The stroke stroke stroke stroke strokes The stroke str	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280	Total hole Total surf. Cumulative kPa MACP	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump (OP Test using Test OP Test OP Test Description 5 5 81 Cut me Logs // Cement Out Cement	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ??	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on n 21. Safety	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting	10 0 24 Readings (%)	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface losses We Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test sing Test OP Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ??	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools	10 0 24 teadings (%) 0.0 0.50	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	strokes T5 T1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out	Total hole Total surf. Cumulative kPa MACP	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test sing Test OP Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ??	Backg Conn To T. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	10 0 24 Readings (%) 0.0 0.50	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface losses We Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out	Total hole Total surf. Cumulative kPa MACP 21.50	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test sing Test OP Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ??	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	10 0 24 teadings (%) 0.0 0.50	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1	strokes T5 T1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out	Total hole Total surf. Cumulative kPa MACP 21.50	32.5	Last B Next Ca Next B Trag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test sing Test OP Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ??	Backg Conn To T. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	10 0 24 Readings (%) 0.0 0.50	55 .8 0
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes T5 T1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.50	6271	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OL Condition 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS	26-J 1000 rot 8/9/20 n kdaN & K Torque	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface losses Wel Strokes 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.50 1.00	32.5 6271 with 10-13 k	Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test ssing Test OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OP	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs)09 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes Strokes 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.50 1.00	32.5 6271 with 10-13 k	Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test ssing Test OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OP	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50	ul-09 ating hrs 009 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2 00:00 - 24:0	lating Vol. es down hole es at surface losses We Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa 0 Drilled ahe	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.50 1.00 Cove limestor	32.5 6271 with 10-13 k	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D cdan, 80 - 10	OP Test sing Test OP Test OP Test OL Condition 5 5 81 Cut ne Logs //Cement Out Cement Up BOP OP & FIT brill REMARKS 00 RPM in received a service of the condition of the	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50 d bed clays @	ul-09 ating hrs 109 ?? Ft/# 10+ 2 4.75 m/hr	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H: Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 24.00	55 .8 0 07 07
Total circu Today losse Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface losses Wel Strokes 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	139.6 4.5 4.3 8.8 Il Control - Pressure 3320 3280 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.50 1.00	32.5 6271 with 10-13 k	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D cdan, 80 - 10	OP Test ssing Test OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OLUT OP Test OP	26-J 1000 rot 8/9/20 n kdaN & K Torque 0.50 d bed clays @	ul-09 ating hrs)09 ?? Ft/# 10+	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew Ha Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.50 0.50	55 .80

			Vulc	an Mi	neral	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	34		Date:	02-A	ug-09
Depth:	1452.0	mKB	Progress:	39.0	Drilling:	12.00	hrs ROP, 1	n/hr:	3.25	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 5-6+ m	/hr to 1525 n	n in Sprout I	Falls - silty, sa	andy shales			KB elev:	175.30	m.
the next da										KB - GL	6.30	
Bit #	Size/Make	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
7	311 / HC	HC506ZX	7011417	1058	1491	433	86.00	6 X 11.1	70-100	10-13		
8	311 / HC	HC506ZX		1491				3x11.1/3x10.2	70	10		
		D 1	D	TD 2112 A		D: G 1 GI	1010	DADC 200		1.70		
M-J-1		Pump 1	Pump 2	Drilling As	•			M DC, 308			16,000	kPa
Model Liner		PZ-11 152	PZ-11 152	BHA Lengt		203 DC, X/O 230.00	,12-103 mm m	Strap:	Pump Pres	sure: Board:	16,000	KPa
Stroke	(mm)	279	279	Drill Collar		229/203/165		Drill Pipe () D	127.0	mm	•
SPM	(mm)	85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m³/min @ 95%	65	2.46	Jet Velocity		71.0	m/sec	True Hydra		468.0	kW	
7 01.	m /mm @ 25%		2.40	Jack velocity	•	71.0	III/SCC	Truc Hyur	aunc III .	400.0	KVV	
		SUR	VEYS				MUD			MIID AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:16		Gel	Income	CaC03	
	2.50	1.49	28.75			Density	1070		Caustic	5	Percol	
	5.80	1.51	28.78			Vis.	62		Envirofloc		Sulphamic	
	9.80	1.59	35.30	İ		pН	9.5		Kelzan	2	T-352	
	3.40	1.29	32.18	1		W.L.	8.0		Cello		Defoamer	1
103	7.90	1.55	39.16			P.V.	19.0		Bicarb		2K-7	3
109	9.00	1.00	Wireline	Survey		Y.P.	18.0		Newedge	6		
116	58.00	0.25	"	"		Gel S.	4.5/7/8		Drispac	8		
126	5.00	1.00	"	"		Filter Ck	0.5		Desco			
136	0.00	1.25	"	"		Solids %	4.0		Barite			
145	6.00	1.00	"	"		Oil	0.000		Lignite			
						Ca (mg/l)	280.0		PHPA	22		
]			Cl (mg/l)	9000.0		Sawdust			
						MBT	12.5		Soda Ash	1		
						Temp	50.4		Supervision		Day Cost	\$8,514
						XSPolymer	0.7		Mud Van	1	Well Cost	\$122,666
Mud	losses Surfa	ce & Downl	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu		141.9				sing Test		ul-09	Underflow			10.0
	es down hole	2.5	Total hole			OP Test		ul-09	Overflow I			60
	es at surface	2.4	Total surf.	25.4		sing Test		ating hrs	Flow Rate,			.8
Today total	l losses	4.9	Cumulative	37.4	Next B	OP Test	8/9/20	009 ??	Operating	hours	24	1.0
						I G III	1 1 37 0 77	0, 111		T . 10 P	11 (0/)	
	***	1.0 (1	1 D		He	ole Condition	i kdaN & K				Readings (%)	
		ll Control -			1							-
Pump	Strokes	Pressure	kPa MACP	6231	Drag up	5	Torque	10+	•	ground	0.	07
RSPP #1	Strokes 75	Pressure 3320		6231	Drag Dn	5	Torque	10+	Conn	ection		
-	Strokes	Pressure		6231		5	Torque	10+	Conn		0.	
RSPP #1	Strokes 75 75	Pressure 3320 3280		6231	Drag Dn Hook Load	5 81	Torque	10+	Conn	ection rip	0.	
RSPP #1	Strokes 75 75 1. Rig up/O	Pressure 3320 3280	MACP	6231	Drag Dn Hook Load	5 81		10+	Conn T	ection rip ack	0.	
RSPP #1	Strokes 75 75 1. Rig up/O 2. Drill	Pressure 3320 3280		6231	Drag Dn Hook Load 9. Slip & C 10. Survey	5 81	Torque 0.50	10+	Conn T 17. Plug B 18. Wash t	ection rip ack o Btm	0.	
RSPP #1	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream	Pressure 3320 3280	MACP	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli	5 81 Cut		10+	Conn T 17. Plug B 18. Wash t 19. Strippin	ection rip ack o Btm ng Mud	0.	
RSPP #1	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Out	Pressure 3320 3280 200 3280	12.00	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	5 81 Cut ne Logs //Cement		10+	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on	ection rip ack o Btm ng Mud mud pumps	0.	
RSPP #1	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Out 5. Circ. & O	Pressure 3320 3280 200 3280	12.00 0.50	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump (5 81 Cut ne Logs /Cement Out Cement		10+	Tonn Tonn Tonn Tonn Tonn Tonn Tonn Tonn	ection rip ack o Btm ng Mud mud pumps Meeting	0.	
RSPP #1	Strokes	Pressure 3320 3280 20ut t Cond.	12.00 0.50 10.00	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump C 14. Nipple	5 81 Cut ne Logs /Cement Out Cement Up BOP		10+	Tonn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	ection rip ack o Btm ng Mud mud pumps Meeting o Tools	0.25	
RSPP #1	Strokes	Pressure 3320 3280 Out t Cond.	12.00 0.50	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test Bo	5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT		10+	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25	
RSPP #1	Strokes	Pressure 3320 3280 Out t Cond.	12.00 0.50 10.00	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump C 14. Nipple	5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT		10+	Tonn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25	
RSPP #1	Strokes	Pressure 3320 3280 Out t Cond.	12.00 0.50 10.00	6231	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test Bo	5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	0.50	10+	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25	
RSPP #1 RSPP #2	Strokes	Pressure 3320 3280 Dut t Cond. ice	12.00 12.00 0.50 10.00 0.25	-	Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	5 81 Cut In e Logs /Cement Out Cement Up BOP OP & FIT Prill	0.50		Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air	12.00 0.50 10.00 0.25 52 m to 1491	- - - - - - - - - - -	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut Cut Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Out 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air and from 145 change. Cha	12.00 12.00 0.50 10.00 0.25 22 m to 1491 anged oil in		Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut Cut Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air and from 145 change. Cha	12.00 12.00 0.50 10.00 0.25 22 m to 1491 anged oil in		Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut Cut Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air and from 145 change. Cha	12.00 12.00 0.50 10.00 0.25 22 m to 1491 anged oil in		Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut /Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air and from 145 change. Cha	12.00 12.00 0.50 10.00 0.25 22 m to 1491 anged oil in		Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut /Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Dut t Cond. ice air and from 145 change. Cha	12.00 12.00 0.50 10.00 0.25 22 m to 1491 anged oil in		Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut /Cement Out Cement Up BOP OP & FIT Orill REMARKS	0.50	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400 Ran in hole.	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Our 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 00 Drilled ahe 0 Hoist for bit 1. (12 chipped	Pressure 3320 3280 Out t Cond. ice air ad from 145 change. Chacutters on b	12.00 12.00 0.50 10.00 0.25 52 m to 1491 anged oil in oit and 1 miss	m with 10-1 drawworks n	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut In e Logs In e Lo	0.50 red bed clay nctioned blir	s @ 4.75 m/t	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400 Ran in hole.	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & O 6. Trip 7. Rig Serv 8. Rig Repa	Pressure 3320 3280 Out t Cond. ice air ad from 145 change. Chacutters on b	12.00 12.00 0.50 10.00 0.25 52 m to 1491 anged oil in oit and 1 miss	m with 10-1 drawworks n	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut In e Logs In e Lo	0.50 red bed clay nctioned blir	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400 Ran in hole.	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Our 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 00 Drilled ahe Hoist for bit . (12 chipped	Pressure 3320 3280 Out t Cond. ice air ad from 145 change. Ch. cutters on b	12.00 0.50 10.00 0.25 52 m to 1491 anged oil in viit and 1 miss	m with 10-1 drawworks n sing cutter.)	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D 3 kdan, 80 - notor and tra	5 81 Cut In ELOGS In Cement Out Cement Up BOP OP & FIT Orill REMARKS 100 RPM in nsmission.Fu	0.50 red bed clay nctioned blin	s @ 4.75 m/h	Conn T 17. Plug B 18. Wash t 19. Strippii 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400 Ran in hole.	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Our 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 00 Drilled ahe 0 Hoist for bit 1. (12 chipped	Pressure 3320 3280 Out t Cond. ice air ad from 145 change. Ch. cutters on b	12.00 12.00 0.50 10.00 0.25 52 m to 1491 anged oil in oit and 1 miss	m with 10-1 drawworks n sing cutter.)	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	5 81 Cut In e Logs In e Lo	0.50 red bed clay nctioned blin	s @ 4.75 m/t	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on a 21. Safety 22. Handle 23 Crew H Total Hour Total Hour Weather:	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg s	0.25 0.25 0.50 24.00	07
RSPP #1 RSPP #2 00:00 - 13:0 1300 - 2400 Ran in hole.	Strokes 75 75 1. Rig up/O 2. Drill 3. Ream 4. Drill Our 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa 00 Drilled ahe Hoist for bit . (12 chipped	Pressure 3320 3280 Out t Cond. ice air ad from 145 change. Chacutters on b	12.00 0.50 10.00 0.25 52 m to 1491 anged oil in viit and 1 miss	m with 10-1 drawworks n sing cutter.)	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D 3 kdan, 80 - notor and tra	ne Logs //Cement Out Cement Up BOP OP & FIT brill REMARKS 100 RPM in nsmission.Fu ook 870 m, Sp	0.50 red bed clay nctioned blin	s @ 4.75 m/h d rams.	Conn T 17. Plug B 18. Wash t 19. Strippii 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg sional 15+ kf	0.25 0.50 24.00	or sunny

			Vulc	an Mi	ineral	s Daily	/ Drill	ing Re	eport			
Well:		Vulc		an Robinso			Day:		•	Date:	03-A	ug-09
Depth:	1588.0	mKB	Progress:	74.0	Drilling:	21.25	hrs ROP,		3.48	Rig:		am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 4-5+ m	/hr to 1615 n	n in Sprout I	Falls - silty, s	andy shales			KB elev:	175.30	m.
the next da	ıy	Ü			•	•	•			KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
8	311 / HC	HC506ZX	7006301	1491			19.50	3x11.1/3x10.2	70	10		
N			1	1								
			I									
26.11		Pump 1	Pump 2	Drilling As				M DC, 308			1 < 000	1.0
Model		PZ-11	PZ-11			03 DC, X/O			Pump Pres		16,000	kPa
Liner	(mm)	152	152	BHA Lengt		230.00	m	Strap:) D	Board:		
Stroke SPM	(mm)	279 85	279 85	Drill Collar D.C. Annul		229/203/165 45.0	mm m/min	Drill Pipe (D.P Annula		127.0 37.0	mm m/min	
Vol.	m³/min @ 95%	63	2.46	Jet Velocity		71.0	m/sec	True Hydr		468.0	kW	
V 01.	III / IIIII @ 95%		2.40	Jet velocity	y ·	71.0	III/SCC	True Hyur	aunc III .	400.0		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:05		Gel		CaC03	
	2.50	1.49	28.75			Density	1075		Caustic	2	Percol	
99:	5.80	1.51	28.78			Vis.	62		Envirofloc		Sulphamic	
	09.80	1.59	35.30			pН	8.5		Kelzan	2	T-352	
	23.40	1.29	32.18			W.L.	8.0		Cello		Defoamer	
	37.90	1.55	39.16			P.V.	19.0		Bicarb		2K-7	
	99.00	1.00	Wireline	Survey		Y.P.	15.5		Newedge	6		
	58.00	0.25	"	"		Gel S.	4.5/7/8		Drispac	8		
	55.00	1.00	"	"		Filter Ck	0.5		Desco			
	50.00 56.00	1.25	"	"		Solids % Oil	4.5 0.000		Barite			
	52.00	1.00	"	"		Ca (mg/l)	180.0		Lignite PHPA	2		
135	52.00	1.00				Cl (mg/l)	9200.0		Sawdust	14		
			Į			MBT	12.5		Soda Ash	3		
						Temp	45.8		Supervision		Day Cost	\$905
						XSPolymer			Mud Van	1	Well Cost	\$122,666
										~ .	<u></u>	
Mud	l losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Mud Total circu		ce & Downl 149.5	nole Estimat	es m3		asing Tests sing Test		ate ul-09	Underflow			10.0
Total circu			nole Estimat Total hole	es m3	Last Ca		26-J		Underflow Overflow I	Density	174	10.0 065
Total circu Today loss Today loss	ılating Vol. es down hole es at surface	149.5 0.5 3.5	Total hole Total surf.		Last Ca Last B Next Ca	sing Test OP Test sing Test	26-J 26-J 1000 ro	ul-09 ul-09 tating hrs	Overflow I Flow Rate,	Density Density m3/min	174 10)65 .8
Total circu Today loss	ılating Vol. es down hole es at surface	149.5 0.5	Total hole	41.4	Last Ca Last B Next Ca	sing Test OP Test	26-J 26-J 1000 ro	ul-09 ul-09	Overflow I	Density Density m3/min	174 10)65
Total circu Today loss Today loss	nlating Vol. es down hole es at surface il losses	149.5 0.5 3.5 4.0	Total hole Total surf. Cumulative		Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test	26-J 26-J 1000 rot 8/9/2	tul-09 ful-09 tating hrs 009 ??	Overflow I Flow Rate, Operating	Density Density m3/min hours	174 10 0 24	.8 4.0
Total circu Today loss Today loss Today tota	es down hole es at surface il losses	149.5 0.5 3.5 4.0	Total hole Total surf. Cumulative	41.4	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test OP Test	26-J 26-J 1000 roi 8/9/2	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating	Density Density m3/min hours	174 10 0 24 Readings (%)	.8 4.0
Total circu Today loss Today loss Today tota Pump	llating Vol. es down hole es at surface il losses We Strokes	149.5 0.5 3.5 4.0 Pressure	Total hole Total surf. Cumulative		Last Ca Last B Next Ca Next B He Drag up	sing Test OP Test sing Test OP Test OP Test Description OF Test OF Test	26-J 26-J 1000 rot 8/9/2	tul-09 ful-09 tating hrs 009 ??	Overflow I Flow Rate, Operating	Density Density m3/min hours Total Gas F	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	es down hole es at surface il losses We Strokes 75	149.5 0.5 3.5 4.0 Pressure 3460	Total hole Total surf. Cumulative	41.4	Last Ca Last B Next Ca Next B He Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test Condition 5 5 5	26-J 26-J 1000 roi 8/9/2	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection	174 10 0 24 Readings (%)	.8 4.0
Total circu Today loss Today loss Today tota Pump	llating Vol. es down hole es at surface il losses We Strokes	149.5 0.5 3.5 4.0 Pressure	Total hole Total surf. Cumulative	41.4	Last Ca Last B Next Ca Next B He Drag up	sing Test OP Test sing Test OP Test OP Test Condition 5 5 5	26-J 26-J 1000 roi 8/9/2	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas F	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 75	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510	Total hole Total surf. Cumulative	41.4	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Condition 5 5 81	26-J 26-J 1000 roi 8/9/2	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T	Density Density m3/min hours Total Gas F ground ection rip	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	es down hole es at surface il losses We Strokes 75	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510	Total hole Total surf. Cumulative	41.4	Last Ca Last B Next Ca Next B He Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test OP Condition 5 5 81	26-J 26-J 1000 roi 8/9/2	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas F ground ection rip	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface il losses We Strokes 75 75 1. Rig up/O	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510	Total hole Total surf. Cumulative kPa MACP	41.4	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test De Condition 5 5 81	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t	Density Density m3/min hours Total Gas F ground ection rip ack o Btm	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 1. Rig up/C 2. Drill	149.5 0.5 3.5 4.0 Pressure 3460 3510	Total hole Total surf. Cumulative kPa MACP	41.4	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test De Condition 5 5 81 Cut	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	strokes 75 1. Rig up/C 2. Drill 3. Ream	149.5 0.5 3.5 4.0 Pressure 3460 3510 Dut	Total hole Total surf. Cumulative kPa MACP	41.4	Last Ca Last B Next Ca Next B The Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing	sing Test OP Test sing Test OP Test OP Test OP Test De Condition 5 5 81 Cut	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps	174 10 0 24 Readings (%)	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	149.5 0.5 3.5 4.0 Pressure 3460 3510 Out	Total hole Total surf. Cumulative kPa MACP 21.25	41.4	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	sing Test OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Si	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting o Tools	174 10 0 24 24 24 26 26 30 0.	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	149.5 0.5 3.5 4.0 Pressure 3460 3510 Out	Total hole Total surf. Cumulative kPa MACP 21.25	41.4	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	sing Test OP Test sing Test OP Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 24 26 26 26 30 0.50	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	149.5 0.5 3.5 4.0 Pressure 3460 3510 Out	Total hole Total surf. Cumulative kPa MACP 21.25	41.4	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	sing Test OP Test sing Test OP Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 24 24 26 26 30 0.	065 .8 4.0
Total circu Today losse Today losse Today tota Pump RSPP #1	ulating Vol. es down hole es at surface il losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	149.5 0.5 3.5 4.0 Pressure 3460 3510 Out	Total hole Total surf. Cumulative kPa MACP 21.25	41.4	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	sing Test OP Test sing Test OP Test De Condition 5 5 81 Cut The Logs //Cement Out Cement Up BOP OP & FIT Orill	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 24 26 26 26 30 0.50	065 .8 4.0
Total circu Today loss Today tota Pump RSPP #1 RSPP #2	strokes The strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	41.4	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	sing Test OP Test sing Test OP Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ??	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 24 26 26 26 30 0.50	065 .8 4.0
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	strokes The strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75	6190	Last Ca Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test OP Test De Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT OF III REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50 24.00	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:45 - 24:0	strokes T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75 ole 1 m to 1582	6190 m with 10-1	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque 0.50	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50 24.00	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:45 - 24:0	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repi	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75 ole 1 m to 1582	6190 m with 10-1	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque 0.50	ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	174 10 0 24 Readings (% 0. 0. 0.50 24.00	065 .8 4.0 007 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:4 00:45 - 24:0	Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75 Ole Ol m to 1582	41.4 6190 m with 10-1	Last Ca Last B Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D 3 kdan, 65-8	sing Test OP Test Sing Test OP Test Sing Test OP Test Die Condition 5 81 Cut The Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS ORPM in re ok 870 m, Sp	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque 0.50 d bed clays (ul-09 ul-09 tating hrs 009 ?? ft/# 10+ @ 4.0 m/hr w	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg s	174 10 0 24 Readings (%) 0. 0. 0.50 24.00	065 .8 4.0 0 07 07
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 0:00 -00:45 00:45 - 24:0	strokes T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair	149.5 0.5 3.5 4.0 Il Control - Pressure 3460 3510 Out t Cond. ice air	Total hole Total surf. Cumulative kPa MACP 21.25 0.50 0.75 ole 1 m to 1582	41.4 6190 m with 10-1	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 5 5 81 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rrill REMARKS	26-J 26-J 1000 roi 8/9/2 n kdaN & K Torque 0.50 d bed clays (ul-09 ul-09 tating hrs 009 ?? ft/# 10+	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas F ground ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg s	174 10 0 24 Readings (% 0. 0. 0.50 24.00	065 .8 4.0 0 07 07

			Vulc	an Mi	inerals	s Daily	/ Drill	ing R	eport			
Well:		Vulc	an Investca				Dav:			Date:	04-A	ug-09
Depth:	1670.0	mKB	Progress:	82.0	Drilling:	22.25	hrs ROP,		3.69	Rig:		nam # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 4-5+ m	/hr to 1696 r	n in Sprout F	Falls - silty, s	andy shales			KB elev:	175.30	
the next da				•			•		•	KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
8	311 / HC	HC506ZX	7006301	1491			19.50	3x11.1/3x10.2	70	10		
]									
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, Sh	ock Sub. 2-1	NM DC, 308	mm string s	tab XO		
Model		PZ-11	PZ-11	_	DC -Jars- 1-2						16,000	kPa
Liner	(mm)	152	152	BHA Leng	th:	230.00	m	Strap:		Board:		_
Stroke	(mm)	279	279	Drill Colla		229/203/165	-	Drill Pipe		127.0	mm	
SPM	3	85	85	D.C. Annu		45.0	m/min	D.P Annul		37.0	_m/min	
Vol.	m³/min @ 95%		2.46	Jet Velocit	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	_kW	
		SUR	VEYS				MUD			MUD AI	DDITIVES	
D	epth	Drift	Azimuth	North	East	Time	6:05		Gel		CaC03	
	32.50	1.49	28.75			Density	1075		Caustic	6	Percol	ļ <u> </u>
	95.80	1.51	28.78		1	Vis.	64	1	Envirofloc	1	Sulphamic	<u> </u>
	09.80	1.59	35.30			pH	10.5	1	Kelzan	1	T-352	
	23.40	1.29	32.18 39.16			W.L. P.V.	10.8		Cello		Defoamer	1
	37.90 99.00	1.55 1.00	Wireline	Survey		Y.P.	20.0 17.0		Bicarb Newedge		2K-7	2
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	8		
	65.00	1.00	"	"		Filter Ck	0.5		Desco			1
130	60.00	1.25	"	"		Solids %	0.5		Barite			
14:	56.00	1.00	"	"		Oil	0.000		Lignite			
	52.00	1.00	"	"		Ca (mg/l)	60.0		PHPA	4		
164	48.00	1.50	"	"		Cl (mg/l)	9500.0		Sawdust	3		
				1		MBT	12.5		Soda Ash	4		
						Temp XSPolymer	49.1 1.0		Supervision Mud Van	1	Day Cost Well Cost	\$1,701 \$125,272
Muc	l losses Surfa	ce & Down	hole Estimat	es m3	ROP & C	asing Tests		ate	Mud van		rifuge	\$123,272
	ulating Vol.	157.0	lioic Estillat	LS IIIS		sing Test		ul-09	Underflow			40.0
	ses down hole		Total hole			OP Test		ul-09	Overflow		1	065
•	ses at surface		Total surf.			sing Test		tating hrs	Flow Rate	•).8
Today tota	al losses	8.3	Cumulative	49.7	Next B	OP Test	8/9/2	009 ??	Operating	hours	24	4.0
	***	11 G 1	I.D.		**	1 0 10	11310 77			T . 1.C . T	2 11 (0/	`
Domin	Strokes	ell Control - Pressure	MACP	6190		ole Condition		10+	Pools		Readings (%	.07
Pump RSPP #1	75	3000	MACF	0190	Drag up Drag Dn	5	Torque	10+	_	ground nection	1	.07
RSPP #2	75 75	2980			Hook Load					rip	0.	.07
				_				=			-	
	1. Rig up/(Out		-	9. Slip & C			_	17. Plug B			_
	2. Drill		22,25	-	10. Survey 11. Wirelin		0.50	=	18. Wash			_
	3. Ream 4. Drill Ou	ıt		-	12. Casing	_		=	19. Strippi	ng Mua mud pumps		-
	5. Circ. &		0.25	-		Out Cement		_	21. Safety		0.25	=
	6. Trip	conu.	0.20	=	14. Nipple			=	22. Handl	_	- 0.20	=
	7. Rig Serv	vice	0.50	=	15. Test B			=	23 Crew H	land-off Mtg	0.25	=
	8. Rig Rep	air		-	16. BOP D	rill		- -	Total Hou	rs	24.00	-
						REMARKS	1					
						KEWAKK						
00:00 - 17:	15 Drilled ah	ead from 158	82 m to 1648	m with 10-1	3 kdan, 65-8	0 RPM in gr	ey bed clays	@ 4.0 m/hr	with occasio	nal 15+ kft/#	torque spike	es
	45 Wireline s	•										
17:45 - 24:	00 Drilled ah	ead from 164	48 m to 1670	m with 10-1	3 kdan, 55-8	0 RPM in gr	ey bed clays	@ 4.0 m/hr	with occasio	onal 15+ kft/#	torque spike	ès
Tops: Cod	roy Group 8	15 m, Ship (Cove limesto	ne 846 m, F	ischell's Bro	ok 870 m, S _l	prout Falls	?				
Duo C	A2.04	CO 004	т. э.	do-	176	Tot-1.C · ·	da or	05.060	W	_	Dlug 20 1	d
Prev Cost	\$3,80	59,884	Today	. \$43	5,176	Total Cost		95,060	Weather: Mud Type	e	Plus 20 clou Polymer	
Foreman		Bill W	/illiams		Rig Phone	,	709-649-710	6	Taken By	: Terry B	rooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investo			<u> </u>	Day:			Date:	05-A	ug-09
Depth:	1747.0	mKB	Progress:	77.0	Drilling:	21.75	hrs ROP,		3.54	Rig:		am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 3-4+ m	/hr to 1774 r	n in Sprout F	alls - silty, s	andy shales			KB elev:	175.30	m.
the next da	ay	_			-	•	-			KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
8	311 / HC	HC506ZX	7006301	1491			69.00	3x11.1/3x10.2	70	10		
		Dunn 1	Pump 2	Drilling As	aamble.	Die Cul Cl	nock Sub, 2-l	VIM DC 200	mm stains s	toh VO		
Model		Pump 1 PZ-11	PZ-11	_	Sembry: OC -Jars- 1-2						17,000	kPa
Liner	(mm)	152	152	BHA Leng		230.00	m	Strap:	_ rump r res	Board:	17,000	- M a
Stroke	(mm)	279	279	Drill Colla		229/203/165	_	Drill Pipe	O.D.	127.0	mm	-
SPM		90	90	D.C. Annu		45.0	m/min	D.P Annul		37.0	m/min	
Vol.	m³/min @ 95%		2.58	Jet Velocity	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	kW	
		SUR	VEYS				MUD			MIID AT	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:05		Gel	MODAL	CaC03	
	2.50	1.49	28.75	- 102 til	23.00/6	Density	1075		Caustic	6	Percol	
	5.80	1.51	28.78			Vis.	61		Envirofloc		Sulphamic	İ
100	09.80	1.59	35.30			pН	10.0		Kelzan	2	T-352	
	23.40	1.29	32.18			W.L.	9.6		Cello		Defoamer	
	37.90	1.55	39.16			P.V.	20.0		Bicarb		2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	15.5		Newedge	8	Sapp	5
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	10	Dyna det	1
	65.00 60.00	1.00	"	"		Filter Ck Solids %	0.5		Desco			-
	56.00	1.25 1.00	"	"		Oil	4.5 0.000		Barite Lignite			
	52.00	1.00	"	"		Ca (mg/l)	80.0		PHPA	10		
	48.00	1.50	"	"		Cl (mg/l)	9700.0		Sawdust	3		
	02.00	1.50	"	"		MBT	12.5		Soda Ash	1		
180	01.00	1.25	"	"		Temp	51.4		Supervision		Day Cost	\$8,440
						XSPolymen	1.0		Mud Van	1	Well Cost	\$133,712
	l losses Surfa		hole Estimat	es m3		asing Tests		ate			rifuge	
	ılating Vol.	158.0				sing Test		ul-09	Underflow			40.0
•	es down hole		Total hole			OP Test		ul-09	Overflow l	•)65
Today tota	es at surface	4.9 5.4	Total surf. Cumulative	55.1		sing Test OP Test		tating hrs 009 ??	Flow Rate, Operating			0.8 4.0
Touay tota	11 105505	3.4	Cumulative	33.1	Next D	OI Test	0/9/2	009 11	Operating	Hours		+.0
	We	ll Control -	kPa		Ho	ole Conditio	n kdaN & K	ft/#		Total Gas I	Readings (%)
Pump	Strokes	Pressure	MACP	6222	Drag up	5	Torque	10+	Back	ground		.07
RSPP #1	75	3000	1,1,101	V	Drag Dn	5	Torque			nection		.07
RSPP #2	75	2980			Hook Load				Т	rip		
	1 Dia un/6)¢		-	0 Clin 6 C	Y4		_	17 Dlug D	aalr		_
	1. Rig up/C 2. Drill	Jui	21.75	=	9. Slip & C 10. Survey		0.50	=	17. Plug B 18. Wash			=
	3. Ream			=	11. Wirelin		0.20	=	19. Strippi			=
	4. Drill Ou	t		-	12. Casing	_		_		mud pumps		-
	5. Circ. &	Cond.	0.25	-		Out Cement		_	21. Safety		0.50	-
	6. Trip			-	14. Nipple	Up BOP		_	22. Handle	e Tools		_
	7. Rig Serv		0.75	_	15. Test B0			_		and-off Mtg		_
	8. Rig Rep	air		-	16. BOP D	rill		_	Total Hou	rs	24.00	-
						REMARKS	5					
00:00 17:	15 Drilled ahe	and from 16	70 m to 1702	m with 10 1	3 kdan 65 0	O DDM in ~	ay had alare	@ 4 0 m/h=	with occasio	nal 15 : l-f+/#	torque eniles	
	45 Wireline s			III WIUI 10-1	5 Kuaii, 05-8	O KPM III gi	ey bed clays	@ 4.0 III/III	with occasio	11a1 13+ K1V#	torque spike	28
	00 Drilled ah	•		m with 10-1	3 kdan, 75-8	0 RPM in gr	ey bed clays	@ 4.0 m/hr	with occasio	nal 15+ kft/#	torque spike	es
Tops: Cod	roy Group 8	15 m, Ship (Cove limesto	ne 846 m, Fi	ischell's Bro	ok 870 m, S	prout Falls _.	?				
Prev Cost	\$3,89	5,060	Today	\$43	,643	Total Cost	\$3,93	38,703	Weather		Plus 28 Sunn	ıy
Foreman		Bill W	illiams	-	Rig Phone		709-649-710	16	_ Mud Type Taken By:		Polymer rooker / Sha	ne Halley

			Vulc	an Mi	inerals	S Daily	y Drill	ing R	eport			
Well:		Vulc	an Investca				Dav:			Date:	06-A	ug-09
Depth:	1828.0	mKB	Progress:	81.0	Drilling:	21.50	hrs ROP,		3.77	Rig:		am # 11
Operation	@ 0800 hrs:	Circulate @	1843 m. pir	or to bit trip			,			KB elev:	175.30	m.
the next da	ay		-	-						KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
8	311 / HC	HC506ZX	7006301	1491	1843	352	89.00	3x11.1/3x10.2	50	10-15		
			1		[İ					
		Pump 1	Pump 2	Drilling As	sembly:	Bit Sub Sh	ock Sub 2-1	NM DC, 308	mm string s	tah XO		
Model		PZ-11	PZ-11		DC -Jars- 1-2						17,000	kPa
Liner	(mm)	152	152	BHA Leng		230.00	m	Strap:		Board:		•
Stroke	(mm)	279	279	Drill Colla	r O.D.	229/203/165	mm	Drill Pipe	O.D.	127.0	mm	-
SPM		90	90	D.C. Annu	lar Vel.:	45.0	m/min	D.P Annul	ar Vel.:	37.0	m/min	
Vol.	m ³ /min @ 95%		2.58	Jet Velocit	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	_kW	
		SUR	VEYS				MUD			MUD AI	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:05		Gel		CaC03	
	2.50	1.49	28.75			Density	1080	ļ	Caustic	5	Percol	
	25.80	1.51	28.78			Vis.	63		Envirofloc	1	Sulphamic	
	09.80 23.40	1.59 1.29	35.30 32.18			pH W.L.	9.5 9.2	1	Kelzan Cello	1	T-352 Defoamer	2
	37.90	1.55	39.16			P.V.	21.0		Bicarb		2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	15.0		Newedge	4	Sapp	3
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	10	Dyna det	1
126	65.00	1.00	"	"		Filter Ck	0.5		Desco	6		
136	60.00	1.25	"	"		Solids %	5.0		Barite			
	56.00	1.00	"	"		Oil	0.000		Lignite			
	52.00	1.00	"	"		Ca (mg/l)	80.0		PHPA	4		
	48.00	1.50	_ "			Cl (mg/l)	9800.0		Sawdust	14		
	02.00	1.50	"	"		MBT	12.5		Soda Ash		D C4	02.620
180	01.00	1.25				Temp XSPolymer	53.1		Supervision Mud Van	1	Day Cost Well Cost	\$3,620 \$137,332
Mud	l losses Surfa	ce & Down	hole Estimat	es m3	BOP & C:	asing Tests		ate	Mud van		rifuge	ψ157,53 <u>2</u>
	ılating Vol.	163.0				sing Test		ful-09	Underflow			0.00
	es down hole		Total hole			OP Test		ful-09	Overflow l)70
Today loss	es at surface	9.0	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate	,m3/min	0	0.8
Today tota	ıl losses	10.0	Cumulative	65.0	Next B	OP Test	8/9/2	009 ??	Operating	hours	24	4.0
	We	ll Control -	kPa		Но	ole Condition	n kdaN & K	ft/#		Total Gas I	Readings (%)
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque	10+	Back	ground	0.	.07
RSPP #1	75	3512	6141	1815	Drag Dn	5			Conr	nection	0.	.07
RSPP #2	75	3520		1815	Hook Load	88			Т	rip		
	1. Rig up/C)ut		=	9. Slip & C	`nt		=	17. Plug B	ack		=
	2. Drill	, ui	21,50		10. Survey		0.50	_	18. Wash			=
	3. Ream			=	11. Wirelin			=	19. Strippi			=
	4. Drill Ou	t		-	12. Casing	/Cement		_		mud pumps		-
	5. Circ. &	Cond.	0.25	· •	-	Out Cement		=" =	21. Safety	_	0.25	=' =
	6. Trip				14. Nipple	-		_	22. Handle			=
	7. Rig Serv 8. Rig Rep		1.25		15. Test BO 16. BOP D			=	23 Crew H Total Hou	land-off Mtg	24.00	=
	o. Kig Kep	all		-	10. BOI D			_	Total Hou	15	24.00	-
						REMARKS	8					
00:00 - 17:4	45 Drilled ahe	ead from 174	47 m to 1801	m with 10-1	3 kdan, 65-8	0 RPM in gr	ey bed clays	@ 4.0 m/hr	with occasio	nal 15+ kft/#	torque spike	es
17:45 - 18:	15 Wireline s	survey. 1.5 d	eg.		·						• •	
18:15 - 24:0	00 Drilled ahe	ead from 180	01 m to 1828	m with 10-1	5 kdan, 75-8	0 RPM in gr	ey bed clays	@ 4.0 m/hr	with occasio	nal 15+ kft/#	torque spike	es
Tops: Cod	roy Group 8	15 m, Ship (Cove limesto	ne 846 m, F	ischell's Bro	ok 870 m, S _l	prout Falls _	?				
Prev Cost	\$3,93	8,703	Today	\$30	,875	Total Cost	\$3,90	69,578	Weather	:	Plus 28 Sunn	ıy
Foreman		Bill W	illiams	-	Rig Phone	,	709-649-710)6	Mud Type Taken By:		Polymer rooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca			<u> </u>	Day:		-	Date:	07-A	ug-09
Depth:	1843.0	mKB	Progress:	15.0	Drilling:	6.75	hrs ROP,		2.22	Rig:	Stoneha	_
Operation	@ 0800 hrs:	Drillng ahea	ad @ 1-2+ m	/hr to 1845 n	n in Sprout F	Falls -, possib	ole conglome	rate.		KB elev:	175.30	m.
the next da	ay	_			-	-	_			KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
8	311 / HC	HC506ZX	7006301	1491	1843	352	89.00	3x11.1/3x10.2	70	10-15		
(9 311	HR-S35DX	6040255	1843	_							
		Pump 1	Pump 2	Drilling As				mm string s				
Model		PZ-11	PZ-11					DC, 8-HWT	Pump Pres		15,000	kPa
Liner	(mm)	152	152	BHA Lengt		218.57	m	Strap:	0 D	Board:		
Stroke	(mm)	279	279	Drill Collar		229/203/165	_	Drill Pipe		127.0	_mm	
SPM Vol.	m³/min @ 95%	85	85 2.58	D.C. Annul Jet Velocity		45.0 71.0	m/min m/sec	D.P Annula True Hydr		37.0 468.0	m/min kW	
V OI.	m /min @ 95%		2.36	jaet velocity	y:	/1.0	III/Sec	True Hyur	aunc nr:	408.0	KW	
		CIID	VEYS				MUD			MIIDAT	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	6:05		Gel	MODAL	CaC03	
	32.50	1.49	28.75	North	East	Density	1080		Caustic	10	Percol	
	95.80	1.51	28.78			Vis.	63		Envirofloc	10	Sulphamic	
	09.80	1.59	35.30			pH	9.5		Kelzan	3	T-352	
	23.40	1.29	32.18			W.L.	9.2		Cello		Defoamer	2
	37.90	1.55	39.16			P.V.	21.0		Bicarb		2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	15.0		Newedge	9	Sapp	4
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	20	Dyna det	4
	65.00	1.00	"	"		Filter Ck	0.5		Desco	8	,	
13	60.00	1.25	"	"		Solids %	5.0		Barite			
	56.00	1.00	"	"		Oil	0.000		Lignite			
15.	52.00	1.00	"	"		Ca (mg/l)	80.0		PHPA	6		
16	48.00	1.50	"	II .		Cl (mg/l)	9800.0		Sawdust	58		
17	02.00	1.50	"	"		MBT	12.5		Soda Ash			
18	01.00	1.25	"	"		Temp	53.1		Supervision		Day Cost	\$9,830
						XSPolymer	1.0		Mud Van	1	Well Cost	\$147,163
Muc	d losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	ulating Vol.	169.0			Last Ca	sing Test		ul-09	Underflow	Density	180	
		0.2	Total hole		Last B	OP Test		ul-09	Overflow I		10	70
	ses down hole	0.3				sing Test	1000 ro	tating hrs	Flow Rate,	m3/min		.8
Today loss	ses at surface	1.5	Total surf.		Next Ca		100010					
	ses at surface			66.9		OP Test	100010		Operating	hours	24	
Today loss	ses at surface al losses	1.5 1.8	Total surf. Cumulative	66.9	Next B	OP Test		0. III	Operating		24	1.0
Today loss Today tota	ses at surface al losses We	1.5 1.8	Total surf. Cumulative		Next B	OP Test	n kdaN & K			Total Gas I	24 Readings (%)	1.0
Today loss Today tota Pump	ses at surface al losses We Strokes	1.5 1.8 Il Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next B He Drag up	OP Test ole Condition 5		ft/# 10+	Backş	Total Gas F	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75	1.5 1.8 Il Control - Pressure 3512	Total surf. Cumulative	Depth 1815	Next B Ho Drag up Drag Dn	OP Test ole Conditio 5 5	n kdaN & K		Backa Conn	Total Gas I ground ection	24 Readings (%)	07
Today loss Today tota Pump	ses at surface al losses We Strokes 75	1.5 1.8 Il Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next B He Drag up	OP Test ole Conditio 5 5	n kdaN & K		Backa Conn	Total Gas F	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75	1.5 1.8 Il Control - Pressure 3512 3520	Total surf. Cumulative kPa MACP	Depth 1815	Next B Hook Load	OP Test Ole Conditio 5 5 88	n kdaN & K		Backs Conn T	Total Gas I ground ection rip	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/O	1.5 1.8 Il Control - Pressure 3512 3520	Total surf. Cumulative kPa MACP 6141	Depth 1815	Hook Load 9. Slip & (OP Test Dele Condition 5 5 88	n kdaN & K		Backs Conn T	Total Gas I ground ection rip	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill	1.5 1.8 Il Control - Pressure 3512 3520	Total surf. Cumulative kPa MACP	Depth 1815	Next B Ho Drag up Drag Dn Hook Load 9. Slip & (10. Survey	OP Test Ole Conditio 5 5 88	n kdaN & K		Backs Conn T 17. Plug B 18. Wash	Total Gas F ground ection rip ack to Btm	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream	1.5 1.8 Il Control - Pressure 3512 3520	Total surf. Cumulative kPa MACP 6141	Depth 1815	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	OP Test Ole Conditio 5 5 88 Cut	n kdaN & K		Backs Conn T 17. Plug B 18. Wash t 19. Strippin	Total Gas F ground nection rip ack to Btm ng Mud	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	1.5 1.8 Il Control - Pressure 3512 3520 Out	Total surf. Cumulative kPa MACP 6141 6.75	Depth 1815	Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	OP Test Ole Conditio 5 5 88 Cut ne Logs //Cement	n kdaN & K Torque		Back, Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on	Total Gas Is ground nection rip ack to Btm ng Mud mud pumps	24 Readings (%) 0.0	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	1.5 1.8 Il Control - Pressure 3512 3520 Out	Total surf. Cumulative kPa MACP 6141 6.75	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump (OP Test ole Conditio 5 5 88 Cut ne Logs /Cement Out Cement	n kdaN & K Torque		Backy Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety	Total Gas Inground lection rip ack to Btm and Mud mud pumps Meeting	24 Readings (%) 0.	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	1.5 1.8 Il Control - Pressure 3512 3520 Out	Total surf. Cumulative kPa MACP 6141 6.75 0.75 8.75	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test S	n kdaN & K Torque		Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle	Total Gas F ground lection rip ack to Btm ing Mud mud pumps Meeting	24 Readings (%) 0.0 0.1 1.00	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.8 Control - Pressure 3512 3520 Out t Cond.	Total surf. Cumulative kPa MACP 6141 6.75 0.75 8.75 0.50	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test Bo	OP Test De Conditio 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	n kdaN & K Torque		Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 4.0.25	07
Today loss Today tota Pump RSPP #1	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	1.5 1.8 Control - Pressure 3512 3520 Out t Cond.	Total surf. Cumulative kPa MACP 6141 6.75 0.75 8.75	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test De Conditio 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	n kdaN & K Torque		Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.8 Control - Pressure 3512 3520 Out t Cond.	Total surf. Cumulative kPa MACP 6141 6.75 0.75 8.75 0.50	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test Bo	OP Test De Conditio 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	n kdaN & K Torque		Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 4.0.25	07
Today loss Today tota Pump RSPP #1	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.8 Control - Pressure 3512 3520 Out t Cond.	Total surf. Cumulative kPa MACP 6141 6.75 0.75 8.75 0.50	Depth 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test Bo	OP Test S	n kdaN & K Torque		Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 4.0.25	07
Pump RSPP #1 RSPP #2	we Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond.	Total surf. Cumulative KPa MACP 6141 6.75 0.75 8.75 0.50 6.00	Depth 1815 1815	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	OP Test OP Test OP Test OP Test Self-Self-Self-Self-Self-Self-Self-Self-	n kdaN & K Torque	10+	Backy Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 4.0.25	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air	Total surf. Cumulative KPa MACP 6141 6.75 0.75 8.75 0.50 6.00	Depth 1815 1815	Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wirelin 12. Casing 13. Pump (14. Nipple 15. Test B(16. BOP D	OP Test Ole Condition 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS	n kdaN & K Torque	10+	Backy Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas Is ground ection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 4.0.25	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 The Rig up/C The Drill The Rig Rep To Rig Serv To Rig Serv To Rig Serv To Rig Rep To Rig Rep To Rig Serv To Rig	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air add from 182 bottoms up. 1 I upper pipe	Total surf. Cumulative KPa MACP 6141 6.75 0.75 8.75 0.50 6.00 88 m to 1843 Pull out for b ram and noti	Depth 1815 1815 m with 10-1 it change.Porced ram bloc	Post B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	op Test ole Conditio 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 60 RPM in population properties contact the contact t	n kdaN & K Torque Sossible congluto ram cavity	10+	Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground nection rip ack to Btm ng Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 2.25 24.00	07
Pump RSPP #1 RSPP #2	Strokes T5 T5 The Rig up/C The Drill The Rig Rep To Rig Serv To Rig Serv To Rig Serv To Rig Rep To Rig Rep To Rig Serv To Rig	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air add from 182 bottoms up. 1 I upper pipe	Total surf. Cumulative KPa MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b	Depth 1815 1815 m with 10-1 it change.Porced ram bloc	Post B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	op Test ole Conditio 5 5 88 Cut ne Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 60 RPM in population properties contact the contact t	n kdaN & K Torque Sossible congluto ram cavity	10+	Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour	Total Gas F ground nection rip ack to Btm ng Mud mud pumps Meeting e Tools and-off Mtg	24 Readings (%) 0.0 0.1 1.00 2.25 24.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	Ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repart 8. Rig Repart 8. Rig Repart 9.00 Drilled and 9.00 Circulate 1.00 Functionec Opened doo 9.00 Functionec	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. cice air and from 182 outtoms up. Il upper pipe rs on double I tested all ra	MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b ram and noting attername blooms and her was	m with 10-1 it change.Poced ram bloock not attackyalve. Made	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B 16. BOP D 5 kdan, 65-8 sssible congle ck did not reched to ram, to up tricone in	operate track back in wo bolts back issert bit, laye	ossible congluto ram cavity and out shock s	10+	Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. aqured bolts, p new jars an	Total Gas B ground dection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg is	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	Strokes T5 T5 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep 00 Drilled ahe 00 Circulate b 00 Functionec Opened doo 00 Functionec 01:00 Closed	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. cice air ead from 182 outtoms up. I upper pipe upper good belt tested all ra upper and le	MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for by ram and noting atternation because and her wower pipe ram and her wower pipe ram.	m with 10-1 it change.Pocced ram block not attacky alve. Made ms and perssi	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 5 kdan, 65-8 ssible congle ck did not reched to ram, to up tricone in ure tested ram	operate of the comment of the commen	ossible congluto ram cavity and out shock sto 1500 kpa	omerate @ 2 y, led and retor sub,picked up low and 100	Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. aqured bolts, p new jars an	Total Gas B ground dection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg is	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	Strokes T5 T5 T1. Rig up/C T2. Drill T3. Ream T4. Drill Ou T5. Circ. & C T6. Trip T6. Rig Serv T7. Rig Serv T8. Rig Reps T8. Rig Reps T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T1. Rig Serv T1. Rig Serv T1. Rig Serv T1. Rig Serv T1. Rig Serv T2. Rig Serv T1. Rig Serv T2. Rig Serv T3. Rig Serv T4. Rig Serv T5. Rig Serv T6. Rig Serv T7. Rig Serv T8. Rig Serv T9. Rig Serv T9. Rig Serv T9. Rig Serv T1. Rig Serv T	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. ice air l upper pipe s on doubled tested all raupper and ledgested accum	MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b ram and noting atternam ble ums and her vower pipe ramulator. 3 fundator. 3 fundator.	Depth 1815 1815 m with 10-1 it change.Poiced ram bloock not attack valve. Made ms and perssi	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D 5 kdan, 65-8 ssible congle ck did not ret hed to ram, tw up tricone in ure tested ran ben HCR, Cl	OP Test Ole Condition 5 5 88 Cut In Logs Cement Out Cement Up BOP OP & FIT Orill REMARKS OUT OUT REMARKS REM	ossible congleto ram cavity and out shock sto 1500 kpa close pipe ra	omerate @ 2 y. lled and retor sub,picked up low and 100 m.	Backs Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. aqured bolts, p new jars an	Total Gas B ground dection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg is	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	Strokes Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep 00 Drilled ahe 00 Circulate b 00 Functionec 01:00 Closed Functioned Start pressur	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air ead from 182 oottoms up. It lusper pipe t use of double t tested all ra upper and lutested accum re 20250 kpa	MACP 6141 6.75 0.75 8.75 0.50 6.00 88 m to 1843 Pull out for b ram and notic gate and her wower pipe ramulator. 3 fund. Remaining	m with 10-1 it change.Pocced ram block not attack ms and perssiction test.Oppressure 10:	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D 5 kdan, 65-8 sssible congle ck did not ret hed to ram, tv up tricone in ure tested ran ben HCR, Cl- 500 kpa. Tin	OP Test OP Test OP Test Olivery Condition Solution Out Cement Out Cement Out Cement Out Cement Orill REMARKS ORPM in popular REMARKS Solution REMARKS	n kdaN & K Torque bissible congluto ram cavity and out shock sto 1500 kpa close pipe rate 2 min. 30	omerate @ 2 y, lled and retor sub,picked up low and 100 m. secs.	Backy Conn T 17. Plug B 18. Wash 1 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. 1-3 m/hr. 1-4 mqured bolts, p new jars an 100 kpa high	Total Gas F ground section rip ack to Btm ng Mud mud pumps Meeting e Tools and-off Mtg rs closed gates. d ran in hole - 15 min. eac	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repu 00 Drilled ahe 00 Circulate b 00 Functionec Opened doo 00 Functionec 01:00 Closed Functioned Start pressur Annular clo	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air ead from 182 oottoms up. If I upper pipe rs on double a upper and le tested all ra upper and le tested all ra upper and le tested all ra upper ad le tested all	MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b ram and noti gate, ram ble wower pipe rarulator, a function of the content of the conte	m with 10-1 it change.Pocced ram block not attacl valve. Made valve. Made valve in the state of	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D 5 kdan, 65-8 ssible conglock did not rethed to ram, to up tricone in ure tested ramen HCR, Cl 500 kpa. Tin 1 press 1222:	OP Test Del Condition 5 5 88 Cut The Logs Cement Out Cement Up BOP OP & FIT Orill REMARKS BO RPM in popular Remarks	n kdaN & K Torque bissible congluto ram cavity and out shock sto 1500 kpa close pipe rate 2 min. 30	omerate @ 2 y, lled and retor sub,picked up low and 100 m. secs.	Backy Conn T 17. Plug B 18. Wash 1 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. 1-3 m/hr. 1-4 mqured bolts, p new jars an 100 kpa high	Total Gas F ground section rip ack to Btm ng Mud mud pumps Meeting e Tools and-off Mtg rs closed gates. d ran in hole - 15 min. eac	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	Strokes T5 T5 T1. Rig up/C T2. Drill T3. Ream T4. Drill Ou T5. Circ. & T6 T7 T8 Rig Serv T9 T8 Rig Rep T9 T9 T9 T1 Rig Serv T9 T1 Rig Serv T9 T1 Rig Serv T1 Rig Serv T1 Rig Serv T1 Rig Serv T2 Rig Serv T3 Rig Serv T4 Rig Serv T5 T6 Rig Serv T7 T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T7 T6 Rig Serv T7 T6 Rig Serv T7 T7 T6 Rig Serv T7 T6 Rig Serv T7 T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T6 Rig Serv T7 T7 T6 Rig Serv T7 T7 T6 Rig Serv T7	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air l upper pipe rs on double I tested all ra upper and la tested all ra upper and la tested accume 20250 kps se 32 secs. S press 10750,	Total surf. Cumulative MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b ram and noti gate.ram ble uns and here were pipe ramulator. 3 fund. Remaining tart press 20: end 10500 k	m with 10-1 it change.Porced ram block not attackalve. Made ms and perssinction test.Oppressure 10:250 kpa. Encpa. Pason ch	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D 5 kdan, 65-8 ssible conglock did not rethed to ram, to up tricone in ure tested ram een HCR, Cl. 500 kpa. Tin 1 press 1222: oke 30 secs	OP Test Delic Condition 5 5 88 Cut The Logs Cement Out Cement Up BOP OP & FIT Orill REMARKS To ORPM in proper to proper to the logs where the proper to the logs of the logs	n kdaN & K Torque Sossible congluto ram cavity ced off.Instal d out shock sto 1500 kpa close pipe rae 2 min. 30 r rams close	omerate @ 2 y, lled and retor sub,picked up low and 100 m. secs. 4 secs. Start	Backy Conn T 17. Plug B 18. Wash 1 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. 1-3 m/hr. 1-4 mqured bolts, p new jars an 100 kpa high	Total Gas F ground section rip ack to Btm ng Mud mud pumps Meeting e Tools and-off Mtg rs closed gates. d ran in hole - 15 min. eac	24 Readings (%) 0.1 0.2 1.00 2.4.00	07
Pump RSPP #1 RSPP #2 00:00 - 06: 06:00 - 15: 15:00 - 21:	ses at surface al losses We Strokes 75 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repair 00 Drilled and 00 Circulate b 00 Functioned Opened doo 00 Functioned	1.5 1.8 Il Control - Pressure 3512 3520 Out t Cond. rice air l upper pipe rs on double I tested all ra upper and la tested all ra upper and la tested accume 20250 kps se 32 secs. S press 10750,	Total surf. Cumulative MACP 6141 6.75 0.75 8.75 0.50 6.00 28 m to 1843 Pull out for b ram and noti gate.ram ble uns and here were pipe ramulator. 3 fund. Remaining tart press 20: end 10500 k	m with 10-1 it change.Porced ram bloock not attack valve. Made in pressure 10: 250 kpa. Enc pa. Pason ch ne 846 m, Fi	Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D 5 kdan, 65-8 ssible conglock did not rethed to ram, to up tricone in ure tested ram een HCR, Cl. 500 kpa. Tin 1 press 1222: oke 30 secs	OP Test Delic Condition 5 5 88 Cut The Logs Cement Out Cement Up BOP OP & FIT Orill REMARKS To ORPM in proper to proper to the logs where the proper to the logs of the logs	ossible congluto ram cavity ced off.Instal dout shock sto 1500 kpc aclose pipe race 2 min. 30 r rams close prout Falls	omerate @ 2 y, lled and retor sub,picked up low and 100 m. secs.	Backy Conn T 17. Plug B 18. Wash 1 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H Total Hour 1-3 m/hr. 1-3 m/hr. 1-4 mqured bolts, p new jars an 100 kpa high	Total Gas F ground lection rip ack to Btm ing Mud mud pumps Meeting e Tools and-off Mtg s closed gates, id ran in hole - 15 min. eac	24 Readings (%) 0.1 0.2 1.00 2.4.00	007

Bill Williams

Foreman

Mud Type Taken By:

709-649-7106

Rig Phone

Polymer
Terry Brooker / Shane Halley

			T 7 1.	N. //	1	D '1	D .111	· D				
			Vuic	an Mi	inerals	s Dany	/ Drill	ıng Ke	eport			
Well:		Vulc	an Investca				Day:			Date:	08-A	0
Depth:	1860.0	mKB	Progress:	17.0	Drilling:	13.20	hrs ROP,	m/hr:	1.29	Rig:	Stoneha	
-	@ 0800 hrs:	Running in	hole with PD	C bit @ 160	00 m					KB elev:	175.30	
the next da Bit #	<u> </u>	MALITADO	Cowiel No	T _{ss}	Out	Metres	Hours	Mongles	DDM	KB - GL WOB kdaN	6.30	
9	311 / HC	Model IADC HR-S35-DX	Serial No. 6040255	In 1843	Out 1860	17	13.20	Nozzles 3 X 18	RPM 50	10-15	IODL	BGUK
,	311/110	IIK-333-DA	0040233	1043	1000	17	13.20	3 A 16	30	10-13		
	1		I		1		I		1			
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, 2-l	NM DC, 308	mm string s	tab XO			
Model		PZ-11	PZ-11	1-203 mm I	OC -Jars- 1-2	03 DC, X/O	,12-165 mm	DC, 8-HWT	Pump Pres	sure:	13,000	kPa
Liner	(mm)	152	152	BHA Leng	th:	218.57	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla	r O.D.	229/203/165	mm	Drill Pipe (127.0	mm	
SPM		85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m ³ /min @ 95%		2.58	Jet Velocity	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	kW	
		CLID	VEYS				MUD			MIDAD	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	6:45		Gel	MIUD AL	CaC03	
	32.50	1.49	28.75	1101111	12431	Density	1085		Caustic	1	Percol	
	95.80	1.51	28.78			Vis.	69		Envirofloc	-	Sulphamic	
	09.80	1.59	35.30			рH	10.0		Kelzan	3	T-352	
102	23.40	1.29	32.18			W.L.	7.6		Cello		Defoamer	2
103	37.90	1.55	39.16			P.V.	26.0		Bicarb		2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	16.5		Newedge	9	Sapp	4
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	20	Dyna det	4
	65.00	1.00	"	"		Filter Ck	0.5		Desco	8		
	60.00	1.25	"	"		Solids %	5.0		Barite			
	56.00	1.00	"	"		Oil Ca (mg/l)	0.000		Lignite	-		
	52.00 48.00	1.00 1.50	"			Cl (mg/l)	80.0 9900.0		PHPA Sawdust	6 58		
	02.00	1.50	Ι "	"		MBT	12.5		Sawuust Soda Ash	36		
	01.00	1.25	"	"		Temp	39.4		Supervision		Day Cost	\$7,041
						XSPolymer	1.0		Mud Van	1	Well Cost	\$154,204
Muc	l losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	ulating Vol.	169.0			Last Ca	sing Test	26-J	ul-09	Underflow	Density	180	0.0
	ses down hole		Total hole		Last B	OP Test		ul-09	Overflow I	Density	10	70
	ses at surface	1.5	Total surf.			sing Test	1000 ro	tating hrs	Flow Rate,		0	
Today tota	al losses	1.8	Cumulative	66.9	Next B	OP Test			Operating	hours	24	0
	***	11.0. 4.1	I D		TT.	1. () . 1'4'	1 1 31 0 17	P4 /#		T 4 1 C . T	1' (0/)	
D		ell Control -	МАСР	D4b		ole Condition			Dl.		Readings (%)	
Pump RSPP #1	Strokes 75	Pressure 3512	6141	Depth 1815	Drag up Drag Dn	5	Torque	10+	·	ground ection	0.0	
RSPP #2	75 75	3520	0141	1815	Hook Load					rip	0.	
										r	I	
	1. Rig up/C	Out		•	9. Slip & C	Cut	1.00	=	17. Plug B	ack		
	2. Drill		13.25		10. Survey			_	18. Wash t	to Btm		
	3. Ream				11. Wirelin	ne Logs		=	19. Strippin	ng Mud		
	4. Drill Ou			:	12. Casing			=		mud pumps		
	5. Circ. &	Cond.	1.00		_	Out Cement		=	21. Safety	_	0.50	
	6. Trip	•	6.00		14. Nipple		1.05	_	22. Handle		0.50	
	7. Rig Serv 8. Rig Rep		0.50		15. Test BO 16. BOP D		1.25	-	Total Hour	and-off Mtg	24.00	
	o. Kig Kep	an			10. DOI D	1111		-	10tai 110tii	.5	24.00	
						REMARKS						
00:00 - 01:	45 Closed up								kpa high - 1:	5 min. each t	est ok.	
			ulator. 3 fun									
			. Remaining tart press 202						12225 and 1	0750 kpg		
01:45-02:4	5 Slip & cut 1			LU KPA. EIK	i picos 12223	, кра Оррег	rams crose	T SUCS. STAIL	12223 CHU II	0150 кра		
	0 Run in hole											
	0 Drilled 311		m 1843 m to	1860 m.								
	Circulate bo				eck and hois	st for bit char	nge					
										-	-	-
•	roy Group 81						_	?	***		DI 1070 :	
Prev Cost	\$3,97	0,378	Today	\$49	,625	Total Cost	\$4,02	20,003	Weather:		Plus 18 Rain	
Foreman		Bill W	illiams		Rig Phone	•	709-649-710	6	Mud Type Taken By:		Polymer rooker / Shar	ne Halley

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca			<u> </u>	Dav:			Date:	09-A	ug-09
Depth:	1867.0	mKB	Progress:	7.0	Drilling:	13.20	hrs ROP,		0.53	Rig:		am # 11
-	@ 0800 hrs:		U						0.55	KB elev:	175.30	
the next da		Dining uner		III 10 1000 I	oprout 1	uno , possie	ne congronne	······································		KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
9	311 / HC	HR-S35-DX	6040255	1843	1860	17	13.20	3 X 18	50	10-15	_	
10	311 / HC	HC506Z	7213027	1860	1867	7	6.50	3x11.2 3x 10.3	50-70	8-12		
		1			1				1		1	
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, 2-	NM DC, 308	mm string s	tab XO			
Model		PZ-11	PZ-11	1-203 mm I	OC -Jars- 1-2	03 DC, X/O	,12-165 mm	DC, 8-HWT	Pump Pres	sure:	13,000	kPa
Liner	(mm)	152	152	BHA Lengt		218.57	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		229/203/165	_	Drill Pipe (127.0	mm	
SPM		85	85	D.C. Annul		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m ³ /min @ 95%		2.58	Jet Velocity	y:	71.0	m/sec	True Hydra	aulic HP:	468.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
982	2.50	1.49	28.75			Density	1085		Caustic	3	Percol	
	5.80	1.51	28.78			Vis.	78		Envirofloc		Sulphamic	
	9.80	1.59	35.30			pН	10.7		Kelzan	1	T-352	
	3.40	1.29	32.18			W.L.	8.0		Cello		Defoamer	1
	7.90	1.55	39.16	C.		P.V.	27.0		Bicarb	-	2K-7	1
	9.00	1.00	Wireline "	Survey		Y.P.	17.5		Newedge	1	Sapp	
	58.00 5.00	0.25 1.00	,,	"		Gel S. Filter Ck	4/6/7		Drispac	4	Dyna det	
	60.00	1.00	"	"		Solids %	0.5 5.0		Desco Barite			
	6.00	1.00	"	"		Oil	0.000		Lignite			
	2.00	1.00	"	"		Ca (mg/l)	40.0		PHPA	2		
	8.00	1.50	"	"		Cl (mg/l)	9900.0		Sawdust			
	2.00	1.50	"	"		MBT	12.5		Soda Ash			
180	1.00	1.25	"	"		Temp	37.8		Supervision		Day Cost	\$2,199
						XSPolymer	1.0		Mud Van	1	Well Cost	\$156,404
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	171.0			Last Cas	sing Test	26-J	ul-09	Underflow	Density	180	0.00
Today losse	es down hole	0.2	Total hole		Last Bo	OP Test	26-J	ul-09	Overflow I	Density	10	070
•	es at surface	0.8	Total surf.			sing Test	1000 ro	tating hrs	Flow Rate,			.8
Today total	l losses	1.0	Cumulative	67.9	Next B	OP Test			Operating	hours	24	1.0
	We	ll Control -	kPa		Ho	ole Condition	n kdaN & K	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	5	Torque	10+	Back	ground	0.	07
RSPP #1	75	3512	6141	1815	Drag Dn	5			Conn	ection	0.	07
RSPP #2	75	3520		1815	Hook Load	88			Т	rip		
	1 D: //				0 011 0 0	1 4	1.00	_	15 DI D			
	1. Rig up/C 2. Drill	Jul	13.25		9. Slip & C 10. Survey		1.00	=	17. Plug B 18. Wash t			-
	3. Ream		13.23		11. Wirelin			_	19. Strippin			-
	4. Drill Ou	t			12. Casing			=		mud pumps		
	5. Circ. &		1.00		_	Out Cement		-	21. Safety		0.50	-
	6. Trip		6.00		14. Nipple			=	22. Handle			•
	7. Rig Serv	ice	0.50		15. Test BO	OP & FIT	1.25	-	23 Crew H	and-off Mtg	0.50	•
	8. Rig Rep	air			16. BOP D	rill		=	Total Hour	's	24.00	•
00:00 -04:30	Continue to	pull out of h	ole.			REMARKS	3					
	0 Ream from			t @ 1828 m	to 1832 m.							
	Drilled 311								•			•
17:15-24:00	Flow checke				e due to ROI	Р.						
		•	r pipe and bl									
	Bit # 10, 20	chipped cutt	ers with cutt	er tace missi	ing from 10 c	cutters.						
Tops: Codr	oy Group 8	15 m, Ship C	Cove limesto	ne 846 m <u>,</u> Fi	schell's Bro	ok 870 m, Sj	prout Falls _	?				
Prev Cost	\$4,07	4,789	Today	\$25	,713	Total Cost	\$4,10	00,502	Weather:		Plus 23 Sunn	у
Foreman		Bill W	illiams		Rig Phone		709-649-710	06	Mud Type Taken By:		Polymer rooker / Sha	ne Halley

			Vulc	an Mi	inerals	. Daily	, Drill	ing R	nort			
						Dan			cport			
Well:			an Investca				Day:			Date:		ug-09
Depth:	1889.0	mKB	Progress:	22.0	Drilling:	17.25	hrs ROP,		1.28	Rig:		am # 11
Operation	@ 0800 hrs:	Drillng ahea	ad @ 1-2+ m	/hr to 1868 r	n in Sprout F	Falls -, possib	le conglome	erate.		KB elev:	175.30	
the next da	y									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
10	311 / HC	HC506Z	7213027	1860	1867	7	6.50	3x11.2 3x 10.3	50-70	8-12		
9 RR	311 / HC	HR-S35-DX	6040255	1867		22	16.25	3 X 18	50	15 -18		
									-	-		
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, 2-	NM DC, 308	3 mm string s	tab XO			
Model		PZ-11	PZ-11	1-203 mm I	DC -Jars- 1-2	03 DC, X/C	,12-165 mm	DC, 8-HWT	Pump Pres	sure:	15,500	kPa
Liner	(mm)	152	152	BHA Leng	th:	218.57	m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla	r O.D.	229/203/165	mm	Drill Pipe (O.D.	127.0	mm	-
SPM		85	85	D.C. Annu	lar Vel.:	45.0	m/min	D.P Annula	ar Vel.:	37.0	m/min	
Vol.	m ³ /min @ 95%		2.58	Jet Velocit	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	kW	
				_							_	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
982	2.50	1.49	28.75			Density	1080		Caustic	4	Percol	
995	5.80	1.51	28.78			Vis.	67		Envirofloc		Sulphamic	
100	9.80	1.59	35.30			pН	10.4		Kelzan	1	T-352	
102	3.40	1.29	32.18			W.L.	8.6		Cello		Defoamer	1
103	7.90	1.55	39.16			P.V.	25.0		Bicarb		2K-7	1
109	9.00	1.00	Wireline	Survey		Y.P.	15.0		Newedge	1	Sapp	1
116	8.00	0.25	"	"		Gel S.	4/6/7		Drispac	2	Dyna det	1
126	5.00	1.00	"	"		Filter Ck	0.5		Desco	1	Walnut	3
136	0.00	1.25	"	"		Solids %	5.0		Barite	25		
145	6.00	1.00	"	"		Oil	0.000		Lignite			
155	2.00	1.00	"	"		Ca (mg/l)	20.0		PHPA	1		
	8.00	1.50	"	ıı .		Cl (mg/l)	9900.0		Sawdust	17		
170	2.00	1.50	"	"		MBT	12.5		Soda Ash			
180	1.00	1.25	"	"		Temp	39.6		Supervision		Day Cost	\$2,528
						XSPolymer	1.0		Mud Van	1	Well Cost	\$158,933
	losses Surfa		nole Estimat	es m3		asing Tests		ate			rifuge	
Total circu		118.0				sing Test		ful-09	Underflow	•		0.00
•	es down hole		Total hole			OP Test		ful-09	Overflow I	-		070
_	es at surface		Total surf.	70.5		sing Test	1000 ro	tating hrs	Flow Rate,			.8
Today total	1 Iosses	4.6	Cumulative	72.5	Next B	OP Test			Operating	nours	24	4.0
	***	11.0. 4.1	ı n			1 C 1''	1 1 N 0 T	· C4 111		T 4 1 C . T	1' (0/	\
_		ell Control -		D (1		ole Condition			D 1		Readings (%)	
Pump RSPP #1	Strokes	Pressure	MACP	Depth	Drag up	5	Torque	10+		ground		07 07
RSPP #2	75 75	3512 3520	6141	1815 1815	Drag Dn Hook Load					ection rip	υ.	.07
Kβ11 π2	73	3320		1013	1100K LUau	. 00				пр		
	1. Rig up/0	Dut		-	9. Slip & C	'nt		=	17. Plug B	aek		-
	2. Drill	Jui	17.25	-	10. Survey			-	18. Wash			-
	3. Ream		17,20	-	11. Wirelin			=	19. Strippi			-
	4. Drill Ou	ıf		-	12. Casing			_		mud pumps	-	-
	5. Circ. &			=	_	Out Cement		=	21. Safety		0.50	=
	6. Trip		5.75	-	14. Nipple			=	22. Handle			-
	7. Rig Serv	vice	0.50	-	15. Test B	-		=		and-off Mtg		-
	8. Rig Rep			=	16. BOP D			_	Total Hou	_	24.00	=
				-				_				-
						REMARKS	5					
00:00 -00:30	Continue to	pull out of h	ole.									
00:30 -06:00	0Make up in:	sert bit and R	tun in hole,n	o fill.								
06:00-24:00	Profile bit a	nd Drilled 3	11 mm hole	from 1867 m	to 1889 m.							
	Functioned	upper and lo	wer pipe ran	ıs.								
m	C -	15	Y	044	~	1.050 ~		0				
-	•				ischell's Bro			?	Wo-41	1	Dlug 22 C	**
Prev Cost	\$4,07	4,789	Today	\$25	5,713	Total Cost	54,10	00,502	Weather: Mud Type		Plus 23 Sunn Polymer	y
Foreman		Rill W	illiams	=	Rig Phone		709-649-710)6	Taken By:		rooker / Sha	ne Hallev
- or critain		Dill 11			- ue i nonc				· · · · · · · · · · · · · · · · · · ·	TOLIN D	conci / Dila	ii

			Vulc	an Mi	inerals	s Daily	y Dri ll	ing Re	eport			
Well:	1922.0	Vulc mKB	an Investca				Day:	43	-	Date:		ug-09 am # 11
Depth:	@ 0800 hrs:		Progress:		Drilling:	21.25	iiis kor,	111/1117;	1.55	Rig: KB elev:	175.30	
the next da		Circulate pi	ioi to trip ioi	i oit						KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
9 RR	311 / HC	HR-S35-DX	6040255	1867	- Cut	22	38.00	3 X 18	50	15 -18	1022	2001
,					<u>l</u>						l	
		Pump 1	Pump 2	Drilling As	sembly:	Bit, Sub, 2-1	NM DC, 308	3 mm string s	tab XO			
Model		PZ-11	PZ-11	1-203 mm I	DC -Jars- 1-2					sure:	15,500	kPa
Liner	(mm)	152	152	BHA Leng	th:	218.57	m	Strap:	_	Board:		-
Stroke	(mm)	279	279	Drill Colla	r O.D.	229/203/165	mm	Drill Pipe (O.D.	127.0	mm	
SPM		85	85	D.C. Annu	lar Vel.:	45.0	m/min	D.P Annula	ar Vel.:	37.0	m/min	
Vol.	m³/min @ 95%		2.58	Jet Velocit	y:	71.0	m/sec	True Hydr	aulic HP:	468.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
	2.50	1.49	28.75			Density	1090		Caustic	2	Percol	
	5.80	1.51	28.78			Vis.	78		Envirofloc	ļ	Sulphamic	
	09.80	1.59	35.30			pН	10.6	1	Kelzan	1	T-352	
	23.40	1.29	32.18			W.L.	7.8		Cello	1	Defoamer	1
	37.90	1.55	39.16	0		P.V.	27.0		Bicarb	.	2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	16.0		Newedge	1	Sapp	
	68.00	0.25	"	"		Gel S.	4/6/7		Drispac	2	Dyna det	
	65.00 60.00	1.00 1.25	"	"		Filter Ck Solids %	0.5 5.6		Desco	+	Walnut	
	56.00	1.00	"	"		Oil	0.000		Barite Lignite	1		
	52.00	1.00	"	"		Ca (mg/l)	20.0		PHPA	1		
	48.00	1.50	"	"		Cl (mg/l)	9900.0		Sawdust			
	02.00	1.50	! "	"		MBT	12.5		Soda Ash	1		
	01.00	1.25	"	"		Temp	48.2		Supervision		Day Cost	\$1,449
	07.00	1.25	"	"		XSPolymer			Mud Van	1	Well Cost	\$160,383
Mud	l losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	ılating Vol.	173.0			Last Ca	sing Test	26-J	ful-09	Underflow	Density	180	0.00
Today loss	es down hole	0.8	Total hole		Last B	OP Test	26-J	ful-09	Overflow I		10)70
Today loss	es at surface	2.0	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate,	,m3/min	0	0.8
Today tota	ıl losses	2.8	Cumulative	75.3	Next B	OP Test			Operating	hours	24	4.0
					_							
	We	ell Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas F	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	6	Torque	6-9		ground		.07
RSPP #1	75	3750	6141	1890	Drag Dn	6				nection	0.	.07
RSPP #2	75				Hook Load	94			Т	rip		
				-				_	4= 5: 5			=
	1. Rig up/0	Jut	21.25	-	9. Slip & C		1.05	_	17. Plug B			-
	2. Drill		21.25	-	10. Survey		1.25	_	18. Wash			=
	3. Ream 4. Drill Ou			-	11. Wirelin	_		_	19. Strippi	0		=
				-	12. Casing			_		mud pumps	0.50	_
	5. Circ. & 6. Trip	Conu.		-	14. Nipple	Out Cement		=	21. Safety 22. Handle	_	0.30	=
	7. Rig Serv	vice	1.00	-	15. Test B	-		_		e 100is land-off Mtg		=
	8. Rig Rep		1.00	-	16. BOP D			-	Total Hou	_	24.00	-
	o. rug rep			=	10. DOI D			_	1044111041		21.00	=
						REMARKS	5					
00:00-16:00	0 Drilled 311	mm hole fro	m 1889 m to	1907 m.								
16:00-17:00	0 Wireline su	rvey @ 1907	1.25 deg.									
17:00-24:00	0 Drilled 311	mm hole fro	m 1907 m to	1922 m.			_				-	
	Functioned	annular prev	entor & lowe	er pipe rams.								
m ~ -	G -	15 6		046 =	~	1.050 ~						
-	roy Group 8							?	W- 4		DI 22 G	
Prev Cost	\$4,1.	34,224	Today	\$26	5,444	Total Cost	\$4,10	60,668	Weather: Mud Type		Plus 23 Sunn Polymer	ıy
Foreman		Rill W	illiams	=	Rig Phone	,	709-649-710)6	Taken By:		rooker / Sha	ne Hallev
- or canan		DIII 11			-us i nonc		0-17-110		runcii Dy.	. Idiiy Di	Jones / Dila	rruncy

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Dav:	44		Date:	12-A	ug-09
Depth:	1938.0	mKB	Progress:	16.0	Drilling:	10.50	hrs ROP,		1.52	Rig:	Stoneh	
_	@ 0800 hrs:		-		Dimme.	10.50	ms Roi,		1.52	KB elev:	175.30	
the next da		Dim uncua	17 10111. 1.	5 111/111						KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
9 RR	311 / HC	HR-S35-DX	6040255	1867	1934	67	44.30	3 X 18	50	15 -18		E-0-NO-TO
	311 / Reed	M4188ZDH		1934		4			50	15 -18	12 11 11	L o no rq
10	3117 Recu	Pump 1	Pump 2	Drilling As				mm string s		15 10		
Model		PZ-11	PZ-11		DC -Jars- 1-2					sure:	15,500	kPa
Liner	(mm)	152	152	BHA Leng		218.57	m	Strap:		Board:	10,000	
Stroke	(mm)	279	279	Drill Colla		229/203/165	_	Drill Pipe ().D.	127.0	mm	
SPM	()	85	85	D.C. Annu		45.0	m/min	D.P Annula		37.0	m/min	
Vol.	m³/min @ 95%		2.58	Jet Velocit		71.0	m/sec	True Hydr		468.0	kW	
				1	, -			,			•	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:11		Gel		CaC03	
	2.50	1.49	28.75			Density	1090		Caustic	4	Percol	
	5.80	1.51	28.78			Vis.	70		Envirofloc		Sulphamic	
	9.80	1.59	35.30			pН	10.6		Kelzan	1	T-352	
	23.40	1.29	32.18			W.L.	8.0		Cello		Defoamer	1
103	37.90	1.55	39.16			P.V.	25.0		Bicarb		2K-7	1
	99.00	1.00	Wireline	Survey		Y.P.	14.5		Newedge	1	Sapp	
116	58.00	0.25	"	"		Gel S.	3/5/6		Drispac	2	Dyna det	
126	55.00	1.00	"	"		Filter Ck	0.5		Desco		Walnut	
136	60.00	1.25	"	"		Solids %	5.6		Barite		Lime Hydrate	2
145	6.00	1.00	"	"		Oil	0.000		Lignite			
155	52.00	1.00	"	"		Ca (mg/l)	20.0		PHPA	2		
164	18.00	1.50	"	"		Cl (mg/l)	9900.0		Sawdust			
170	02.00	1.50	"	"		MBT	12.5		Soda Ash			
180	01.00	1.25		"		Temp	45.2		Supervision		Day Cost	\$2,154
190	07.00	1.25		"		XSPolymen	1.1		Mud Van	1	Well Cost	\$162,537
Mud	losses Surfa	ce & Downl	ıole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	179.0			Last Ca	sing Test		ul-09	Underflow	Density		0.00
Today losse	es down hole	1.1	Total hole		Last B	OP Test		ul-09	Overflow I	Density	10	070
	es at surface	1.8	Total surf.			sing Test	1000 ro	tating hrs	Flow Rate,			.8
Today total	l losses	2.9	Cumulative	77.8	Next B	OP Test			Operating	hours	24	1.0
		ll Control -					n kdaN & K				Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	6	Torque	6700ft/lb		ground		07
RSPP #1	72	3280	6141	1930	Drag Dn	6				ection	0.	07
RSPP #2	72	3280			Hook Load	94			Т	rip		
								=	4 = 51 5			
	1. Rig up/C	Jut	10.50	-	9. Slip & C			-	17. Plug B		-	-
	2. Drill		10.50	-	10. Survey			-	18. Wash t		-	
	3. Ream				11. Wirelin			-	19. Strippin			
	4. Drill Ou		1.77		12. Casing			-		mud pumps	1.00	
	5. Circ. &	Cona.	1.75	-	_	Out Cement		=	21. Safety		1.00	-
	6. Trip		10.00	-	14. Nipple			=	22. Handle			-
	7. Rig Serv		0.75	-	15. Test BO 16. BOP D			=		and-off Mtg		-
	8. Rig Rep	all		-	10. BOF D	TIII		-	Total Hour	8	24.00	-
						REMARKS						
00:00-07:30	Drilled 311	mm hole fro	m 1922 m to	1934 m		KENIAKK	,					
	Circulate an			1754 III.								
	Pull out of h			flow checks	as required	Function Bli	nd rams Ch	ange bit				
	Run in the h											
	Pattern bit.								nular			
20.12-27.00	, - utterii 011. :	110III 12	J 1 10 1750II	10000	u. 1, JUINI II	, / 00011/LU	, 10 100KI d	- anetion all				
Tops: Codr	roy Group 81	15 m, Shin C	ove limesto	ne 846 m. Fi	ischell's Bro	ok 870 m. Si	prout Falls	?				
Prev Cost	• •	0,668	Today		9,645	Total Cost		90,313	Weather:]	Plus 21 Sunn	y
			· · · · · · · · · · · · · · · · · · ·	-	-				Mud Type		Polymer	-
Foreman		Bill W	illiams		Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Hallev

			Vulc	an Mi	inerals	s Daily	Drilli	ing Re	eport			
Well:		Vulc	an Investca			<u> </u>	Day:	45	1	Date:	13-Aı	1g-09
Depth:	1971.0	mKB	Progress:	33.0	Drilling:	22.50	hrs ROP, r		1.50	Rig:	Stoneha	
-	@ 0800 hrs:		-	6 m/hr			,			KB elev:	175.30	m.
the next da	y									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
9 RR	311 / HC	HR-S35-DX	6040255	1867	1934	67	44.30	3 X 18	50	15 -18	4-2-WT-M-	E-0-NO-TQ
10	311 / Reed	M4188ZDH		1934		37	25	3 X 18	1	15 -18		
37.11		Pump 1	Pump 2	Drilling As			NM DC, 308				15.500	1 D
Model Liner		PZ-11 152	PZ-11 152	BHA Leng	OC -Jars- 1-2	218.57		Strap:	Pump Pres	sure: Board:	15,500	kPa
Stroke	(mm)	279	279	Drill Colla		229/203/165	m	Drill Pipe () D		mm	
SPM	(mm)	85	85	D.C. Annu		47.5		D.P Annula		41.0	m/min	
Vol.	m³/min @ 95%	05	2.58	Jet Velocit		89.0	m/sec	True Hydr		468.0	kW	
					, -							
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:13		Gel		CaC03	
982	2.50	1.49	28.75			Density	1095		Caustic	3	Percol	
	5.80	1.51	28.78			Vis.	68		Envirofloc		Sulphamic	
	9.80	1.59	35.30			pН	10.6		Kelzan		T-352	
	3.40	1.29	32.18			W.L.	8.2		Cello		Defoamer	2
	7.90	1.55	39.16			P.V.	25.0		Bicarb		2K-7	
	9.00	1.00	Wireline	Survey		Y.P.	14.0		Newedge	1	Sapp	
	8.00	0.25	"	"		Gel S.	3/4.5/5.5		Drispac	2	Dyna det	
	5.00	1.00	"	"		Filter Ck Solids %	0.5		Desco	8	Walnut	1
	6.00	1.25	"	"		Oil	6.0 0.000		Barite Lignite		Lime Hydrate	1
	2.00	1.00	"	"		Ca (mg/l)	20.0		PHPA	1		
	8.00	1.50	"	"		Cl (mg/l)	10000.0		Sawdust	1		
	2.00	1.50	, ,	"		MBT	12.5		Soda Ash			
	1.00	1.25	"	"		Temp	47.7		Supervision		Day Cost	\$1,998
	7.00	1.25	"	"		XSPolymer	1.0		Mud Van	1	Well Cost	\$164,535
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests	Da	ate		Centi	rifuge	
Total circu	lating Vol.	178.4			Last Ca	sing Test	26-Jı	ul-09	Underflow	Density	193	0.0
Today losse	es down hole	2.2	Total hole		Last Bo	OP Test	26-Jı	ul-09	Overflow I	Density	10	80
Today losse	es at surface	1.6	Total surf.		Next Ca	sing Test	1000 rot	ating hrs	Flow Rate,	m3/min	400	0.0
Today total	Loccec	3.8	Cumulative	81.1	Next B	OP Test			Operating	hours	24	.0
	1 103303											
						- ~						
	We	ll Control -					ı kdaN & Ki			Total Gas R		
Pump	We Strokes	Pressure	MACP	Depth	Drag up	8	n kdaN & Ki Torque	ft/# 7000	·	ground	0.0	07
RSPP #1	We			Depth 1962	Drag up Drag Dn	8			Conn	ground ection		07
-	We Strokes	Pressure	MACP	-	Drag up	8			Conn	ground	0.0	07
RSPP #1	We Strokes 75	Pressure 3850	MACP	-	Drag up Drag Dn Hook Load	8 9 94			Conn	ground ection rip	0.0	07
RSPP #1	Strokes 75	Pressure 3850	MACP 6141	-	Drag up Drag Dn Hook Load 9. Slip & C	8 9 94			Conn T	ground ection rip ack	0.0	07
RSPP #1	Strokes 75 1. Rig up/C 2. Drill	Pressure 3850	MACP	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	8 9 94			17. Plug B 18. Wash t	ground ection rip ack o Btm	0.0	07
RSPP #1	Strokes 75	Pressure 3850 Out	MACP 6141	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	8 9 94 Cut			Conn T 17. Plug B 18. Wash t 19. Strippin	ground ection rip ack o Btm ng Mud	0.0	07
RSPP #1	Strokes 75 1. Rig up/C 2. Drill 3. Ream	Pressure 3850 Out	MACP 6141	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	8 9 94 Cut			17. Plug B 18. Wash t 19. Strippin 20. Wk on	ground ection rip ack o Btm ng Mud mud pumps	0.0	07
RSPP #1	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 3850 Out	MACP 6141	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	8 9 94 Cut ne Logs /Cement Out Cement			Conn T 17. Plug B 18. Wash t 19. Strippin	cround ection rip ack o Btm ng Mud mud pumps Meeting	0.0	07
RSPP #1	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Pressure 3850 Out t Cond.	MACP 6141	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C	8 9 94 Cut ne Logs /Cement Out Cement Up BOP			Tonn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	cround ection rip ack o Btm ng Mud mud pumps Meeting	0.0	07
RSPP #1	We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	Pressure 3850 Out t Cond.	MACP 6141 22.50	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT			Tonn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.0	07
RSPP #1	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 3850 Out t Cond.	MACP 6141 22.50	-	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	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill	Torque		Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on 21. Safety 22. Handle 23 Crew H	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.4	07
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 3850 Out t Cond.	MACP 6141 22.50	1962	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D	8 9 94 Cut The Logs Cement Out Cement Up BOP OP & FIT rill REMARKS	Torque	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep.	Pressure 3850 Out t Cond. ice air	MACP 6141 22.50	1962	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D	8 9 94 Cut The Logs Cement Out Cement Up BOP OP & FIT rill REMARKS	Torque	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 3850 Out t Cond. ice air	MACP 6141 22.50	1962	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D	8 9 94 Cut The Logs Cement Out Cement Up BOP OP & FIT rill REMARKS	Torque	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 3850 Out t Cond. ice air mm hole fro ills.	MACP 6141 22.50	1962	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D	8 9 94 Cut The Logs Cement Out Cement Up BOP OP & FIT rill REMARKS	Torque	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: Drilled 311 and motor k One centrifu	Pressure 3850 Out t Cond. ice air mm hole fro ills. ge is down.	MACP 6141 22.50 0.75 m 1938m to	1962	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 hrs drilling,	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS average RO	Torque P 1.5m/hr. or	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repair 9 Drilled 311 and motor k One centrifu	Pressure 3850 Out t Cond. ice air mm hole fro ills. age is down. incident. Fi	MACP 6141 22.50 0.75 m 1938m to	1962	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6 14. Nipple 15. Test B6 16. BOP D	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS average RO	Torque P 1.5m/hr. or	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	We Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: Drilled 311 and motor k One centrifu	Pressure 3850 Out t Cond. ice air mm hole fro ills. age is down. incident. Fi r the VSP	MACP 6141 22.50 0.75 m 1938m to	1962	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 hrs drilling,	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS average RO	Torque P 1.5m/hr. or	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repair 9 Drilled 311 and motor k One centrift one First aid filling pit fo	Pressure 3850 Out t Cond. ice air mm hole fro ills. ige is down. incident. Fi r the VSP s	MACP 6141 22.50 0.75 m 1938m to	1962	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	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS average RO	Torque P 1.5m/hr. or	7000	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on i 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	0.75)7)7
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Report Drilled 311 and motor k One centrift one First aid filling pit fo 8 hazard ID roy Group 81	Pressure 3850 Out t Cond. ice air mm hole fro ills. ige is down. incident. Fi r the VSP s	MACP 6141 22.50 0.75 m 1938m to	1962 1971m. 22.5 hed while ch	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	8 9 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS average RO	Torque P 1.5m/hr. or prout Falls)	7000	Conn T 17. Plug B 18. Wash t 19. Strippii 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour functioned U	ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	0.75 24.00 ms, Lower pi	pe rams
RSPP #1 RSPP #2	Strokes 75 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Report One centrift one First aid filling pit fo ony Group 81 \$4,29	Pressure 3850 Out t Cond. ice air mm hole fro ills. ige is down. incident. Fi r the VSP s s 55 m, Ship C	MACP 6141 22.50 0.75 m 1938m to nger tip crus	1962 1971m. 22.5 hed while characteristics with the second seco	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 hrs drilling, anging heads	8 9 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS average RO s in mud pun ok 870 m, (S Total Cost	Torque P 1.5m/hr. or prout Falls)	n rig service	Conn T 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	ground ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg s	0.0 0.0 0.0 0.75 0.75 0.75 0.75 0.75 0.7	pe rams

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport				
Well:		Vulc	an Investca			Day: 46			Date:		14-Aug-09		
			Progress: 59.0 Drilling:			22.75 hrs ROP, m/hr:			2.50	Rig:		am # 11	
Operation @ 0800 hrs: Drill ahead at 1990m. 1.6 m/hr					Ö		,	,		KB elev:	175.30	m.	
the next da	y									KB - GL	6.30	m.	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR	
9 RR	311 / HC	HR-S35-DX	6040255	1867	1934	67	44.30	3 X 18	50	15 -18	4-2-WT-M-	E-0-NO-TQ	
10	311 / Reed	M4188ZDH	CK4616	1934		96	48	3 X 18	70	15 -18			
		Pump 1	Pump 2	Drilling As			NM DC, 308						
Model		PZ-11	PZ-11		OC -Jars- 1-2				Pump Pres		16,500	kPa	
Liner	(mm)	152	152	BHA Length:		218.57 m		Strap:		Board:		•	
Stroke (mm)		279	279	Drill Collar O.D.		229/203/165 mm		Drill Pipe O.D.		127.0	mm		
SPM	3	85	85	D.C. Annular Vel.:		47.5 m/min		D.P Annular Vel.:		41.0	m/min		
Vol.	m ³ /min @ 95%		2.58	Jet Velocity	y:	89.0	m/sec	True Hydra	aulic HP:	468.0	kW		
		CLIDA	VEXC				MID			MIDAD	DITIVEC		
Do	nth	Drift	VEYS	North	East	Time	MUD 6:27	<u> </u>	Gel	MUD AD	DITIVES	l	
	2.50	1.49	Azimuth 28.75	North	East	Density	1095		Caustic		CaC03 Percol	1	
	5.80	1.49	28.78			Vis.	69		Envirofloc		Sulphamic	1	
	9.80	1.59	35.30			pH	10.7		Kelzan	1	Т-352	1	
	3.40	1.29	32.18			W.L.	8.2		Cello	1	Defoamer	1	
	7.90	1.55	39.16			P.V.	25.0		Bicarb		2K-7	1	
	9.00	1.00	Wireline	Survey		Y.P.	14.0		Newedge	2	Sapp	-	
	8.00	0.25	"	"		Gel S.	3/4.5/5.5		Drispac	2	Dyna det		
	5.00	1.00	"	"		Filter Ck	0.5		Desco		Walnut		
	60.00	1.25	"	"		Solids %	6.0		Barite	30	Lime Hydrate	d	
	6.00	1.00	"	"		Oil	0.000		Lignite		,		
155	2.00	1.00	"	"		Ca (mg/l)	40.0		PHPA	2			
1648.00		1.50	"	"		Cl (mg/l)	10100.0		Sawdust				
1702.00		1.50	"	"		MBT	12.5		Soda Ash				
1801.00		1.25	"	"		Temp	49.7		Supervision		Day Cost	\$3,252	
190	7.00	1.25	"	"		XSPolymer	1.1		Mud Van	1	Well Cost	\$167,788	
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Cent	rifuge		
Total circu	lating Vol.	176.0			Last Cas	sing Test	26-Jı	ul-09	Underflow	Density	192	20.0	
Today losses down hole			Total hole		Last Bo			ul-09		verflow Density		1080	
Today losses at surface			Total surf.			sing Test	1000 rot					400.0	
Today tota	l losses	6.3	Cumulative	87.9	Next B	OP Test			Operating	hours	24	1.0	
Well Contro						ole Condition kdaN & K				Total Gas R			
Pump Strokes		Pressure	MACP	Depth	Drag up	8	Torque	7000		ground	0.50 0.50		
RSPP #1	75 75	3850	6100	1963	Drag Dn	8				ection	0.	50	
RSPP #2	75	3850		1963	Hook Load	97			1	rip			
	1 D:/	34		-	0 61: 8 6	Y4		-	17 Dl D			-	
1. Rig up/Out		Jui	22.75	-	9. Slip & C 10. Survey	uı		-	17. Plug B 18. Wash t			-	
2. Drill 3. Ream			44.13	-	10. Survey 11. Wirelin	no I oge		-	19. Strippin			-	
4. Drill Out				-	12. Casing			-		mud pumps		-	
5. Circ. & Cond.					13. Pump (-	21. Safety		0.50		
6. Trip				-	14. Nipple			-	22. Handle		0.00	-	
7. Rig Service		vice	0.75	•	15. Test B0			-		and-off Mtg		•	
8. Rig Repair				•	16. BOP D			-	Total Hour	_	24.00	•	
				-				=				-	
						REMARKS							
00:00-24:00	Drilled 311	mm hole fro	m 1971m to	2030m. 22.7	5 hrs drilling	g, average RO	OP 2.5m/hr. o	on rig service	e functioned	Upper pipe r	ams, Lower	pipe rams	
	and annular												
	1 near mis												
		uge is down.											
		l oil sent to d			nanagement								
		torage tank r	eceived for r	nud storage									
m	8 hazard ID			046	1 III B	1.050	4 17 17 3						
		15 m, Ship C 28.314			ischell's Bro				Wo-4L		Dlug 21 -1		
Prev Cost	\$4,32	10,314	Today	\$38	,064	Total Cost	\$4,30	66,378	Weather: Mud Type		Plus 21 clear Polymer	L	
Foreman		Don Campbell			Rig Phone	709-649-7106			_ Mud Type Polymer Taken By: Terry Brooker / Shane Halley				

			Vulc	an Mi	inerals	s Daily	/ Drill	ing Re	eport				
Well:		Vulc				<u> </u>	Day:		Port	Date:	15.A	110-09	
		mKB	lcan Investcan Robinso Progress: 33.5		Drilling:	11.75	hrs ROP, m/hr:		2.85	Rig:	15-Aug-09 Stoneham # 11		
Operation @ 0800 hrs: Log with l					Dinning.	11.75 1113 101,1111			2.03	KB elev:	175.30 m.		
the next da		Log Will Di		cona ram						KB - GL	6.30		
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR	
9 RR	311 / HC	HR-S35-DX	6040255	1867	1934	67	44.30	3 X 18	50	15 -18	4-2-WT-M-		
10	311 / Reed	M4188ZDF	CK4616	1934	•	130	59		70	15 -18	1-3-BT-H-()-1-WT-LC	
		Pump 1	Pump 2	Drilling As				3 mm string s					
Model		PZ-11	PZ-11	1-203 mm I	DC -Jars- 1-2		,12-165 mm				16,500	kPa	
Liner (mm) 152			152	BHA Length:		218.57	m	Strap:	2065.73	_	2063.50		
Stroke (mm)		279	279	Drill Collar O.D.		229/203/165				127.0	mm		
	SPM 85		85	D.C. Annular Vel.:		47.5	m/min	D.P Annula		41.0	_m/min		
Vol. m³/min @ 95% 2.58 Jet Velocity: 89.0 m/sec True Hydraulic HP: 468.0 kW						_KW							
		SUR	VEYS				MUD			MIID AT	DITIVES		
De	epth	Drift	Azimuth	North	East	Time	6:26		Gel	1,102,112	CaC03		
	- p			- 10- 1-		Density	1095		Caustic	2	Percol		
99	5.80	1.51	28.78			Vis.	70		Envirofloc		Sulphamic		
100	09.80	1.59	35.30			рH	10.1		Kelzan		T-352	1	
102	23.40	1.29	32.18			W.L.	8.0		Cello		Defoamer	3	
103	37.90	1.55	39.16			P.V.	25.0		Bicarb		2K-7	1	
	99.00	1.00	Wireline	Survey		Y.P.	14.5		Newedge	3	Sapp		
	68.00	0.25	"	"		Gel S.	3/4.5/5.5		Drispac	3	Dyna det		
	65.00	1.00	"	"		Filter Ck	0.5		Desco		Walnut		
	60.00	1.25	"	"		Solids %	6.0		Barite		Lime Hydrate	1	
	56.00	1.00	"	"		Oil	0.000		Lignite				
	52.00	1.00	"	"		Ca (mg/l)	20.0		PHPA	2			
	48.00 02.00	1.50 1.50	ļ "	"		Cl (mg/l) MBT	10700.0 12.5		Sawdust Soda Ash				
	01.00	1.25	"	"		Temp	51.1		Supervision		Day Cost	\$2,501	
	41.00	2.00	"	"		XSPolymer	1.1		Mud Van	1	Well Cost	\$170,290	
	l losses Surfa		hole Estimat	es m3	BOP & C	asing Tests		ate	THU THE		rifuge	\$170,290	
Total circu	ılating Vol.	183.0			Last Ca	sing Test	26-J	ful-09	Underflow	Density	192	20.0	
	ses down hole	1.6	Total hole			OP Test	26-J	Jul-09 Overflow I		Density	1080		
Today losses at surface		2.2	Total surf.		Next Ca	sing Test	1000 rotating hrs		Flow Rate,m3/min		40	0.0	
Today tota	al losses	3.8	Cumulative	91.7	Next B	OP Test			Operating	hours	24	4.0	
	***	n.c 1	1.00		**	1 0 10	11310 7	6, 111		T . I C . T	11 (0/	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
		ell Control -		D 4		ole Condition			D 1		Readings (%)		
Pump RSPP #1	Strokes 36	Pressure 3680	MACP 6100	Depth 1963	Drag up Drag Dn	8	Torque	7000	Background Connection			0.50 0.50	
RSPP #2	36	3680	0100	1963	Hook Load					rip	υ.	.50	
KSII #2	30	3000		1703	HOOK LOAG	- 71		l		Пр			
1. Rig up/Out			0.50	=	9. Slip & C	Cut	-	=	17. Plug B	ack		-	
2. Drill			11.75	-	10. Survey		0.50	_	18. Wash	to Btm		-	
3. Ream				_	11. Wirelin	ne Logs		_,	19. Strippi	ng Mud		_	
4. Drill Out		t		_	12. Casing	/Cement		_	20. Wk on	mud pumps		_	
5. Circ. & Cond.		Cond.	4.25	-	_	Out Cement		_	21. Safety	_	1.00	-	
	6. Trip		5.00	-	14. Nipple			_	22. Handle			-	
7. Rig Service			0.75	=	15. Test Bo		0.25	=		and-off Mtg		=	
	8. Rig Rep	air		=	16. BOP D	rill		=	Total Hour	rs	24.00	=	
						REMARKS							
00:00-10:13	5 Drilled 311	mm hole fro	m 2030m to	2058m aver	age ROP 2.5								
10:15-1045	Deviation S	urvey at 204	1m. 2 deg										
	0 Accumulat												
	5 Rig service.												
	0 Drill from 2												
	O Circulate bo			00m. No fil	I. Level rig w	hile circulat	ıng. Circulat	e after wiper	trip to increa	ase vis to 90s	ec.		
	0 Pull out of t			046	b111 B	-1- 070 · · · · ·	L4 TO 17	F.i. C	4 2004				
Prev Cost	roy Group 8: \$4.36	15 m, Ship C 66,378	Today		ischell's Bro 2,242	ok 870 m, (S Total Cost	•) Friars Cov 98,620	e at 2004 Weather:	D1	s 20 over cas	train	
TIEV COST	φ+,30	10,210	1 ouay	φ 3 2	,, 	Total Cust	Φ+,3	20,040	Mud Type		Polymer		
Foreman						•	ne Hallev						

			Vulc	an Mi	inerals	s Daily	y Drill	ing Ro	eport			
Well:		Vule	an Investca				Day:		- <u>I</u>	Date:	16 A	ug-09
Depth:	2063.5	mKB	Progress:	33.5	Drilling:	11.75	hrs ROP,		2.85	Rig:	Stoneh	
_	@ 0800 hrs:		U				ms kor,		2.63	KB elev:	175.30	
_	BST or Ru	_		Kun m me n	ole for wiper	uip.				KB - GL	6.30	
Bit #	•	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
9 RR	311 / HC	HR-S35-DX	6040255	1867	1934	67	44.30	3 X 18	50	15 -18		E-0-NO-TQ
	311 / Reed			1934		130		1	70	15 -18)-1-WT-LO
10	7 3117 Recu	Pump 1	Pump 2	Drilling As			NM DC, 308			13 -10	1-3-D1-I1-0	7-1-W1-LO
Model		PZ-11	PZ-11				0,12-165 mm			sure.	16,500	kPa
Liner	(mm)	152	152	BHA Leng		218.57	m	Strap:	2065.73		2063.50	
Stroke	(mm)	279	279	Drill Colla		229/203/165	_	Drill Pipe		127.0	mm	
SPM	()	85	85	D.C. Annu		47.5	m/min	D.P Annul		41.0	m/min	
Vol.	m³/min @ 95%		2.58	Jet Velocit		89.0	m/sec	True Hydr	aulic HP:	468.0	kW	
		I	L		,			•			_	
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	7:28		Gel		CaC03	
	5.80	1.51	28.78			Density	1095		Caustic	3	Percol	
	09.80	1.51	28.78			Vis.	90		Envirofloc		Sulphamic	
	23.40	1.29	32.18			pН	10.0		Kelzan	7	T-352	1
	37.90	1.55	39.16			W.L.	7.6		Cello		Defoamer	
	99.00	1.00	Wireline	Survey		P.V.	25.0		Bicarb		2K-7	1
	58.00	0.25	"	"		Y.P.	14.5		Newedge	3	Sapp	
	55.00	1.00	"	"		Gel S.	3/4.5/5.5		Drispac	8	Dyna det	
	50.00	1.25	"	"		Filter Ck	0.5		Desco		Walnut	_
	56.00	1.00	"	"		Solids %	6.0		Barite	36	Lime Hydrate	3
	52.00	1.00	"	"		Oil	0.000		Lignite			
	48.00	1.50	"	"		Ca (mg/l)	20.0		PHPA	1		
	02.00	1.50 1.25	"	"		Cl (mg/l) MBT	10700.0 12.5		Sawdust Soda Ash			
	07.00	1.25	"	"			51.1				D C4	#0.000
	41.00	2.00	"	"		Temp XSPolymer			Supervision Mud Van	1	Day Cost Well Cost	\$8,089 \$170,290
	l losses Surfa		nole Estimat	es m3	ROP & C	asing Tests		ate	Wide Van		rifuge	\$170,290
	ılating Vol.	183.0	lore Estimate			sing Test		ul-09	Underflow			0.00
	es down hole		Total hole			OP Test		ul-09	Overflow I	•		065
	es at surface		Total surf.			sing Test		tating hrs	Flow Rate,	•		0.0
Today tota		0.0	Cumulative	91.7		OP Test			Operating			1.0
			•	•	=							
	We	ell Control -	kPa		Но	ole Conditio	n kdaN & K	ft/#		Total Gas F	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	8	Torque	7000	Back	ground		50
RSPP #1	36	3680	6100	1963	Drag Dn	8				ection	0.	50
RSPP #2	36	3680		1963	Hook Load	97			T	rip		
	1 70 //				0 (11 0 6			=	45 DI D			
	1. Rig up/0)ut			9. Slip & C			_	17. Plug B			
	2. Drill				10. Survey		20.55	-	18. Wash t			
	3. Ream			-	11. Wirelin	_	20.75	=	19. Strippii			-
	4. Drill Ou			=	12. Casing	/Cement Out Cement		=		mud pumps	0.25	=
	5. Circ. & 6. Trip	Cona.	2.75	-	14. Nipple		·	-	21. Safety 22. Handle		0.25	-
	7. Rig Serv	ico	0.25	-	15. Test B			=		and-off Mtg		-
	8. Rig Rep		0.23		16. BOP D			=	Total Hour	_	24.00	
	or rug reep			=	IO. BOI D			=	1044111041	.5	24.00	=
						REMARKS	S					
	5 Finish pull o									d 2063.5m. F	functioned U	PR and BR
	O Log with Ba											
	Rig down l				Pull out wit	hout filling t	o leave mu	d 30m belov	w GL for VS	P survey		
15:30- 24:0	(Rig to and c											
	Check all va	aives and sea	ts in mud pu	mp.								
	8 Назгана п	D submitted.										
Tops: Code	8 Hazzard II roy Group 8		Cove limesto	ne 846 m. Fi	ischell's Bro	ok 870 m. <i>(</i> \$	Sprout Falls	Friars Cov	re at 2004			
Prev Cost		8,620	Today		,372	Total Cost		38,992	Weather:		Plus 23 Clea	r
	•		-	-					Mud Type		Polymer	
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By:	Terry B	rooker / Sha	ne Halley

			Vulc	an M	ineral	s Dail	v Drill	ing R	eport			
Well:		Vulc	an Investca			•	Dav:		1	Date:	17-Δ	ug-09
Depth:	2063.5	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,		0.00	Rig:		am # 11
_	@ 0800 hrs:		riogress.	0.0	Diming.	0.00	ms Roi,		0.00	KB elev:	175.30	
	a DST or Ru		ate casing							KB - GL	6.30	
Bit #	•	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
210 11	DIE C/1/IIII	Model 1120	2011411101		out	1120205	220425	TOLLEG	242 1/2	,, oz man	1022	2001
10	0 311 / Reed	M4188ZDH	CK4616	1934		130	59	open	70	15 -18	1-3-BT-H-0)-1-WT-LO
		Pump 1	Pump 2	Drilling As	sembly:		o, 3-203 mm					
Model		PZ-11	PZ-11		•				Pump Pres	sure:	12,700	kPa
Liner	(mm)	152	152	BHA Leng	th:	308.00	m	Strap:	2065.73	Board:	2063.50	-
Stroke	(mm)	279	279	Drill Colla	r O.D.	1.2	mm	Drill Pipe	O.D.	127.0	mm	
SPM		95	95	D.C. Annu	lar Vel.:	68.0	m/min	D.P Annul	ar Vel.:	46.0	m/min	
Vol.	m ³ /min @ 95%		2.90	Jet Velocit	y:	NA	m/sec	True Hydr	aulic HP:	468.0	kW	
			VEYS	ı			MUD			MUD AD	DITIVES	1
	epth	Drift	Azimuth	North	East	Time	8:32		Gel		CaC03	
	5.80	1.51	28.78			Density	1100		Caustic		Percol	
	09.80	1.51	28.78			Vis.	102		Envirofloc		Sulphamic	
	23.40	1.29	32.18		1	pН	9.7		Kelzan	4	T-352	
	37.90	1.55	39.16	C	1	W.L.	7.6		Cello		Defoamer	
	99.00	1.00	Wireline	Survey		P.V.	30.0		Bicarb		2K-7	
	68.00 65.00	0.25 1.00	"	"		Y.P. Gel S.	21.0 5/7.5/8.5		Newedge	3	Sapp	
	60.00	1.00	"	"		Filter Ck	0.5		Drispac Desco	3	Dyna det Walnut	
	56.00	1.00	"	"		Solids %	6.0		Barite	30	Lime Hydrate	d
	52.00	1.00	"	"		Oil	0.000		Lignite	30	Line Hyurau	u I
	48.00	1.50	"	"		Ca (mg/l)	50.0		PHPA			
	02.00	1.50	"	"		Cl (mg/l)	10900.0		Sawdust			
	01.00	1.25	"	"		MBT	12.5		Soda Ash			
190	07.00	1.25	"	"		Temp	34.1		Supervision		Day Cost	\$3,786
204	41.00	2.00	"	"		XSPolyme	1.0		Mud Van	1	Well Cost	\$182,166
Mud	l losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	ılating Vol.	184.0			Last Ca	sing Test	26-J	ul-09	Underflow	Density	192	20.0
Today loss	ses down hole	0.0	Total hole		Last B	OP Test	26-J	ul-09	Overflow I	Density	10)85
	ses at surface		Total surf.		-	sing Test	1000 ro	tating hrs	Flow Rate,	m3/min		0.0
Today tota	al losses	0.0	Cumulative	91.7	Next B	OP Test			Operating	hours	4	.0
		ll Control -					n kdaN & K			Total Gas F		
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	7000		ground		18
RSPP #1	36	3025	6100	1963	Drag Dn	9				ection		18
RSPP #2	36	3025		1963	Hook Load	93			Т	rip	0.	55
	1 D:/6	\ _4		-	0 61: 6 6	~4	1.00	=	17 Dl D			-
	1. Rig up/C 2. Drill	Jul		-	9. Slip & C 10. Survey		1.00	-	17. Plug B 18. Wash t			-
	3. Ream			-	10. Survey		7.25	=	19. Strippi			-
	4. Drill Ou	t		-	12. Casing		1.23	=		mud pumps		-
	5. Circ. &		2.50	-		Out Cement		-	21. Safety		1.00	-
	6. Trip	Conu.	10.50	-	14. Nipple		·	_	22. Handle		1.75	-
	7. Rig Serv	rice	0.00		15. Test B	-		=		and-off Mtg		=
	8. Rig Rep				16. BOP D			=	Total Hour	_	24.00	-
	g r			-				_				-
						REMARK	S					
00:00-07:15	5 Finish cond	uct Velocity	Survey Profi	le VSP								
	5 Trip in hole					Shane Halle	y, Terry Broo	oker and Car	neron Merkle	ey arrived on	site.	
	5 Circulate a					-	-	-		-	-	
	0 Pull out to p			3mm DC's	Function Blir	nd rams						
22:00-24:00	0 Ssafty meet	0.1										
			• • •		the tailgate	of the testers	truck and fe	ll to the grou	ınd. Sustaine	d bruising to	left lower ba	ıck
m ~ -		nedical exam		7 hazards II		1.050	, ,					
-	roy Group 8								W41		lua 10 P · ·	
Prev Cost	\$4,43	8,992	Today	\$17	1,386	Total Cost	\$4,61	10,378	Weather: Mud Type		lus 19 Raini Polymer	ng
Foreman		Don Co	ampbell	=	Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Hallav
r or cilian		Don Ca	шросп		Aug I Holle		/ U/-U+7-/10	v	Taken Dy:	1 CITY D	OUNCI / Dild	ne maney

			Vulc	an M	inerals	s Dail	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Dav:		1 0 - 0	Date:	18_A	ug-09
Depth:	2063.5	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, i		0.00	Rig:		am # 11
_	@ 0800 hrs:		110gress.	0.0	Dinning.	0.00	ms KOI,I	111/111 •	0.00	KB elev:	175.30	
	a; DST or Ru		ate casing							KB - GL	6.30	
Bit #	•	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
DIC II	DIZC/IVIANC	Model IADC	berrar 140.	111	Out	Mictics	Hours	TOLLICS	IXI IVI	WOD Kuar	TODE	DUOK
10	0 311 / Reed	M4188ZDF	CK4616	1934		130	59	open	70	15 -18	1-3-BT-H-(0-1-WT-LO
	31171000	Pump 1	Pump 2	Drilling As		DST assem		open	,,,	10 10	102111	, 1 ,, 1 20
Model		PZ-11	PZ-11						Pump Pres	sure:	12,700	kPa
Liner	(mm)	152	152	BHA Leng	th:	308.00	m	Strap:	2065.73	Board:	2063.50	•
Stroke	(mm)	279	279	Drill Colla	r O.D.	1.2	mm	Drill Pipe	O.D.	127.0	mm	_
SPM		85	0	D.C. Annu	lar Vel.:	68.0	m/min	D.P Annul	ar Vel.:	46.0	m/min	
Vol.	m³/min @ 95%		6000.00	Jet Velocit	y:	NA	m/sec	True Hydr	aulic HP:	468.0	kW	
			VEYS	1	1		MUD	1		MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	10:10		Gel	2	CaC03	
	05.80	1.51	28.78			Density	1095		Caustic	3	Percol	
	09.80 23.40	1.51 1.29	28.78 32.18		1	Vis. pH	89 9.7	 	Envirofloc Kelzan		Sulphamic T-352	
	23.40 37.90	1.29	39.16			W.L.	6.2	 	Kelzan Cello		1-352 Defoamer	
	99.00	1.00	Wireline	Survey		P.V.	29.0		Bicarb		2K-7	
	68.00	0.25	"	"		Y.P.	20.0		Newedge		Sapp	
	65.00	1.00	"	"		Gel S.	4.5/7/8		Drispac		Dyna det	
	60.00	1.25	"	"		Filter Ck	0.5		Desco		Walnut	
145	56.00	1.00	"	"		Solids %	6.0		Barite	38	Lime Hydrate	ed
155	52.00	1.00	"	"		Oil	0.000		Lignite			
	48.00	1.50	"	"		Ca (mg/l)	40.0		PHPA			
	02.00	1.50	"	"		Cl (mg/l)	10700.0		Sawdust			
	01.00	1.25	"	"		MBT	12.5		Soda Ash			
	07.00	1.25	"	"		Temp	34.1		Supervision		Day Cost	\$1,696
	41.00	2.00	1 - E-4:4		DOD 0 C	XSPolyme asing Tests		ate	Mud Van	1 C4	Well Cost	\$183,862
	l losses Surfa lating Vol.	180.2	noie Estimat	es ms		sing Tests		ul-09	Underflow		rifuge	20.0
	ses down hole		Total hole			OP Test		ul-09 ul-09	Overflow I	•)85
•	ses at surface		Total surf.			sing Test		tating hrs	Flow Rate,	•		0.0
Today tota		0.0	Cumulative	91.7		OP Test	100010	anng mo	Operating			.0
Ť					-		1					
	We	ell Control -	kPa		Н	ole Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%)
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	7000	Back	ground	0.	.18
RSPP #1	36	3025	6100	1963	Drag Dn	6				ection		.18
RSPP #2	36	3025		1963	Hook Load	67			T	rip	0.	.55
	1 10: //			-	0 (11 0 (-	_	45 DI D			_
	1. Rig up/0	Jut		-	9. Slip & C		-	-	17. Plug B			-
	2. Drill 3. Ream			-	10. Survey 11. Wirelin			=	18. Wash t			-
	4. Drill Ou	ıt		-	12. Casing	_		-		mud pumps		-
	5. Circ. &		2.00	-		Out Cement	+	-	21. Safety		0.75	-
	6. Trip	conu.	2.00	=	14. Nipple		·	=	22. Handle		21.25	=
	7. Rig Serv	ice		-	15. Test Bo			_		and-off Mtg		_
	8. Rig Rep			=	16. BOP D			=	Total Hour	_	24.00	=
				-				-	Note: 21.25	in Code 22 is	all DST time.	-
						REMARKS						
	0 Finished P/U											
	O Safety meet										icates seat fa	ilure.
	5 Trip oput w			cnecks at 2	:uoum, 1946	om, 14/8m	and 1388m.	/5UL Short	on the hole	e till.		
	0 Circulate bo 0 Continue to			aund the need	kar alamanta	in avcallant	condition T	rouble shoot	reason for D	ST failura C	o far undata	rminad
10.00-24:00	o Commue to	pun out with	11 1581 1001. 10	unu me paci	vei ciciliciits	in excellent	conunton. 11	JOUDIC SHOOL	reason for D	or failule. S	o iai unuelei	minicu.
	7 hazards II	D'd										
Tops: Cod	roy Group 8		Cove limesto	ne 846 m, F	ischell's Bro	ok 870 m, (S	Sprout Falls))				
Prev Cost	\$4,61	0,378	Today	\$32	2,406	Total Cost	\$4,64	12,784	Weather:		lus 19 Raini	ng
<u> </u>				-	D. F.				Mud Type		Polymer	
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By:	Terry Bi	rooker / Sha	ne Halley

			Vulc	an M	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo			<u> </u>	Day:		1	Date:	19-A	ug-09
Depth:	2063.5	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,		0.00	Rig:		am # 11
-	@ 0800 hrs:						,			KB elev:	175.30	
-	a _: Run 244mn	•								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
				L								
10	0 311 / Reed	M4188ZDF Pump 1	Pump 2	1934 Drilling As		DST assem		open	70	15 -18	1-3-BT-H-0	0-1-WT-LO
Model		PZ-11	PZ-11	Dinning As	sembly.	DST assem	ory		Pump Pres	sure:	12,700	kPa
Liner	(mm)	152	152	BHA Leng	th:	308.00	m	Strap:	2065.73		2063.50	
Stroke	(mm)	279	279	Drill Colla	r O.D.	1.2	mm	Drill Pipe (O.D.	127.0	mm	-
SPM		85	0	D.C. Annu		68.0	m/min	D.P Annula		46.0	m/min	
Vol.	m ³ /min @ 95%		6000.00	Jet Velocit	y :	NA	m/sec	True Hydr	aulic HP:	468.0	kW	
		CIID	VEYS				MUD			MIDAD	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	7:10		Gel	MUD AD	CaC03	1
	95.80	1.51	28.78	NOTH	Last	Density	1100		Caustic	2	Percol	
	09.80	1.51	28.78			Vis.	89		Envirofloc		Sulphamic	
102	23.40	1.29	32.18			pН	10.6		Kelzan		T-352	2
	37.90	1.55	39.16			W.L.	6.4		Cello		Defoamer	1
	99.00	1.00	Wireline	Survey		P.V.	31.0		Bicarb		2K-7	
	68.00	0.25	"	"		Y.P.	20.5		Newedge		Sapp	
	65.00 60.00	1.00	"	"		Gel S. Filter Ck	4.5/7/8		Drispac		Dyna det	
	56.00	1.25 1.00	"	"		Solids %	0.5 6.0		Desco Barite		Walnut Lime Hydrate	nd.
	52.00	1.00	"	"		Oil	0.000		Lignite		Line Hydrau	<u> </u>
	48.00	1.50	"	"		Ca (mg/l)	30.0		PHPA			
170	02.00	1.50	"	"		Cl (mg/l)	10700.0		Sawdust			
	01.00	1.25	"	"		MBT	12.5		Soda Ash			
	07.00	1.25	"	"		Temp	28.7		Supervision		Day Cost	\$1,180
	41.00	2.00	" - 1 E 4' - 4		DOD 0 C	XSPolymer		ate	Mud Van	1	Well Cost	\$185,043
	d losses Surfa ulating Vol.	180.2	noie Esumai	les m5		asing Tests sing Test		ul-09	Underflow		rifuge	20.0
	ses down hole		Total hole			OP Test		ul-09	Overflow I			085
	ses at surface		Total surf.			sing Test		tating hrs	Flow Rate,			0.0
Today tota	al losses	0.0	Cumulative	91.7	Next B	OP Test			Operating	hours	4	.0
					-							
		ell Control -				ole Condition					Readings (%	
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	7000		ground		.18
RSPP #1 RSPP #2		3025 3025	6100	1963 1963	Drag Dn Hook Load	67				rip		. <u>18</u> .55
KSII #2	30	3023		1703	1100K LUau	07				тър	U.	
	1. Rig up/C	Out		-	9. Slip & C	Cut		=	17. Plug B	ack		-
	2. Drill			-	10. Survey			_	18. Wash	to Btm		-
	3. Ream			=' =	11. Wirelin	_		_	19. Strippin	_		_
	4. Drill Ou			_	12. Casing			_		mud pumps		_
	5. Circ. &	Cond.		-		Out Cement		_	21. Safety	_	1.75	-
	6. Trip 7. Rig Serv	ico	0.50	-	14. Nipple 15. Test B			_	22. Handle	and-off Mtg	21.75	-
	8. Rig Rep		0.50	-	16. BOP D			_	Total Hour		24.00	-
	or rug rup			-	10. 201 2			=		in Code 22 is a		-
						REMARKS						
	0 Continue to	•						•	0500kPa. Fu	inction blind	rams	
	0 Make up Int		•						eflotok la a -	okon Mair (love 4.4	
14:00-22:4	5 DST #2 87						145min. P	umpea up ir	ntiatable pa	cker. Main t	iow 14min.	
23:45-24:0	O Rig down m	* *			Deflate packe	.ı.						
23.13-24.0	U Tag down II		Pour or the									
	8 hazards II	O'd. No incid	ents									
-	lroy Group 81		Cove limesto	ne 846 m, F	ischell's Bro		prout Falls)				
Prev Cost	\$4,64	12,784	Today	\$35	5,766	Total Cost	\$4,67	78,550	Weather:		lus 19 Raini	ng
Foreman		Don C	ampbell	=	Rig Phone	,	709-649-710	16	Mud Type Taken By:		Polymer rooker / Sha	na Hellow
- or cinail		Don C	ишросп		AUG I HOME		, u,-u - 1,-110		rancii Dy.	LULY DI	JUNET / DIId	iii maney

			Valo	- N/S	in anala	. Deil	D:11	ina D				
						Dan	y Drill		eport			
Well:			an Investca				Day:			Date:		ug-09
Depth:	2063.5	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, 1	m/hr:	0.00	Rig:		am # 11
_	@ 0800 hrs:									KB elev:	175.30	
	Finish casin					35.	1		222	KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
1.0	211 / D 1	M41007DI	CIVACIC	1024		120			70	15 10	1.2 DE II.	1 11/11 1 ()
10	311 / Reed			1934 Drilling As		130	59	open	70	15 -18	1-3-В1-Н-(0-1-WT-LO
Model		Pump 1 PZ-11	Pump 2 PZ-11	Di lilling As	sembly.				Pump Pres	cura.	12,700	kPa
Liner	(mm)	152	152	BHA Leng	th•		m	Strap:	2065.73		2063.50	ма
Stroke	(mm)	279	279	Drill Colla		1.2	mm	Drill Pipe		127.0	mm	•
SPM	()		0	D.C. Annu			m/min	D.P Annul		46.0	m/min	
Vol.	m³/min @ 95%	0.0139	0.0139	Jet Velocity	y:		m/sec	True Hydr	aulic HP:	-	kW	
								•			-	
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	7:10		Gel		CaC03	
	5.80	1.51	28.78			Density	1100		Caustic		Percol	
	09.80	1.51	28.78			Vis.	89		Envirofloc		Sulphamic	
	23.40	1.29	32.18			pН	10.6		Kelzan		T-352	
	37.90	1.55	39.16	G.		W.L.	6.4	-	Cello		Defoamer	
	99.00	1.00	Wireline "	Survey		P.V.	31.0	 	Bicarb		2K-7	
	58.00 55.00	0.25 1.00	"	"		Y.P. Gel S.	20.5 4.5/7/8		Newedge		Sapp Dame det	
	50.00	1.00	"	"		Filter Ck	0.5		Drispac Desco		Dyna det Walnut	
	56.00	1.00	"	"		Solids %	6.0		Barite		Lime Hydrate	d
	52.00	1.00	"	"		Oil	0.000		Lignite		Line Hyurau	u
	48.00	1.50	"	"		Ca (mg/l)	30.0		PHPA			
	02.00	1.50	"	"		Cl (mg/l)	10700.0		Sawdust			
	01.00	1.25	"	"		MBT	12.5		Soda Ash			
190	07.00	1.25	"	"		Temp	28.7		Supervision		Day Cost	•
204	41.00	2.00	"	"		XSPolymen	1.0		Mud Van	1	Well Cost	\$185,043
Mud	l losses Surfa	ce & Downl	nole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
	ılating Vol.	180.2				sing Test		ul-09	Underflow	•		20.0
	es down hole		Total hole			OP Test		ul-09	Overflow I)85
	es at surface		Total surf.	0.4.5		sing Test	1000 rot	tating hrs	Flow Rate,			0.0
Today tota	ll losses	0.0	Cumulative	91.7	Next B	OP Test			Operating	hours	4	.0
	Wa	ell Control -	l-Do		Ш	la Canditia	n kdaN & K	£4/#		Total Gas R	loodings (0/	\
Pump	Strokes	Pressure	МАСР	Depth	Drag up	7	Torque	7000	Rooke	ground	Leadings (%))
RSPP #1	36	1 ressure	6100	1963	Drag Dn	6	Torque	7000		ection		
RSPP #2	36		0100	1963	Hook Load	67				rip		
10112				1,00	1100H Louid	0.	<u> </u>	<u> </u>		Р		
	1. Rig up/0	Out		-	9. Slip & C	Cut		=	17. Plug B	ack		-
	2. Drill				10. Survey			-	18. Wash t	to Btm		•
	3. Ream		-	•	11. Wirelin	ne Logs		_	19. Strippin	ng Mud		•
	4. Drill Ou			•	12. Casing		13.50	='		mud pumps		•
	5. Circ. &	Cond.			13. Pump (<u> </u>	_	21. Safety		1.25	
	6. Trip				14. Nipple			=	22. Handle		9.00	
	7. Rig Serv		0.25		15. Test Bo		-	_		and-off Mtg		
	8. Rig Rep	air			16. BOP D	rill		_	Total Hour		24.00	
						REMARKS	3		Note: 21./5	in Code 22 is a	ali DST time.	
00:00-09:30	Continue to	pull out of t	he hole DST	#2. Lay out								
	5 Remove Flo					. I unction I	Jina ranis					
	5 Rig up ro r			<u> </u>								
13;15-23-1	5 Run 244.5r	nm 67.43kg/	m, LTC, L-8	0 casing.								
23:15-24:00	Rig up basil	extensions a	and elevators	at shoe.								
	-			-			-	-				-
T. G.		D'd. No incid		046		1.070 "	1 4					
Tops: Code Prev Cost	roy Group 8	15 m, Ship C 7,930			ischell's Bro 8,539	ok 870 m, (8 Total Cost	•		Waatha		Dlug 14 Cl	•
1 1ev Cost	\$4,07	1,730	Today	\$198	0,337	Total Cost	\$4,87	76,469	Weather: Mud Type		Plus 14 Clea Polymer	ı
Foreman		Don Ca	ampbell	=	Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Hallev

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	53		Date:	21-A	ug-09
Depth:	2063.5	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, r		0.00	Rig:		am # 11
_			-				ms KOI,I	11/111 •	0.00	KB elev:	175.30	
	@ 0800 hrs: Drill out and			u 1400kra 10	ow and 1100	okra iligii						
				T	0.4	3.5.4	**	NT. I	DDM	KB - GL	6.30	
Bit #	Size/Make	Model IADC	Seriai No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
				L			L					
10	311 / Reed			1934		130	59	open	70	15 -18	1-3-BT-H-0	0-1-WT-LOC
		Pump 1	Pump 2	Drilling As	sembly:							
Model		PZ-11	PZ-11						Pump Pres		12,700	kPa
Liner	(mm)	152	152	BHA Leng			m	Strap:	2065.73	Board:	2063.50	_
Stroke	(mm)	279	279	Drill Colla	r O.D.	1.2	mm	Drill Pipe (O.D.	127.0	mm	
SPM			0	D.C. Annul	lar Vel.:		m/min	D.P Annula	ar Vel.:	46.0	m/min	
Vol.	m ³ /min @ 95%	0.0139	0.0139	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
										•	-	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	21:13		Gel	10	CaC03	
995	5.80	1.51	28.78			Density	1105		Caustic	1	Percol	
	09.80	1.51	28.78			Vis.	89		Envirofloc		Sulphamic	
	23.40	1.29	32.18			рH	10.8		Kelzan	6	T-352	
	37.90	1.55	39.16			Fluid Loss	6.4		Cello		Defoamer	1
	99.00	1.00	Wireline	Survey		P.V.	29.0		Bicarb		2K-7	1
	58.00	0.25	"	Burvey "		Y.P.	20.0		Newedge		Sapp	-
	55.00	1.00	"	"		Gel S.	4/6.5/7.5		Drispac		Dyna det	
	50.00	1.25	"	"		Filter Ck	0.5		Desco	3	Walnut	
	56.00	1.00	"	"		Solids %	7.0			40		
	52.00	1.00	"	"		Oil	0.000		Barite	40	Lime Hydrate	ea
			"	"					Lignite			
	48.00	1.50	"	"		Ca (mg/l)	40.0		PHPA			-
	02.00	1.50	"	"		Cl (mg/l) MBT	10700.0		Sawdust			
	01.00	1.25	"	"			12.5		Soda Ash		D C (
	07.00	1.25		"		Temp	27.1		Supervision	1	Day Cost	*****
	41.00	2.00			non a c	XSPolymer			Mud Van	1	Well Cost	\$185,043
	l losses Surfa		noie Estimat	es m3	·	asing Tests		ate			rifuge	
	ılating Vol.	180.2				sing Test		ul-09	Underflow	•		20.0
	es down hole		Total hole			OP Test		ul-09	Overflow I			085
	es at surface	0.0	Total surf.	04.5		sing Test	1000 rot	ating hrs	Flow Rate,			0.00
Today total	ll losses	0.0	Cumulative	91.7	Next B	OP Test			Operating	hours	4	1.0
	We	ll Control -	kPa		Но	ole Condition	n kdaN & Ki	ft/#		Total Gas R	eadings (%)
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	7000	Backg	ground		
RSPP #1	36		6100	1963	Drag Dn	6			Conn	ection		
RSPP #2	36			1963	Hook Load	67			T	rip		
				_								_
	1. Rig up/C	Out		-	9. Slip & C				17. Plug B			_
	2. Drill			=	10. Survey				18. Wash t			=
	3. Ream			_	11. Wirelin				19. Strippii			_
	4. Drill Ou			_	12. Casing		18.00			mud pumps		_
	5. Circ. &	Cond.	2.50	_	13. Pump (Out Cement		-	21. Safety	Meeting	1.00	_
	6. Trip			_	14. Nipple				22. Handle	Tools	2.25	=
	7. Rig Serv	ice	0.25	_	15. Test Bo	OP & FIT		_	23 Crew H	and-off Mtg		_
	8. Rig Repa	air			16. BOP D	rill		_	Total Hour	s	24.00	_
							Note:	2.25 in Code	22 isRemove	and indtall flo	w tee.	
						REMARKS						
	O Continue to											
16;00-21:00	0 Remove Flo		up hanger an	d L/J. land o	out with 168 j	jts 69kg/m, L	-80, LTC + l	nanger joint.	Shoe @ 205	6.74m. St wt	up 142daN,	down 110
	Re install F											
21:00-24:00	Rig in BJ an	nd cement. 41	m3 water ahe	ead, 3m3 sca	venger, 48.1:	5t Fill-Lite 2	-100 mixed @	@ 1518kg/m	63.4m3 + 10	0.1 ton 0-1-0	"G" mixed @	@ 1901kg/m3
	to yield 7.65	m3. Drop to	p plug and d	isplace w/rig	g pump at 1.3	3m3/min.						
-	roy Group 81											
		(4(0	Today	¢114	6,175	T-4-1 C4	4400	2 (4 4	XX7 /1			
Prev Cost	\$4,87	0,409	1 ouay	\$110	0,175	Total Cost	\$4,99	2,644	Weather:		Plus 14 Clea	п
Prev Cost Foreman	\$4,87		ampbell	- \$110	Rig Phone		\$4,99 709-649-710	,	Weather: Mud Type Taken By:		Plus 14 Clea Polymer rooker / Sha	

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Valo	an Investca			, <u> </u>	Day:		Рого	D-4	22.4	00
Depth:	2063.5	mKB		an Kodinsu 0.0	Drilling:	0.00	hrs ROP,		0.00	Date: Rig:		ug-09 am # 11
-	@ 0800 hrs:		Progress:	0.0	Dining.	0.00	ms kor,	111/111 •	0.00	KB elev:	175.30	
-	a Drill Ahead	1 Offination 1	megnty test							KB - GL	6.30	
Bit #		Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
DIC II	SIZE/IVILIKE	Model INDC	Dellar 140		Out	Metres	110015	TOZZICS	141 1/1	WOD Ruth	TODE	DOOR
11	1 216 / Reed	DSX811-M	113204	2064		0	0	4X10, 4X12	2			
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,				DC, 311mm	Stab, 5 X 16	5mm DC,
Model		PZ-11	PZ-11	Jar, 7 165m	ım DC, 8 HW				Pump Pres			kPa
Liner	(mm)	152	152	BHA Leng	th:	301.07	m	Strap:		Board:		=
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe		127.0	mm	
SPM			0	D.C. Annu			m/min	D.P Annul		46.0	m/min	
Vol.	m ³ /min @ 95%	0.0139	0.0139	Jet Velocit	y:		m/sec	True Hydr	aulic HP:		kW	
		Grip					1 erm			1000	D. F. F. F. F. G.	
	43		VEYS		·	rn:	MUD	1		MUD AD	DITIVES	I
	epth 95.80	Drift	Azimuth	North	East	Time Dangity	15:37		Gel	1	CaC03	
	09.80	1.51 1.51	28.78 28.78			Density Vis.	1085 64		Caustic Envirofloc	1	Percol Sulphamic	
	23.40	1.29	32.18			pH	11.3		Kelzan		T-352	1
	37.90	1.55	39.16			Fluid Loss	6.8		Cello		Defoamer	-
	99.00	1.00	Wireline	Survey		P.V.	22.0		Bicarb		2K-7	
	68.00	0.25	"	"		Y.P.	13.0		Newedge		Sapp	
120	65.00	1.00	"	"		Gel S.	3/4.5/5		Drispac		Dyna det	
130	60.00	1.25	"	"		Filter Ck	0.5		Desco	1	Walnut	
14:	56.00	1.00	"	"		Solids %	5.0		Barite		Lime Hydrate	d
	52.00	1.00	"	"		Oil	0.000		Lignite			
	48.00	1.50	"	"		Ca (mg/l)	40.0		PHPA			
	02.00	1.50	"	"		Cl (mg/l)	10000.0		Sawdust			
	01.00	1.25	"	"		MBT	10.0		Soda Ash		5 0 .	
	07.00 41.00	1.25 2.00	"	"		Temp	28.7		Supervision	1	Day Cost Well Cost	\$563
	1 losses Surfa		rolo Estimot		DOD & C	XSPolyments asing Tests		ate	Mud Van		rifuge	\$188,539
	ulating Vol.	152.0	lole Estimat	es ms		sing Tests		are aug-09	Underflow			20.0
	ses down hole		Total hole			OP Test		ug-09 ug-09	Overflow I	•)85
	ses at surface		Total surf.			sing Test		tating hrs	Flow Rate,	•		0.0
Today tota		0.0	Cumulative	91.7		OP Test			Operating			.0
·		!	!	!							!	
	We	ell Control -	kPa		Ho	ole Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	7000	Back	ground		
RSPP #1	36		6100	1963	Drag Dn	6			Conn	ection		
RSPP #2	36			1963	Hook Load	67			T	rip		
				=				_				=
	1. Rig up/0	Out		-	9. Slip & C			_	17. Plug B			-
	2. Drill			-	10. Survey			_	18. Wash t			-
	3. Ream			-	11. Wirelin	_	2.50	-	19. Strippin			-
	4. Drill Ou 5. Circ. &			-	12. Casing	/Cement Out Cement		=	20. WK on 21. Safety	mud pumps	1.25	-
	6. Trip	Conu.	3.75	-	14. Nipple		7.25	_	22. Handle		1.23	-
	7. Rig Serv	rice	0.25	-	15. Test B(8.50	_		and-off Mtg		-
	8. Rig Rep			-	16. BOP D		0.50	_	Total Hour		24.00	-
				=				=				=
						REMARKS	8					
00:00-01:0	0 Finish displ	acement of c	ement. Bum	ped plug 350	00kpa over fi	nal displacer	nent and pre	ssure test cas	sing to 11300	kpa. Pressur	e held.	
	5 Rig our casi											
	l: Remove Fl											
	O Pressure tes								CI	. 6	. ""	Q1
	0 Reinstall me			ith wear bus	shing. Install	wear sleeve	and determin	ne it is too lo	ng. Change	out for swect	ion "C" wear	Sleeve
	0 Make up dri 0 Finish press			v and 11000	kDa high							
	rov Group 8					ok 870 m /9	Sprout Falle)				
Prev Cost		2,644	Today		5,324	Total Cost	•	68,968	Weather:		Plus 14 Clea	r
	+	<i>'</i> -			,			,	Mud Type		Polymer	
Foreman		Don Ca	ampbell	-	Rig Phone		709-649-710)6	Taken By:		rooker / Sha	ne Halley

			Valo	on M	inovol	n Doile	, Dwill	ina Da	mont			
			v uic		inerals	s Dany	Driii	mg Ke	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	55		Date:	23-A	ug-09
Depth:		mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneh	am # 11
_	@ 0800 hrs:									KB elev:	175.30	
the next da	<u> </u>			_						KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
11	216 / D 1	DCV011 M	112204	2074				43710 43710	T20 14100	0		
11	216 / Reed			2064 Drilling As		216mm hit		4X10, 4X12		8 Teledrift, D	C 211mm S	to b
Model		Pump 1 PZ-11	PZ-11		a DC, Jar, 7			3 stage moto	Pump Pres		9,500	kPa
Liner	(mm)	152	152	BHA Lengt		301.07	m	Strap:	_ rump rres	Board:	7,500	. KI U
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	•
SPM		110	0	D.C. Annul	lar Vel.:		m/min	D.P Annul		46.0	m/min	
Vol.	m ³ /min @ 95%	0.0139	0.0139	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
			VEYS	1			MUD	1		MUD AD	DITIVES	1
	epth	Drift	Azimuth	North	East	Time	17:55		Gel		CaC03	
	5.80	1.51	28.78			Density	1070		Caustic		Percol	
	09.80	1.51	28.78		-	Vis.	59		Envirofloc		Sulphamic	2
	23.40 37.90	1.29 1.55	32.18 39.16		 	pH Fluid Loss	11.4 7.6		Kelzan Cello		T-352 Defoamer	3
	99.00	1.00	Wireline	Survey		P.V.	20.0		Bicarb	 	2K-7	
	58.00	0.25	"	"		Y.P.	12.0		Newedge		Sapp	
126	55.00	1.00	"	"		Gel S.	2.5/4/4.5		Drispac		Dyna det	
136	50.00	1.25	"	"		Filter Ck	0.5		Desco	4	Walnut	
145	6.00	1.00	"	"		Solids %	0.4		Barite		Lime Hydrate	d
	52.00	1.00	"	"		Oil	0.000		Lignite			
	18.00	1.50	"	"		Ca (mg/l)	40.0		PHPA			
	02.00	1.50 1.25	"	"		Cl (mg/l) MBT	9600.0 10.0		Sawdust			
	07.00	1.25	"	"		Тетр	33.1		Soda Ash Supervision		Day Cost	\$1,443
	11.00	2.00	"	"		XSPolymer	1.0		Mud Van	1	Well Cost	\$189,983
	losses Surfa		hole Estimat	es m3	BOP & Ca	asing Tests		ate		Cent	rifuge	,,
Total circu	lating Vol.	152.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	192	20.0
Today losse	es down hole	0.0	Total hole		Last Bo	OP Test		ug-09	Overflow I	Density	10	060
	es at surface		Total surf.			sing Test	1000 ro	tating hrs	Flow Rate,			0.0
Today tota	l losses	0.0	Cumulative	91.7	Next B	OP Test			Operating	hours	24	1.0
	XX7	II C41	LD.		l m	.l. C 3!4!	. I.J. N 0 17	Er III		T-4-1 C T) (0/)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Pump	Strokes	ll Control - Pressure	МАСР	Depth	Drag up	ole Condition 7	Torque	7000	Dooly	round	Readings (%))
RSPP #1	36	i ressure	6100	1963	Drag Up	6	Torque	7000		ection		
RSPP #2	36		0100	1963	Hook Load	67				rip		
										•		
	1. Rig up/0	Out		_	9. Slip & C		1.00	_	17. Plug B			
	2. Drill		16.75	-	10. Survey		0.50	_	18. Wash t			-
	3. Ream 4. Drill Ou			-	11. Wirelin	_		-	19. Strippin			
	4. Drill Ou 5. Circ. &		0.75	-	12. Casing	Out Cement		_	20. WK on 21. Safety	mud pumps Meeting	1.00	-
	6. Trip	Conu.	2.25	-	14. Nipple			_	22. Handle		1.00	-
	7. Rig Serv	ice	0.75	-	15. Test BO		1.00	_		and-off Mtg		-
	8. Rig Rep	air		-	16. BOP D	rill		_	Total Hour	'S	24.00	•
00.00.00.45	Einial BOD	44 TT	- l- ll-			REMARKS		:_L A	1-44 : 57	1)Ol-D- 1125"	
	Finish BOP RIH to casir			and stabbing	g valve 1500i	KPa Iow, and	11000KPa n	ign. Accumu	lator test. Fi	nai pres 1160	JUKPa. 135	to rebuild
	Slip and cu	<u> </u>										
	Drill float c		ment. Drill sl	hoe at 2058.4	48m Drill 3m	new hole.						
	Circulate bo						00kpa. No le	eak off. 0.325	5m3 pumped	. 0.325m3 re	turned.	
09:00-24:00	Drill ahead.	1.6m3/min,	Average WC	OB = 8000Da	ın, Differenta	al pressure=	900kPa, 800	0ft/lb, 3.45m	/hr			
-	roy Group 8					, ,	•	,		701	15.050/ 67	1
Prev Cost	\$5,06	8,968	Today	\$355	5,462	Total Cost	\$5,42	24,430	Weather: Mud Type		us 17, 25%Cl Polymer	ear
Foreman		Don Ca	ampbell	-	Rig Phone	•	709-649-710	16	Taken By:		rooker / Sha	ne Halley

			¥7.1	3.5		·	D 411	. D				
			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	56		Date:	24-A	ug-09
Depth:		mKB	Progress:	70.0	Drilling:	23.75	hrs ROP,	m/hr:	2.94	Rig:		am # 11
		Drilling ahe	ad with bit #	14 @2142m	ROP 1.5m/ł	ır				KB elev:	175.30	
the next da			a	-					222	KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
13 14	HTC	DSX811-MA9 MX-30GDX	113204 5139598	2064	2133	70	23.75	4X10, 4X12	T30, M100	8	1-8-RO-S-	X5-LT-PR
14	піс	Pump 1		Drilling As		216mm hit	NBS 212mr	n, Teledrift,	DC 212mm	Stah		
Model		PZ-11	PZ-11		n DC, Jar, 7			ii, reiediiit,	Pump Pres		19,000	kPa
Liner	(mm)	165	152	BHA Leng		296.74	m	Strap:		Board:	17,000	
Stroke	(mm)	279	279	Drill Colla	r O.D.	165.0	mm	Drill Pipe (O.D.	127.0	mm	-
SPM		110	0	D.C. Annu	lar Vel.:	104.0	m/min	D.P Annula	ar Vel.:	66.0	m/min	
Vol.	m ³ /min @ 95%	1.8700		Jet Velocity	y:	140.0	m/sec	True Hydr	aulic HP:	322.0	kW	
			VEYS		T		MUD			MUD AD	DITIVES	1
	epth	Drift	Azimuth	North	East	Time	6:51		Gel		CaC03	
	9.80 23.40	1.51 1.29	28.78 32.18			Density Vis.	1070 59		Caustic Envirofloc		Percol Sulphamic	
	37.90	1.55	39.16			pH	11.2		Kelzan	2	T-352	
	9.00	1.00	Wireline			Fluid Loss	7.2		Cello		Defoamer	2
	8.00	0.25	"			P.V.	20.0		Bicarb	6	2K-7	1
	55.00	1.00	"			Y.P.	12.5		Newedge		Sapp	
136	60.00	1.25	"			Gel S.	3/4.5/5.5		Drispac		Dyna det	
	6.00	1.00	"			Filter Ck	0.5		Desco	2	Walnut	
	52.00	1.00	"			Solids %	0.4		Barite		Lime Hydrate	d
	8.00	1.50	"			Oil	0.000		Lignite			
	02.00	1.50	"			Ca (mg/l)	30.0		PHPA	2		
	01.00	1.25 1.25	"			Cl (mg/l) MBT	9800.0 10.0		Sawdust Soda Ash			
	1.00	2.00	"			Тетр	39.0		Supervision		Day Cost	\$1,985
	3.00	2.00	Teledrift			XSPolymer			Mud Van	1	Well Cost	\$191,986
	losses Surfa			es m3	BOP & Ca	asing Tests		ate	Trad yan	Cent	rifuge	\$171,700
Total circu	lating Vol.	141.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	18:	50.0
Today losse	es down hole	2.3	Total hole		Last B	OP Test	23-A	.ug-09	Overflow I	Density	10)60
	es at surface		Total surf.			sing Test	1000 ro	tating hrs	Flow Rate,			0.0
Today total	l losses	3.3	Cumulative	95.0	Next B	OP Test			Operating	hours	24	4.0
	XX/-	ell Control -	l.D.		11.	1- C 1:4:	. l.J. N 0 17	E4 /11		T-4-1 C D	(0/	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Pump	Strokes	Pressure	МАСР	Depth	Drag up	6	n kdaN & K Torque	7500	Dooly	Total Gas R ground	Leadings (%)
RSPP #1	511 OKES 55	3310	11000	2133	Drag Up	6	Torque	7300		ection	0	05
RSPP #2		2210	11000	2100	Hook Load					rip		00
								_		_		
	1. Rig up/0	Out			9. Slip & C			_	17. Plug B			_
	2. Drill		9.25		10. Survey			=	18. Wash t			-
	3. Ream		0.25	•	11. Wirelin	O		=	19. Strippin	_		-
	4. Drill Ou		1 25	-	12. Casing			=		mud pumps	0.75	=
	5. Circ. & 6. Trip	Cona.	$\frac{1.25}{11.00}$	-	14. Nipple	Out Cement	1.00	=	21. Safety 22. Handle	_	0.75	-
	7. Rig Serv	ice	0.50	-	15. Test B0		1.00	-		and-off Mtg		-
	8. Rig Rep			-	16. BOP D			=	Total Hour	U	24.00	=
				-				_				-
00.00.00	. D. 111 c	117 2:-	a por	1. 0.5		REMARKS	5					
			3m. ROP slo	owed to 0.5n	n/hr. Function	n annular.						
	Trip to char Change ou		dified Wear	hushina (5	75" cut off							
					ce @ 2096m.							
	Wash and li				C 2070III.							
200		o										
	~ .			0.15	=				0.000			
Tops: Codr Prev Cost		15 m, Ship C 24,430	Cove limestor Today		ischell's Bro 3,145	ok 870 m, (S Total Cost), Friars cov 37,575	e @2086m. Weather:	Dlı	ıs 17, 25%C	lear
110, 0031	φυ,44	,100	Louay	φ11.	.,170	Total Cost	φυ,οι	,0.10	Mud Type		Polymer	····
Foreman		Don Co	ampbell		Rig Phone		709-649-710	6	Taken By:	Terry Bi	rooker / Sha	ne Hallev

			Vulc	an Mi	inerals	S Daily	Drill	ing Re	port			
Well:		Vulc	an Investca			<i>\</i>	Day:		1	Date:	25-A	ug-09
Depth:	2177.0		Progress:	44.0	Drilling:	21.50	hrs ROP, 1		2.00	Rig:		am # 11
_	@ 0800 hrs:		_		_					KB elev:	175.30	
-	Drill ahead	C								KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
13	216 / Reed	DSX811-MA9	113204	2064	2133	70	23.75	4X10, 4X12	T30, M100	8	1-8-RO-S-	X5-LT-PR
14	HTC	MX-30GDX	5139598	2133		44	22		110	18		
		Pump 1	Pump 2	Drilling As			NBS 212mn	n, Teledrift, l				
Model		PZ-11	PZ-11		n DC, Jar, 7				Pump Pres		19,000	kPa
Liner	(mm)	165	152	BHA Lengt		296.74	m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (127.0	mm	
SPM	3	110	0	D.C. Annul		104.0	m/min	D.P Annula		66.0	m/min	
Vol.	m ³ /min @ 95%	1.8700		Jet Velocity	y:	140.0	m/sec	True Hydra	aunc HP:	322.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:05		Gel		CaC03	
102	23.40	1.51	28.78			Density	1070		Caustic		Percol	
103	7.90	1.29	32.18			Vis.	57		Envirofloc		Sulphamic	
109	9.00	1.55	39.16			pН	11.1		Kelzan	2	T-352	
116	68.00	1.00	Wireline			Fluid Loss	8.0		Cello		Defoamer	1
	55.00	0.25	"			P.V.	19.0		Bicarb		2K-7	1
	60.00	1.00	"			Y.P.	11.0		Newedge	1	Sapp	
	6.00	1.25	"			Gel S.	2.5/4/4.5		Drispac	2	Dyna det	
	52.00	1.00	"			Filter Ck	0.5		Desco	25	Walnut	<u> </u>
	8.00	1.00	"			Solids %	0.4		Barite	25	Lime Hydrate	ed I
	02.00	1.50 1.50	"			Oil Ca (mg/l)	0.000 20.0		Lignite	1		
	07.00	1.25	"			Cl (mg/l)	9700.0		PHPA Sawdust	1		
	1.00	1.25	"			MBT	10.0		Sawaust Soda Ash			
	3.00	2.00	"			Temp	43.2		Supervision		Day Cost	\$2,964
	57.00	2.50	Teledrift			XSPolymer	1.0		Mud Van	1	Well Cost	\$194,933
	losses Surfa			es m3	BOP & Ca	asing Tests		ate		Cent	rifuge	, ,
Total circu		141.0				sing Test	22-A	ug-09	Underflow			20.0
Today losse	es down hole		Total hole		Last Bo	OP Test		ug-09	Overflow I	Density	10)55
Today losse	es at surface	0.5	Total surf.		Next Ca	sing Test	1000 rot	ating hrs	Flow Rate,	m3/min	80	0.0
Today tota	l losses	2.8	Cumulative	97.8	Next B	OP Test			Operating	hours	24	4.0
					-							
	We	ell Control - 1			Ho	le Condition	n kdaN & Ki			Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	6	Torque	7500	,	ground		
RSPP #1	55	5700	11000	2167	Drag Dn	6				ection		05
RSPP #2					Hook Load	9000			T	rip	0.	00
	1 Dia un/6	 4		:	0 Clin 8 C	\		=	17 Dlug D	o olz		=
	1. Rig up/C 2. Drill	Jui	21.50		9. Slip & C 10. Survey		0.25	-	17. Plug B 18. Wash t			-
	3. Ream		1.25		11. Wirelin		0.23	-	19. Strippin			-
	4. Drill Ou	f	1.25		12. Casing	_		-		mud pumps		-
	5. Circ. &				13. Pump (=	21. Safety		0.50	=
	6. Trip			•	14. Nipple			-	22. Handle			-
	7. Rig Serv	ice	0.50	•	15. Test B0			-		and-off Mtg		=
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	's	24.00	-
00.00 01.15	Finish ream	ina 2102 to 2	1122 I:-L	nomin-		REMARKS						
	Drill from 2				rvey Function	on annular f	unction LIDD					
01.15-24.00	, Dim 110111 2	11/1 ل ل ل ل ل 1	with 11g St	or rice and Su	a rey. runell	on annulai, I	unction OTK	•				
	No incident 8 hazards II											
Tops: Codr	oy Group 8		ove limesto	ne 846 m. Fi	schell's Bro	ok 870 m. (S	prout Falls)	Friars cov	e @2086m.			
Prev Cost	•	37,575	Today		,496	Total Cost	•	8,071	Weather:	Plu	ıs 17, 25%C	lear
Foreman		Bill W	illiams		Rig Phone	,	709-649-710	6	Mud Type Taken By:		Polymer	ne Hallev

			Vulc	an Mi	inerals	S Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:		-	Date:	26-A	ug-09
Depth:	2234.0	mKB	Progress:	57.0	Drilling:	22.50	hrs ROP,		2.50	Rig:		am # 11
_	@ 0800 hrs:		U		_	22.00			2.50	KB elev:	175.30	
_	r Drill ahead	8								KB - GL	6.30	
Bit #		Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
14	HTC	MX-30GDX	5139598	2133		101	44	2X13, 1X12	110	18 to 12		
		Pump 1	Pump 2	Drilling As				n, Teledrift,	DC, 212mm	Stab,		
Model		PZ-11	PZ-11		n DC, Jar, 7		8 HWDP		Pump Pres	sure:	19,000	kPa
Liner	(mm)	165	152	BHA Leng		296.74	m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM	3	100	0	D.C. Annu		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m³/min @ 95%	1.7000		Jet Velocit	y:	122.0	m/sec	True Hydr	aulic HP:	324.0	kW	
		SUR	VEYS				MUD			MIID AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:58		Gel	IIICD III	CaC03	
	37.90	1.29	28.78	1102 111	Zust	Density	1075		Caustic	1	Percol	
	99.00	1.55	32.18			Vis.	59		Envirofloc		Sulphamic	
116	68.00	1.00	39.16			рH	11.2		Kelzan	3	T-352	
	65.00	0.25	Wireline			Fluid Loss	7.8		Cello		Defoamer	1
136	60.00	1.00	"			P.V.	21.0		Bicarb		2K-7	1
145	56.00	1.25	"			Y.P.	12.0		Newedge	2	Sapp	
155	52.00	1.00	"			Gel S.	2.5/4/4.5		Drispac	2	Dyna det	
	48.00	1.00	"			Filter Ck	0.5		Desco		Walnut	
	02.00	1.50	"			Solids %	0.5		Barite		Lime Hydrate	ed
	01.00	1.50	"			Oil	0.000		Lignite			
	07.00	1.25	"			Ca (mg/l)	40.0		PHPA	2		
	41.00	1.25	"			Cl (mg/l)	9800.0		Sawdust			
	03.00	2.00				MBT	12.5		Soda Ash		D. C. 4	
	57.00 17.00	2.50 4.00	Teledrift			Temp XSPolymei	49.2		Supervision Mud Van	1	Day Cost Well Cost	\$2,207 \$197,141
	l losses Surfa			oc m3	ROP & C	asing Tests		ate	Mud van	•	rifuge	\$197,141
	ılating Vol.	147.3	Estimat	CS IIIO	_	sing Test		ug-09	Underflow			90.0
	es down hole		Total hole			OP Test		ug-09	Overflow I)65
	es at surface		Total surf.			sing Test		tating hrs	Flow Rate,			0.0
Today tota	ıl losses	5.4	Cumulative	103.2		OP Test		Ü	Operating	hours	24	4.0
		ell Control -					n kdaN & K			Total Gas R		
Pump	Strokes	Pressure	MACP	Depth	Drag up	6	Torque	7200		ground		.08
RSPP #1 RSPP #2	55	5630	11000	2230	Drag Dn Hook Load	92000				ection rip		.12
Κ511 π2					1100K LUau	72000				пр	U.	.00
	1. Rig up/0	Out		•	9. Slip & C	Cut		_	17. Plug B	ack		-
	2. Drill		22.50	•	10. Survey		0.25	=	18. Wash			-
	3. Ream				11. Wirelin	ne Logs		-	19. Strippin	ng Mud		-
	4. Drill Ou	t			12. Casing	/Cement		=" =	20. Wk on	mud pumps		_
	5. Circ. &	Cond.			13. Pump (Out Cement		_	21. Safety	Meeting	0.50	_
	6. Trip				14. Nipple			_	22. Handle			_
	7. Rig Serv		0.75	:	15. Test B0			_		and-off Mtg		_
	8. Rig Rep	air		:	16. BOP D	rill		=	Total Hour	'S	24.00	=
						REMARKS	1					
00:00-15:45	5 Drill from 2	177 to 2218i	m 110rpm, 1	8000daN on				in 60m. Fun	ction UPR			
15:45-24:00	0 Drill from 2	218 to 2234	m with 110rp	m, and 1200	OdaN on bit.	Function cr	own saver ar	nd function to	est flare ignit	ter.		
		inspection c	conducted.									
	No incident											
т С .	11 hazards l		Y 12.	04 <i>C</i>	b111 B	-1- 070 - 40		T-i-	- @2006			
Prev Cost	roy Group 8:	15 m, Ship C 78,071	Today		ischell's Bro 3.904	ok 870 m, (8 Total Cost	•), Friars cov 16.975	Weather:	DI.	ıs 17, 25%C	loor
i iev Cost		0,0/1	1 oday	. \$30	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	TOTAL COST	\$3,01	10,713	Mud Type		Polymer	ıcaı
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Halley

1			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	27.A	ug-09
Depth:	2279.0		Progress:	45.0	Drilling:	21.75	hrs ROP,		2.00	Rig:	Stoneh	_
	@ 0800 hrs:				_	21.73	ms ROI,		2.00	KB elev:	175.30	
1 -	Drill ahead	Diffing and	ad with bit "	14 @ <i>22)2</i> 111	ROI ZIII/III					KB - GL	6.30	
Bit #	1	Model IADC	Sorial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
Вιιπ	SIZE/IVIAKE	WIOUGI IADC	Serial No.	111	Out	Metres	110015	TAULLICS	IXI IVI	WOD Kuar	TODL	DUOK
14	HTC	MX-30GDX	5139598	2133		146	71	2X13, 1X12	110	18 to 12		
14	me	Pump 1		Drilling As				n, Teledrift,			<u>I</u>	
Model		PZ-11	PZ-11		n DC, Jar, 7			ii, Teledilit, i	Pump Pres		19,000	kPa
Liner	(mm)	165	152	BHA Leng		296.74	m	Strap:	_ camp i res	Board:	17,000	M u
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (D	-	mm	
SPM	(1111)	100	0	D.C. Annul		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m³/min @ 95%	1.7000	Ü	Jet Velocit		122.0	m/sec	True Hydra		324.0	kW	
7 01.	III 7 IIIII C 3370	1.7000		oct velocit,	,•	122.0	III/SCC	True Hydr	uunc III .	321.0		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
170	2.00	1.50	Wireline			Density	1080		Caustic	1	Percol	
180	01.00	1.50	"			Vis.	61		Envirofloc		Sulphamic	
190	7.00	1.25	"			pН	10.7		Kelzan	1	T-352	
204	1.00	1.25	"			Fluid Loss	7.6		Cello		Defoamer	
210	3.00	2.00	"			P.V.	22.0		Bicarb		2K-7	1
215	57.00	2.50	Teledrift			Y.P.	12.0		Newedge	2	Sapp	
221	7.00	4.00				Gel S.	2.5/4.5/5		Drispac	3	Dyna det	
	0.00	3.50	"			Filter Ck	0.5		Desco		Walnut	
226	66.00	4	"			Solids %	0.5		Barite		Lime Hydrate	1
228	33.00	4	=			Oil	0.000		Lignite			
						Ca (mg/l)	40.0		PHPA	1		
						Cl (mg/l)	10100.0		Sawdust			
						MBT	12.5		Soda Ash			
						Temp	48.3		Supervision		Day Cost	\$1,568
						XSPolymer	1.0		Mud Van	1	Well Cost	\$198,540
3.7 3	losses Surfa	ce & Downl	nole Estimat	es m3	BOP & C	asing Tests	D	ate		Centi	rifuge	
Mud	103363 54114	cc cc Down	TOTE ESTIMATE									
Mud Total circu		144.6	1010 Estimate			sing Test	22-A	ug-09	Underflow	Density		0.0
Total circu		144.6	Total hole		Last Ca				Underflow Overflow I		189	90.0 965
Total circu Today losse	lating Vol.	144.6 2.0			Last Cast Bo	sing Test	23-A	ug-09		Density	189	
Total circu Today losse	lating Vol. es down hole es at surface	144.6 2.0	Total hole	106.6	Last Ca Last Bo Next Ca	sing Test OP Test	23-A	ug-09 ug-09	Overflow I	Density m3/min	189 10 80	65
Total circu Today losse Today losse	lating Vol. es down hole es at surface	2.0 1.4	Total hole Total surf.		Last Ca Last Bo Next Ca	sing Test OP Test sing Test	23-A	ug-09 ug-09	Overflow I Flow Rate,	Density m3/min	189 10 80	0.0 0.0
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	2.0 1.4	Total hole Total surf. Cumulative		Last Ca Last Bo Next Ca Next Bo	sing Test OP Test sing Test	23-A 1000 rot	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating	Density m3/min hours	189 10 80	0.0 0.0 4.0
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	144.6 2.0 1.4 3.4	Total hole Total surf. Cumulative		Last Ca Last Bo Next Ca Next Bo	sing Test OP Test sing Test OP Test	23-A 1000 rot	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating	Density m3/min hours	189 10 80 24 Readings (%)	0.0 0.0 4.0
Total circu Today losse Today losse Today total	lating Vol. es down hole es at surface I losses We	144.6 2.0 1.4 3.4	Total hole Total surf. Cumulative	106.6	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test	23-A 1000 rot n kdaN & K	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating	Density m3/min hours Total Gas R	189 10 80 24 Readings (%)	065 0.0 4.0
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface I losses We Strokes	144.6 2.0 1.4 3.4 Il Control - Pressure	Total hole Total surf. Cumulative kPa MACP	106.6 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	sing Test OP Test sing Test OP Test OP Test cle Condition 7 6	23-A 1000 rot n kdaN & K	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground	189 10 80 24 Readings (%)	0.0 0.0 1.0 0.0 0.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes	144.6 2.0 1.4 3.4 Il Control - Pressure	Total hole Total surf. Cumulative kPa MACP	106.6 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test cle Condition 7 6	23-A 1000 rot n kdaN & K	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground ection	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes	144.6 2.0 1.4 3.4 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP	106.6 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test OP Test Condition 7 6 92000	23-A 1000 rot n kdaN & K	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground ection rip	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55	144.6 2.0 1.4 3.4 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP	106.6 Depth	Last Ca: Last Bo Next Ca Next Bo The Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test I Good Test 7 6 92000	23-A 1000 rot n kdaN & K	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground ection rip	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface Hosses We Strokes 55	144.6 2.0 1.4 3.4 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	106.6 Depth	Last Ca: Last Bo Next Ca Next Bo The Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test Ole Condition 7 6 92000	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn T1	Density m3/min hours Total Gas R ground ection rip ack o Btm	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill	144.6 2.0 1.4 3.4 11 Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	106.6 Depth	Last Ca: Last B6 Next Ca Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test OP Test sing Test OP Test OP Test Condition 7 6 92000 Cut ne Logs	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	set down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	144.6 2.0 1.4 3.4 11 Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	106.6 Depth	Last Ca: Last B6 Next Ca Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test sing Test OP Test OP Test Condition 7 6 92000 Cut ne Logs	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn T: 17. Plug B: 18. Wash t 19. Strippin	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps	189 10 80 24 Readings (%)	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	144.6 2.0 1.4 3.4 11 Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	106.6 Depth	Last Ca: Last B6 Next Ca Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test sing Test OP Test OP Test OP Test OP Test Cut Description Out Out Cut Description Out Cement Out Cement	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t 19. Strippin 20. Wk on n	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting	189 10 80 24 Readings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/(2. Drill 3. Ream 4. Drill Ou 5. Circ. &	144.6 2.0 1.4 3.4 3.4 Control - Pressure 6740 t t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	106.6 Depth	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6	sing Test OP Test sing Test OP Test OP Test C	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting	189 10 80 24 Readings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative KPa MACP 11000	106.6 Depth	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 6 14. Nipple	sing Test OP Test sing Test OP Test OP Test De Condition 7 6 92000 Cut The Logs //Cement Out Cement Up BOP OP & FIT	23-A 1000 roi n kdaN & K Torque	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative KPa MACP 11000	106.6 Depth	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP Test OLIVITY OL	23-A 1000 roi	ug-09 ug-09 tating hrs	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	189 10 80 24 8eadings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative kPa MACP 11000 21.75	106.6 Depth 2273	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP Test Ole Condition 7 6 92000 Cut ne Logs // Cement Out Cement Up BOP OP & FIT rill REMARKS	23-A 1000 rot	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	189 10 80 24 8eadings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative kPa MACP 11000 21.75	106.6 Depth 2273	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP Test Ole Condition 7 6 92000 Cut ne Logs // Cement Out Cement Up BOP OP & FIT rill REMARKS	23-A 1000 rot	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg	189 10 80 24 8eadings (%) 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	strokes Str	144.6 2.0 1.4 3.4 3.4 Il Control - Pressure 6740 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	106.6 Depth 2273	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B6 16. BOP D	sing Test OP Test sing Test OP Test OP	23-A 1000 rot h kdaN & K Torque 0.50 Survey @2	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn To 17. Plug B. 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H. Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting ' Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	strokes Str	144.6 2.0 1.4 3.4 3.4 Il Control - Pressure 6740 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	106.6 Depth 2273	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP	23-A 1000 rot h kdaN & K Torque 0.50 Survey @2	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn To 17. Plug B. 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H. Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting ' Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep.	144.6 2.0 1.4 3.4 3.4 Il Control - Pressure 6740 Dut t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	106.6 Depth 2273	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B6 16. BOP D	sing Test OP Test sing Test OP Test OP	23-A 1000 rot h kdaN & K Torque 0.50 Survey @2	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn To 17. Plug B. 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H. Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting ' Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface Hosses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Drill from 2 Function U	144.6 2.0 1.4 3.4 Control - Pressure 6740 Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	106.6 Depth 2273	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B6 16. BOP D	sing Test OP Test sing Test OP Test OP	23-A 1000 rot h kdaN & K Torque 0.50 Survey @2	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backs Conn To 17. Plug B. 18. Wash t 19. Strippin 20. Wk on n 21. Safety 22. Handle 23 Crew H. Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting ' Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface Hosses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill from 2 Function U	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75 m 110rpm, 18	Depth 2273	Last Ca: Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test le Condition 7 6 92000 Cut le Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS 2240m 3.5	23-A 1000 rot n kdaN & K Torque 0.50 ° Survey @2 re 1 min. D	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backg Conn 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting ' Tools and-off Mtg	189 10 80 24 Readings (%) 0. 0. 0.	0.0 0.0 1.0 0 08 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-24:00 Tops: Codn	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill from 2 Function U	144.6 2.0 1.4 3.4 Control - Pressure 6740 Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75 ond Crown sa	Depth 2273	Last Ca: Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D bit. Survey (control of the control g Test OP Test sing Test OP Test OP	23-A 1000 rot n kdaN & K Torque 0.50 Survey @2 re 1 min. D	ug-09 ug-09 tating hrs ft/# 7200 2266 4° iscuss crew	Overflow I Flow Rate, Operating Backg Conn 17. Plug B: 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting o Tools and-off Mtg s	189 100 80 24 Readings (%) 0. 0. 1.00 24.00	065 0.0 1.0 08 12 00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drill from 2 Function U	144.6 2.0 1.4 3.4 Control -	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75 m 110rpm, 18	Depth 2273	Last Ca: Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test le Condition 7 6 92000 Cut le Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS 2240m 3.5	23-A 1000 rot n kdaN & K Torque 0.50 Survey @2 re 1 min. D	ug-09 ug-09 tating hrs ft/# 7200	Overflow I Flow Rate, Operating Backg Conn 17. Plug B 18. Wash t 19. Strippin 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ng Mud mud pumps Meeting Tools and-off Mtg s	189 10 80 24 Readings (%) 0. 0. 0.	065 0.0 1.0 08 12 00

			Vulc	an Mi	inerals	Daily	Drilli	ing Re	port			
Well:		Vulc	an Investca				Day:	60	•	Date:	28-A	ug-09
Depth:	2314.0	mKB	Progress:	35.0	Drilling:	19.75	hrs ROP, r	n/hr:	1.80	Rig:	Stoneha	0
Operation	@ 0800 hrs:	Make up dir	ectional tool	s.						KB elev:	175.30	m.
the next day		rectional too		head.						KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
1.4	HTTPC	MAX 20CD	5120500	2122	2214	101	0.6	27712 17712	110	10 . 10		
14	HTC	MX-30GDX Pump 1	5139598 Pump 2	2133 Drilling As	2314	181	NBS 212mm	2X13, 1X12		18 to 12		
Model		PZ-11	PZ-11		sembry: n DC, Jar, 7-1			i, releariit, i	Pump Pres		19,000	kPa
Liner	(mm)	165	152	BHA Lengt		296.74	m	Strap:	1 ump 11cs	Board:	17,000	M a
Stroke	(mm)	279	279	Drill Collar		165.0		Drill Pipe ().D.		mm	
SPM		100	0	D.C. Annul	ar Vel.:	112.0	m/min	D.P Annula	ır Vel.:	71.0	m/min	
Vol.	m ³ /min @ 95%	1.7000		Jet Velocity	y:	122.0	m/sec	True Hydra	aulic HP:	324.0	kW	
	_	SUR			_		MUD			MUD AD	DITIVES	
De		Drift	Azimuth	North	East	Time	6:45		Gel	2	CaC03	
	2.00 1.00	1.50 1.50	Wireline "			Density Vis.	1080 59		Caustic Envirofloc	2	Percol Sulphamic	
	7.00	1.25	"			pH	11.2		Kelzan	1	Т-352	
	1.00	1.25	"			Fluid Loss	7.8		Cello	-	Defoamer	
210	3.00	2.00	"			P.V.	21.0		Bicarb		2K-7	2
215	7.00	2.50	Teledrift			Y.P.	12.0		Newedge	3	Sapp	
	7.00	4.00	"			Gel S.	2.5/4.5/5		Drispac	2	Dyna det	
	0.00	3.50	"			Filter Ck	0.5		Desco		Walnut	_
	6.00	4	"			Solids %	0.5		Barite		Lime Hydrate	2
	3.00 9.00	4.00	"			Oil Ca (mg/l)	0.000 40.0		Lignite PHPA	1		
229	9.00	4.00				Cl (mg/l)	9800.0		Sawdust	1		
						MBT	12.5		Sawaust Soda Ash			
						Temp	47.7		Supervision		Day Cost	\$1,200
						XSPolymer	1.0		Mud Van	1	Well Cost	\$199,741
Mud	losses Surfa	ce & Downh	nole Estimat	es m3	BOP & Ca	asing Tests	Da	ate		Centi	rifuge	
Total circul	lating Vol.	145.3		es m3	Last Cas	sing Test	22-A	ug-09	Underflow	Density	189	
Total circul Today losse	lating Vol. es down hole	145.3 1.0	Total hole	es m3	Last Cas Last B	sing Test OP Test	22-Ai 23-Ai	ug-09 ug-09	Overflow I	Density Density	189 10	65
Total circul Today losse Today losse	lating Vol. es down hole es at surface	145.3 1.0 2.0	Total hole Total surf.		Last Cas Last BO Next Cas	Sing Test OP Test Sing Test	22-Ai 23-Ai	ug-09	Overflow I Flow Rate,	Density Density m3/min	189 10 80	65 0.0
Total circul Today losse	lating Vol. es down hole es at surface	145.3 1.0	Total hole	es m3	Last Cas Last BO Next Cas	sing Test OP Test	22-Ai 23-Ai	ug-09 ug-09	Overflow I	Density Density m3/min	189 10 80	65
Total circul Today losse Today losse	lating Vol. es down hole es at surface losses	145.3 1.0 2.0 3.0	Total hole Total surf. Cumulative		Last Cas Last BO Next Cas Next BO	Sing Test OP Test Sing Test OP Test	22-Ai 23-Ai 1000 rot	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating	Density Density m3/min hours	189 10 800 24	65 0.0 1.0
Total circul Today losse Today losse Today total	lating Vol. es down hole es at surface losses	145.3 1.0 2.0 3.0	Total hole Total surf. Cumulative	109.0	Last Cas Last BC Next Cas Next BC	sing Test OP Test sing Test OP Test	22-Ai 23-Ai 1000 rot	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating	Density Density m3/min hours Total Gas R	189 10 800 24 teadings (%)	65 0.0 1.0
Total circul Today losse Today losse	lating Vol. es down hole es at surface losses	145.3 1.0 2.0 3.0	Total hole Total surf. Cumulative		Last Cas Last BO Next Cas Next BO	Sing Test OP Test Sing Test OP Test	22-Ai 23-Ai 1000 rot	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating	Density Density m3/min hours	189 10 800 24	65 0.0 1.0
Total circul Today losse Today losse Today total Pump	lating Vol. es down hole es at surface losses We Strokes	145.3 1.0 2.0 3.0 11 Control -	Total hole Total surf. Cumulative kPa MACP	109.0 Depth	Last Cas Last BC Next Cas Next BC Ho Drag up	sing Test OP Test sing Test OP Test OP Test ole Condition 7	22-Ai 23-Ai 1000 rot	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground	189 10 80 24 (eadings (%)	65 0.0 1.0
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface losses We Strokes	145.3 1.0 2.0 3.0 11 Control -	Total hole Total surf. Cumulative kPa MACP	109.0 Depth	Last Cas Last BC Next Cas Next BC Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test le Condition 7 6	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection	189 10 80 24 (eadings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. s down hole s at surface losses We Strokes 55	145.3 1.0 2.0 3.0 11 Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	109.0 Depth	Last Cas Last BC Next Cas Next BC Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test COP Test COP Test 7 6 94	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B	Density Density m3/min hours Total Gas R ground ection rip	189 10 80 24 (eadings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill	145.3 1.0 2.0 3.0 11 Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP	109.0 Depth	Last Cas Last BC Next Cas Next BC Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test DP Test sing Test DP Test OP Test OP Test Ole Condition 7 6 94	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t	Density Density m3/min hours Total Gas R ground ection rip ack o Btm	185 10 800 24 (ceadings (%) 0. 0.	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	145.3 1.0 2.0 3.0 3.0 Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	109.0 Depth	Last Cast Last BC Next Cast Next BC Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	sing Test OP Test sing Test OP Test OP Test cle Condition 7 6 94 cut the Logs	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch	Density Density m3/min hours Total Gas R ground ection rip ack o Btm lecks	189 10 80 24 (eadings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	145.3 1.0 2.0 3.0 3.0 Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	109.0 Depth	Last Cas Last BC Next Cas Next BC Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/	sing Test OP Test sing Test OP Test OP Test cle Condition 7 6 94 cut the Logs (Cement	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t	Density Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps	189 10 800 24 (eadings (%) 0.1 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	145.3 1.0 2.0 3.0 3.0 Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000 19.75	109.0 Depth	Last Cast BC Next BC Next BC Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump C	sing Test OP Test sing Test OP Test OP Test Color Condition 7 6 94 Cut The Logs (Cement Out Cement	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety	Density Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting	185 10 800 24 (ceadings (%) 0. 0.	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	145.3 1.0 2.0 3.0 3.0 Pressure 6740 t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	109.0 Depth	Last Cast BC Next Cast BC Next BC The More BC Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple	sing Test OP Test sing Test OP Test OP Test Cut Cut Cut Cut Cut Cut Cut Cut Cut C	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	Density Density Majmin hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools	189 10 800 24 (eadings (%) 0.1 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	145.3 1.0 2.0 3.0 3.0 Pressure 6740 Out	Total hole Total surf. Cumulative KPa MACP 11000 19.75 0.50 1.50	109.0 Depth	Last Cast BC Next BC Next BC Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump C	sing Test OP Test sing Test OP	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 (eadings (%) 0.1 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	145.3 1.0 2.0 3.0 3.0 Pressure 6740 Out	Total hole Total surf. Cumulative KPa MACP 11000 19.75 0.50 1.50	109.0 Depth	Last Cast Box Next Care Next Box Next B	sing Test DP Test sing Test OP Test De Condition 7 6 94 Cut De Logs Cement Out Cement Up BOP DP & FIT	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps	145.3 1.0 2.0 3.0 3.0 Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50	109.0 Depth 2300	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps	145.3 1.0 2.0 3.0 3.0 Pressure 6740 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1:	109.0 Depth 2300	Last Cast Box Next Care Next Box Next B	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of h	145.3 1.0 2.0 3.0 3.0 Il Control - Pressure 6740 t Cond. rice air 279 to 2314r tole for bit an	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1: ad directiona	109.0 Depth 2300 2000daN on 1 tools.	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of h	145.3 1.0 2.0 3.0 3.0 Pressure 6740 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1: ad directiona	109.0 Depth 2300 2000daN on 1 tools.	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of h	145.3 1.0 2.0 3.0 3.0 Il Control - Pressure 6740 t Cond. rice air 279 to 2314r tole for bit an	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1: ad directiona	109.0 Depth 2300 2000daN on 1 tools.	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down hole s at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of h	145.3 1.0 2.0 3.0 3.0 Il Control - Pressure 6740 t Cond. vice air 279 to 23141 toole for bit an PR, Annula	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1: ad directiona	109.0 Depth 2300 2000daN on 1 tools.	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps	145.3 1.0 2.0 3.0 3.0 Il Control - Pressure 6740 t Cond. vice air 279 to 23141 toole for bit an PR, Annula	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, 1: ad directiona	109.0 Depth 2300 2000daN on 1 tools.	Last Cast Box Next Care Next Box Next Box Box Box Box Box Box Box Box Box Box	sing Test OP Test sing Test OP Test Per Test	22-Ai 23-Ai 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools and-off Mtg	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of Function U	145.3 1.0 2.0 3.0 3.0 Il Control - Pressure 6740 Out t Cond. cice air 279 to 23141 tole for bit ar PR, Annula	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 1.100 m 110rpm, 12 and directionar and Crown Cove limeston	Depth 2300 2000daN on I tools. In saver.	Last Cas Last BG Next Cas Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing/ 13. Pump G 14. Nipple 15. Test BG 16. BOP D bit. Survey G	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200 0.50	ug-09 ug-09 ating hrs ft/# 6200	Overflow I Flow Rate, Operating Backs Conn 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools and-off Mtg s	185 10 800 24 (ceadings (%) 0. 0. 0.50 0.75	65 0.0 0 0 0
Total circui Today losse Today total Pump RSPP #1 RSPP #2	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps Drill from 2 Pull out of Function U	145.3 1.0 2.0 3.0 3.0 Pressure 6740 t Cond. rice air 279 to 2314r toole for bit ar PR, Annula	Total hole Total surf. Cumulative kPa MACP 11000 19.75 0.50 1.50 0.50 m 110rpm, E and directionar and Crown	Depth 2300 2000daN on I tools. In saver.	Last Cast Box Next Care Next Box Next B	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200 0.50	ug-09 ug-09 ating hrs ft/# 6200	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Crew H Total Hour	Density Density Major	189 10 800 24 6eadings (%) 0.0 0.0 0.50	65 0.0 0 0 0

			Vulc	an Mi	inerals	s Daily	v Drill	ing Re	eport			
Well:		Vule	an Investca			<u> </u>	Day:		- P 0- V	Date:	20 A	ug-09
Depth:	2334.0	mKB	Progress:	20.0	Drilling:	19.75	hrs ROP,		2.50	Rig:		am # 11
_	@ 0800 hrs:		0			19.73	ms KOI,		2.50	KB elev:	175.30	
_	r Drill ahead	Diffing and	au with bit π	13 @ 2234111	KOI JIII/III					KB - GL	6.30	
Bit #	<u> </u>	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
210 11	DIEC/1/2012	Model 1112 C	Derita 1100		Out	112012 05	110415	TTOLLEG	242 1/2	TOD HULL	1022	2001
15	HC	HC506 ZX	7114737	2314				6X12	100	4-6		
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	or @1.15deg,	Stab,NM too	l carrier,NM	DC,
Model		PZ-11	PZ-11	5 X 165mn	n DC, Jar, 7	165mm DC,	8 HWDP		Pump Pres	sure:	12,000	kPa
Liner	(mm)	165	152	BHA Leng	th:	307.13	m	Strap:		Board:		-
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe		127.0	mm	
SPM		80	0	D.C. Annu		112.0	_m/min	D.P Annul		71.0	m/min	
Vol.	m ³ /min @ 95%	1.4000		Jet Velocity	y:	122.0	m/sec	True Hydr	aulic HP:	324.0	kW	
		CEID	- TENEZO			T) III			MIDAD	DIFFE	
D.	anth	Drift	VEYS Azimuth	Nouth	Foot	Time	MUD 6:45	<u> </u>	Cal	MUD AD	DITIVES	<u> </u>
	epth 02.00	1.50	Wireline	North	East	Density	1080		Gel Caustic	1	CaC03 Percol	
	01.00	1.50	witeline "			Vis.	59		Envirofloc	1	Sulphamic	
	07.00	1.25	"			pH	11.2		Kelzan	2	T-352	
	41.00	1.25	"			Fluid Loss	7.8		Cello		Defoamer	
	03.00	2.00	"			P.V.	21.0		Bicarb		2K-7	3
	57.00	2.50	Teledrift			Y.P.	12.0		Newedge	2	Sapp	
22	17.00	4.00	"			Gel S.	2.5/4.5/5		Drispac	2	Dyna det	
224	40.00	3.50	"			Filter Ck	0.5		Desco		Walnut	5
	66.00	4	"			Solids %	0.5		Barite		Lime Hydrate	1
	83.00	4	"			Oil	0.000		Lignite		Dyna fiber	3
229	99.00	4.00	"			Ca (mg/l)	40.0		PHPA	2		
						Cl (mg/l)	9800.0		Sawdust	5		
						MBT	12.5		Soda Ash		D G (
						Temp XSPolymer	47.7 1.0		Supervision Mud Van	1	Day Cost Well Cost	\$2,156 \$201,897
Mud	l losses Surfa	co & Downl	hola Estimat	oc m3	ROP & C	asing Tests		ate	Mud van		rifuge	\$201,897
	ılating Vol.	144.0	Estimat	LS IIIS		sing Test		aug-09	Underflow			90.0
	es down hole		Total hole			OP Test		ug-09	Overflow I	•)65
•	es at surface		Total surf.			sing Test		tating hrs	Flow Rate,	•		0.0
Today tota	ıl losses	0.6	Cumulative	110.2	Next B	OP Test			Operating	hours	24	4.0
					-							
	We	ll Control -	kPa		Но	ole Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	6200	Back	ground	0.	08
RSPP #1	55	6740	11000	2300	Drag Dn	6				ection		12
RSPP #2					Hook Load	94	6200)	T	rip	0.	.00
	1 70 //			=	0 (11 0 6		0.55	=	45 DI D			=
	1. Rig up/C 2. Drill	Jut	8.00	=	9. Slip & C		1.00	=	17. Plug B 18. Wash			=
	2. Driii 3. Ream		8.00	-	10. Survey 11. Wirelin		1.00	=	19. Flow ch		0.50	-
	4. Drill Ou	t		-	12. Casing	_		_		mud pumps	0.30	-
	5. Circ. &			-		Out Cement		_	21. Safety		0.75	-
	6. Trip	Conu	8.50	=	14. Nipple			_	22. Handle		3.75	=
	7. Rig Serv	ice	0.75	-	15. Test Bo			_		and-off Mtg		-
	8. Rig Rep			=	16. BOP D			=	Total Hour	_	24.00	-
				-				-				-
						REMARKS	8					
	5 Continued to											
	0 Make up PE			u tools and r	un in hole to	2032 m.						
	0 Slip and cu	ıı 1∠m. arıll	ing line									
	5 Run in hole 0 Drilled fron	2314 m to 1	2334 m									
13.13-24:00	No incident		درے HI.									
			r and Crow	n saver								
Tops: Cod	roy Group 81				ischell's Bro	ok 870 m. (S	Sprout Falls), Friars cov	e @2086m.			
Prev Cost		3,521	Today		,274	Total Cost	•	13,795	Weather:]	Plus 13 Sunn	y
			v	-	-				Mud Type		Polymer	-
Foreman		Bill W	illiams	-	Rig Phone		709-649-710)6	Taken By:		rooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vule	an Investo			<i>y</i> 2 411 <i>y</i>	Day:	62	Port	Date:	30-Aı	ng 00
Depth:	2384.0	mKB	Progress:	50.0	Drilling:	19.75	hrs ROP, i		2.50	Rig:	Stoneha	
_	@ 0800 hrs:		-		_		ms KOI,I	11/111 •	2.30	KB elev:	175.30	
-	Drill ahead	Dinning unc	uu C 21101	ii. with oit "	is not shift					KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
15	HC	HC506 ZX	7114737	2314		1		6X12	100	4-6		
	•	Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	r @1.15deg,	Stab,NM too	l carrier,NM	DC,
Model		PZ-11	PZ-11	5 X 165mn	n DC, Jar, 7	165mm DC,	8 HWDP		Pump Pres	sure:	12,000	kPa
Liner	(mm)	165	152	BHA Lengt			m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (mm	
SPM		80	0	D.C. Annul		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.4000		Jet Velocity	y:	122.0	m/sec	True Hydr	aulic HP:	324.0	kW	
		CLIDA	TEXTO				MIID			MIDAD	DITINEC	
D.	41-		VEYS	N41-	E4	T:	MUD	1	G 1	MUD AD		
	e pth 56.00	Drift 6.22	Azimuth 288.00	North Schlum	East	Time Density	6:45 1080		Gel Caustic	1	CaC03 Percol	
	95.00	6.49	289.00	Schlum		Vis.	59		Envirofloc	1	Sulphamic	
	95.00 09.00	6.30	289.00	Schlum		vis. pH	11.2		Kelzan	1	T-352	
	23.00	5.27	287.00	Schlum		Fluid Loss	7.8		Cello	1	Defoamer	
	36.00	4.90	285.00	Schlum		P.V.	21.0		Bicarb		2K-7	1
	50.00	5.23	289.00	Schlum		Y.P.	12.0		Newedge		Sapp	
	78.00	4.72	287.00	Schlum		Gel S.	2.5/4.5/5		Drispac	1	Dyna det	
	91.00	4.38	285.00	Schlum		Filter Ck	0.5		Desco		Walnut	5
				Schlum		Solids %	0.5		Barite	35	Lime Hydrate	1
				Schlum		Oil	0.000		Lignite		Dyna fiber	
				Schlum		Ca (mg/l)	40.0		PHPA	1		
				Schlum		Cl (mg/l)	9800.0		Sawdust	2		
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	47.7		Supervision		Day Cost	\$2,254
				Schlum		XSPolymer	1.0		Mud Van	1	Well Cost	\$201,897
	losses Surfa		iole Estimat	es m3		asing Tests		ate			rifuge	
	llating Vol.	145.0	TD 4 11 1			sing Test		ug-09	Underflow	•	189	
•	es down hole		Total hole			OP Test		ug-09	Overflow I		10	
Today tota	es at surface	0.2	Total surf. Cumulative	110.4		sing Test OP Test	1000 100	ating hrs	Flow Rate, Operating		800 24	
Touay tota	11 105565	0.2	Cumulative	110.4	NEAT D	OI IEST			Operating	nours	24	0
	Wo	ll Control -	l ₂ Do		Но	ole Condition	kdoN & K	f+/#		Total Gas R	ondings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	6200	Racke	ground	0.0	
RSPP #1	55 55	6740	11000	2300	Drag Dn	6	Torque	0200	,	ection	0.1	
RSPP #2		****			Hook Load	94	6200			rip	0.0	
						!		!	!	•		
	1. Rig up/0	Out			9. Slip & C	Cut		-	17. Plug B	ack		
	2. Drill		19.75	•	10. Survey		0.50	-	18. Wash t	o Btm		
	3. Ream			•	11. Wirelin	ne Logs		='	19. Flow ch	iecks		
	4. Drill Ou	t			12. Casing	/Cement		_	20. Wk on	mud pumps		
	5. Circ. &	Cond.				Out Cement		-	21. Safety		0.75	
	6. Trip				14. Nipple	_		-	22. Handle	Tools	0.25	
	7. Rig Serv		0.75		15. Test BO			-	23 Other		2.00	
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	'S	24.00	
						REMARKS						
00:00-24:00	Drilled fron	2334 m to '	2384 m			KEMAKKS						
00.00 21.00	Diffica from	1 233 1 III to 2	230 1 III.									
	No incident											
m C :	Function te	est accumula		046		1.050 (2	(E.P.)		@ 3 000			
_	Function te roy Group 8	est accumula 15 m, Ship C	Cove limesto							T	Dina 12 Com	
Tops: Codi Prev Cost	Function te roy Group 8	est accumula			ischell's Bro	ok 870 m, (S Total Cost		, Friars cov	e @2086m. Weather: Mud Type		Plus 13 Sunny Polymer	y

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca			<u> </u>	Day:	63	T	Date:	31-Aı	10-09
Depth:	2448.0	mKB	Progress:	64.0	Drilling:	21.50	hrs ROP, r		2.50	Rig:	Stoneha	
_	@ 0800 hrs:		U		_		,-			KB elev:	175.30	
-	Drill ahead	Ü								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
15	HC	HC506 ZX	7114737	2314				6X12	100	4-6		
M - J - 1		Pump 1		Drilling As	•			3 stage moto		Stab,NM too		
Model Liner		PZ-11 165	PZ-11 152	BHA Lengt		165mm DC, 8 307.13	m	Strap:	Pump Pres	sure: Board:	12,000	kPa
Stroke	(mm)	279	279	Drill Collar				Drill Pipe () D	-	mm	
SPM	(IIIII)	80	0	D.C. Annul				D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.4000		Jet Velocity			m/sec	True Hydr		324.0	kW	
			•								•	
			VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
	56.00	6.22	288.00	Schlum		Density	1090		Caustic	1	Percol	
	95.00	6.49	289.00	Schlum		Vis.	68		Envirofloc		Sulphamic	
	09.00	6.30	289.00	Schlum		pH Fluid Loss	11.2		Kelzan	1	T-352	
	23.00 36.00	5.27 4.90	287.00 285.00	Schlum Schlum		P.V.	7.8		Cello Bicarb		Defoamer 2K-7	1
	50.00	5.23	289.00	Schlum		Y.P.	12.0		Newedge		Sapp	1
	78.00	4.72	287.00	Schlum		Gel S.	2.5/4.5/5		Drispac	1	Dyna det	
	91.00	4.38	285.00	Schlum		Filter Ck	0.5		Desco		Walnut	5
240	05.00	4.24	278.00	Schlum		Solids %	0.5		Barite	35	Lime Hydrate	1
241	18.00	4.17	280	Schlum		Oil	0.000		Lignite		Dyna fiber	
	32.00	4.30	281.00	Schlum		Ca (mg/l)	40.0		PHPA	1		
244	16.00	4.07	278	Schlum		Cl (mg/l)	9800.0		Sawdust	2		
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	47.7		Supervision	1	Day Cost	\$3,943
Mud	losses Surfa	as & Darral	rala Estimat	Schlum	DOD 8. C.	XSPolymer	1.0	ate	Mud Van	Cont	Well Cost	\$208,095
	lating Vol.	151.0	ioie Estimat	es III3		asing Tests sing Test	22-A		Underflow		r ifuge 189	0.0
	es down hole	0.0	Total hole			OP Test	23-A		Overflow I	•	10	
•	es at surface	0.2	Total surf.			sing Test		ating hrs	Flow Rate,		800	
Today tota		0.2	Cumulative	110.4		OP Test		8	Operating		24	
			•									
	We	ll Control -	kPa		Ho	le Condition		0. 111		Total Gas R	eadings (%)	
Pump	Strokes		111 ti				i kdaN & Ki	ft/#		Total Gas N	caurigs (70)	
	off ones	Pressure	MACP	Depth	Drag up	7	Torque	6200	Backş	ground	0.0)8
RSPP #1	55			Depth 2300	Drag up Drag Dn	6	Torque		Conn	ground ection	0.0	12
RSPP #1 RSPP #2		Pressure	MACP	-	Drag up				Conn	ground	0.0	12
	55	Pressure 6740	MACP	-	Drag up Drag Dn Hook Load	6 94	Torque		Conn	ground ection rip	0.0	12
	55 1. Rig up/C	Pressure 6740	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C	6 94 Cut	Torque 6200		Conn T	ground ection rip ack	0.0	12
	55 1. Rig up/C 2. Drill	Pressure 6740	MACP	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	6 94 Cut	Torque		Conn T 17. Plug B 18. Wash t	ground ection rip ack o Btm	0.0	12
	1. Rig up/C 2. Drill 3. Ream	Pressure 6740 Out	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	6 94 Cut	Torque 6200		Conn T 17. Plug B 18. Wash t 19. Flow ch	ground ection rip ack o Btm ecks	0.0	12
	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 6740 Out	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	6 94 Cut	Torque 6200		17. Plug B 18. Wash t 19. Flow ch 20. Wk on	ground ection rip ack o Btm ecks mud pumps	0.0	12
	1. Rig up/C 2. Drill 3. Ream	Pressure 6740 Out	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	6 94 Cut ne Logs /Cement Out Cement	Torque 6200		Conn T 17. Plug B 18. Wash t 19. Flow ch	ection rip ack o Btm aecks mud pumps Meeting	0.0	12
	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C	Pressure 6740 Out t Cond.	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C	6 94 Cut ne Logs /Cement Out Cement Up BOP	Torque 6200		17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety	ection rip ack o Btm aecks mud pumps Meeting	0.0	12
	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 6740 Out t Cond.	MACP 11000 21.50	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple	6 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	Torque 6200		17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	ground ection rip ack o Btm eccks mud pumps Meeting	0.0	12
	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 6740 Out t Cond.	MACP 11000 21.50	-	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice	MACP 11000 21.50 0.75	-	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	6 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 6740 Out t Cond. ice	MACP 11000 21.50 0.75	-	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice air	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice air	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice air	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip ack o Btm eccks mud pumps Meeting	0.4	12
RSPP #2	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice air 2384 m to 2	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill	1.00		Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ground ection rip eack o Btm eecks mud pumps Meeting	0.4	12
00:00-24:00	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 6740 Out t Cond. ice air 2384 m to 2	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00	6200	Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	ground ection rip eack o Btm eecks mud pumps Meeting	0.4	12
00:00-24:00 Tops: Codn	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 6740 Out t Cond. ice air 2384 m to 2 oper pipe ra	MACP 11000 21.50 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00 1.00 prout Falls)	, Friars cov	Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 2 21. Safety 22. Handle 23 Other Total Hour	ground ection rip ack o Btm eccks mud pumps Meeting o Tools	0.1 0. 0.1 0.75	12
00:00-24:00	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 6740 Out t Cond. ice air 2384 m to 2	MACP 11000 21.50 0.75	2300	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	6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00 1.00 prout Falls)	6200	Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	ground ection rip ack o Btm ecks mud pumps Meeting o Tools	0.4	12

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	64		Date:	01-Se	ep-09
Depth:	2504.0	mKB	Progress:	56.0	Drilling:	21.75	hrs ROP, r	n/hr:	2.50	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	Trip with bi	t #15.							KB elev:	175.30	m.
the next day	Change bit.l	Run in hole a	and 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
15	HC	HC506 ZX	7114737	2314	2508	194	66	6X12	100	4-6		
		Pump 1	Pump 2	Drilling Ass	•			3 stage moto			l carrier,NM	
Model		PZ-11	PZ-11		n DC, Jar, 7			Cu	Pump Press		12,000	kPa
Liner Stroke	(mm)	165 279	152 279	BHA Lengt Drill Collar			m	Strap: Drill Pipe (<u> </u>	Board: 127.0		
SPM	(mm)	80	0	D.C. Annul		165.0 112.0	mm m/min	D.P Annula		71.0	mm m/min	
Vol.	m³/min @ 95%	1.4000	U	Jet Velocity		122.0	m/sec	True Hydra			kW	
V 01.	III / IIIIII @ 957/0	1.4000		Jet velocity	,.	122.0	III/SCC	True Hyur	aunc m.	324.0	. KVV	
		SUR	VEYS				MUD			MIID AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:45		Gel	MICD AD	CaC03	
	8.00	4.72	287.00	Schlum	Lust	Density	1090		Caustic		Percol	
	1.00	4.38	285.00	Schlum		Vis.	62		Envirofloc		Sulphamic	
	5.00	4.24	278.00	Schlum		рH	11.2		Kelzan	1	T-352	
	8.00	4.17	280	Schlum		Fluid Loss	7.8		Cello		Defoamer	
	2.00	4.30	281.00	Schlum		P.V.	21.0		Bicarb		2K-7	
	6.00	4.07	278	Schlum		Y.P.	12.0		Newedge	2	Sapp	
	9.00	4.49	278.00	Schlum		Gel S.	2.5/4.5/5		Drispac	2	Dyna det	
247	3.00	4.61	275.00	Schlum		Filter Ck	0.5		Desco		Walnut	2
248	7.00	4.72	280.00	Schlum		Solids %	0.5		Barite		Lime Hydrate	1
				Schlum		Oil	0.000		Lignite		Dyna fiber	1
				Schlum		Ca (mg/l)	40.0		PHPA	1		
				Schlum		Cl (mg/l)	9700.0		Sawdust	9		
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	38.7		Supervision		Day Cost	\$1,201
				Schlum		XSPolymer	1.0		Mud Van	1	Well Cost	\$208,095
					DOD & C	asing Tests	D.	ate		Centi	rifuge	
Mud	losses Surfa	ce & Downl	nole Estimat	es m3	bur a Ca	asing resis	D	ate			mage	
Mud Total circu		ce & Downl 151.0	iole Estimat	es m3		sing Tests		ug-09	Underflow			0.0
Total circu			nole Estimat Total hole	es m3	Last Cas		22-A		Underflow Overflow D	Density		
Total circul Today losse Today losse	lating Vol. es down hole es at surface	151.0 0.0 0.2	Total hole Total surf.		Last Cas Last BO Next Cas	Sing Test OP Test Sing Test	22-A 23-A	ug-09	Overflow E Flow Rate,	Density Density m3/min	189 10 80	65 0.0
Total circul Today losse	lating Vol. es down hole es at surface	151.0 0.0	Total hole		Last Cas Last BO Next Cas	sing Test OP Test	22-A 23-A	ug-09 ug-09	Overflow D	Density Density m3/min	189 10	65 0.0
Total circul Today losse Today losse	lating Vol. es down hole es at surface l losses	151.0 0.0 0.2 0.2	Total hole Total surf. Cumulative		Last Cas Last BC Next Cas Next BC	sing Test OP Test sing Test OP Test	22-A 23-A 1000 rot	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating	Density Density m3/min hours	189 10 80 24	65 0.0 1.0
Total circul Today losse Today losse Today total	lating Vol. es down hole es at surface l losses We	151.0 0.0 0.2 0.2	Total hole Total surf. Cumulative	110.4	Last Cas Last BO Next Cas Next BO	sing Test OP Test sing Test OP Test	22-A 23-A 1000 rot	ug-09 ug-09 ating hrs	Overflow D Flow Rate, Operating	Density Density m3/min hours Total Gas R	189 10 800 24 Readings (%)	65 0.0 1.0
Total circul Today losse Today losse Today total Pump	lating Vol. es down hole es at surface l losses We Strokes	151.0 0.0 0.2 0.2 1l Control -	Total hole Total surf. Cumulative kPa MACP	110.4 Depth	Last Cast Book Next Cast Book Next Book Ho	sing Test OP Test sing Test OP Test OP Test	22-A 23-A 1000 rot	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating	Density Density m3/min hours Total Gas R ground	189 10 80 24 Readings (%)	65 0.0 1.0
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We	151.0 0.0 0.2 0.2	Total hole Total surf. Cumulative	110.4	Last Cast Bo Next Cast Bo Next Bo Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test le Condition 7 6	22-A 23-A 1000 rot 1 kdaN & Ki	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating Backg	Density Density m3/min hours Total Gas R ground ection	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump	lating Vol. es down hole es at surface l losses We Strokes	151.0 0.0 0.2 0.2 1l Control -	Total hole Total surf. Cumulative kPa MACP	110.4 Depth	Last Cast Book Next Cast Book Next Book Ho	sing Test OP Test sing Test OP Test OP Test	22-A 23-A 1000 rot	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating Backg	Density Density m3/min hours Total Gas R ground	189 10 80 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55	151.0 0.0 0.2 0.2 0.2 ll Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP	110.4 Depth 2300	Last Ca: Last Bo Next Ca: Next Bo Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test Condition 7 6 94	22-A 23-A 1000 rot 1 kdaN & Ki	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating Backg Conn	Density Density m3/min hours Total Gas R ground ection	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55	151.0 0.0 0.2 0.2 0.2 ll Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	110.4 Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test Condition 7 6 94	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating b Backg Conn T) 17. Plug Ba	Density Density Maymin Hours Total Gas R Ground Section Sip	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface losses We Strokes 55 1. Rig up/C 2. Drill	151.0 0.0 0.2 0.2 0.2 ll Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP	110.4 Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test OP Test sing Test OP Test OP Test OP Test le Condition 7 6 94	22-A 23-A 1000 rot 1 kdaN & Ki	ug-09 ug-09 ating hrs	Overflow E Flow Rate, Operating b Backg Conn Tr 17. Plug Ba 18. Wash t	Density Density m3/min hours Total Gas R ground ection rip ack o Btm	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	151.0 0.0 0.2 0.2 0.2 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	110.4 Depth 2300	Last Ca: Last BG Next Ca: Next BG Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	sing Test DP Test sing Test OP Test OP Test Condition 7 6 94 Cut The Logs	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch	Density Density Density m3/min hours Total Gas R ground ection cip ack o Btm ecks	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	151.0 0.0 0.2 0.2 0.2 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	110.4 Depth 2300	Last Ca: Last BG Next Ca: Next BG Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test sing Test OP Test OP Test OP Test Cut Cut De Logs Cement	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on n	Density Density Density Maymin Hours Total Gas R Fround Section Section Frip Frip Frip Frip Frip Frip Frip Frip	185 10 800 24 Readings (%) 0.1	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	151.0 0.0 0.2 0.2 0.2 Il Control - Pressure 6740	Total hole Total surf. Cumulative kPa MACP 11000	Depth 2300	Last Ca: Last BG Next Ca: Next BG Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump G	sing Test OP Test sing Test OP Test OP Test Condition 7 6 94 Cut The Logs (Cement Out Cement	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow L Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety	Density Density Density m3/min hours Total Gas R ground ection crip ack o Btm ecks mud pumps Meeting	189 100 800 24 Readings (%)	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface llosses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Dut	Total hole Total surf. Cumulative kPa MACP 11000	Depth 2300	Last Ca: Last BG Next BG Next BG Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple	sing Test OP Test sing Test OP Test OP Test Condition 7 6 94 Cut The Logs Cement Out Cement Up BOP	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Density Density Density m3/min hours Total Gas R ground ection crip ack o Btm ecks mud pumps Meeting	185 10 800 24 Readings (%) 0.1	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole as at surface closses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	151.0 0.0 0.2 0.2 0.2 Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000	Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump G 14. Nipple 15. Test BG	sing Test OP Test sing Test OP Test OP Test OE Condition 7 6 94 Out Out Out Cement Out Cement Up BOP OP & FIT	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole s at surface llosses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	151.0 0.0 0.2 0.2 0.2 Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000	Depth 2300	Last Ca: Last BG Next BG Next BG Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple	sing Test OP Test sing Test OP Test OP Test OE Condition 7 6 94 Out Out Out Cement Out Cement Up BOP OP & FIT	22-A 23-A 1000 rot 1 kdaN & Ki Torque	ug-09 ug-09 ating hrs	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Density Density Maj/min Hours Total Gas R Fround Section Sect	185 10 800 24 Readings (%) 0.1	65 0.0 1.0 08 12
Total circul Today losse Today losse Today total Pump RSPP #1	s down hole as at surface closses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	151.0 0.0 0.2 0.2 0.2 Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP Test le Condition 7 6 94 cut me Logs //Cement Out Cement Up BOP OP & FIT rill	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000 21.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP Test OE Condition 7 6 94 Out Out Out Cement Out Cement Up BOP OP & FIT	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	s down hole as at surface closses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Out	Total hole Total surf. Cumulative kPa MACP 11000 21.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP Test le Condition 7 6 94 cut me Logs //Cement Out Cement Up BOP OP & FIT rill	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	151.0 0.0 0.2 0.2 0.2 11 Control - Pressure 6740 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today losse Today total Pump RSPP #1 RSPP #2	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	151.0 0.0 0.2 0.2 0.2 Il Control - Pressure 6740 Out t Cond. rice air	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Pag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing, 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep:	151.0 0.0 0.2 0.2 0.2 Pressure 6740 t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP Test OF	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200	ug-09 ug-09 ating hrs ft/# 6200	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle Total Hour	Density Density Maj/min Hours Total Gas R Fround Section Sect	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12
Total circui Today losse Today total Pump RSPP #1 RSPP #2 00:00-24:00	lating Vol. es down hole es at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep: Drilled from Function up No incidents	151.0 0.0 0.2 0.2 0.2 Il Control - Pressure 6740 Out t Cond. dice air	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75 cove limestor	Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200 0.75	ug-09 ug-09 ating hrs ft/# 6200 , Friars cove	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle Total Hour	Density Density Maymin hours Total Gas R ground ection rip ack o Btm ecks nud pumps Meeting Tools	185 10 800 24 Readings (%) 0. 0. 0.75	65 0.0 1.0 08 12 00
Total circui Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep: Drilled from Function up No incidents	151.0 0.0 0.2 0.2 0.2 Pressure 6740 t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 21.75 0.75	Depth 2300	Last Ca: Last BG Next Ca: Next BG Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump G 14. Nipple 15. Test BG 16. BOP D	sing Test OP Test sing Test OP Test OP Test OF	22-A 23-A 1000 rot 1 kdaN & Ki Torque 6200 0.75	ug-09 ug-09 ating hrs ft/# 6200	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle Total Hour	Density Density Maymin hours Total Gas R ground ection rip ack o Btm ecks nud pumps Meeting Tools	189 10 800 24 Readings (%) 0.0 0.1	65 0.0 1.0 08 12 00

			Vulc	an Mi	inerals	Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investca			<u>v</u>	Day:		•	Date:	02-S	ер-09
Depth:	2521.0	mKB	Progress:	17.0	Drilling:	10.50	hrs ROP,		1.40	Rig:		am # 11
_	@ 0800 hrs:									KB elev:	175.30	
_	a Drill ahead									KB - GL	6.30	
Bit #	•	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
16	Reed	R30APDH	CW7148	2508		•		3 X 10.3	150	14		
		Pump 1	Pump 2	Drilling As				3 stage moto	or @1.83deg,	NM tool car	rier,NM DC,	
Model		PZ-11	PZ-11		n DC, Jar, 7		8 HWDP		Pump Pres	sure:	12,000	kPa
Liner	(mm)	165	152	BHA Leng		307.13	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM	3	80	0	D.C. Annu		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.4000		Jet Velocit	y:	122.0	m/sec	True Hydr	aulic HP:	324.0	kW	
		CIID	VEYS				MUD			MIIDAD	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	6:45		Gel	MICD AD	CaC03	
	78.00	4.72	287.00	Schlum	Lust	Density	1095		Caustic	1	Percol	
	91.00	4.38	285.00	Schlum		Vis.	59		Envirofloc		Sulphamic	
	05.00	4.24	278.00	Schlum		рH	9.5		Kelzan	1	T-352	
	18.00	4.17	280	Schlum		Fluid Loss	6.4	Ì	Cello		Defoamer	
	32.00	4.30	281.00	Schlum		P.V.	24.0		Bicarb		2K-7	
24	46.00	4.07	278	Schlum		Y.P.	12.5		Newedge		Sapp	
24:	59.00	4.49	278.00	Schlum		Gel S.	2.5/4.5/5		Drispac		Dyna det	
24	73.00	4.61	275.00	Schlum		Filter Ck	0.5		Desco	1	Walnut	
243	87.00	4.72	280.00	Schlum		Solids %	0.5		Barite		Lime Hydrate	1
	00.00	4.72	277	Schlum		Oil	0.000		Lignite		Dyna fiber	
	14.00	4.15	276.00	Schlum		Ca (mg/l)	40.0		PHPA			
25	28.00	3.83	277	Schlum		Cl (mg/l)	9700.0		Sawdust	11		
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	35.9		Supervision		Day Cost	\$1,201
		0.70		Schlum	non a c	XSPolymer	1.0		Mud Van	1	Well Cost	\$208,095
	l losses Surfa		nole Estimat	es m3	_	asing Tests		ate	T. 1 (2		rifuge	20.0
	ulating Vol.	151.0	T-4-1 b -1-			sing Test		ug-09	Underflow			90.0
	ses down hole ses at surface		Total hole Total surf.			OP Test sing Test		aug-09 tating hrs	Overflow I Flow Rate,			0.0
Today tota		0.2	Cumulative	110.4		OP Test	100010	tating ins	Operating			1.0
Today tota	11 100000	0.2	Cumulative	110.1	T (CAL D	OI ICSt			Operating	nours		1.0
	We	ell Control -	kPa		Ho	ole Condition	n kdaN & K	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	6200		ground		08
RSPP #1	55	6740	11000	2300	Drag Dn	6	Torque	0200		ection		12
RSPP #2		0.10	11000	2000	Hook Load		6200			rip		00
						ı	•	I		•		
	1. Rig up/C	Out		•	9. Slip & C	Cut	-	=	17. Plug B	ack		•
	2. Drill		10.25		10. Survey			-	18. Wash t	to Btm		•
	3. Ream				11. Wirelin	ne Logs		<u>-</u>	19. Flow ch	necks		-
	4. Drill Ou	t			12. Casing	/Cement		_	20. Wk on	mud pumps		_
	5. Circ. &	Cond.	0.50		_	Out Cement		_	21. Safety		1.00	
	6. Trip		10.00		14. Nipple			=	22. Handle	Tools	1.50	
	7. Rig Serv		0.75	:	15. Test B0			_	23 Other			
	8. Rig Rep	air			16. BOP D	rill		=	Total Hour	'S	24.00	:
						REMARKS	,					
00:00-07:0	0 Drilled fron	1 2504 m to	2508 m			KEWIAKK	•					
	5 Pull out of l											
	0 Make up d		dial up moto	or to 1.83 d	eg.							
14:00-20:3	0 Run in hole				_							
20:30-24:0	0 Drilled fron	2508 m to	2521 m.	•		•	•					
	No incident		-	-	-	-	-			-		
			er pipe rams.									
-	roy Group 8						•	,			.	
Prev Cost	\$5,87	7,734	Today	\$42	,524	Total Cost	\$5,92	20,258	Weather:		Plus 19 sunn	У
Fana		D:11 11	illiam-	:	D: a D1		700 640 710	.	Mud Type		Polymer	no Hall
Foreman		BIII W	'illiams		Rig Phone		709-649-710	U	Taken By:	rerry Bi	rooker / Sha	ue malley

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	66		Date:	03-Se	p-09
Depth:	2521.0	mKB	Progress:	17.0	Drilling:	10.50	hrs ROP, r		3.70	Rig:	Stoneha	•
-	@ 0800 hrs:			n.			,			KB elev:	175.30	
-	Drill ahead	8			81					KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
											_	
16	Reed	R30APDH	CW7148	2508				3 X 10.3	150	14		
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit.	171mm 7/8:		r @1.83deg,	NM tool carr	ier.NM DC.	
Model		PZ-11	PZ-11		n DC, Jar, 7 1				Pump Press			kPa
Liner	(mm)	165	152	BHA Lengt		307.13	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM		80	0	D.C. Annul		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m³/min @ 95%	1.4000		Jet Velocity		122.0	m/sec	True Hydr			kW	
]							•	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:45		Gel	11102 112	CaC03	
	78.00	4.72	287.00	Schlum	24.50	Density	1095		Caustic	2	Percol	
	01.00	4.38	285.00	Schlum		Vis.	61		Envirofloc		Sulphamic	
)5.00	4.24	278.00	Schlum		pH	10.2		Kelzan		Т-352	
	8.00	4.17	280	Schlum		Fluid Loss	7.0		Cello		Defoamer	
	32.00	4.30	281.00	Schlum		P.V.	24.0		Bicarb		2K-7	1
	16.00	4.07	278	Schlum		Y.P.	12.0		Newedge		Sapp	
	59.00	4.49	278.00	Schlum		Gel S.	2.5/4.5/5		Drispac		Dyna det	
	73.00	4.61	275.00	Schlum		Filter Ck	0.5		Desco		Walnut	
	37.00 87.00	4.72	280.00	Schlum		Solids %	0.5		Barite	40	Lime Hydrate	2
	00.00	4.72	277	Schlum		Oil	0.000		Lignite	40	Dyna fiber	
	4.00	4.15	276.00	Schlum		Ca (mg/l)	40.0		PHPA		Dyna nibei	
	28.00	3.83	277	Schlum		Cl (mg/l)	9700.0		Sawdust	4		
	11.00	3.49	279.00	Schlum		MBT	12.5		Sawaust Soda Ash	4		
231	1.00	3.77	277.00	Schlum	 	Temp	40.1				Day Cost	\$2,140
			 	Schlum	 	XSPolymer	1.0		Supervision Mud Van	1	Well Cost	\$2,140
Mud	losses Surfa	oo & Downl	holo Estimot		DOD & C	asing Tests		ate	wide vali		rifuge	\$200,093
			iole Estimat	es mo					T J			0.0
Total circu		151.0	T-4-1 b-1-			sing Test		ug-09	Underflow Overflow D	•	189	
	es down hole	0.0	Total hole			OP Test		ug-09			10	
Today tota	es at surface	0.2	Total surf. Cumulative	110.4		sing Test OP Test		ating hrs	Flow Rate, Operating		800	
Touay tota			Cumulative	110.4	Next D	or rest	00-20	ср-09	Operating	ioui s	24	.0
	1 losses	0.2										
			IrDo		Ц	la Candition	lidoN & V	F4 /#		Total Cos D	landings (0/)	
D	We	ll Control -		D 4		le Condition					eadings (%)	200
Pump	We Strokes	ll Control - Pressure	MACP	Depth	Drag up	7	ı kdaN & Ki Torque	ft/# 6200	Backg	round	0.0	
RSPP #1	We	ll Control -		Depth 2300	Drag up Drag Dn	7 6	Torque		Backg Conn	round ection	0.0	12
-	We Strokes	ll Control - Pressure	MACP	-	Drag up	7			Backg Conn	round	0.0	12
RSPP #1	We Strokes 55	ll Control - Pressure 6740	MACP	-	Drag up Drag Dn Hook Load	7 6 94	Torque		Backg Conn Tr	round ection rip	0.0	12
RSPP #1	Strokes 55	ll Control - Pressure 6740	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C	7 6 94	Torque 6200		Backg Conn Ti	round ection rip ack	0.0	12
RSPP #1	Strokes 55 1. Rig up/C 2. Drill	ll Control - Pressure 6740	MACP	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	7 6 94	Torque		Backg Conn Tr 17. Plug Ba 18. Wash t	round ection rip ack o Btm	0.0	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream	Pressure 6740	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	7 6 94 Cut	Torque 6200		Backg Conn Ti 17. Plug Ba 18. Wash t 19. Flow ch	round ection rip ack o Btm ecks	0.0	12
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 6740	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing/	7 6 94 Cut ne Logs /Cement	Torque 6200		Packg Conn Ti 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on i	round ection rip eck o Btm ecks nud pumps	0.0	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Pressure 6740	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing/ 13. Pump (7 6 94 Cut ne Logs 'Cement Out Cement	Torque 6200		Conn Ti 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety	round ection rip ack o Btm ecks nud pumps Meeting	0.0	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 6740 Out t Cond.	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump C 14. Nipple	7 6 94 Cut ne Logs /Cement Out Cement Up BOP	Torque 6200		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle	round ection rip ack o Btm ecks nud pumps Meeting	0.1	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 6740 Out t Cond.	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC	7 6 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	Torque 6200		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 6740 Out t Cond.	MACP 11000	-	Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump C 14. Nipple	7 6 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	Torque 6200		Backg Conn To 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1	12
RSPP #1	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 6740 Out t Cond.	MACP 11000	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond.	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 6740 Out t Cond.	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond.	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond.	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond.	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 6740 Out t Cond. ice	MACP 11000 21.75 0.75	-	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Dorilled from	Pressure 6740 Out t Cond. rice air	MACP 11000 21.75 0.75	2300	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	1.00		Backg Conn To 17. Plug Bi 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Dirilled from	Pressure 6740 Out t Cond. rice air 1 2508 m to 2	MACP 11000 21.75 0.75 2602 m.	2300	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00	6200	Backg Conn Ti 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle 23 Other Total Hour	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Dorilled from No incident Function up roy Group 8:	Pressure 6740 Out t Cond. rice air 2508 m to 2	MACP 11000 21.75 0.75 0.75 2602 m.	2300 and blind rar ne 846 m, Fi	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	7 6 94 cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00 1.00 prout Falls)	, Friars cove	Backg Conn T1 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on 1 21. Safety 22. Handle 23 Other Total Hour	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.25 0.25 24.00	12 00
RSPP #1 RSPP #2	We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Dorilled from No incident Function up roy Group 8:	Pressure 6740 Out t Cond. rice air 1 2508 m to 2	MACP 11000 21.75 0.75 2602 m.	2300 and blind rar ne 846 m, Fi	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	7 6 94 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	1.00 1.00 prout Falls)	6200	Backg Conn Ti 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle 23 Other Total Hour	round ection rip ack o Btm ecks mud pumps Meeting Tools	0.1 0 0.1 0.25	12 00

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	port			
Well:		Vulc	an Investca				Day:			Date:	04-Se	ер-09
Depth:	2685.0	mKB	Progress:	83.0	Drilling:	21.75	hrs ROP, 1		3.80	Rig:	Stoneha	•
_	@ 0800 hrs:	Drilling ahe	ad @ 2715 r	n.			,			KB elev:	175.30	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
16	Reed		CW7148	2508		216 12	171 70	3 X 10.3	150	14		
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As		216mm bit, 165mm DC,		3 stage moto	Pump Pres	NM tool carr	12,000	kPa
Model Liner	(mm)	165	152	BHA Lengt		307.13	m	Strap:	rump rres	sure: Board:	12,000	кга
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM	()	80	0	D.C. Annul		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.4000		Jet Velocity	y:	122.0	m/sec	True Hydra	aulic HP:	324.0	kW	
				-								
		SUR	VEYS	,	,		MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
	56.00	3.64	277.00	Schlum		Density	1100		Caustic	2	Percol	
	59.00	4.40	280.00	Schlum		Vis.	59	-	Envirofloc		Sulphamic	
	82.00 97.00	4.63 3.61	281.00 285.00	Schlum Schlum		pH Fluid Loss	10.5 7.2		Kelzan Cello		T-352 Defoamer	1
	10.00	2.96	290.00	Schlum		P.V.	23.0		Bicarb		2K-7	1
	24.00	3.21	297.00	Schlum		Y.P.	11.5		Newedge		Sapp	•
	38.00	3.73	291.00	Schlum		Gel S.	2.5/4.5/5		Drispac		Dyna det	
265	52.00	4.30	289.00	Schlum		Filter Ck	0.5		Desco		Walnut	3
266	55.00	4.54	286.00	Schlum		Solids %	0.6		Barite	40	Lime Hydrate	2
267	78.00	2.99	299.00	Schlum		Oil	0.000		Lignite		Dyna fiber	
269	92.00	2.23	308.00	Schlum		Ca (mg/l)	40.0		PHPA		Bioside	3
				Schlum		Cl (mg/l)	9700.0		Sawdust	4		
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	44.4		Supervision		Day Cost	\$1,798
		0.5		Schlum	DOD A G	XSPolymer	1.0		Mud Van	1	Well Cost	\$213,929
	l losses Surfa		hole Estimat	es m3		asing Tests		ate	TT 1 61		rifuge	0.0
	ılating Vol.	117.9	T-4-1 b-1-			sing Test		ug-09	Underflow	•		00.0
	es down hole es at surface		Total hole Total surf.			OP Test sing Test		ug-09 tating hrs	Overflow I Flow Rate,		10	0.0
Today tota		2.3	Cumulative	120.5		OP Test		ep-09	Operating			1.0
					- 1,0120 -			-r	- F			
	We	ell Control -	kPa		Но	ole Condition	ı kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	8500	Backs	ground	0.	
RSPP #1	55	7200	11000	2677	Drag Dn	6			Conn	ection	0.	30
RSPP #2					Hook Load	102	6200		T	rip	0.	00
								=				
	1. Rig up/0	Out			9. Slip & C			=	17. Plug B			
	2. Drill		21.75		10. Survey		1.00	_	18. Wash t			
	3. Ream 4. Drill Ou			-	11. Wirelin 12. Casing	_		-	19. Flow ch			
	5. Circ. &			=	_	Out Cement		=	21. Safety	mud pumps Meeting	0.25	
	6. Trip	Conu.		-	14. Nipple			-	22. Handle	_	0.25	
	7. Rig Serv	ice	0.75	-	15. Test B0			_	23 Other	2 20015	0.25	
	8. Rig Rep			-	16. BOP D			=	Total Hour	rs.	24.00	
				-				-				
						REMARKS						
00:00-24:00	Drilled fron	n 2602 m to 2	2685 m.									
	Bit # 15 H	C506ZX PL	C, 15 chipp	ed cutters,	n guage							
	No incident	\$										
		s. per and lowe	er pipe rams									
Tops: Codi	roy Group 8:			ne 846 m, Fi	schell's Bro	ok 870 m, (S	prout Falls)	, Friars cov	e @2086m.			
Prev Cost		66,036	Today		,236	Total Cost	•	7,272	Weather:	:]	Plus 19 sunn	y
				-			_		Mud Type		Polymer	
Foreman		Rill W	illiame		Dig Phone	-	700-640-710	6	Tokon Ry	Toppy Dr	ooker / Shar	an Hollow

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	68		Date:	05-Se	p-09
Depth:	2760.0	mKB	Progress:	75.0	Drilling:	21.75	hrs ROP, r	n/hr:	3.50	Rig:	Stoneha	ım # 11
Operation (@ 0800 hrs:	Pull out of h	nole							KB elev:	175.30	m.
the next day	Drill ahead				81					KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
16	Reed		CW7148	2508				3 X 10.3	150	14-18		
		Pump 1	Pump 2	Drilling As	•			3 stage moto	Ų-			
Model		PZ-11	PZ-11			165mm DC,			Pump Pres		18,000	kPa
Liner	(mm)	165	152	BHA Lengt			m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (127.0	mm	
SPM	3	85	0	D.C. Annul		112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.7000		Jet Velocity	/:	122.0	m/sec	True Hydra	aunc HP:	324.0	kW	
		CLID	VEYS				MUD			MIIDAD	DITIVES	
De	nth	Drift	Azimuth	North	East	Time	6:45	<u> </u>	Gel	MUD AD	CaC03	
	6.00	3.64	277.00	Schlum	Last	Density	1100		Caustic	1	Percol	
256		4.40	280.00	Schlum		Vis.	63		Envirofloc	1	Sulphamic	
258		4.63	281.00	Schlum		рH	10.5		Kelzan	1	Т-352	
259		3.61	285.00	Schlum		Fluid Loss	7.2		Cello	-	Defoamer	1
	0.00	2.96	290.00	Schlum		P.V.	23.0		Bicarb		2K-7	1
262		3.21	297.00	Schlum		Y.P.	11.5		Newedge	1	Sapp	
	8.00	3.73	291.00	Schlum		Gel S.	2.5/4.5/5		Drispac	1	Dyna det	
265	2.00	4.30	289.00	Schlum		Filter Ck	0.5		Desco		Walnut	5
266	5.00	4.54	286.00	Schlum		Solids %	0.6		Barite		Lime Hydrate	1
267	8.00	2.99	299.00	Schlum		Oil	0.000		Lignite		Dyna fiber	
269	2.00	2.23	308.00	Schlum		Ca (mg/l)	40.0		PHPA		Bioside	
272	0.00	3.58	300.00	Schlum		Cl (mg/l)	9700.0		Sawdust	4		
273	4.00	3.79	299.00	Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	44.7		Supervision		Day Cost	\$2,817
				Schlum		XSPolymer			Mud Van	1	Well Cost	\$2,817
Mud	loccoc Surfa	co & Downl	hole Estimat		ROP & C	asing Tests		ate	Mud van		rifuge	\$210,740
Total circul		125.0	loie Estillat	es mo		sing Test		ug-09	Underflow		189	0.0
	s down hole		Total hole			OP Test		ug-09 ug-09	Overflow I		109	
	s at surface	3.4	Total surf.			sing Test		ating hrs	Flow Rate,		800	
Today total		4.6	Cumulative	125.1		OP Test		ep-09	Operating		24	
					- 1,0			-r	- F			
	We	ll Control -	kPa		Ho	ole Condition	ı kdaN & K	ft/#		Total Gas R	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	8500		round	0	
RSPP #1	55	7200	11000	2677	Drag Dn	6				ection	0	
RSPP #2					Hook Load	102	6200		T	rip	0.0	
					ı	ı			ı	-		
	1. Rig up/0	Out			9. Slip & C	Cut		=	17. Plug Ba	ack		
	2. Drill		21.25		10. Survey		1.50	-	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	mud pumps		
	5. Circ. &	Cond.			13. Pump (Out Cement		='	21. Safety	Meeting	0.25	
	6. Trip				14. Nipple			_	22. Handle	Tools		
	7. Rig Serv		0.75		15. Test B0			-	23 Other		0.25	
	8. Rig Rep	air			16. BOP D	rill		-	Total Hour	S	24.00	
						nn						
00.00 24.00	D.:11. 1.0	2005 : 1	2761			REMARKS						
00:00-24:00	Drilled from	1 2685 m to 2	2/61 m.									
	01:00 hrs 9	Sent OS M/M	VD tool failu	re Pull out	of hole							
	01.001113	Jopt OO, IVIV	יטטו ומווע	io, i uli out	or Hole.							
	No incident	S.										
		per and lowe	er pipe rams									
		•	Cove limestor	ne 846 m, Fi	schell's Bro	ok 870 m, (S	prout Falls)	, Friars cov	e @2086m.			
Prev Cost	\$5,99	7,272	Today	\$38	,092	Total Cost	\$6,03	35,364	Weather:		Plus 15 sunny	1
									Mud Type		Polymer	
Foreman		Bill W	'illiams		Rig Phone	7	709-649-710	6	Taken By:	Terry Bi	rooker / Shai	ne Halley

			Vulc	an Mi	nerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	69		Date:	06-Se	ер-09
Depth:	2782.0	mKB	Progress:	22.0	Drilling:	7.00	hrs ROP, r	n/hr:	3.10	Rig:	Stoneha	am # 11
Operation (@ 0800 hrs:	Drilling @	2800 m.							KB elev:	175.30	m.
the next da			•	•	81				•	KB - GL	6.30	
Bit #	Size/Make			In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
17	HC	HC505ZX	7116166	2761	25.1	252		277.10.2	150	14.10	4 (DE 11	2
16	Reed	R30APDH Pump 1	CW7148 Pump 2	2508 Drilling Ass	2761	253	64	3 X 10.3	150 r @1.83deg,	14-18	2, 6, BT, H,	3
Model		PZ-11	PZ-11	_	•	165mm DC,		5 stage moto	Pump Pres		18,000	kPa
Liner	(mm)	165	152	BHA Lengt		307.13	m	Strap:	1 ump 1 res	Board:	10,000	M a
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM	· · ·	85	0	D.C. Annul	ar Vel.:	112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m ³ /min @ 95%	1.7000		Jet Velocity	/:	122.0	m/sec	True Hydr	aulic HP:	324.0	kW	
			VEYS	1	ı		MUD	ı		MUD AD	DITIVES	
Dej		Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
2556 2569		3.64 4.40	277.00 280.00	Schlum Schlum		Density Vis.	1100 63		Caustic Envirofloc	1	Percol	
2582		4.40	281.00	Schlum		pH	10.5		Kelzan	1	Sulphamic T-352	
259		3.61	285.00	Schlum		Fluid Loss	7.2		Cello	1	Defoamer	1
2610		2.96	290.00	Schlum		P.V.	23.0		Bicarb		2K-7	1
2624	4.00	3.21	297.00	Schlum		Y.P.	11.5		Newedge	1	Sapp	
2638	8.00	3.73	291.00	Schlum		Gel S.	2.5/4.5/5		Drispac	1	Dyna det	
2652	2.00	4.30	289.00	Schlum		Filter Ck	0.5		Desco		Walnut	5
2665		4.54	286.00	Schlum		Solids %	0.6		Barite		Lime Hydrate	1
2678	8.00	2.99	299.00	Schlum		Oil	0.000		Lignite		Dyna fiber	
2692		2.23	308.00	Schlum		Ca (mg/l)	40.0		PHPA		Bioside	
2720		3.58	300.00	Schlum		Cl (mg/l)	9700.0		Sawdust	4		
2734	4.00	3.79	299.00	Schlum		MBT	12.5		Soda Ash			
276	1.00	4.14	276.00	Schlum		Temp	44.7		Supervision		Day Cost	\$2,817
2775	5.00	4.80	273.00	Schlum		XSPolymer	1.0		Mud Van	1	Well Cost	\$216,746
	1 C	0 D 1	1 - E-4:	ec m3	ROP & C	asing Tests	D.	ate		Cent	rifuge	
Mud	iosses Suria	ce & Downl	noie Estimat	CS IIIS	DOI a C	using resus	De	acc				
Total circul	ating Vol.	125.0		CS IIIS	Last Ca	sing Test	22-A	ug-09	Underflow	Density	189	
Total circul Today losse	ating Vol. s down hole	125.0 1.2	Total hole		Last Ca Last B	sing Test OP Test	22-A 23-A	ug-09 ug-09	Overflow D	Density Density	189	65
Total circul Today losse Today losse	ating Vol. s down hole s at surface	125.0 1.2 3.4	Total hole Total surf.		Last Ca Last B Next Ca	sing Test OP Test sing Test	22-A 23-A 1000 rot	ug-09 ug-09 ating hrs	Overflow E Flow Rate,	Density Density m3/min	189 10 80	65 0.0
Total circul Today losse	ating Vol. s down hole s at surface	125.0 1.2	Total hole		Last Ca Last B Next Ca	sing Test OP Test	22-A 23-A 1000 rot	ug-09 ug-09	Overflow D	Density Density m3/min	189	65 0.0
Total circul Today losse Today losse	ating Vol. s down hole s at surface losses	125.0 1.2 3.4 4.6	Total hole Total surf. Cumulative		Last Ca Last Bo Next Ca Next Bo	op Test Sing Test Sing Test OP Test OP Test	22-A 23-A 1000 rot 08-Se	ug-09 ug-09 ating hrs ep-09	Overflow D Flow Rate, Operating	Density Density m3/min hours	189 10 80 24	65 0.0 1.0
Total circul Today losse Today losse Today total	ating Vol. s down hole s at surface losses	125.0 1.2 3.4 4.6	Total hole Total surf. Cumulative	125.1	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test OP Test	22-A 23-A 1000 rot 08-Se	ug-09 ug-09 ating hrs ep-09	Overflow D Flow Rate, Operating	Density Density m3/min hours	189 10 800 24 Readings (%)	65 0.0 1.0
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Total circul Today losse Today losse Today total	ating Vol. s down hole s at surface losses	125.0 1.2 3.4 4.6	Total hole Total surf. Cumulative	125.1	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test OP Test cle Condition 7 6	22-A 23-A 1000 rot 08-Se	ug-09 ug-09 ating hrs ep-09	Overflow E Flow Rate, Operating D Backg	Density Density m3/min hours	189 10 800 24 Readings (%)	65 0.0 1.0 30
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Total circul Today losse Today total Pump RSPP #1 RSPP #2 00:00-00:30 00:30-01:30 01:30-08:00 98:00-09:45 14:30-15:30 15:30-17:15 17:15-24:00	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Drilled from MWD tool if Pull out of Make up ne run in hole to Slip and cut Run in hole Drilled from No incident.	125.0 1.2 3.4 4.6 Pressure 7800 Out t Cond. rice air 12761 m to 2 railure.Unab hole w MWD too 202058 m. 15.3 m. dril wash to bott 12761 m to 2 s.	Total hole Total surf. Cumulative kPa MACP 11000 7.00 0.75 11.75 0.25 2762 m. le to survey.0 ling line om. 2782 m.	Depth 2748	Last Ca Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test oP Test Condition 7 6 103 Cut Cut Cement Out Cement Up BOP OP & FIT rill REMARKS	22-A 23-A 1000 rot 08-Si 1 kdaN & Ki Torque 8000 0.75 0.25	ug-09 ug-09 ating hrs ep-09	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density m3/min hours Total Gas R ground ection rip ack o Btm lecks mud pumps Meeting Tools	189 100 800 24 teadings (%) 0 1 2 1.00 2.25	65 0.0 1.0 30
Total circul Today losse Today total Pump RSPP #1 RSPP #2 00:00-00:30 00:30-01:30 01:30-08:00)8:00-09:45 09:45-14:30 14:30-15:30 15:30-17:15 17:15-24:00	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Drilled from MWD tool of Pull out of Make up ne run in hole to Slip and cut Run in hole Drilled from No incident. Function up	125.0 1.2 3.4 4.6 Il Control - Pressure 7800 Out t Cond. Failure.Unabhole w MWD too too2058 m. 15.3 m. drill wash to bott 12761 m to 18. per and lower	Total hole Total surf. Cumulative kPa MACP 11000 7.00 0.75 11.75 0.25 2762 m. le to survey.(ling line tom. 2782 m. er pipe rams	Depth 2748 Circulate bott	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test Condition 7 6 103 Cut Cut Cement Out Cement Up BOP OP & FIT rill REMARKS	22-A 23-A 1000 rot 08-S 1 kdaN & K Torque 8000 0.75 0.25	ug-09 ug-09 ating hrs ep-09 ft/# 8500	Overflow L Flow Rate, Operating Backg Conn To 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle 23 Other Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm lecks mud pumps Meeting Tools	189 100 800 24 teadings (%) 0 1 2 1.00 2.25	65 0.0 1.0 30
Total circul Today losse Today total Pump RSPP #1 RSPP #2 00:00-00:30 00:30-01:30 01:30-08:00)8:00-09:45 09:45-14:30 14:30-15:30 15:30-17:15 17:15-24:00	s down holes at surface losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. Drilled from MWD tool of Pull out of Make up ne run in hole to Slip and cut Run in hole Drilled from No incident. Function up oy Group 8:	125.0 1.2 3.4 4.6 Il Control - Pressure 7800 Out t Cond. Failure.Unabhole w MWD too too2058 m. 15.3 m. drill wash to bott 12761 m to 18. per and lower	Total hole Total surf. Cumulative kPa MACP 11000 7.00 0.75 11.75 0.25 2762 m. le to survey.(ling line tom. 2782 m. er pipe rams	Depth 2748 Circulate both occ bit.	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test Condition 7 6 103 Cut Cut Cement Out Cement Up BOP OP & FIT rill REMARKS	22-A 23-A 1000 rot 08-S 1 kdaN & K Torque 8000 0.75 0.25	ug-09 ug-09 ating hrs ep-09 ft/# 8500	Overflow L Flow Rate, Operating Backg Conn To 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle 23 Other Total Hour	Density Density Maymin hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools s	189 100 800 24 teadings (%) 0 1 2 1.00 2.25	65 0.0 1.0 30 90 40

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	70		Date:	07-Se	p-09
Depth:	2809.0	mKB	Progress:	6.0	Drilling:	11.20	hrs ROP, r	n/hr:	0.50	Rig:	Stoneha	m # 11
Operation	@ 0800 hrs:	Drilling @ 2	2822 m.		_					KB elev:	175.30	m.
the next da	a; Drill ahead	_								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
17	HC	HC505ZX	7116166	2761	2803	42	11.50	7 x 10.2	125	5-7	2, 2, BO	C, A, X
18	HC	MX30GDX	6063824	2803		•	•					
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	r @1.83deg,	NM tool carr	ier,NM DC,	
Model		PZ-11	PZ-11	5 X 165mn	n DC, Jar, 7	165mm DC,	8 HWDP		Pump Press	sure:	18,000	kPa
Liner	(mm)	165	152	BHA Lengt	th:	307.13	m	Strap:	_	Board:		
Stroke	(mm)	279	279	Drill Collar	· O.D.	165.0	mm	Drill Pipe (D.D.	127.0	mm	
SPM		85	0	D.C. Annul	ar Vel.:	112.0	m/min	D.P Annula	ar Vel.:	71.0	m/min	
Vol.	m³/min @ 95%	1.7000		Jet Velocity	y:	122.0	m/sec	True Hydra	aulic HP:	324.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
267	78.00	2.99	299.00	Schlum		Density	1110		Caustic		Percol	
269	92.00	2.23	308.00	Schlum		Vis.	63		Envirofloc		Sulphamic	
272	20.00	3.58	300.00	Schlum		рH	10.2		Kelzan	1	T-352	
	34.00	3.79	299.00	Schlum		Fluid Loss	6.2		Cello		Defoamer	1
		4.14	276.00									
	61.00			Schlum		P.V.	26.0		Bicarb		2K-7	5
	75.00	4.80	273.00	Schlum		Y.P.	13.0		Newedge	5	Sapp	
	89.00	4.00	272.00	Schlum		Gel S.	2.5/4.5/5		Drispac		Dyna det	1
280	02.00	2.69	278.00	Schlum		Filter Ck	0.5		Desco		Walnut	5
				Schlum		Solids %	0.6		Barite	40	Lime Hydrated	l
				Schlum		Oil	0.000		Lignite		Dyna fiber	
				Schlum		Ca (mg/l)	40.0		PHPA		Bioside	
				Schlum		Cl (mg/l)	10200.0		Sawdust			
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	35.0		Supervision		Day Cost	\$371
				Schlum		XSPolymer	1.0		Mud Van	1	Well Cost	\$216,746
Mud	l losses Surfa	ce & Downl	hole Estimat	es m3	BOP & Ca	asing Tests		ate		Cent	rifuge	
	ulating Vol.	125.0				sing Test		ug-09	Underflow	•	189	
Today loss	ses down hole	1.2	Total hole		Last Bo	OP Test	23-A	ug-09	Overflow D	Density	10	
Today loss	ses at surface	3.4	Total surf.		Next Ca	sing Test	1000 rot	ating hrs	Flow Rate,	m3/min	800	0.0
Today tota	al losses	4.6	Cumulative	125.1	Next B	OP Test	08-S	ep-09	Operating l	hours	24	.0
	We	ll Control -	kPa		Ho	ole Condition	n kdaN & Ki	ft/#		Total Gas R	teadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	8500	Backg	round	0.3	80
RSPP #1	55	7800	11000	2748	Drag Dn	6			Conn	ection	0.4	10
RSPP #2					Hook Load	103	8000		Ti	rip	0.0	50
	1. Rig up/0	Out			9. Slip & C	Cut		-	17. Plug Ba	ack		
	2. Drill		11.25		10. Survey		0.50	-	18. Wash t	o Btm		
	3. Ream		•		11. Wirelin	ne Logs		-	19. Flow ch	ecks		
	4. Drill Ou	t			12. Casing		,	-	20. Wk on 1	nud pumps		
	5. Circ. &	Cond.	1.00		13. Pump (Out Cement			21. Safety	Meeting	0.50	
					14. Nipple	IIn ROP		- '	22. Handle	Tools		
	6. Trip		10.25		14. Mippic	CP DOI						
	6. Trip 7. Rig Serv	rice	0.50		15. Test B0			-	23 Other			
	-					OP & FIT		-		s	24.00	
	7. Rig Serv				15. Test B0	OP & FIT		= - -	23 Other	s	24.00	
	7. Rig Serv				15. Test BO 16. BOP D	OP & FIT		-	23 Other	s	24.00	
00:00-08:4:	7. Rig Serv	air	0.50		15. Test BO 16. BOP D	OP & FIT rill		-	23 Other	s	24.00	
	7. Rig Serv 8. Rig Rep	air n 2762 m to 2	0.50		15. Test BO 16. BOP D	OP & FIT rill		-	23 Other	s	24.00	
08:45-16:00	7. Rig Serv 8. Rig Reposition 5 Drilled from	n 2762 m to 2 ROP	0.50 2803 m.		15. Test BO 16. BOP D	OP & FIT rill	3	-	23 Other	s	24.00	
08:45-16:00 16:00-17:00	7. Rig Serv 8. Rig Reposition 5 Drilled from 0 Hoist due to	air n 2762 m to 2 ROP w insert bit,	0.50 2803 m.		15. Test BO 16. BOP D	OP & FIT rill		-	23 Other	s	24.00	
08:45-16:00 16:00-17:00 17:00-20:4	7. Rig Serv 8. Rig Rep. 5 Drilled from 0 Hoist due to 0 Make up ne	air n 2762 m to 2 n ROP w insert bit, wash to bott	0.50 2803 m. check motor. om. 2809 m.		15. Test BC 16. BOP D	OP & FIT rill		-	23 Other	S	24.00	
08:45-16:00 16:00-17:00 17:00-20:4	7. Rig Serv 8. Rig Rep 5 Drilled from 0 Hoist due to 0 Make up ne 5 Run in hole 0 Drilled from	air n 2762 m to 2 P ROP w insert bit, wash to bott n 2803 m to 2	0.50 2803 m. check motor. om. 2809 m.	l damaged	15. Test BC 16. BOP D	OP & FIT rill			23 Other	s	24.00	
08:45-16:00 16:00-17:00 17:00-20:4	7. Rig Serv 8. Rig Rep. 5 Drilled from 0 Hoist due to 0 Make up ne 5 Run in hole 0 Drilled from	air 1 2762 m to 2 ROP w insert bit, wash to bott 1 2803 m to 2	0.50 2803 m. check motor. com. 2809 m. Bit # 17, 14	1 damaged	15. Test BC 16. BOP D	OP & FIT rill			23 Other	s	24.00	
08:45-16:00 16:00-17:00 17:00-20:45 20:45-24:00	7. Rig Serv 8. Rig Rep. 5 Drilled from 0 Hoist due to 0 Make up ne 5 Run in hole 0 Drilled from No incident Function bli	air 1 2762 m to 2 ROP w insert bit, wash to bott 1 2803 m to 2 s. nd, upper an	0.50 2803 m. check motor. com. 2809 m. Bit # 17, 14	1 damaged rams.	15. Test BG 16. BOP D	OP & FIT rill REMARKS			23 Other Total Hour	s	24.00	
08:45-16:00 16:00-17:00 17:00-20:45 20:45-24:00 Tops: Code	7. Rig Serv 8. Rig Rep. 5 Drilled from 0 Hoist due to 0 Make up ne 5 Run in hole 0 Drilled from No incident Function bli	air 1 2762 m to 2 1 ROP w insert bit, wash to bott 1 2803 m to 2 s. nd, upper an	0.50 2803 m. check motor. 2809 m. Bit # 17, 14 d lower pipe Cove limestor	damaged rams.	15. Test BG 16. BOP D cutters	OP & FIT rill REMARKS	prout Falls)		23 Other Total Hour			
08:45-16:00 16:00-17:00 17:00-20:45 20:45-24:00	7. Rig Serv 8. Rig Rep. 5 Drilled from 0 Hoist due to 0 Make up ne 5 Run in hole 0 Drilled from No incident Function bli	air 1 2762 m to 2 ROP w insert bit, wash to bott 1 2803 m to 2 s. nd, upper an	0.50 2803 m. check motor. com. 2809 m. Bit # 17, 14	damaged rams.	15. Test BG 16. BOP D	OP & FIT rill REMARKS	prout Falls)	, Friars cove	23 Other Total Hour		24.00 Plus 15 sunny Polymer	

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	71		Date:	08-S	ер-09
Depth:	2859.0	mKB	Progress:	50.0	Drilling:	22.25	hrs ROP, 1		2.30	Rig:		am # 11
-	@ 0800 hrs:	Drilling @ 2	-				,			KB elev:	175.30	m.
_	Drill ahead	Ü								KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
17	HC	HC505ZX	7116166	2761	2803	42	11.50	7 x 10.2	125	5-7	2, 2, B	C, A, X
18	HC	MX30GDX	6063824	2803		•		3X14				
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	r @1.83deg,	NM tool carr	rier,NM DC,	
Model		PZ-11	PZ-11	5 X 165mn	DC, Jar, 7	165mm DC,			Pump Pres		18,000	kPa
Liner	(mm)	165	152	BHA Lengt	th:	307.13	m	Strap:		Board:		•
Stroke	(mm)	279	279	Drill Collar	· O.D.	165.0	mm	Drill Pipe ().D.	127.0	mm	•
SPM		85	0	D.C. Annul	ar Vel.:	112.0	m/min	D.P Annula		71.0	m/min	
Vol.	m³/min @ 95%	1.7000		Jet Velocity	v:	122.0	m/sec	True Hydra		324.0	kW	
			I.							•	-	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:45		Gel		CaC03	
267	78.00	2.99	299.00	Schlum		Density	1110		Caustic		Percol	
269	92.00	2.23	308.00	Schlum		Vis.	63		Envirofloc		Sulphamic	
	20.00	3.58	300.00	Schlum		рН	10.7		Kelzan		T-352	
	34.00	3.79	299.00	Schlum		Fluid Loss	7.2	t	Cello		Defoamer	
								-				
	51.00	4.14	276.00	Schlum		P.V.	25.0		Bicarb		2K-7	1
	75.00	4.80	273.00	Schlum		Y.P.	12.2		Newedge		Sapp	
278	39.00	4.00	272.00	Schlum		Gel S.	2.5/4.5/5		Drispac		Dyna det	
280	02.00	2.69	278.00	Schlum		Filter Ck	0.5		Desco	1	Walnut	
281	7.00	2.62	281.00	Schlum		Solids %	7.0		Barite		Lime Hydrate	d
283	80.00	3.28	282.00	Schlum		Oil	0.000		Lignite		Dyna fiber	
284	13.00	3.78	292.00	Schlum		Ca (mg/l)	40.0		PHPA		Bioside	
				Schlum		Cl (mg/l)	9800.0		Sawdust			
				Schlum		MBT	12.5		Soda Ash			
				Schlum		Temp	38.0		Supervision		Day Cost	\$217
				Schlum		XSPolymer	1.0		Mud Van	1	Well Cost	\$216,746
Mud	losses Surfa	ce & Downl	nole Estimat		BOP & C	asing Tests		ate			rifuge	7=10,110
	lating Vol.	125.0	l	I		sing Test		ug-09	Underflow			0.0
	es down hole		Total hole			OP Test		ug-09	Overflow I			165
•	es at surface		Total surf.			sing Test		tating hrs	Flow Rate,	•		0.0
Today tota		1.9	Cumulative	132.0		OP Test		ep-09	Operating			1.0
Today tota	1 1033C3	1.7	Cumulative	132.0	TICAL D	OI Itst	00-5	ср-07	Operating	nours	2-	r.0
	Wa	ell Control -	l _r Do		ш	ole Condition	lidoN 0. W	£4/#		Total Gas R	andings (0/	
D				D4h					D			
Pump	Strokes	Pressure	MACP	Depth	Drag up	7	Torque	8500		ground		30
RSPP #1	55	7800	11000	2748	Drag Dn	6		-		ection		20
RSPP #2					Hook Load	103	8000		1	rip	U.	00
				5		_		=		_		ş.
	1. Rig up/0)ut		5	9. Slip & C			=	17. Plug B			
	2. Drill		22.25		10. Survey		0.50	_	18. Wash			
	3. Ream				11. Wirelin	_		_	19. Flow ch			
	4. Drill Ou			-	12. Casing			_		mud pumps		
	5. Circ. &	Cond.			13. Pump (Out Cement		=	21. Safety	Meeting	0.50	
	6. Trip				14. Nipple	Up BOP		_	22. Handle	e Tools		
	7. Rig Serv	ice	0.75		15. Test Bo	OP & FIT			23 Other			
	8. Rig Rep	air			16. BOP D	rill			Total Hour	's	24.00	
				•				-				:
						REMARKS						
00:00-24:00	Drilled fron	n 2809 m to 2	2859 m.									
	No incident	S										
		oper and low	er pipe rams									
Tops: Codi					schell's Bro	ok 870 m, (S	prout Falls)	. Friars cov	e @2086m			
Prev Cost	_•	9,627	Today		,798	Total Cost	•	04,425	Weather:		Plus 15 sunn	v
	Ψ0,11	. ,		Ψ.	,	0030	Ψ 0,12	,	Mud Type		Polymer	,
Foreman		Rill W	illiams	-	Rig Phone		709-649-710	6	Taken By:		rooker / Sha	ne Hallev
- 0. 0		<i>2</i> m 11					0.0 /10	~	- min Dy.	I CII J DI	Janes / Dila	i

			Vulc	an Mi	nerals	Daily	Drill:	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	72		Date:	09-Se	ер-09
Depth:	2906.0	mKB	Progress:	32.0	Drilling:	22.00	hrs ROP, 1	n/hr:	1.45	Rig:	Stoneha	•
Operation	@ 0800 hrs:	Drilling @ 2	2918 m.		_					KB elev:	175.30	m.
the next da	Change bit,	BOP test.								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
17	HC	HC505ZX	7116166	2761	2803	42	11.50	7 x 10.2	125	5-7	2, 2, Bo	C, A, X
18	HC	MX30GDX	6063824	2803		106	49	3X14	125	14		
		Pump 1		Drilling As	•			3 stage moto	<u> </u>	NM tool carr		
Model		PZ-11	PZ-11			165mm DC,			Pump Pres		14,500	kPa
Liner	(mm)	165	152	BHA Lengt			m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar			mm	Drill Pipe (mm	
SPM	3	88	0	D.C. Annul			m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%	1.5000		Jet Velocity	7:	90.4	m/sec	True Hydra	aulic HP:	324.0	kW	
		CUDY	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	6:57		Gel	MIUD AD	CaC03	
	8.00	2.99	299.00	Schlum	Last	Density	1110		Caustic	2	Percol	
						•						
	2.00	2.23	308.00	Schlum		Vis.	64		Envirofloc		Sulphamic	
	20.00	3.58	300.00	Schlum		pН	10.4		Kelzan		T-352	
	34.00	3.79	299.00	Schlum		Fluid Loss	6.8		Cello		Defoamer	
	51.00	4.14	276.00	Schlum		P.V.	27.0		Bicarb		2K-7	1
	5.00	4.80	273.00	Schlum		Y.P.	13.0		Newedge	2	Sapp	
	39.00	4.00	272.00	Schlum		Gel S.	3/5.5/7		Drispac	2	Dyna det	
	02.00	2.69	278.00	Schlum		Filter Ck	0.5		Desco		Walnut	
	7.00	2.62	281.00	Schlum		Solids %	7.0		Barite		Lime Hydrate	2
	80.00	3.28	282.00	Schlum		Oil	0.000		Lignite		Dyna fiber	
	3.00	3.78	292.00	Schlum		Ca (mg/l)	40.0		PHPA		Bioside	
			300.96	Schlum		Cl (mg/l)	9800.0		Sawdust			
	2871.00 3.44 300.			Schlum		MBT	17.5		Soda Ash	2	D 0 .	
	2885.00 3.8 298.3			Schlum		Temp	40.0		Supervision	1	Day Cost	\$881
	losses Surfa	3.83	296.90	Schlum	DOD 8 C	XSPolymer	1.1	ate	Mud Van	1 Ct-	Well Cost	\$219,705
			ioie Estimat	es m5		asing Tests			TT 1 (1			0.0
	lating Vol. es down hole	125.0	Total hole			oing Test OP Test		ug-09 ug-09	Underflow Overflow I	•		00.0
	es at surface		Total surf.			sing Test		ating hrs	Flow Rate,			0.0
Today tota		0.4	Cumulative	133.0		OP Test		ep-09	Operating			l.0
Today tota	1 103363	0.0	Cumulative	133.0	NEAT D	or rest	00-50	ср-09	Operating	nour s	24	r.U
	We	ell Control -	kPa		Ho	le Condition	kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	12	Torque	9500	Backs	ground	0.	
RSPP #1	45	4975	11000	2897	Drag Dn	13				ection	0.	
RSPP #2					Hook Load	103	8000		Т	rip	0.	00
					•				•			
	1. Rig up/0	Out			9. Slip & C	ut		-	17. Plug B	ack		
	2. Drill		22.00		10. Survey		1.00	= _	18. Wash t	to Btm		
	3. Ream			•	11. Wirelin	ne Logs		='	19. Flow ch	necks		
	4. Drill Ou				12. Casing			_		mud pumps		
	5. Circ. &	Cond.			13. Pump (_	21. Safety	_	0.50	
	6. Trip				14. Nipple			_	22. Handle	e Tools		
	7. Rig Service 0.50				15. Test BO			-	23 Other			
	8. Rig Repair				16. BOP D	rill		-	Total Hour	'S	24.00	
						DEMADES						
00:00-24:00	Drilled from	2859 m to '	2906 m. keer	ing deviation		REMARKS		ge 4 m/single	Check flar	e igniter and	nason choke	
00.00 21.00	0-24:00 Drilled from 2859 m to 2906 m, keeping deviation as low as possible. Sliding on average 4 m/single. Check flare igniter and pason choke Function test upper pipe rams. Conduct BOP drill with crew. Well secure in 88 sec with annular preventer.											
	No incident	S.										
	-	-	-	·	-	-	-	-	-	-	-	
_	coy Group 8										21 15	
								Weather:		Plus 15 sunn	y	
Foreman		Bill W	illiams	:	Rig Phone	7	709-649-710	6	Mud Type Taken By:		Polymer rooker / Shar	ne Hallev

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	port			
Well:		Vulc	an Investca	n Robinso	ns #1	-	Day:	73		Date:	10-Se	ер-09
Depth:	2953.0	mKB	Progress:	47.0	Drilling:	22.25	hrs ROP,		2.11	Rig:	Stoneha	•
Operation	@ 0800 hrs:	Drilling @ 2	2968 m.							KB elev:	175.30	m.
the next da	Change bit,	BOP test.								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
18	HC	MX30GDX	6063824	2803		106	49	3X14	125	14		
		Pump 1	Pump 2	Drilling As	•			3 stage moto		NM tool carr		
Model		PZ-11	PZ-11			165mm DC,		G,	Pump Pres		14,500	kPa
Liner	(mm)	165	152	BHA Lengt		307.13	m	Strap:		Board:		
Stroke	(mm)	279	279 90	Drill Collar		165.0	mm	Drill Pipe (mm	
SPM Vol.	m³/min @ 95%	0	1.3070	D.C. Annul Jet Velocity		103.0 90.4	m/min m/sec	D.P Annula		65.0 324.0	m/min kW	
V UI.	III /IIIII @ 95%		1.3070	Jet velocity	y .	90.4	III/Sec	True Hyur	aunc m.	324.0	KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	6:47		Gel		CaC03	
	2.43	3.94	298.78	-,,,-,-		Density	1110		Caustic	2	Percol	
	26.39	2.87	301.29			Vis.	65		Envirofloc		Sulphamic	
	0.21	1.74	289.91			pH	10.5		Kelzan		Т-352	3
2,74			200.01			Fluid Loss	6.8		Cello		Defoamer	,
												1
						P.V.	27.0		Bicarb		2K-7	1
						Y.P.	13.5		Newedge	1	Sapp	
						Gel S.	3/5.5/7		Drispac	1	Dyna det	
						Filter Ck	0.5		Desco		Walnut	
						Solids %	7.0		Barite		Lime Hydrate	2
						Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9800.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	39.6		Supervision		Day Cost	\$1,637
						XSPolymer	1.1		Mud Van	1	Well Cost	\$221,342
	losses Surfa		nole Estimat	es m3		asing Tests		ate		Centi		
Total circu		131.0				sing Test		.ug-09	Underflow	•		0.00
	es down hole		Total hole			OP Test		.ug-09	Overflow I	·		00
•	es at surface	2.4	Total surf.	126.6		sing Test		tating hrs	Flow Rate,			0.0
Today tota	1 iosses	3.6	Cumulative	136.6	Next B	OP Test	08-5	ep-09	Operating	nours	22	1.0
	XX7.	11 C41	LD.		II.	.l. C 3!4!	. l. l. N 0 T/	E4 III		T-4-1 C D	J: (0/)	
D		ell Control -		Danish		ole Condition			D1-	Total Gas R		
Pump RSPP #1	Strokes 55	Pressure 6610	MACP 11000	Depth 2911	Drag up Drag Dn	10 10	Torque	9800		ground nection		27 38
RSPP #2	33	0010	11000	2911	Hook Load					rip		00
KSII #2					HOOK LOAU	111			_	тр	0.	00
	1. Rig up/C)nt			9. Slip & C	'nt		-	17. Plug B	ack		
	2. Drill	Jui	22.25		10. Survey		0.75	=	18. Wash			
	3. Ream				11. Wirelin			=	19. Flow cl			:
	4. Drill Ou	ıt			12. Casing			=		mud pumps		
	5. Circ. &	Cond.				Out Cement		=	21. Safety		0.25	•
	6. Trip				14. Nipple			=	22. Handle	_		:
	7. Rig Service 0.75					OP & FIT		-	23 Other			
	8. Rig Repair				16. BOP D	rill		=	Total Hou	rs.	24.00	•
	REMARKS 0-24:00 Drilled from 2906 m to 2953 m, keeping deviation below 5deg. Sliding on average 3 m/single. Function crown saver. Function UPR and Annular											
00:00-24:00	Drilled fron	n 2906 m to 2	2953 m, keep	ing deviatio	n below 5deg	g. Sliding on	average 3 m	/single. Func	tion crown s	saver. Function	n UPR and A	Annular
	No incident	s. 7 hazzards	IDA									
	140 metuent	s. / Hazzaius	щu									
Tons: Code	ov Group 8	15 m. Shin C	ove limesto	ne 846 m Fi	schell's Bro	ok 870 m (S	prout Falle). Friars cov	e @ 2086m			
Tops: Codroy Group 815 m, Ship Cove limestone 846 m, Fischell's Brook 870 m, (Sprout Falls), Friars cove @2086m. Prev Cost \$6,236,367 Today \$35,800 Total Cost \$6,272,167 Weather: Plus 16 sunny									v			
	40,20	. ,=		Ψυυ	,	0030	40,27	,	Mud Type		Polymer	,
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By:		ooker / Sha	ne Halley

			Vulo	an Mi	inerals	S Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	74		Date:	11-Se	ep-09
Depth:	2967.0	mKB	Progress:	14.0	Drilling:	7.25	hrs ROP,		1.90	Rig:	Stoneha	
_	@ 0800 hrs:		_	11.0	Dinning.	7.23	ms Roi,	,	1.50	KB elev:	175.30	
_	a Drill ahead	Dinning @ .	2)/3 III.							KB - GL	6.30	
Bit #	•	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
18	HC	MX30GDX		2803	2967	164		3X14	125	14	2-6-BT-H-	
19	Reed	R30APDH		2967	2907	104	, ,,	2X13, 1X14	1	14	2-0-B1-II-	L-1-C1-IK
17	Recu	Pump 1	Pump 2	Drilling As	combly	216mm bit	171mm 7/9	,		M tool carri	or NM DC	
Model		PZ-11	PZ-11		n DC, Jar, 7			3 stage mote	Pump Pres			kPa
Liner		165	152	BHA Leng		307.13	m	Strap:	_r ump r res	Board:	14,500	ма
Stroke	(mm)	279	279	Drill Colla		165.0	_	Drill Pipe (O D	127.0		
SPM	(mm)	0	90	D.C. Annu		103.0	mm m/min	D.P Annul		65.0	mm m/min	
	m³/min @ 95%	U	1.3070	Jet Velocit		90.4	m/sec			324.0	kW	
Vol.	m /min @ 95%		1.3070	Jet velocit	y:	90.4	m/sec	True Hydr	aunc HP:	324.0	KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
D	epth	Drift	Azimuth	North	East	Time	6:40		Gel		CaC03	
2912.43		3.94	298.78			Density	1110		Caustic	1	Percol	
2926.39		2.87	301.29			Vis.	64		Envirofloc		Sulphamic	
2940.21		1.74	289.91			рH	10.9		Kelzan		T-352	1
2953.98		2.62	270.76			Fluid Loss	6.8		Cello		Defoamer	
						P.V.	26.0		Bicarb		2K-7	1
						Y.P.	13.0		Newedge		Sapp	
						Gel S.	3/5.5/7		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	
						Solids %	7.0		Barite		Lime Hydrate	1
						Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9800.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	37.8		Supervision		Day Cost	\$587
						XSPolymen			Mud Van	1	Well Cost	\$221,929
Muc	l losses Surfa	ce & Downl	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
	ılating Vol.	133.5			î	sing Test		ug-09	Underflow		190	0.0
	es down hole		Total hole			OP Test		lep-09	Overflow I		11	
_	es at surface	1.4	Total surf.			sing Test		tating hrs	Flow Rate,		80	
Today tota		1.9	Cumulative	138.5		OP Test		ep-09	Operating		24	
		·		1				•	1 2		1	
	We	ll Control -	kPa		Н	ole Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	14	Torque	9800	Backs	ground	0.	
RSPP #1	55	6610	11000	2911	Drag Dn	12	201440	7000		ection	0.	
RSPP #2					Hook Load					rip	0.0	
				_						r		
	1. Rig up/0)ut		_	9. Slip & C	Cut		_	17. Plug B			
	2. Drill		7.25	=	10. Survey			_,	18. Wash	to Btm		
	3. Ream				11. Wirelin	ne Logs			19. Flow ch	iecks		
	4. Drill Ou	t		=	12. Casing	/Cement		_,	20. Wk on	mud pumps		
	5. Circ. &	Cond.	0.50		13. Pump (Out Cement	t		21. Safety	Meeting	1.25	
	6. Trip		7.25		14. Nipple	Up BOP			22. Handle	Tools	1.75	
	7. Rig Serv	ice	0.75		15. Test Bo	OP & FIT	5.25		23 Other			
	8. Rig Repair					rill			Total Hour	's	24.00	
00:00-08-0	0 Drilled fron	2953 m to '	2967 m RC)P fadding o		REMARKS	S					
	0 Pull out for					v and 11000	kPa high (aft	er pulling in	to the casing	shoe)		
	5 Pressure tes										echarge 2min	30 sec
	0 Set motor to					O O O AT U III	D 100 amilai	or test pres		- 55 5 5 KI U, IC	5 2111111	
215 21,0		s. 8 hazzards	•									
Tops: Cod	roy Group 8			ne 846 m. F	ischell's Bro	ok 870 m. (S	Sprout Falls). Friars cov	e @2086m.			
Prev Cost		2,167	Today		,653	Total Cost		31.820	Weather:		Plus 11 sunny	V
		, -		_	,			,	Mud Type		Polymer	,
Foreman		Don Ca	ampbell	=	Rig Phone		709-649-710	16	Taken By:		rooker / Shai	ne Halley

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1	-	Day:	75		Date:	12-S	ер-09
Depth:	3016.0	mKB	Progress:	49.0	Drilling:	17.75	hrs ROP,	m/hr:	2.76	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs:	Drilling @	2973 m.							KB elev:	175.30	
	Drill ahead		•			•				KB - GL	6.30	
Bit #	Size/Make	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
19	Reed	R30APDH	AP6465	2967				2X13, 1X14	1			
		Dunn 1	Dunn 2	Drilling As	gomble.	216mm hit	171mm 7/0.	2 stogo moto	m @1.5doo.N	M tool carrie	on NM DC	
Model		Pump 1 PZ-11	Pump 2 PZ-11		n DC, Jar, 7			3 stage moto	Pump Pres		14,500	kPa
Liner	(mm)	165	152	BHA Leng		307.13	m	Strap:	_ rump rres	Board:	14,500	- M 4
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (O.D.	127.0	mm	-
SPM		0	90	D.C. Annu		103.0	m/min	D.P Annul		65.0	m/min	
Vol.	m³/min @ 95%		1.3070	Jet Velocit	y:	90.4	m/sec	True Hydr	aulic HP:	324.0	kW	
											-	
			VEYS	1			MUD	1		MUD AD	DITIVES	
	pth	Drift	Azimuth	North	East	Time	7:17		Gel		CaC03	
2912.43		3.94	298.78			Density	1110		Caustic		Percol	
2926.39 2940.21		2.87 1.74	301.29 289.91			Vis. pH	65 11.1		Envirofloc		Sulphamic T-352	
2940.21		2.62	270.76			Fluid Loss	7.0		Kelzan Cello		Defoamer	
2966.91		3.62	287.62			P.V.	26.0		Bicarb		2K-7	1
2980.69		3.49	294.09			Y.P.	12.5		Newedge		Sapp	-
2994.76		3,31	306.56			Gel S.	3/5.5/7		Drispac		Dyna det	
3008.46		3.64	305.91			Filter Ck	0.5		Desco		Walnut	
						Solids %	7.0		Barite	40	Lime Hydrate	ed
						Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9800.0		Sawdust			
						MBT	17.5		Soda Ash		D G (
						Temp XSPolymer	36.0		Supervision Mud Van	1	Day Cost Well Cost	\$587 \$221,929
Mud	losses Surfa	co & Down	hola Estimat	ac m3	ROP & C	asing Tests		ate	Mud van		rifuge	\$221,929
Total circu		129.6	Estimat	es mo		sing Test		ug-09	Underflow			00.0
	es down hole		Total hole			OP Test		lep-09	Overflow I	•		100
Today losse	es at surface	6.0	Total surf.		Next Ca	sing Test		tating hrs	Flow Rate	m3/min	40	0.0
Today total	l losses	7.5	Cumulative	146.0	Next B	OP Test	25-S	lep-09	Operating	hours	24	4.0
					•							
	We	ll Control -					n kdaN & K			Total Gas R		
Pump	Strokes	Pressure	MACP	Depth	Drag up	14	Torque	9700		ground		.27
RSPP #1 RSPP #2	55	6030	11000	3005	Drag Dn	12 113				nection		.38
KSFF #2					Hook Load	113			1	rip	1.	.20
	1. Rig up/C	Dut		-	9. Slip & C	'nt		_	17. Plug B	ack		-
	2. Drill	, ui	17.75	=	10. Survey		0.75	=	18. Wash			-
	3. Ream		0.50	=	11. Wirelin			=	19. Flow cl			=
	4. Drill Ou	t		-	12. Casing	/Cement		_	20. Wk on	mud pumps		-
	5. Circ. &	Cond.		•	13. Pump (Out Cement		= =	21. Safety	Meeting	0.25	=
	6. Trip		4.00		14. Nipple	-		_	22. Handle	e Tools		_
	7. Rig Serv		0.75		15. Test Bo 16. BOP D			_	23 Other			_
	8. Rig Repair					rill		_	Total Hou	rs	24.00	-
						REMARKS	2					
00:00-04:45	Finish Run i	in the hole				KENIAKA	,					
	Drill from 2		m correcting	deviation w	ith average s	liding 3m ou	t of 13m. Bu	ild rate while	e rotating 2d	eg/30m		
	Function UI	PR, LPR, and	l Annular									
		s. 7 hazards				-	-		-			
										Snake Bite @		
Prev Cost	\$6,33	1,820	Today	\$35	5,781	Total Cost	\$6,30	67,601	Weather:		Plus 11 sunn	У
Foreman		Don Ca	ampbell	.	Rig Phone		709-649-710	16	Mud Type Taken By:		Polymer cooker / Sha	ne Hallev

			Vulc	an M	inerals	s Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ons #1	-	Day:	76		Date:	13-Se	ер-09
Depth:	3070.0	mKB	Progress:	54.0	Drilling:	21.75	hrs ROP,	m/hr:	2.48	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	Drilling @	3083 m.							KB elev:	175.30	m.
the next da	Drill ahead									KB - GL	6.30	
Bit #	Size/Make	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
19	Reed	R30APDH	AP6465	2967		103	40	2X13, 1X14	125			
		Pump 1	Pump 2	Drilling As				3 stage moto		VM tool carrie		
Model		PZ-11	PZ-11		n DC, Jar, 7				Pump Pres		14,600	kPa
Liner	(mm)	165	152	BHA Leng		307.13	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe		127.0	mm	
SPM	3	0	90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%		1.3070	Jet Velocit	y :	90.4	m/sec	True Hydr	aunc HP:	324.0	kW	
		CIID	VEYS				MUD			MIIDAD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	5:44		Gel	MUDAD	CaC03	
2912.43	շրա <u>։</u>	3.94	298.78	NOLLI	East	Density	1110		Caustic	1	Percol	
2926.39		2.87	301.29			Vis.	64		Envirofloc	-	Sulphamic	
2940.21		1.74	289.91			pH	10.6		Kelzan		Т-352	
2953.98		2.62	270.76			Fluid Loss	7.8		Cello		Defoamer	
2966.91		3.62	287.62			P.V.	24.0		Bicarb		2K-7	1
2980.69		3.49	294.09			Y.P.	12.0		Newedge		Sapp	1
2994.76		3,31	306.56			Gel S.	2.5/5/6.6		Drispac		Dyna det	
3008.46		3.64	305.91			Filter Ck	0.5		Desco		Walnut	
3021.91		4.27	302.63	44.77	65.19	Solids %	7.0		Barite		Lime Hydrate	1
3035.44		5.23	301.46	44.52	65.79	Oil	0.000		Lignite		Dyna fiber	
3048.91		6.04	302.28	66.48	-3.95	Ca (mg/l)	40.0		PHPA		Bioside	
3063.35		6.03	302.00	67.29	-5.24	Cl (mg/l)	9800.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	39.7		Supervision		Day Cost	\$226
						XSPolymer	1.1		Mud Van	1	Well Cost	\$223,831
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	llating Vol.	134.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	190	0.00
Today loss	es down hole	0.5	Total hole		Last B	OP Test	11-S	lep-09	Overflow l	Density	11	.00
	es at surface	0.9	Total surf.			sing Test		tating hrs	Flow Rate	,		0.0
Today tota	l losses	1.4	Cumulative	147.4	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
	We	ll Control -	kPa		Но	ole Condition	n kdaN & K	ft/#		Total Gas R	leadings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	14	Torque	10500		ground		27
RSPP #1	45	5530	11000	3045	Drag Dn	13				nection		38
RSPP #2					Hook Load	114			T	'rip	1.	20
				-				_				
	1. Rig up/C)ut		-	9. Slip & C			=	17. Plug B			
	2. Drill		21.75	-	10. Survey		1.00	_	18. Wash			-
	3. Ream			-	11. Wirelin	_		_	19. Flow cl			
	4. Drill Ou			-	12. Casing			_		mud pumps	0.50	
	5. Circ. &	Cond.		-	_	Out Cement		-	21. Safety		0.50	-
	6. Trip	•	0.75	-	14. Nipple	-		=	22. Handle	e 1 oois		-
	7. Rig Serv		0.75	-	15. Test BO			=	23 Other		24.00	-
	8. Rig Rep	аіг		-	16. BOP D	TIII		_	Total Hou	rs	24.00	-
						REMARKS	5					
00:00-24:00	Drilled from	n 3016m to 3	3070 m. Angl	e is building				to 8m to kill	tendency.			
	NT : :1 .	111 1	TDU									
	No incidents			aantrify as -								
Tone: Code			o service the		ischell's Rro	ok 870 m /S	nrout Falls	Friere cov	e @2086m	Snake Bite @	n 2555	
Prev Cost		7,601	Today		1,265	Total Cost), Friars cov 01,866	Weather:		g 2555 Plus 11 sunn	v
110, 0031	Ψυ,ου	,001	Loudy	Ψ	.,_00	- Juni Cost	Ψ0,•τ	,000	Mud Type		Polymer	J
Foreman		Don C	ampbell	-	Rig Phone	,	709-649-710	16	Taken By:		ooker / Sha	ne Halley
			_		_							•

			Vulc	an M	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1	•	Day:	77		Date:	14-S	ер-09
Depth:	3109.0	mKB	Progress:	39.0	Drilling:	22.25	hrs ROP,		1.75	Rig:		am # 11
_	@ 0800 hrs:	Trip to char	nge the bit							KB elev:	175.30	m.
the next da	Change the	bit. Drill ahe	ead							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
19	Reed	R30APDH	AP6465	2967		103	40	2X13, 1X14	125			
		Pump 1	Pump 2	Drilling As	•			3 stage moto		NM tool carri		
Model		PZ-11	PZ-11		n DC, Jar, 7				Pump Pres		14,600	kPa
Liner	(mm)	165	152	BHA Leng		307.13	_m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm , .	Drill Pipe		127.0	mm	
SPM	3,	0	90	D.C. Annu		90.4	_m/min	D.P Annula True Hydr		65.0	m/min kW	
Vol.	m ³ /min @ 95%		1.3070	Jet Velocit	y:	90.4	m/sec	1 rue Hyar	aunc HP:	324.0	KW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:22		Gel		CaC03	
2912.43		3.94	298.78			Density	1110		Caustic		Percol	
2926.39		2.87	301.29			Vis.	61		Envirofloc		Sulphamic	
2940.21		1.74	289.91			pН	10.4		Kelzan	1	T-352	
2953.98		2.62	270.76			Fluid Loss	7.6		Cello		Defoamer	
2966.91		3.62	287.62			P.V.	25.0		Bicarb		2K-7	1
2980.69		3.49	294.09			Y.P.	11.5		Newedge	1	Sapp	
2994.76		3,31	306.56			Gel S.	2.5/5/6		Drispac	1	Dyna det	
3008.46		3.64	305.91	=	1.00	Filter Ck	0.5		Desco	3	Walnut	
3021.91		4.27	302.63	44.77	-1.88	Solids %	7.0		Barite		Lime Hydrate	d
3035.44		5.23	301.46	44.52	-2.83	Oil	0.000		Lignite		Dyna fiber	
3048.91		6.04	302.28	66.48	-3.95	Ca (mg/l)	40.0		PHPA Sawdust		Bioside	
3063.35 3076.72		6.03 5.58	302.00 305.53	67.29 68.06	-5.24 -6.35	Cl (mg/l) MBT	9800.0 17.5		Sawdust Soda Ash			
3090.57		5.16	310.13	68.86	-7.37	Temp	40.4				Day Cost	¢1.002
3090.37		3.10	310.13	00.00	-1.51	XSPolymer			Supervision Mud Van	1	Well Cost	\$1,082 \$224,914
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests		ate	7444		rifuge	ψ22 i,y i i
Total circu		133.6				sing Test		ug-09	Underflow			20.0
	es down hole		Total hole			OP Test		lep-09	Overflow I	•		.00
	es at surface	0.5	Total surf.		Next Ca	sing Test		tating hrs	Flow Rate	m3/min	80	0.0
Today tota	l losses	0.8	Cumulative	148.2	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
					-							
	We	ll Control -	kPa		Но	ole Conditio	n kdaN & K	ft/#		Total Gas F	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	10500	Back	ground		27
RSPP #1	55	6140	11000	3104	Drag Dn	14				nection		38
RSPP #2					Hook Load	114			1	rip	1.	20
	1. Rig up/C)ut		-	9. Slip & C	'nt		=	17. Plug B	ack		-
	2. Drill	, ui	22.25	=	10. Survey		0.75	=	18. Wash			
	3. Ream			-	11. Wirelin			_	19. Flow cl			
	4. Drill Ou	t		-	12. Casing	_		_		mud pumps		-
	5. Circ. &	Cond.		=	13. Pump	Out Cement		=	21. Safety		0.25	•
	6. Trip			-	14. Nipple	Up BOP		_	22. Handle			•
	7. Rig Serv	rice	0.75	-	15. Test Bo	OP & FIT		=	23 Other			•
8. Rig Repair					16. BOP D	rill		=	Total Hou	rs	24.00	•
						DEM DE	7					
00:00-24:00	Drilled from	3070m to 3	R109 m slidin	g 8m/13 to l		then 6m/13		n				
20.00 21.00			wer pipe ram	2	tondency,	, 5111/15	to manital					
			• •									
	No incidents	s. 8 hazards	ID'd.									
Tone: Code	oy Group 81	5 m Chin (Tovo limosto	no 846 m E	icchall's D=s	ok 870 m /6	Incout Falls	Friend occ	a @2086m	Snaka Dita	a 2555	
Prev Cost		1,867	Today		5,841	Total Cost		, Friars cov 47,708	Weather:		g 2555 Plus 11 sunn	v
1	ΨΟ,ΤΟ	_,00.	- Juny	<u>-</u> Ψ*•	, <u>-</u>	_0 0031	ΨΟ	,	Mud Type		Polymer	,
Foreman	:	Don C	ampbell	∃ •	Rig Phone		709-649-710	16	Taken By:		rooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo			•	Day:		_	Date:	16-S	ер-09
Depth:	3120.0	mKB	Progress:	11.0	Drilling:	4.00	hrs ROP,		2.80	Rig:	Stoneha	•
_	@ 0800 hrs:									KB elev:	175.30	
1 -	Drill ahead									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
19	Reed	R30APDH		2967	0.00	103		2X13, 1X14				E-0-CT-PR
20	HC	HC506ZX	7116724	3110		100		6 X 9.5mm	120		, , 21 11	<u> Lociin</u>
20	- 110	Pump 1	Pump 2	Drilling As	sembly.	216mm bit	171mm 7/8		re motor @1	15deg 209n	ım stab sleev	e on motor
Model		PZ-11	PZ-11	_	rrier,NM DC						12,000	kPa
Liner	(mm)	165	152	BHA Leng		307.13	m	Strap:	<u></u>	Board:	12,000	
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM	(1111)	0	90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%		1.3070	Jet Velocit		90.4	m/sec	True Hydr		157.0	kW	
7 01.	III / IIIII @ 75%		1.5070	Jack velocit	, .	70.4	III/SCC	Truc Hyur	aunc III .	137.0		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:18		Gel		CaC03	
2912.43		3.94	298.78			Density	1110		Caustic	2	Percol	
2926.39		2.87	301.29			Vis.	61		Envirofloc		Sulphamic	
2940.21		1.74	289.91			pН	10.2		Kelzan	1	T-352	
2953.98		2.62	270.76			Fluid Loss	6.2		Cello		Defoamer	
2966.91		3.62	287.62			P.V.	28.0		Bicarb		2K-7	1
2980.69		3.49	294.09			Y.P.	16.5		Newedge	3	Sapp	
2994.76		3,31	306.56			Gel S.	3.5/6.5/8		Drispac	3	Dyna det	
3008.46		3.64	305.91			Filter Ck	0.5		Desco		Walnut	
3021.91		4.27	302.63	44.77	-1.88	Solids %	7.0		Barite		Lime Hydrate	2
3035.44		5.23	301.46	44.52	-2.83	Oil	0.000		Lignite		Dyna fiber	
3048.91		6.04	302.28	66.48	-3.95	Ca (mg/l)	40.0		PHPA		Bioside	
3063.35		6.03	302.00	67.29	-5.24	Cl (mg/l)	9800.0		Sawdust			
3076.72		5.58	305.53	68.06	-6.35	MBT	17.5		Soda Ash			
3090.57		5.16	310.13	68.86	-7.37	Temp	40.9		Supervision		Day Cost	\$1,350
3104.00		5.08	311.11	69.66	-8.31	XSPolymen	r 1.1		Mud Van	1	Well Cost	\$226,265
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	139.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	192	20.0
Today losse	es down hole	0.4	Total hole		Last B	OP Test	11-S	lep-09	Overflow I	Density	11	.00
Today losse	es at surface	0.8	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate,	m3/min	80	0.0
Today tota	l losses	0.8	Cumulative	149.4	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
					_							
	We	ell Control -	kPa		Н	ole Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	10500	Backs	ground	0.	27
RSPP #1	55	6140	11000	3104	Drag Dn	14				ection	0.	38
RSPP #2					Hook Load	114			T	rip	1.	20
						•			•		•	
	1. Rig up/C	Out		-	9. Slip & C	Cut	1.00	=	17. Plug B	ack		•
	2. Drill		4.00	-	10. Survey		0.25	=	18. Wash t	o Btm		
	3. Ream		3.00	-	11. Wirelin	ne Logs	-	=	19. Flow ch	iecks		
	4. Drill Ou	t		-	12. Casing	/Cement	-	=	20. Wk on 1	mud pumps		
	5. Circ. &	Cond.		-	13. Pump	Out Cement	<u> </u>	=	21. Safety	Meeting	0.50	
	6. Trip		11.75	-	14. Nipple	Up BOP		_	22. Handle	Tools	3.00	
	7. Rig Serv	ice	0.50	-	15. Test B	OP & FIT	-	=	23 Other			
	8. Rig Repair					rill	-	=	Total Hour	's	24.00	
				-				=				•
00.00.01.1	: D : II - 1 6	2100 : 3	1111 222			REMARKS	5					
	Drilled from				7/0.0.0 :	1 :	'-1 200	. 1 . 3	, 100	0 . 1 .	. •	ICEO/CZY
	Pull out to c						vith 209mm	stab on the m	notor, and 20	9mm stab ab	ove motor, H	IC506ZX
	Run in the h					2994.						
	Ream and w					F /	N: 1 *	IDD 1177	`			
	Drill ahead.									G . 1 . 1944 - 2	2.0555	
_	roy Group 8							,				
Prev Cost	\$6,44	17,708	Today	\$62	2,678	Total Cost	\$6,5	10,386	Weather:		Plus 4 overca	St
E				-	D:_ P!		700 (40 710	· · · · · · · · · · · · · · · · · · ·	Mud Type		Polymer	II''
Foreman		Don C	ampbell		Rig Phone		709-649-710	10	Taken By:	1 erry Bi	ooker / Sha	ne Halley

			Vulc	an M	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	can Investo	an Robinso	ons #1	-	Day:	79		Date:	17-Se	ер-09
Depth:	3180.0	mKB	Progress:	24.0	Drilling:	16.00	hrs ROP,	m/hr:	1.50	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs:	Trip in the	hole							KB elev:	175.30	m.
the next da	Drill ahead	correcting if	required							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
20	HC	HC506ZX	7116724	3110	3180	46	41	6 X 9.5mm	70	4		
		Pump 1	Pump 2	Drilling As	•					.15deg, 209n		
Model		PZ-11	PZ-11		rrier,NM DC				(Pump Pres		12,000	kPa
Liner	(mm)	165	152	BHA Leng		307.13	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe		127.0	mm	
SPM Vol.	m³/min @ 95%	78 1.3000		D.C. Annu		103.0 90.4	m/min m/sec	D.P Annula True Hydr		65.0 157.0	m/min kW	
V OI.	m /min @ 95%	1.3000		Jet Velocit	y:	90.4	III/Sec	True Hyur	aunc mr:	137.0	KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	5:15		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1110		Caustic	2	Percol	
3117.81		5.58	308.46	70.46	-9.27	Vis.	69		Envirofloc		Sulphamic	
3131.54		5.56	301.69	71.22	-10.36	pН	10.5		Kelzan		T-352	
3145.49		5.61	300.79	71.92	-11.52	Fluid Loss	6.4		Cello		Defoamer	
3158.75		5.88	300.50	72.60	-12.66	P.V.	27.0		Bicarb		2K-7	2
						Y.P.	15.0		Newedge		Sapp	
						Gel S.	3/6/7.5		Drispac		Dyna det	
						Filter Ck	0.5		Desco		Walnut	10
						Solids %	7.0		Barite		Lime Hydrate	2
						Oil	0.000 40.0		Lignite		Dyna fiber	
						Ca (mg/l) Cl (mg/l)	9800.0		PHPA	+	Bioside	
						MBT	17.5		Sawdust Soda Ash			
						Temp	37.1		Supervision		Day Cost	\$766
						XSPolymer	1.1		Mud Van	1	Well Cost	\$229,043
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	139.0			•	sing Test	22-A	ug-09	Underflow	Density	192	20.0
Today loss	es down hole	0.2	Total hole		Last Bo	OP Test	11-S	ep-09	Overflow l	Density	11	.00
	es at surface	4.0	Total surf.			sing Test		tating hrs	Flow Rate	,		0.0
Today tota	l losses	0.6	Cumulative	150.5	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
_		ll Control -				le Condition				Total Gas R		
Pump	Strokes	Pressure	MACP	Depth	Drag up	25	Torque	14500		ground		27
RSPP #1 RSPP #2	45	5415	11000	3178	Drag Dn Hook Load	17 117				nection Trip		38 20
KSII #2					1100K L0au	117			1	Пр	1.	20
	1. Rig up/C)ut		=	9. Slip & C	ut		=	17. Plug B	ack		
	2. Drill		16.00	-	10. Survey		0.50	_	18. Wash			•
	3. Ream			=	11. Wirelin	ne Logs		=	19. Flow cl			-
	4. Drill Ou	t		-	12. Casing	Cement		_	20. Wk on	mud pumps		-
	5. Circ. &	Cond.		3	13. Pump (Out Cement	,	=	21. Safety	Meeting	1.00	•
	6. Trip		5.75	='	14. Nipple	Up BOP		=	22. Handle	e Tools		•
	7. Rig Serv	ice	0.75	_	15. Test BO			_	23 Other			
	8. Rig Rep	air		-	16. BOP D	rill		-	Total Hou	rs	24.00	-
						REMARKS						
00:00-17:30	Drilled from	n 3156 to 31	80. ROP slov	ved to 0.3m/	hr. Functione	d Annular aı	nd LPR					
17:30- 24:0	(Pull out of t	he hole to cl	hange bit. Fu	nctioned UP	R							
	8 hazzards I	D'd, no incid	dents									
										Snake Bite @		
Prev Cost	\$6,58	3,445	Today	\$34	1,551	Total Cost	\$6,61	17,996	Weather		lus 1, light ra	iin
F		ъ с		-	D:_ P'		700 (40 710		Mud Type		Polymer	
Foreman		Don C	ampbell		Rig Phone		709-649-710	0	Taken By:	: 1 erry Bi	ooker / Sha	ne Halley

			Vulc	an Mi	inerals	s Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1	_	Day:	80		Date:	18-S	ер-09
Depth:	3202.0	mKB	Progress:	22.0	Drilling:	9.25	hrs ROP,		2.40	Rig:		am # 11
_	@ 0800 hrs:	Drill ahead		ng 5m/13m			,			KB elev:	175.30	m.
	Drill ahead									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
20	HC	HC506ZX	7116724	3110	3180	46	41	6 X 9.5mm	70	4	2-3-WT-A-	X-2-BC-PR
21	HC	DX-38-CD	5135908	3180		22	9		120	15		
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	r @1.15deg,	NM tool car	rier,	
Model		PZ-11	PZ-11	NM DC, 20	9mm SS,5 X	165mm DC	, Jar, 5165m	m DC, 8 HW	Pump Pres	sure:	12,000	kPa
Liner	(mm)	165	152	BHA Leng	th:	277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla	r O.D.	165.0	mm	Drill Pipe (127.0	mm	
SPM		78		D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%	1.3000		Jet Velocity	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
			VEYS		T		MUD	1		MUD AD	DITIVES	1
	pth	Drift	Azimuth	North	East	Time	10:08		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1110		Caustic	3	Percol	
3117.81		5.58	308.46	70.46	-9.27	Vis.	67		Envirofloc		Sulphamic	
3131.54	-	5.56	301.69	71.22	-10.36	pH Elada Laaa	10.4		Kelzan	-	T-352	1
3145.49	-	5.61	300.79	71.92	-11.52	Fluid Loss	6.8 27.0		Cello	-	Defoamer	1
3158.75 3172.05		5.88 5.95	300.50	72.60	-12.66	P.V. Y.P.			Bicarb	1	2K-7	1
3172.03		6.82	303.15 301.53	73.32 74.17	-13.82 -15.16	Gel S.	13.5 3/6/7.5		Newedge	1	Sapp Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Drispac Desco	1	Walnut	6
3200.41		0.07	233.04	13.09	-10.73	Solids %	7.0		Barite	35	Lime Hydrate	1
						Oil	0.000		Lignite	33	Dyna fiber	1
						Ca (mg/l)	40.0	1	PHPA	1	Bioside	
						Cl (mg/l)	9800.0		Sawdust		Diosiuc	
						MBT	17.5		Soda Ash			
						Temp	40.1		Supervision		Day Cost	\$2,562
						XSPolymer	1.1		Mud Van	1	Well Cost	\$231,605
Mud	losses Surfa	ce & Down	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	136.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	192	20.0
Today losse	es down hole	1.0	Total hole		Last B	OP Test	11-S	lep-09	Overflow I	Density	11	.05
Today losse	es at surface	2.1	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate,	m3/min	80	0.0
Today tota	l losses	3.1	Cumulative	153.6	Next B	OP Test	25-S	lep-09	Operating	hours	24	1.0
					•							
	We	ll Control -	kPa			ole Condition	n kdaN & K	ft/#			Readings (%))
Pump	Strokes	Pressure	MACP	Depth	Drag up	22	Torque	10500		ground		27
RSPP #1	45	5415	11000	3178	Drag Dn	17				ection		27
RSPP #2					Hook Load	118			T	rip	1.	20
	1 70 //			_	0 (7) 0 (_	45 DI D			•
	1. Rig up/0	Jut	0.25	-	9. Slip & C		1.00	=	17. Plug B			-
	2. Drill		9.25	-	10. Survey			_	18. Wash			
	3. Ream 4. Drill Ou			-	11. Wirelin 12. Casing	_		_	19. Flow cl			
	5. Circ. &			-	_	Out Cement		-		mud pumps	1.00	-
	6. Trip	Conu.	9.00	=	14. Nipple			=	21. Safety 22. Handle		2.50	-
	7. Rig Serv	rico	0.75	=	15. Test B	-		=	23 Other	e 1 oois	2.30	-
	8. Rig Rep		0.75	-	16. BOP D			=	Total Hour	•e	24.00	
	o. Rig Rep	411	0.50	-	10. DOI D	1111		_	Total Hour		24.00	-
						REMARKS	S					
00:00-13:15	Continued to	o pull out an	d change bit	. Change mo				to 3152. Pred	caution ream	to 3180m. F	unction bline	l Rams
13:15-14:00	Lay out 2 si	ngles. Tighte	en the Upper	kelly cock.								
14:00-24:00	Drill from 3	180 to 3202	m with 5m o	f sliding. Fur	nction annula	r and LPR						·
		-	-	-		-	-	-	-			-
	8 hazards II											
	oy Group 8											
Prev Cost	\$6,61	7,996	Today	\$64	,164	Total Cost	\$6,68	82,160	Weather:		us 13, light r	ain
Foreman		Don Ca	ampbell	-	Rig Phone	,	709-649-710)6	Mud Type Taken By:	Terry Bi	Polymer rooker / Sha	ne Hallev

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	81		Date:	19-S	ер-09
Depth:	3249.0	mKB	Progress:	47.0	Drilling:	21.75	hrs ROP,	m/hr:	2.16	Rig:	Stoneh	am # 11
Operation	@ 0800 hrs:	Drill ahead	at 3262 slidi	ng 6m/13m						KB elev:	175.30	m.
the next da	Drill ahead									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
21	HC	DX-38-CD	5135908	3180		22	9		120	15		
		D 1	D 2	D.::11: A .		216 1.:4	171 7/0.	2 -44-	. @1 151	NM 41		
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	•			m DC, 8 HW		, NM tool car	12,000	kPa
Liner	(mm)	165	152	BHA Leng		277.73	<u>n</u>	Strap:	1 ump 1 res	Board:	12,000	ма
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM	, ,		90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%		1.3000	Jet Velocit	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
				_							-"	
			VEYS	1			MUD	1		MUD AD	DITIVES	1
	pth	Drift	Azimuth	North	East	Time	9:39		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1120		Caustic	2	Percol	
3117.81 3131.54		5.58 5.56	308.46 301.69	70.46 71.22	-9.27 -10.36	Vis. pH	69 11.2		Envirofloc		Sulphamic T-352	1
3145.49		5.61	300.79	71.22	-10.50	Fluid Loss	7.2		Kelzan Cello		Defoamer	1
3158.75		5.88	300.79	72.60	-12.66	P.V.	28.0		Bicarb		2K-7	2
3172.05		5.95	303.15	73.32	-13.82	Y.P.	14.0		Newedge	1	Sapp	
3186.28		6.82	301.53	74.17	-15.16	Gel S.	3/6/7.5		Drispac	1	Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Desco		Walnut	
3213.77		9.09	297.82	76.04	-18.50	Solids %	7.5		Barite		Lime Hydrate	2
3227.96		9.77	295.82	77.09	-20.58	Oil	0.000		Lignite		Dyna fiber	
3241.10		9.68	295.88	78.08	-22.62	Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9800.0		Sawdust			
						MBT	17.5		Soda Ash		D. C. 4	***
						Temp XSPolymer	40.1		Supervision Mud Van	1	Day Cost Well Cost	\$986 \$232,592
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests		ate	iviuu van	1	rifuge	Ψ232,372
Total circu		135.9				sing Test		ug-09	Underflow			20.0
	es down hole	0.7	Total hole			OP Test		lep-09	Overflow l	•		10
Today losse	es at surface	1.4	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate	,m3/min	80	0.0
Today total	l losses	2.1	Cumulative	155.7	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
					_							
		ll Control -				ole Conditio					Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	22	Torque	10500		ground		27
RSPP #1 RSPP #2	45	5415	11000	3178	Drag Dn Hook Load	17 1 118				nection rip		27 20
ROIT #2					HOOK LOAG	110			_	11р	1.	20
	1. Rig up/C	Out		-	9. Slip & (Cut		_	17. Plug B	ack		
	2. Drill		21.75	=	10. Survey		0.75	=	18. Wash			•
	3. Ream			-	11. Wirelin	ne Logs		_	19. Flow cl	hecks		
	4. Drill Ou	t		_	12. Casing			_	20. Wk on	mud pumps		
	5. Circ. &	Cond.		=	_	Out Cement		_	21. Safety		0.75	-
	6. Trip			=	14. Nipple	-		=	22. Handle	e Tools		
	7. Rig Serv		0.75	-	15. Test Bo 16. BOP D			-	23 Other		24.00	-
	8. Rig Repa	air		-	10. BOP D	TIII		=	Total Hou	rs	24.00	
	REMARKS											
00:00-13:15	Drill from 3	202 to 3249	m with 5m o	f sliding. Fu	nction annula							
	0 hogJ. IP	Vd no !: 1	anto.									
Tone: Code	8 hazards ID oy Group 81			ne 846 m E	ischell's Rro	nk 870 m /6	Sprout Falls	Friere cov	e @2086m	Snake Rite (า 2555	
Prev Cost		2,160	Today		,674	Total Cost), Friars cov 16,834	Weather:		lus 8. overca	st
1	ΨΟ,ΟΟ	_,	- van j	_ φυ	,	_0001	Ψ0,7	,00.	Mud Type		Polymer	
Foreman	•	Don Ca	ampbell	=	Rig Phone		709-649-710	16	Taken By:		ooker / Sha	ne Halley

			Vulc	an M	ineral	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1	-	Day:	82		Date:	20-Se	ер-09
Depth:	3282.0	mKB	Progress:	33.0	Drilling:	21.75	hrs ROP,	m/hr:	2.16	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	Pull out of t	the hole due t	to a swivel q	uill failure.					KB elev:	175.30	m.
	Repair the s									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
21	HC	DX-38-CD	5135908	3180		102	9		120	15		
		Down 1	Dumn 2	Drilling As	oombly.	216mm hit	171mm 7/0.	2 stage motor	m @1 15doo	NM tool oor	mi om	
Model		Pump 1 PZ-11	Pump 2 PZ-11	_	Sembly: 9mm SS,5 X					, NM tool car	12,000	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:	- rump rres	Board:	12,000	. KI a
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (O.D.	127.0	mm	•
SPM			90	D.C. Annu	lar Vel.:	103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%		1.3000	Jet Velocit	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
	_		VEYS	T			MUD			MUD AD	DITIVES	I
	pth	Drift	Azimuth	North	East	Time	9:55		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1120 67		Caustic	1	Percol	
3117.81 3131.54		5.58 5.56	308.46 301.69	70.46 71.22	-9.27 -10.36	Vis. pH	10.6		Envirofloc Kelzan		Sulphamic T-352	
3145.49		5.61	300.79	71.92	-11.52	Fluid Loss	7.4		Cello		Defoamer	
3158.75		5.88	300.50	72.60	-12.66	P.V.	27.0		Bicarb		2K-7	1
3172.05		5.95	303.15	73.32	-13.82	Y.P.	14.0		Newedge	1	Sapp	
3186.28		6.82	301.53	74.17	-15.16	Gel S.	3/5.5/7		Drispac	2	Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Desco		Walnut	
3213.77		9.09	297.82	76.04	-18.50	Solids %	7.5		Barite		Lime Hydrate	1
3227.96		9.77	295.82	77.09	-20.58	Oil	0.000		Lignite	1	Dyna fiber	
3241.10		9.68	295.88	78.08	-22.62	Ca (mg/l)	40.0		PHPA		Bioside	
3254.00		8.45	295.57	79.98	24.49	Cl (mg/l) MBT	9800.0		Sawdust			
3268.00		7.96	295.42	79.84	26.29		17.5		Soda Ash		D C4	0.50.5
						Temp XSPolymer	40.6		Supervision Mud Van	1	Day Cost Well Cost	\$695 \$233,387
Mud	losses Surfa	ce & Down	l hole Estimat	es m3	BOP & C	asing Tests		ate	ivida van	1	rifuge	ψ233,361
Total circu		136.6				sing Test		ug-09	Underflow			0.00
	es down hole	1.2	Total hole			OP Test		ep-09	Overflow l	•		10
Today losse	es at surface	2.3	Total surf.		Next Ca	sing Test	1000 ro	tating hrs	Flow Rate	,m3/min	80	0.0
Today tota	l losses	3.5	Cumulative	159.2	Next B	OP Test	25-S	ep-09	Operating	hours	24	1.0
_		ll Control -				ole Condition	1			Total Gas R		
Pump	Strokes	Pressure	MACP	Depth	Drag up	22	Torque	10500		ground		27
RSPP #1 RSPP #2	45	5415	11000	3178	Drag Dn Hook Load	17 1 118				nection Trip		27 20
KSII #2					1100K L0au	110			1	Пр	1.	20
	1. Rig up/C	Out		-	9. Slip & (Cut		=	17. Plug B	ack		-
	2. Drill	,	21.00	-	10. Survey		1.25	_	18. Wash			-
	3. Ream			•	11. Wirelin			=	19. Flow cl	hecks		•
	4. Drill Ou	t		•	12. Casing	/Cement		= =	20. Wk on	mud pumps		•
	5. Circ. &	Cond.			_	Out Cement		_	21. Safety		1.00	
	6. Trip				14. Nipple	-		=	22. Handle	e Tools		
	7. Rig Serv		0.75	•	15. Test Bo 16. BOP D			=	23 Other		24.00	-
	8. Rig Repair					rill		=	Total Hou	rs	24.00	-
						REMARKS						
00:00-13:15	Drill from 3	249 to 3282	m with 5m o	f sliding. BC	P drill with			ec. Function	annular and	HCR. Functi	on LPR	
	-	-	-	-					-			
	0 hog1. Tr	Vd. no !: 1	amto.									
Tons: Code	8 hazards II			ne 846 m F	ischell's Rro	ok 870 m /S	hrout Falle	Frigre cov	e @2086m	Snake Bite @	0 2555	
Prev Cost		6,834	Today		1,160	Total Cost		50,994	Weather:		Plus 9, Clear	•
		,			,			7 :	Mud Type		Polymer	
Foreman		Don Ca	ampbell	-	Rig Phone		709-649-710	6	Taken By:		ooker / Sha	ne Halley

			Vulo	an M	inerals	s Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	83		Date:	21-Se	ер-09
Depth:	3284.0	mKB	Progress:	2.0	Drilling:	1.25	hrs ROP,		1.60	Rig:	Stoneha	-
_	@ 0800 hrs:				g .					KB elev:	175.30	
	Wait on del		•	5						KB - GL	6.30	
Bit #	-	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
21	HC	DX-38-CD	5135908		3284			3X11.1	120	15	2-2-BT-A-E	
	110	DA 30 CD	3133700	3100	5201	101	55	32111.1	120	15	2201 111	o in nic
		Pump 1	Pump 2	Drilling As	sembly.	216mm bit	171mm 7/8·	3 stage moto	r @1 15deo	NM tool car	rier	
Model		PZ-11	PZ-11		9mm SS,5 X						13,200	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:	1 ump 1 res	Board:	13,200	M a
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe	O D	127.0	mm	
SPM	(IIIII)	217	90	D.C. Annu		103.0	m/min	D.P Annul		65.0	m/min	
Vol.	m³/min @ 95%		1.3000	Jet Velocit		54.7	m/sec	True Hydr		157.0	kW	
V 01.	III / IIIII @ 75%		1.5000	Jack velocit	y •	34.7	III/SCC	Truc Hyur	aunc III .	137.0	_ K * * *	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	10:15		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1125		Caustic	1	Percol	
3117.81		5.58	308.46	70.46	-9.27	Vis.	68		Envirofloc		Sulphamic	
3131.54		5.56	301.69	71.22	-10.36	pН	10.9		Kelzan		T-352	4
3145.49		5.61	300.79	71.92	-11.52	Fluid Loss	6.8		Cello		Defoamer	1
3158.75		5.88	300.50	72.60	-12.66	P.V.	26.0		Bicarb		2K-7	1
3172.05		5.95	303.15	73.32	-13.82	Y.P.	15.0		Newedge	2	Sapp	
3186.28		6.82	301.53	74.17	-15.16	Gel S.	3/5.5/7		Drispac	2	Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Desco		Walnut	
3213.77		9.09	297.82	76.04	-18.50	Solids %	7.5		Barite		Lime Hydrate	1
3227.96		9.77	295.82	77.09	-20.58	Oil	0.000		Lignite	2	Dyna fiber	
3241.10		9.68	295.88	78.08	-22.62	Ca (mg/l)	40.0		PHPA	1	Bioside	
3254.00		8.45	295.57	79.98	24.49	Cl (mg/l)	9800.0		Sawdust			
3268.00		7.96	295.42	79.84	26.29	MBT	17.5		Soda Ash			
						Temp	31.8		Supervision		Day Cost	\$2,642
					non a c	XSPolymen			Mud Van	1	Well Cost	\$235,929
	l losses Surfa		hole Estimat	tes m3		asing Tests		ate			rifuge	
	ılating Vol.	141.6				sing Test		ug-09	Underflow			0.00
	es down hole	0.6	Total hole			OP Test		ep-09	Overflow I			10
	es at surface	1.5	Total surf.	161.2		sing Test		tating hrs	Flow Rate,			0.0 1.0
Today tota	ii iosses	2.1	Cumulativ	161.3	Next B	OP Test	05-C	Oct-09	Operating	nours	22	1.0
	XX/-	II C41	1.D.,		TT.	.l. C	l.J. N 0 17	E4 III		T-4-1 C T	(0/)	
D	Strokes	ll Control - Pressure	MACP	Donath		22	n kdaN & K	10500	Dl.	ground	Readings (%)	27
Pump RSPP #1	45	4560	11000	Depth 3281	Drag up Drag Dn	17	Torque	10500		ground nection		27 27
RSPP #2	43	4300	11000	3201	Hook Load					rip		20
KSII #2					HOOK LOAG	110		<u> </u>		Пр	1.	20
	1. Rig up/C	Out		-	9. Slip & C	Cut		-	17. Plug B	ack		•
	2. Drill		1.25	=	10. Survey			=	18. Wash	to Btm		•
	3. Ream			_	11. Wirelin	ne Logs		_	19. Flow cl	iecks	•	
	4. Drill Ou	t		_	12. Casing	/Cement		_	20. Wk on	mud pumps		
	5. Circ. &	Cond.		_	13. Pump	Out Cement	t	_	21. Safety	Meeting	0.25	
	6. Trip			=	14. Nipple			=	22. Handle	e Tools		
	7. Rig Service					OP & FIT	5.50	=	23 Other			
	8. Rig Repair <u>17.00</u>					rill		_	Total Hour	'S	24.00	
	REMARKS											
00:00-01:1:	5 Drill from 3	282 to 3284:	m Developed	d a leak at th	e swivek Qui	11						
01:15-11:4:	5 Pull out of t	he hole brea	k down and	lay out Swiv	el, and kelly							
	0 Wait on Sw						-			-	-	•
18:00-23:30	0 BOP pressu					P, Stabbing	valve, and cl	hoke manifo	ld valves to	1400 and 110	00kPa. Annu	ılar 11000
			iss report for									
	roy Group 8											
Prev Cost	\$6,75	0,994	Today	\$28	3,935	Total Cost	\$6,77	79,929	Weather:		Plus 9, Clear	
_		P ~		=	D' P'		<u></u>		Mud Type		Polymer	TT. "
Foreman		Don Ca	ampbell		Rig Phone		709-649-710	0	Taken By:	1 erry Bi	rooker / Sha	ne Halley

			Vulc	an Mi	ineral	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:	_	-	Date:	22-S	ep-09
Depth:	3284.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, r		0.00	Rig:	Stoneha	•
-	@ 0800 hrs:		•	Swivel						KB elev:	175.30	
	Wait on deli				•	•				KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
21	HC	DX-38-CD	5135908	3180	3284	104	53	3X11.1	120	15	2-2-BT-A-E	E-0-TR-RIG
		Dm 1	Darman 2	Theiling Ac	L1,,,	216 hit	171 7/0.	2 -ta mata	@1.15dag	MM tool oot	<u> </u>	
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	•	216mm bit, X 165mm DC.				, NM tool car		kPa
Liner	(mm)	165	152	BHA Lengt			, Jar, 5165iiii m	Strap:	Pumpries	Soure: Board:	13,200	Kra
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (O.D.		mm	
SPM	(11111)		90	D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m³/min @ 95%			Jet Velocity			m/sec	True Hydra			kW	ļ
				·								
			VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	7:03	<u> </u>	Gel		CaC03	<u> </u>
3104.38	<u> </u> !	5.08	311.11	69.66	-8.31	Density	1115	ļ	Caustic	2	Percol	
3117.81	<u> </u> !	5.58	308.46	70.46	-9.27	Vis.	24	<u> </u>	Envirofloc		Sulphamic	
3131.54	ļ!	5.56	301.69	71.22	-10.36	pH	11.8	<u> </u>	Kelzan	├ ──	T-352	1
3145.49	ļ!	5.61	300.79	71.92	-11.52	Fluid Loss	7.2	<u> </u>	Cello	 	Defoamer	
3158.75	 	5.88	300.50	72.60	-12.66	P.V.	26.0 11.0	 	Bicarb	 	2K-7	1
3172.05 3186.28	 	5.95 6.82	303.15 301.53	73.32 74.17	-13.82 -15.16	Y.P. Gel S.	4/8.5/11	 	Newedge	+	Sapp Dyna det	
3200.41	 	8.09	299.04	75.09	-15.16	Filter Ck	0.5	 	Drispac Desco	+	Dyna det Walnut	
3213.77	 	9.09	299.04	76.04	-18.50	Solids %	9.4	 	Desco Barite	40	Walnut Lime Hydrate	1
3227.96	 	9.77	295.82	77.09	-20.58	Oil	0.000	 	Lignite	70	Dyna fiber	1
3241.10	+	9.68	295.88	78.08	-20.58	Ca (mg/l)	40.0	 	PHPA	+	Bioside	
3254.00	+	8.45	295.57	79.98	24.49	Cl (mg/l)	9600.0		Sawdust	+	Diosiac	
3268.00	 	7.96	295.42	79.84	26.29	MBT	15.0	 	Soda Ash	+		ſ
	 					Temp	25.5	 	Supervision	+	Day Cost	\$2,128
						XSPolymer	1.1	<u> </u>	Mud Van	1	Well Cost	\$238,057
Mud	losses Surfa	ce & Down	nole Estimat	tes m3	BOP & C	Casing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	123.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	190	0.00
Today losse	es down hole		Total hole		Last B	OP Test	21-S	ep-09	Overflow I	Density	11	10
_	es at surface		Total surf.			asing Test		ating hrs	Flow Rate,	,		0.0
Today total	l losses	0.0	Cumulative	161.3	Next B	OP Test	05-O	Oct-09	Operating	hours	24	4.0
<u> </u>												
		ell Control -				ole Condition					Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	22	Torque	10500	· ·	ground	0.2	
RSPP #1	45	4560	11000	3281	Drag Dn	17	 	 		nection	0.3	
RSPP #2					Hook Load	118			1	rip	1.2	20
1	1. Rig up/O	7 -14		-	9. Slip & C	C-14		-	17. Plug B	to alz		
1	2. Drill	Jui	1.25	=	9. Survey			=	17. Plug B			i.
1	3. Ream		1,40	=	10. Survey			=	19. Flow ch			
İ	4. Drill Out	ıf		-	12. Casing			-		mud pumps		
1	5. Circ. & 0			=	_	Out Cement		=	21. Safety		0.25	
İ	6. Trip	001111		-	14. Nipple			-	22. Handle			
1	7. Rig Serv	vice		•	15. Test Bo	-	5.50	=	23 Other	•		
1	8. Rig Repa		17.00	•	16. BOP D	rill		•	Total Hour	rs	24.00	
-0.00.04.00						REMARKS						
00:00-24:00) Wait on Swi	ivel repair										
 												
 	4 hazards II	1/d 2 near m	iss reports. S	hackle failu	re while han	ging block, cu	anhoard doo	r fell off.				
Tops: Codr									e @2086m.	Snake Bite @	2555	
Prev Cost		79,929	Today		7,853	Total Cost	•	97,782	Weather:		Plus 9, Clear	ſ
1				-	,				Mud Type		Polymer	
Foreman	•	Don C	ampbell	•	Rig Phone	-	709-649-710	6	Taken By:	Terry Bi	rooker / Shai	ne Halley

			Vulc	an M	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	85		Date:	23-S	ер-09
Depth:	3284.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP,		0.00	Rig:	Stoneha	
	@ 0800 hrs:									KB elev:	175.30	
_	Wait on deli		•							KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
21	HC	DX-38-CD	5135908	3180	3284	104	53	3X11.1	120	15	2-2-BT-A-F	E-0-TR-RIG
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 7/8:	3 stage moto	or @1.15deg	, NM tool car	rier,	
Model		PZ-11	PZ-11		9mm SS,5 X	. 165mm DC	, Jar, 5165m	m DC, 8 HW	Pump Pres	ssure:	13,200	kPa
Liner	(mm)	165	152	BHA Leng	th:	277.73	m	Strap:		_Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM	2		90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%		1.3000	Jet Velocit	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
		CEID	E7E7E7C			T	N. FETTO			MIDAD	DITTI	
D-	41-		VEYS	Ni4l.	F4	T!	MUD		a 1	MUD AD	DITIVES	
3104.38	pth	Drift 5.08	Azimuth 311.11	North 69.66	-8.31	Time Density	7:03 1115		Gel Caustic		CaC03	
3117.81		5.58	308.46	70.46	-9.27	Density Vis.	24		Envirofloc	+	Percol Sulphamic	
3131.54		5.56	301.69	71.22	-10.36	pH	11.8		Kelzan	+	Т-352	1
3145.49		5.61	300.79	71.22	-10.50	Fluid Loss	7.2		Cello		Defoamer	1
3158.75		5.88	300.79	72.60	-12.66	P.V.	26.0		Bicarb		2K-7	1
3172.05		5.95	303.15	73.32	-13.82	Y.P.	11.0		Newedge		Sapp	1
3186.28		6.82	301.53	74.17	-15.16	Gel S.	4/8.5/11		Drispac		Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Desco		Walnut	
3213.77		9.09	297.82	76.04	-18.50	Solids %	9.4		Barite		Lime Hydrate	1
3227.96		9.77	295.82	77.09	-20.58	Oil	0.000		Lignite		Dyna fiber	
3241.10		9.68	295.88	78.08	-22.62	Ca (mg/l)	40.0		PHPA		Bioside	
3254.00		8.45	295.57	79.98	24.49	Cl (mg/l)	9600.0		Sawdust			
3268.00		7.96	295.42	79.84	26.29	MBT	15.0		Soda Ash			
						Temp	25.5		Supervision		Day Cost	
						XSPolymen	1.1		Mud Van	1	Well Cost	\$238,057
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & Ca	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	123.0				sing Test		.ug-09	Underflow		190	0.00
	es down hole		Total hole			OP Test		ep-09	Overflow			10
	es at surface		Total surf.	444.0		sing Test		ating hrs	Flow Rate			0.0
Today total	losses	0.0	Cumulative	161.3	Next B	OP Test	05-C	Oct-09	Operating	hours	24	1.0
								0.111		m . 10 n	71 (0/)	
T.		ll Control -		D (1			n kdaN & K		ъ.	Total Gas R		
Pump RSPP #1	Strokes 45	Pressure 4560	MACP 11000	Depth 3281	Drag up Drag Dn	22 17	Torque	10500		ground nection	0.	27
RSPP #2	43	4300	11000	3201	Hook Load					rip		20
ROIT #2					HOOR LOUG	110				ПР	1.	
	1. Rig up/C)ut		=	9. Slip & C	Cut		=	17. Plug B	Back		
	2. Drill			-	10. Survey			_	18. Wash			
	3. Ream			=	11. Wirelin			=	19. Flow cl			
	4. Drill Ou	t		=	12. Casing	_	-	=	20. Wk on	mud pumps		
	5. Circ. &	Cond.		-	13. Pump (Out Cement		-	21. Safety	Meeting		
	6. Trip			-	14. Nipple	Up BOP		-	22. Handl			
	7. Rig Serv	rice		3	15. Test Bo	OP & FIT		=	23 Other			
	8. Rig Repa	air	24.00	='	16. BOP D	rill		= _	Total Hou	rs	24.00	
						REMARKS	5					
00:00-24:00	Wait on Swi	ivel repair										
	No incidents	S										
Tops: Codr			Cove limesto	ne 846 m, F	ischell's Bro	ok 870 m, (S	Sprout Falls	, Friars cov	e @2086m.	Snake Bite @	2555	
Prev Cost		4,592	Today		3,257	Total Cost		7,849	Weather		Plus 9, Clear	
		•		_					Mud Type		Polymer	
Foreman	•	Don Ca	ampbell		Rig Phone		709-649-710	6	Taken By	: Terry Bi	ooker / Sha	ne Halley

			Vulc	an Mi	inerals	Daily	Drill	ing Re	port			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	86		Date:	24-Se	ep-09
Depth:	3284.0	mKB	Progress:	0.0	Drilling:	0.00	hrs ROP, 1	m/hr:	0.00	Rig:	Stoneha	
Operation	@ 0800 hrs:	Drilling @	3282 m.							KB elev:	175.30	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
21	HC	DX-38-CD	5135908	3180	3284	104	53	3X11.1	120	15	2-2-BT-A-E	-0-TR-RIG
22	Reed	R34APDH	AN2958	3284								
		Pump 1	Pump 2	Drilling As				3 stage moto				
Model		PZ-11	PZ-11			, Jar, 5165m	,		Pump Pres		13,200	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (mm	
SPM	3		90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%		1.3000	Jet Velocity	y:	54.7	m/sec	True Hydra	aunc HP:	157.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3104.38		5.08	311.11	69.66	-8.31	Density	1115		Caustic		Percol	
3117.81		5.58	308.46	70.46	-9.27	Vis.	68		Envirofloc		Sulphamic	
3131.54		5.56	301.69	71.22	-10.36	pН	11.2		Kelzan		T-352	
3145.49		5.61	300.79	71.92	-11.52	Fluid Loss	7.5		Cello		Defoamer	
3158.75		5.88	300.50	72.60	-12.66	P.V.	26.0		Bicarb		2K-7	1
3172.05		5.95	303.15	73.32	-13.82	Y.P.	12.5		Newedge		Sapp	
3186.28		6.82	301.53	74.17	-15.16	Gel S.	3/6/7		Drispac		Dyna det	
3200.41		8.09	299.04	75.09	-16.75	Filter Ck	0.5		Desco		Walnut	
3213.77		9.09	297.82	76.04	-18.50	Solids %	7.0		Barite		Lime Hydrate	d
3227.96		9.77	295.82	77.09	-20.58	Oil	0.000		Lignite		Dyna fiber	
3241.10		9.68	295.88	78.08	-22.62	Ca (mg/l)	40.0		PHPA		Bioside	
3254.00		8.45	295.57	79.98	24.49	Cl (mg/l)	9600.0		Sawdust			
3268.00		7.96	295.42	79.84	26.29	MBT	15.0		Soda Ash		D. C. 4	****
	-					Temp XSPolvmer	25.5 1.1		Supervision	1	Day Cost Well Cost	\$101
Mud	logged Cumfo	ac & Down	holo Estimot		DOD 8. C			ate	Mud Van	•		\$238,188
	losses Surfa		noie Esumai	es m5		asing Tests			T I J	Centi		0.0
	ılating Vol. es down hole	123.0 0.0	Total hole			sing Test OP Test		ug-09 ep-09	Underflow Overflow I		190	
	es at surface	0.0	Total surf.			sing Test		ating hrs	Flow Rate,	•	80	
Today tota		0.0	Cumulative	161.3		OP Test		oct-09	Operating		24	
roung tom	1 100000	0.0	Cummun	101.0	T (ent 2	01 1000	02 0		operating			.0
	We	ll Control -	kPa		Но	ole Condition	ı kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	22	Torque					
RSPP #1	45	4560		-				10500	Backs	round	0.	27
		4300	11000	3281	Drag Dn	17	Torque	10500	Backg Conn	ground ection	0.:	
RSPP #2		4300	11000	3281	Drag Dn Hook Load		Torque	10500	Conn	,		27
RSPP #2		4300	11000	3281			Torque	10500	Conn	ection	0.3	27
RSPP #2	1. Rig up/0		11000	3281		118	Torque	10500	Conn	ection rip	0.3	27
RSPP #2	1. Rig up/C		11000	3281	Hook Load	118 Cut	Torque	10500	Conn	ection rip ack	0.3	27
RSPP #2	- ·		11000	3281	Hook Load 9. Slip & C 10. Survey 11. Wirelin	118 Cut ne Logs	Torque	10500	Conn Tr	ection rip ack o Btm	0.3	27
RSPP #2	2. Drill 3. Ream 4. Drill Ou	Out t	11000	3281	9. Slip & C 10. Survey 11. Wirelii 12. Casing	118 Cut ne Logs /Cement	Torque	10500	17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t	ection rip ack o Btm ecks mud pumps	0.3	27
RSPP #2	2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Out t	11000	3281	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C	118 Cut ne Logs /Cement Out Cement	Torque	10500	17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety	ection rip ack o Btm ecks nud pumps Meeting	0.3	27
RSPP #2	 Drill Ream Drill Ou Circ. & Trip 	Out t Cond.	11000	3281	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump C 14. Nipple	118 Cut ne Logs /Cement Out Cement Up BOP	Zvrque	10500	17. Plug B. 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	ection rip ack o Btm ecks nud pumps Meeting	0.3	27
RSPP #2	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Out t Cond.		3281	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	7 Orque	10500	7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
RSPP #2	 Drill Ream Drill Ou Circ. & Trip 	Out t Cond.	24.00	3281	9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump C 14. Nipple	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT	ZVIQUE	10500	17. Plug B. 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	ection rip ack o Btm ecks mud pumps Meeting Tools	0.3	27
RSPP #2	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Out t Cond.		3281	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	118 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill		10500	7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Dut t Cond. rice air		3281	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT		10500	7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
00:00-15:30	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	t Cond. vice air		3281	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	118 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill			7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
00:00-15:3(15:30-16:4: 16:45-19:0(2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep. D Wait on Sw 5 Pull out of P D Make up ins	t Cond. rice air	24.00		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	118 Cut ne Logs (Cement Out Cement Up BOP OP & FIT rill REMARKS		10500	7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
00:00-15:30 15:30-16:45 16:45-19:00 19:00-20:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep D Wait on Sw 5 Pull out of P D Make up ins C Continue to	t Cond. rice air ivel tole totle tert bit mud wait on swi	24.00		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	118 Cut ne Logs (Cement Out Cement Up BOP OP & FIT rill REMARKS			7. Plug B: 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
00:00-15:30 15:30-16:45 16:45-19:00 19:00-20:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep D Wait on Sw 5 Pull out of P D Make up ins Continue to D Make up sw	t Cond. rice air ivel nole sert bit mud wait on swi	24.00		Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	118 Cut ne Logs (Cement Out Cement Up BOP OP & FIT rill REMARKS		10500	Conn 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting Tools	01.	27
00:00-15:30 15:30-16:4: 16:45-19:00 19:00-20:00 20:00-24:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	t Cond. rice air ivel cole sert bit mud wait on swir rivel and serres reported.	24.00 motor and divel	rectional too	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	m.		Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	ection rip ack o Btm ecks mud pumps Meeting Tools	24.00	27
00:00-15:30 15:30-16:45 16:45-19:00 20:00-24:00 Tops: Cod n	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep D Wait on Sw D Ull out of P D Make up ins O Continue to D Make up sw No incident roy Group 8:	t Cond. vice air ivel sole sert bit mud wait on swi vivel and services reported. 15 m, Ship (24.00 motor and divel vice. Cove limesto	rectional too	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS hole to 302 p	m.	, Friars cove	Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on i 21. Safety 22. Handle 23 Other Total Hour	ection rip ack o Btm ecks mud pumps Meeting Tools s	24.00 24.555	27 20
00:00-15:30 15:30-16:4: 16:45-19:00 19:00-20:00 20:00-24:00	2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep D Wait on Sw D Ull out of P D Make up ins O Continue to D Make up sw No incident roy Group 8:	t Cond. rice air ivel cole sert bit mud wait on swir rivel and serres reported.	24.00 motor and divel	rectional too	9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	118 Cut ne Logs //Cement Out Cement Up BOP OP & FIT rill REMARKS	m.		Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	ection rip ack o Btm ecks mud pumps Meeting Tools s	24.00	27 20

			Vulc	an Mi	inerals	s Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	87		Date:	25-Se	ер-09
Depth:	3315.0	mKB	Progress:	31.0	Drilling:	16.75	hrs ROP,	m/hr:	2.00	Rig:	Stoneh	
Operation	@ 0800 hrs:	Drilling @	3330 m.							KB elev:	175.30	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
22	Reed	R34APDH	AN2958	3284				3X11.1	120	15	2-2-BT-A-E	E-0-TR-RIG
				ı								
		Pump 1	Pump 2	Drilling As	•					, NM tool car		
Model		PZ-11	PZ-11			C, Jar, 5165m			Pump Pres		13,200	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM Vol.	m³/min @ 95%	-	90	D.C. Annu Jet Velocit		103.0 54.7	m/min	D.P Annula True Hydra		65.0	m/min kW	
VOI.	m /min @ 95%	1	1.3000	Jet velocit	y:	34.7	m/sec	True flyur	aunc nr:	157.0	KVV	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:03		Gel	1	CaC03	
3200.41		8.09	299.04	75.09	-16.75	Density	1120		Caustic		Percol	
3213.77		9.09	297.82	76.04	-18.50	Vis.	70		Envirofloc		Sulphamic	
3227.96		9.77	295.82	77.09	-20.58	pН	11.5		Kelzan		T-352	
3241.10		9.68	295.88	78.08	-22.62	Fluid Loss	7.0		Cello		Defoamer	
3254.00		8.45	295.57	79.98	24.49	P.V.	27.0		Bicarb		2K-7	
3268.00		7.96	295.42	79.84	26.29	Y.P.	13.0		Newedge		Sapp	
3282.00		8.68	296.62			Gel S.	3/6/8		Drispac		Dyna det	
3296.00		8.87	297.37			Filter Ck	0.5		Desco		Walnut	
3309.00		8.44	296.90			Solids %	7.0		Barite		Lime Hydrate	d
						Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	32.0		Supervision		Day Cost	\$30
	1 0 0	0.70			DOD 0 C	XSPolymer	1.1	,	Mud Van	1	Well Cost	\$238,188
	losses Surfa		hole Estimat	tes m3		asing Tests		ate			rifuge	
Total circu		123.0	T. 4.11.1			sing Test		ug-09	Underflow			00.0
•	es down hole es at surface		Total hole Total surf.			OP Test		ep-09 ating hrs	Overflow I Flow Rate.			0.0
Today tota		0.0	Cumulative	161.3		sing Test OP Test		oct-09	Operating			4.0
Today tota	1 105565	0.0	Cumulative	101.5	INCAL D	OI IEST	03-0	Ct-07	Operating	iloui s	2-	0
	We	ell Control -	kPa		H	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	11500	Rack	ground	0.	
RSPP #1	51 OKES 55	7800	11000	3315	Drag Dn	16	Torque	11300		nection	0.	
RSPP #2		7000	11000	5515	Hook Load					rip		50
										-	I.	
	1. Rig up/0	Out		-	9. Slip & C	Cut		-	17. Plug B	ack		
	2. Drill		16.75	= _	10. Survey		0.25	-	18. Wash	to Btm	-	
	3. Ream			= _	11. Wirelin	ne Logs		=' _	19. Flow cl	hecks		
	4. Drill Ou	ıt		=	12. Casing	/Cement		_	20. Wk on	mud pumps		
	5. Circ. &	Cond.		_	13. Pump (Out Cement		_	21. Safety	Meeting	0.25	
	6. Trip			_	14. Nipple			_	22. Handle	e Tools		
	7. Rig Serv		0.50	=	15. Test Bo			_	23 Other			
	8. Rig Rep	air	6.25	_	16. BOP D	rill		_	Total Hour	rs	24.00	
						REMARKS						
00:00-06:15	Ran in hole	from 328 m	. to 3260 m.	Washed dow	n last 25 m.ľ							
	Drilled 216											
												,
	=											
	No incident			-	-		-		-	-		
•							•	,		Snake Bite @		
Prev Cost	\$6,84	10,779	Today	\$29	,589	Total Cost	\$6,87	70,368	Weather		Plus 4, frost	
Foreman		D C	amphell	_	Rig Phone	,	709-649-710	•	Mud Type	: Terry Bi	Polymer	IT-II

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	88		Date:	26-Se	ер-09
Depth:	3368.0	mKB	Progress:	47.0	Drilling:	22.00	hrs ROP,		2.10	Rig:	Stoneha	
-	@ 0800 hrs:	Drilling @					,			KB elev:	175.30	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
22	Reed	R34APDH	AN2958	3284				3X11.1	120	15	2-2-BT-A-E	E-0-TR-RIG
		Pump 1	Pump 2	Drilling As						NM tool car		
Model		PZ-11	PZ-11	,		, Jar, 5165m			Pump Pres		13,200	kPa
Liner	(mm)	165	152	BHA Lengt		277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe (mm	
SPM	2		90	D.C. Annul		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%		1.3000	Jet Velocity	y:	54.7	m/sec	True Hydra	aulic HP:	157.0	kW	
		CIID	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:03		Gel	MUDAD	CaC03	
3200.41	ptii	8.09	299.04	75.09	-16.75	Density	1120		Caustic	2	Percol	
3213.77		9.09	297.82	76.04	-18.50	Vis.	70		Envirofloc		Sulphamic	
3227.96		9.77	295.82	77.09	-20.58	pH	11.5		Kelzan		Т-352	
3241.10		9.68	295.88	78.08	-22.62	Fluid Loss	7.0		Cello		Defoamer	1
3254.00		8.45	295.57	79.98	24.49	P.V.	27.0		Bicarb		2K-7	3
3268.00		7.96	295.42	79.84	26.29	Y.P.	13.0		Newedge	1	Sapp	
3282.00		8.68	296.62	77.01	20.27	Gel S.	3/6/8		Drispac	1	Dyna det	
3296.00		8.87	297.37			Filter Ck	0.5		Desco		Walnut	
3309.00		8.44	296.90			Solids %	7.0		Barite		Lime Hydrate	d
3323.00		8.65	296.00			Oil	0.000		Lignite		Dyna fiber	
3337.00		9.54	295.14			Ca (mg/l)	40.0		PHPA	1	Bioside	
3352.00		10.07	293.74			Cl (mg/l)	9600.0		Sawdust			
3365.00		10.92	294.18			MBT	17.5		Soda Ash			
						Temp	32.0		Supervision		Day Cost	\$1,294
						XSPolymer	1.1		Mud Van	1	Well Cost	\$238,188
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Centi	rifuge	
Total circu	lating Vol.	123.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	190	0.00
	es down hole	0.0	Total hole			OP Test		ep-09	Overflow I	•	11	10
Today losse	es at surface	0.0	Total surf.		Next Ca	sing Test	505 rot	ating hrs	Flow Rate,	m3/min	80	0.0
Today total	losses	0.0	Cumulative	161.3	Next B	OP Test	05-C	oct-09	Operating	hours	24	1.0
					-							
	We	ell Control -	kPa		Н	ole Condition	n kdaN & K	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	11500	Backg	ground	0.	27
RSPP #1	55	7800	11000	3315	Drag Dn	16			Conn	ection	0.	27
RSPP #2					Hook Load	120			T	rip	2.	50
	1. Rig up/0	Out		-	9. Slip & C	Cut		- -	17. Plug B	ack		
	2. Drill		22.00	-	10. Survey		0.75	_	18. Wash t			
	3. Ream				11. Wirelin			-	19. Flow ch			
	4. Drill Ou				12. Casing			_		mud pumps	0.50	
	5. Circ. &	Cona.		-	-	Out Cement		=	21. Safety		0.50	
	6. Trip		0.75		14. Nipple 15. Test B			=	22. Handle	e I ools		
	7. Rig Serv		0.75		16. BOP D			=	23 Other	_	24.00	
	8. Rig Rep	аіг		÷	10. BOP D	TIII		-	Total Hour	'S	24.00	
						REMARKS						
00:00-24:00	Drilled 216	mm hole fro	om 3315 m. to	o 3368 m.								
	No incident	s reported.										
•	•					, ,	•	,		Snake Bite @		
Prev Cost	\$6,87	70,368	Today	\$36	,328	Total Cost	\$6,90	06,696	Weather: Mud Type		Plus 8, sunny Polymer	/
Foreman		D:11 VX	illiams	-	Rig Phone	,	709-649-710	6	Taken By:		ooker / Sha	na Hallav

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	can Investo	an Robinso	ns #1		Day:	89		Date:	27-S	ер-09
Depth:	3415.0	mKB	Progress:	47.0	Drilling:	22.00	hrs ROP,	m/hr:	2.10	Rig:	Stoneh	
Operation	@ 0800 hrs:	Drilling @	3410 m.							KB elev:	175.30	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
22	Reed	R34APDH	AN2958	3284				3X11.1	120	15	2-2-BT-A-I	E-0-TR-RIG
				•								
		Pump 1	Pump 2	Drilling As	•					, NM tool car		
Model		PZ-11	PZ-11		X 165mm DC		m DC, 8 HV	VDP	Pump Pres	ssure:	13,200	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM	2		90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%		1.3000	Jet Velocit	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3200.41	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	8.09	299.04	75.09	-16.75	Density	1120		Caustic	2	Percol	
3213.77		9.09	297.82	76.04	-18.50	Vis.	70		Envirofloc	†	Sulphamic	
3227.96		9.77	295.82	77.09	-20.58	рH	11.5		Kelzan		T-352	
3241.10		9.68	295.88	78.08	-22.62	Fluid Loss	7.0		Cello		Defoamer	1
3254.00		8.45	295.57	79.98	24.49	P.V.	27.0		Bicarb		2K-7	3
3268.00		7.96	295.42	79.84	26.29	Y.P.	13.0		Newedge	1	Sapp	
3282.00		8.68	296.62			Gel S.	3/6/8		Drispac	1	Dyna det	
3296.00		8.87	297.37			Filter Ck	0.5		Desco		Walnut	
3309.00		8.44	296.90			Solids %	7.0		Barite		Lime Hydrate	d
3323.00		8.65	296.00			Oil	0.000		Lignite		Dyna fiber	
3337.00		9.54	295.14			Ca (mg/l)	40.0		PHPA	1	Bioside	
3352.00		10.07	293.74			Cl (mg/l)	9600.0		Sawdust			
3365.00		10.92	294.18			MBT	17.5		Soda Ash			
						Temp	32.0		Supervision		Day Cost	602
						XSPolymer	1.1		Mud Van	1	Well Cost	\$238,188
Mud	losses Surfa	ce & Down	hole Estimat	tes m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
Total circu	lating Vol.	123.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	190	0.00
Today losse	es down hole	0.0	Total hole		Last B	OP Test	21-S	ep-09	Overflow 1	Density	11	10
Today losse	es at surface	0.0	Total surf.		Next Ca	sing Test	505 rot	ating hrs	Flow Rate	,m3/min	80	0.0
Today tota	l losses	0.0	Cumulative	161.3	Next B	OP Test	05-0	Oct-09	Operating	hours	24	1.0
					-							
	We	ell Control -	kPa		He	ole Condition	n kdaN & K	ft/#		Total Gas R	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	11500	Back	ground	0.	27
RSPP #1	55	7800	11000	3315	Drag Dn	16			Conr	nection	0.	27
RSPP #2					Hook Load	120			T	'rip	2.	50
				=.				=.				
	1. Rig up/0	Out		_	9. Slip & C			_	17. Plug B			
	2. Drill		22.00	=	10. Survey		0.75	=	18. Wash			
	3. Ream			=	11. Wirelin	_		=	19. Flow cl			
	4. Drill Ou			_	12. Casing			_		mud pumps		:
	5. Circ. &	Cond.		_	_	Out Cement		_	21. Safety		0.50	:
	6. Trip			_	14. Nipple			_	22. Handle	e Tools		
	7. Rig Serv		0.75	_	15. Test Bo			_	23 Other			
	8. Rig Rep	air		=	16. BOP D	rill		_	Total Hour	rs	24.00	:
						REMARKS	5					
00:00-24:00	Drilled 216	mm hole fro	om 3368 m. to	o 3415 m.								
	- NT 1											
Tong C-1	No incident		Corre li	no 946 F	lanhall!- D	al. 970 (C	nuont E-11	Enio	o @2007	Cualra Dit. (a 2555	
Prev Cost		15 m, Ship C 70,368					•), Friars cov)6,696	e @2086m. Weather:	Snake Bite @		7
rev Cost	\$0,87	0,300	Today	_ \$30	5,328	Total Cost	\$0,90	70,090	Mud Type		Plus 8, sunny Polymer	1
Foreman		Rill W	/illiams	=	Rig Phone	,	709-649-710	6			rolylliel rooker / Sha	ne Hallev

			Vulc	an Mi	inerals	Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	90		Date:	28-Se	ер-09
Depth:	3451.0	mKB	Progress:	36.0	Drilling:	19.75	hrs ROP,	m/hr:	1.82	Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	Run in hole								KB elev:	175.30	m.
the next da	Run in hole	.Drill ahead.								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
22	Reed	R34APDH	AN2958	3284	3451	167	76	3X11.1	120	15	2-2-BT-A-E	2-0-TR-RIG
		Pump 1	Pump 2	Drilling As	•					, NM tool car		
Model		PZ-11	PZ-11		X 165mm DC		m DC, 8 HV		Pump Pres		13,200	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:		_Board:		
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe (127.0	mm	
SPM	2		90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%		1.3000	Jet Velocity	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3309.00		8.44	296.90			Density	1120		Caustic		Percol	
3323.00		8.65	296.00			Vis.	64		Envirofloc		Sulphamic	
3337.00		9.54	295.14			pН	10.7		Kelzan	1	T-352	
3352.00		10.07	293.74			Fluid Loss	7.8		Cello		Defoamer	1
3365.00		10.92	294.18			P.V.	25.0		Bicarb		2K-7	1
3378.00		11.37	295.70			Y.P.	12.5		Newedge	3	Sapp	
3391.00		11.49	294.96			Gel S.	3/6/7		Drispac	3	Dyna det	
3406.00		12.16	295.58			Filter Ck	0.5		Desco		Walnut	
3419.00		11.97	296.52			Solids %	7.5		Barite		Lime Hydrate	d
3433.00		11.99	295.97			Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9300.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	40.0		Supervision		Day Cost	\$1,592
						XSPolymer			Mud Van	1	Well Cost	\$238,188
		ce & Down	hole Estimat	tes m3		asing Tests		ate			rifuge	
Total circu		146.0				sing Test		ug-09	Underflow	•		80.0
	s down hole		Total hole			OP Test		ep-09	Overflow 1			15
	s at surface		Total surf.	165.6		sing Test		ating hrs	Flow Rate			0.0
Today total	iosses	0.5	Cumulative	165.6	Next B	OP Test	03-C	0ct-09	Operating	nours	22	1.0
	***	11.0 4 1	1 D			1 C 1'4'	1 1 N 0 T	C4 111		T 4 1 C P	1' (0/)	
D.		ell Control -		D (1			n kdaN & K		D 1		Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	16	Torque	11500		ground	0.	
RSPP #1 RSPP #2	57	7650	11000	3432	Drag Dn Hook Load	16 120				nection rip	0.	00
K311 #2					1100K LUAU	120			1	Пр	U.	00
	1. Rig up/0	Ont		=	9. Slip & C	'nt		=	17. Plug B	ack		
	2. Drill	, ut	19.75	-	10. Survey		0.25	-	18. Wash			
	3. Ream			-	11. Wirelin			-	19. Flow cl			
	4. Drill Ou	ıt		-	12. Casing			-		mud pumps		
	5. Circ. &	Cond.	0.50	-		Out Cement		-	21. Safety		0.50	
	6. Trip		2.50	-	14. Nipple			-	22. Handle			
	7. Rig Serv	vice	0.50	-	15. Test B0			-	23 Other			
	8. Rig Rep			-	16. BOP D	rill		-	Total Hou	rs	24.00	
						REMARKS	<u> </u>					
00:00-21:00	Drilled 216	mm hole fro	m 3415 m. t	o 3451 m.								
					le for bit cha	inge.						
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	11 / 2	1									
	No incident											
_	•						•	,		Snake Bite @		
Prev Cost	\$6,94	10,679	Today	\$46	,259	Total Cost	\$6,98	36,938	Weather		Plus 8, sunny	1
Foreman		D:II V	illiams	-	Rig Phone		709-649-710	4	Mud Type		Polymer	no Hallov

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	91		Date:	29-S	ер-09
Depth:	3462.0	mKB	Progress:	11.0	Drilling:	6.00	hrs ROP,	m/hr:	1.90	Rig:		am # 11
Operation	@ 0800 hrs:	Run in hole			J		,			KB elev:	175.30	m.
the next da	Run in hole	.Drill ahead.								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
22	Reed	R34APDH	AN2958	3284	3451	167	76	3X11.1	120	15	4-7-BT-H-I	E-2-BT-PR
23	HC	GX-44DX	6067291	3451				3 x 14.3	110	15		
		Pump 1		Drilling As						NM tool car		
Model		PZ-11	PZ-11		X 165mm DC				Pump Pres		15,000	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:		Board:		•
Stroke	(mm)	279	279	Drill Colla		165.0	mm	Drill Pipe		127.0	mm	
SPM	3	90	90	D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%	1.5000	1.3000	Jet Velocit	y:	54.7	m/sec	True Hydr	aulic HP:	157.0	kW	
		SUR	VEYS				MUD			MIID AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:03		Gel	MODAD	CaC03	
3309.00	- ptin	8.44	296.90	HOLLI	12451	Density	1130		Caustic		Percol	
3323.00		8.65	296.00			Vis.	72		Envirofloc		Sulphamic	
3337.00		9.54	295.14			рH	10.7		Kelzan		T-352	
3352.00		10.07	293.74			Fluid Loss	7.8		Cello		Defoamer	
3365.00		10.92	294.18			P.V.	30.0		Bicarb		2K-7	1
3378.00		11.37	295.70			Y.P.	14.5		Newedge	1	Sapp	
3391.00		11.49	294.96			Gel S.	3/6/7		Drispac	1	Dyna det	
3406.00		12.16	295.58			Filter Ck	0.5		Desco		Walnut	
3419.00		11.97	296.52			Solids %	7.5		Barite	35	Lime Hydrate	d
3433.00		11.99	295.97			Oil	0.000		Lignite		Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9300.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	25.4		Supervision		Day Cost	\$1,688
						XSPolymen			Mud Van	1	Well Cost	\$243,396
	l losses Surfa		hole Estimat	tes m3		asing Tests		ate			rifuge	
		1460			Last Ca	sing Test	22-A	ug-09	Underflow	•		30.0
Total circu		146.0										
Today losse	es down hole	0.2	Total hole			OP Test		ep-09	Overflow I			15
Today losse Today losse	es down hole es at surface	0.2	Total surf.	165.6	Next Ca	sing Test	505 rot	ating hrs	Flow Rate,	m3/min	80	0.0
Today losse	es down hole es at surface	0.2		165.6	Next Ca		505 rot	•		m3/min	80	
Today losse Today losse	es down hole es at surface l losses	0.2 0.3 0.5	Total surf. Cumulative	165.6	Next Ca Next B	sing Test OP Test	505 rot 05-0	ating hrs Oct-09	Flow Rate,	m3/min hours	80	0.0
Today losse Today tota	es down hole es at surface l losses We	0.2 0.3 0.5	Total surf. Cumulative		Next Ca Next B	sing Test OP Test ole Condition	505 rot 05-C	ating hrs Oct-09	Flow Rate, Operating	m3/min hours Total Gas R	80 24 Readings (%	0.0
Today losso Today tota Today tota	es down hole es at surface I losses We Strokes	0.2 0.3 0.5 ell Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B	oP Test Condition 25	505 rot 05-0	ating hrs Oct-09	Flow Rate, Operating Backs	m3/min hours Total Gas R ground	80 24 Readings (%)	0.0 4.0
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface l losses We	0.2 0.3 0.5	Total surf. Cumulative		Next Ca Next B Ho Drag up Drag Dn	op Test OP Test Ole Conditio 25 25	505 rot 05-C	ating hrs Oct-09	Flow Rate, Operating Backs Conn	m3/min hours Total Gas R ground ection	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota	es down hole es at surface I losses We Strokes	0.2 0.3 0.5 ell Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B	op Test OP Test Ole Conditio 25 25	505 rot 05-C	ating hrs Oct-09	Flow Rate, Operating Backs Conn	m3/min hours Total Gas R ground	80 24 Readings (%)	0.0 4.0
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface il losses We Strokes 57	0.2 0.3 0.5 ell Control - Pressure 7650	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load	op Test OP Test Condition 25 25 124	505 rot 05-C	ating hrs Oct-09	Flow Rate, Operating Backs Conn	m3/min hours Total Gas R ground ection rip	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes	0.2 0.3 0.5 ell Control - Pressure 7650	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B Ho Drag up Drag Dn	sing Test OP Test le Conditio 25 25 124 Cut	505 rot 05-C n kdaN & K Torque	ating hrs Oct-09	Flow Rate, Operating Backs Conn T	m3/min hours Total Gas R ground ection rip	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down holdes at surface I losses We Strokes 57 1. Rig up/0	0.2 0.3 0.5 ell Control - Pressure 7650	Total surf. Cumulative kPa MACP 11000	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test le Conditio 25 25 124 Cut	505 rot 05-C n kdaN & K Torque	ating hrs Oct-09	Flow Rate, Operating Back, Conn T 17. Plug B	m3/min hours Total Gas R ground ection rip ack o Btm	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down holdes at surface I losses We Strokes 57 1. Rig up/C 2. Drill	0.2 0.3 0.5 ell Control - Pressure 7650	Total surf. Cumulative kPa MACP 11000 6.00	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test OP Test le Conditio 25 25 124 Cut ne Logs	505 rot 05-C n kdaN & K Torque	ating hrs Oct-09	Back Conn T 17. Plug B 18. Wash t 19. Flow ch	m3/min hours Total Gas R ground ection rip ack o Btm	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down holdes at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream	0.2 0.3 0.5 0.5 Pressure 7650	Total surf. Cumulative kPa MACP 11000 6.00	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test le Conditio 25 25 124 Cut ne Logs	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back Conn T 17. Plug B 18. Wash t 19. Flow ch	m3/min hours Total Gas R ground ection rip ack to Btm ecks mud pumps	80 24 Readings (%)	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	0.2 0.3 0.5 0.5 Pressure 7650	Total surf. Cumulative kPa MACP 11000 6.00	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Conditio 25 25 124 Cut Dut Logs //Cement Out Cement Up BOP	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash 1 19. Flow cl 20. Wk on	m3/min hours Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting	80 24 deadings (% 0. 0.	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	ses down hole es at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative kPa MACP 11000 6.00 2.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Conditio 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative kPa MACP 11000 6.00 2.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Conditio 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow cl 20. Wk on 21. Safety 22. Handle	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 deadings (% 0. 0.	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	ses down hole es at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative kPa MACP 11000 6.00 2.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Conditio 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today losso Today tota Today tota Pump RSPP #1	ses down hole es at surface I losses We Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative kPa MACP 11000 6.00 2.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Conditio 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative KPa MACP 11000 6.00 2.25 11.00 0.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Conditio 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	strokes Strokes 57 1. Rig up/0 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond.	Total surf. Cumulative KPa MACP 11000 6.00 2.25 11.00 0.25	Depth 3432	Next Ca Next B 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	sing Test OP Test De Conditio 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	strokes Strokes 57 1. Rig up/0 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. rice air	Total surf. Cumulative KPa	Depth 3432	Next Ca Next B Prag 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	sing Test OP Test De Conditio 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00	strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. Vice air o pull out of tt mud motor to 320 m. ar	Total surf. Cumulative kPa MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Madd check dires	Depth 3432	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 25 25 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00)8:00-12:30	strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep 5 Continued to 0 Changed ou 0 Run in hole	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a	MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Madd check dire and slip and c	Depth 3432	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 25 25 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00)8:00-12:30 12:30-17:30	strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. Vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a to 3418 m a	Total surf. Cumulative kPa MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Mad dcheck dire and slip and c nd wash to b	Depth 3432	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 25 25 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00)8:00-12:30 12:30-17:30	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep Continued to Changed ou D Run in hole Run in hole	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a to 3418 m a	Total surf. Cumulative kPa MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Mad dcheck dire and slip and c nd wash to b	Depth 3432	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 25 25 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 1.00 2.50	ating hrs Oct-09	Back, Conn T 17. Plug B 18. Wash t 20. Wk on 21. Safety 22. Handle 23 Other	m3/min hours Total Gas R ground ection rip ack to Btm hecks mud pumps Meeting	80 24 8eadings (% 0. 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00 12:30-12:30 12:30-17:30	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep 1. Continued to the continued of	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a to 3418 m a n 3451 to 344 s reported.	MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Madd check dired slip and cond wash to b 52	Depth 3432	Next Ca Next B He 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	sing Test OP Test OP Test Sile Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS drill string.	505 rot 05-C n kdaN & K Torque 1.00 2.50	### ##################################	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas R ground ection rip ack to Btm necks mud pumps Meeting Tools	1.00	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00 12:30-12:30 12:30-17:30	strokes Strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep 5 Continued to 0 Changed ou 0 Run in hole 0 Run in hole 0 Run in hole 0 Run in hole 0 Run in hole 0 Drilled from No incident roy Group 8	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a to 3418 m a n 3451 to 344 s reported.	MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Madd check dired slip and cond wash to b 52	Depth 3432	Next Ca Next B He 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	sing Test OP Test OP Test Sile Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS drill string.	505 rot 05-0 n kdaN & K Torque 1.00 2.50 Sprout Falls	### ##################################	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas R ground ection rip ack to Btm tecks mud pumps Meeting Tools Snake Bite	1.00	0.0 4.0 27 27 60
Today loss Today tota Pump RSPP #1 RSPP #2 00:00-03:45 03:45-06:30 06:30-08:00 12:30-12:30 12:30-17:30 Tops: Codi	strokes Strokes Strokes 57 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep 5 Continued to 0 Changed ou 0 Run in hole 0 Run in hole 0 Run in hole 0 Run in hole 0 Run in hole 0 Drilled from No incident roy Group 8	0.2 0.3 0.5 Control - Pressure 7650 Out tt Cond. vice air o pull out of tt mud motor to 320 m. ar to 1240 m.a to 3418 m a to 3418 m a a 3451 to 346 s reported. 15 m, Ship C 66,919	MACP 11000 6.00 2.25 11.00 0.25 hole. and bit.Mad di check dire and slip and cond wash to be be cond wash to be be cond wash to be cond wash to be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be cond wash to be be conducted wash to be be conducted wash to be be conducted wash to be be conducted wash to be be conducted wash to be be conducted wash to be conducted wash to be conducted wash to be be conducted wash to be be conducted wash to be conducted	Depth 3432	Next Ca Next B He 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 onal tools.	sing Test OP Test OP Test De Condition 25 25 124 Cut The Logs Cement Out Cement Up BOP OP & FIT Irill REMARKS drill string. ok 870 m, (8 Total Cost	505 rot 05-0 n kdaN & K Torque 1.00 2.50 Sprout Falls	ating hrs Oct-09 ft/# 13000	Flow Rate, Operating Back, Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas R ground ection rip ack to Btm tecks mud pumps Meeting to Tools Snake Bite	80 22 Readings (% 0. 0. 1.00 24.00	0.0 4.0 27 27 60

			Vulc	an Mi	inerals	s Daily	y Drill	ing Ro	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	92		Date:	30-Se	ер-09
Depth:	3499.0	mKB	Progress:	37.0	Drilling:	22.25	hrs ROP,		1.66	Rig:		am # 11
Operation	@ 0800 hrs:	Drilling @	3511 m.							KB elev:	175.30	m.
the next da	n Drill ahead.									KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
23	HC	GX-44DX	6067291	3451			27	3 x 14.3	110	15		
		Pump 1	Pump 2	Drilling As	•				or @1.15deg,			
Model		PZ-11	PZ-11			, Jar, 2x165			_Pump Pres		15,000	kPa
Liner	(mm)	165	152	BHA Lengt		277.73	m	Strap:		Board:		•
Stroke	(mm)	279	279	Drill Collar		165.0	mm	Drill Pipe		127.0	mm .	
SPM	3	90	90	D.C. Annul		103.0	m/min	D.P Annul		65.0	_m/min	
Vol.	m ³ /min @ 95%	1.5000	1.3000	Jet Velocity	y:	54.7	m/sec	True Hydr	aunc HP:	157.0	_kW	
		CLID	VEVC				MID			MIDAD	DITIVEC	
D _c	epth	Drift	VEYS Azimuth	North	East	Time	7:03		Gel	MUD AL	CaC03	
3309.00	epin	8.44	296.90	NOLLI	Last	Density	1125		Caustic		Percol	
3323.00		8.65	296.90			Vis.	63		Envirofloc		Sulphamic	
3337.00		9.54	295.14			pH	10.1		Kelzan		T-352	
3352.00		10.07	293.74			Fluid Loss	8.4		Cello		Defoamer	
3365.00		10.92	294.18			P.V.	25.0		Bicarb		2K-7	1
3378.00		11.37	295.70			Y.P.	12.0		Newedge		Sapp	-
3391.00		11.49	294.96			Gel S.	3/6/7		Drispac	1	Dyna det	
3406.00		12.16	295.58			Filter Ck	0.5		Desco		Walnut	
3419.00		11.97	296.52			Solids %	7.5		Barite		Lime Hydrate	1
3433.00		11.99	295.97			Oil	0.000		Lignite	1	Dyna fiber	
3448.00		11.67	295.77			Ca (mg/l)	40.0		PHPA		Bioside	
3460.00		12.14	296.30			Cl (mg/l)	9600.0		Sawdust			
3474.00		12.36	297.12			MBT	17.5		Soda Ash			
3488.00		12.19	296.14			Temp	41.9		Supervision		Day Cost	\$428
						XSPolymer	1.1		Mud Van	1	Well Cost	\$243,825
Mud	l losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Cent	rifuge	
	doting Vol	144.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density	188	30.0
Total circu	naung voi.	144.0										
	es down hole		Total hole			OP Test	21-S	ep-09	Overflow I	Density	11	15
Today loss		0.2	Total hole Total surf.		Last B	OP Test sing Test		ep-09 ating hrs	Overflow I Flow Rate,	-		0.0
Today loss	es down hole es at surface	0.2		165.8	Last Bo Next Ca		505 rot	•	1	m3/min	80	
Today loss	es down hole es at surface	0.2 0.3	Total surf.	165.8	Last Bo Next Ca	sing Test	505 rot	ating hrs	Flow Rate,	m3/min	80	0.0
Today loss	es down hole es at surface al losses	0.2 0.3	Total surf. Cumulative	165.8	Last Bo Next Ca Next Bo	sing Test	505 rot 05-0	ating hrs Oct-09	Flow Rate, Operating	m3/min hours Total Gas F	80	0.0
Today loss Today tota Today tota	es down hole es at surface al losses We Strokes	0.2 0.3 0.5 ell Control -	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Ho Drag up	OP Test Ole Condition 25	505 rot 05-0	ating hrs Oct-09	Flow Rate, Operating	m3/min hours Total Gas F ground	80 24 Readings (%) 0.	0.0 1.0 27
Today loss Today tota Today tota Pump RSPP #1	es down hole es at surface al losses	0.2 0.3 0.5	Total surf. Cumulative		Last Bo Next Ca Next Bo Ho Drag up Drag Dn	op Test OP Test Ole Condition 25 25	505 rot 05-0 n kdaN & K	ating hrs Oct-09	Flow Rate, Operating Backs Conn	m3/min hours Total Gas F ground ection	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota	es down hole es at surface al losses We Strokes	0.2 0.3 0.5 ell Control -	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Ho Drag up	op Test OP Test Ole Condition 25 25	505 rot 05-0 n kdaN & K	ating hrs Oct-09	Flow Rate, Operating Backs Conn	m3/min hours Total Gas F ground	80 2 ² Readings (%) 0.	0.0 1.0 27
Today loss Today tota Today tota Pump RSPP #1	es down hole es at surface al losses We Strokes 55	0.2 0.3 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	op Test OP Test Condition 25 25 124	505 rot 05-0 n kdaN & K	ating hrs Oct-09	Flow Rate, Operating Backs Conn T	m3/min hours Total Gas F ground ection rip	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	es down hole es at surface al losses We Strokes 55	0.2 0.3 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load	sing Test OP Test De Condition 25 25 124 Cut	505 rot 05-C n kdaN & K Torque	ating hrs Oct-09	Flow Rate, Operating Backs Conn T 17. Plug B	m3/min hours Total Gas F ground ection rip	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	wes down hole wes at surface al losses We Strokes 55 1. Rig up/C 2. Drill	0.2 0.3 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP	Depth	Last Bone	sing Test OP Test le Condition 25 25 124 Cut	505 rot 05-0 n kdaN & K	ating hrs Oct-09	Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t	m3/min hours Total Gas F ground ection rip ack	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	0.2 0.3 0.5 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load	sing Test OP Test le Condition 25 25 124 Cut ne Logs	505 rot 05-C n kdaN & K Torque	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch	m3/min hours Total Gas F ground ection rip ack to Btm ecks	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	0.2 0.3 0.5 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wirelin 12. Casing	sing Test OP Test OP Test Self-Self-Self-Self-Self-Self-Self-Self-	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t	m3/min hours Total Gas F ground ection rip ack to Btm ecks mud pumps	80 24 Readings (%) 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	we down hole we at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	0.2 0.3 0.5 0.5 Control - Pressure 6930	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6	sing Test OP Test OP Test De Condition 25 25 124 Cut De Logs /Cement Out Cement	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety	m3/min hours Total Gas F ground ection rip ack to Btm ecks mud pumps Meeting	80 2 ² Readings (%) 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Condition 25 25 124 Cut The Logs // Cement Out Cement Up BOP	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	m3/min hours Total Gas F ground ection rip ack to Btm ecks mud pumps Meeting	80 24 Readings (%) 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Condition 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0.	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface al losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut Dut Logs /Cement Out Cement Up BOP OP & FIT	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	0.2 0.3 0.5 Control - Pressure 6930 Out tt Cond.	Total surf. Cumulative kPa MACP 11000 22.25	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT Trill	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09	Backs Conn T 17. Plug B 18. Wash t 20. Wk on 2 21. Safety 22. Handle 23 Other	m3/min hours Total Gas F ground ection rip ack to Btm toecks mud pumps Meeting	80 24 Readings (%) 0. 0. 0. 0.50	0.0 4.0 0 27 27
Today loss Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep O Drilled fron	0.2 0.3 0.5 Control - Pressure 6930 Out tt Cond. vice air	Total surf. Cumulative kPa MACP 11000 22.25 0.75	Depth 3463	Last Bone Next Barrell	sing Test OP Test OP Test See Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09 ft/# 13500	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas F ground ection rip ack to Btm necks mud pumps Meeting Tools	80 24 Readings (%) 0. 0. 0. 24.00	0.0 4.0 0 27 27
Today loss Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep O Drilled from	0.2 0.3 0.5 Control - Pressure 6930 Out tt Cond. vice air 1 3462 m. to	Total surf. Cumulative kPa MACP 11000 22.25 0.75	Depth 3463	Last Bo Next Ca Next Bo Pag up Drag up Hook Load 9. Slip & Ca 10. Survey 11. Wirelin 12. Casing 13. Pump 16. Nipple 15. Test Bo 16. BOP D	sing Test OP Test OP Test See Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS Ook 870 m, (S	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09 ft/# 13500	Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas F ground ection rip ack to Btm tecks mud pumps Meeting Tools Snake Bite (80 24 Readings (%) 0. 0. 0.50 24.00	0.0 1.0 27 27 60
Today loss Today tota Pump RSPP #1 RSPP #2	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep O Drilled from	0.2 0.3 0.5 Control - Pressure 6930 Out tt Cond. vice air	Total surf. Cumulative kPa MACP 11000 22.25 0.75	Depth 3463	Last Bone Next Barrell	sing Test OP Test OP Test See Condition 25 25 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT rill REMARKS	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09 ft/# 13500	Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour re @2086m. Weather:	m3/min hours Total Gas F ground ection rip ack to Btm tecks mud pumps Meeting Tools Snake Bite	80 24 Readings (%) 0. 0. 0. 0.50 24.00	0.0 1.0 27 27 60
Today loss Today tota Pump RSPP #1 RSPP #2 00:00-24:00 Tops: Code	ses down hole ses at surface at losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep O Drilled from	0.2 0.3 0.5 Control - Pressure 6930 Out tt Cond. Vice air 1 3462 m. to s reported. 15 m, Ship C 88,901	Total surf. Cumulative kPa MACP 11000 22.25 0.75	Depth 3463	Last Bo Next Ca Next Bo Pag up Drag up Hook Load 9. Slip & Ca Oal Casing 13. Pump Oal Casing 14. Nipple 15. Test Bo Oal Casing 16. BOP Doal Casing 17. Bore Bore Date of the Casing 18. Pump Oal Casing 19. Test Bo Oal Casing 19. T	sing Test OP Test OP Test De Condition 25 25 124 Cut The Logs Cement Out Cement Up BOP OP & FIT Irill REMARKS Ook 870 m, (S) Total Cost	505 rot 05-C n kdaN & K Torque 0.50	ating hrs Oct-09 ft/# 13500	Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	m3/min hours Total Gas F ground ection rip ack to Btm tecks mud pumps Meeting Tools Tools	80 24 Readings (%) 0. 0. 0.50 24.00	0.0 1.0 27 27 60

			Vulc	an Mi	inerals	S Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	01-0	ct-09
Depth:	3538.0	mKB	Progress:	39.0	Drilling:	22.25	hrs ROP, r		1.80	Rig:	Stoneha	
-	@ 0800 hrs:		0				,			KB elev:	175.30	
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
23	HC	GX-44DX	6067291	3451			27	3 x 14.3	110	15		
		Pump 1	Pump 2	Drilling As	•					NM tool car		
Model		PZ-11	PZ-11		X 165mm DC		-		Pump Pres		15,000	kPa
Liner	(mm)	165	152	BHA Lengt		277.73	m	Strap:) D	Board:		
Stroke SPM	(mm)	279 90	279 90	Drill Collar D.C. Annul		165.0 103.0	mm m/min	Drill Pipe (D.P Annula		127.0 65.0	mm /in	
Vol.	m ³ /min @ 95%	1.5000	1.3000	Jet Velocity		54.7	m/sec	True Hydra			m/min kW	
V 01.	III / IIIII @ 75 / 0	1.5000	1.5000	Jet velocity	•	54.7	III/SCC	Truc Hyur	• •,	137.0	N. I.	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:03		Gel	1102112	CaC03	
3419.00		11.97	296.52			Density	1125		Caustic	3	Percol	
3433.00		11.99	295.97			Vis.	63		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.1		Kelzan		T-352	2
3460.00		12.14	296.30			Fluid Loss	8.4		Cello		Defoamer	1
3474.00		12.36	297.12			P.V.	25.0		Bicarb		2K-7	1
3488.00		12.19	296.14			Y.P.	12.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3/6/7		Drispac	1	Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	7.5		Barite		Lime Hydrate	3
						Oil	0.000		Lignite	2	Dyna fiber	
						Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash			
				1		Temp	41.9		Supervision		Day Cost	\$1,830
N 1	1 C C	0.D. 1	1 5 4' - 4		DOD 0 C	XSPolymer	1.1		Mud Van	1	Well Cost	\$245,655
	losses Surfa		noie Estimat	es m3		asing Tests		ate	T		rifuge	0.0
	llating Vol. es down hole	144.0 0.2	Total hole		Last Cas	OP Test		ug-09 ep-09	Underflow Overflow I		188	
	es at surface	0.2	Total surf.			sing Test		ating hrs	Flow Rate,	•	800	
Today tota		0.5	Cumulative	165.8		OP Test		oct-09	Operating		24	
roung total	1100000	0.5	Cumulativ	100.0	110.10 25	01 100	02 0		operating	10415		
	We	ll Control -	kPa		Ho	ole Condition	n kdaN & Ki	ft/#		Total Gas R	eadings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	25	Torque	13500	Backs	ground	0.	12
RSPP #1	55	7068	11000	3516	Drag Dn	25				ection	0.	
RSPP #2					Hook Load	124			T	rip		
						•						
	1. Rig up/0	Out			9. Slip & C	Cut		='	17. Plug B	ack		
	2. Drill		22.25		10. Survey		0.50	_	18. Wash t	to Btm		
	3. Ream			-	11. Wirelin	_		-	19. Flow ch			
	4. Drill Ou				12. Casing			-		mud pumps	0.50	
	5. Circ. &	Cond.				Out Cement		-	21. Safety		0.50	
	6. Trip		0.75	-	14. Nipple			-	22. Handle	e Tools		
	7. Rig Serv 8. Rig Rep		0.75	-	15. Test BO 16. BOP D			-	23 Other Total Hour	10	24.00	
	o. Kig Kep	all		-	10. BOI D	1 111		-	Total Hour	.5	24.00	
						REMARKS						
00:00-24:00	Drilled fron	1 3499 m. to	3538			REM HERE	<u> </u>					
	_											
	=											
т С 1	No incident		Y 12	046 - 51	L-III D	-1- 070 (0		E-i-	- @2006	C., . L., D'()	3555	
Tops: Codi Prev Cost	roy Group 81	15 m, Ship C 73,829	Cove limestor Today		,364	ok 870 m, (S Total Cost	• /	, Friars cov 19,193	e @2086m. S Weather:		2555 Plus 15, sunn	
TIEV COST	\$7,07	3,049	1 ouay	\$35	,504	Total Cost	\$7,10	17,173	Weatner: Mud Type		Polymer	у
Foreman		Bill W	illiams	-	Rig Phone	,	709-649-710	6	Taken By:		ooker / Shai	ne Hallev

			Vulc	an Mi	inerals	Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	94		Date:	02-O	ct-09
Depth:	3560.0	mKB	Progress:	22.0	Drilling:	15.00	hrs ROP,	m/hr:	1.80	Rig:	Stoneha	am # 11
	@ 0800 hrs:	Pull out of l	nole.							KB elev:	175.30	
	Drill ahead.			-				1	DD1.5	KB - GL	6.30	
Bit #		Model IADC GX-44DX		In 2454	Out	Metres 109	Hours	Nozzles	RPM	WOB kdaN	TODL	BGOR
	HC	GA-44DA	6067291	3451	3560	109	63	3 x 14.3	110	15		
	Į.	Pump 1	Pump 2	Drilling As	 sembly:	216mm hit	171mm 7/8	:3 stage moto	r @1 15deg	NM tool car	rier	
Model		PZ-11	PZ-11		K 165mm DC				Pump Pres		15,000	kPa
Liner	(mm)	165	152	BHA Leng		277.73	m	Strap:	p	Board:		
Stroke	(mm)	279	279	Drill Colla	r O.D.	165.0	mm	Drill Pipe (O.D.	127.0	mm	
SPM		90	90	D.C. Annu	lar Vel.:	103.0	m/min	D.P Annula	ar Vel.:	65.0	m/min	
Vol.	m ³ /min @ 95%	1.5000	1.3000	Jet Velocity	y:	54.7	m/sec	True Hydr	a 47	157.0	kW	
_			VEYS				MUD	1		MUD AD	DITIVES	
	pth	Drift	Azimuth	North	East	Time	7:03		Gel	2	CaC03	
3419.00		11.97	296.52			Density	1130		Caustic	2	Percol	
3433.00 3448.00		11.99 11.67	295.97 295.77			Vis. pH	68 10.7		Envirofloc		Sulphamic	
3460.00		12.14	296.30			рн Fluid Loss	7.4		Kelzan Cello		T-352	2
3474.00		12.14	290.30			P.V.	28.0		Bicarb		Defoamer 2K-7	1
3488.00		12.19	296.14			Y.P.	13.0		Newedge			1
		12.19								4	Sapp	
3501.00			296.75			Gel S.	3.5/7/8		Drispac	4	Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco	-	Walnut	2
3529.00 3542.00		12.68 12.92	299.17 298.08			Solids % Oil	8.0 0.000		Barite	4	Lime Hydrate	2
3542.00		12.92	290.00			Ca (mg/l)	40.0		Lignite PHPA	4	Dyna fiber Bioside	
-						Cl (mg/l)	9600.0		Sawdust		Dioside	
						MBT	17.5		Sawdust Soda Ash			
						Temp	44.7		Supervision		Day Cost	\$1,795
						XSPolymer			Mud Van	1	Well Cost	\$247,451
Mud	losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests		ate			rifuge	72,
Total circu		147.0				sing Test	22-A	ug-09	Underflow			80.0
	es down hole	0.2	Total hole			OP Test		Sep-09	Overflow I	•		15
Today losse	es at surface	0.3	Total surf.		Next Ca	sing Test	505 rot	ating hrs	Flow Rate,	m3/min	80	0.0
Today total	l losses	0.5	Cumulative	171.0	Next B	OP Test	05-0	Oct-09	Operating	hours	24	1.0
		ell Control -				le Condition	n kdaN & K				Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	30	Torque	13500	·	ground		12
RSPP #1	55	7068	11000	3516	Drag Dn	30				ection	0.	12
RSPP #2					Hook Load	124			Т	rip		
	1. Rig up/0)t		=	0 Clin 8 C	\4		=	17. Plug B	o alr		
	2. Drill	Jui	14.25	-	9. Slip & C 10. Survey		0.25	=	17. Trug B			
	3. Ream		14.25	-	11. Wirelin		0.25	-	19. Flow ch			
	4. Drill Ou	ıt		=	12. Casing	_		_		mud pumps		
	5. Circ. &		3.00	-		Out Cement		_	21. Safety		0.75	
	6. Trip		5.50	-	14. Nipple			_	22. Handle			
	7. Rig Serv	vice	0.25	=	15. Test B0			=	23 Other			
	8. Rig Rep	air		-	16. BOP D	rill		-	Total Hour	's	24.00	
						REMARKS	5					
	Drilled fron			depth called	for well.							
	Circulate up		e sample.									
	Wiper trip t		,									
	Circulate ar		mua.									
20:00-24:00	Pull out of l	ioie.	Function to	et accumulate	or.annular pr	eventor uppo	er and lower	nine rame				
	=		i uncuon tes	si accumunati	or.annutat pr	cvemor,uppe	anu iower	pipe railis.				
	No incident	s reported.										
Tops: Codr			Cove limesto	ne 846 m, Fi	schell's Bro	ok 870 m, (S	prout Falls), Friars cov	e @2086m.	Snake Bite (@ 2555	
Prev Cost		73,829	Today		,364	Total Cost		09,193	Weather:]	Plus 15, sunn	у
Foreman		Rill W	'illiams	-	Rig Phone	,	709-649-710	16	Mud Type		Polymer rooker / Shar	ne Hallev

			Vulc	an Mi	inerals	Daily	/ Drill	ing Ro	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	95		Date:	03-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	logging								KB elev:	175.30	m.
the next da	Logging									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	3 3 BT A E	1 TD
		-	-				151 50		04451) n ()	,	
M 11		Pump 1	Pump 2	Drilling As					or @1.15deg,			1 D
Model		PZ-11 165	PZ-11 152		(165mm DC				Pump Pres		15,000	kPa
Liner Stroke	(mm)	279	279	BHA Lengt Drill Collar		277.73 165.0	mm	Strap: Drill Pipe (O D	Board: 127.0	mm	
SPM	(mm)	90	90	D.C. Annul		103.0	m/min	D.P Annul		65.0	m/min	
Vol.	m³/min @ 95%	1.5000	1.3000	Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
7 024		1.0000	1.5000	000 (010010,	, -	J	112,500	1140 11741	• •	10710		
		SUR	VEYS				MUD			MUD AT	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3419.00	Î	11.97	296.52			Density	1130		Caustic	2	Percol	
3433.00		11.99	295.97			Vis.	75		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.8		Kelzan	2	T-352	
3460.00		12.14	296.30			Fluid Loss	7.6		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	23.0		Bicarb		2K-7	1
3488.00		12.19	296.14			Y.P.	11.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/7/8		Drispac	2	Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.0		Barite	40	Lime Hydrate	2
3542.00		12.92	298.08			Oil	0.000		Lignite	2	Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	3
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash			
						Temp	25.1		Supervision		Day Cost	\$4,320
						XSPolymer			Mud Van	1	Well Cost	\$251,771
	l losses Surfa		hole Estimat	es m3		asing Tests		ate			rifuge	
	ılating Vol.	147.0				sing Test		ug-09	Underflow	•		30.0
	es down hole		Total hole			OP Test		ep-09	Overflow I			15
Today tota	es at surface	0.3 0.5	Total surf. Cumulative	171.0		sing Test OP Test		ating hrs Oct-09	Flow Rate,			0.0 1.0
Today tota	ii iosses	0.3	Cumulative	1/1.0	Next B	or rest	03-0	JC1-09	Operating	nours	24	1.0
	Wo	ell Control -	l _z Do		Ша	le Condition	n IrdoN & V	F+ /#		Total Cas I	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	30	Torque	13500	Poolze	ground		12
RSPP #1	51 OKES 55	7068	11000	3516	Drag Dn	30	Torque	13300	, ,	ection		12
RSPP #2	55	7000	11000	3310	Hook Load					rip	0.	12
								I.		r	1	
	1. Rig up/C	Out		•	9. Slip & C	ut		_	17. Plug B	ack		•
	2. Drill			•	10. Survey			=	18. Wash		-	
	3. Ream			•	11. Wirelin	ne Logs	2.50	_	19. Flow ch	iecks		
	4. Drill Ou	ıt		•	12. Casing	Cement		_	20. Wk on	mud pumps		
	5. Circ. &	Cond.		•	13. Pump (Out Cement		=	21. Safety	Meeting	1.25	
	6. Trip		5.75	-	14. Nipple	Up BOP		_	22. Handle	e Tools	1.00	_
	7. Rig Serv	rice			15. Test B0			_	23 Other		13.50	
	8. Rig Rep	air			16. BOP D	rill		_	Total Hour	rs.	24.00	
						REMARKS	S					
	Continued to			1.0.21.00:								
	Wait on Bal					January 1						
	5 Make up log				eung with ba	iker logging	ciew.					
25:13-24:00	J Kig up logg	mg equipme	iii to 11g 11001	١.								
	_											
	=											
	No incident	s reported										
Tops: Code	roy Group 81		Cove limesto	ne 846 m, Fi	ischell's Bro	ok 870 m, (S	prout Falls), Friars cov	re @2086m.	Snake Bite (@ 2555	
Prev Cost		8,465	Today		,409	Total Cost	•	97,874	Weather:		Plus 15, sunn	y
				-					Mud Type		Polymer	
Foreman		Bill W	/illiams		Rig Phone	,	709-649-710)6	Taken By:	Terry B	rooker / Shai	ne Hallev

			Vulc	an Mi	inerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	96		Date:	04-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	logging								KB elev:	175.30	m.
the next da	Logging									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	3 3 BT A E	1 TD
		-	-				151 50		04451) The state of the	,	
M 11		Pump 1	Pump 2	Drilling As						, NM tool car		1 D.
Model		PZ-11 165	PZ-11 152		165mm DC				Pump Pres		15,000	kPa
Liner Stroke	(mm)	279	279	BHA Lengt Drill Collar		277.73 165.0	mm	Strap: Drill Pipe (O D	Board: 127.0	mm	
SPM	(mm)	90	90	D.C. Annul		103.0	m/min	D.P Annul		65.0	m/min	
Vol.	m³/min @ 95%	1.5000	1.3000	Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
					, -				•			
		SUR	VEYS				MUD			MUD AL	DITIVES	
Do	epth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3419.00	Î	11.97	296.52			Density	1130		Caustic	2	Percol	
3433.00		11.99	295.97			Vis.	75		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.8		Kelzan	2	T-352	
3460.00		12.14	296.30			Fluid Loss	7.6		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	23.0		Bicarb		2K-7	1
3488.00		12.19	296.14			Y.P.	11.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/7/8		Drispac	2	Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.0		Barite	40	Lime Hydrate	2
3542.00		12.92	298.08			Oil	0.000		Lignite	2	Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	3
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash			
				1		Temp	25.1		Supervision		Day Cost	\$4,320
		0.5			20200	XSPolymer			Mud Van	1	Well Cost	\$251,771
	l losses Surfa		hole Estimat	es m3		asing Tests		ate			rifuge	
	ılating Vol.	147.0	T			sing Test		ug-09	Underflow	•	188	
	es down hole		Total hole			OP Test		ep-09	Overflow I			15
Today tota	es at surface	0.3 0.5	Total surf. Cumulative	171.0		sing Test OP Test		ating hrs Oct-09	Flow Rate, Operating			0.0 1.0
Today tota	11033C3	0.5	Cumulative	171.0	TICAL D	or rest	03-0	JC1-07	Operating	iloui 3	2-	r.0
	We	ell Control -	kPa		Ho	le Condition	n kdaN & K	ft/#		Total Cas I	Readings (%)	1
Pump	Strokes	Pressure	MACP	Depth	Drag up	30	Torque	13500	Back	ground	0.	
RSPP #1	55 55	7068	11000	3516	Drag Dn	30	Torque	10000	1	nection	0.	
RSPP #2		7000	11000	0010	Hook Load					rip		
								ı	ı	•		
	1. Rig up/0	Out		•	9. Slip & C	ut	-	_	17. Plug B	ack		
	2. Drill			•	10. Survey			-	18. Wash	to Btm		
	3. Ream				11. Wirelin	ne Logs	17.00	=' =	19. Flow cl	hecks		
	4. Drill Ou	t			12. Casing			=		mud pumps		
	5. Circ. &	Cond.				Out Cement		=	21. Safety		0.75	
	6. Trip				14. Nipple			=	22. Handle	e Tools		
	7. Rig Serv			-	15. Test BO			_	23 Other		5.50	
	8. Rig Rep	air			16. BOP D	rill		=	Total Hour	rs	23.25	
00.00 11 0) D: 1			ar aradela di di		REMARKS						
	O Rig up logg: 5 Safety meet			n with tools.	wait on par	is for logging	g unit					
	Rig to run V		ging crew.									
16:00-24:00		or log.										
10.00-24.00	LUE.											
	_											
	=											
	No incident	s reported.										
Tops: Cod	roy Group 8		Cove limesto	ne 846 m, Fi	schell's Bro	ok 870 m, (S	prout Falls), Friars cov	e @2086m.	Snake Bite (@ 2555	
Prev Cost		8,534	Today		,545	Total Cost		31,079	Weather:	;]	Plus 12, sunn	у
				-					Mud Type		Polymer	
Foreman			/illiams		Rig Phone	,	709-649-710		T-1 D	TO D	rooker / Shai	TT . 11

			Vulc	an Mi	inerals	s Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	05-O	ct-09
Depth:	3560.0	mKB	Progress:	iii itooiiiso	Drilling:		hrs ROP,			Rig:	Stoneha	
1 -	@ 0800 hrs:		110510001		21					KB elev:	175.30	
the next da										KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
23	HC	GX-44DX	6067291	3451	3560		63	3 x 14.3	110	15	3 3 BT A E	
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit.	171mm 7/8:	3 stage moto	r @1.15deg.	NM tool car	rier.	
Model		PZ-11	PZ-11		X 165mm DC				Pump Pres			kPa
Liner	(mm)	165	152	BHA Lengt		277.73	m	Strap:		Board:		
Stroke	(mm)	279	279	Drill Collar	· O.D.	165.0	mm	Drill Pipe (O.D.	-	mm	
SPM		90	90	D.C. Annul	ar Vel.:	103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%	1.5000	1.3000	Jet Velocity		54.7	m/sec	True Hydr	4 7	157.0	kW	
			ı					•			•	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3419.00		11.97	296.52			Density	1130		Caustic		Percol	
3433.00		11.99	295.97			Vis.	75		Envirofloc		Sulphamic	
3448.00		11.67	295.77			рH	10.8		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	7.6		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	23.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	11.0		Newedge		Sapp	
3501.00	t	12.25	296.75			Gel S.	3.5/7/8		Drispac		Dyna det	
3516.00	1	12.23	299.21			Filter Ck	0.5				Walnut	
3529.00	1	12.57	299.21			Solids %	8.0		Desco Barite			J
3542.00		12.00	298.08			Oil	0.000				Lime Hydrate	a
3560.00		13.24	296.68			Ca (mg/l)	40.0		Lignite PHPA		Dyna fiber Bioside	
3300.00		13.24	290.00			Cl (mg/l)	9600.0				Bioside	
						MBT	17.5		Sawdust Soda Ash			
-						Temp	25.1				Day Cost	¢20
				1					Supervision		_ •	\$30
						IVCPolymor	11		Mud Von	1 1	Wall Cost	\$251 771
Mud	loccoc Surfa	co & Downl	ole Fetimat	ac m3	ROP & C	XSPolymer		ate	Mud Van	Centr	Well Cost	\$251,771
	losses Surfa		nole Estimat	es m3		asing Tests	D	ate		Centi	rifuge	
Total circu	lating Vol.	147.0		es m3	Last Ca	asing Tests sing Test	D 22-A	.ug-09	Underflow	Centi Density	rifuge 188	30.0
Total circu Today losse	lating Vol. es down hole	147.0 0.2	Total hole	es m3	Last Cas Last Bo	asing Tests sing Test OP Test	22-A 21-S	ug-09 ep-09	Underflow Overflow I	Centi Density Density	rifuge 188 11	30.0 15
Total circu Today losse Today losse	lating Vol. es down hole es at surface	0.2 0.3	Total hole Total surf.		Last Ca Last B Next Ca	asing Tests sing Test OP Test sing Test	22-A 21-S 505 rot	ug-09 ep-09 ating hrs	Underflow Overflow I Flow Rate,	Centro Density Density m3/min	188 11 80	30.0 15 0.0
Total circu Today losse	lating Vol. es down hole es at surface	147.0 0.2	Total hole	es m3	Last Ca Last B Next Ca	asing Tests sing Test OP Test	22-A 21-S 505 rot	ug-09 ep-09	Underflow Overflow I	Centro Density Density m3/min	rifuge 188 11	30.0 15 0.0
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	147.0 0.2 0.3 0.5	Total hole Total surf. Cumulative		Last Ca Last Bo Next Ca Next Bo	asing Tests sing Test OP Test sing Test OP Test	22-A 21-S 505 rot 05-C	ep-09 ating hrs	Underflow Overflow I Flow Rate, Operating	Centro Density Density m3/min hours	188 11 800 24	30.0 15 0.0
Total circu Today losse Today losse Today total	lating Vol. es down hole es at surface I losses We	147.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.0	Last Ca Last Bo Next Ca Next Bo	asing Tests sing Test OP Test sing Test OP Test OP Test	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating	Centro Density Density m3/min hours	188 111 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface I losses We Strokes	147.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	asing Tests sing Test OP Test sing Test OP Test OP Test OP Test Ole Condition 30	22-A 21-S 505 rot 05-C	ep-09 ating hrs	Underflow Overflow I Flow Rate, Operating	Centro Density Density m3/min hours Total Gas R	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We	147.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.0	Last Car Last Bo Next Ca Next Bo Ho Drag up Drag Dn	asing Tests Sing Test OP Test Sing Test OP Test OP Test OP Test OP Test OP Test OP Test	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow I Overflow I Flow Rate, Operating Backs	Centro Density Density m3/min hours Total Gas R ground ection	188 111 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface I losses We Strokes	147.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	asing Tests Sing Test OP Test Sing Test OP Test OP Test OP Test OP Test OP Test OP Test	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow I Overflow I Flow Rate, Operating Backs	Centro Density Density m3/min hours Total Gas R	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	asing Tests sing Test OP Test sing Test OP Test oP Test OP Test OP Test 30 30 124	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn	Centry Density Density m3/min hours Total Gas R ground ection rip	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/O	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	asing Tests sing Test OP Test sing Test OP Test oP Tes	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backg Conn T:	Centro Density Density m3/min hours Total Gas R ground ection rip	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last B6 Next Ca Next B6 Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	asing Tests sing Test OP Test sing Test OP Test oP Tes	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn T: 17. Plug B: 18. Wash t	Centro Density Density Majorin Hours Total Gas R Ground ection rip ack o Btm	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last B6 Next Ca Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs	22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn Tr. 17. Plug B. 18. Wash t 19. Flow ch	Centrol Density Density Density m3/min hours Total Gas R ground ection rip ack o Btm lecks	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last B6 Next Ca Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs Cement	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn Tr. 17. Plug B. 18. Wash t 19. Flow ch 20. Wk on 1	Centro Density Density Majmin hours Total Gas R ground ection rip ack o Btm necks mud pumps	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	147.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last B6 Next B6 Next B6 Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Condition 30 30 124 Cut The Logs Cement Out Cement	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn To Plug B. Wash t 19. Flow ch 20. Wk on 21. Safety	Centi Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	147.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple	asing Tests sing Test OP Test sing Test OP Test OP Test Be Condition 30 30 124 Cut Be Logs Cement Out Cement Up BOP	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Centi Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	147.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	asing Tests sing Test OP Test sing Test OP Test oP Test De Condition 30 30 124 Cut The Logs //Cement Out Cement Up BOP OP & FIT	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	147.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple	asing Tests sing Test OP Test sing Test OP Test oP Test De Condition 30 30 124 Cut The Logs //Cement Out Cement Up BOP OP & FIT	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	188 11 800 24 eadings (%)	30.0 15 0.0 1.0
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	147.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP	171.0 Depth	Last Ca: Last Bo Next Ca Next Bo Pag up Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 30 124 Cut The Logs //Cement Out Cement Up BOP OP & FIT Trill	22-A 21-S 505 rot 05-C n kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. rice air	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut Die Logs //Cement Opt Cement Up BOP OP & FIT Trill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn 17. Plug B. 18. Wash t 19. Flow ch 19. Flow ch 21. Safety 22. Handle 23 Other	Centric Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks hecks	eifuge 188 11 800 24 eadings (%) 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-24:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trig. 7. Rig Serv 8. Rig Reps D Logging. Rig.	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air un Sonic XN	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump O 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut The Logs Cement Out Cement Out Cement Up BOP OP & FIT Trill REMARKS L, and Induce	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00	aug-09 ep-09 ating hrs loct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backg Conn Ti 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Centrol Density Density Density Majmin Hours Total Gas R Ground ection rip ack o Btm hecks mud pumps Meeting o Tools	188 11 800 24 eadings (%) 0. 0.	30.0 15 0.0 1.0
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-24:00 Tops: Codr	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps D Logging. Re No incidents roy Group 81	147.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP 11000 MAC, Densi	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump O 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 30 124 Cut The Logs Cement Out Cement Out Cement Up BOP OP & FIT Prill REMARKS L, and Induct ok 870 m, (S	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00 Section / Calipe	aug-09 ep-09 ating hrs oct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backs Conn Ti 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Centing Density Density Density Density Density Density Majorial Gas R Ground Dection Prip Density Den	24.00	80.0 15 0.0 1.0 12 12
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps D Logging. Re No incidents roy Group 81	147.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air un Sonic XN	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump O 14. Nipple 15. Test Bo 16. BOP D	asing Tests sing Test OP Test sing Test OP Test sing Test OP Test Die Condition 30 124 Cut The Logs Cement Out Cement Out Cement Up BOP OP & FIT Trill REMARKS L, and Induce	22-A 21-S 505 rot 05-C n kdaN & K Torque 24.00 Section / Calipe	aug-09 ep-09 ating hrs loct-09 ft/# 13500	Underflow Overflow I Flow Rate, Operating Backg Conn Ti 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Centing Density Densit	188 11 800 24 eadings (%) 0. 0.	80.0 15 0.0 1.0 12 12

			Vulc	an Mi	nerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Day:	98		Date:	06-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	logging								KB elev:	175.30	m.
the next da	Logging									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		BGOR
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	3 3 BT A E	1 TD
		-	-				151 50		04471			
M 11		Pump 1	Pump 2	Drilling Ass				3 stage moto				1 D
Model		PZ-11 165	PZ-11 152	BHA Lengt		Jar, 2x1651			Pump Pres		15,000	kPa
Liner Stroke	(mm)	279	279	Drill Collar		277.73 165.0	m mm	Strap: Drill Pipe () D	Board: 127.0	mm	•
SPM	(mm)	90	90	D.C. Annul		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%	1.5000	1.3000	Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
7 024		1.5000	1.5000	occ relocity	•	J		1140 11,41	•	10710		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	7:03		Gel		CaC03	
3419.00	Î	11.97	296.52			Density	1130		Caustic		Percol	
3433.00		11.99	295.97			Vis.	75		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.8		Kelzan	3	T-352	
3460.00		12.14	296.30			Fluid Loss	7.6		Cello		Defoamer	3
3474.00		12.36	297.12			P.V.	23.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	11.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/7/8		Drispac	8	Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.0		Barite	20	Lime Hydrate	d
3542.00		12.92	298.08			Oil	0.000		Lignite	1	Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust	13		
						MBT	17.5		Soda Ash			
						Temp	25.1		Supervision		Day Cost	\$330
						XSPolymer	1.1		Mud Van	1	Well Cost	\$257,024
	losses Surfa		hole Estimat	es m3		asing Tests		ate			rifuge	
Total circu		147.0				sing Test		ug-09	Underflow			30.0
	es down hole		Total hole			OP Test		ep-09	Overflow I	•		15
Today tota	es at surface	0.3	Total surf. Cumulative	171.0		sing Test OP Test		ating hrs Oct-09	Flow Rate,			0.0 1.0
Touay tota	1 105565	0.5	Cumulative	1/1.0	Next D	or rest	03-0	JC1-07	Operating 1	nour s	25	1.0
	Wo	ell Control -	l _z Do		Ц	le Condition	kdoN & V	F+/#		Total Cas D	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	30	Torque	10/#		ground	teauings (70)	
RSPP #1	511 OKES 55	7068	11000	3516	Drag Dn	30	Torque			ection		
RSPP #2	55	7000	11000	3310	Hook Load	124				rip		
								II.		т		
	1. Rig up/C	Out		:	9. Slip & C	ut		=	17. Plug B	ack		
	2. Drill				10. Survey			_	18. Wash t			
	3. Ream				11. Wirelin	ne Logs	24.00	=	19. Flow ch			
	4. Drill Ou	ıt			12. Casing	_		=	20. Wk on 1	mud pumps		
	5. Circ. &	Cond.			13. Pump (Out Cement		-	21. Safety	Meeting		
	6. Trip				14. Nipple			=" =.	22. Handle			_
	7. Rig Serv	ice			15. Test BO	OP & FIT		=" =.	23 Other			_
	8. Rig Rep	air			16. BOP D	rill		_	Total Hour	rs	24.00	
						REMARKS						
00:00-24:00	Logging. R	un Dip/Ima	ager. Micro r	esisitivity an	d Formation	n tester.						
	_											
	=											
	No incident	s reported.										
Tops: Codi	oy Group 8		Cove limesto	ne 846 m, Fi	schell's Bro	ok 870 m, (S	prout Falls	, Friars cov	e @2086m.	Snake Bite @	@ 2555	
Prev Cost		59,280	Today		,484	Total Cost		84,764	Weather:		Plus 10, rain	1
									Mud Type		Polymer	
Foreman		Rill W	/illiams		Rig Phone	,	709-649-710	6	Taken Rv	Terry Ri	rooker / Sha	ne Hallev

			Vulc	an Mi	nerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	99		Date:	07-O	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	m # 11
Operation	@ 0800 hrs:	Pull out to p	pick up DST	tools						KB elev:	175.30	m.
the next da	r Logging									KB - GL	6.30	
Bit #		Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	3 3 BT A E	1 TD
		-	-				151 0.77	112 50		D.G. 0.17	······	
34.11		Pump 1	Pump 2	Drilling Ass	sembly:	216mm bit,	171mm 8 X	165mm DC,	Jar, 2x165n			. D.
Model Liner		PZ-11	PZ-11 152	BHA Lengt	h.	277.73		Strap:	Pump Pres	sure: Board:	15,000	kPa
Stroke	(mm)		279	Drill Collar		165.0	m mm	Drill Pipe (<u> </u>	127.0	mm	
SPM	(IIIII)		90	D.C. Annul		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%		1.3000	Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
		I						·			-	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:23		Gel		CaC03	
3419.00	<u> </u>	11.97	296.52			Density	1105		Caustic		Percol	
3433.00		11.99	295.97			Vis.	63		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.6		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	7.2		Cello		Defoamer	
3474.00	 	12.36	297.12			P.V.	21.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	14.5		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	4/6.5/7.5		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	6.6		Barite		Lime Hydrate	i
3542.00	+	12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00	+	13.24	296.68			Ca (mg/l) Cl (mg/l)	40.0 7400.0		PHPA Sawdust		Bioside	
	+					MBT	15.0		Sawaust Soda Ash			
						Тетр	28.5		Supervision		Day Cost	\$687
	†					XSPolymer	1.0		Mud Van	1	Well Cost	\$257,711
Mud	l losses Surfa	ce & Down	hole Estimat	es m3	BOP & Ca	asing Tests		ate		Cent	rifuge	
	ılating Vol.	139.0				sing Test	22-A	ug-09	Underflow			
Today loss	es down hole	0.2	Total hole		Last B	OP Test	21-S	ep-09	Overflow I	Density		
Today loss	es at surface	0.3	Total surf.		Next Ca	sing Test	505 rot	ating hrs	Flow Rate,	m3/min		
Today tota	l losses	0.5	Cumulative	171.0	Next B	OP Test	05-0	Oct-09	Operating 1	hours		
	We		kPa			le Condition	ı kdaN & K	ft/#		Total Gas R	Readings (%)	
		ell Control -			Drag up	30						
Pump	Strokes	Pressure	MACP	Depth			Torque		Backg		3 \ 7	
RSPP #1				Depth 3516	Drag Dn	30	Torque		Conn	ection		
-	Strokes	Pressure	MACP	-			Torque		Conn			
RSPP #1	Strokes 55	Pressure 7068	MACP	-	Drag Dn Hook Load	30 124	Torque		Conn	ection rip		
RSPP #1	Strokes 55 1. Rig up/C	Pressure 7068	MACP	-	Drag Dn Hook Load	30 124	Torque		Conn Ti	ection rip ack		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill	Pressure 7068	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey	30 124		-	17. Plug B: 18. Wash t	ection rip ack o Btm		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream	Pressure 7068 Out	MACP	-	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	30 124 Cut	16.00	-	17. Plug B 18. Wash t 19. Flow ch	ection rip ack o Btm aecks		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	Pressure 7068 Out	MACP	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing	30 124 Cut ne Logs /Cement	16.00	-	17. Plug B: 18. Wash t 19. Flow ch 20. Wk on r	ection rip ack o Btm tecks mud pumps		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream	Pressure 7068 Out	MACP	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing	30 124 Cut ne Logs /Cement Out Cement	16.00	-	17. Plug B 18. Wash t 19. Flow ch	ection rip ack o Btm aecks mud pumps Meeting		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	Pressure 7068 Out t Cond.	MACP 11000	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump (30 124 Cut ne Logs /Cement Out Cement Up BOP	16.00	-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety	ection rip ack o Btm aecks mud pumps Meeting		
RSPP #1	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	Pressure 7068 Out t Cond.	MACP 11000	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple	30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT	16.00	-	17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1	1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	Pressure 7068 Out t Cond.	MACP 11000	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple 15. Test BC 16. BOP D	30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT rill	16.00	-	17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	ection rip ack o Btm ecks mud pumps Meeting o Tools		
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 7068 Out t Cond.	MACP 11000	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing, 13. Pump (14. Nipple 15. Test BC 16. BOP D	30 124 Fut The Logs (Cement Out Cement Up BOP OP & FIT rill	16.00	-	Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00		Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00		Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00		Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00	, 30 requeste	Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00	, 30 requeste	Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep	Pressure 7068 Out t Cond. vice air	MACP 11000 	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut The Logs Cement Out Cement Up BOP DP & FIT rill REMARKS	16.00	, 30 requeste	Conn To To To To To To To To To To To To To	ection rip ack o Btm ecks mud pumps Meeting o Tools	24.00	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/O 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 7068 Out tt Cond. vice air es finish log nole for a wi	8.00 ging run #5 I per trip. 2 m	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D	30 124 Sut Tut The Logs (Cement Oput Cement Up BOP OP & FIT FIII REMARKS SSSful test. Rud d UPR.	16.00		Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	ection rip ack o Btm necks mud pumps Meeting o Tools s	24.00	
RSPP #1 RSPP #2 00:00-16:00 16:00-24:00 Tops: Code	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 7068 Out tt Cond. rice air es finish log nole for a wi	8.00 ging run #5 I per trip. 2 m hazzards ID Cove limestor	3516 FMT. 30 attential on bottom dd ne 846 m, Fi	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D mpts, I succe n. Functione	30 124 Sut Tut Tut Tut Tut Tut Tut Tut Tut Tut T	16.00 16.00 In #6 RCOR), Friars cov	Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour ed, 28 attemp	ection rip ack o Btm necks mud pumps Meeting o Tools s	24.00 vered.	
RSPP #1 RSPP #2	Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	Pressure 7068 Out tt Cond. vice air es finish log nole for a wi	8.00 ging run #5 I per trip. 2 m	3516	Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump C 14. Nipple 15. Test BC 16. BOP D mpts, I succe n. Functione	30 124 Sut Tut The Logs (Cement Oput Cement Up BOP OP & FIT FIII REMARKS SSSful test. Rud d UPR.	16.00 16.00 In #6 RCOR		Conn Ti 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	ection rip ack o Btm necks mud pumps Meeting o Tools s ted, 28 recov	24.00	

			Vulc	an Mi	nerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	100		Date:	08-O	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,	m/hr:		Rig:	Stoneha	m # 11
Operation	@ 0800 hrs:	DST #3 Fin	al shut in							KB elev:	175.30	m.
the next da	DST #4									KB - GL	6.30	
Bit #	Size/Make	Model IADC		In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	33BT A E	1 TD
		- 4	-				40	1.404				
N. 11		Pump 1	Pump 2	Drilling Ass	sembly:	516m tail pi	pe, 49m test	tool, 136m	165mm dc, 2			1 D
Model		PZ-11	PZ-11 152	DIIA I angs	h.		•	Strap:	Pump Press		15,000	kPa
Liner Stroke	(mm)		152	BHA Lengt Drill Collar		165.0	m mm	Strap: Drill Pipe () D	Board: 127.0	mm	
SPM	(mm)			D.C. Annul		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%			Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
			1		-	*		,	•		.=	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	pth	Drift	Azimuth	North	East	Time	8:05		Gel		CaC03	
3419.00		11.97	296.52			Density	1135		Caustic		Percol	
3433.00		11.99	295.97			Vis.	74		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.6		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	6.8		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	30.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	15.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	4/6/7		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.4		Barite		Lime Hydrate	i
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	7400.0		Sawdust			
						MBT	15.0		Soda Ash			
				1		Temp	28.5		Supervision		Day Cost	\$412
						XSPolymer	1.0		Mud Van	1	Well Cost	\$258,124
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & Ca	asing Tests		ate			rifuge	
Total circu	lating Vol.	139.0			Last Cas			.ug-09	Underflow	•		
Total circu Today losse	lating Vol. es down hole	0.2	Total hole		Last B	OP Test	21-S	ep-09	Overflow D	ensity		
Total circu Today losse Today losse	lating Vol. es down hole es at surface	0.2 0.3	Total surf.	171.0	Last Bo Next Ca	OP Test sing Test	21-S 505 rot	ep-09 ating hrs	Overflow E Flow Rate,	Density m3/min		
Total circu Today losse	lating Vol. es down hole es at surface	0.2		171.0	Last Bo Next Ca	OP Test	21-S 505 rot	ep-09	Overflow D	Density m3/min		
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	0.2 0.3 0.5	Total surf. Cumulative	171.0	Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating	Density m3/min hours	eadings (%)	
Total circu Today losse Today losse Today total	lating Vol. es down hole es at surface I losses We	0.2 0.3 0.5	Total surf. Cumulative		Last BO Next Cas Next BO	OP Test sing Test OP Test le Condition	21-S 505 rot 05-C 1 kdaN & K	ep-09 ating hrs Oct-09	Overflow D Flow Rate, Operating	Density m3/min hours Total Gas R	eadings (%)	
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface I losses We Strokes	0.2 0.3 0.5	Total surf. Cumulative kPa MACP	Depth	Last BO Next Ca Next BO Ho Drag up	OP Test sing Test OP Test le Condition 30	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating D	Density m3/min hours Total Gas R ground	eadings (%)	
Total circu Today losse Today losse Today total	lating Vol. es down hole es at surface I losses We	0.2 0.3 0.5	Total surf. Cumulative		Last BO Next Cas Next BO	OP Test sing Test OP Test le Condition	21-S 505 rot 05-C 1 kdaN & K	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating Backg	Density m3/min hours Total Gas R ground ection	eadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes	0.2 0.3 0.5	Total surf. Cumulative kPa MACP	Depth	Last BO Next Ca Next BO Ho Drag up Drag Dn	OP Test sing Test OP Test le Condition 30 30	21-S 505 rot 05-C 1 kdaN & K	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating Backg	Density m3/min hours Total Gas R ground	leadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last BO Next Car Next BO Drag up Drag Dn Hook Load	DP Test sing Test DP Test DP Test DP Test DP Test DP Test DP Test DP Test	21-S 505 rot 05-C 1 kdaN & K	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating Backg	Density m3/min hours Total Gas R ground ection rip	eadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last BO Next Ca Next BO Ho Drag up Drag Dn	DP Test sing Test DP Test DP Test DP Test DP Test DP Test DP Test DP Test	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating Backg Conn	Density m3/min hours Total Gas R ground ection rip	leadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface Hosses We Strokes 55	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load	OP Test sing Test OP Test OP Test Sele Condition 30 30 124	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow E Flow Rate, Operating b Backg Conn T) 17. Plug Ba	Density m3/min hours Total Gas R ground ection rip ack o Btm	leadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing	OP Test sing Test OP Test OP Test OP Test 30 30 124 Out The Logs (Cement	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow L Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on n	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps		
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O	OP Test sing Test OP Test OP Test Sole Condition 30 30 124 Sut The Logs (Cement Out Cement	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps	1.75	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.2 0.3 0.5 Il Control - Pressure 7068 Dut t Cond.	Total surf. Cumulative kPa MACP 11000 1.75 7.00	Depth 3516	How Load Post Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump (14. Nipple	OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm hecks mud pumps Meeting		
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth 3516	How Load Post Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	OP Test sing Test OP Test OP Test Ille Condition 30 30 124 Sut The Logs Cement Out Cement Up BOP OP & FIT	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density m3/min hours Total Gas R ground ection rip ack o Btm lecks mud pumps Meeting Tools	1.75 12.25	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000 1.75 7.00	Depth 3516	How Load Post Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump (14. Nipple	OP Test sing Test OP Test OP Test Ille Condition 30 30 124 Sut The Logs Cement Out Cement Up BOP OP & FIT	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow L Flow Rate, Operating Backg Conn To 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm lecks mud pumps Meeting Tools	1.75	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000 1.75 7.00	Depth 3516	Last BO Next Ca Next Bo Per Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelir 12. Casing 13. Pump of 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09	Backg Conn To T. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density m3/min hours Total Gas R ground ection rip ack o Btm lecks mud pumps Meeting Tools	1.75 12.25	
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	0.2 0.3 0.5 Il Control - Pressure 7068 Out	Total surf. Cumulative kPa MACP 11000 1.75 7.00 0.25	Depth 3516	Last BC Next Ca: Next BC Pag up 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	OP Test sing Test OP Test OP Test de Condition 30 30 124 cut de Logs (Cement Out Cement Up BOP OP & FIT rill REMARKS	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air	Total surf. Cumulative kPa MACP 11000 1.75 7.00 0.25 mud, Pull od	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with bu	Total surf. Cumulative KPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Mak	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repo	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with bu	Total surf. Cumulative KPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Mak	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with bu	Total surf. Cumulative KPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Mak	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with bu	Total surf. Cumulative KPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Mak	Depth 3516	Last BO Next Ca: Next BO Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump O 14. Nipple 15. Test BO 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with bu	Total surf. Cumulative KPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Mak	Depth 3516	Last BC Next Ca: 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	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug Ba 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools	1.75 12.25 24.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00 23:00-24:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trig. 7. Rig Serv 8. Rig Reps 6 Circulate an 0 Run in tailo 0 Rig up test r	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with benanifold and	Total surf. Cumulative kPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Maki lines.	Depth 3516	Last BC Next Ca: Next BC Pag up 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	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque 1.00	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting Tools s	1.75 12.25 24.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00 23:00-24:00 Tops: Codr	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps 6 Circulate an 9 Run in tailo 9 Rig up test r	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with be nanifold and	Total surf. Cumulative kPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Maki lines.	Depth 3516 ut of the hole te up test too	Last BC Next Ca: Next BC Pag up 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 e for DST. B ls, trip in hole schell's Broese	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque 1.00 Il secure in 9 ring.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools s d rams and U	1.75 12.25 24.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:45 09:45-23:00 23:00-24:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trig. 7. Rig Serv 8. Rig Reps 6 Circulate an 0 Run in tailo 0 Rig up test r	0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air d condition pipe with be nanifold and	Total surf. Cumulative kPa MACP 11000 1.75 7.00 0.25 mud, Pull od all nose, Maki lines.	Depth 3516 ut of the hole te up test too	Last BC Next Ca: Next BC Pag up 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	OP Test sing Test OP Test OP	21-S 505 rot 05-C 1 kdaN & K Torque 1.00 Il secure in 9 ring.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools s d rams and U	1.75 12.25 24.00	g

			Vulc	an Mi	inerals	S Daily	y Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	101		Date:	09-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	DST #4 Init	ial shut in							KB elev:	175.30	m.
	Lay down dı									KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		D 1	D	D 2112 A		004 (1)	. 40	. 1.126	165 1 1	00 1111/100	D.11. 1. 4	C
Model		Pump 1 PZ-11	Pump 2 PZ-11	Drilling As	sembly:	904m tan p	ipe, 49m test	1001, 130111	Pump Pres		Drill pipe to	kPa
Liner	(mm)	1 Z-11	152	BHA Lengt	th:		m	Strap:	_1 unip 1 1es	Board:	13,000	ма
Stroke	(mm)		102	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM				D.C. Annul	lar Vel.:	103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%			Jet Velocity	y:	54.7	m/sec	True Hydr	47	157.0	kW	
		GTID					3 FT 170			1000	D. VIII. VIII. G	
D-	41-		VEYS	N41-	E4	Т:	MUD		G.I	MUD AD	DITIVES	
3419.00	pth	Drift 11.97	Azimuth 296.52	North	East	Time Density	8:05 1135		Gel Caustic		CaC03 Percol	
3433.00		11.97	295.97			Vis.	74		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pH	10.6		Kelzan		Т-352	
3460.00		12.14	296.30			Fluid Loss	6.8		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	30.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	15.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	4/6/7		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.4		Barite		Lime Hydrate	d
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l) MBT	7400.0 15.0		Sawdust Soda Ash			
						Temp	28.5		Supervision		Day Cost	\$412
						XSPolymer			Mud Van	1	Well Cost	\$258,124
Mnd	losses Surfa	ce & Down	hole Estimat	es m3	BOP & C	asing Tests		ate			rifuge	
										-	_	
Total circu		139.0			Last Ca	sing Test	22-A	ug-09	Underflow	Density		
Total circu Today losse	lating Vol. es down hole	139.0 0.2	Total hole			sing Test OP Test		.ug-09 ep-09	Underflow Overflow I	•		
Total circu Today losse Today losse	lating Vol. es down hole es at surface	139.0 0.2 0.3	Total surf.	451.0	Last Bo Next Ca	OP Test sing Test	21-S 505 rot	ep-09 ating hrs	Overflow I Flow Rate,	Density m3/min		
Total circu Today losse	lating Vol. es down hole es at surface	139.0 0.2		171.0	Last Bo Next Ca	OP Test	21-S 505 rot	ep-09	Overflow I	Density m3/min		
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	139.0 0.2 0.3 0.5	Total surf. Cumulative	171.0	Last Bo Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate,	Density m3/min hours	Readings (%)	
Total circu Today losse Today losse Today total	llating Vol. es down hole es at surface I losses We	139.0 0.2 0.3 0.5	Total surf. Cumulative	L	Last Bo Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density m3/min hours Total Gas R	Readings (%)	
Total circu Today losse Today losse	lating Vol. es down hole es at surface l losses	139.0 0.2 0.3 0.5	Total surf. Cumulative	Depth 3516	Last Bo Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density m3/min hours	teadings (%)	
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface I losses We Strokes	139.0 0.2 0.3 0.5	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Ho Drag up	OP Test sing Test OP Test OP Condition 30 30	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground	Readings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	OP Test sing Test OP Test OP Test De Condition 30 30 124	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T	Density m3/min hours Total Gas R ground ection rip	teadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	es down hole es at surface Hosses We Strokes 55	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bone	OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test 100 100 100 100 100 100 100 100 100 1	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B	Density m3/min hours Total Gas R ground ection rip	teadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bone	OP Test sing Test OP Test OP Test Sing Test OP Test 100 100 100 100 100 100 100 100 100 1	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t	Density m3/min hours Total Gas R ground ection rip ack o Btm	teadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	OP Test sing Test OP Test OP Test le Condition 30 30 124 Cut ne Logs	21-S 505 rot 05-C	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch	Density m3/min hours Total Gas R ground ection rip ack o Btm necks	teadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	OP Test sing Test OP Test OP Test Sing Test OP Test 30 30 124 Cut The Logs Cement	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps	teadings (%)	
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	139.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	OP Test sing Test OP Test OP Test OP Test 30 30 124 Cut ne Logs /Cement Out Cement	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting	teadings (%)	
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Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	OP Test sing Test OP Test OP Test OP Test 30 30 124 Cut Dut Cement Out Cement Up BOP OP & FIT	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)		
Total circu Today losse Today losse Today total Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000	Depth	Last Bo Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	21.50	
Total circu Today losse Today total Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000 0.75 0.50	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & Co 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2	s down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repi	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990.	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & Co 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP Domin, Initial	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D Omin, Initial ed. Gas in sa	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flower.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps G DST #3 inte 6 Pull oput wi	139.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air rval from 29 th DST #3. in tail pipe. C	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D Omin, Initial ed. Gas in sa	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flower.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa	139.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air rval from 29 th DST #3. in tail pipe. C	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D Omin, Initial ed. Gas in sa	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flower.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Repa	139.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air rval from 29 th DST #3. in tail pipe. C	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling	Depth 3516	Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo 16. BOP D Omin, Initial ed. Gas in sa	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flower.	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools DST) s	21.50 23.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45 21:45-24:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & C 6. Trip 7. Rig Serv 8. Rig Repair 8. Rig Repair 9 Delta junt wi 6 Run in 904n 9 Make up DS	139.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air rval from 29 th DST #3. (a tail pipe. C	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling Conduct 4fun	Depth 3516	Last Bo Next Ca Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & Co 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP Domin, Initial ed. Gas in saulator test. In	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flover. e 20500kPa,	ep-09 ating hrs bet-09 ft/# v 60min, Fin	Overflow I Flow Rate, Operating Backg Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools DST) s rs. Function l	21.50 23.00 HCR.	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45 21:45-24:00 Tops: Codr	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa 6 DST #3 inte 6 DUI oput wi 6 Run in 904n 0 Make up DS No incidents roy Group 81	139.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total surf. Cumulative kPa MACP 11000 0.75 0.50 0.63 to 2990. 65m drilling Conduct 4fun hazzards ID Cove limesto	Depth 3516	Last Bo Next Ca Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & Co 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo Omin, Initial ed. Gas in saulator test. In sischell's Brooks Broo	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flover. e 20500kPa,	ep-09 ating hrs Oct-09 ft/# v 60min, Fin final pressur	Overflow I Flow Rate, Operating Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour al shut in 6h e 9700kPa. F	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools DST) s rs. Function l Recharge time	21.50 23.00 HCR. e 1min 50sec	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-09:15 09:15-20:45 20:45-21:45 21:45-24:00	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Repa 6 DST #3 inte 6 DUI oput wi 6 Run in 904n 0 Make up DS No incidents roy Group 81	139.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. ice air rval from 29 th DST #3. (a tail pipe. C	Total surf. Cumulative kPa MACP 11000 0.75 0.50 063 to 2990. 65m drilling Conduct 4fun	Depth 3516	Last Bo Next Ca Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & Co 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP Domin, Initial ed. Gas in saulator test. In	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 0.25 in, Final flover. e 20500kPa,	ep-09 ating hrs bet-09 ft/# v 60min, Fin	Overflow I Flow Rate, Operating Backg Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools OST) s Recharge time	21.50 23.00 HCR.	

			Vulc	an Mi	inerals	Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	102		Date:	10-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP, 1	n/hr:		Rig:	Stoneha	am # 11
Operation	@ 0800 hrs:	RIH DST #:	5							KB elev:	175.30	m.
	Lay down d	rill string								KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Dunn 1	Pump 2	Drilling As	 combles	00.4m toil m	ina 40m taat	tool 126m	165mm do 1	09m HWDP.	Daill mine to	anufa a a
Model		Pump 1 PZ-11	PZ-11	Drilling As	semony:	904III tali pi	ipe, 49iii test	1001, 130111	Pump Pres		15,000	kPa
Liner	(mm)	1 Z-11	152	BHA Lengt	h.		m	Strap:	_ r unip r res	Board:	13,000	KI a
Stroke	(mm)		132	Drill Collar		165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM	()			D.C. Annul		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m ³ /min @ 95%			Jet Velocity	y:	54.7	m/sec	True Hydr	47	157.0	kW	
		•	•	•								
		SUR	VEYS				MUD			MUD AD	DITIVES	
	epth	Drift	Azimuth	North	East	Time	8:0200 AM		Gel		CaC03	
3419.00		11.97	296.52			Density	1135		Caustic		Percol	
3433.00		11.99	295.97			Vis.	75		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.4		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	6.5		Cello		Defoamer	
3474.00	<u> </u>	12.36	297.12			P.V.	30.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	15.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	4/6/7		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.4		Barite		Lime Hydrate	d
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0 7400.0		PHPA		Bioside	
						Cl (mg/l) MBT	15.0		Sawdust Soda Ash			
						Temp	28.5		Supervision		Day Cost	\$30
						XSPolymer			Mud Van	1	Well Cost	\$261,101
Mud	losses Surfa	ce & Down	nole Estimat	es m3	BOP & Ca	asing Tests		ate	ivida vali		rifuge	\$201,101
Total circu		139.0				sing Test		ug-09	Underflow		linge	
	es down hole		Total hole			OP Test		ep-09	Overflow I	•		
	es at surface	0.3	Total surf.			sing Test		ating hrs	Flow Rate,			
Today tota		0.5	Cumulative	171.0	Next Bo	OP Test	05-C	ct-09	Operating	hours		
		•	•	•					•		•	
	We	ll Control -	kPa		Ho	le Conditio	n kdaN & K	ft/#		Total Gas R	Readings (%)	
Pump	Strokes	Pressure	MACP	Depth	Drag up	30	Torque		Backg	ground		
RSPP #1	55	7068	11000	3516	Drag Dn	30				ection		
RSPP #2					Hook Load	124			T	rip		
	4 54 16							=	4 = 51 5			
	1. Rig up/0)ut		-	9. Slip & C	ut		-	17. Plug B			
	2. Drill			=	10. Survey	no T oga		=	18. Wash t			
	3. Ream 4. Drill Ou			-	11. Wirelin 12. Casing/	_		-		mud pumps		
	5. Circ. &			-	13. Pump (-	21. Safety		0.75	
	6. Trip	Conu.	11.50	-	14. Nipple			-	22. Handle			
	7. Rig Serv	ice	0.25		15. Test B(-	23 Other (I		11.50	
	8. Rig Rep			-	16. BOP D			=	Total Hour		24.00	
				•				-				
						REMARKS	5					
) RIH DST #4											
	DST #4 Init				,		shut in 360n	nin.				
16:30-24:00	Pull out of h	ole with DS	T #4. 88m of	f fluid recove	ery (Drilling	Mud)						
	No incident	s reported. 8	hazzards ID	'd								
_	roy Group 81	15 m, Ship (Cove limesto	ne 846 m, Fi								
Prev Cost	\$7,74	1,185	Today	\$34	,284	Total Cost	\$7,77	5,469	Weather:		lus 3, overca	st
Foreman		Don C	ampbell	-	Rig Phone	,	709-649-710	6	Mud Type Taken By:		Polymer cooker / Shar	ne Hallev

			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca				Day:			Date:	11-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	
_	@ 0800 hrs:						,			KB elev:	175.30	
the next da	Run 7" casir	ng								KB - GL	6.30	m.
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
					ļ							
		Pump 1	Pump 2	Drilling As	sembly:	972m tail p	pe, 82m test	tool, 82m 1	65mm dc, 10			
Model Liner		PZ-11	PZ-11	DIIA I	41			C4	Pump Pres		15,000	kPa
Stroke	(mm)		152	BHA Leng Drill Colla		165.0	m mm	Strap: Drill Pipe (O D	Board: 127.0	mm	
SPM	(mm)			D.C. Annu		103.0	m/min	D.P Annula		65.0	m/min	
Vol.	m³/min @ 95%			Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
			I		, .						•	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	8:05		Gel		CaC03	
3419.00		11.97	296.52			Density	1140		Caustic		Percol	
3433.00		11.99	295.97			Vis.	77		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.4		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	6.8		Cello		Defoamer	
3474.00		12.36	297.12		-	P.V.	31.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	15.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/6/7		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00 3542.00		12.68 12.92	299.17 298.08			Solids % Oil	8.8 0.000		Barite		Lime Hydrate	d
3560.00		13.24	296.68			Ca (mg/l)	40.0		Lignite PHPA		Dyna fiber Bioside	
0000.00		10.24	250.00			Cl (mg/l)	7400.0		Sawdust		Dioside	
						MBT	15.0		Soda Ash			
				ı		Temp	28.5		Supervision		Day Cost	\$30
						XSPolymer	1.0		Mud Van	1	Well Cost	\$261,131
		0.5	-1- E-4!4	og m2	DOD 6 C	asing Tests	D	ate		Centi	rifugo	
Mud	losses Surfa	ce & Down	ioie Estimat	es mo	BUP & C	asing resis	ע	aic		Centr	inuge	
Total circu	lating Vol.	145.0		es III3	Last Ca	sing Test	22-A	ug-09	Underflow	Density	Huge	
Total circu Today losse	llating Vol. es down hole	145.0 0.2	Total hole	es III3	Last Ca Last B	sing Test OP Test	22-A 21-S	ug-09 lep-09	Overflow I	Density Density	nuge	
Total circu Today losso Today losso	llating Vol. es down hole es at surface	0.2 0.3	Total hole Total surf.		Last Ca Last Bo Next Ca	sing Test OP Test sing Test	22-A 21-S 505 rot	aug-09 dep-09 ating hrs	Overflow I Flow Rate,	Density Density m3/min	inuge	
Total circu Today losse	llating Vol. es down hole es at surface	145.0 0.2	Total hole	171.4	Last Ca Last Bo Next Ca	sing Test OP Test	22-A 21-S 505 rot	ug-09 lep-09	Overflow I	Density Density m3/min	inuge	
Total circu Today losso Today losso	llating Vol. es down hole es at surface l losses	145.0 0.2 0.3 0.5	Total hole Total surf, Cumulative		Last Ca Last Bo Next Ca Next B	sing Test OP Test sing Test OP Test	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density Density m3/min hours		
Total circu Today losse Today losse Today tota	llating Vol. es down hole es at surface l losses We	145.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.4	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test OP Test	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density Density m3/min hours Total Gas R		
Total circu Today losse Today losse Today tota	es down hole es at surface l losses We Strokes	145.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	sing Test OP Test sing Test OP Test OP Test OP Test Dele Condition 30	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density Density m3/min hours Total Gas R ground		,
Total circu Today losse Today losse Today tota	llating Vol. es down hole es at surface l losses We	145.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.4	Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test OP Test OP Test Ole Condition 30 30	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R		
Total circu Today losse Today losse Today tota Pump RSPP #1	es down hole es at surface l losses We Strokes	145.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test OP Test Ole Condition 30 30	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection		
Total circu Today losse Today losse Today tota Pump RSPP #1	es down hole es at surface l losses We Strokes	145.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test OP Test OP Test 30 30 124	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection rip		
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill	145.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection rip		
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	145.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	sing Test OP Test sing Test OP Test OP Test OP Test OP Test OP Test A Description A Descrip	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B. 18. Wash t 19. Flow ch	Density Density m3/min hours Total Gas R ground ection rip ack o Btm lecks		
Total circu Today losse Today losse Today tota Pump RSPP #1	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	145.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test sing Test OP Test OP Test OP Test OP Test OP Test Lead to the Condition Solution S	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t 19. Flow ch 20. Wk on n	Density Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps	eadings (%)	
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	145.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP 11000	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Trag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6	sing Test OP Test sing Test OP Test OP Test OP Test OP Test Sing Test OP Test Cut OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test O	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety	Density Density m3/min hours Total Gas R ground ection rip ack o Btm ecks mud pumps Meeting		
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip	145.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP 11000	171.4 Depth	Last Ca Last Bo Next Ca Next B Tag up Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools	0.75	
Total circu Today losse Today losse Today tota Pump RSPP #1	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	145.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP 11000	171.4 Depth	Last Ca Last Bo Next Ca Next B Tag up Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test sing Test OP Test OP Test Sing Test OP Test Sing Test OP Test Sing Test Sin	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
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Total circu Today losse Today tota Pump RSPP #1 RSPP #2	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	145.0 0.2 0.3 0.5 Control - Pressure 7068 Cond. cice Cond. cic	Total hole Total surf. Cumulative kPa MACP 11000	Depth 3516	Last Ca Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backs Conn 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
Total circu Today losse Today tota Pump RSPP #1 RSPP #2 00:00-05:30	lating Vol. es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & G 6. Trip 7. Rig Serv 8. Rig Rep	145.0 0.2 0.3 0.5 Control - Pressure 7068 Cond.	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25	Depth 3516	Last Ca Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs Cement Out Cement Out Cement Up BOP OP & FIT rill REMARKS	22-A 21-S 505 rot 05-C 1 kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backs Conn 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15	Strokes Str	145.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 cee test tools.	Depth 3516	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15	Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	145.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 cee test tools.	Depth 3516	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15	Strokes Str	145.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 cee test tools.	Depth 3516	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test OP	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
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Total circu Today loss Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15	lating Vol. es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: 0 Finish pull C 0 Make up and 5 Test interva 0 pull out DS	145.0 0.2 0.3 0.5 Control -	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 ce test tools. f5. m to 2572m.	Depth 3516 Change shut	Last Ca Last Bo Next Bo Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing T	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools DST)	0.75	
Total circu Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15 23:15-24:00	Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep D Finish pull C D Make up and Test interva D pull out DS	145.0 0.2 0.3 0.5 Control -	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 ce test tools. #5. in to 2572m. s checked by hazzards ID	Depth 3516 Change shul Initial flow amud engined	Last Ca Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs // Cement Out Cement Up BOP OP & FIT rill REMARKS ing and bottom in 90min, Fin #3, #4 indicates #3, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4, #4 indicates #4, #4, #4 indicates #4, #4, #4, #4, #4, #4, #4, #4, #4, #4,	22-A 21-S 505 rot 05-C n kdaN & K Torque mm packer. R ala flow 90m	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backg Conn 17. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour ings in tools t in 360min.	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools DST) s	0.75 22.25 24.00	
Total circu Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-05:30 05:30-13:00 13:00-23:15 23:15-24:00	strokes Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep D Finish pull C D Make up and Test interva D pull out DS Recovered f No incidents Toy Group 8	145.0 0.2 0.3 0.5 Control -	Total hole Total surf. Cumulative kPa MACP 11000 0.75 0.25 ce test tools. #5. in to 2572m. s checked by hazzards ID	Depth 3516 Change shut Initial flow mud engined the 846 m, Fig. 1771.4	Last Ca Last Bo Next Bo Next Bo Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test Bo 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut The Logs // Cement Out Cement Up BOP OP & FIT rill REMARKS ing and bottom in 90min, Fin #3, #4 indicates #3, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4 indicates #4, #4, #4 indicates #4, #4, #4 indicates #4, #4, #4, #4, #4, #4, #4, #4, #4, #4,	22-A 21-S 505 rot 05-C n kdaN & K Torque Torque ampacker. R all flow 90m ate no forma	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backg Conn 17. Plug B. 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other (I Total Hour ings in tools t in 360min.	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools DST) s	0.75 22.25 24.00	
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			Vulc	an Mi	nerals	Daily	Drill	ing Re	eport			
Well:		Vulc	an Investca	n Robinso	ns #1		Dav:	104		Date:	12-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	
Operation @					Drining.		ms Roi,			KB elev:	175.30	
the next day		•	505							KB - GL	6.30	
		Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN		
23	HC	GX-44DX	6067291	3451	3560	109	63	3 x 14.3	110	15	3 3 BT A E	
											12	
		Pump 1	Pump 2	Drilling Ass	sembly:	216mm bit,	171mm 8 X	165mm DC.	Jar, 2x165m	m DC, 8 HV	VDP	
Model		PZ-11	PZ-11	J	•				Pump Press	sure:	11,336	kPa
Liner	(mm)		152	BHA Lengt	h:	252.55	m	Strap:	_	Board:		
Stroke	(mm)		279	Drill Collar	· O.D.	165.0	mm	Drill Pipe ().D.	127.0	mm	
SPM			90	D.C. Annul	ar Vel.:	103.0	m/min	D.P Annula	ar Vel.:	65.0	m/min	
Vol.	m ³ /min @ 95%		1.5000	Jet Velocity	7:	54.7	m/sec	True Hydr	47	157.0	kW	
		SUR	VEYS				MUD			MUD AD	DITIVES	
Dep	th	Drift	Azimuth	North	East	Time	7:11		Gel		CaC03	
3419.00		11.97	296.52			Density	1140		Caustic		Percol	
3433.00		11.99	295.97			Vis.	71		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pH	10.4	ļ	Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	6.8	ļ	Cello		Defoamer	
3474.00		12.36	297.12			P.V.	27.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	11.5		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/5/6		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.8		Barite		Lime Hydrated	i
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash		5 6 .	
						Temp	13.0		Supervision		Day Cost	\$30
						_			_	-	•	
	G 6	e D 1		2	DOD 0 C	XSPolymer	1.1		Mud Van	1	Well Cost	\$261,131
			nole Estimat	es m3		XSPolymer asing Tests	1.1 D	ate	Mud Van	Cent	•	\$261,131
Total circula	ating Vol.	150.0		es m3	Last Ca	XSPolymer asing Tests sing Test	1.1 D 22-A	ug-09	Mud Van Underflow	Cent Density	Well Cost	\$261,131
Total circula Today losses	ating Vol. s down hole	150.0 0.2	Total hole	es m3	Last Ca Last B	XSPolymer asing Tests sing Test OP Test	1.1 D 22-A 21-S	ug-09 ep-09	Mud Van Underflow Overflow D	Cent Density Density	Well Cost	\$261,131
Total circula Today losses Today losses	ating Vol. s down hole s at surface	150.0 0.2 0.3	Total hole Total surf.		Last Ca Last B Next Ca	XSPolymer asing Tests sing Test OP Test sing Test	1.1 D 22-A 21-S 505 rot	ug-09 ep-09 ating hrs	Mud Van Underflow Overflow D Flow Rate,	Centro Density Density m3/min	Well Cost	\$261,131
Total circula Today losses	ating Vol. s down hole s at surface	150.0 0.2	Total hole	es m3	Last Ca Last B Next Ca	XSPolymer asing Tests sing Test OP Test	1.1 D 22-A 21-S 505 rot	ug-09 ep-09	Mud Van Underflow Overflow D	Centro Density Density m3/min	Well Cost	\$261,131
Total circula Today losses Today losses	ating Vol. s down hole s at surface losses	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative		Last Ca Last Bo Next Ca Next Bo	XSPolymer asing Tests sing Test OP Test sing Test OP Test	1.1 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l	Centro Density Density m3/min hours	Well Cost rifuge	\$261,131
Total circula Today losses Today losses Today total l	ating Vol. s down hole s at surface losses We	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.4	Last Ca Last Bo Next Ca Next Bo	XSPolymer asing Tests sing Test OP Test OP Test OP Test	1.1 D 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l	Centro Density Density m3/min hours	Well Cost	\$261,131
Total circula Today losses Today losses Today total l	ating Vol. s down hole s at surface losses Wel	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	XSPolymer asing Tests sing Test OP Test sing Test OP Test	1.1 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating I	Centro Density Density m3/min hours Total Gas R	Well Cost rifuge	\$261,131
Total circula Today losses Today losses Today total l Pump RSPP #1	ating Vol. s down hole s at surface losses We	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.4	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	XSPolymer asing Tests Sing Test OP Test Sing Test OP Test OP Test	1.1 D 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l Backg	Centro Density Density m3/min hours Total Gas R ground ection	Well Cost rifuge	\$261,131
Total circula Today losses Today losses Today total l	ating Vol. s down hole s at surface losses Wel	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up	XSPolymer asing Tests sing Test OP Test sing Test OP Test	1.1 D 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l Backg	Centro Density Density m3/min hours Total Gas R	Well Cost rifuge	\$261,131
Total circula Today losses Today losses Today total l Pump RSPP #1 RSPP #2	ating Vol. down hole at surface losses We Strokes 55	150.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca: Last Bo Next Ca Next Bo Ho Drag up Drag Dn Hook Load	XSPolymer asing Tests Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test	1.1 D 22-A 21-S 505 rot 05-C	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating 1 Backg Conn	Centri Density Pensity m3/min hours Total Gas R ground ection	Well Cost rifuge	\$261,131
Total circula Today losses Today losses Today total I Pump RSPP #1 RSPP #2	ating Vol. s down hole s at surface losses Wel	150.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last Bo Next Ca Next Bo Ho Drag up Drag Dn	XSPolymer asing Tests Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test OP Test Sing Test	1.1 D 22-A 21-S 505 rot 05-C 1 kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l Backg	Centity Density Density m3/min hours Total Gas R ground ection rip	Well Cost rifuge	\$261,131
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Total circula Today losses Today losses Today total l Pump RSPP #1 RSPP #2	ating Vol. down hole s at surface losses We Strokes 55 1. Rig up/O 2. Drill	150.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca: Last Bo Next Ca Next Bo Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	XSPolymer asing Tests sing Test OP Test sing Test OP Test ole Condition 30 30 124 Cut the Logs	1.1 D 22-A 21-S 505 rot 05-C 1 kdaN & K Torque	ug-09 ep-09 ating hrs Oct-09	Mud Van Underflow Overflow D Flow Rate, Operating l Backg Conn Tr 17. Plug Ba 18. Wash t	Centity Density Density Mas/min Hours Total Gas R Ground Action Cip Cock Cock Cock Cock Cock Cock Cock Coc	Well Cost rifuge	\$261,131
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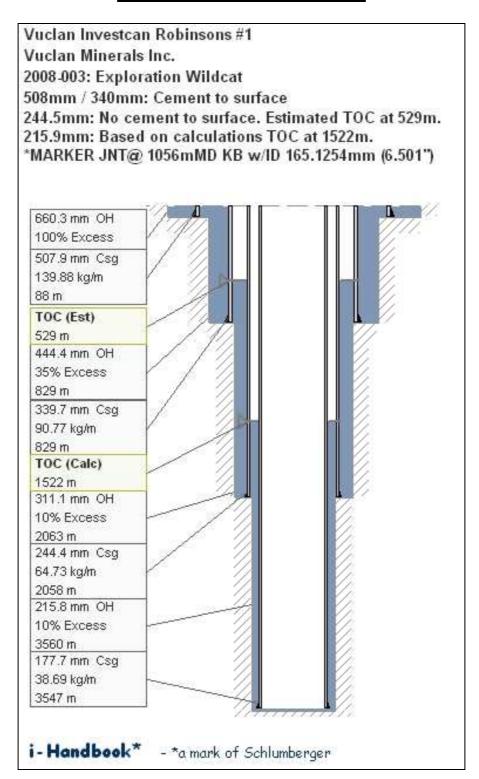
			Vulc	an Mi	ineral	s Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investca	an Robinso	ns #1		Day:	105		Date:	13-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	
	@ 0800 hrs:			ı	-		,			KB elev:	175.30	
1 -	Rig Down fo		Ü							KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly:	216mm bit,	171mm 8 X	165mm DC		ım DC, 8 HV		
Model		PZ-11	PZ-11					a.	Pump Pres		11,336	kPa
Liner	(mm)		152	BHA Lengt		252.55	m	Strap:	0 D	Board:		
Stroke SPM	(mm)		279 90	Drill Collar D.C. Annul		165.0 103.0	mm m/min	Drill Pipe (D.P Annula		127.0 65.0	mm m/min	
Vol.	m³/min @ 95%		1.5000	Jet Velocity		54.7	m/sec	True Hydr		157.0	kW	
7 01.	m/mm e /5/0		1.5000	Jack velocity	, .	34.7	III/SCC	Truc Hyur	• •	137.0		
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:11		Gel	1102112	CaC03	
3419.00		11.97	296.52			Density	1140		Caustic		Percol	
3433.00		11.99	295.97			Vis.	71		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	10.4		Kelzan		T-352	
3460.00		12.14	296.30			Fluid Loss	6.8		Cello		Defoamer	
3474.00		12.36	297.12			P.V.	27.0		Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	11.5		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	3.5/5/6		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco		Walnut	
3529.00		12.68	299.17			Solids %	8.8		Barite		Lime Hydrate	d
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust			
						MBT	17.5		Soda Ash		D. C. 4	***
				1	-	Temp XSPolymer	13.0		Supervision Mud Van	1	Day Cost Well Cost	\$30
	L				DOD 6 C	asing Tests		ate	Mud van	•		\$261,131
Mnd	Incees Surfa	ce & Downl	hole Estimat									
	losses Surfa		hole Estimat	es m3					Underflow		rifuge	
Total circu	lating Vol.	150.0		es m3	Last Ca	sing Test	22-A	ug-09	Underflow Overflow I	Density	riiuge	
Total circu Today losse			Total hole Total surf.	es m3	Last Ca Last B		22-A 21-S		Underflow Overflow I Flow Rate,	Density Density	riiuge	
Total circu Today losse	llating Vol. es down hole es at surface	150.0 0.2	Total hole	171.4	Last Ca Last B Next Ca	sing Test OP Test	22-A 21-S 505 rot	ug-09 Sep-09	Overflow I	Density Density m3/min	riuge	
Total circu Today losse Today losse	llating Vol. es down hole es at surface	150.0 0.2 0.3	Total hole Total surf.		Last Ca Last B Next Ca	sing Test OP Test sing Test	22-A 21-S 505 rot	aug-09 dep-09 ating hrs	Overflow I Flow Rate,	Density Density m3/min	riuge	
Total circu Today losse Today losse	llating Vol. es down hole es at surface l losses	150.0 0.2 0.3	Total hole Total surf, Cumulative		Last Ca Last B Next Ca Next B	sing Test OP Test sing Test	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density Density m3/min		
Total circu Today losse Today losse	llating Vol. es down hole es at surface l losses	150.0 0.2 0.3 0.5	Total hole Total surf, Cumulative		Last Ca Last B Next Ca Next B	sing Test OP Test sing Test OP Test	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density Density m3/min hours		
Total circu Today losse Today losse Today total Pump RSPP #1	llating Vol. es down hole es at surface l losses We	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative	171.4	Last Ca Last B Next Ca Next B He Drag up Drag Dn	sing Test OP Test sing Test OP Test OP Test DIE Condition 30 30	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection		
Total circu Today losse Today losse Today total Pump	lating Vol. es down hole es at surface l losses We Strokes	150.0 0.2 0.3 0.5	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last B Next Ca Next B He Drag up	sing Test OP Test sing Test OP Test OP Test DIE Condition 30 30	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground		
Total circu Today losse Today losse Today total Pump RSPP #1	llating Vol. es down hole es at surface 1 losses We Strokes 55	150.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP 11000	171.4 Depth	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test OP Test De Condition 30 30 124	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density Density m3/min hours Total Gas R ground ection rip		
Total circu Today losse Today losse Today total Pump RSPP #1	es down hole es at surface I losses We Strokes 55	150.0 0.2 0.3 0.5 Il Control - Pressure 7068	Total hole Total surf. Cumulative kPa MACP	171.4 Depth	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test sing Test OP Test OP Test OP Test OL Condition 30 30 124 Cut	22-A 21-S 505 rot 05-C	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T1	Density Density m3/min hours Total Gas R ground ection rip		
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Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-10:30	strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50	Depth 3516	Last Ca Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pump 14. Nipple 15. Test Bo	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 124 Cut The Logs //Cement Out Cement Up BOP OP & FIT Orill	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools	1.50	
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Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-10:30 10:30-11:30 11:30-12:30	Strokes Str	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50	Depth 3516	Last Ca Last B Next Ca Next B 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	sing Test OP Test Sing Test OP Test Sing Test OP Test	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools	1.50	
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Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-10:30 10:30-11:30 11:30-12:30	Strokes Str	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50	Depth 3516	Last Ca Last B Next Ca Next B 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	sing Test OP Test Sing Test OP Test Sing Test OP Test	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools	1.50	
Total circu Today losso Today total Pump RSPP #1 RSPP #2 00:00-10:30 10:30-11:30 11:30-12:30	Strokes Str	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50	Depth 3516	Last Ca Last B Next Ca Next B 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	sing Test OP Test Sing Test OP Test Sing Test OP Test	22-A 21-S 505 rot 05-C n kdaN & K Torque	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting Tools	1.50	
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Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-10:30 10:30-11:30 11:30-12:30 12:30-24:00	Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep D Lay out drill D Retrieve we D Level the rig D Rig up and r	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. dice air string. Brea ar bushing 3 un 7: casing	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50 k the kelly a 2024m at m	Depth 3516 ond swivel idnight, Circle de me 846 m, Fi	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelii 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	sing Test OP Test sing Test OP Test sing Test OP Test De Condition 30 30 124 Cut Ine Logs /Cement Out Cement Up BOP OP & FIT Irill REMARKS	22-A 21-S 505 rot 05-C n kdaN & K Torque 11.50 0.50	aug-09 dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backg Conn 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle Total Hour	Density Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools s	1.50 24.00	
Total circu Today losse Today total Pump RSPP #1 RSPP #2 00:00-10:30 10:30-11:30 11:30-12:30 12:30-24:00 Tops: Codr	Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Rep D Lay out drill D Retrieve we D Level the rig D Rig up and r	150.0 0.2 0.3 0.5 Il Control - Pressure 7068 Out t Cond. dice air string. Brea ar bushing 3 cun 7: casing	Total hole Total surf. Cumulative kPa MACP 11000 0.25 9.75 0.50 k the kelly a 2024m at m	Depth 3516 ond swivel idnight, Circle de me 846 m, Fi	Last Ca Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	sing Test OP Test Sing Test OP Test Sing Test OP Test OP	22-A 21-S 505 rot 05-C n kdaN & K Torque 11.50 0.50	aug-09 dep-09 ating hrs Oct-09 fft/#	Overflow I Flow Rate, Operating Backg Conn 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density Density Maymin hours Total Gas R ground ection rip ack o Btm tecks mud pumps Meeting o Tools S	1.50 24.00	

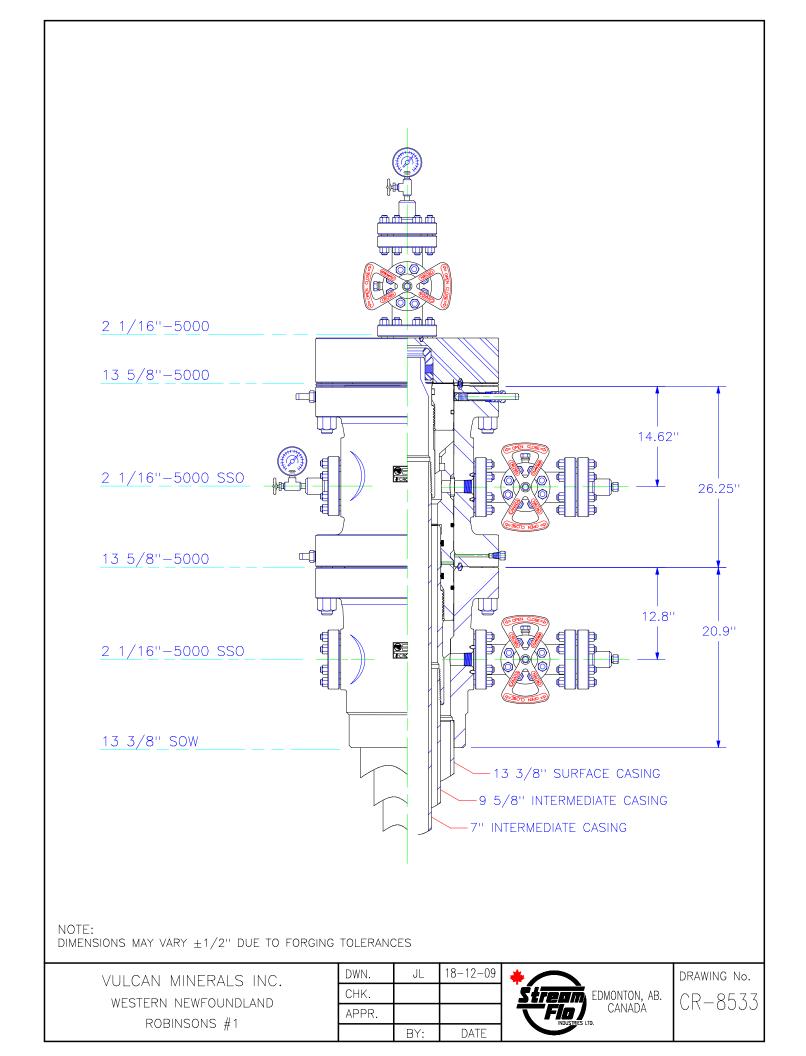
			Vulc	an Mi	inerals	s Daily	Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	106		Date:	14-0	ct-09
Depth:	3560.0		Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	
_	@ 0800 hrs:		110gress.		Dining.		ms nor,			KB elev:	175.30	
1 -	Rig release	-								KB - GL	6.30	
Bit #	, , , , , , , , , , , , , , , , , , , 	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	
210 11	BIEG/1/2010	Model 1112 C	5011411101		o u v	112012 05	220425	TOLLIES	242 1/12	// O2 IIIII /	1022	
-												
		Pump 1	Pump 2	Drilling As	sembly:		ı	1	1			
Model		PZ-11	PZ-11		•				Pump Pres	sure:	11,336	kPa
Liner	(mm)		152	BHA Leng	th:		m	Strap:		Board:		
Stroke	(mm)		279	Drill Colla	r O.D.		mm	Drill Pipe (O.D.	-	mm	
SPM			70	D.C. Annu	lar Vel.:		m/min	D.P Annula	ar Vel.:		m/min	
Vol.	m ³ /min @ 95%		1.1900	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
											•	
		SUR	VEYS				MUD			MUD AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:11		Gel		CaC03	
3419.00		11.97	296.52			Density	1140		Caustic	6	Percol	
3433.00		11.99	295.97			Vis.	68		Envirofloc		Sulphamic	
3448.00		11.67	295.77			pН	12.3		Kelzan	1	T-352	12
3460.00		12.14	296.30			Fluid Loss	6.6		Cello		Defoamer	1
3474.00		12.36	297.12			P.V.	25.0	ļ	Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	12.0		Newedge		Sapp	
3501.00		12.25	296.75			Gel S.	4/6/7		Drispac		Dyna det	2
3516.00		12.57	299.21			Filter Ck	0.5		Desco	2	Walnut	
3529.00		12.68	299.17			Solids %	8.8		Barite	138	Lime Hydrate	i
3542.00		12.92	298.08			Oil	0.000		Lignite		Dyna fiber	
3560.00		13.24	296.68			Ca (mg/l)	40.0		PHPA		Bioside	
						Cl (mg/l)	9600.0		Sawdust		Coronox	9
						MBT	17.5		Soda Ash		Safecote	5
						Temp	13.0		Supervision		Day Cost	\$13,299
						XSPolymer	1.1		Mud Van	1	Well Cost	\$24,461
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate		Centi	rifuge	
T-4-1 -2	lating Vol.	150.0				sing Test		ug-09	Underflow			
					Loct D	OP Test	21-S	lep-09	Overflow I	Density		
Today losse	es down hole		Total hole									
Today losse Today losse	es down hole es at surface	0.3	Total surf.	151	Next Ca	sing Test		ating hrs	Flow Rate,			
Today losse	es down hole es at surface			171.4	Next Ca			ating hrs Oct-09	Flow Rate, Operating			
Today losse Today losse	es down hole es at surface l losses	0.3 0.5	Total surf. Cumulative	171.4	Next Ca Next B	sing Test OP Test	05-0	Oct-09		hours		
Today losse Today losse Today tota	es down hole es at surface l losses We	0.3 0.5	Total surf. Cumulative		Next Ca Next B	sing Test OP Test ole Condition	05-0	Oct-09	Operating	hours Total Gas R	eadings (%)	
Today losso Today tota Today tota	es down hole es at surface I losses We Strokes	0.3 0.5 Il Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B Ho Drag up	one Condition	05-0	Oct-09	Operating Backs	hours Total Gas R ground	eadings (%)	
Today losse Today tota Today tota Pump RSPP #1	es down hole es at surface l losses We	0.3 0.5	Total surf. Cumulative	l	Next Ca Next B Ho Drag up Drag Dn	op Test OP Test Description 30 30	05-0	Oct-09	Operating Backs Conn	hours Total Gas R ground ection	eadings (%)	
Today losso Today tota Today tota	es down hole es at surface I losses We Strokes	0.3 0.5 Il Control - Pressure	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B Ho Drag up	op Test OP Test Description 30 30	05-0	Oct-09	Operating Backs Conn	hours Total Gas R ground	eadings (%)	
Today losse Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load	op Test OP Test Ole Condition 30 30 124	05-0	Oct-09	Operating Backs Conn T	hours Total Gas R ground ection rip	eadings (%)	
Today losse Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55 1. Rig up/C	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load	sing Test OP Test De Condition 30 30 124 Cut	05-0	Oct-09	Backs Conn T 17. Plug B	hours Total Gas R ground ection rip ack	eadings (%)	
Today losse Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	sing Test OP Test le Condition 30 30 124 Cut	05-0	Oct-09	Backs Conn T 17. Plug B 18. Wash t	Total Gas R ground ection rip ack o Btm	eadings (%)	
Today losse Today tota Today tota Pump RSPP #1	es down hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	sing Test OP Test le Condition 30 30 124 Cut ne Logs	05-C	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch	Total Gas R ground ection rip ack so Btm ecks	eadings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000 5.25	Depth	Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing	sing Test OP Test Sole Condition 30 30 124 Cut ne Logs /Cement	05-C n kdaN & K Torque	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t	Total Gas R ground ection rip ack so Btm ecks mud pumps		
Today losso Today tota Today tota Pump RSPP #1	ses down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	0.3 0.5 Il Control - Pressure 7068	Total surf. Cumulative kPa MACP 11000	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 6	sing Test OP Test De Condition 30 30 124 Cut ne Logs /Cement Out Cement	05-C n kdaN & K Torque	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on 21. Safety	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting	eadings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total surf. Cumulative kPa MACP 11000 5.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Condition 30 30 124 Cut The Logs /Cement Out Cement Up BOP	05-C n kdaN & K Torque	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on 21. Safety 22. Handle	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting		
Today losso Today tota Today tota Pump RSPP #1	we stown hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.3 0.5 Control - Pressure 7068 Out	Total surf. Cumulative kPa MACP 11000 5.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test Bo	sing Test OP Test De Condition 30 30 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT	05-C n kdaN & K Torque	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on t 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip ack to Btm necks mud pumps Meeting	1.25	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	0.3 0.5 Control - Pressure 7068 Out	Total surf. Cumulative kPa MACP 11000 5.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pump 0 14. Nipple	sing Test OP Test De Condition 30 30 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT	05-C n kdaN & K Torque	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on 21. Safety 22. Handle	Total Gas R ground ection rip ack to Btm necks mud pumps Meeting		
Today losso Today tota Today tota Pump RSPP #1	we stown hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv	0.3 0.5 Control - Pressure 7068 Out	Total surf. Cumulative kPa MACP 11000 5.25	Depth	Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump 0 14. Nipple 15. Test B0 16. BOP D	sing Test OP Test De Condition 30 30 124 Cut The Logs //Cement Out Cement Up BOP OP & FIT Orill	05-C 1 kdaN & K Torque 12.25 2.25	Oct-09	Backs Conn T 17. Plug B 18. Wash t 19. Flow ct 20. Wk on t 21. Safety 22. Handle 23 Other	Total Gas R ground ection rip ack to Btm necks mud pumps Meeting	1.25	
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	strokes Stroke	0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total surf. Cumulative KPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B He 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	sing Test OP Test See Condition 30 30 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT OP WITTER REMARKS	05-C 1 kdaN & K Torque 12.25 2.25	Ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground section rip ack so Btm secks mud pumps Meeting e Tools	1.25	ut onen hole
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	strokes Stroke	0.3 0.5 Il Control - Pressure 7068 Out t Cond.	Total surf. Cumulative KPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B He 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	sing Test OP Test See Condition 30 30 124 Cut The Logs /Cement Out Cement Up BOP OP & FIT OP WITTER REMARKS	05-C 1 kdaN & K Torque 12.25 2.25	Ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground section rip ack so Btm secks mud pumps Meeting e Tools	1.25	it open hole
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	strokes Stroke	0.3 0.5 Il Control - Pressure 7068 Out t Cond. vice air asing. 255jts ondition prior	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B 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	sing Test OP Test OP Test 30 30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS noe @3548m	12.25 2.25 Float collar	ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize	1.25 24.00	t open hole
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	strokes Stroke	0.3 0.5 Il Control - Pressure 7068 Out t Cond. rice air assing. 255jts ondition pricing. 2m3 was	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25 178mm, 40. or to cementiler ahead, 3n	Depth 3516	Next Ca Next B 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 OP Test 30 30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS 100 @ 3548m n3, 23.8m3 F	12.25 2.25 Float collar	ft/# ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize 0:1:0 "G" @	1.25 24.00	t open hole
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	strokes Stroke	0.3 0.5 Il Control - Pressure 7068 Out t Cond. vice air asing. 255jts ondition pricing. 2m3 waith 70.5m3 w	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 30 30 124 Cut Inc. Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 100 @ 3548m 110 may 110	12.25 2.25 Float collar rill-Lite 2-20 30mpa to pro	ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize 0:1:0 "G" @	1.25 24.00	t open hole
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	ses down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps D Finish run co Circulate, co Cement casi Displace wi	0.3 0.5 Il Control - Pressure 7068 Out t Cond. vice air asing. 255jts ondition pricing. 2m3 waith 70.5m3 w	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 30 30 124 Cut Inc. Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 100 @ 3548m 110 may 110	12.25 2.25 Float collar rill-Lite 2-20 30mpa to pro	ft/# ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize 0:1:0 "G" @	1.25 24.00	t open hole
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	ses down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Reps D Finish run co Circulate, co Cement casi Displace wi	0.3 0.5 Il Control - Pressure 7068 Out t Cond. vice air asing. 255jts ondition pricing. 2m3 waith 70.5m3 w	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 30 30 124 Cut Inc. Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 100 @ 3548m 110 may 110	12.25 2.25 Float collar rill-Lite 2-20 30mpa to pro	ft/# ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize 0:1:0 "G" @	1.25 24.00	t open hole
Today loss: Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	ses down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: O Circulate, co O Cement casi O Cement casi (Rig out casi	0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice air asing. 255jts ondition pricing. 2m3 waith 70.5m3 weng tools, cle	Total surf. Cumulative kPa MACP 11000 5.25 2.75 0.25	Depth 3516	Next Ca Next B Prag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	sing Test OP Test OP Test 30 30 124 Cut Inc. Logs /Cement Out Cement Up BOP OP & FIT Orill REMARKS 100 @ 3548m 110 may 110	12.25 2.25 Float collar rill-Lite 2-20 30mpa to pro	ft/# ft/#	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools Tools m, Centralize 0:1:0 "G" @	1.25 24.00	t open hole
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	ses down hole es at surface I losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: O Circulate, co O Cement casi O Cement casi (Rig out casi	0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice asing. 255jts ondition price ing. 2m3 was th 70.5m3 w ng tools, cle. s reported. 8	Total surf. Cumulative KPa MACP 11000 5.25 2.75 0.25 178mm, 40. or to cementiter ahead, 3n ater. Final di an up and tea	Depth 3516	Next Ca Next B He 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 &C, L-80. Sh © 1200kg/r pressure 20m eaning mud to	sing Test OP Test 30 30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS noe @ 3548m na, 23.8m3 F npa. Bump to anks still in	12.25 12.25 2.25 3 Float collar sill-Lite 2-20 30mpa to progress.	ft/# ft/# c @3534, Ma ft @ 1518kg ft @ 1518kg	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour rker @ 2491	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools s m, Centralize 0:1:0 "G" @ 1. OK.	1.25 24.00 e every 3 join 1901kg/m3.	t open hole
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00	stown hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps O Finish run co O Circulate, co O Cir	0.3 0.5 Il Control - Pressure 7068 Out t Cond. cice asing. 255jts ondition price ing. 2m3 was th 70.5m3 w ng tools, cle. s reported. 8	Total surf. Cumulative KPa MACP 11000 5.25 2.75 0.25 178mm, 40. or to cementiter ahead, 3n ater. Final di an up and tea	Depth 3516 26kg/m, LTd ng. 13 scavenger splacement par out rig. Cle d ne 846 m, Fi	Next Ca Next B He 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 &C, L-80. Sh © 1200kg/r pressure 20m eaning mud to	sing Test OP Test 30 30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT orill REMARKS noe @ 3548m na, 23.8m3 F npa. Bump to anks still in	12.25 2.25 2.25 prout Falls	ft/# ft/# c @3534, Ma ft @ 1518kg ft was the first contract the fi	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety 22. Handle 23 Other Total Hour Trker @ 2491 (m3, 8.32m3 asing 10min e @ 2086m.; Weather:	Total Gas R ground ection rip ack to Btm ecks mud pumps Meeting Tools m, Centralize to O:1:0 "G" @ to OK.	1.25 24.00 e every 3 join 1901kg/m3.	
Today loss Today tota Today tota Pump RSPP #1 RSPP #2 00:00-10:00 10:00-12:00 12:00-16:00 16:00 -24:00	stown hole es at surface l losses We Strokes 55 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps O Finish run co O Circulate, co O Cir	0.3 0.5 Il Control - Pressure 7068 Out t Cond. rice air asing. 255jts ondition pricing. 2m3 wa th 70.5m3 w ng tools, cle s reported. 8 15 m, Ship C 0,199	Total surf. Cumulative KPa MACP 11000 5.25 2.75 0.25 178mm, 40. or to cementiter ahead, 3n ater. Final di an up and tea	Depth 3516 26kg/m, LTd ng. 13 scavenger splacement par out rig. Cle d ne 846 m, Fi	Next Ca Next B 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 &C, L-80. Sh @ 1200kg/r pressure 20m eaning mud to sischell's Bro	sing Test OP Test OP Test 30 30 124 Cut ne Logs /Cement Out Cement Up BOP OP & FIT brill REMARKS noe @3548m n3, 23.8m3 F npa. Bump to anks still in ok 870 m, (S Total Cost	12.25 2.25 2.25 prout Falls	ft/# ft/# a (@3534, Ma) a (@3534, Ma) b (@ 1518kg/ressure test c) c (@3534, Ma)	Backs Conn T 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour rker @ 2491 (m3, 8.32m3 asing 10min	Total Gas R ground ection rip ack so Btm ecks mud pumps Meeting 2 Tools m, Centralize 0:1:0 "G" @ 1. OK.	1.25 24.00 24.00 24.00 2555	t

			Vulc	an Mi	ineral	s Daily	/ Drill	ing Re	eport			
Well:		Vulc	an Investo	an Robinso	ns #1		Day:	107	•	Date:	15-0	ct-09
Depth:	3560.0	mKB	Progress:		Drilling:		hrs ROP,			Rig:	Stoneha	ım # 11
Operation	@ 0800 hrs:	Rig move								KB elev:	175.30	m.
	Rig release		•	•			•			KB - GL	6.30	
Bit #	Size/Make	Model IADC	Serial No.	In	Out	Metres	Hours	Nozzles	RPM	WOB kdaN	IODL	BGOR
		Pump 1	Pump 2	Drilling As	sembly:	<u> </u>						
Model		PZ-11	PZ-11	Drining 110	scinory.				Pump Pres	sure:	11,336	kPa
Liner	(mm)		152	BHA Lengt	th:		m	Strap:		Board:		
Stroke	(mm)		279	Drill Collar	r O.D.		mm	Drill Pipe (O.D.		mm	
SPM			70	D.C. Annul			m/min	D.P Annula			m/min	
Vol.	m ³ /min @ 95%		1.1900	Jet Velocity	y:		m/sec	True Hydr	aulic HP:		kW	
		CIID	VEYS				MUD			MIID AD	DITIVES	
De	epth	Drift	Azimuth	North	East	Time	7:11		Gel	MOD AD	CaC03	
3419.00		11.97	296.52	110111	Zust	Density	1140		Caustic	1	Percol	
3433.00		11.99	295.97			Vis.	68		Envirofloc	6	Sulphamic	
3448.00		11.67	295.77			pН	12.3		Kelzan	1	T-352	
3460.00		12.14	296.30			Fluid Loss	6.6		Cello		Defoamer	1
3474.00	1	12.36	297.12			P.V.	25.0	-	Bicarb		2K-7	
3488.00		12.19	296.14			Y.P.	12.0		Newedge		Sapp	1
3501.00		12.25	296.75			Gel S.	4/6/7		Drispac		Dyna det	
3516.00		12.57	299.21			Filter Ck	0.5		Desco	1	Walnut	
3529.00 3542.00		12.68 12.92	299.17 298.08			Solids % Oil	8.8 0.000		Barite	1	Lime Hydrate Dyna fiber	1
3560.00		13.24	296.68			Ca (mg/l)	40.0		Lignite PHPA	-4	Dyna noer Bioside	
0000.00		10.24	230.00			Cl (mg/l)	9600.0		Sawdust		MSDS	1
-						MBT	17.5		Soda Ash		pellets	36
				I		Temp	13.0		Supervision		Day Cost	\$1,555
						XSPolymer	1.1		Mud Van	1	Well Cost	\$276,061
Mud	losses Surfa	ce & Downl	hole Estimat	es m3	BOP & C	asing Tests	D	ate			rifuge	
			ì	ì								
Total circu		150.0	m . 11 1			sing Test		ug-09	Underflow	•		
Today losse	es down hole	150.0 0.2	Total hole		Last B	OP Test	21-S	ep-09	Overflow I	Density		
Today losse Today losse	es down hole es at surface	150.0 0.2 0.3	Total surf.	171.4	Last B Next Ca	OP Test sing Test	21-S 505 rot	ep-09 ating hrs	Overflow I Flow Rate,	Density m3/min		
Today losse	es down hole es at surface	150.0 0.2		171.4	Last B Next Ca	OP Test	21-S 505 rot	ep-09	Overflow I	Density m3/min		
Today losse Today losse	es down hole es at surface l losses	150.0 0.2 0.3	Total surf. Cumulative	171.4	Last B Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density m3/min hours	Readings (%)	
Today losse Today losse	es down hole es at surface l losses	150.0 0.2 0.3 0.5	Total surf. Cumulative	171.4 Depth	Last B Next Ca Next B	OP Test sing Test	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating	Density m3/min hours	Readings (%)	
Today losse Today tota	es down hole es at surface l losses We	150.0 0.2 0.3 0.5	Total surf. Cumulative		Last B Next Ca Next B	OP Test sing Test OP Test	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs	Density m3/min hours Total Gas R	Readings (%)	
Today losso Today tota Today tota	es down hole es at surface l losses We	150.0 0.2 0.3 0.5	Total surf. Cumulative		Last B Next Ca Next B He Drag up	OP Test sing Test OP Test Dle Condition	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground	Readings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes	150.0 0.2 0.3 0.5 Il Control -	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Ho Drag up Drag Dn Hook Load	OP Test sing Test OP Test	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn	Density m3/min hours Total Gas R ground ection rip	Readings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C	150.0 0.2 0.3 0.5 Il Control -	Total surf. Cumulative		Last B Next Ca Next B Drag up Drag Dn Hook Load	OP Test sing Test OP Test De Condition	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T1	Density m3/min hours Total Gas R ground ection rip	Readings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill	150.0 0.2 0.3 0.5 Il Control -	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey	OP Test sing Test OP Test OP Condition	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t	Density m3/min hours Total Gas R ground ection rip ack o Btm	Readings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream	150.0 0.2 0.3 0.5 Il Control - Pressure	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin	OP Test sing Test OP Test OP Test Ole Condition Cut	21-S 505 rot 05-C	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch	Density m3/min hours Total Gas R ground ection rip ack o Btm necks	Readings (%)	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou	150.0 0.2 0.3 0.5 Il Control - Pressure	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing	OP Test sing Test OP Test oP Test cut ne Logs /Cement	21-S 505 rot 05-C n kdaN & K Torque	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t 19. Flow ch 20. Wk on p	Density m3/min hours Total Gas R ground ection rip ack o Btm tecks mud pumps		
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream	150.0 0.2 0.3 0.5 Il Control - Pressure	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing	OP Test sing Test OP Test oP Test cle Condition Cut ne Logs /Cement Out Cement	21-S 505 rot 05-C n kdaN & K Torque	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting	1.00	
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. &	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond.	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump (OP Test sing Test OP Test OP Test De Condition Cut The Logs /Cement Out Cement Up BOP	21-S 505 rot 05-C n kdaN & K Torque	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn Tr. Plug B 18. Wash t 19. Flow ch 20. Wk on 21. Safety	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting		
Today losso Today tota Today tota Pump RSPP #1	es down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond.	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple	OP Test sing Test OP Test OP Test De Condition Cut The Logs Cement Out Cement Up BOP OP & FIT	21-S 505 rot 05-C n kdaN & K Torque	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T1. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools	1.00	
Today losso Today tota Today tota Pump RSPP #1	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond.	Total surf. Cumulative kPa MACP		Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & (10. Survey 11. Wireli 12. Casing 13. Pump 14. Nipple 15. Test B	OP Test sing Test OP Test OP Test OLUT	21-S 505 rot 05-C n kdaN & K Torque	dep-09 ating hrs Oct-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools	1.00	
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond.	Total surf. Cumulative kPa MACP 13.50	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP Test OLUTION OLU	21-S 505 rot 05-C n kdaN & K Torque	ep-09 ating hrs Det-09	Overflow I Flow Rate, Operating Backs Conn T. 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools	1.00	
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep.	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. ice	Total surf. Cumulative kPa MACP 13.50	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP Test OLUTION OLU	21-S 505 rot 05-C n kdaN & K Torque 5.50	ep-09 ating hrs Det-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting Tools	1.00 4.00 24.00	
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. rice air	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety r	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out	ep-09 ating hrs Det-09 ft/# solids pit. pipe trucks a	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools	1.00 4.00 24.00	r.
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. rice air	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety r	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out	ep-09 ating hrs Det-09 ft/# solids pit. pipe trucks a	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools	1.00 4.00 24.00	r.
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. rice air	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety r	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out	ep-09 ating hrs Det-09 ft/# solids pit. pipe trucks a	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools	1.00 4.00 24.00	r.
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Repo	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. rice air	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety r	Depth	Last B Next Ca Next B Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pump of 14. Nipple 15. Test B 16. BOP D	OP Test sing Test OP Test OP	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out	ep-09 ating hrs Det-09 ft/# solids pit. pipe trucks a	Overflow I Flow Rate, Operating Backs Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on n 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools	1.00 4.00 24.00	r.
Today losse Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6. Trip 7. Rig Serv 8. Rig Rep: O Nipple down O Clean mud t Change to R	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. rice air n BOP. Clea anks, Rig do ded Brook #2	Total surf. Cumulative kPa MACP 13.50 ning mud tar wn, Safety r r report Rig c	Depth Aks. All stora neeting with down, lower	Last B Next Ca Next B Ho Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wireli 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D ge tanks are all rigmover top section,	OP Test sing Test OP Test OP Test OLITICAL	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out nks, Mud pure	solids pit. pipe trucks a mp 2, 13 load	Overflow I Flow Rate, Operating Backg Conn T: 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools	1.00 4.00 24.00	r.
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps O Nipple down O Clean mud to Change to R	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. cice air n BOP. Clea anks, Rig dc led Brook #2	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety re report Rig of the second surf.	Depth Depth All stora meeting with lown, lower seconnected f	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D ge tanks are all rigmover top section, in	OP Test sing Test OP Test OP Test OLITICAL	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out nks, Mud pur	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools s Delay ed wai	1.00 4.00 24.00 24.00	r.
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps O Nipple down O Clean mud to Change to R	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. cice air n BOP. Clea anks, Rig do led Brook #2 t reported, A	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety re report Rig of the company	Depth Aks. All stora neeting with lown, lower seconnected fine 846 m, Fi	Last B Next Ca 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 ge tanks are all rigmover top section, 1	OP Test sing Test OP Test OP Test OLUT	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out nks, Mud pure ut closing the sprout Falls	solids pit. pipe trucks a mp 2, 13 load	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour and catwalk. I ds transferred	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting o Tools s Delay ed wai	1.00 4.00 24.00 24.00 iting on loaded ok #2 location	r.
Today loss Today tota Today tota Pump RSPP #1 RSPP #2	ses down hole es at surface I losses We Strokes 1. Rig up/C 2. Drill 3. Ream 4. Drill Ou 5. Circ. & 6 6. Trip 7. Rig Serv 8. Rig Reps O Nipple down O Clean mud to Change to R	150.0 0.2 0.3 0.5 Il Control - Pressure Out t Cond. cice air n BOP. Clea anks, Rig dc led Brook #2	Total surf. Cumulative kPa MACP 13.50 ning mud tar own, Safety re report Rig of the second surf.	Depth Aks. All stora neeting with lown, lower seconnected fine 846 m, Fi	Last B Next Ca Next B He Drag up Drag Dn Hook Load 9. Slip & C 10. Survey 11. Wirelin 12. Casing 13. Pumpo 14. Nipple 15. Test B 16. BOP D ge tanks are all rigmover top section, in	OP Test sing Test OP Test OP Test OLITICAL	21-S 505 rot 05-C n kdaN & K Torque 5.50 Transfer to s w. Load out nks, Mud pure ut closing the sprout Falls	ep-09 ating hrs Oct-09 ft/#	Overflow I Flow Rate, Operating Backg Conn Tr 17. Plug B: 18. Wash t 19. Flow ch 20. Wk on t 21. Safety 22. Handle 23 Other Total Hour	Density m3/min hours Total Gas R ground ection rip ack o Btm necks mud pumps Meeting r Tools s Delay ed wai I to Red Brod	1.00 4.00 24.00 24.00	r.

 WEELDON	 TEAD SC	HEMATICS	

WELLBORE SCHEMATIC





APPENDIX 5: GAS	PVT AN	ALYSIS		
/ulcan Investcan Robins Final Well Report Appen				

LIST OF	TEST SAMPLE (CYL	INDERS FOR ROBINSONS#1	_			
ROBINS	SONS #1			Date	Methane (%)	Ethane (%)	Total Organic Sulphur (ppm)
DST#3	2963-2990 m		AGAT#05004278 (Bottom hole sampler)	09-Oct-09	93%		
DST#4	2574-2640 m		AGAT#05004456 (Bottom hole sampler)	10-Oct-09	84%	9%	-
DST#5	2517-2572 m		AGAT#05004704 (Bottom hole sampler)	11-Oct-09	91%	6%	-
		ĺ					



Container Identification
5004456

Operator Name	
VULCAN MINERALS INC.	

Laboratory Number 09E375947A

Unique Well Identifier	Well Name
NOT AVAILABLE	VULCAN INVESTCAN ROBINSONS#1

 Field or Area
 Pool or Zone
 Sampler's Company

 NOT AVAILABLE
 HOLLAND TESTERS

 Well License
 Elevation
 Test Type
 Test No.
 Name of Sampler

 KB m
 175.00
 GRD m
 169.00
 Image: Control of the contro

Test Interval or Perfs mKB	Sampling Point		Separator	Reservoir	Source	Sampled	Received
2574.0 - 2640.0	NOT AVAILABLE	Pressure (kPa)			2050	2050	170
mKB		Temperature			39	39	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Oct 10, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information BOTTOM HOLE SAMPLER, DST

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/m³	
Hydrogen	0.00131	0.00131		
Helium	0.00026	0.00026		
Nitrogen	0.02057	0.02058		
Carbon Dioxide	0.00037	0.00000		
Hydrogen Sulfide	0.00000	0.00000		
Methane	0.83680	0.83711		
Ethane	0.09442	0.09446	335.4	
Propane	0.02746	0.02747	100.9	
Isobutane	0.00548	0.00548	23.9	
n-Butane	0.00755	0.00755	31.8	
Isopentane	0.00240	0.00240	11.7	
n-Pentane	0.00161	0.00161	7.8	
Hexanes	0.00117	0.00117	6.1	
Heptanes+	0.00061	0.00061	3.5	
TOTAL	1.00000	1.00000	521.1	

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

Moisture Free	Moisture and Acid
(MJ/m³)	Gas Free (MJ/m³)
43.01	43.03

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

Moisture Free Moisture Free

0.666

732.8

Calculated pseudo critical properties As Sampled Acid Gas Free

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4567.21	209.42	4566.17	209.39

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction
19.28	100.13

Calculated C5+ Vapour Pressure (kPa abs)

106.94

Field H2S (ppm)

	п
1	- 1
1	- 1
	_
1	- 1
0.00	- 1
10.00	- 1

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.





^{*} Results relate only to the items tested



09E375947A

PROPERTIES OF C6+ FRACTION

CompanyVULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
36.2+	Hexanes+ (C6+)	0.00178	1778	0.00178	9.6188
98.6+	Octanes+ (C8+)	0.00024	237	0.00024	1.3885
125.8+	Nonanes+ (C9+)	0.00006	58	0.00006	0.3445
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 / m³)
68.9 - 98.6	Heptanes (C7)	0.00037	375	0.00037	2.1370
98.6 - 125.8	Octanes (C8)	0.00018	179	0.00018	1.0440
125.8 - 150.9	Nonanes (C9)	0.00006	58	0.00006	0.3445
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 / m³)
49.28	Cyclopentane	0.00050	502	0.00050	2.4472
68.73	n-Hexane	0.00034	337	0.00034	1.8496
71.83	Methylcyclopentane	0.00006	57	0.00006	0.3078
80.06	Benzene	0.00001	15	0.00001	0.0552
80.78	Cyclohexane	0.00009	91	0.00009	0.4799
99.24	2,2,4-Trimethylpentane	0.00001	< 10	0.00001	0.0357
100.94	Methylcyclohexane	0.00005	49	0.00005	0.2610
110.61	Toluene	0.00005	47	0.00005	0.2083
136.16	Ethylbenzene	0.00000	< 10	0.00000	0.0233
138.33; 139.09	m&p-Xylene	0.00002	23	0.00002	0.1190
144.42	o-Xylene	0.00001	< 10	0.00001	0.0398
169.34	1,2,4-Trimethylbenzene	0.00000	0	0.00000	0.0000







Container Identification 5004704

Operator Name	
VULCAN MINERALS INC.	

Laboratory Number 09E375947B

Well Name
VULCAN INVESTCAN ROBINSONS#1

Field or Area Pool or Zone Sampler's Company
NOT AVAILABLE HOLLAND TESTERS

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m 175.00 GRD m 169.00			

Test Interval or P	Perfs mKB	Sampling Point		Separator	Reservoir	Source	Sampled	Received
2517.0 - 2572.0		NOT AVAILABLE	Pressure (kPa)			3940	3940	2800
mKB			Temperature			38	38	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Oct 11, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information BOTTOM HOLE SAMPLER, DST

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	Mole Fraction		
COMPONENT	As Received	Air & Acid Gas Free	VOLUMES mL / m³	
Hydrogen	0.00145	0.00145		
Helium	0.00058	0.00058		
Nitrogen	0.01863	0.01863		
Carbon Dioxide	0.00000	0.00000		
Hydrogen Sulfide	0.00000	0.00000		
Methane	0.90720	0.90720		
Ethane	0.05517	0.05517	196.0	
Propane	0.01071	0.01071	39.3	
Isobutane	0.00159	0.00159	6.9	
n-Butane	0.00235	0.00235	9.9	
Isopentane	0.00080	0.00080	3.9	
n-Pentane	0.00052	0.00052	2.5	
Hexanes	0.00066	0.00066	3.5	
Heptanes+	0.00034	0.00034	2.0	
TOTAL	1.00000	1.00000	264.1	

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

Moisture Free	Moisture and Acid
(MJ/m³)	Gas Free (MJ/m³)
39.83	39.83

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

Moisture Free Moisture Free

0.609

709.6

Calculated pseudo critical properties As Sampled Acid Gas Free

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4574.06	198.86	4574.06	198.86

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction		
17.63	100.29		

Calculated C5+ Vapour Pressure (kPa abs)

95.40

Field H2S (ppm)

1	- 1
1	- 1
1000	- 1
0.00	- 1
1	- 1
0.00	

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.





^{*} Results relate only to the items tested



PROPERTIES OF C6+ FRACTION

File No. Company 09E375947B VULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
36.2+	Hexanes+ (C6+)	0.00089	888	0.00089	4.8941
98.6+	Octanes+ (C8+)	0.00008	82	0.00008	0.5167
125.8+	Nonanes+ (C9+)	0.00000	0	0.00000	0.0000
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 / m³)
68.9 - 98.6	Heptanes (C7)	0.00026	260	0.00026	1.5243
98.6 - 125.8	Octanes (C8)	0.00008	82	0.00008	0.5167
125.8 - 150.9	Nonanes (C9)	0.00000	0	0.00000	0.0000
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 / m³)
49.28	Cyclopentane	0.00025	255	0.00025	1.2405
68.73	n-Hexane	0.00017	165	0.00017	0.9072
71.83	Methylcyclopentane	0.00002	24	0.00002	0.1273
80.06	Benzene	0.00002	20	0.00002	0.0734
80.78	Cyclohexane	0.00001	< 10	0.00001	0.0397
99.24	2,2,4-Trimethylpentane	0.00000	0	0.00000	0.0000
100.94	Methylcyclohexane	0.00002	20	0.00002	0.1066
110.61	Toluene	0.00000	< 10	0.00000	0.0183
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	0	0.00000	0.0000







Container Identification 5004278

Operator Name
VULCAN MINERALS INC.

Laboratory Number 09E375947C

Unique Well Identifier	Well Name
NOT AVAILABLE	VULCAN INVESTCAN ROBINSONS#1

Field or Area Pool or Zone Sampler's Company **NOT AVAILABLE HOLLAND TESTERS**

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m 175.00 GRD m 169.00			

Test Interval or Perfs mKE	Sampling Point		Separator	Reservoir	Source	Sampled	Received
2963.0 - 2990.0	NOT AVAILABLE	Pressure (kPa)			2684	2684	1700
mKB		Temperature			44	44	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Oct 09, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information BOTTOM HOLE SAMPLER, DST

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/m³	
Hydrogen	0.00095	0.00095		
Helium	0.00032	0.00032		
Nitrogen	0.01254	0.01254		
Carbon Dioxide	0.00000	0.00000		
Hydrogen Sulfide	0.00000	0.00000		
Methane	0.93109	0.93109		
Ethane	0.04595	0.04595	163.2	
Propane	0.00570	0.00570	20.9	
Isobutane	0.00090	0.00090	3.9	
n-Butane	0.00130	0.00130	5.5	
Isopentane	0.00047	0.00047	2.3	
n-Pentane	0.00025	0.00025	1.2	
Hexanes	0.00035	0.00035	1.8	
Heptanes+	0.00016	0.00016	1.0	
TOTAL	1.00000	1.00000	199.9	

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

Moisture Free	Moisture and Acid	
(MJ/m³)	Gas Free (MJ/m³)	
39.25	39.25	

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

0.592 715.5

Calculated pseudo critical properties As Sampled **Acid Gas Free**

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4586.40	196.70	4586.40	196.70

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction	
17.15	100.25	

Ca	culated C5+
apour	Pressure (kPa abs)

I Sample	C7+ Fraction	99.4
47.45	400.05	

Field H2S (ppm)

	 •
1	
1	
1	
0.00	
10.00	

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.





^{*} Results relate only to the items tested



PROPERTIES OF C6+ FRACTION

File No. Company 09E375947C VULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
36.2+	Hexanes+ (C6+)	0.00051	513	0.00051	2.8072
98.6+	Octanes+ (C8+)	0.00004	38	0.00004	0.2257
125.8+	Nonanes+ (C9+)	0.00001	< 10	0.00001	0.0332
150.9+	Decanes+ (C10+)	0.00000	< 10	0.00000	0.0168
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 / m³)
68.9 - 98.6	Heptanes (C7)	0.00012	125	0.00012	0.7366
98.6 - 125.8	Octanes (C8)	0.00003	32	0.00003	0.1924
125.8 - 150.9	Nonanes (C9)	0.00000	< 10	0.00000	0.0164
150.9 - 174.3	Decanes (C10)	0.00000	< 10	0.00000	0.0168
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 / m³)
49.28	Cyclopentane	0.00013	135	0.00013	0.6569
68.73	n-Hexane	0.00006	61	0.00006	0.3340
71.83	Methylcyclopentane	0.00001	< 10	0.00001	0.0519
80.06	Benzene	0.00000	0	0.00000	0.0000
80.78	Cyclohexane	0.00002	23	0.00002	0.1230
99.24	2,2,4-Trimethylpentane	0.00000	0	0.00000	0.0000
100.94	Methylcyclohexane	0.00001	< 10	0.00001	0.0404
110.61	Toluene	0.00001	< 10	0.00001	0.0317
136.16	Ethylbenzene	0.00000	0	0.00000	0.0000
138.33; 139.09	m&p-Xylene	0.00000	< 10	0.00000	0.0164
144.42	o-Xylene	0.00000	0	0.00000	0.0000
169.34	1,2,4-Trimethylbenzene	0.00000	0	0.00000	0.0000





Container Identification
4001075

Operator Name	
VULCAN MINERALS INC.	

Laboratory Number 09E375947D

Unique Well Identifier	Well Name
NOT AVAILABLE	VULCAN INVESTCAN REDBROOK#2

Field or Area Pool or Zone Sampler's Company
NOT AVAILABLE HOLLAND TESTERS

 Well License
 Elevation
 Test Type
 Test No.
 Name of Sampler

 KB m
 62.00
 GRD m
 56.00
 Image: Control of the control

Test Interval or Perfs mKB	Sampling Point		Separator	Reservoir	Source	Sampled	Received
1555.0 - 1574.0	NOT AVAILABLE	Pressure (kPa)			65	65	40
mKB		Temperature			4	4	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Nov 28, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information (INITIAL GTS) CAUGHT AT MANIFOLD, DST 1A

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/m³
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/m³)	Gas Free (MJ/m³)	
35.66	35.66	

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

Moisture Free Moisture Free

0.650

728.5

Calculated pseudo critical properties As Sampled Acid Gas Free

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4438.90	191.36	4438.90	191.36

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction	
18.82	101.85	

Calculated C5+ Vapour Pressure (kPa abs)

98.84

Field H2S (ppm)

	 •
1 ~ ~ ~	
10.00	
1	
0.00	

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.





^{*} Results relate only to the items tested



PROPERTIES OF C6+ FRACTION

File No. Company 09E375947D VULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
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 / m³)
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 / m³)
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

Operator Name
VULCAN MINERALS INC.

Laboratory Number 09E375947E

Unique Well Identifier	Well Name
NOT AVAILABLE	VULCAN INVESTCAN REDBROOK#2

Field or Area Pool or Zone Sampler's Company NOT AVAILABLE **HOLLAND TESTERS**

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m 62.00 GRD m 56.00			

Test Interval or Perfs mKB		Sampling Point		Separator	Reservoir	Source	Sampled	Received
1555.0 - 1574.0		NOT AVAILABLE	Pressure (kPa)			742	742	100
mKB			Temperature			21	21	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Nov 28, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information BOTTOM HOLE SAMPLER, DST 1B

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/m³
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 Free	Moisture and Acid
(MJ/m³)	Gas Free (MJ/m³)
36.38	36.38

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

Moisture Free Moisture Free 0.660

Calculated pseudo critical properties As Sampled **Acid Gas Free**

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4433.86	192.91	4433.86	192.91

(g/mol)

Calculated molecular weight

Total Sample	C7+ Fraction
19.11	100.32

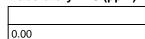
Ca	alculated C5+
/apou	r Pressure (kPa abs)

715.2

le	C7+ Fraction	99	.28
	400.00		

F: - I - I	IIOC	(maa)
FIRIO	H/5	(nnm)

1	
1	
1	
0.00	
10.00	



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.





^{*} Results relate only to the items tested



PROPERTIES OF C6+ FRACTION

File No. Company 09E375947E VULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
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 / m³)
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 / m³)
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

Operator Name	
VULCAN MINERALS INC.	

Laboratory Number 09E375947F

Unique Well Identifier	Well Name
NOT AVAILABLE	VULCAN INVESTCAN REDBROOK#2

Field or Area Pool or Zone Sampler's Company
NOT AVAILABLE HOLLAND TESTERS

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m 62.00 GRD m 56.00			

Test Interval	or Perfs mKB	Sampling Point		Separator	Reservoir	Source	Sampled	Received
1360.0 - 1383.0		NOT AVAILABLE	Pressure (kPa)			1780	1780	600
mKB			Temperature			19	19	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Entered By	Certified By
Nov 29, 2009	Dec 15, 2009	Dec 18, 2009	Dec 18, 2009	Binh Nguyen	Binh Nguyen

Other Information BOTTOM HOLE SAMPLER, DST 2

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 / m³
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/m³)	Gas Free (MJ/m³)
36.27	36.27

Calculated Relative Density Calculated

Moisture Free 0.645 Calculated Density C7+ Fraction (kg/m³)

Moisture Free

716.9

Calculated pseudo critical properties As Sampled Acid Gas Free

Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4457.51	192.41	4457.51	192.41

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction
18.69	101.79

Calculated C5+ Vapour Pressure (kPa abs)

106.37

Field H2S (ppm)

	 •
1	
1	
1	
0.00	
10.00	

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.





^{*} Results relate only to the items tested



09E375947F

PROPERTIES OF C6+ FRACTION

CompanyVULCAN MINERALS INC.

UWI / LSDNOT 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 / m³)
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 / m³)
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 / m³)
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. AGAT WORK ORDER: 09C375947 **PROJECT NO: ATTENTION TO: SHANE HALLEY**

Trace Sulphur Analysis (GC/SCD) - Gas

SAMPLE ID: 05003561 SAMPLE TYPE: Gas DATE RECEIVED: Dec 15, 2009

DATE SAMPLED: Nov 28, 2009 DATE REPORTED:

SAMPLE DESCRIPTION: VULCAN INV		· · · · ·		DD!	DATE ANALYZED	15.11=1.6.1	DATE DDEDADED
PARAMETER	UNIT	RESULT	G/S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Hydrogen Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	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	ΥH	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:

AGAT CERTIFICATE OF ANALYSIS (V1)

Page 1 of 3

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Certificate of Analysis

CLIENT NAME: VULCAN MINERALS INC. AGAT WORK ORDER: 09C375947
PROJECT NO: ATTENTION TO: SHANE HALLEY

Trace Sulphur Analysis (GC/SCD) - Gas

SAMPLE TYPE: Gas SAMPLE ID: 05004278 DATE RECEIVED: Dec 15, 2009

DATE SAMPLED: Oct 09, 2009 DATE REPORTED:

SAMPLE DESCRIPTION: VULCAN INVESTCAN ROBINSONS#1: DST

PARAMETER	UNIT	RESULT	G/S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Hydrogen Sulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	Dec 15, 2009
Carbonyl Sulphide	ppm (v/v)	1.3		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)	<0.1		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	ΥH	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	ΥH	Dec 15, 2009
Dimethyl Disulphide	ppm (v/v)	<0.1		0.1	Dec 18, 2009	ΥH	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)	1.3		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.

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CLIENT NAME: VULCAN MINERALS INC. AGAT WORK ORDER: 09C375947 **PROJECT NO: ATTENTION TO: SHANE HALLEY**

Trace Sulphur Analysis (GC/SCD) - Gas

SAMPLE TYPE: Gas **SAMPLE ID: 05005092** DATE RECEIVED: Dec 15, 2009

DATE SAMPLED: Nov 29, 2009 DATE 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	ΥH	Dec 15, 2009
Carbonyl Sulphide	ppm (v/v)	1.7		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	ΥH	Dec 15, 2009
Carbon Disulphide	ppm (v/v)	<0.1		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	ΥH	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	ΥH	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)	1.7		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.

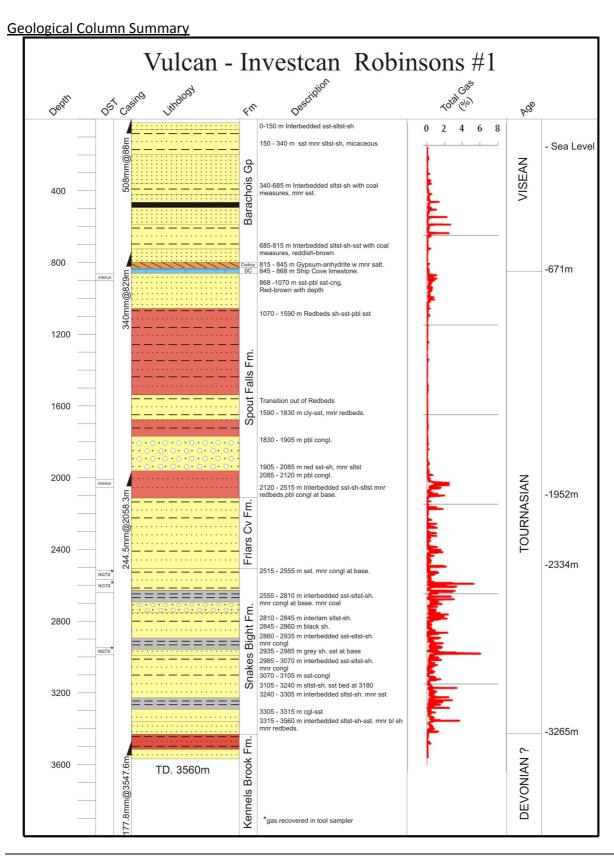
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APPENDIX 6: GEOLOGY REPORT							
ulcan Investcan Ro nal Well Report A							



Geological Report

on

VULCAN INVESTCAN ROBINSONS # 1

(FTD 3560 m)

October 02, 2009



Prepared For: Patrick Laracy

VULCAN MINERALS INC.

Prepared By: J. Michael Smith

JDS CONSULTANTS

403-589-4998 (c)

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VULCAN INVESTCAN ROBINSONS # 1 was drilled during the summer of 2009 within the north eastern section of the Bay St. George Basin, (Carboniferous Age, 355 -300 million Years).

The well was located apx 37 km south on the Trans Canada from the main exit for the town of Stephenville, Newfoundland, and 6 km east on a dirt road referred to as the Pasture Road.

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 Robinsons # 1 was spudded on June 30th, 2009 at 12:30 hrs.

Conductor hole was drilled with a 455 mm pilot hole and opened up to 660 mm. A depth of 88 meters was reached on July 2nd at 18:15 hrs. The first attempt to run the 508 mm Conductor failed due to tight hole and a ledge? At 45 m. Also, a steady influx of water continued to decrease the viscosity of the mud causing an ongoing problem. The casing was pulled and the conductor hole was reamed to 88 meters. A 18m3 barite sweep was spotted at 25 meters down hole prior to second casing attempt. The 508 mm Conductor was run with a tight spot at 45 meters requiring circulating the casing down to 88 meters. The casing was cemented with WOC on July 5th at 18:15 hrs.

Surface hole of 445 m was drilled ahead on July 7th at 1700 hrs from the 508 mm conductor set at 88 meters. Surveys were taken every single (apx 14 m) and the hole continued to build angle. Fanning was attempted resulting in slower ROP with no results. The bit was POOH at 253 meters on July 10th for Schlumberger Directional tools. A MWD / 1.15 deg motor were RIH and drilling continued. Well bore angle continued to build with 100% sliding to apx 6 degrees and the bit was POOH at a depth of 560 meters on July 14th. The motor was rerun, set up to 1.5 degrees bend angle. Drilling continued with the hole angle slowly brought back to apx 2 degrees prior to Surface Casing Point at 829 meters on July 19th. (*Codroy* Anhydrite intersected at 815 meters).

Surface casing of 340 mm was run and cemented at 829 m MD with no problems. WOC on July 21st at 00:30 hrs. The diverter was rigged out and the BOPs were built and installed. The Degasser, Manifold Shack, Flair Tank and lines were setup and Pressure Tested prior to drill out.

Intermediate hole of 311 mm was drilled out on July 26th from 829 meters. Schlumberger MWD / Motor set at 1.15 degrees / Tricone was RIH to control well bore build angle. The Codroy Anhydrite was drilled out and the **Ship Cove** Limestone member was intersected at apx 845 meters, consisting of dirty Marlstones.

The Top of the **Spout Falls** Formation was hit at apx 870 meters with the first signs of minor gas shows within a Cleaner Pebble? Sandstone unit. No **Fischells Brook** Conglomerate Member was evident based on cuttings. Drilling continued rotating 100% of the time as the well bore continued to remain vertical under 2 degrees. The Tricone / Schlumberger Directional tools were POOH at a depth of 1058 meters on July 28th, and Schlumberger was released from the well.

A PDC / no motor were RIH and drilling continued within a very uniform Redbed - Sandy Clay interbedded sequence and the bit was POOH at 1491 meters (86 hrs) on August 2nd.

A new PDC was RIH with no motor and drilling continued within the Redbeds until transitioning into a cleaner looking white - greyish clay Sandstone. (Abundant Red and White clays were evident at the shakers and it appeared that the Drill bit was continually "Balling Up". Sawdust was pumped with an attempt to improve the ROP resulting in limited success.

Drilling continued and the Redbeds became prominent from 1710 meters to 1830 meters with some intervals of the whiter clay rich sands. A cleaner Pebble Sandstone to possible Conglomerate was intersected at 1830 meters. The PDC was POOH at 1843 meters on August 7th, due to poor ROP and the unknown potential for damage. Minor damage only was evident on PDC.

A tricone was RIH and drilling continued within the Pebble Sandstone / Conglomerate but was POOH after 17 meters at 1860 meters due to poor ROP.

A PDC was RIH / no motor and drilled from 1860 meters and was POOH at 1867 meters due to poor ROP (down to 0.3 m/hr). The Tricone was rerun and drilling continued from 1867 meters on August 10th within the Sandstone / conglomerate.

The base of the conglomerate / sandstone was at apx 1910 meters when additional Redbeds were intersected. The Tricone was POOH at 1935 meters due to the softer Redbeds and a softer Tricone was RIH and drilled ahead on August 10th at 06:30 hrs.

The tricone bit / no motor drilled ahead from 1935 meters, predominantly within apparent Redbeds. ROP evened out between 2.5 to 3 m/hr within the Redbeds. Drilling continued and stopped at 2063.5 meters for Intermediate Casing and Logging on August 15th at 1330 hrs. Two Logging runs and a third Velocity Seismic Survey were completed.

Two DST"s were attempted after the completion of logging. DST # 1 inflate from 2013 - 2063 m, and DST # 2 straddle from 873-901 m. Both DST"s failed due to leaking packers. See Drilling reports for detailed information.

244.5 mm Casing was run and cemented at 2058.3 meters with no problems. Surface equipment was Pressure Tested with no problems.

216 mm Main Hole was drilled out on August 23rd at 06:45 hrs (7 days after Casing Point). A PDC / motor was RIH and Drilling continued at apx 10 m/hr. A Conglomerate was encountered at 2087 meters. Drilling continued through the conglomerate, softer chalky grey clay grey Sandstones, minor Redbeds, into an apparent Chalky - Clay rich Sandstone based on samples and the PDC was POOH at 2133 meters due to low ROP down to 0.3 m/hr. The PDC was Ringed Out and considered destroyed.

A tricone / no motor were RIH on August 25th and drilling continued in a uniform Sandstone. The top of the <u>Friars</u> <u>Cove was picked at 2129 meters</u> after drilling through the bottom of a massive Conglomerate. Minor seepages (Mud losses) were recorded during this section. Hole angle continued to build during the Bit run. The tele-drift survey tool was recording 4 degrees and holding when the Bit was POOH at 2314 meters.

Schlumberger Directional Tools were picked up with a PDC bit (on motor set 1.5 degrees) and surveying into the hole recorded a maximum hole deviation of 6.5 degrees at 2295 meters. (Verses 4 degrees for mechanical Teledrift). Drilling continued on August 29th, sliding as required to drop well bore angle back to vertical. Sliding was poor with the PDC and drilling continued down to 2508 meters when a Conglomerate was penetrated and the ROP slowed down to under 1 m/hr. The PDC was POOH, and was in fair shape with some fractured cutter faces and would of been ringed out if left in the hole for any extended time.

A tricone was RIH with directional tools (motor set 1.83 degrees) and drilling continued on September 2nd. The **Snakes Bight** Formation was penetrated at 2515 meters (Based on the exit / base of the last massive Conglomerate). Drilling continued down to 2762 m and was POOH due to an MWD Failure. The Tricone bit had all of its outside row of inserts broken off but was stilling drilling ahead. The Snakes Bight black Shale / Siltstones were intersected at 2555 meters (Based on major litholgy change - see Striplog).

A PDC was RIH with directional tools (motor set 1.83 degrees) and drilling continued in a Shale - Siltstone sequence on September 6th. (ROP up to 10 m/hr). A Conglomerate was hit at 2800 meters and the PDC was POOH at 2803 m due to ROP slowdown and formation.

A Tricone was RIH with directional tools (motor set 1.83 degrees) and drilling continued on September 7th. A sequence of Shales - Siltstone and some Sandstone were encountered with the occasional Conglomerate. 100% Shale was encountered at apx 2940 meters and drilling continued down to 2967 meters and the Tricone was POOH due to slower ROP.

Pressure Testing was required based on Government Regulations prior to the next bit run.

A Tricone was RIH with directional tools (motor set 1.15 degrees) on September 11th from 2927 m. The well bore continued to build angle and slides up to 8 meters were required due to low set angle on motor of 1.15 degrees. Well bore angle was kept under 6 degrees. POOH at 3110 meters.

A PDC bit was picked up with a motor set 1.15 degrees with added stabilizers. Drilling continued on September 15th. Sliding was very poor and it was hard to set tool face because of PDC and stabilizers. A Sandstone - Conglomerate was hit at 3173 meters and the PDC was POOH at 3180 meters when the ROP had decreased to 0.3 m/hr.

A Tricone was picked up with the motor set at only 1.15 degrees and drilling continued on September 18th. Drilling was smoother and consistent with the tricone and slides were manageable. ROP decreased with depth as harder Sandstones - Siltstones were encountered. Slides up to 8 meters were required to stop the well bore angle from climbing and building above 10 degrees. A failure in the swivel (unable to circulate) resulted in the bit run being terminated at 3285 meters. A new unit was hot shoted from Alberta and 77 hours were lost "waiting on rig repairs". General rig maintenance on motors – tanks, etc were performed while shut down. The BOP's – surface equipment were also pressure tested during the down time.

A Tricone was picked up with the motor set at 1.15 degrees and drilling continued on September 25th from 3285 meters. The well bore angle continued to build to apx 12 degrees as slides were shortened to 3-4 meters. This resulted in the intentional minimizing of build angle in attempt to increase the overall penetration average. The bit was POOH at 3451 meters. The *Kennels Brook* "Greenish Sandstones / Redbeds" were intersected at 3405 meters.

A tricone was RIH with motor set at 1.15 degrees and drilling continued on September 29th.

The well was FTD (Final Total Depth) by the office on October 2nd at 1500 hrs, at a depth of 3560 meters within the Kennels Brook's Formation, consisting of Greenish Sands – Siltstones and increasing Redbeds with depth. The prognoses Total Depth of 3600 meters was not needed as the Kennels Brook Formation was higher than the original Seismic indicated.

(see next page)

A wiper trip to 3300 meters was performed with no problems. The Directional tools were laid down and Schlumberger was released.

The Drilling Rig waited on the bank, for the Baker Hughes Logging unit for 15 hours due to poor communication with the logging crews flying in to Deer Lake for the job. (Run # 1 was supposed to be the Sonic log but a malfunction in one of the trucks "electronic boards" shut down the operation. The VSP crews showed up and the decision was made to switch the logging run order - Run# 1 was the VSP (Velocity Seismic Profile) with an air gun submerged in a dug pit filled with water (minimum 10x10x5 meters).

The Well bore was handed over to Baker Hughes on October 3rd at 2200 hrs and logging was completed on October 7th at 1400 hrs. No hole problems were encountered and all Baker Logging runs were completed without incident. Total logging time from handover to handover was 88 hours.

The Following Baker Hughes Logging Runs were completed:

Run # 1 - VSP (apx 20 hrs)

Run # 2 – XMAC Sonic (apx. 9 hrs)

Run # 3 - HDIL-ZDL-CN -GR-CAL (apx 11 hrs)

Run # 4 – STAR DIP / IMAGER (apx 13 hrs)

Run # 5 - FMT (apx 11 hrs)

Run # 6 - RCOR (apx 12 hrs)

A clean out trip was completed after logging with no problems or concerns.

Three DST's over 4 days were completed to further evaluate the well.

DST # 3 rig up started on October 8th at 1000 hrs. The interval 2963 – 2990 meters was tested. No Gas to Surface during the test with 65 meters of drilling mud recovered from the pipe. Sweet gas was collected for analysis from the down hole sample chamber. DST # 3 was completed on October 9th at 1700 hrs. Total operation time for DST # 3 was 31 hours.

DST # 4 rig up started on October 9th at 2100 hrs. The interval 2574 – 2640 meters was tested. No Gas to Surface during the test with 88 meters of drilling mud recovered from the pipe. Drilling mud with Gas was collected from the down hole sample chamber. Mechanical failure of bearing in Shut In tool and leakage around lower packer seal resulted in a partial failure of the test. DST # 4 was completed on October 11th at 0200 hrs. Total operation time for DST # 4 was 29 hours.

DST # 5 rig up started on October 11th at 0300 hrs. The interval 2517 – 2572 meters was tested. No Gas to Surface during the test with 140 meters of drilling mud recovered from the pipe. Drilling Mud with Gas was collected from down hole sample chamber. Mechanical failure of the upper packer seal during Initial Shut In resulted in some fluid drop in the Well Bore and into test zone. Partial failure of Test. DST # 5 was completed on October 12th at 0800 hrs. Total operation time for DST # 5 was 29 hours. Testing operations were completed and Holland testers Released.

The Drill pipe was RIH for a cleanout and to circulate out any gas from well bore (800 units trip gas), and the drill string was POOH sideways and laid down for the running of Casing.

Casing was run on October 13, 2009. 178 mm 42.6 kg/m LTC Casing was run and cemented at 3547.6 meters. Plug down on October 14th at 16:00 hrs.

The Rig was released on October 15th at 12:00 hrs to move over to Vulcan Investcan Red Brook # 2.

Well Information

Operator: Vulcan Minerals Inc

Well Name: Vulcan Investcan Robinsons 1

Location:

UWI: Robinsons 1
Pool: Wildcat
Field: Robinsons
State / Province: Newfoundland

Country: Canada

License Number:

Well Status: Cased for Future Evaluation

Surface Co-ordinates Hole Type: Fault Indicator:

Latitude: 48 degs 13 mins 52.3 Longitude: 58 degs 37 mins 8.

N/S: North 5343046.987 **E/W:** West 379774.568

Bottom Hole Co-ordinates Latitude: Longitude:

N/S: E/W:

Elevations Reference: gd
Ground Elevation: 169.00 Kelly Bushing to Ground: 6.00

Kelly Bushing Elevation: 175.30 Cut (-): 0.00
Casing Flange Elevation: Fill (+): 0.00

Total Depth Measured Depth True Vertical Depth

Total Depth Driller (Tally): 3,560.00 3,548.55

Total Depth Driller (Strap or SLM):

Total Depth Logger: 3,557.20 3,545.82

Miscellaneous Depths

Plugback Depth: Water Depth Reference: Sidetrack Depth: Water Depth:

Well Summary

 Drilling Contractor:
 Stoneham Rig # 11
 Spud Date:
 Jun 30, 2009
 @ 12:30

 Rig Release Date:
 Oct 15, 2009
 @ 12:00
 Total Depth Date:
 Oct 2, 2009
 @ 15:00

Cores # Formation Interval Cut Recovered %

Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Conductor	508.0	88.00	660.0
Surface	340.0	829.00	445.0
Intermediate	244.5	2,058.30	311.0
Production	177.8	3,547.60	216.0

Logging Summary

Company	Engineer	Total Depth (MD)	Logging tools
Baker Hghes	Shannon Crewe / L	2,055.60	Velocity Seismic Profile VSP - Measured Points at 15 m intervals
			Full Wave Monoploe Sonic (XMAC-F1
			SLAM> High Definition Induction-Gamma Ray-Caliper-Compensation Z-Densilog-Compensated Neutron Log (HDIL-GR-ZDL-CNL-CAL)
Baker Hughes		3,560.00	RCOR Rotary Sidewall Coring Tool (3417 - 2172 m)
			Formation Multi Tester FMT (2979 - 2270 m)
			STAR DIP/IMAGER (Micro Resisitivity-GR) 3560 (FTD) - 2058 (CSG)
			INDUCTION/GR/CALIPER/SP DENSITY/NEUTRON/GR/X-Y CAL HDIL-GR(DSL)-CCAL-SP DGR-ZDL-CN-CCAL 3560 (FTD) - 2058 (CSG) + overlap into Casing
			SONIC (XMAC) 3560 FTD - 2058 (CSG)
			Zero Offset Vertical Seismic Profile / Gamma Ray ZVSP-GR (3560 FTD - 2058 CSG)

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Jul 1, 09	55.00		8.00		SPUD WELL June 30, 2009 @ 1230 hrs Drill Pilot hole 455 mm MD = 36 m Drill 455 mm Pilot hole
Jul 2, 09	40.00	-15.00	6.00	-2.5	Drill 444 mm Pilot hole to 83 meters POOH at 1500 hrs, Lay out BHA and Pick up 660 mm Hole opener Bit, Drill ahead - open hole at 2300 hrs MD = 23 m Drill through to morning opening Conductor Hole.
Jul 3, 09	88.00	48.00	10.00	4.8	Open up drill 660 mm Conductor hole, Drill 83 - 88 m 18:00 hrs - TD, Circ and POOH for Casing MD = 88 m Remove Rotary Table to run Casing (Casing too large for Table opening)
Jul 4, 09	88.00	0.00	0.00	0.0	RIg up and attempt to run 508 mm Conductor to 88 meters, Circ and work Casing to 25 m, Possible water flow from well, Ince Vis of mud, Work pipe down to 42 m Pounding in Casing MD = 88 m (Casing at 42 meters) Continue to try to pound - Circ pipe past 44 meters. 01:30 hrs - POOH with 508 mm Casing Remove false table and install rotary table
Jul 5, 09	88.00	0.00	0.00	0.0	Install rotary table, Pick up BHA - 660 mm Bit and Ream into hole to 88 meters (clean out prior to second attempt at casing Wiper trip at 2200 hrs, CIrc and mix 20 m3 barite sweep to spot Downhole., POOH for Casing Remove Rotary table and instal false table for running casing.
Jul 6, 09	88.00	0.00	0.00	0.0	Remove rotary table 09:15 hrs - Make up and run 508 mm COnductor Csg, Tight spot 45 meters, pound through 16:00 hrs - Casing on btm, Circ - Condition mud Safety meeting with cementers and cement conductor, good cement returns WOC @ 18:30 hrs Cut conductor and weld on flange for Diverter MD = 88 m Weld flange

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Jul 7, 09	88.00	0.00	0.00	0.0	Nipple up Diverter system Clean tanks Install rotary table Make up and weld diverter flow line and complete nipple up procedures MD = 88 m Pick up BHA and RIH to drill out
Jul 8, 09	146.00	58.00	10.00	5.8	Pick up BHA, etc Circ and fill string Repair valves - etc as required, Extend height of flow line - (T extention) RIg service. 16:00 hrs - Drill out shoe 85 to 88 m, FIT for 10 mins @ 70 PSI 17:45 hrs - Drill ahead 444 mm Surface hole MD = 131 m Wellbore angle building - Reduce FOB and increase RPM to Fan Bit, ROP down to 2 m/hr to drop angle
Jul 9, 09	201.00	55.00	20.00	2.8	Repair Suction Line (3 hrs) Control Drill 444 mm Surface hole (slow at apx 2 - 5 m/hr) fanning bit to decrease / stop wellbore angle. MD = 196 m
Jul 10, 09	250.00	49.00	19.00	2.6	Drill ahead 445 mm Surface hole, Fanning with reduced weight to lower wellbore angle, attempt to drill with increased weight but deviation increased, Cnx at 242 m was tight and interval around 226.5 meters was reamed for apx 3 hrs. MD = 242 m Drill ahead Fanning bit to reduce /hold Wellbore angle under 4 degrees.
Jul 11, 09	289.00	39.00	6.00	6.5	Drill ahead 445 mm Surface hole standard rotary 08:00 hrs - POOH at 253 m for Schlumberger tools Lay out BHA, Pick up Motor (set 1.15 degs), MWD - BHA and RIH 16:30 hrs - RIH - Survey to bottom 21:00 hrs - Drill ahead 445 mm hole / Slide as required MD = 264 m Drill through to morning sliding as required for for vertical

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Jul 12, 09	380.00	91.00	15.00	6.1	Drill 445 mm hole, Work on Pumps 0630 - 0930 hrs, drill ahead to 352 m, several thin Coals, work on pumps 2145 - 2345 hrs, ream coaly interval while waiting on repairs MD = 354 m Drill ahead sliding 100 % to hold angle, work on pumps 0330 - 0500 hrs, drill ahead sliding to 0600 hrs
Jul 13, 09	498.00	118.00	18.00	6.6	Work on Pumps - repair Head 07:00 hrs - Drill ahead 445 mm hole, slide to hold angle MD = 468 m Drill through to morning attempting to hold angle, angle building to the NE.
Jul 14, 09	560.00	62.00	13.00	4.8	Drill ahead 445 mm Surface hole to 560 m (Lost 3.5 hours to pump repairs throughout day) 23:30 hrs, Circ hole and prepare to POOH (Hole angle continuing to build) MD = 560 m 01:30 hrs - POOH to change BHA - Motor
Jul 15, 09	606.00	46.00	11.00	4.2	Change out BHA, Set Motor to 1.5 degs, add stab, RIH / MWD/motor 1500 hrs - Drill ahead 445 mm hole (lost 1.5 hrs pump repairs) MD = 588 m Drill through to morning, slide as required to slowly drop wellbore angle.
Jul 16, 09	680.00	74.00	18.50	4.0	Drill ahead 445 mm Surface Hole Slide and survey as required to drop angle under 4 degs (see Surveys), 2 hours on pumps MD = 662 m Drill through to morning
Jul 17, 09	750.00	70.00	19.00	3.7	Drill ahead last 24 hours 445 mm Surface hole, Survey as required MD = 737 m Drill through to morning at apx 4 m/hr
Jul 18, 09	780.00	30.00	10.60	2.8	Drill ahead 445 mm hole 17:45 hrs - drill to 776 m, Circ - etc and POOH at 1900 hrs for bit. Change bit MD = 776 m Change out MWD - RIH 04:30 hrs - Drill ahead 445 mm hole

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Jul 19, 09	829.00	49.00	18.00	2.7	Drill ahead 445 mm hole, Slide and survey as required, Stopped 5 times for pump repairs, Hit Anhydrite at 815 meters, Mud clobbered, add Soda Ash - Thinner to treat, Drill ahead MD = 821 m Drill through to morning in massive Anhydrite, ROP less than 2 m/hr, no Gas. TD for Casing at 829 m @ 0600 hrs in Anhydrite.
Jul 20, 09	829.00	0.00	0.00	0.0	Circ and condition mud at TD Wiper trip / circ and condition on bottom 15:30 hrs - POOH for Casing 21:00 hrs - Lay down Schlumberger Tools 23:00 hrs - RIg up to Run Casing MD = 829 m Level - Jack Rig to run Casing 01:30 hrs - Run 340 mm Casing
Jul 21, 09	829.00	0.00	0.00	0.0	Run 340 mm Csg 17:30 hrs - Circ and condition mud / Csg on bottom 21:45 hrs - Safety meeting, rig and cement casing MD = 829 m 00:30 hrs - WOC, hold 10 mPa for 10 mins 04:40 hrs - Lay down Diverter - etc 06:00 hrs - Nipple Down
Jul 22, 09	829.00	0.00	0.00	0.0	Nipple Down, Cut Casing, clean mud talks, strip surface mud W/O welder 3 hours, heat up Csg bowl MD = 829 m Weld bowl / continue stripping mud
Jul 23, 09	829.00	0.00	0.00	0.0	Nipple up BOP's, (Build up individual components), Pick up Annular Preventer MD = 829 m Nipple up - kill line / HCR
Jul 24, 09	829.00	0.00	0.00	0.0	Continue to work - rig up BOP's Make / weld Flow Nipple - line Spot degasser and manifold shack and hook up lines MD = 829 m Complete flow line and lines hookup Prepare to pressure test

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Jul 25, 09	829.00	0.00	0.00	0.0	Pressure test manifold shack 12:00 hrs - Attempt to install wear bushings 14:15 hrs - RIH slick - open ended 17:15 hrs - Level Rig with cranes 20:15 hrs - POOH 23:00 hrs - Attempt to remove cement from collar MD = 829 m Start Pressure Testing BOP's through to morning.
Jul 26, 09	834.00	5.00	1.70	2.9	Pressure test BOP's Install Flow T and Line Intstall Flair line and Degasser 15:45 hrs - Make up BHA - Schlumberger Motor - MWD 18:00 hrs - RIH MD = 829 m Tag cmt at 815 m, Drill out cmt - float and shoe 04:14 hrs - Drill ahead 311 mm Intermediate hole from 829 m Displace to Poly Mud 06:00 hrs - 834 m
Jul 27, 09	931.00	97.00	21.00	4.6	Drill ahead last 24 hrs / MWD - Motor (Rotate 100% - no sliding. (angle staying under 2 degs) MD = 904 m Drill through to morning 06:00 hrs = 931 m
Jul 28, 09	1,016.00	85.00	21.00	4.0	Drill ahead last 24 hours MD = 996 m Drill through to morning (survey as required, no sliding, well bore remaining vertical
Jul 29, 09	1,058.00	42.00	11.00	3.8	Drill ahead and rotate 18:30 hrs - 1058 m - Clcr and POOH to drop Schlumberger and pick up PDC / no motor MD = 1058 m Lay down Schlumberger and Make up new BHA with PDC 05:00 hrs - RIH to drill ahead
Jul 30, 09	1,147.00	89.00	17.50	5.1	RIH / PDC (no Motor) 10:30 hrs - Drill ahead 311 mm hole MD = 1124 m Drill through to morning
Jul 31, 09	1,267.00	120.00	21.50	5.6	Drill ahead last 24 hours / PDC MD = 1237 m Drill through to morning at apx 6 m/hr
Aug 1, 09	1,375.00	108.00	21.50	5.0	Drill ahead last 24 hours MD = 1350 m Drill through to morning at apx 6 m/hr

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Aug 2, 09	1,467.00	92.00	21.50	4.3	Drill ahead last 24 hours MD = 1452 m Drill through to morning with ROP 2 - 6 m/hr
Aug 3, 09	1,514.00	47.00	12.00	3.9	Drill ahead to 1491 m 14:00 hrs - POOH for bit MD = 1491 m 01:00 hrs - Drill ahead to morning / new PDC at apx 7 m/hr
Aug 4, 09	1,606.00	92.00	22.00	4.2	Drill ahead last 24 hours MD = 1589 m Drill through to morning in a softer chalky wh Sst ?
Aug 5, 09	1,690.00	84.00	22.00	3.8	Drill ahead last 24 hours MD = 1670 m Drill through to morning at apx 6 m/hr with slower beds donw to 3 m/hr
Aug 6, 09	1,767.00	77.00	22.00	3.5	Drill ahead last 24 hours MD = 1747 m Drill through to morning - Drillbit balling up from clays
Aug 7, 09	1,843.00	76.00	23.00	3.3	Drill ahead last 26 hrs. MD = 1826 m Drill ahead to 0800 hrs @ 1843 m, ROP down to 1.5 m/hr with some Qtz, Cherty ? - Lithics fractured frags / Sands - Shales. Circ to POOH.
Aug 8, 09	1,843.00	0.00	0.00	0.0	Drill ahead to 1843 m, ROP down to 1.5 m/hr / PDC - Possible Conglomerate in samples. 08:00 hrs - Circ and POOH for bit Pick up tricone, Pick up new jars. MD = 1843 m Top pipe ram blocking hole, Manually open ram, Repair Rams. Pick up Tricone and RIH to 382 m, Pressure test rams 03:00 hrs - RIH to bottom
Aug 9, 09	1,860.00	17.00	14.00	1.2	Drill ahead slow and steady all day at apx 1.5 m/hr to 1860 m 21:15 hrs - Circ and POOH for PDC MD = 1860 m 04:00 hrs - Make up new (506) PDC and RIH

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Aug 10, 09	1,867.00	7.00	6.50	1.1	RIH with PDC to drill ahead 10:30 hrs - Drill ahead with PDC very slow at 1 - 1.5 m/hr Drill ahead with PDC very slow to 1867 m (7.5 hr) ROP down to 0.3 m/hr 18:30 hrs - Circ and POOH for Tricone MD = 1867 m POOH - Pick up Rerun Tricone and RIH
Aug 11, 09	1,894.00	27.00	22.00	1.2	Drill ahead last 24 hrs slow MD = 1889 m Drill through to morning at apx 1 m/hr.
Aug 12, 09	1,933.00	39.00	22.00	1.8	Drill ahead last 24 hours ROP picked up at apx 1907 meters - Some Red clays at shakers MD = 1921 m Drill throught to morning, ROP slowing down, Last meter drilled high torque, Circ to POOH
Aug 13, 09	1,945.00	12.00	9.00	1.3	Circ and POOH for Bit, Pick up new Tricone bit and RIH 20:30 hrs - Drill ahead with new 311 mm Tricone Bit. MD = 1938 m Drill throught to morning in apparent sandy Redbeds at apx 1.1 m/hr.
Aug 14, 09	1,989.00	44.00	22.00	2.0	Drill ahead last 24 hours MD = 1972 m Drill through to morning at apx 3 m/hr
Aug 15, 09	2,047.00	58.00	22.00	2.6	Drill ahead last 24 hours MD = 2031 m Drill throught to morning at apx 2.5 m/hr
Aug 16, 09	2,063.50	16.50	7.00	2.4	Drill ahead to 2063.5 m 13:30 hrs - TD - Circ - Wiper trip to 1700 m, No Problems, Circ 21:00 hrs - POOH to Log (lay out BHA) MD = 2063.5 m 02:00 hrs - Safety meeting with Baker / RIg up Log # 1 (HDIL-SP-ZDL-CNL-GR-CAL) - RIH to bottom and Log 06:00 hrs - Log # 1

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Aug 17, 09	2,063.50	0.00	0.00	0.0	Run Log # 1 HDIL-GR-ZDL-CNL-CAL 08:30 hrs - Rig Up Log # 2 (XMAC-F1) Sonic 14:30 hrs - Complete Log # 2 - RIH 11 Stands to displace 30+ meters of fluid in hole for VSP, POOH with no hole fill pump on 15:30 hrs - Rig up Log # 3 (VSP) and RIH MD = 2063.5 m Log VSP 07:00 - Rig out VSP and Rig out Baker Hughes - Release Prepare to RIH for Cleanout
Aug 18, 09	2,063.50	0.00	0.00	0.0	Logging Tools rigged Out, RIH for Cleanout 14:00 hrs - Circ and condition 17:00 hrs - POOH for DST # 1 22:00 hrs - Make up Tools for DST MD = 2063.5 m 02:00 hrs - RIH for DST # 1
Aug 19, 09	2,063.50	0.00	0.00	0.0	RIH / DST # 1 Convential and attempt to set at 2013 m to test bottom of hole. UNABLE to obtain packer seal with formation. 1100 hrs - POOH to check DST # 1 Assembly 14:30 hrs - 1174 m - Hole not taking proper fluid amount, RIH 2 stds and circ B.Up's - no gas, Flow Check - POOH 22:00 hrs - Handle test tools and remove recorders MD = 2063.5 m 01:00 hrs - Packers in good shape - no damage, Remove packers and pressure test - DST # 1 failure unknown. 03:45 hrs - Continue handling test tools - Pick up DST # 2 Straddle assembly.
Aug 20, 09	2,063.50	0.00	0.00	0.0	Make up DST # 2 Straddle to test 873-901 m RIH 15:30 hrs - Inflate packers and open tool - Mud leaking into tool through packers from hole, Shut in for apx 90 mins, Open tool - Mud leaking through packer, Close tool and shut in 23:30 hrs - Deflate packers MD = 2063.5 m POOH with DST # 2 04:00 hrs - Rig out Test tools to Run casing.
Aug 21, 09	2,063.50	0.00	0.00	0.0	Tear out DST # 2 (failed) and Release Testers 11:15 hrs - Rig up and Run 244.5 mm Csg MD = 2063.5 m

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Aug 22, 09	2,063.50	0.00	0.00	0.0	Run Casing to 2058.5 m Circ and Condition Mud 21;15 hrs - Rig to and Cement Casing 23:15 hrs - WOC MD = 2063.5 m Hold back pressure on casing for 1 hour 01:00 hrs - Rig out cementers - etc, WOC 06:00 hrs - Start pressure testing
Aug 23, 09	2,067.00	3.50	0.50	7.0	Pressure Test Manifold etc 11:45 hrs - Install wear bushing 14:45 hrs - Pick up Mud motors and adjust to 1.15 degs, Pick Up BHA and RIH to 329 m 19:30 hrs - Pressure Test BOPS MD = 2063.5 m 01:00 Hrs - RIH, slip and cut, Tag float - drill out cmt 06:45 drill out shoe and ahead.
Aug 24, 09	2,130.00	63.00	21.00	3.0	Drill out shoe and ahead 08:00 hrs - FIT to 16 kpa at 2067 m Drill ahead 216 mm hole with motor / PDC at apx 10 m/hr in Redbeds Hit top Friars Cove at 2086 m (Conglomerate) ROP slowing down / varied, Torque - Motor stalling MD = 2117 m Drill through erratically to morning.
Aug 25, 09	2,139.00	9.00	8.00	1.1	
Aug 26, 09	2,192.00	53.00	22.00	2.4	Drill ahead last 24 hours. MD = 2178 m Drill through to morning at apx 2 m/hr.
Aug 27, 09	2,246.00	54.00	22.00	2.5	Drill ahead 216 mm hole @ 2218 m, Survey out to 4 degs, Reduce FOB and Increase RPM to Fan bit to drop angle. MD = 2235 m Drill through to morning at apx 2 m/hr.
Aug 28, 09	2,289.00	43.00	22.00	2.0	Drill ahead last 24 hours MD = 2279 m Drill ahead to morning at apx 1.5 m/hr in a finer - silty Calcs Sand

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Aug 29, 09	2,314.00	25.00	14.00	1.8	Drill ahead, fanning at apx FOB 12000, RPM 115 to bring back angle, Steady at 4 degs 21:30 hrs 2314 m, Circ and POOH for Directional Tools MD = 2314 m POOH 06:00 hrs - Make up Directional Tools
Aug 30, 09	2,352.00	38.00	11.00	3.5	Pick up tools - BHA, RIH, SLip and cut, Flow checks into hole Survey at points RIH 15:00 hrs - Drill ahead 216 mm main hole MD = 2335 m Drill through to morning.
Aug 31, 09	2,404.00	52.00	22.00	2.4	Drill ahead last 24 hours MD = 2385 m Drill through to morning in a softer chalky Calcs Sltst
Sep 1, 09	2,449.00	45.00	22.00	2.0	Drill ahead last 24 hours / PDC MD = 2385 m Drill through to morning.
Sep 2, 09	2,508.00	59.00	21.00	2.8	Drill ahead, slide as required to maintain wellbore angle apx 4.5 degs MD = 2508 m Attempt to slide, Attempt to drill at 2508 m, 0500 hrs - Circ and POOH for PDC
Sep 3, 09	2,542.00	34.00	10.50	3.2	POOH with PDC, adjust motor up to 1.5 degs, RIH with Dir. Tools 18:30 hrs - Drill ahead with Tricone / motor / MWD MD = 2522 m Drill through to morning at apx 4 m/hr
Sep 4, 09	2,622.00	80.00	22.00	3.6	Drill ahead last 24 hours MD = 2601 m Drill through to morning
Sep 5, 09	2,709.00	87.00	22.00	4.0	Drill ahead last 24 hours MD = 2685 m Drill through to morning at apx 5 m/hr
Sep 6, 09	2,762.00	53.00	17.00	3.1	Drill ahead at apx 5 m/hr, slide to hold angle under 4 degs MD = 2760 m Drill to 2762 m (MWD Failure) 01:45 hrs - POOH for MWD - Drill bit

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Sep 7, 09	2,803.00	41.00	24.00	1.7	POOH, change out MWD - Motor - RIH with PDC, motor set 1.83 degs 17:45 hrs - Drill ahead with PDC apx 10 m/hr no problems Attempt to slide at 2779 m, Poor - very hard to maintain tool face with PDC MD = 2781 m Drill through to morning, ROP slowing, Hit Conglomerate at apx 2800 m, Drill to 2803 m, ROP down to 1 m/hr 08:30 hrs - Circ to POOH
Sep 8, 09	2,818.00	15.00	8.00	1.9	POOH due to formation, Drop PDC and pick up Tricone, RIH 21:00 hrs - Drill ahead MD = 2808 m Drill through to morning, Slide as required to drop wellbore to vertical
Sep 9, 09	2,871.00	53.00	22.00	2.4	Drill ahead last 24 hours MD = 2858 m Drill through to morning at apx 2.5 m/hr
Sep 10, 09	2,916.00	45.00	22.00	2.0	Drill ahead last 24 hours MD = 2906 Drill through to morning at 1.5 m/hr (sliding) Unable to get hole angle under 3 degs
Sep 11, 09	2,967.00	51.00	23.00	2.2	Drill ahead last 24 hours MD = 2955 m Drill through to morning. 08:00 hrs - Circ to POOH for Bit and Pressure test
Sep 12, 09	2,970.00	3.00	1.50	2.0	Circ and POOH 15:00 hrs - OOH - Lay out MWD - etc 17:00 hrs - Pressure Test Surface Equiptment - BOP's 21:00 Make up MWD - Scribe Motor, BHA, Pick up Jars MD = 2967 m RIH 04;30 hrs - Drill ahead 216 mm hole (motor set 1.5 degs)
Sep 13, 09	3,031.00	61.00	22.00	2.8	
Sep 14, 09	3,081.00	50.00	22.00	2.3	Drill ahead last 24 hours Hole angle has built out to 6 degs - forced to slide 50% to hold MD = 3070 m Slide as required to hold 6 degs (hopefully drop) Drill ahead at apx 1.5 m/hr due to extra sliding

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Sep 15, 09	3,110.00	29.00	16.00	1.8	Drill ahead 216 mm main hole within a Sand / Conglomerate MD = 3110 m Circ and POOH for Bit due to slow ROP
Sep 16, 09	3,127.00	17.00	8.00	2.1	POOH for bit Set motor 1.15 degs, add stabs, Make up BHA, RIH, slip and cut, Wash and ream into hole from 2994 - 3110 m 20:45 hrs - Drill ahead / PDC MD = 3120 m Drill through to morning attempting to slide (7 meters in rotations / sliding in 6 hrs)
Sep 17, 09	3,168.00	41.00	22.00	1.9	Drill ahead last 24 hours MD = 3157 m Drill through to morning - Poor attempted slides throughout last 24 hours
Sep 18, 09	3,180.00	12.00	11.00	1.1	Drill ahead - hold angle at apx 6 degs, SLow ROP after slide at 3172 m, ROP slowing down to 0.3 m/hr by 3180 m 17:30 hrs - Circ and POOH with PDC due to slow ROP. MD = 3180 m Change out Motor - Pick up Tricone, RIH, Slip and Cut at shoe
Sep 19, 09	3,216.00	36.00	15.00	2.4	POOH Change out motor - RIH with Tricone Ream last 3 singles to bottom 14:00 hrs - Drill ahead / tricone MD = 3203 m Drill through to morning, Slide - Angle out to 8 degs
Sep 20, 09	3,258.00	42.00	22.00	1.9	Drill ahead last 24 hours, Sliding to hold wellbore under 10 degs. MD = 3249 m Drill through to morning Sliding at apx 1.5 m/hr
Sep 21, 09	3,284.00	26.00	18.00	1.4	Drill ahead 216 mm hole MD = 3282 m Drill to 3284 m, POOH due to failure of quill sub on Swivel / kelly.
Sep 22, 09	3,284.00	0.00	0.00	0.0	Wait on Swivel Repair / Cornerbrook - New Unit left Monday from Alberta
Sep 23, 09	3,284.00	0.00	0.00	0.0	Waiting on delivery of new swivel from Alberta
Sep 24, 09	3,284.00	0.00	0.00	0.0	Waiting on delivery of new swivel from Alberta

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Sep 25, 09	3,284.00	0.00	0.00		Wait on Swivel Make up BHA - Motor - Bit, RIH to 300 m 20:30 hrs - Swivel on location - Install and Test Swivel MD = 3284 m RIH - Wash 2 singles to bottom 06:00 hrs - Drill ahead 216 mm hole, motor 1.15 degs / Tricone
Sep 26, 09	3,326.00	42.00	22.00	1.9	Drill ahead last 24 hours MD = 3315 m Drill through to morning / Slide 3 m per 14 with 1.15 motor to hold angle at apx 8.5 degs
Sep 27, 09	3,380.00	54.00	22.00	2.5	Drill ahead last 24 hours MD = 3369 Drill through to morning
Sep 28, 09	3,425.00	45.00	22.00	2.0	Drill ahead last 24 hours MD = 3415 m Drill ahead - slide apx 3 m / 14 m single to slow build angle Hole angle currently 12 degs +
Sep 29, 09	3,451.00	26.00	14.00	1.9	Drill ahead to 3451 m (Slide to hold angle apx 12 degs) 21:00 hrs - Circ and POOH for Bit (76 bit hours) MD = 3451 m POOH, Change out bit - motor
Sep 30, 09	3,471.00	20.00	11.00	1.8	Make up BHA - Motor - Tricone (6-1-7) and RIH, Slip and Cut, RIH, Ream to bottom from 3406 m 17:30 hrs - Drill ahead at apx 1.5 m/hr MD = 3462 m Drill through to morning at apx 1.5 m/hr
Oct 1, 09	3,509.00	38.00	22.00	1.7	Drill ahead last 24 hours Slide to hold angle apx 12 degs MD = 3499 m Drill through to morning at apx 1.5 m/hr
Oct 2, 09	3,547.00	38.00	22.00	1.7	Drill ahead last 24 hours MD = 3538 Drill through to morning, Slide to hold Hole angle under 13 degs.
Oct 3, 09	3,560.00	13.00	8.00	1.6	Drill ahead to 3560 m 15:00 hrs FTD well 3560 m Wiper trip to 3300 m Circ BU's TG = 28 u POOH to log MD = 3560 m POOH - Lay out Jars - Directional tools

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Oct 4, 09	3,560.00	0.00	0.00	0.0	Break out Bit 06:45 hrs - Wait on Loggers (Deer Lake Airport) 20:30 hrs - Baker Loggers on location 23:30 hrs - Rig up Sonic - MD = 3560 m 01:00 - Trouble shoot tool, Rig up other tools - Trouble Shoot Truck 03:30 - Wait on Parts from Baker Truck comming across on Ferry in morning 06:00 - Wait on Loggers for Truck Parts
Oct 5, 09	3,560.00	0.00	0.00	0.0	Wait on parts for Logging truck 09:00 hrs - VSP personnel on location - Decision to run VSP Run in 11 stands to displace wellbore fluid 30 meters for log. Rig up RUN # 1 VSP equiptment (airgun + compressors) 12:00 hrs - Safety meeting with loggers - Rig up VSP wireline and RIH for survey MD = 3560 m 03:00 hrs - Lay out VSP Tools Attempt to switch pannel boards in trucks - no go. Set up Logging command in Special services truck and rig in Sonic log
Oct 6, 09	3,560.00	0.00	0.00	0.0	Rig and Run #2 XMAC SONIC 15:00 hrs - Rig and RUN # 3 HDIL-GR ZDL-CN MD = 3560 m 02:00 hrs - Rig and RUN #4 STAR DIP / IMAGER
Oct 7, 09	3,560.00	0.00	0.00	0.0	Run # 4 - Star Dip / Imager 1500 hrs - Rig up and RUN # 5 - FMT MD = 3560 m 0200 hrs - Rig up and RUN #6 - RCOR (Sidewall Cores)
Oct 8, 09	3,560.00	0.00	0.00	0.0	Cut Sidewall Cores (RUN # 6 RCOR) 14:00 hrs - Rig out Loggers 16:00 hrs - RIH - Clean out trip 23:00 hrs - Circ B.Ups (147 units) MD = 3560 m 02:30 hrs - POOH for DST # 1

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Oct 9, 09	3,560.00	0.00	0.00		POOH for DST # 1 10:00 hrs - Safety meeting with Tester, RIH with tail pipe apx 500 m 11:30 hrs - Make up DST # 1 Tools 13:30 hrs - Install Recording Tools and RIH 18:00 hrs - Slip and Cut at 1700 m, RIH 23:00 hrs - On Bottom for DST # 1 2963-2990 m Pick up Manifold - Chick Stands and rig up MD = 3560 m 00:00 hrs - Set and open tool (preflow) 00:18 hrs - Shut in Well apx 1 hrs 01:45 hrs - Open Tool for Main flow 02:45 hrs - Final Shut In 09:00 hrs - DST # 1 Completed, Release tool and POOH
Oct 10, 09	3,560.00	0.00	0.00	0.0	POOH with DST # 3 17:00 hrs - Recover 65 meters drilling mud from pipe, gas ? sample from test chamber, Break down test tools 21:00 hrs - RIH with more tailpipe (apx 920 m total), Make up DST # 4, change spacing, install recorders MD = 3560 m RIH with DST # 4 07:00 hrs - On bottom with tailpipe, Safety meeting with Tester, Rg up surface manifold - etc for test.
Oct 11, 09	3,560.00	0.00	0.00	0.0	On Bottom with DST #4 and run Test 16:30 hrs - Test completed, Release tool with difficulty to POOH 17:30 hrs - 1 hr to Break free DST - POOH with DST # 4 MD = 3560 m Collect samples - Remove Packers damaged, break down test tools 03:00 hrs - Change out Bottom packer - continue to break down tools 05:30 hrs - Make up DST # 5
Oct 12, 09	3,560.00	0.00	0.00	0.0	RIH with DST # 5 to test lower Friars Cove 2517 - 2572 m 13:00 hrs - Start DST # 5 23:15 hrs - DST # 5 Finished, POOH MD = 3560 m POOH with DST # 5 and recover samples from Drilling mud recovered

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Operational Summary
Oct 13, 09	3,560.00	0.00	0.00	0.0	Lay down DST # 5 - recover samples - break down tools and release Holland Testers 11:00 hrs - RIH for Cleanout trip prior to Casing 20:00 hrs - Hole clean - POOH sideways - Lay out drill pipe for Casing MS = 3560 m Continue to POOH / Lay down pipe for Casing.
Oct 14, 09	3,560.00	0.00	0.00	0.0	POOH - Lay Down Drill string for Casing 10:30 - OOH - Retrieve wear bushing 11:30 - Level Rig 12:30 - Rig to and run 177.8 mm Main Casing MD = 3560 m (Csg at 2024 m) Run casing throughout night
Oct 15, 09	3,560.00	0.00	0.00	0.0	Run 178 mm Casing 10:00 hrs - Circ and Condition Mud / Casing 12:00 hrs - Cement Long String @ 3547.6 m 16:00 hrs - WOC - Rig out Cementers Clean tanks - Prepare to and start rigging out to move MD = 3560 m Prepare to move rig Rig Release 1200 hrs Oct 15, 2009

Casing Type	Casing Size	Casing Landed @	Hole Size			
Conductor	508.0	88.00	660.0			
Surface	340.0	829.00	445.0			
Intermediate	244.5	2,058.30	311.0			
Production	177.8	3.547.60	216.0			

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

Bit #	Make	Type	Size	Depth In	Depth	Made	Hours	Avg.	I.A.D.C. Bit Condition								
					Out			P.R.	I		MDC			G		RP1	RP2
1	SDGH		444.0	10.0	83.0	73.0	21.50	3.40	1	3	SS	G	5		WT	ВНА	
2	Hughes	XH+C	660.0	10.0	88.0	78.0	15.00	5.20	1	1	WT	Α	2	1	NO	TD	
3	Reed	415X	444.0	88.0	253.0	165.0	48.50	3.40	2	3	WT	Α	1	1		вна	
4	Reed	T41C	445.0	253.0	776.0	523.0	119.25	4.39	2	2	WT	Α	6	2	RG	HR	
RR3	Reed	T41C	445.0	776.0	829.0	53.0	20.50	2.59	1	1	WT	Α	1	2	RG	TD	
5	Hughes	GX-28DX	311.0	829.0	1,058.0	229.0	50.75	4.51	3	8	ВС	G	Е	4	WT	FM	вна
6	Hughes	HC506ZX	311.0	1,058.0	1,491.0	433.0	89.50	4.84	2	3	СС	Н	Χ	3		PR	
7	Hughes	HCM5062	311.0	1,491.0	1,843.0	352.0	92.50	3.81	1	2	СС	Α	Χ	1	СС	PR	FM
8	Hughes	HR-S35D	311.0	1,843.0	1,860.0	17.0	13.25	1.28	1	1	NO		Е	I	NO	PR	
9	Hughes	HCM506	311.0	1,860.0	1,867.0	7.0	13.25	0.53	5	5	ВС	Α	Χ	I	СС	PR	FM
8RR	Hughes	HR53DD>	311.0	1,867.0	1,935.0	68.0	38.25	1.78	0	1	WT	Α	Ε	I	WT	PR	
10	Hughes	M4188ZD	311.0	1,935.0	2,063.5	128.5	59.25	2.17	1	3	ВТ	Н	0	1	WT	TD	LOG
11	Reed	DSX811N	216.0	2,063.5	2,133.0	69.5	23.75	2.93	1	8	RO	S	Χ	I	LT	PR	
12	Hughes	MX30GD	216.0	2,133.0	2,314.0	181.0	85.25	2.12	1	1	WT	N	1	1	WT	вна	
13	Hughes	CH506ZX	216.0	2,314.0	2,508.0	194.0	77.00	2.52	2	3	СТ	Α	Χ	1	СС	PR	
14	Reed	R30APDF	216.0	2,508.0	2,762.0	254.0	69.75	3.64	2	6	ВТ	Н	3	1	СТ	DTF	
15	Hughes	HC505ZX	216.0	2,762.0	2,803.0	41.0	13.75	2.98	2	2	ВС	Α	Χ	1	NO	PR	FM
16	Hughes	MX-30GD	216.0	2,803.0	2,967.0	164.0	77.00	2.13	2	6	ВТ	Н	Ε	1	СТ	PR	
17	Reed	R30APDF	216.0	2,967.0	3,110.0	143.0	62.50	2.29	7	7	ВТ	Α	Ε	I	СТ	PR	
18	Hughes	HC506ZX	216.0	3,110.0	3,180.0	70.0	41.00	1.71	2	3	WT	Α	Χ	1	ВС	PR	
19	Hughes	GX-38CD	216.0	3,180.0	3,284.0	104.0	51.00	2.04	2	2	ВТ	М	Е	I	TR	RIG	
20	Reed	R34APDF	216.0	3,284.0	3,451.0	167.0	76.50	2.18	4	7	ВТ	Н	Е	2		PR	
21	Hughes	GX-44GD	216.0	3,451.0	3,560.0	109.0	64.75	1.68	3	3	ВТ	Α	Е	1		TD	

Total Rotating Hours: 1,223.75

Storage Units:

Logging Suite Number: 1

Wireline Logging Company: Baker Hghes Engineer: Shannon Crewe / Lloyd Hicks

District: Nisku Unit Number: E6558

Witness: Michael Smith

Was Pressure Control Equipment Utilized: No Maximum Deviation: 2.000 °
Was the Logging Job Mechanically Assisted: No Hole Size: 311.0

Total Lost Time:0.00Loggers' Total Down Time:0.00Total Job Time (From Rig up to Rig down):28.00

	Measured Depth	True Vertical Depth
Casing Depth Driller	825.20	823.77
Casing Depth Logger	829.00	827.56
Total Depth Driller (Tally)	2,055.60	2,053.84
Total Depth Driller (Strap or SLM)	2,065.23	

General Remarks: No Problems

Three Runs (SLAM) - Sonic - VSP

Second run was sticky on bottom and shallower than first run

Apparent lots of debris falling on VSP during logging

Great crews - very efficient throughout job.

Date: Aug 16, 2009

Drilling Fluid Data

Drilling Fluid Type: Polymere (water)

Fluid Density: 1080.0 Viscosity: 90 pH: 11.0 Fluid Loss: 8.3

Mud Resistivity (Rm): 0.21 @ 43.9 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 45.8° 45.8° **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): 0.18 @ 43.9° Source (Rmf): Measured Mud Cake Resistivity (Rmc): 0.26 @ 43.9° Source (Rmc): Measured

Logging Run Information

Date on Bottom: Aug 16, 2009

Total Depth Logger: 2,055.60 (MD) 2,055.60 (TVD)

Logging Tools: SLAM ---> High Definition Induction-Gamma Ray-Caliper-Compensation

Z-Densilog-Compensated Neutron Log

(HDIL-GR-ZDL-CNL-CAL)

Remarks: No Problems

Run # 1 (5 hrs 15 mins)

Date: Aug 16, 2009

Drilling Fluid Data

Drilling Fluid Type: Polymere (water)

Fluid Density: 1080.0 Viscosity: 90 pH: 11.0 Fluid Loss: 8.3

Mud Resistivity (Rm): 0.21 @ 43.9 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 45.8° 45.8° **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): 0.18 @ 43.9° Source (Rmf): Measured Mud Cake Resistivity (Rmc): 0.26 @ 43.9° Source (Rmc): Measured

Logging Run Information

Date on Bottom: Aug 16, 2009

Total Depth Logger: 2,055.60 (MD) 2,055.60 (TVD)

Logging Tools: Full Wave Monoploe Sonic

(XMAC-F1

Remarks: Repeat not done on bottom due to stickness...

Main run logged and Repeat (60 m) done below shoe after main pass.

Run # 2 (5 hrs - 40 mins)

Hole Conditions: Good - Sticky on bottom - 2000 lbs overpull coming off bottom

Date: Aug 16, 2009

Drilling Fluid Data

Drilling Fluid Type: Polymere (water)

Fluid Density: 1080.0 Viscosity: 93 pH: 11.0 Fluid Loss: 8.3

Mud Resistivity (Rm): 0.21 @ 43.9 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 45.8° 45.8° **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): 0.18 @ 43.9° Source (Rmf): Measured Mud Cake Resistivity (Rmc): 0.26 @ 43.9° Source (Rmc): Measured

Logging Run Information

Date on Bottom: Aug 6, 2009

Total Depth Logger: 2,055.60 (MD) 2,055.60 (TVD)

Logging Tools: Velocity Seismic Profile

VSP - Measured Points at 15 m intervals

Remarks: Pit was dug apx 60 meters from well centre 5mx5mx5m for Air Gun.

Apx 4 meters water only in pit. Run # 3 (12 hrs 45 mins)

Report for VSP Emailed to office.

Hole Conditions: Good

Wireline Logging Summary

Storage Units:

Metric

Logging Suite Number: 2

Wireline Logging Company: Baker Hughes Engineer: Shannon Crewe / Lloyd Hicks

District: Nisku Unit Number: E6558

Witness: Michael Smith

Was Pressure Control Equipment Utilized: No Maximum Deviation: 12.000 °
Was the Logging Job Mechanically Assisted: No Hole Size: 216.0

Total Lost Time:27.00Loggers' Total Down Time:12.00

Total Job Time (From Rig up to Rig down):

	Measured Depth	True Vertical Depth
Casing Depth Driller	2,058.30	2,056.54
Casing Depth Logger	2,055.40	2,053.64
Total Depth Driller (Tally)	3,560.00	3,548.55
Total Depth Driller (Strap or SLM)		

General Remarks: Bad start to Job. On bank Saturday morning and waited 15 hours for crews to fly in from out

of provience. 1st run (Sonic) was aborted when there was an electronics frailure in a "board" on the logging truck. Decision made Sunday after VSP crews arrived to run Velocity

Survey with air gun Sunday afternoon.

Six runs in total with no problems once job got started.

Hole conditions excellent over the 4 days.

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: Poly

Fluid Density: 1125.0 Viscosity: 65 pH: Fluid Loss:

Mud Resistivity (Rm): @ 0

Mud Resistivity (Rm) @ BHT: @ Maximum Temperature: °

Mud Filtrate Resistivity (Rmf):

@ ° Source (Rmf):

Mud Cake Resistivity (Rmc):

@ ° Source (Rmc):

Logging Run Information

Date on Bottom: Oct 4, 2009

Total Depth Logger: (MD) (TVD)

Logging Tools: Zero Offset Vertical Seismic Profile / Gamma Ray

ZVSP-GR (3560 FTD - 2058 CSG)

Remarks: Phonse Fagan - Geophysicist from Vulcan office on location for survey.

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: Poly

Fluid Density: 1125.0 Viscosity: 65 pH: 8.0 Fluid Loss: 8.0

Mud Resistivity (Rm): 0.31 @ 36.5 °

Mud Resistivity (Rm) @ BHT: 0.23 @ 55.6° **Maximum Temperature:** 55.6° Mud Filtrate Resistivity (Rmf): Source (Rmf): 0.27 @ 36.5° measured Mud Cake Resistivity (Rmc): 0.37 @ 36.5 ° Source (Rmc): measured

Logging Run Information

Date on Bottom: Oct 5, 2009

Total Depth Logger: 3,555.70 (MD) 3,544.36 (TVD)

Logging Tools: SONIC

(XMAC) 3560 FTD - 2058 (CSG)

Remarks: No Problems

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: poly

Fluid Density: 1125.0 Viscosity: 65 pH: 8.0 Fluid Loss: 8.0

Mud Resistivity (Rm): 0.21 @ 36.4 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 51.2 ° 51.2 0 **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): 0.25 36.4° Source (Rmf): measured Mud Cake Resistivity (Rmc): 0.30 @ 36.4° Source (Rmc): measured

Logging Run Information

Date on Bottom: Oct 5, 2009

Total Depth Logger: 3,555.70 (MD) 3,544.36 (TVD)

Logging Tools: INDUCTION/GR/CALIPER/SP DENSITY/NEUTRON/GR/X-Y CAL

HDIL-GR(DSL)-CCAL-SP DGR-ZDL-CN-CCAL 3560 (FTD) - 2058 (CSG) + overlap into

Casing

Remarks: No Problems

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: Poly

Fluid Density: 1125.0 Viscosity: 65 pH: 8.0 Fluid Loss: 8.0

Mud Resistivity (Rm): 0.25 @ 36.4 °

Maximum Temperature: Mud Resistivity (Rm) @ BHT: 0.20 @ 51.2 ° 51.2° Mud Filtrate Resistivity (Rmf): 0.21 @ 36.4° Source (Rmf): measured Mud Cake Resistivity (Rmc): 0.30 @ 36.4 ° Source (Rmc): measured

Logging Run Information

Date on Bottom: Oct 6, 2009

Total Depth Logger: (MD) (TVD)

Logging Tools: STAR DIP/IMAGER

(Micro Resisitivity-GR) 3560 (FTD) - 2058 (CSG)

Remarks: No Problems

Stayed off bottom to avoid any sticky problems

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: Poly

Fluid Density: 1130.0 Viscosity: 75 pH: 10.7 Fluid Loss: 7.4

Mud Resistivity (Rm): 0.25 @ 36.4 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 51.2 ° **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): 0.21 @ 36.4° Source (Rmf): measured Mud Cake Resistivity (Rmc): 0.30 @ 36.4° Source (Rmc): measured

Logging Run Information

Date on Bottom: Oct 6, 2009

Total Depth Logger: 2,979.00 (MD) 2,974.98 (TVD)

Logging Tools: Formation Multi Tester

FMT (2979 - 2270 m)

Remarks: 30 out of 31 attempts failed

2691.9 m only sucessful test.

Intervals are recorded on Main Striplog (Wireline Column)

Hole Conditions: Good - Excellent

Date: Oct 3, 2009

Drilling Fluid Data

Drilling Fluid Type: Poly

Fluid Density: 1030.0 Viscosity: 75 pH: 10.7 Fluid Loss: 7.4

Mud Resistivity (Rm): 0.25 @ 36.4 °

Mud Resistivity (Rm) @ BHT: 0.20 @ 51.2 0 **Maximum Temperature:** Mud Filtrate Resistivity (Rmf): Source (Rmf): 0.21 @ 36.4° measured Mud Cake Resistivity (Rmc): 0.30 @ 35.4 ° Source (Rmc): measured

Logging Run Information

Date on Bottom: Oct 7, 2009

Total Depth Logger: 3,417.00 (MD) 3,408.86 (TVD)

Logging Tools: RCOR

Rotary Sidewall Coring Tool (3417 - 2172 m)

Remarks: 30 cores cut.

Drill Stem Test Reports

See Appendix #9 for Drill Stem Test Summaries

Deviation / Directional Survey Report

Directional Drilling Company: Schlumberger

Directional Drillers:

Measured While Drilling (MWD) Hands:

Survey Mode: magnetic
Survey Mode: MWD
Survey Date: Jul 4, 2009

Survey Calculation Method: minimum curvature

Target Azimuth: 45.00

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 (°)	(°)	Distance	Distance	Section	Severity

Remarks:

Measured Depth	T.V.D.	Drift Angle (º)	Azimuth (º)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00
103.36	103.32	2.620	85.39	0.19	2.36	1.80	0.76
131.01	130.94	3.060	89.51	0.25	3.72	2.81	0.53
158.44	158.33	3.030	90.02	0.25	5.18	3.84	0.04
185.36	185.20	3.810	90.09	0.25	6.79	4.98	0.87
212.92	212.71	3.510	84.82	0.33	8.54	6.27	0.49
234.43	234.17	3.700	81.38	0.49	9.88	7.34	0.40
254.23	253.94	3.380	79.08	0.70	11.09	8.33	0.53
268.64	268.32	3.390	74.50	0.89	11.92	9.06	0.56
282.12	281.78	3.340	70.79	1.13	12.67	9.76	0.50
295.43	295.07	3.330	68.34	1.40	13.40	10.46	0.32
308.96	308.57	3.310	70.62	1.67	14.13	11.17	0.30
323.03	322.62	3.480	66.48	1.98	14.90	11.94	0.64
337.43	336.99	3.450	67.35	2.32	15.71	12.74	0.13
350.99	350.53	3.340	66.57	2.63	16.44	13.49	0.26
364.29	363.81	3.270	65.40	2.94	17.14	14.20	0.22
377.43	376.93	3.040	64.16	3.25	17.80	14.89	0.55
391.66	391.14	2.100	63.34	3.53	18.37	15.49	1.98
405.24	404.71	1.930	62.40	3.75	18.80	15.94	0.38
419.00	418.46	2.300	57.78	4.00	19.24	16.43	0.89
432.77	432.22	2.750	56.51	4.33	19.75	17.03	0.99
446.38	445.81	3.300	56.87	4.73	20.35	17.73	1.21
460.67	460.07	3.730	55.31	5.22	21.07	18.59	0.92
474.04	473.41	4.250	59.39	5.72	21.86	19.50	1.33
487.33	486.66	4.530	62.68	6.21	22.75	20.47	0.85
500.97	500.26	4.710	61.72	6.72	23.72	21.52	0.43
514.76	514.00	5.200	66.64	7.24	24.79	22.65	1.41
529.05	528.22	5.510	68.68	7.74	26.02	23.88	0.76
542.90	542.01	5.950	66.58	8.27	27.30	25.15	1.06
556.44	555.47	6.270	64.04	8.87	28.61	26.51	0.93
570.53	569.48	5.610	62.11	9.53	29.91	27.89	1.47
584.01	582.91	4.650	56.72	10.14	30.95	29.06	2.39

597.01	595.87	4.120	41.78	10.78	31.70	30.04	2.89
610.61	609.44	4.030	49.91	11.45	32.39	31.00	1.29
624.10	622.89	3.940	50.43	12.05	33.11	31.94	0.22
638.29	637.05	3.850	51.16	12.66	33.86	32.89	0.22
652.34	651.07	3.670	52.60	13.23	34.58	33.81	0.43
665.87	664.58	3.320	48.38	13.75	35.22	34.63	0.96
679.36	678.05	2.950	41.05	14.27	35.74	35.37	1.21
695.52	694.19	2.470	22.98	14.91	36.15	36.10	1.81
706.77	705.43	2.450	11.17	15.37	36.29	36.53	1.35
720.73	719.38	2.300	5.30	15.94	36.38	36.99	0.61
732.34	730.98	2.200	359.19	16.39	36.39	37.33	0.67
761.95	760.56	2.490	13.66	17.59	36.54	38.27	0.67
775.58	774.18	2.540	20.28	18.16	36.71	38.80	0.65
789.59	788.18	2.170	34.13	18.67	36.97	39.34	1.45
806.75	805.33	2.270	52.58	19.14	37.42	40.00	1.26
831.82	830.38	1.900	55.22	19.68	38.16	40.90	0.46
844.74	843.29	1.940	49.10	19.95	38.50	41.33	0.48
858.31	856.85	1.590	47.20	20.23	38.81	41.74	0.78
872.27	870.81	1.650	48.30	20.49	39.10	42.14	0.15
885.85	884.38	1.750	43.89	20.77	39.39	42.54	0.36
899.79	898.32	1.630	45.42	21.06	39.68	42.95	0.28
913.43	911.95	1.690	38.27	21.36	39.94	43.35	0.47
927.28	925.80	1.480	33.18	21.67	40.17	43.72	0.55
941.80	940.31	1.580	38.06	21.98	40.39	44.11	0.34
954.57	953.08	1.570	32.11	22.27	40.59	44.45	0.38
968.34	966.84	1.300	36.91	22.55	40.79	44.79	0.64
982.51	981.01	1.490	28.75	22.84	40.97	45.13	0.58
995.79	994.28	1.540	28.78	23.15	41.14	45.46	0.11
1,009.85	1,008.34	1.590	35.30	23.48	41.35	45.84	0.39
1,023.38	1,021.86	1.290	32.18	23.76	41.54	46.17	0.69
1,036.69	1,035.17	1.550	29.83	24.04	41.71	46.49	0.60
1,100.00	1,098.46	1.000	29.83	25.26	42.41	47.85	0.26
1,170.00	1,168.46	0.250	29.83	25.93	42.79	48.59	0.32
1,265.00	1,263.45	1.000	29.83	26.82	43.30	49.59	0.24
1,362.00	1,360.43	1.250	29.83	28.48	44.25	51.43	0.08
		-					

1,456.00	1,454.42	1.000	29.83	30.08	45.17	53.21	0.08
1,648.00	1,646.37	1.500	29.83	33.71	47.25	57.25	0.08
1,702.00	1,700.35	1.500	29.83	34.94	47.95	58.61	0.00
1,801.00	1,799.32	1.250	29.83	37.00	49.14	60.91	0.08
1,907.00	1,905.30	1.250	29.83	39.00	50.29	63.14	0.00
2,054.00	2,052.24	2.000	29.83	42.62	52.36	67.16	0.15
2,103.00	2,101.21	2.000	29.83	44.10	53.21	68.81	0.00
2,157.00	2,155.17	2.500	29.83	45.94	54.26	70.86	0.28
2,211.36	2,209.46	4.460	289.25	47.67	52.86	71.08	3.03
2,266.45	2,264.31	6.220	288.83	49.34	48.01	68.84	0.96
2,295.75	2,293.43	6.490	289.19	50.40	44.94	67.42	0.28
2,309.42	2,307.01	6.300	289.08	50.90	43.51	66.75	0.42
2,323.33	2,320.85	5.270	287.41	51.34	42.17	66.12	2.25
2,336.99	2,334.46	4.900	285.00	51.67	41.01	65.54	0.94
2,350.08	2,347.50	5.230	289.47	52.02	39.91	65.00	1.18
2,364.18	2,361.54	4.980	287.38	52.42	38.72	64.44	0.66
2,378.64	2,375.95	4.720	287.74	52.78	37.55	63.88	0.54
2,391.38	2,388.65	4.380	285.07	53.07	36.59	63.40	0.94
2,405.14	2,402.37	4.240	281.30	53.31	35.58	62.85	0.69
2,418.82	2,416.01	4.170	280.28	53.49	34.59	62.29	0.22
2,432.99	2,430.14	4.310	281.00	53.69	33.56	61.70	0.32
2,446.36	2,443.48	4.070	278.63	53.86	32.60	61.13	0.66
2,459.80	2,456.88	4.490	278.67	54.01	31.61	60.54	0.94
2,473.38	2,470.42	4.610	275.37	54.14	30.54	59.88	0.64
2,487.56	2,484.55	4.720	280.17	54.29	29.40	59.18	0.86
2,500.86	2,497.81	4.720	277.54	54.46	28.32	58.54	0.49
2,514.52	2,511.42	4.150	276.56	54.59	27.27	57.89	1.26
2,528.81	2,525.68	3.830	277.08	54.71	26.28	57.27	0.68
2,541.93	2,538.77	3.490	279.51	54.83	25.45	56.77	0.85
2,556.18	2,553.00	3.640	277.66	54.96	24.58	56.24	0.40
2,569.27	2,566.05	4.400	280.61	55.11	23.67	55.71	1.80
2,582.84	2,579.58	4.630	281.44	55.31	22.62	55.11	0.53
2,597.24	2,593.94	3.610	285.82	55.55	21.62	54.57	2.22
2,610.98	2,607.66	2.960	290.90	55.80	20.87	54.21	1.55
2,624.19	2,620.85	3.210	297.93	56.09	20.23	53.97	1.03

2,638.93	2,635.57	3.730	291.92	56.46	19.42	53.66	1.29
2,652.53	2,649.13	4.300	289.22	56.80	18.52	53.26	1.32
2,665.21	2,661.77	4.540	286.11	57.09	17.59	52.81	0.80
2,678.97	2,675.50	2.990	299.35	57.42	16.76	52.45	3.85
2,692.92	2,689.44	2.230	308.98	57.77	16.23	52.33	1.88
2,706.24	2,702.75	2.890	304.53	58.12	15.75	52.24	1.55
2,720.92	2,717.40	3.580	300.85	58.57	15.05	52.06	1.47
2,734.01	2,730.47	3.790	299.61	58.99	14.33	51.84	0.51
2,761.60	2,757.99	4.140	276.55	59.56	12.54	50.98	1.76
2,775.45	2,771.80	4.800	273.20	59.64	11.47	50.28	1.54
2,789.61	2,785.92	4.000	272.27	59.70	10.38	49.55	1.70
2,802.43	2,798.72	2.690	278.45	59.76	9.64	49.07	3.18
2,817.22	2,813.49	2.620	281.99	59.88	8.97	48.68	0.36
2,830.18	2,826.43	3.280	282.71	60.02	8.31	48.32	1.53
2,843.25	2,839.48	3.780	292.41	60.27	7.55	47.96	1.78
2,857.80	2,853.99	4.330	300.96	60.74	6.64	47.64	1.68
2,871.65	2,867.81	3.440	300.81	61.22	5.83	47.41	1.93
2,885.27	2,881.40	3.800	298.31	61.64	5.08	47.18	0.87
2,899.02	2,895.12	3.830	296.90	62.06	4.27	46.91	0.21
2,912.43	2,908.50	3.940	298.78	62.49	3.47	46.64	0.38
2,926.39	2,922.44	2.870	301.29	62.90	2.75	46.42	2.32
2,940.21	2,936.24	1.740	289.91	63.15	2.26	46.25	2.63
2,953.98	2,950.00	2.620	280.76	63.28	1.75	45.99	2.06
2,966.90	2,962.91	3.620	287.62	63.46	1.07	45.63	2.47
2,980.69	2,976.67	3.490	294.09	63.76	0.27	45.28	0.92
2,994.76	2,990.71	3.310	306.56	64.18	-0.44	45.07	1.62
3,008.46	3,004.39	3.640	305.91	64.67	-1.11	44.94	0.73
3,021.91	3,017.81	4.270	302.63	65.19	-1.88	44.77	1.49
3,035.44	3,031.29	5.230	301.46	65.79	-2.83	44.52	2.14
3,048.91	3,044.70	6.040	302.28	66.48	-3.95	44.22	1.81
3,063.35	3,059.06	6.030	302.98	67.30	-5.23	43.89	0.15
3,076.72	3,072.36	5.580	305.53	68.06	-6.35	43.64	1.16
3,090.57	3,086.15	5.160	310.13	68.86	-7.37	43.47	1.30
3,104.38	3,099.90	5.080	311.11	69.66	-8.31	43.38	0.26
3,117.81	3,113.27	5.580	308.46	70.46	-9.27	43.27	1.24

3,131.54	3,126.94	5.560	301.69	71.22	-10.36	43.04	1.44
3,145.49	3,140.82	5.610	300.79	71.92	-11.52	42.71	0.22
3,158.75	3,154.02	5.880	300.52	72.60	-12.66	42.38	0.61
3,172.05	3,167.24	5.950	303.15	73.32	-13.82	42.07	0.63
3,186.28	3,181.39	6.820	301.53	74.17	-15.16	41.72	1.87
3,200.41	3,195.40	8.090	299.04	75.09	-16.75	41.25	2.78
3,213.77	3,208.61	9.090	297.82	76.04	-18.50	40.68	2.28
3,227.96	3,222.60	9.770	295.82	77.09	-20.58	39.96	1.60
3,241.40	3,235.85	9.680	295.88	78.08	-22.62	39.21	0.20
3,254.57	3,248.86	8.450	295.57	78.98	-24.49	38.53	2.80
3,268.54	3,262.68	7.960	295.42	79.84	-26.29	37.86	1.05
3,282.21	3,276.21	8.680	296.62	80.70	-28.07	37.22	1.63
3,295.66	3,289.50	8.870	297.37	81.64	-29.89	36.59	0.49
3,309.34	3,303.03	8.440	296.90	82.57	-31.73	35.96	0.96
3,323.39	3,316.92	8.650	296.00	83.50	-33.60	35.29	0.53
3,337.46	3,330.81	9.540	295.14	84.46	-35.60	34.55	1.92
3,352.25	3,345.39	10.070	293.74	85.50	-37.89	33.67	1.18
3,365.50	3,358.42	10.920	294.18	86.49	-40.10	32.80	1.93
3,378.04	3,370.72	11.370	295.70	87.51	-42.30	31.97	1.29
3,391.88	3,384.28	11.490	294.96	88.68	-44.78	31.05	0.41
3,406.35	3,398.45	12.160	295.58	89.95	-47.46	30.04	1.41
3,419.41	3,411.22	11.970	296.52	91.15	-49.91	29.16	0.63
3,433.19	3,424.70	11.990	295.97	92.41	-52.48	28.24	0.25
3,448.17	3,439.36	11.670	295.77	93.75	-55.24	27.23	0.65
3,460.80	3,451.72	12.140	296.30	94.89	-57.58	26.39	1.15
3,474.10	3,464.72	12.360	297.12	96.16	-60.10	25.50	0.63
3,488.23	3,478.52	12.190	296.14	97.51	-62.79	24.55	0.57
3,501.86	3,491.84	12.250	296.75	98.79	-65.37	23.64	0.31
3,516.01	3,505.66	12.570	299.21	100.22	-68.05	22.75	1.31
3,529.26	3,518.59	12.680	299.17	101.63	-70.58	21.96	0.25
3,542.55	3,531.55	12.920	298.08	103.04	-73.17	21.13	0.77
3,560.00	3,548.55	13.240	296.68	104.86	-76.67	19.93	0.77

		Drilling Fluid Summ	nary	Sto	orage Units	s: Metric
Drilling Fluid Type:	Gel / Chem	Fr	om:	0	То:	829
Drilling Fluid Type:	Polymere	Fr	om:	829	To:	3,560

Company: JDS Consultants

Geologist: Michael Smith (403-589-4998 c)

 Work Performed
 From:
 Jul 02, 2009
 To:
 Oct 11, 2009

 Depths Logged
 From:
 88.0
 To:
 3,560.0

Remarks:

Kelly Bushing Elevation: Ground Elevation:

175.30 169.00 **Casing Flange Elevation:**

** All Depths measured from Kelly Bushing Elevation **

Group <i>Formation</i> Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
Barachois	0.00	10.00	10.00	10.00	10.00	165.30	804.50
Codroy	600.00	814.50	813.07	810.00	808.58	-633.28	31.50
Ship Cove	750.00	846.00	844.55	848.00	846.55	-671.25	24.00
Spout Falls	794.00	870.00	868.54	880.00	878.53	-703.23	1259.00
Friars Cove	2064.00	2129.00	2127.19	2129.00	2127.19	-1951.89	386.00
Snakes Bight	2643.00	2515.00	2511.90	2512.00	2508.91	-2333.61	934.00
Kennels Brook	3600.00	3449.00	3440.17	3449.00	3440.17	-3264.87	111.00
FTD	3600.00	3560.00	3548.55	3557.20	3545.82	-3370.52	

Geologist Comments regarding visual / microscopic porosity estimates:

The estimates of porosity / cementation in the Sidewall Cores and Cuttings during the drilling operation of the Robinsons # 1 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 Sample Descriptions and Sidewall Cores - 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 Wellsite geologist used an x20 power magnification for the Robinsons # 1 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 Robinsons # 1 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)

Grain Relief / Cementation: 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.

0.0 to 10.5 No Samples

10.5 to 15.0 <u>Interbedded SILTSTONE to SHALE</u> (4.5)

Slightly brown grey to brownish tan, argillaceous, micromicaceous throughout, local grading to dirty fine Sandstone, also minor brownish red argillaceous shale to claystone fragments, minor to 20% medium grey Shale, massive, amorphous, firm, non calcareous.

15.0 to 19.0 SHALE

(4.0) Medium grey, massive, amorphous, blocky, siliceous in part, moderately soft to firm, with minor interbedded Siltstone to Sandstone, dirty off white to reddish grey, very fine to lower medium, quartz, micromicaceous, biotite to muscovite, clay rich, slightly iron staining, trace lighter to medium brownish shale, trace loose white quartz.

19.0 to 24.0 <u>SANDSTONE</u>

(5.0) Mottled off white, fine to medium to coarse, quartz, opaque light grey to whitish, minor translucent, poorly sorted, subrounded to minor subangular, minor coarser rounded, clean, non calcareous, siliceous in part, moderate friable, weakly cemented, minor apparent pinkish feldspars, minor localized black mica, possible light greenish chlorite, (possible water sand), 10-15% ineffective porosity, no shows. minor interbedded Siltstone to Shale as above, possible cavings.



24.0 to 34.0 <u>Interbedded SILTSTONE to SHALE to SANDSTONE</u>

Light to medium grey Siltstone, massive, blocky, softer, lumpy, friable, micromicaceous throughout, minor Shale, medium to darker grey, amorphous, blocky, carbonaceous to slightly micro coaly specks, possible trace micro coal laminations?, assorted clean to dirty Sandstone, fine to medium, greyish, argillaceous to cleaner slightly yellowish tan, clay rich, trace biotite, minor cleaner pink feldspathic fragments, as above, uniform with depth.

34.0 to 41.0 <u>Interbedded SILTSTONE to SANDSTONE to minor Shale</u>

(7.0) Mottled off white, fine to lower medium Sandstone, cleaner, quartz, opaque to whitish, rare translucent, minor orange to slightly pinkish feldspathic, minor chlorite to mica, 5-8% effective porosity, interlaminated with assorted Siltstone, light greyish, micromicaceous to brownish red mica, minor Shale, light grey to dark grey black, increaser cleaner medium feldspathic sand with depth.

41.0 to 47.0 SANDSTONE with SHALE

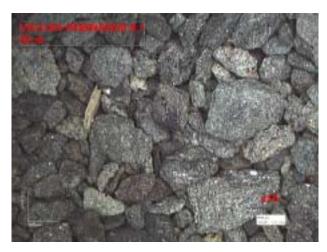
Mottled off white, fine to upper medium, quartz, opaque, off white, rare translucent, minor orange to pinkish feldspathic, trace chlorite, minor black mica, blocky, massive, non calcareous, interbedded with medium to darker grey shale, amorphous, massive, platy to blocky, non calcareous, trace slightly siliceous, softer to easily friable, no shows.

47.0 to 57.0 <u>SANDSTONE</u>

(6.0)

(10.0)

Predominately mottled off white, fine to medium, very clean, quartz, off white, abundant semi translucent, minor pinkish to orange feldspars, predominately loose grains, non calcareous, weaker cemented, siliceous in part, minor trace black mica, minor SHALE to greyish micaceous Siltstone only. (no shows)





57.0 to 75.0 SILTSTONE with minor SHALE

(18.0)

Light to medium grey, micromicaceous, argillaceous, softer, friable, non calcareous with interbedded to increasing brownish to slightly tan, slightly reddish micaceous Siltstone, minor Shale only throughout, as above, minor cleaner to slightly mottled tan Sandstone, very fine to fine, quartz, slightly feldspathic, non calcareous, as above, uniform erratic ROP with depth.



75.0 to 82.0 <u>SANDSTONE</u>

(7.0)

Mottled off white to slightly pinkish tan, very fine to fine to upper fine in general, quartz, off white, minor translucent, clean throughout, minor orange to pinkish feldspars, non to predominant micaceous, fine to medium muscovite to finer biotite, possible minor altered very light green chlorite, non calcareous, siliceous in part but friable, weakly cemented, minor light grey micaceous Siltstone, as above.

82.0 to 88.0 SHALE with SILTSTONE

(6.0)

Medium grey, massive, amorphous, blocky, non calcareous, abundant darker grey, slightly carbonaceous to micro coaly? fragments to specks, local silty, interbedded with Siltstone, as above, micromicaceous, trace sand cavings, uniform, Run 508 mm Conductor Casing.

88.0 to 97.0 <u>SANDSTONE</u>

(9.0)

Off white, lower to upper coarse, clean, generally fractured, possible some pebbles?, quartz, opaque, white, minor very slightly semi translucent, minor orange possible feldspathic fragments, slightly calcareous finer matrix, moderate sorted?, rounded upper medium to lower coarse to generally angular fractured quartz grains, no shows, no gas, minor poorer sorted fragments only, no visible porosity, assuming minor ineffective due to calcite component, (rare trace cement only from drill out).

97.0 to 115.0 <u>Interbedded SILTSTONE with SHALE</u>

(18.0) Medium brown to slightly reddish brown very micaceous Siltstone, firm, soft, weakly cemented, non calcareous, argillaceous with fine to micromicaceous muscovite with reddish mica?, grading throughout to abundant less micaceous laminations, greyish brown to greyish, minor finer sands, argillaceous, interbedded with minor to 10% medium to darker

grey Shale, firm, amorphous, non calcareous, and minor slightly orange feldspathic fine poorer Sandstones, uniform with depth.

115.0 to 125.0 Interbedded SILTSTONE to SANDSTONE with minor Shale

(10.0) Medium brownish micaceous Siltstone, as above grading to increasing interbedded very fine to fine micaceous dirty brownish to greyish Sandstone, non calcareous, argillaceous, competent but weakly cemented, easily crushable, minor interlaminated to bedded Shale, medium grey to dark grey, very slightly reddish medium brown, minor micromicaceous only,

soft, non calcareous.

125.0 to 135.0 SHALE with trace Coal

(10.0) Predominately darker grey, massive, amorphous, platy, competent but very soft, crushable, minor greyish black, apparent traces poorer micro laminations to micro lenses of Coal, black to dull black, semi vitreous, some coal partings, trace fine micaceous very fine to lower fine greyish argillaceous Sandstone laminations? to thin interbeds, lenses?



135.0 to 140.0 SANDSTONE to SILTSTONE

(5.0) Lighter greyish, micaceous to micromicaceous, very fine to fine, mica rich, quartz, opaque, moderate sorted, lighter clay to argillaceous matrix in part, non calcareous, firm, weaker cemented, non calcareous, rare trace brownish shale only.

140.0 to 146.0 SHALE

(6.0) Medium grey, massive, amorphous, blocky, firm but easily crushed, non calcareous, local silty, minor trace micromicaceous, interlaminated with darker grey black, slightly carbonaceous to coaly in part, with apx 30% medium brownish (slightly reddish tinge) Shale, massive, blocky, non to slightly silty, amorphous, clay rich, non calcareous.

146.0 to 150.0 SANDSTONE ?

(4.0) Garbage sample, fine to medium greyish sands, shales, sawdust (From tanks after repair to

suction line) with increasing clean quartz, medium to coarse, as below.

150.0 to 167.0 <u>SANDSTONE</u>

(17.0) Off white, clean, medium to coarse, minor pebbles, loose in general, minor fragments moderate cemented, crushable, predominately quartz, opaque to off white, semi to minor translucent, vitreous, rare greyish, possible minor feldspars, pale to light orange, overall very clean, rare trace possible slightly carbonaceous to coaly micro laminations to micro thin

infilling, black argillaceous specks, poorer overall sorting, clean siliceous silty cement?, moderate rounded to rounded loose upper medium quartz to fractured very coarse quartz,

possible coarsening down with depth overall, no shows, no gas



167.0 to 180.0 SILTSTONE with trace Coal

(13.0) Mottled light to medium grey, massive, interlaminated softer, weakly cemented, argillaceous,

minor micro to abundant micromicaceous to minor finely micaceous, non calcareous, localized carbonaceous to coaly micro specks, minor trace thin Coal fragments, dull black to vitreous, assuming micro to very thin laminations, minor dirty micromicaceous to micaceous

very fine to lower fine softer Sands thin interbeds, increasing with depth, dirty in part.

180.0 to 193.0 SHALE to SILTSTONE

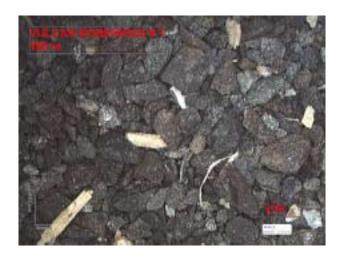
(13.0) Darker grey to minor grey black, massive, amorphous, minor silty, non calcareous, easily

crushed, possible minor very slightly carbonaceous, trace minor convoluted coaly fragments (possible minor shearing?), interbedded with minor lighter grey Siltstone, dirty, argillaceous, local micromicaceous to micaceous, as above, minor brownish amorphous

blocky Shale, possible interlams to thin bedding, assuming minor very thin coaly

laminations, minor very fine to fine poorer Sandstone.

180.0 to 193.0 (cont')



193.0 to 200.0 <u>SANDSTONE</u>

(7.0)

Off white, predominately lower to upper medium, 5-10% coarser, possible minor pebbles, silty to very fine siliceous matrix to cement, overall clean, quartz, opaque, rare greyish, abundant semi translucent, minor stained very light orange quartz?, apparent trace orange to slightly pinkish feldspars?, rare trace argillaceous to lithic grains, rare trace micaceous flakes, non calcareous, generally loose fragments, fractured, moderate cemented but crushable, moderate sorted, subrounded to rounded, some coarser rounded to fractured, minor trace black silty Shale interlams?, no shows, no gas.

200.0 to 215.0 <u>SANDSTONE</u>

(15.0)

Mottled off white, lower to upper medium with lower coarse, quartz, opaque, white, minor semi translucent, minor apparent orange feldspars, trace grey black argillaceous lithic to shale fragments, clean, massive, predominately loose grains, with minor crushable fragments, weaker cemented, siliceous in part with trace calcareous component, moderate sorted, rounded to abundant rounded quartz grains, minor crushed to fractured coarse, finer to silty silica infilling, possible minor whitish siliceous clay? with trace calcareous, no visible porosity, higher relief, 4-5% effective porosity?, no shows, no cut. With 20% greyish Siltstone, micaceous in part, argillaceous, and brownish to very slightly reddish Shale to silty Shale, assuming laminations to very thin bedding within sand.



215.0 to 227.0 SANDSTONE grading to SILTSTONE

(12.0)

Off white lower to upper medium quartz rich, clean Sandstone, as above, grading to increasing dirty light to medium grey micro micaceous upper Siltstone to very fine Sandstone with depth, trace lower fine micaceous, argillaceous, siliceous in part, weaker cemented, crushable, rare Shale, trace convoluted to distorted vitreous black coaly fragments. Connection at 242 meters had tight hole and 3 hours were spent reaming around 226.5 meters depth.



227.0 to 240.0 <u>SILTSTONE</u>

(13.0)

Lighter to local medium grey micromicaceous to micaceous Siltstone to very fine Sandstone, argillaceous, minor carbonaceous to possible micro coaly? specks through darker fragments, blocky, competent but softer, crushable, uniform, minor Shale, medium grey, blocky, firm, rare micromicaceous, trace reddish brown Shale, slightly micromicaceous, rare trace coaly fragments to very fine sandy with micro coaly laminations throughout.

240.0 to 257.0 SILTSTONE grading to SHALE

(17.0)

Medium to local darker grey Siltstone, medium to upper silt grading to abundant very fine Sandstone, argillaceous, dirty, micromicaceous to micaceous, siliceous in part, non calcareous, firm, competent, blocky, crushable, with minor interlaminated Shale and possible very fine to upper fine feldspathic cleaner Sandstone laminations, grading and fining down with depth to predominantly Shale, darker grey to slightly grey black, massive, amorphous, blocky, firm, crushable, non calcareous, amorphous to slightly micromicaceous, minor silty to slightly sandy.

257.0 to 267.0 SANDSTONE

(10.0)

Off white, fine to medium with minor coarse, quartz, opaque, white, abundant translucent, minor black argillaceous lithics fragments to minor infilling to laminations, trace minor orange possible feldspars, rare slightly stained quartz, predominately fragments, well cemented, siliceous, non calcareous, silty to silica matrix infilling to cement, minor calcareous component, poorer sorted, subangular to subrounded, grading with depth - coarsening down to a very clean Sandstone, white, fine to medium to very coarse, quartz, translucent to whitish opaque, trace orange feldspars only, no lithics, poorly sorted but generally moderate well to very well rounded grains, high relief, abundant apparent secondary recrystallization to overgrowths?, generally loose, weakly cemented, possible10-12% effective porosity?, no shows, no cut.

267.0 to 257.0 (Cont')



267.0 to 278.0 SHALE

(11.0)

Predominately grey black to very dark grey, massive, amorphous, blocky, platy, non calcareous, firm, competent, crushable, local minor to moderately silty, interbedded with minor slightly reddish brown to brownish Shale, increasing with depth, minor Sands only, assumed cavings, minor thin interlams of dirty micromicaceous Siltstone throughout.



278.0 to 293.0 <u>SANDSTONE with interbedded Siltstone</u>

(15.0)

Off white, general very clean, fine to medium with coarse, quartz only, silty silica infilling to cement, poorly sorted subangular to some angular very fine matrix grading to increased rounded medium to rounded coarse, high relief, minor secondary recrystallization to growths, possible 8-10% effective porosity?, with interlaminated fine to medium clean feldspathic? Sandstone, tighter, better cemented, crushable, also abundant very fine to upper silt micaceous dirty Siltstone to Sandstone, interlaminated to thinly interbedded inter fingering sequence overall.

293.0 to 297.0 SANDSTONE

(4.0)

Off white, very clean, lower to upper medium, coarse, quartz, opaque, white, translucent, rare trace lithic, minor trace orange feldspars?, moderate poor sorted, subrounded to rounded, abundant loose, minor fractured, abundant well cemented siliceous fragments, silty silica matrix cement, non calcareous, minor apparent secondary recrystallization, moderate relief, lighter, harder, 4-6% effective porosity, No shows, No Gas.



297.0 to 308.0 SILTSTONE grading to SHALE

(11.0)

Medium grey Siltstone, argillaceous, massive, micromicaceous to micaceous, muscovite ?, blocky, firm, easily crushable, weakly cemented, minor SHALE, grading to Shale with depth, darker grey to grey black, massive, amorphous, blocky, non calcareous, siliceous in part, very firm, crushable, harder than Siltstone, minor silty, trace coaly partings with several coal fragments, possible very thin laminations.

308.0 to 322.0 SHALE with minor SILTSTONE

(14.0)

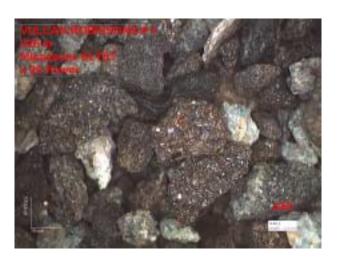
Brownish with very slightly reddish tinge, massive, amorphous, blocky, very firm, non to local minor micromicaceous, grading to increasing micromicaceous brownish (reddish), Siltstone, minor apparent harder cryptocrystalline fragments, possible minor fracturing, calcareous to sideritic?, interlaminated with 25-10% darker grey Shale, massive, amorphous, blocky, minor apparent upper coaly fragments to possible coaly partings, decreasing with depth, overall slightly coarsening with depth to minor micromicaceous very fine dirty Sandstone.

322.0 to 342.0 Interbe

Interbedded SILTSTONE to SHALE

(20.0)

Slightly reddish brown, non to micromicaceous Siltstone to light to medium grey micaceous Siltstone to very fine Sandstone, interbedded to interlaminated with minor very fine to fine feldspathic cleaner Sandstone lenses, very very slightly calcareous, to interlaminated darker grey to grey black shales with depth, mixed up to varied samples throughout, no gas, no shows.



342.0 to 352.0

SHALE with COAL

(10.0)

Predominately darker grey black massive Shale, amorphous, blocky, firm, local carbonaceous to micro coaly specks, with interbedded Coal beds up to 1.5 meters thick based on ROP, maximum gas apx 40 units only, minor silty to very argillaceous medium grey Siltstone lenses?



352.0 to 367.0 SHALE with minor SILTSTONE to trace Coal

(15.0) Medium grey, massive, blocky, non calcareous, firm, crushable, minor silty to rare

micromicaceous, minor to 15% grey black, carbonaceous in part, minor coaly partings to laminations, trace blocky vitreous fractured Coal fragments, interbedded with apx 25% lighter to medium grey micro to micaceous Siltstone, argillaceous, dirty, soft, minor trace

micaceous fine slightly dirty Sandstone.

367.0 to 380.0 Interbedded SILTSTONE to Shale

(13.0) Light to medium grey, massive, amorphous to micromicaceous to very micaceous upper silt to

very fine Sandstone, argillaceous to dirty, non calcareous, soft, friable, interbedded with 20% brownish Shale, (slight reddish tinge), massive, amorphous, blocky, firm, non calcareous, local silty, rare micromicaceous, minor darker grey to grey black shale, rare trace coaly

fragments, uniform with depth.

380.0 to 385.0 Interbedded SILTSTONE to SANDSTONE

(5.0) Light to medium grey, argillaceous, dirty, blocky, mica to micromicaceous, firm, crushable, minor mottled off white fine slightly feldspathic cleaner Sands as lenses?, siliceous, rare trace

very slightly calcareous only, minor reddish brown micromicaceous Shales and also darker

grey black, slightly carbonaceous, rare trace coaly fragments...

385.0 to 400.0 SHALE with minor SILTSTONE

(15.0) Predominately darker grey to increasing grey black with depth, massive, amorphous, blocky, firm, crushable, non calcareous, minor interlaminated brownish to very slightly reddish brown

Shale, slightly micromicaceous, minor lighter grey Siltstone, as above, soft in general, minor harder siliceous fragments with depth, slightly carbonaceous?.



400.0 to 415.0 <u>Interbedded SILTSTONE to SHALE</u>

(15.0) Lighter grey, micaceous to micromicaceous, quartz, soft, crushable, non calcareous, carbonaceous to micro coaly laminations, minor apparent interbedded cleaner Sands, very fine to lower medium, off white, moderate cemented, moderate sorted subrounded, calcareous in part, bedded with Shale, grey black, massive, amorphous, blocky, non calcareous, carbonaceous in part.

415.0 to 426.0 SHALE with minor COAL

(11.0) Darker grey to grey black, minor black, massive, amorphous, blocky, firm, crushable, abundant micro coaly laminations, some carbonaceous, minor blocky coaly fragments throughout, assuming very thin interbeds, minor interlaminated Siltstone, medium grey, argillaceous, blocky, non calcareous, local very slightly carbonaceous to micro coaly specs,

no sands.

426.0 to 438.0 SANDSTONE

(12.0) Off white, lower to upper medium to very coarse, quartz, opaque, white, translucent, very clean, massive, generally loose, weaker cemented, siliceous in part with minor trace calcareous component, moderate poorly sorted, subrounded to well rounded, fragments very high relief, good secondary recrystallization to quartz overgrowths, apparent weaker silty silica infilling, 10-12% effective porosity?, increasing matrix, grading with depth to off white cleaner very fine Sandstone to upper Siltstone, moderate well cemented, siliceous, very

slightly calcareous only, apparent interlaminated Shale with depth, No Shows.

438.0 to 442.0 SHALE

(4.0) Medium to darker grey, grey black, massive, amorphous, blocky, trace carbonaceous, rare micro coaly laminations?, with minor micromicaceous Siltstone.

442.0 to 458.0 <u>SANDSTONE</u>

(16.0) Off white, lower to upper medium with coarse, massive, silty to slightly chalky, very fine quartz matrix infilling, very clean, blocky, abundant loose, siliceous in part, minor calcareous component increasing with depth, minor apparent secondary recrystallization to overgrowths, tighter than above, 4-6% effective porosity, interbedded Shale (20%) with depth, grey black, dark gray, slightly carbonaceous, as above, minor interlams of Siltstone with Shale, No Shows.



458.0 to 475.0 Interbedded SILTSTONE to SHALE with minor COAL

(17.0) Medium to minor lighter grey Siltstone, massive, amorphous, blocky, firm, competent, crushable, micaceous, micromicaceous, dirty, interbedded to interlaminated with Shale, grey black to black, carbonaceous, trace coaly microlams to interlaminated medium grey, massive, amorphous, blocky, non calcareous, minor good vitreous black Coal fragments, thin Coal at 464 meters with gas show 120 units, uniform with depth, possible minor Sandstone, off white, cleaner, very fine to fine, calcareous in part, thin laminations with depths, no shows.

475.0 to 488.0

SHALE

(13.0)

Darker grey to grey black, massive, amorphous, blocky, firm, competent, crushable, non calcareous, abundant localized carbonaceous, possible minor micro coaly laminations?, minor Siltstone, medium to darker grey, argillaceous, dirty, micromicaceous, No Fluorescence, <u>Very weak slow residual pale yellow white cut</u> from blacker carbonaceous Shale fragments.



488.0 to 500.0

SANDSTONE grading to SILTSTONE

(12.0)

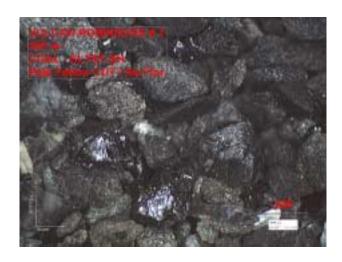
Off white to very slightly salt and pepper, lower to upper fine, abundant fine to some coarse, quartz, opaque, white, translucent, minor lithic fragments, minor trace mica, (muscovite ?), siliceous in general, rare trace localized calcareous only, moderate cemented, abundant fragments, silty silica matrix to cement, moderate poorer sorted, subangular to subrounded, rare rounded, lower relief, tighter, 3-5% effective ?, grading with depth to increasing very fine to fine greyish tighter Sandstone to Siltstone with some apparent Shale laminations to thin bedding, trace gas show from upper cleaner sands, no shows.



500.0 to 508.0 SHALE with COAL

(8.0)

Grey black, black, massive, amorphous, blocky, firm, competent, crushable, carbonaceous with coaly micro laminations, black vitreous fibrous to blocky "shinny" black Coal fragments, interlaminated with Siltstone, darker grey black, carbonaceous, lower to medium, silt, firm, blocky, friable, non calcareous, carbonaceous to micro coaly specks, apparent Thin coal bed at 506 meters, No fluorescence, <u>Good pale yellow white residual to very slow overall cut from fragments.</u>



508.00 to 512.0 <u>SANDSTONE</u>

(4.0)

Off white, very fine to lower to upper medium with silty to siliceous matrix cement, predominately fragments, clean, quartz, opaque, white, translucent, moderate poorly sorted, subangular to subrounded, rare trace lithic, rare trace pyrite, minor slightly pale orange stained grains, very slightly calcareous only, minor Shale in samples, no shows.

512.0 to 523.0 <u>Interbedded SILTSTONE to SANDSTONE</u>

(11.0)

Light to medium grey Siltstone, lower to upper silt, quartz, micaceous, overall argillaceous to dirty, firm, crushable, non calcareous, abundant localized carbonaceous, local grading to silty Shale, grey black, interbedded with lower to upper fine Sandstone, off white, moderate to very clean, quartz, lighter orange feldspars?, rare to no lithic, rare mica flakes, silty to silica matrix cement, non to local very slightly calcareous, predominately fragments, tighter, lower relief, 2-4% effective porosity?, no Shows,

523.0 to 532.0 SHALE

(9.0)

Predominately brownish to slightly reddish brown, massive, amorphous, blocky, minor silty, minor greyish micaceous Siltstone, grading with depth to a medium to darker grey, massive, amorphous, blocky, firm, crushable, non calcareous, minor interlaminated Siltstone, 10% cleaner interlaminated SANDSTONE with depth, off white. Clean, as per below.

532.00 to 536.0

SANDSTONE

(4.0)

Off white, Very Clean, lower to predominately upper medium, coarse, massive, loose to fragments, quartz, opaque, white, translucent, minor trace very slightly greenish clay fragments, rare black to reddish lithic, moderate poorly sorted, subangular to rounded, moderate cemented, siliceous to with silty silica matrix in part, rare trace very slightly calcareous, moderate to lower relief, no visible porosity, 3-4% effective due to cement.



536.00 to 547.0

SILTSTONE with Sandstone

(11.0)

Medium to abundant darker grey, lower to upper silt grading to very fine Sandstone, argillaceous, dirty, local minor carbonaceous, quartz, lithics, micromicaceous to micaceous, blocky, firm to slightly harder, crushable, minor Shale, medium to darker grey, siliceous in part, non calcareous, interbedded with minor to 10% cleaner off white Sandstone, fine to upper medium, rare coarse, as above, minor upper fine to lower medium slightly feldspathic Sandstone, uniform to uniform ROP with Depth, No Shows, No Gas.

547.0 to 560.0

Interbedded SILTSTONE / SHALE to minor Sandstone

(13.0)

Medium to darker grey, massive, argillaceous, dirty, carbonaceous in part, quartz, micromicaceous to micaceous, firm blocky, siliceous in part, crushable, as above, with increasing medium to darker grey Shale interlams, continued apparent thin Sandstone bedding throughout?, (as above), decreasing with depth. minor upper Coal fragments, apparent thin 0.5 meters?. Coal seam at 547 meters with apx 200 units Gas show. POOH at 560 meters to crank up Motor as hole continues to build with 1.15 deg motor.



Interbedded SILTSTONE with SHALE to minor Sandstone 560.0 to 575.0

Predominately darker to medium grey, massive, blocky, lower to upper silt, quartz, (15.0)argillaceous to dirty, micromicaceous in part, non calcareous, siliceous in part, very firm, competent, crushable, local carbonaceous?, interlaminated with Shale, darker grey to minor grey black, massive, amorphous, platy, minor thinner interbeds Sandstone, off white, dirty light grey, very fine to minor lower fine, quartz, white, opaque, minor translucent, micaceous,

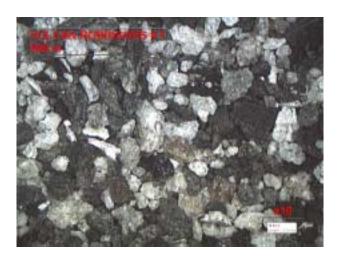
siliceous in part, crushable, no shows.

575.0 to 589.0 SILTSTONE with SHALE grading to Sandstone

Darker grey, medium grey, massive, blocky, quartz, opaque, micaceous, biotite with muscovite?, possible trace carbonaceous?, very firm, siliceous in part, crushable, interbedded with Shale, darker grey, massive, amorphous, minor silty, interlaminated with very fine Sandstone, off white, slightly dirty, massive, blocky, quartz, micaceous in part, grading with depth to very fine to fine, clean, off white to light greyish, massive, blocky, siliceous with local trace calcareous, to slightly argillaceous component, very micaceous, biotite, no shows.

589.0 to 593.0 SANDSTONE with COAL?

Off white, clean, upper fine to predominantly lower medium, quartz, white, translucent, silty silica matrix to cement, tighter, siliceous, non calcareous, moderate sorted, subrounded, lower relief, fragments, 3-4% effective?, no Shows, minor light to medium grey micaceous Siltstone. trace blocky black vitreous Coal fragments, Good gas show at 590 meters. Assuming gas show from Coals.



593.0 to 600.0 SANDSTONE with SILTSTONE grading to Shale

Light to medium grey dirty Siltstone, micaceous, as above, with abundant very fine to lower fine cleaner Sandstone Laminations to thin bedding, quartz, siliceous, moderate well cemented, 2-3% effective porosity?, minor upper coal fragments, grading to increasing Shale with depth, darker grey, massive, amorphous, platy, minor silty, increasing reddish brown shaly fragments, silty in part.

VULCAN INVESTCAN ROBINSONS #1

(7.0)

(14.0)

(4.0)

600.0 to 613.0 <u>Interbedded SILTSTONE with Sandstone</u>

(13.0) Predominately lighter to medium grey, dirty argillaceous, quartz, micaceous throughout, firm

to blocky, competent but crushable, minor apparent carbonaceous partings?, micro laminations, trace larger Coaly fragments, minor darker grey Shale, interbedded with Sandstone, off white, cleaner, very fine, massive, blocky, quartz, trace micromicaceous, siliceous with very slightly calcareous component, well cemented, no to minor porosity, no

shows.

613.0 to 617.0 SANDSTONE

(4.0) Lighter grey very fine to fine, rare medium, quartz, opaque, grey, white, black micaceous, overall slightly argillaceous, abundant grading to Siltstone, interbedded with clean Sandstone, mottled off white, very fine to medium, quartz, trace black mica, minor organic feldspars?,

siliceous with minor calcareous component, tighter, harder, better cemented, no visible

porosity, no shows.

617.0 to 625.0 SILTSTONE with SHALE

(8.0) Medium to darker grey, massive, blocky, firm, competent, quartz, micaceous to micromicaceous, argillaceous to dirty matrix, non calcareous, interbedded with minor darker grey to slightly grey black Shale, minor possible thin lenses fine micaceous Sandstone, very

uniform ROP, thinly laminated throughout?, no shows.



625.0 to 633.0 SILTSTONE to SANDSTONE

trace calcareous.

(8.0) Very light to local medium grey, massive, blocky, quartz, micromicaceous, firm, crushable, argillaceous to slightly dirty, grading to interbedded with Sandstone, very fine to fine, mottled lighter grey, slightly grey white, micaceous, biotite, muscovite, fairly clean, minor argillaceous, rare trace carbonaceous?, moderate cemented to weaker siliceous matrix, crushable, rare

633.0 to 644.0 SILTSTONE to SHALE with COAL, minor Sandstone

11.0)

Medium to lighter grey, micaceous, as above, dirty, grading to darker grey to grey black Shale, massive, blocky, platy, siliceous, carbonaceous, coaly, interbedded to laminated Coal beds, vitreous to bright black Vitrain, conchoidal fracturing, visible micro laminations and/or filled fractures? of white calcite within Coal fragments, abundant light grey Siltstone, as above in samples, cavings or possible laminations to thin bedding with coals, No Fluorescence, Fluorescence, Very slow residual moderate bright yellowish cut over 5 minutes, Cut visible on Shales to Siltstone and fine Sandstone fragments, (Abundant Coal at shakers to Gas show of 250 units.).





644.0 to 657.0 SILTSTONE with SHALE to minor Sandstone

(13.0)

Medium to darker grey Siltstone, dirty, massive, blocky, siliceous in part, crushable, micromicaceous to micaceous, some carbonaceous, interbedded with darker grey Shales, massive, amorphous, non calcareous, minor silty, minor Sandstone, slightly dirty off white, light grey, very fine to minor fine interlams?, non to rare trace very slightly calcareous, quartz, trace carbonaceous, micaceous, continued Coal fragments, possible thin laminations to interbeds or cavings from larger beds above, no shows.

657.0 to 662.0 SILTSTONE to SANDSTONE

(5.0) Lighter grey to off white Sandstone, very fine in general, abundant silty, cleaner, firm, competent but friable, quartz, white, semi translucent, micaceous, non to local minor slightly calcareous (silty), interbedded with dirtier light grey Siltstone, micromicaceous, soft, non

calcareous, rare shale, minor trace reddish Siltstones.

662.0 to 678.0 Interbedded SANDSTONE to SILTSTONE Red beds

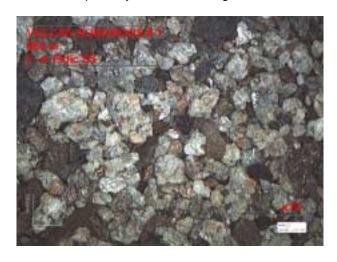
Brownish to predominately slightly lighter reddish brown, slightly mottled orange brown, very fine in general, minor lower fine, quartz, opaque, reddish argillaceous component, crystalline texture in part, possible minor very fine to silty orange feldspars?, micromicaceous in part to minor fine micaceous, siliceous in part, firm to minor slightly harder but predominately very easily crushed, interbedded with minor reddish brown Shale, (destroyed by drilling or washing), and minor Sandstone, very fine, off white, cleaner, slightly feldspathic, (easily drilled with a PDC?) Slower ROP apx 4 m/hr, No shows.



678.0 to 688.0 <u>SANDSTONE</u>

(10.0)

Reddish brown to brownish grey Siltstone with grey Siltstone, micaceous interbedded and grading to massive Sandstone with depth, lower to upper medium, mottled off white, quartz, opaque, translucent, white, good trace organic feldspars?,, minor trace mica, rare trace fibrous coaly fragments, moderate sorted, subangular to subrounded, moderate well cemented, siliceous, non to rare trace local fragments very slightly calcareous, moderate lower relief, no visible porosity, no shows, no gas.



(16.0)

688.0 to 700.0

Interbedded SILTST with Sandstone

(12.0)

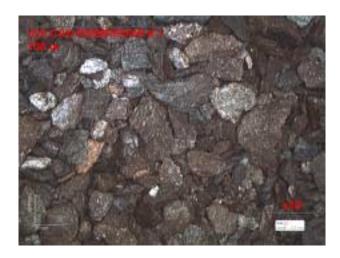
Slightly reddish brown to brownish to brownish grey, massive, blocky, micromicaceous to micaceous, firm to very firm, blocky, competent, crushable, siliceous in part, non calcareous, argillaceous, dirty, local grading to and interbedded to interlaminated with Sandstone, general slightly reddish white, very fine to rare fine, massive, blocky, siliceous in part, quartz, micaceous, minor greyish Shales, non to slightly silty, uniform with depth, no shows.

700.0 to 722.0

SILTSTONE Red beds with minor SHALE to Sandstone

(22.0)

Predominately brownish to medium brownish with very slightly reddish tinge, minor greyish brown, massive, blocky, lower to upper silt grading to very fine Sandstone, argillaceous, dirty, clay rich in part, micromicaceous to mica with coarser lenses to interbeds, firm, competent, non calcareous, siliceous in part, siltstone weaker cemented due to clays with very fine Sandstone moderate firm to rare harder, good trace brownish Shales to throughout, assuming Shales laminations to bedding being destroyed while drilling, uniform with depth, no shows.



722.0 to 732.0

SHALE

(10.0)

Light to medium grey, massive, amorphous, blocky, to platy, abundant convoluted to wavy to visible "shear" type partings to surfaces, non calcareous, slightly siliceous to very firm, competent, crushable, with 20% reddish brown Shale, minor silty, also some "shear" textures, Possible Shear zone, Minor Gas show from zone ?, no sands, no coals.



SHALE to REDBEDS 732.0 to 740.0

(8.0)Reddish brown to medium brownish, massive, amorphous, blocky, firm, competent, local minor silty, interbedded with medium grey Shale, amorphous, blocky, non calcareous, rare silty, continued minor fragments convoluted, sheared ?, trace white very fine to fine quartz to

off white siliceous Sandstone, possible very thin laminations, no shows.

740.0 to 743.0 SHALE with minor SANDSTONE

(3.0)Reddish brown to greyish Shales, massive, blocky, amorphous, non calcareous, good trace convoluted to distorted "shear" type surfaces especially within reddish Shale, minor blocky vitreous striated partings within grey fragments, minor SANDSTONE, off white, clean. quartz, off white, translucent, very fine to medium, silty silica cement to matrix, very poorly sorted, subangular to subrounded, tight, no visible porosity, minor chalky fragments, no

shows, no gas.

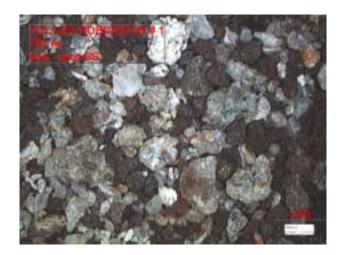
743.0 to 750.0 SHALE with REDBEDS with minor SANDSTONE

(7.00)Predominately brownish to slightly reddish brown, massive, amorphous, blocky, firm, competent, crushable, micromicaceous to local very fine micaceous, abundant grading to lower to upper Siltstone, minor darker grey shale, with depth 15% loose with fragments Sandstone, off white, lower to upper fine, minor coarse, quartz, opaque, white, translucent, well cemented, silica matrix to cement, very clean, thin bedding to laminations?, (Very brown

to red brown at shakers), no shows, no gas.

750.0 to 756.0 SILTSTONE grading to SANDSTONE

Reddish brown to brownish Siltstone to Shale grading to massive SANDSTONE, off white, very clean, quartz, translucent, off white, lower to upper medium, subrounded to rounded, abundant coarse grained to minor smaller pebbles? quartz, translucent, fractured grains, local inter bedded or possible matrix lower to upper medium fragments slightly feldspathic, overall clean, moderate well cemented, siliceous, local minor trace very slightly calcareous, possible trace calcite fracture infilling? trace chalky white silty fragments, drill bit to shear gouge?, lower relief, no visible porosity, possible 1-2% effective?, no shows, no gas.



(6.0)

756.0 to 760.0

SHALE to REDBEDS

(4.0)

Brownish to slightly reddish brown, massive, amorphous, blocky, firm, non calcareous, minor silty, minor apparent convoluted to distorted reddish shale fragments, minor darker grey shale interlams, also trace distorted fragments, several apparent fractured lithic to cherty pebbles?, 5% Sandstone cavings from above.

760.0 to 764.0

SANDSTONE

(4.0)

Off white, very clean, lower to upper medium, coarse, quartz, translucent, off white, minor localized finer pale orange feldspars?, rare trace lithic, poorer sorted, subrounded to rounded, abundant fractured coarse quartz, abundant well cemented finer matrix? fragments, predominantly well cemented, siliceous, non to local fragments very slightly calcareous only, low relief, no visible porosity, possible 2-3% effective?, 10-15% darker grey shale interlams with possible same reddish brown Shale, no shows, no gas.



764.0 to 768.0

SILTSTONE to SANDSTONE Red beds

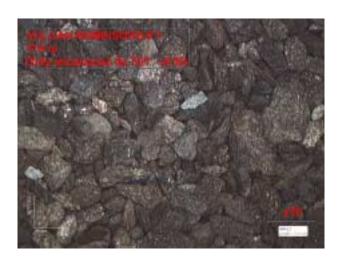
(4.00)

Brownish to very slightly reddish brown, massive, blocky, firm, argillaceous, micromicaceous to micaceous, firm, easily crushable, quartz, lower to upper silt to very fine Sandstone, dirty, argillaceous, interlaminated with 10-15% medium grey Shale, firm, platy, blocky, amorphous, apx 5% cleaner white slightly feldspathic Sandstone as above, thin lenses or cavings? ROP under 3 m/hr, no shows.

768.0 to 776.0 Interbedded SILTSTONE with SANDSTONE and Shale

(0.8)

Light to medium dirty brownish, (rare reddish tinge decreasing with depth), grading to brownish grey to greyish with depth, interbedded Siltstone, micromicaceous and very fine Sandstone, generally very micaceous, minor to 5% interlaminated SHALE, darker grey, massive, amorphous, some distorted to convoluted fragments throughout, minor very fine slightly softer feldspathic Sand laminations, overall samples very uniform, softer, ROP increased to over 3 m/hr, possible due to micaceous component, no shows, no Gas, POOH @ 776 meters for drill bit.



776.0 to 784.0 Interbedded SILTSTONE with SANDSTONE to Shale

(8.0)

Lighter to medium grey Siltstone, massive, blocky, quartz, possible trace lithic, very firm, blocky, moderate cemented, dirty, argillaceous, silica in part, micromicaceous in part, interlaminated with minor darker grey Shale, massive, platy, abundant thinly interbedded to interlaminated Sandstone, very fine to lower fine, off white, dirty light grey, trace orange feldspathic, local very micaceous, possible trace lithic, siliceous, well cemented with trace calcareous component, possible 10-15% brownish Siltstone to silty shale interlams?, micaceous (overall greyer with depth).

784.0 to 793.0 Interbedded SILTSTONE with minor SANDSTONE

(9.0)

Greyish brown to abundant slightly reddish brown Siltstone, argillaceous in part, minor to very micaceous, interlaminated with very fine Sandstone, mottled greyish to some slightly reddish tinge, quartz, minor black mica, moderate clean, siliceous to moderate well cemented with slightly calcareous component, minor fine slightly stained micaceous Sandstone, possible thin argillaceous Shaly laminations, medium grey to reddish?, possible minor off well fine to medium cleaner quartz Sandstone laminations throughout 795 meter interval.

793.0 to 796.0 SANDSTONE

(3.0)

Interlaminated ?, mottled of white to very light grey, quartz, possible trace lithic, minor trace black mica, possible very pale orange feldspars?, moderate well cemented, siliceous with slight calcareous component throughout, apparent micro calcite filled fracture?, moderate well sorted, subangular to subrounded, low relief, no visible porosity, tight, harder, slower drilling while sliding, abundant dirty Siltstone micaceous interlams, good trace white chalky gouge fragments.

796.0 to 807.0 SILTSTONE with SHALE

(11.0)

Brownish, greyish brown, Siltstone, lower to upper silt to very fine micaceous, argillaceous, clay rich, minor lower fine micaceous Sandstone lenses, interbedded with minor brownish to slightly reddish brown slightly silty shales and minor greyish shales, trace mottled whitish very fine Sandstone lenses, uniform with depth, no gas.



807.0 to 814.5 SHALE with minor COAL

(7.5)

Apparent upper lenses Sandstone, very fine cleaner to slightly dirty to micaceous, calcareous in part, grading to softer darker grey to grey black Siltstone to grey black to darker grey SHALE, massive, amorphous, blocky, siliceous in part, abundant silty, slightly carbonaceous, trace with increasing Coaly fragments, possible thin lenses, poorer slightly argillaceous to dull fragments, some coal partings?, some distorted convoluted surfaces, trace gas only.



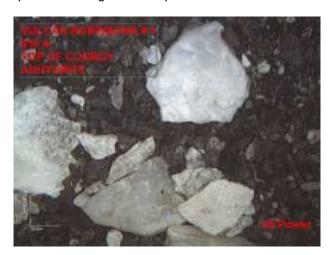
CODROY 814.50 MD, 813.07 TVD, -637.77 SSL

814.5 to 818.0 ANHYDRITE (Probable SALT)

(3.5)

Good drill break, massive larger thumb size+ fragments at surface, chalky white softer to very dense harder "coke bottle" opaque to slightly brownish blue grey, Mud clobbered instantly on bottoms up from 817 meters, Fast ROP indicates possible interlaminated SALT?, or erosional karst contact.(98% cavings in samples) other than larger fragments at shakers.

(Mud check verified increase in chlorides from 1500 to apx 6400 ppm (Salt) in the 160 m3 mud system. Theoretical Calculated Chloride increase of 5000 ppm would require 1.9 meters of 445 mm pure salt being drilled . Apx 2.6 meters salt based on ROP only.



818.0 to 829.0 ANHYDRITE

(11.0)

Off white, very clean, massive, blocky, competent, microcrystalline, rare chalky, micro to massive banding assumed with very dense, harder, insoluble "coke bottle" opaque to slightly dirty brownish grey to grey blue?, possible trace microcrystalline to very fine crystalline gypsum fragments, ROP under 2 m/hr, No gas, uniform with depth. POOH at 829 meters for 340 mm Casing.



829.0 to 842.0 A

ANHYDRITE

(13.0)

Off white, microcrystalline, local slightly chalky, blocky, firm, overall calcareous component, 2-5% calcite component, mottled blotchy replacement or primary?, (Alizarin Red staining), apparent micro to massive banding, micro to larger banding?, greyish slightly buff, cryptocrystalline, harder, No Fluorescence, <u>very slow but stronger residual bright white cut</u>, no staining, (slight sulpher smell to samples when acid added, with depth minor interlaminated very dirty grey black silty, argillaceous marlstone?, limey Shale.





842.0 to 846.0

Interlaminated ANHYDRITE with MARLSTONE

(4.0)

Mudstone (1A), light to medium grey, microcrystalline, massive, blocky, hard, 50-60% residual Silt to argillaceous content, good calcareous, visible fragments with interlaminated to brecciated? anhydritic Limestone to Marlstone, anhydrite off white, chalky to calcareous component in general to thin laminations with inclusions of very clean microcrystalline to finely crystalline pure Anhydrite, <u>overall pale white slow residual cut from Anhydrite</u>, No fluorescence, no cut from Marlstone.

SHIP COVE 846.00 MD, 844.55 TVD, -669.25 SSL

846.0 to 858.0

Interlaminated MARLSTONE to LIMESTONE with ANHYDRITE

(12.0)

40-60% lighter grey to slightly mottled greyish brown Marlstone, microcrystalline to cryptocrystalline texture with 50-60% argillaceous to silty residual matrix, hard, massive, no cut, with abundant interlaminated Anhydrite?, minor pure finely crystalline but generally very calcareous, minor silty component, to very limy to soft chalky cleaner Limestone?, no fluorescence, <u>slow uniform residual paler white cut from softer Anhydrite?</u> to possible anhydritic chalky Limestone?. (ROP indicates thinly bedded to laminate). Minor very fine to upper Silt Sandstone in 852 sample, off white, quartz, clean, trace lithic, 5% calcareous component.



858.0 to 870.0

LIMESTONE with minor MARLSTONE

(12.0)

Mudstone, (1/11A), 60-80% off white, softer, chalky in part, abundant microcrystalline, very calcareous with localized minor patchy apparent anhydrite, firm, blocky to lumpy, 5-10% lower to medium quartz? silty component, apparent clean, interbedded with 20-30% Marlstone, as above, greyish, massive, calcareous, microcrystalline, slightly greyish buff, cryptocrystalline, 50%+ silty to dirty component, minor to less than 1% finely crystalline clean Anhydrite fragments to fractures filled within Limestone, No fluorescence, <u>overall slow pale white residual cut, becoming stronger to brighter over time throughout cleaner Limestone</u>, no staining, steady ROP, no gas.



SPOUT FALLS 870.00 MD, 868.54 TVD, -693.24 SSL

870.0 to 875.0 TRANSITION TOP ?

(5.0) 870 meter no sample, 873 sample predominately chalky to microcrystalline cleaner

Limestone, Mudstone, possible minor micro pellets?, pale white slow cut, increasing 40% Marlstone, grey buff, cryptocrystalline, very hard, massive, no show, 2-3% non calcareous to slightly dolomitic Shale, medium grey, platy, harder, trace Sandstone fragments, rare loose, medium to coarse poorer sorted, quartz, feldspathic, as per below, Note slightly increased ROP and small gas shows apx 100 units, no stain, no shows from Sandstone, assuming thin

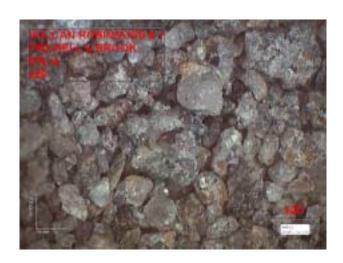
laminations of Sandstone giving weak gas show or possible shale?.

875.0 to 885.0 <u>SANDSTONE</u>

(10.0) Mottled lighter grey, off white, predominately lower to upper medium, abundant coarse to

possible minor floating small pebbles?, quartz, opaque, off white, abundant fractured translucent, feldspars, lighter orange pink, trace grey black lithic, overall clean, poorer sorted, subangular to subrounded, with abundant coarse angular to fractured, abundant very fine fragments, tighter subangular to subrounded laminations to thin bedding, moderate well cemented but friable in part, siliceous with trace calcareous component only, assuming silty to very fine Sandstone infilling matrix, fragments tighter, uniform with depth, no visible porosity, possible minor secondary porosity within larger coarser fragments, 4-7% effective

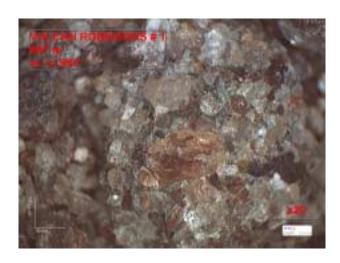
porosity?, no shows, no cut.



885.0 to 897.0 Pebble SANDSTONE

(12.0)

Lighter grey, off white, local pinkish feldspathic, upper medium to lower coarse in general with abundant fractured pebbles?, quartz, opaque, white, translucent, pink orange feldspars, trace lithics, moderate poor sorting, subrounded to abundant rounded, finer grained subangular, very coarse to pebble quartz, feldspars, cherty lithic floating pebbles?, siliceous in general, 1-3% calcareous, moderate well cemented fragments to predominately loose grains assuming weaker cemented to matrix, Possible thin pebble bedding?, no apparent Conglomerate, no shows, no cut, minor gas peaks throughout.



897.0 to 908.0 Pebble SANDSTONE

(11.0)

Lighter grey to off white with pinkish feldspathic component, lower to upper medium in general, subrounded to rounded, abundant coarser to very coarse fractured quartz to cherty lithic to feldspars pebbles?, predominant loose, weaker cemented? but abundant fragments, moderate well cemented, very fine to rare silty matrix, siliceous, rare trace calcareous, very poorly sorted, no shows, minor increasing finer, minor brownish very fine argillaceous Sandstone grading to Siltstone, minor upper fine greenish quartz lithic siliceous fragments, well sorted, subrounded, no shows.

908.0 to 929.0 SANDSTONE

(21.0)

Overall very slightly pinkish, lower to upper fine, chalky with pinkish clay? matrix, some fragments with very pale greenish grey matrix infilling, quartz, opaque, minor translucent, minor feldspars, trace lithic, general moderate poorly sorted, abundant upper fine to decreasing coarse, subangular to subrounded to rounded, overall weaker cemented, increased chalky, possible overall slightly anhydritic component, less than 1% coarser fractured pebbles?, abundant very fine to fine siliceous Sandstone laminations?, higher overall porosity but possible 2-3% effective due to clay content?.

929.0 to 933.0 ANHYDRITE?

(4.0)

Predominantly off white, chalky, softer with pure clean microcrystalline Anhydrite, with softer Sandstone, very fine to upper fine, slightly reddish matrix?, anhydritic?, softer cement, moderate sorted, subrounded to rounded, no shows.

933.0 to 938.0 S

SANDSTONE

(5.0)

Predominately loose, overall slightly reddish brown to brownish at shakers, clay rich?, destroyed by drilling and clays washed out, middle to upper medium, quartz, opaque, semi translucent, trace yellow stained, minor trace slightly greenish, minor feldspars, trace lithics, weaker cemented, siliceous to clay rich?, moderate sorted, subrounded to rounded, minor finer fragments with pale greenish white clay infilling, continued minor fractured lithic pebbles, possible minor anhydritic?, no shows.



938.0 to 950.0

SANDSTONE grading to pebble CONGLOMERATE?

(12.0)

Arkosic, loose, mottled slightly pinkish brown?, medium to lower coarse quartz, opaque, translucent, general rounded, shakers and pre washed samples reddish brown muddy, good trace pinkish feldspars, trace lithics, minor fragments only, medium, high relief, siliceous to slightly chalky softer cleaner matrix, minor feldspars, lithics, black mica, grading to overall coarser, 20% fractured pebbles, quartz, translucent, opaque, trace yellow, pinkish feldspars to lithics, grey siliceous cherty, trace brownish tan, dark grey, angular fractured shards to fragments up to 3 mm, possible pebble conglomerate? with medium to lower coarse rounded quartz matrix?, overall weaker cemented based on lack of fragments, no fluorescence, no cut, assuming poorer to no effective porosity, (clay rich matrix destroyed by drilling?.

950.0 to 964.0

Cobble CONGLOMERATE? to Pebble SANDSTONE

(14.0)

Arkosic, predominately loose middle to upper medium to lower coarse Sandstone, quartz, translucent to opaque, moderate sorted, rounded to subrounded, slightly pinkish argillaceous staining?, feldspathic, lithic, with floating pebbles of grey black to reddish, tan to mottled red black lithic, fractured, also apparent poorly sorted to fine to lower coarse very well cemented siliceous lithic Sandstone pebbles? to cobbles?, Possible thinner cobble Conglomerates or more uniform pebble Sandstone?, generally weaker cemented based on loose rounded quartz grains, samples at shakers very muddy (red brown), indicating a possible red clay cement to matrix in part, minor apparent cleaner very fine to fine tight Sandstone laminations?, trace calcareous, no visible porosity, effective porosity?, no gas.

964.0 to 975.0 Pebble SANDSTONE

(11.0)

Arkosic, predominately loose lower to upper medium to lower coarse, quartz, opaque, translucent, slightly apparent reddish stained, some feldspars, orange pink, minor lithic, black, with fractured coarse to very fine pebble fragments, varied lithic, pinkish feldspathic, quartz, sandstone fragments, dark grey black cherty, mottled grey red cherty "granite" lithic pebbles?, minor poor sorted medium Sandstone with very light green clay infilling, continued very "red brown" muddy at shakers and pre washed samples, assuming red clay component, no shows, trace gas only.



975.0 to 984.0 Pebble SANDSTONE

(9.0)

predominately loose, lower to upper medium. lower coarse, arkosic, predominately quartz, opaque, whitish, overall very slightly pale yellow pink staining?, subrounded to rounded, minor feldspars, minor lithics, minor fragments slightly chalky crystalline, cleaner, very light grey to abundant very slightly greenish clay matrix infilling, slightly calcareous, overall softer cement to matrix, minor possible lithic to cherty to quartz to feldspathic floating pebbles?, very red muddy at shakers, assuming interlaminated red clays to very soft matrix within bedded softer sands.

984.0 to 990.0 <u>Sandy REDBEDS ?</u>

(6.0)

Extremely red muddy to clay rich at shakers, (lost during drilling and sample washing?), remaining dried samples fine to medium loose quartz, opaque, minor translucent, apparent minor light yellowish to pinkish staining, trace lithics, rare feldspars, minor coarse fragments, minor to no fragments that are very friable, assuming very high lost red muddy clay component, ROP down to 3 m/hr.

990.0 to 1000.0 SANDSTONE

(10.0)

Loose, lower to upper medium to lower coarse, minor possible floating pebbles?, continued overall reddish to reddish brown colored, muddy at shakers and pre washed samples, (continued assuming clays lost during drilling and washing), quartz, opaque, minor translucent, some reddish to yellowish pale staining, cleaner than above, minor lithics to feldspars, subrounded to rounded, minor fragments mottled off white, quartz to lithics to feldspars, poorly sorted, friable, soft whitish to local very slightly altered pale greenish clay infilling, slightly calcareous, trace brownish to brownish grey argillaceous to silty fragments, thin laminations? minor gas shows of 75 units.

1000.0 to 1015.0 <u>SANDSTONE</u>

(15.0)

Loose, upper fine to upper medium with reduced lower coarse, arkosic, cleaner than above?, quartz, opaque, minor semi translucent, continued very pale possible reddish to yellowish staining from clays?, minor orange feldspars, trace lithics, minor lithic possible pebbles, as above, overall subangular to subrounded to abundant rounded, weakly cemented by roundness of grains, continued minor fragments, poorly sorted with softer altered pale greenish clays, minor calcareous, trace brownish silty to argillaceous laminations, trace fine grain sandstone fragments, slightly greenish, slightly calcareous to clay matrix to cement, assuming continued muddy clay (laminations) component, minor gas shows to peaks throughout. (Minor lignite "coaly" mud additive in samples.

1015.0 to 1026.0 SANDSTONE

(11.0)

Loose, lower to predominant upper medium, minor lower coarse, minor fine, quartz, opaque, semi translucent, some apparent reddish to yellowish staining from clay, subrounded to rounded, minor lithic, minor feldspars, soft clay red matrix assumed, minor coarse to small pebbles throughout, minor Sandstone fragments only, mottled off white, poor sorted, softer whitish to slightly pale greenish infilling matrix, overall soft very weakly cemented, clay rich, local slightly calcareous fragments, no gas.

1026.0 to 1040.0 SANDSTONE REDBEDS

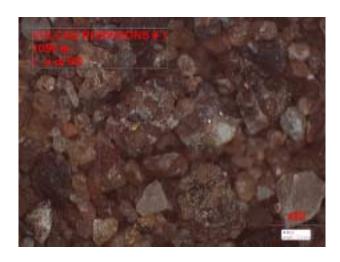
(14.0)

Loose, very red muddy to clay rich at shakers, (clays lost to destroyed by drilling to washing samples), upper fine to upper medium in general, predominant quartz, subrounded to rounded, no to minor fragments only, moderate sorted, minor assumed floating coarse to pebble quartz to feldspars to rare cherty lithics, uniform sample with depth due to drilling to washing away of clay interbeds to laminations to matrix, weakly cemented, slower ROP due to spinning on richer red clay to shaly intervals, ROP down to 3 m/hr, no shows.

1040.0 to 1058.0 SANDSTONE to pebble SANDSTONE

(18.0)

Predominately loose, very abundant muddy to red clay rich throughout, very muddy at shakers, lower to upper medium to coarse, quartz, opaque, pale reddish stained, minor lithics, minor to 5% coarser fractured floating pebbles?, lithic, varied tan to grey cherty?, very fine mottled Sandstone, trace mica, opaque quartz fragments, mottled red black lithic pebbles?, thicker bedded coarser cleaner with finer to argillaceous to clay rich Arkosic Sandstone, no shows, no gas, POOH at 1058 meters for BHA Change.



1058.0 to 1078.0 Pebble SANDSTONE with REDBEDS

(20.0)

Very muddy red brown (soft clays) at shakers, washed samples predominately lower to upper medium with abundant coarse to minor fine quartz, opaque, semi translucent, very pale light yellowish to pinkish staining, good trace lithics, varied colored, pink to grey to yellow to black, pink mottled feldspars, very uniform samples throughout, moderate to poorer sorted, subrounded to abundant rounded, (grains slightly more fractured with PDC, 2% coarser to 2 mm fractured to partial fractured lithic pebbles, over all predominately red clay rich matrix. (ROP indicates possible 1 meter coarser possible Pebble Conglomerates?

1078.0 to 1090.0 REDBEDS to SANDSTONE

(12.0)

Very muddy to clay rich at shakers, washed samples predominately loose, fine to medium, medium lower coarse, quartz, opaque, semi translucent, abundant very slightly stained, apparent fragments, fine, pinkish white, very friable, quartz, clay to silty softer matrix?, minor localized harder off white fine fragments, quartz, lithic, calcareous matrix, overall samples more chalky to argillaceous (washed less?), appears overall finer to more clay rich with depth.

1090.0 to 1100.0 REDBEDS with SANDSTONE?

(10.0)

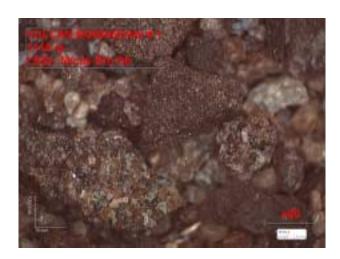
Very red clay rich, very fine to fine mottled red brown to off white Sandstone, quartz, trace lithic, rare feldspars, chalky white to reddish clay matrix, abundant grading to argillaceous Siltstone, 10-15% red brown to medium brown slightly micaceous Shale, continued 50-70% medium rounded loose Quartz, minor coarse, trace fractured, assuming clays destroyed by drilling.



1100.0 to 1110.0 REDBEDS with SANDSTONE

(10.0)

Predominately loose in washed samples, lower to upper medium with minor lower coarse, quartz, opaque, semi translucent, overall slightly yellowish staining, (samples very clay rich), minor fragments fine Sandstone, predominately quartz, yellowish stained, trace feldspars, appears moderate clean, trace very slightly green clay? matrix, very slightly calcareous, 5-7% brownish silty to sandy to micaceous Shales, trace coarser fractured grains only, Assuming faster ROP apx 6 m/hr finer dirtier very clay rich Sands to Shale intervals to bedding, no apparent pebble banding – bedding.



1110.0 to 1125.0 SANDSTONE

(15.0)

Clay rich muddy samples, loose lower to upper medium quartz, opaque, semi translucent, very slightly yellowish stained, trace feldspars, rare lithics, moderate sorted, subrounded to rounded grains, minor fractured only, less than 2% coarser quartz, rare trace fractured pebbles, minor fragments only, general fine, minor poorly sorted fine to medium, quartz, slightly yellowish stained, slightly siliceous to apparent very light greenish clay infilling, rare trace calcareous fragments, continued very muddy clay rich medium grained moderate sorted Sandstone?, fairly uniform ROP. no gas.

1125.0 to 1136.0 <u>SANDSTONE</u>

(11.0)

Clay rich, predominately loose lower to upper medium with fine component, minor coarse only, trace fractured pebbles?, continued quartz, opaque, semi translucent, overall very slightly yellowish to trace pinkish stained, moderate sorted, subrounded to rounded, weakly cemented due to roundness of grains, clay matrix?, minor to trace fragments, moderate sorted quartz Sandstone, fine to medium, high relief, siliceous in part, friable, slightly greenish clay infilling, non calcareous, minor brownish Shale to micaceous Siltstone, uniform with depth, no gas.



1136.0 to 1150.0 Pebble SANDSTONE with SANDSTONE

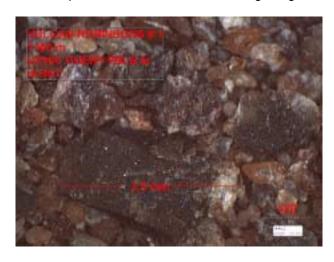
(14.0)

Predominately loose, lower to upper medium with fine to abundant lower coarse, 10-15% fractured coarse to very coarse pebbles?, cleaner overall, quartz, opaque, slightly yellowish stained, minor feldspars, lithics, continued subrounded to rounded sand matrix, continued very muddy clay at shakers, Assumed better cemented cleaner pebble Sandstone and or possible thin pebble Conglomerates with continued interbedded dirty clay rich fine to medium argillaceous Sands to Redbeds, ROP down to 2.5 m/hr within harder to coarser Sands?.

1150.0 to 1168.0 Pebble SANDSTONE to SANDSTONE

(13.0)

Predominant loose, medium to lower coarse, quartz, opaque, semi translucent, very lightly pinkish to yellow staining, trace feldspars, minor lithics, moderate sorted?, subrounded to rounded, minor fragments, poorer sorted, very high relief, weakly cemented, siliceous to minor very slightly pale greenish infilling, local moderate sorted off white, cleaner, siliceous to very slightly calcareous, possible thinner laminations to micro bedding, 4-6% larger fractured lithic to cherty pebbles, assumed floating within the finer matrix, continued abundant red clay (gumbo soft) at shakers, assuming destroyed and washed out by drilling, increased FOB and RPM has overall improved and smoothed out drilling, no gas.



1168.0 to 1185.0 SANDSTONE with REDBEDS

(17.0)

Predominately red clay rich at shakers, loose, upper fine to upper medium with minor coarse, quartz, opaque. semi translucent, abundant very lightly pinkish to yellowish staining, minor lithics, trace feldspars only, moderate sorted, subrounded to rounded, minor to less than 1% coarser fractured quartz to lithic fragments, possible trace pebbles only, very uniform, minor fragments only, very fine to upper medium, poorly sorted, predominately slightly stained quartz, rounded to subrounded, trace lithics, siliceous to very slightly trace calcareous matrix with apparent chalky? very slightly pale green clay infilling. ROP smoothed out, probably thinly bedded cleaner Sandstone and very argillaceous Redbeds to clay rich shales?, all solid clays destroyed by drilling, no gas.



1185.0 to 1200.0 SANDSTONE to REDBEDS

(15.0)

Very clay rich to muddy, dried samples predominately loose lower to upper medium, quartz, opaque, slightly yellowish stained, trace lithics, rare trace feldspars only, minor lower coarse, no pebbles, moderate poor to moderate sorted, subrounded to rounded, very clay rich, minor fragments very light mottled grey, very fine to fine, quartz, lithics, moderate high relief, siliceous to chalky to very slightly calcareous, overall slightly calcareous component to samples, Clays to Redbeds wash out to destroyed by Drilling and washing.

1200.0 to 1212.0 <u>REDBEDS to SANDSTONE ?</u>

(12.0)

Clay rich, thick gumbo to soft red clay at shakers, samples have lower to upper medium quartz, opaque, translucent, slightly stained only, trace lithics, moderate sorted, subrounded to rounded, minor fragments, very fine to fine to rare medium, weakly cemented, slightly siliceous to calcareous with continued very pale greenish clay infilling, uniform, muddy, no gas, ROP over 6 m/hr.

1212.0 to 1225.0 SANDY REDBEDS

(13.0)

Clay at shakers, samples 70% washed away during prep, remaining is fine to medium quartz, opaque, translucent, slightly stained, subrounded to rounded, as above, minor fragments, very fine to fine, siliceous, clay rich to coarse Siltstone, very soft, chalky in part, assuming sandy Redbeds to clay to shale interbeds throughout, uniform to very muddy with depth, no gas.

1225.0 to 1250.0 SANDY REDBEDS with SHALE to CLAYSTONE

(25.0)

80 % soft red clays in sample bags, (washed away during prep), very uniform throughout, remaining sample, loose fine to upper medium quartz, opaque, semi translucent, slightly minor staining, trace lithics, minor possible feldspars, minor fragments as per above, very fine to fine to minor medium, quartz, trace lithics, weakly cemented, high relief, siliceous with trace calcareous, abundant very light pale green clay infilling, overall chalky to dusty to powdery slightly calcareous samples, no gas, uniform ROP above 6 m/hr steady, ROP indicates thinly bedded to interlaminated shales to clays and sandy cleaner? Sandy interbeds.



1250.0 to 1270.0 SANDY REDBEDS with SHALE?

(20.0) As Above, predominately mud to red clays in sample bags and at shakers, 30% remaining

after washing continued loose quartz, (cavings or sandy shales to Redbeds?), opaque, semi translucent, slightly stained only, minor lithics, trace to no feldspars, minor fragments, very fine to fine, quartz, siliceous to very slightly calcareous, slightly pale greenish clay infilling, as

above, uniform samples and ROP with depth, no gas.

1270.0 to 1285.0 REDBEDS to CLAYSTONE? with SHALE?

(15.0) 95% + Red Soft "Gumbo" type Clays over shakers, assuming formation harder based on ROP of apx 7 m/hr. Remaining washed sample AS ABOVE, loose, fine to medium to minor lower coarse, quartz opaque, translucent, slightly stained, moderate sorted, subrounded to rounded,

minor fragments very fine to fine to medium, poorer sorted, local trace calcareous to siliceous, weakly cemented, high relief, good very slightly pale green clay infilling, no gas,

ROP indicates thinly interbedded to laminated.



1285.0 to 1300.0 REDBEDS with minor SANDSTONE

(15.0) Red soft clays at shakers, as above, uniform with depth, possible 20% Sandstone?, loose, lower to upper medium in general, quartz, opaque, semi translucent, slightly stained, trace lithics, rare feldspars, minor lower coarse, no pebbles, minor fragments mottled off white, cleaner, very fine to fine, tighter, thin bedding to laminations throughout more argillaceous

clay rich silty to sandy Redbeds?, steady ROP, no gas.

1300.0 to 1320.0 REDBEDS with SANDSTONE?

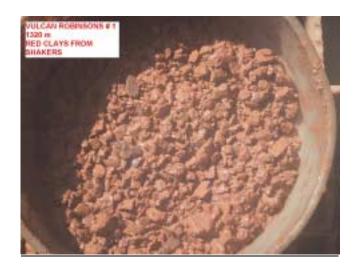
(20.0)

Thick massive red brown Soft Clay fragments at shakers, assuming minor Sands only?, dried washed samples Sands only, loose, lower to upper medium, lower coarse, quartz, opaque, slightly stained, moderate sorted, subrounded to rounded, assuming generally weak cemented, minor fragments only, trace brownish Shale fragments, predominately thick sandy Redbeds, clay rich?, no gas. ROP indicates some sandstone bedding with slower ROP. (See photo from shakers of Clays.)



SOFT RED CLAY FROM END OF SHAKER AT 1320 m

(AS PER LAST 100's METERS)



RINSED SAMPLE WITH CLAY (TOP SCREEN) 1320 m

1320.0 to 1340.0 REDBEDS with SANDSTONE?

(20.0) Red Brown soft Shale to Claystone equivalent at shakers, remaining washed samples loose, fine to medium, quartz, opaque, semi translucent, slightly yellowish to pinkish stained, AS ABOVE, trace lithics, rare feldspars, subrounded to rounded to apparent subangular to minor

fractured, minor brownish to silty Shaly laminations?, rare fragments, overall very uniform samples with depth, Varied ROP suggest 20% coarser better cemented bedded cleaner

Sandstone, no apparent pebbles or conglomerate.

1340.0 to 1360.0 REDBEDS to SHALE? with minor SANDSTONE?

clays), steady ROP, no gas.

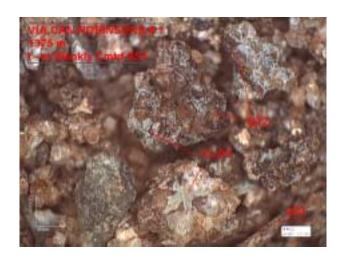
(20.0) 99% soft red Clay fragments at shakers, 99% loose fine to medium sands with quartz in washed and dried samples, AS ABOVE, assuming massive sandy Redbeds and or softer Shales?, (formation harder than samples indicate based on average ROP of 6 m/hr. Dried samples loose quartz, opaque, slightly stained, moderate sorted, subrounded to subangular with minor lower coarse fractured, possible trace pebbles, Overall "dusty" samples due to clays, (Note -- if samples fully washed and dried, samples would appear very clean with no



1360.0 to 1380.0 REDBEDS with minor SANDSTONE

(20.0) AS ABOVI

AS ABOVE, Continued heavy Claystone equivalent at shakers, dried samples uniform loose, fine to upper medium, trace coarse Quartz, opaque, slightly yellowish to reddish stained, moderate poorer to moderate sorted, subrounded to rounded in general, slightly siliceous, weakly cemented, visible light greyish to very light greenish? grey clay infilling, minor darker brownish fragments, possible laminations?, uniform with depth, minor apparent coarser Sands based on ROP, no gas.



1380.0 to 1400.0 REDBEDS with SANDSTONE?

(20.0) 80% + Soft clays in bagged samples + washed away in attempt to clean through screen,

100% massive soft red brown Claystone at shakers, very uniform, AS ABOVE, dried samples, as above, fine to upper medium, minor lower coarse, trace fractured pebbles, generally quartz, opaque, stained reddish to slightly yellowish in part, minor lithics, rare feldspars, minor medium grey silty laminations?, fragments, continued minor softer poorly sorted clay rich sandy fragments, ROP indicates some sandier? coarser? bedding not picked up in samples.

1400.0 to 1420.0 REDBEDS to CLAYSTONE with minor SANDSTONE

(20.0) Claystone at shakers, washed and dried samples as above, loose, fine to medium, minor

lower coarse. quartz, opaque, semi translucent, abundant slightly reddish to yellowish stained, uniform, minor lithics, rare feldspars, minor to increasing fragments in 1420 samples, as above, poorly sorted subrounded to rounded clay matrix, very friable, weakly cemented, increased to 1% brownish shale fragments with floating rounded quartz, minor apparent

Sands based on ROP, no gas.

1420.0 to 1440.0 REDBEDS to CLAYSTONE?

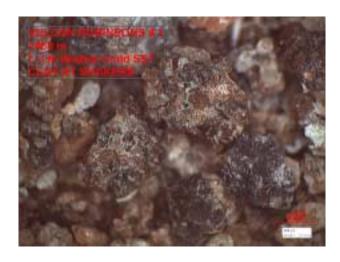
(20.0) AS ABOVE, 100% Claystone to soft red brown clays at shakers?, dried samples fine to medium quartz, opaque, translucent, minor staining, trace lithics, very muddy, poorly

drying samples due to massive clays, uniform ROP apx 6 m/hr, minor Sands ?, no gas.

1440.0 to 1460.0 CLAYSTONE to REDBEDS with minor SANDSTONE

(20.0)

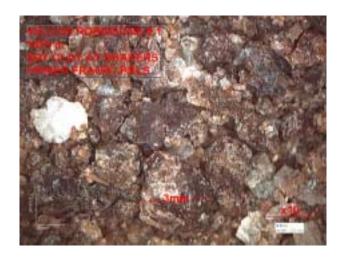
AS ABOVE, massive red soft clay at shakers, dried samples continued loose, fine to upper medium with 5% lower coarse, rare trace pebble, quartz, opaque, reddish to slightly yellowish stained, subrounded to rounded, moderate sorted in part, trace lithics, rare trace feldspars, "dusty" samples, 90% of sample bag lost from washing and drying, minor slightly greyish pink fine to lower medium fragments, high relief, siliceous, weakly cemented, poorly sorted, subrounded to rounded, ROP at 1460 meters apx 2 m/hr, no apparent Conglomerate in samples, ROP assuming harder to firmer sands, cleaner ?, no gas.



1460.0 to 1475.0 Pebble SANDSTONE with REDBEDS to SHALE

(15.0)

Clays at shakers slightly sandy, increasing fragments in dried samples, as above, fine to medium to lower coarse, moderate sorted, subrounded to subangular, high relief, cleaner off white, slightly siliceous cemented to continued weakly cemented reddish with off white to slightly pale greenish clay infilling, good trace fractured pebbles up to 3 mm, Ragged ROP indicating inter bedded softer Shales to cemented Pebble sands, no gas.



1475.0 to 1482.0 REDBEDS with SANDSTONE?

(7.0) Clay at shakers, as above, loose fine to medium quartz, trace lower coarse, quartz, opaque,

translucent, slightly stained, moderate poor sorted, subrounded to rounded, increasing apparent fragments, weakly cemented, minor semi crystalline moderate cemented, non calcareous, trace cleaner, minor greyish harder shales to possible lithics, trace fractured

medium lithic to quartz grains.

1482.0 to 1491.0 SANDSTONE with REDBEDS?

(9.0) Slower ROP at 1484 meters, larger fragments very slightly greyish but reddish, fine to lower medium, moderate sorted, subrounded to rounded, slightly siliceous but continued friable, but competent, no to trace clays, predominately Red Clays at shakers, dried sample loose, fine to medium, minor increasing to coarser with depth, some fractured pebbles to coarse sand grains, overall slower ROP over last 50 meters, Predominately clay equivalent at shakers, no

gas, POOH at 1491 meters to check drill bit (86.5 hrs).



1491.0 to 1505.0 REDBEDS with minor SANDSTONE

(14.0) Predominant soft red brown CLAY at shakers, dried samples loose, fine to upper medium with

minor coarse, quartz, opaque, slightly reddish to yellowish stained from clays?, rare lithics, no to rare trace feldspars, moderate sorted, subrounded to rounded, weaker cemented, non calcareous, argillaceous matrix Sandstone to sand clay rich Shales to Redbeds, minor to 5% firmer platy Shale, round brown to medium brown, non calcareous, micromicaceous in part,

Good ROP with new PDC Drill bit apx 7 m/hr, no gas.

1505.0 to 1520.0 REDBEDS with minor SANDSTONE

(15.0) Continued very clay rich, 80% of clays from sample bags wash out during prep and drying, Red Claystone equivalent at shakers, dried samples loose, fine to upper medium, trace

coarse, quartz, opaque, lightly red to yellowish stained, subrounded to rounded, clay matrix, minor fragments only, very fine to upper fine, slightly reddish, subangular to subrounded, soft, friable, slightly chalky, minor fine to medium clay rich fragments, no to fractured coarse lithic

to quartz, no apparent pebbles, as above, uniform with depth.

1520.0 to 1529.0 REDBEDS with CLAYSTONE?

(9.0) Clay at shakers, apparent darker grey fragments with clays ?, continued 80-90% clays washed out of samples, dried samples continued loose, fine to upper medium, minor coarse,

quartz, opaque, stained, as above, trace lithics, trace to no feldspars, good trace to 5% brownish micromicaceous slightly silty Shale, (ROP up to 10 m/hr?,) minor fragments only,

fine to medium, slightly reddish, quartz, poorly sorted, friable, no gas.

1529.0 to 1535.0 SANDSTONE to REDBEDS

(6.0) Slower ROP at 1530 meters down to 2 m/hr, Predominately continued red brown Claystone equivalent at shakers, slightly sandy texture, dried samples continued loose, fine to medium to upper medium, minor fractured pebbly lithic to quartz to chert grains?, as above, 10-15% fragments, slightly mottled reddish white, very fine to fine to abundant lower medium, quartz, opaque, slightly reddish brown staining, overall finer grained but abundant medium fragments,

non calcareous, slightly siliceous, visible clay infilling, moderate relief, slightly better

cemented, non calcareous, no gas.

1535.0 to 1550.0 REDBEDS with SHALE?

(15.0) Steady increasing ROP to 8 m/hr, 95% Claystone equivalent at shakers but gritty, dried samples as above, loose, very fine to fine to medium, rare coarse, quartz, opaque, lightly reddish stained, trace lithic only, no to trace feldspars, moderate sorted, subrounded to

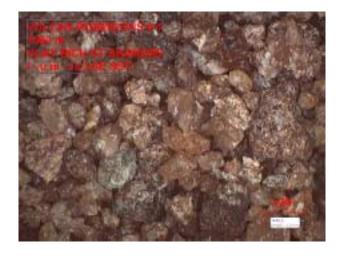
reddish stained, trace lithic only, no to trace feldspars, moderate sorted, subrounded to rounded, weakly argillaceous cemented?, minor fragments fine to medium, very slightly siliceous with weaker clay infilling?, no visible pebbles, assuming uniform very clay

rich interval, no gas.

1550.0 to 1578.0 REDBEDS? with SANDSTONE?

(28.0) Continued very muddy to round brown clay rich at shakers, (slightly increasing sandy

texture), Three distinct ROP slowdowns throughout 25 meter interval with 1.5 to 2 meter harder beds?. Samples uniform with depth, nothing in samples indicating cause of slowdown. overall samples may be slightly browner overall slightly greyish -- browning trend with depth over last 75 meters?, dried samples continue to consist of loose fine to upper medium with local lower coarse, rare fractured very coarse, predominately quartz, opaque, slightly reddish brown staining?, trace lithics, rare feldspars, non calcareous throughout, minor localized fragments of mottled very light pinkish red, very fine to fine, medium, moderate poor sorted, non calcareous, clay matrix in part, high to medium relief, friable to weakly cemented, also minor very fine firmer, better cemented but easily fractured, slightly cleaner, non calcareous, no appear Conglomerates or pebble Sandstone, slowdown unknown, maximum ROP 8-9 m/hr, no gas



1578.0 to 1584.0 CHALKY SANDSTONE ?

(6.0)

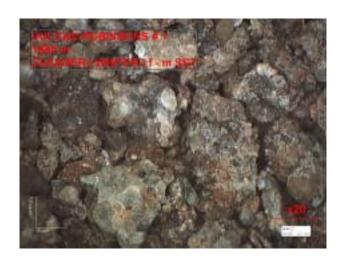
Whiter overall sample, (red clays to red at shakers from mud), Dried samples whiter, overall cleaner, continued fine to medium to lower coarse, quartz, opaque, semi translucent, less to minor staining, no fragments, abundant soft chalky white clays, (not anhydrite), no to very slightly calcareous, clean grains, slower ROP, (Drill bit appears to be spinning to not biting into rock), continued 1-2% reddish brown to brownish shales, silty to slightly sandy, rare mica, Note apparent fragments to clumps from drying not competent formation, Slower ROP.



1584.0 to 1598.0 LIGHTER REDBEDS with SANDSTONE

(14.0)

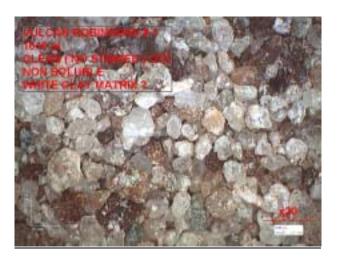
Clay rich at shakers, as above, dried samples continued loose, fine to upper medium, quartz, opaque, semi translucent, light reddish stained to cleaner whiter, overall continued red, moderate sorted, subrounded to rounded, cleaner samples abundant subrounded to subangular?, local fragments off white, cleaner, lower relief, quartz, moderate well cemented, non calcareous, with other rounded reddish sandy fragments, Note slow ROP under 2 m/hr from 1590-1595 meters, unsure? of rock?

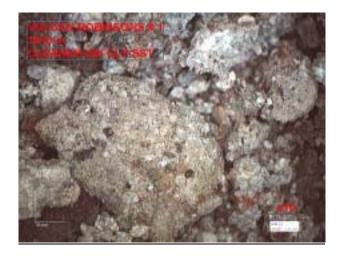


1598.0 to 1615.0 SANDSTONE with white Clay?

(17.0)

Overall very light greyish to off white dried samples, (No red beds to no red clays), loose, fine to upper medium, minor lower coarse, quartz, off white, opaque, semi translucent, no staining, abundant apparent white chalky material to clumps from drying?, non calcareous to rare calcareous, no anhydrite, moderate sorted, subrounded with abundant rounded to minor subangular, abundant very soft chalky white fragments with quartz but appears to be from drying?, possible some competent weakly cemented fragments with quartz to clay matrix to infilling, (see photo).





1615.0 to 1633.0 CLAY RICH SANDSTONE

(17.0)

Very light grey to off white chalky? Clays at shakers, bagged samples very grey white muddy, Dried and vialed samples loose, lower to medium to lower coarse, predominant quartz, clean opaque, white, translucent quartz, subrounded to rounded with abundant lower medium to upper fine rounded to subangular to minor fractured, rare trace black lithic, minor very light pale marine green clay fragments and red brown shaly to silty fragments in 1630 sample, trace fragments, weakly cemented, quartz, very friable, high relief, slightly chalky, non calcareous, minor very slightly greenish clay infilling, no hard fragments, no gas.

1633.0 to 1637.0 SANDSTONE

(4.0)

5% in sample, off white, fine, crystalline, blocky, quartz, opaque, white, semi translucent, very clean to fragments with trace black lithic, red shale? lithic and apparent brown black mica?, siliceous in part, very slightly calcareous, moderate sorted, subangular to angular to fine rounded, poor relief, tight, possible slower ROP?, minor medium to lower coarse fragments, higher relief, clean, cemented in part, friable, trace lower to upper medium fragments with rounded stained quartz grains in a cleaner siliceous white matrix, abundant to continued loose fine to medium quartz, as above, chalky overall.



1637.0 to 1655.0 CLAY SANDSTONE?

(18.0)

95% Muddy grey white clays at shakers, some gritty, dried samples very chalky "dusty" with loose fine to upper medium, lower coarse quartz, opaque, white, semi translucent, subrounded to rounded grains with finer grains rounded to subangular, overall very clean white, trace reddish brown shale to possible subangular lithics, trace fragments only, weakly cemented quartz, with trace reddish lithics, very light greenish clay infilling to silty siliceous to very slightly trace calcareous matrix, overall weaker cemented than finer tighter sands above, uniform with depth, assuming slower ROP at 1645 meters due to finer crystalline clean quartz Sandstone, no show, no gas.

1655.0 to 1662.0 SANDSTONE? or CLAY?

(7.0)

Massive grey white Claystone equivalent at shakers for ROP at 1.3 m/hr, Drill bit balling and added sawdust to clean drill bit, dried samples loose quartz as above, abundant assorted fragments due to slow ROP, some fragments Sandstone, (see photo), off white to very slightly greenish tinge due to greenish clay infilling, clean, quartz, translucent in general, lower to upper fine, rounded to subrounded, high relief, very slightly siliceous matrix with clay, friable, no shows, minor harder very slightly calcareous fine fragments, better cemented, Slow ROP from Clays or sand or mechanical plugging of PDC.

1662.0 to 1670.0 CLAY SANDSTONE?

(8.0) Sample bags very clay rich, dried samples loose, fine to upper medium, quartz, semi

translucent, opaque white, clean, moderate sorted, subrounded to rounded, minor fractured to subangular, very minor fragments, very fine to fine harder to medium, friable, as above, slightly greenish clay infilling, assorted red brown cavings to fragments, no pebbles, assuming overall weakly cemented white to slightly greenish clay rich matrix infilling to rounded grains

indicate soft weak cement, no gas, no shows.

1670.0 to 1676.0 SANDSTONE? or CLAY?

(6.0) Heavy Clay at shaker, dried samples abundant fragments, lower to upper fine, well sorted, soft quartz rich with clay, micromicaceous, very slightly calcareous trace, to lower to upper medium, quartz, opaque. translucent, moderate sorted, rounded to subrounded, weakly

cemented, slightly siliceous to slightly greenish clay infilling, rare coarse fragments?, 5-7% silty micaceous red beds to cavings due to slow ROP, more apparent fragments due to slower

drilling?.



1676.0 to 1690.0 CLAY SANDSTONE?

(14.0) Dried samples loose, quartz, opaque, translucent, fine, well sorted, firm but easily crushable,

clay rich, to lower to upper medium with medium coarse, moderate to moderate poor sorted, subrounded to rounded, "dusty" samples, minor fragments, very fine to fine, very slightly micaceous to weakly cemented clay rich, very slightly greenish clay infilling, no hard

fragments, ROP up to 6 m/hr, no shows, no gas.

1690.0 to 1700.0 CLAY SANDSTONE?

(10.0) Predominant loose, fine to upper medium with lower coarse, quartz, opaque, semi translucent, whitish ?, rare trace lithics, apparent clean, overall very "dusty" sample from clays, some

fragments, lower to upper fine, quartz, clean, weaker cemented, very slightly siliceous?, moderate well sorted, subangular to subrounded, very slightly pale greenish tinge, also minor poorer sorted fine to medium very weakly cemented, quartz, only, subrounded to subangular to abundant rounded, non calcareous, 2-3% reddish brown silty Shales?, cavings?, with

depth grading to loose, chalky?, no gas.

1700.0 to 1710.0 SANDSTONE

(10.0)

Slow ROP under 2 m/hr increasing to 3 m/hr with depth, 1705 sample 80% added sawdust, remaining rock appears very mixed to predominately cavings from slow drilling, with depth very chalky sample, loose quartz, opaque, semi translucent, off white, as above, appears very slightly reddish clay component, minor reddish stained rounded quartz, trace slightly greenish very fine to fine clay rich Sandstone, friable, no shows, no gas.

1710.0 to 1725.0 REDBEDS with SANDSTONE?

(15.0)

Increasing to predominately lighter reddish clays with depth, dried samples loose, lower to upper medium to lower coarse quartz, opaque, slightly reddish stained, translucent, minor lithics, black to greenish, some apparent cherty? fractured coarse, possible minor pebbles?, abundant cleaner non stained quartz as per grey beds, Possible interbedded red and grey Clay rich Sands to local very sandy Claystone equivalent, more uniform ROP due to increased sands in bedded Redbeds?, no gas.

1725.0 to 1740.0 REDBEDS with CLAY SANDSTONE?

(15.0)

Predominately red brown clays at shakers, light red brown muddy bagged samples, 10-20% remaining sample dried is loose, fine to upper medium with minor coarse, possible trace loose floating cherty pebbles?, quartz, 60-70% lightly reddish stained, 20%+ cleaner translucent to white quartz, trace black lithics, "dusty" samples due to clays, minor fine to medium very slightly greenish competent but friable weakly cemented Sandstone fragments, uniform ROP apx 5 m/hr, no shows, no gas.



1740.0 to 1750.0 REDBEDS

(10.0)

Red Clay at shakers, Bagged samples muddy red brown, dried samples with Clays washed away are loose, upper fine to upper medium with abundant lower coarse, rare trace fractured lithics to cherty small pebbles?, quartz, predominately slightly reddish to orange stained throughout, general moderate sorted, subrounded to rounded with minor subangular component, minor clean non stained, trace lithics only, minor fragments, weakly cemented, mottled reddish, medium, quartz, to very slightly greenish, quartz rich.



1750.0 to 1773.0 CLAY SANDSTONE ?

(23.0)

Red brown Mud at shakers but washed clay cuttings predominately greyish white, slightly gritty, bagged samples clay rich "snowball", washed out clays and dried sample, loose, clean, quartz, opaque, translucent, no staining, upper fine to medium, lower coarse, subrounded with abundant rounded to finer subangular, 10% lightly reddish to orange stained, minor fragments very clean, medium, moderate cemented but friable, non calcareous, quartz, opaque to translucent, trace very slightly greenish, siliceous matrix cement in part, (Lots of Sawdust being added to "UNBALL" drill bit from clays drilled. Slow ROP due to bit balling?



1773.0 to 1785.0 REDBEDS

(12.0)

Predominately very red muddy bagged samples, dried samples overall very light reddish, very fine to abundant softer mottled very light reddish chalky Siltstone, clean to non stained fine to medium white to translucent quartz with stained fine to medium quartz, cleaner slightly greenish clay in filled Sandstone to reddish semi crystalline slightly lithic Sandstone grading predominantly to softer chalky Silty to Siltstone with depth, 1780 sample 90% Pecan Shells added due to drill bit balling, 1785 sample appears chalky mottled non to very slightly calcareous, very weakly cemented clay rich Siltstone, Very ragged ROP and poor samples due to shell additive, minor brownish to grey brown Shale fragments increasing with depth, slightly silty to rare sandy?



1785.0 to 1803.0 REDBEDS with SHALE?

(18.0)

Very red muddy samples, dried samples intermixed, medium grey brown to brownish shales, firm, platy, silty, slightly micromicaceous, competent, non calcareous, abundant loose clean to stained fine to medium quartz, abundant silty mottled reddish Siltstone, chalky, soft, to fine to medium cleaner quartz Sandstone with overall very pale greenish tinge from clay infilling, some clean whitish Sandstone, Possible inter fingered red argillaceous clay rich sandy Shales to shale and bedded cleaner sands?, (first intervals with competent shales. Continued poor to ragged ROP due to drill bit mechanics? or formation?.

1803.0 to 1808.0 SANDSTONE

(5.0)

Chalky grey white bagged samples, dried sample predominately loose cleaner quartz, opaque, translucent, moderate sorted, subangular to subrounded with abundant rounded, weakly cemented with abundant clay?, also slightly reddish stained quartz, subrounded to rounded, traces slightly greenish clay in filled Sandstone to mottled reddish stained Sandstone, trace possible siliceous to chalky white, microcrystalline gouge?. ROP up to 10 m/hr, no gas, no shows.

1808.0 to 1812.0 REDBEDS to SHALE with SILTSTONE

(4.0)

Mottled reddish brown, silty, firm, blocky, competent, micromicaceous in part, quartz, trace lithics, local grading to very fine Sandstone, micromicaceous, also reddish brown Shale, amorphous, to floating fine quartz, apx 20% loose fine to medium stained to non stained quartz, minor fragments from above.

1812.0 to 1832.0 SILTSTONE to REDBEDS

(20.0)

Mottled reddish white silty to very fine Siltstone to Sandstone, argillaceous in part, non calcareous, slightly siliceous, firm to competent fragments, quartz, possible trace feldspars?, orange stained, well sorted, subangular to subrounded, with interbedded red brown Shale, silty to micromicaceous, good trace brownish to slightly greyish brown, rare greyish fragments, trace whitish microcrystalline harder blocky fragments, apparent Siltstone, siliceous to very slightly calcareous, good trace fractured coarser lithics, quartz, cherty grains to fragments to floating pebbles?, continued varied loose quartz sandstone to trace slightly greenish sandstone fragments from above, possible inter fingered Redbeds with cleaner grey white clay Sandstone?. (Bagged samples still red muddy), better uniform ROP apx 5 m/hr, no gas.



1832.0 to 1843.0 Pebble SANDSTONE to Pebble CONGLOMERATE?

(11.0)

Cleaner overall samples, minor clays at shakers only, no red beds, varied fragments, translucent quartz, orange to reddish quartz to feldspars fragments, minor darker lithics, greyish to light creamy cherty fragments, medium to coarse fractured to splintery component, minor loose quartz only, subrounded to rounded, minor weaker poor sorted Sandstone, fine to upper medium, siliceous in part, overall appears like Pebble Conglomerate, Bottoms up sample had shards to splintery quartz fragments up to 1 cm in length, assuming a siliceous slightly chalky to silty off white to slightly greenish matrix infilling with assorted poorer sorted sandstone, moderate cemented, ROP slow down to 1.5 m/hr. POOH at 1843 meters to check PDC. (See Photos)



1843.0 to 1850.0 Pebble SANDSTONE

(7.0)

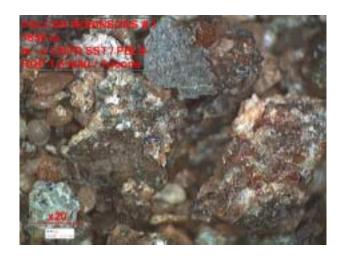
Predominately fragments, varied colored, mottled reddish, off white, lithic, fine to medium, quartz, opaque, translucent with reddish stained, black to grey lithics, brownish to yellow to creamy grey cherty, cleaner very fine to fine siliceous fragments to very crappy very poorly sorted lithic with softer siliceous to slightly greenish clay infilling, as above, good trace coarse rounded quartz, slightly stained, poorly sorted fine to medium to coarse matrix, generally siliceous fragments, abundant fractured quartz to varied colored chert, minor "granite" fractured Pebbles throughout, abundant fractured fractured pebbles at shaker up to 1 cm, white quartz, varied colored chert, black to red lithics, trace green, harder better cemented Sandstone, ROP 1 – 1.5 m/hr.



1850.0 to 1860.0 Pebble SANDSTONE

(10.0)

Predominant loose, medium to lower coarse, quartz, opaque white to reddish stained, subrounded to rounded, minor subangular, minor to 10% fragments, reddish to greenish, mottled, very fine to fine to very poorly sorted medium, continued abundant fractured varied colored lithic cherty pebbles to fragments throughout, cream, greenish, whitish, buff grey, some to decreasing quartz, overall interval appears to be a weaker cemented coarser Sandstone (loose rounded grains), with abundant floating varied lithic to quartz pebbles?, some larger fractured fragments, coarser pebbles?, possible smaller cobbles?, overall sandstone matrix. ROP under 1.5 m/hr. POOH with Drill bit at 1860 meters.



1850.0-1860.0 (cont')



1860.0 to 1867.0 Pebble SANDSTONE to CONGLOMERATE?

(7.0)

Varied colored quartz to lithic medium to coarse Sandstone?, from apparent Sandstone matrix consisting of red stained rounded quartz with softer clay siliceous cement to hard siliceous greenish fine to medium to very fine off white siliceous very hard laminations?, 20% fractured coarse pebbles?, quartz, white, translucent, lithic chert, grey, cream, orange, greenish, trace blackish, (rounded stained quartz possible cavings?), ROP for Tricone and PDC apx 1.5 m/hr, very hard cemented formation, siliceous, cherty, pebbles to pebble conglomerate?, no clays, ROP down to 0.3 m/hr with PDC, POOH at 1867.5 meters due to no ROP.

1867.0 to 1880.0

Pebble SANDSTONE with CONGLOMERATE?

(13.0)

As Above, overall continued reddish color to samples, loose lower to upper medium quartz, white, translucent to abundant slightly reddish stained, abundant varied cemented Sandstone, off white, very fine to silty, siliceous to greenish, siliceous, poorer sorted fine to medium predominately white siliceous matrix with rounded stained quartz grains in contact with red chert fragments, continued fractured cherty fragments, cream, grey, white quartz, some orange fractured feldspars?, apparent colored lithic rock fragments, fractured fragments up to 1 cm at shakers, ROP 1 to 2 m/hr, assuming well cemented Sandstone with pebbles to possible cobbles and harder bedded siliceous finer bedding.



1880.0 to 1895.0 <u>SANDSTONE with PEBBLE CONGLOMERATE?</u>

(15.0)

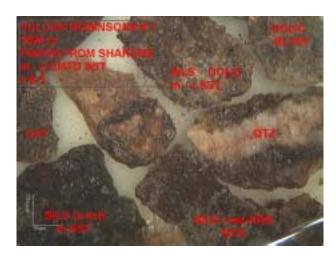
Continued uniform with above, predominately loose medium to lower coarse quartz, rounded, stained but assuming mostly cavings from upper softer Redbeds, multiple Fragments varied, poorly sorted quartz rich, stained rounded to off white, slightly fractured, fine to medium, siliceous, well cemented, with coarse to very coarse lithic cherty to quartz fragments, cleaner apparent off white silts to dolomitic very hard sandy Siltstone, continued minor greenish very hard silty? siliceous, to slightly greenish fine to upper medium softer slightly greenish clay infilling (cavings), continued Lithics to chert, greyish, buff, creamy, quartz, whitish, minor translucent, reddish, assuming fractured pebbles, less indications of Conglomerate, little cuttings at shakers, overall intermixed samples due to cavings?, continued well cemented Sandstone with floating chert to quartz to lithic pebbles to possible cobbles to fragments, ROP apx 1 m/hr.



1895.0 to 1906.0 Pebble SANDSTONE with minor CONGLOMERATE

(11.0)

As above, abundant loose medium rounded slightly stained quartz, minor fragments throughout, fine to medium, poorer sorted, quartz, trace lithics, cherty, minor reddish to greenish clays, siliceous in part with minor dolomitic component, general moderate relief, moderate well cemented, continued varied fractured Lithics to Pebbles, greyish, creamy to reddish Chert, minor quartz, trace greenish chert to quartz?, minor deep red to feldspathic lithics, ROP increased to 1.5 m/hr, slightly less cemented to less Conglomerate Pebbles.



1906.0 to 1911.0 <u>Transition From CONGLOMERATE</u>

(5.0) Increasing loose medium to lower coarse subrounded to rounded slightly reddish stained quartz, Continued Chert fragments, purple to creamy, greyish, minor quartz only, some greenish to blackish lithics, minor fragments, fine to medium, moderate cemented, slightly

reddish stained, quartz, very slightly calcareous, (minor Dolomitic fragments, white clean, slightly siliceous, slightly silty, ROP increasing, Minor Red Clays at Shakers.

1911.0 to 1925.0 REDBEDS with SANDSTONE

(14.0) 90% loose subrounded to rounded lower medium to lower coarse slightly reddish to orange stained Quartz in dried vialed samples, minor 5% fragments, fine to medium, varied coloured from mottled greenish red to blackish to whitish, moderate cemented, siliceous with slightly trace dolomitic, poorer sorted, subangular to angular to coarser rounded, siliceous in

part, minor greenish clay infilling, continued minor cherty fragments throughout only, no coarse chert at shakers, Roughnecks report some clays at shakers. ROP up to apx 2.5 m/hr,

slight increase in background gas to 25 units.

1925.0 to 1935.0 REDBEDS with SANDSTONE

meters for Drill bit.

(10.0) Abundant Red to Mottled red white Clay at shakers from 1934 sample, predominately loose quartz, lower to upper medium, minor lower coarse, very slightly stained, abundant fragments, fine to medium, mottled whitish to very slightly reddish, quartz, opaque, white, translucent, minor black lithics, rare trace mica flakes, minor fragments with apparent red shaly? fragments, moderate well cemented, low relief, siliceous, whitish, hard, trace very slightly dolomitic, to higher relief, weaker cemented with apparent minor greenish clay infilling, minor coarser fractured quartz, no to trace chert fragments only in dried samples, minor angular fractured greenish lithics in coarse samples at shakers, (No coarse chert). POOH at 1935



1935.0 to 1945.0 REDBEDS with SANDSTONE

(10.0)

Predominately Sandy to Silty Redbeds, abundant micaceous, firm, blocky to platy, abundant Reddish brown Shale, non to micromicaceous, siliceous in part, non carbonate, increasing Redbeds with depth, interbedded or laminated with cleaner off white mottled Sandstone, quartz, off white, some reddish stained, minor greyish, overall higher relief with minor siliceous to white to greenish clay infilling, local harder very fine siliceous Sandstone, non calcareous, minor chalky " gouge" like fragments in 1945 sample, non calcareous to fractured quartz, silty to sandy, (from drill bit ?), to trace cherty fragments from above, Coarse component at shakers 50% softer reddish white lumpy clays and silty to sandy slightly friable Redbeds, No chert or hard lithics at shakers.



1945.0 to 1955.0 REDBEDS with SANDSTONE

(10.0)

Reddish brown to brownish, very fine to argillaceous Silty Redbeds, predominately upper fine to lower medium, poorly sorted mottled reddish white, quartz, trace lithics, some localized black micaceous, siliceous in part, very slightly calcareous to dolomitic, slightly chalky to greenish clay infilling, abundant loose medium, also localized cleaner siliceous, better cemented laminations, trace slightly greenish white very clean Siltstone, siliceous to slightly dolomitic, rare apparent greyish shaly fragments, Predominately silty to fine sandy Redbeds with 10% greenish sandy fragments at shakers, apx 10% clay at shakers in coarse shaker sample.

1955.0 to 1965.0 SANDSTONE with REDBEDS

(10.0)

50% loose quartz, lower to upper medium, quartz, subrounded to rounded, very slightly stained to cleaner no staining, white, opaque, abundant semi translucent, rare trace lithics, abundant mottled reddish white fragments very fine to silty, very slightly siliceous chalky to upper fine to lower medium, quartz rich, trace micaceous, rare reddish lithic grains, minor localized slightly greenish matrix, continued minor very slightly greenish white Siltstone, siliceous to very slightly dolomitic with micromicaceous, trace cleaner quartz Sandstone fragments, slightly greenish, assuming thinner bedding throughout, minor Redbed fragments, silty to micromicaceous to very fine sandy, predominately Redbed fragments at shakers, minor clay only.

1965.0 to 1980.0

REDBEDS with SANDSTONE

(15.0)

60-70% loose quartz grains, as above, fine to upper medium, quartz, slightly stained to cleaner, off white, translucent, subrounded to rounded in general, (3% Clay at shakers only), good competent fragments reddish mottled Sandstone, fine, minor medium, quartz, stained to minor clean, trace red lithic grains, rare darker lithics, siliceous in part to trace dolomitic only, softer chalky to minor greenish grey clay infilling, minor cleaner off white fine siliceous tighter to slightly greenish white to slightly micromicaceous Sandstone laminations?, 10-15% redbed fragments in samples, amorphous red shale to reddish brown silty to fine sandy, local slightly micromicaceous, trace coarse fractured white quartz and trace chalky silty to sandy white soft "gouge" in 1980 sample. Increase ROP due to increased RPM.



1980.0 to 1990.0

SANDSTONE with REDBEDS

(10.0)

Increased loose quartz in dried samples, predominant lower to upper medium with medium lower coarse, quartz, opaque, white, translucent, cleaner, abundant continued slightly stained, reddish stained fragments subrounded to rounded, cleaner quartz slightly less rounded subangular to subrounded, minor trace coarser quartz, trace fractured, rare trace fractured coarse lithic to cherty fragments, softer matrix, minor fragments with quartz are chalky off white, cleaner, clays to slightly siliceous, (destroyed by drilling), continued mottled reddish brown Redbeds, fine to medium, firm, friable, siliceous in part with trace dolomitic, quartz, trace red shale fragments, clean quartz, minor argillaceous to greyish green clay infilling, ROP constant at apx 3 m/hr, Gas Show 68 units from 1987 meters (chalky white Sandstone?), No shows, no cut. Coarse Rock at shakers 90% Redbeds, 5% greenish Sandstone with Siltstone, 5% clays.



1990.0 to 2002.0 REDBEDS with SANDSTONE

(12.0)

Reddish brown argillaceous Shales to Siltstone, slightly micromicaceous, to fine to medium poorer sorted mottled reddish white quartz Sandstone, slightly reddish stained, opaque, semi translucent, slightly chalky, friable, as above, with interbedded cleaner poorer sorted off white siliceous Sands, quartz rich, clear to translucent, siliceous to very slightly dolomitic, minor slightly greenish white clay infilling, abundant lower to upper medium, minor lower coarse loose quartz, subrounded to rounded, minor harder semi crystalline Siltstone, off white to slightly greenish, siliceous in part with slightly dolomitic component, rare trace greyish to greenish fragments to shale, interlaminated to interbedded throughout.

2002.0 to 2013.0 SHALES to SLTSTS with minor SANDSTONE

(11.0)

Greyish Shales to Siltstone at shakers, Dried samples medium grey Shale, massive, blocky to platy, local slightly micromicaceous, firm, competent, minor silty, rare trace micro disseminated pyrite, minor Black Shales with micro black laminated Coal, with interbedded to laminated Siltstone, off white, quartz, micromicaceous in part, blocky, slightly siliceous to dolomitic, very clean, local very slightly greenish, minor very fine to fine quartz to micaceous Sandstone, poorer sorted but clean, continued varied light mottled reddish white fragments Sandstone, very fine to fine, poorer sorted, quartz, slightly stained, rare red lithic fragments, slightly chalky, 10-15% looser medium to lower coarse loose quartz, possible sands or cavings, Predominantly Grey fragments at shakers, with greyish to white soft "gumbo" lumpy clay Clumps.



2013.0 to 2027.0 REDBEDS with SANDSTONE

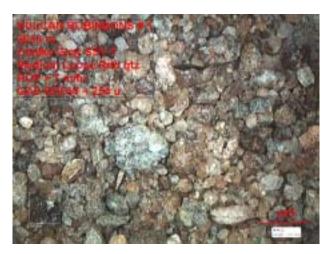
(14.0)

Reddish brown silty to sandy redbeds as above, with softer bedded Sandstone, mottled reddish white, fine to lower medium, quartz, reddish stained to opaque white, semi translucent, siliceous in part with trace red argillaceous to good slightly greenish grey clay infilling, minor cleaner slightly greenish Siltstones, blocky, harder, and cleaner off white fine to medium moderate well cemented quartz Sandstone, overall slightly muddy red bagged samples, some greenish white to reddish clay at shakers, abundant loose quartz throughout, lower to upper medium, minor lower coarse, slightly reddish stained to cleaner, subrounded to rounded, assuming softer clay matrix, uniform with depth. (minor grey Shales only).

2027.0 to 2034.0 SANDSTONE?

(7.0)

Predominately loose quartz, (greyish slightly muddy bagged samples, some apparent greyish clays at shakers), lower to upper medium with medium lower coarse, quartz, very slightly reddish stained to cleaner off white, semi translucent to translucent, abundant fine to medium mottled reddish fragments, as above, minor but cleaner off white to slightly greenish Sandstone fragments, quartz, off white to translucent, minor very slightly greenish, minor slightly reddish stained, trace possible lithics, softer matrix, silty to whitish clay?, to good slightly greenish semi waxy clay infilling, Assuming ROP break of 7 m/hr and Gas show of 254 units from cleaner whitish clay filled Sandstone. No effective Porosity or permeability due to clays?, Possible log porosity up to 15%, No shows, no cut.





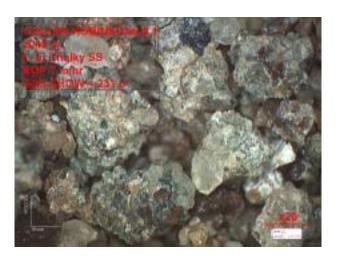
2034.0 to 2037.0 REDBEDS to SANDSTONE

(3.0) Slower ROP, samples as above, assuming tighter reddish clay rich Siltstone to Chalky softer Sandstone.

2037.0 to 2043.0 SANDSTONE?

(6.0)

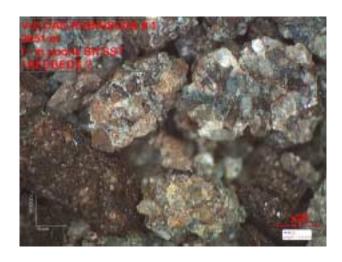
Predominately loose quartz, (slightly muddy greyish samples), fine to upper medium to minor coarse, opaque, white, translucent, clean, abundant slightly reddish stained, as above, overall finer than above from 2030 meters, minor fragments are mottled reddish, fine in general with minor medium, reddish stained quartz, chalky in part, as above with some cleaner slightly greenish white fine Sandstone, opaque white to translucent clean to slightly stained rounded quartz, fine in general, apparent larger coaly grain in one fragment, minor fractured quartz to possible lithics, possible minor floating pebbles ?, ROP up to 6 m/hr, Gas show 252 units. No effective porosity due to clays, Probable 10-15% on logs, No shows, no cut.



2043.0 to 2050.0 REDBEDS with SANDSTONE

(7.0)

Predominately loose quartz, as above, reddish stained to opaque white, translucent, fine to upper medium, medium coarse, subrounded to abundant rounded to subangular, minor assorted fragments from mottled slightly reddish to cleaner slightly greenish, minor harder greenish white siltstone, minor slightly better cemented to siliceous with chalky clay component, Slower ROP.



2050.0 to 2055.0 REDBEDS / SANDSTONE

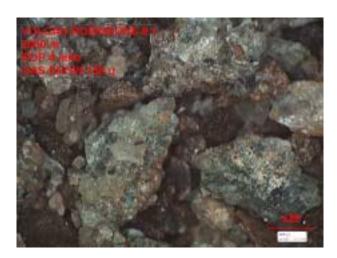
(5.0)

As above, predominately loose quartz, fine to upper medium, abundant lower coarse, opaque, white, translucent, lightly reddish stained, abundant clean, subangular to subrounded, minor fracturing, abundant rounded, moderate to poorly sorted, abundant fragments varied coloured, fine to medium, moderate cemented, mottled reddish white to reddish greenish to slightly greenish, mixed, quartz, opaque to clear to slightly stained, minor trace lithic, moderate cemented siliceous in part, local minor dolomitic, some greenish clay infilling, minor Siltstone, minor silty to sandy to Redbeds to Shale, (increasing apparent fractured Cherty to quartz to pinkish lithics floating Pebbles?) minor greenish white to greyish clays at shakers.

2055.0 to 2062.0 <u>SANDSTONE</u>?

(7.0)

Loose, fine to medium, quartz, opaque, white, translucent, slightly reddish to orange staining, moderate sorted, subrounded to abundant rounded, also subangular to minor fractured only, minor softer silty to fine fragments only, soft, friable, chalky component, (good reddish to greenish white chalky lumps at shakers for 2057 sample, with depth continued loose with increasing fragments, poorly sorted greenish to slightly mottled reddish very fine to silty to poorly sorted fine to medium, moderate cemented, apparent chalky to greenish infilling, minor harder slightly siliceous cleaner greenish fragments, 10% harder redbeds to slightly brownish grey silty Shale fragments, slightly micromicaceous, No apparent Porosity to clay rich due to loose rounded grains?, ROP to 4 m/hr. Gas shows of 150 units.



2062.0 to 2063.5 REDBEDS to CEMENTED SANDSTONE?

(1.5) As above, increasing Silty reddish shale fragments, varied moderate cemented SANDSTONE, Slower ROP under 2 m/hr, gas background dropping. Stop to Log hole and run 245 mm Intermediate Casing.

RUN 245 mm INTERMEDIATE CASING

2063.5 to 2075.0 CLAY SANDSTONE

(11.5)

Greyish clay rich at shakers, dried vialed samples predominately loose quartz, fine to medium, opaque, whitish, minor translucent, minor slightly reddish stained, moderate sorted, subrounded to rounded to abundant subangular, minor black lithics, minor chalky variegated fragments, trace greenish siliceous fine quartz Sandstone, crystalline, minor poorer sorted red brown argillaceous Sandstone laminations, trace whitish green siliceous Siltstone laminations, Good ROP apx 10 m/hr, Assuming laminated softer clay rich Sandstones and thinner crystalline siliceous stringers, trace redbed laminations?. (grading to red basal clay Sandstone with depth.



2075.0 to 2082.0 RED BEDS with grey SILTSTONE

(7.0)

Brownish to reddish brown, abundant greyish brown, massive, blocky, competent but friable, mottled overall, silty to minor very fine Sandstone, slightly siliceous to weakly cemented, trace micromicaceous, minor local chalky fragments, predominately red to mottled grey clay at shakers, grading to basal greyish white Siltstone, mottled, soft, friable, quartz, trace micromicaceous, rare lithic grains, siliceous in part, minor slightly dolomitic, uniform.



2082.0 to 2086.0 REDBED SANDSTONE

(4.0) Loose quartz, reddish clay rich, fine in general, trace to no fragments, opaque, whitish, trace

translucent, abundant slightly stained, moderate sorted, subrounded to rounded, minor coarser to medium Quartz, trace black lithic, medium soft chalky Siltstone fragments, ROP up

to 10 m/hr, minor gas show.

2086.0 to 2097.0 <u>CONGLOMERATE</u>

(11.00) Lithic to chert fractured fragments, tan, greenish, cream, light to dark grey black, clear to white quartz, pinkish lithics Granite fragments, probably grey black mafic fragments, siliceous

whitish to very slightly greenish silty siliceous Limestone lithics?, minor loose to no quartz only, finer fragments siliceous matrix, silty to mottled sandy, greenish to moderate well cemented poorer sorted reddish quartz matrix infilling, slower ROP, High localized torque,

ROP slowing down to under 2 m/hr.

quartz to lithic fragments.



2097.0 to 2100.0 SANDSTONE

(3.0) 20-30% loose quartz, fragments fine to medium, minor lower coarse, quartz, opaque, white, translucent, slightly orange stained, poorer sorted, softer greenish clay matrix, subrounded to rounded to slightly greenish siliceous fragments, massive, very hard, loose rounded quartz indicate clay rich matrix, minor reddish mottled Sandstone fragments, continued 5% chert to

REDBEDS with SANDSTONE 2100.0 to 2105.0

(5.0)Mottled reddish brown to brownish Silty, as above, assuming cleaner Sandstone,

predominately loose with depth, quartz, opaque, white, trace translucent, minor light orange, some fragments, poorly sorted, subrounded to rounded, greenish clay infilling, some cleaner siliceous, abundant fractured quartz indicating better cement, continued chert to lithic to

quartz coarse fractured fragments, Gas show 180 units, no Shows, no cut.

Interlaminated SANDSTONE to CONGLOMERATE? 2105.0 to 2108.0

(3.0)Loose quartz, fine to upper medium to lower coarse to abundant fragments,

> interlaminated greenish whiter quartz with trace lithics with greenish clay infilling, siliceous in part with mottled reddish to orange stained quartz with greenish clay infilling, abundant fragments, poorer sorted greyish Sandstone, abundant lithic to quartz to cherty fragments,

varied colored, assuming possible pebble Conglomerate?, slower ROP, no gas.

CLAY SANDSTONE? 2108.0 to 2119.0

(11.00)Predominately loose, lower to upper medium, abundant upper fine to medium lower coarse,

quartz, opaque, white, minor translucent, minor lithics, moderate to moderate poor sorted, subrounded, abundant rounded, abundant subangular, minor fractured, Greyish clay rich with minor red clay at shakers, minor assorted varied coloured Sandstone fragments, interlams better cemented?, minor coarser lithics to chert to quartz fragments only, better ROP over 4

m/hr, assuming predominately chalkier to clay rich Sandstone, no gas.

2119.0 to 2121.0 Pebble SANDSTONE to CONGLOMERATE?

(2.0)Slower ROP, increased fractured lithics, quartz to cherty fragments, Sandstone fragments as

above.

2121.0 to 2124.0 **REDBEDS**

(3.0)Very red muddy bagged sample, brownish to red brown silty to very fine Sandy fragments, 5% loose quartz fine to medium, opaque, white, minor harder greenish grey to softer reddish

Sandstone fragments, trace lithics to cherty fragments only, no gas.



2124.0 to 2127.0 REDBEDS?

(3.0) Possible thinner silty to sandy Redbeds as above, continued fragments greenish clay

infilling to minor mottled reddish, minor trace lithics to cherty fragments only.

Friars Cove: 2,129.00 MD, 2,129.00 TVD, -1,953.70 SSL

2127.0 to 2133.0 Chalky to Clay SANDSTONE? – or extremely hard Formation due to slow ROP?.

(5.0) Predominately loose quartz with depth, white, clean, translucent, moderate sorted, subrounded to rounded, minor angular to subangular, trace fragments only, as above, muddy grey clays at shakers, good trace soft clay to chalky fragments, overall slightly calcareous component, slow ROP dropping down to 0.5 m/hr, Low motor differential, No

apparent lithics to quartz fragments, no Conglomerate apparent. POOH at 2133 meters due to

ROP down to 0.3 m/hr. (PDC RINGED OUT).





2133.0 to 2142.0 SANDSTONE

(9.0)

Light grayish to slightly greenish grey very fine to fine, quartz, clean, opaque, whitish, translucent, apparent very slightly greenish, no to rare trace fine black lithic, micaceous, sparse to abundant varied mica, black to greenish black biotite, white to translucent to reddish muscovite, minor coarser medium sands with coarser black to white mica, thin laminations greenish siltstone, non to slightly micromicaceous, rare clay infilling, crystalline, siliceous in part to 2-3% dolomitic component, 5% loose clean white quartz component, minor slightly stained quartz, cavings?, low relief, no visible porosity, No Conglomerate, rare trace fractured coarse quartz fragments.



2142.0 to 2149.0 <u>SANDSTONE</u>

(7.0)

Coarsening down sequence?, clean off white to overall slightly greenish white lower to upper medium Sandstone, massive, blocky, quartz, opaque, translucent, whitish, rare trace greenish clay lithics to reddish medium lithic fragments, rare but local trace white mica, crystalline, siliceous with very slightly trace calcite to minor localized greenish clay infilling through coarser fragments, abundant loose rounded medium to lower coarse quartz, overall moderate sorted, subangular to subrounded to rounded, grading overall to very fine to fine clean Sandstone, fragments, minor loose quartz only, quartz, opaque, white, translucent, very clean, rare trace greenish to blackish lithic, moderate well cemented, siliceous to very slightly dolomitic, moderate sorted, subangular to subrounded, ant rounded, trace greenish clay fragments, overall very light greenish white to grey, (wet samples greenish grey), rare traces poor micro to medium coaly pyritic fragments, no visible porosity, 2-3% ineffective, no shows, no gas.

2149.0 to 2153.0 SANDSTONE

(4.0)

Predominately loose, fine to medium, lower coarse, quartz, clean, white, minor opaque, translucent, moderate poorer sorted, subangular to subrounded, coarser grains rounded, intermixed within a very fine quartz slightly greenish matrix and Sandstone, overall light greenish samples when wet, rare trace lithics, black to slightly orange, possible minor white mica, softer to weaker cemented, rare trace pyritic micro infilling within argillaceous matrix surrounding quartz grains, siliceous to trace calcareous only, minor very slightly light greenish clay infilling.

2153.0 to 2157.0 SILTSTONE to SANDSTONE with minor SHALE

(4.0) Overall slightly greenish white to greenish grey, very fine to upper silty, quartz, clean, fragments, moderate cemented, tighter to harder than medium sands, trace siliceous blackish grey shale laminations, slightly silty, blocky, slower ROP.



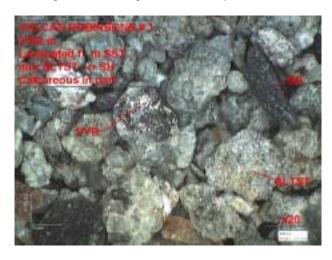
2157.0 to 2160.0 SANDSTONE

(10.0)

(3.0) Loose lower to upper medium, lower coarse quartz, translucent, opaque, subrounded to rounded, abundant weaker cemented medium, clean, no lithics, trace slightly greenish clay infilling matrix, minor trace calcareous, faster ROP with coarser grained Sandstone.

2160.0 to 2170.0 Interlaminated SANDSTONE to SILTSTONE

Overall very fine to lower fine Sandstone, very slightly greenish white to greenish light grey wet samples, clean, quartz, rare trace lithic grains, local white mica to micaceous, minor black biotite, moderate cemented, lower relief, siliceous with overall minor calcareous component, interlaminated to thinly bedded with poorer sorted medium Sands, quartz, opaque, white, translucent, subrounded to minor subangular, abundant rounded, rare trace slightly greenish to orange quartz?, finer silty matrix in part, slightly calcareous, also very fine to upper Siltstone, grading overall fining down with depth to predominately Siltstone, overall very light slightly greenish white, massive, blocky, competent, siliceous with calcareous component, minor micromicaceous, possible minor greenish clay infilling throughout, uniform with depth, Note minor drilling breaks with gas shows of apx 100 units at 2166 meters.



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2170.0 to 2175.0 <u>Interlaminated SILTSTONE with SHALE</u>

(5.0) Off white, clean, lower to up

Off white, clean, lower to upper silt to very fine Sandstone, quartz, slightly white micromicaceous, very slightly calcareous microcrystalline and darker colored to moderate calcareous slightly chalky off white, minor chalky very calcareous fragments, minor fine to lower loose quartz, interlaminated with 15-20% Shale, light greyish, very slightly greenish grey, competent, platy, very firm to harder, slightly cryptocrystalline texture but easily crushable, siliceous to very slightly trace possible dolomitic with calcareous, apparent minor micromicaceous, tight, no gas. (wet bagged samples greenish grey)

2175.0 to 2179.0 SANDSTONE with SHALE

(4.0) As above, fine to lower medium quartz rich off white consolidated Sands, moderate clean, quartz, opaque, white, translucent, slightly calcareous, predominately very fine Sandstone to Siltstone with interbedded Shale, as above, ROP up to 4 m/hr, Gas show 183 units, No

shows, no cut.

2179.0 to 2187.0 SANDSTONE with SILTSTONE and SHALE

(8.0) Salt and pepper 3 meter cap of poorer sorted fine grain whitish slightly calcareous Sandstone, quartz rich, as above but with abundant "foreign" transported well rounded varied buff to greyish, opaque, fine to medium quartz, assorted argillaceous lithics, well cemented, minor apparent slightly light buff staining but no cut, no fluorescence, possible slight alteration?, rare trace pyrite, grading below to interlaminated to bedded Shale to Siltstone, massive platy greyish to dirty hard crystalline argillaceous Siltstone fragment with cleaner lighter greyish white micaceous calcareous Siltstone to very fine Sandstone, minor chalky fragments.



2187.0 to 2192.0 SANDSTONE

(5.0)

Loose to weakly cemented fragments, fine to upper medium quartz, clean, rare trace lithics, fragments slightly siliceous with calcareous component, some slightly chalky texture, generally loose, minor very fine to fine to Siltstone fragments interlams, minor chalky calcareous fragments, (drill bit?), trace disseminated to infilling pyrite around quartz grains, moderate to moderate poor sorted, subangular to subrounded with abundant rounded, overall poorer sorted softer weaker cemented clean Sandstone.



2192.0 to 2202.0 Interlaminated SILTSTONE

(10.0)

Dirty greyish argillaceous lower to upper silt to very fine Sandstone, quartz rich, slightly calcareous only, interbedded with clean calcareous Siltstone, blocky, competent, rare chalky, easily crushed, grading with depth to increasing cleaner fine to very fine Sandstone, minor black lithics to trace biotite, minor white micaceous throughout, moderate to local very calcareous, rare trace pyrite, abundant cleaner slightly micaceous friable Siltstone interlaminated?, overall sample darker to dirty, trace shale fragments only. (overall wet bagged samples continue to be a very light greenish grey white.)

2202.0 to 2209.0 SILTSTONE

(7.0)

60% darker grey black, massive, mottled in part, lower to upper silt local grading to very fine, massive, angular blocky to platy blocky well cemented fragments, overall crystalline texture, quartz, black argillaceous matrix, black to white micromicaceous, minor platy amorphous cryptocrystalline black shale fragments to thin laminations, siliceous with minor slightly dolomitic component, minor fragments with calcitic fracture infilling?, interbedded with dirty but cleaner light grey moderate calcareous Sltsts and 10% cleaner very calcareous softer weaker cemented Siltstone, minor chalky calcareous fragments, no sands.

(SEE Photo next Page)

2202.0 to 2209.0 SILTSTONE Cont'



2209.0 to 2220.0 Interbedded SILTSTONE to SANDSTONE

(11.0)

Light greyish to off white, dirty in part, softer chalky Siltstone to slightly crystalline, harder, very calcareous, interbedded and grading to predominately very fine to local fine slightly dirty calcareous Sandstone, quartz, rare lithics, minor white to black mica, predominately fine Sandstone with depth, cleaner, off white with laminated black mica, rare lithics, overall moderate calcareous to local very calcareous fragments, uniform ROP with depth, no gas. Overall light greenish grey wet bagged samples, light grey dried samples.



2220.0 to 2227.0 SANDSTONE grading to SILTSTONE

(7.0)

Fine mottled slightly dirty poorer sorted fine Sandstone, quartz, trace micromicaceous, rare lithic, slightly calcareous component, slightly argillaceous, grading to Siltstone with very fine Sandstone with depth, moderate clean, very slightly greyish white, quartz, slightly micromicaceous, firm, competent, good calcareous component, also dirtier silty to sandy argillaceous interlams to thin bedding.

2227.0 to 2234.0 SILTSTONE grading to SHALE

(7.0) Lighter dirti

Lighter dirtier slightly calcareous Siltstone to Sandstone, as above grading to 90% grey black Shale, massive, amorphous, black, platy, slightly silty, abundant crystalline Siltstone, grey black, massive, hard, siliceous with very slight carbonate component, argillaceous to probable carbonaceous, no apparent coaly matter.



2234.0 to 2237.0 SILTSTONE

(3.0) Cleaner off white to very slightly argillaceous, quartz, calcareous component, competent but

friable to easily crushed, with very fine moderate sorted Sandstone, crystalline, harder, 30%

shale as above, slight drill break to 4 m/hr, trace gas show of 25 units.

2237.0 to 2246.0 Interbedded SILTSTONE to SHALE

(9.0) Lighter slightly cleaner Siltstone, calcareous in part grading and interbedded with darker

grey dirty argillaceous Siltstone, increasing grading to competent grey black Shale with depth, massive, platy, siliceous minor dolomitic to carbonate matrix, assuming harder crystalline dirty grey black Siltstone thin interbeds to laminations throughout, no gas. ROP under 2 m/hr. (Continued reduced FOB and high RPM to bring hole back to vertical).

2246.0 to 2253.0 SILTSTONE grading to SANDSTONE

(7.0) Very light greyish white, massive, blocky, quartz, moderate to local very clean, calcareous

component, with very fine white micaceous slightly to moderate calcareous Sandstone, minor Shale laminations throughout?, grading with depth to fine to upper medium Sandstone, abundant loose grains, quartz, trace very fine to lower fine lithics, trace feldspars, weaker siliceous cemented, rare trace calcareous, minor slightly greenish with some clay infilling,

abundant interlaminated Siltstone.

2253.0 to 2256.0 SANDSTONE

(3.0) Medium to fine massive hard well cemented calcareous Sandstone, quartz, clean, poorly sorted, subrounded to subangular, abundant rounded, to finer moderate sorted, subangular

to subrounded slightly buff, calcareous, low relief, tight, hard slow drilling due to

calcite cement, interlams of darker argillaceous cryptocrystalline slightly dolomitic Siltstone.

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2256.0 to 2260.0 SHALE

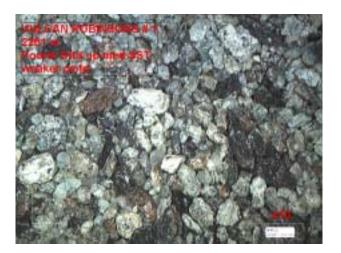
(4.0) Darker grey to abundant grey black, massive, amorphous, blocky to platy, moderate well

cemented, competent, probable carbonaceous in part, minor black, possible very carbonaceous to micro coaly laminations?, minor silty, microcrystalline, rare trace fragments with micro calcite fractures? to possible fossil debris?, ratty ROP, assuming thinly bedded dirty Siltstone to carbonaceous shales with harder calcareous Sandstone, gas show 109

units, no show, no cut.

2260.0 to 2262.0 <u>SANDSTONE</u>

(2.0) Fine to medium clean quartz, calcareous matrix to cement, poorly sorted, abundant calcareous Siltstone, abundant loose subrounded to rounded medium to lower coarse quartz, local well to abundant weaker cemented.



2262.0 to 2265.0 SHALE to Marlstone?

(3.0) Light to medium grey, massive, blocky to platy, cryptocrystalline to microcrystalline texture, siliceous with slight to moderate calcareous to dolomitic? component, Limestone texture, minor trace mica, silty Marlstone?



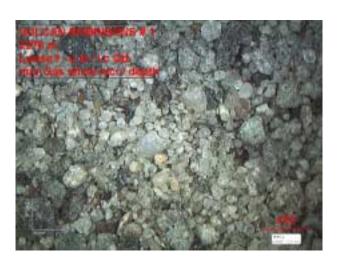
2265.0 to 2269.0 Laminated SILTSTONE to SANDSTONE

(4.0) Off white to very slightly greenish white, upper silt to very fine to medium lower fine Sandstone, thinly laminated slightly to moderate calcareous, quartz, clean, moderate to very well to poorer sorted coarser fragments, trace white micromicaceous in part, rare blackish mica?, trace micro light greenish clay grains, slower ROP due to calcitic cement.

2269.0 to 2276.0 SANDSTONE

(7.0)

Off white with very slightly greenish white tinge, fining down, abundant loose lower to upper medium to lower coarse loose quartz with fragments, weaker cemented, translucent, opaque, minor very slightly greenish, moderate sorted, subangular to subrounded with abundant rounded coarser, some fracturing, rare trace black lithics, light stained orange grains, trace very light greenish clay grains to possible minor chalky infilling, some finer to silty matrix, grading with depth to predominately finer to siltstone matrix, siliceous to slightly chalky?, minor trace calcareous only, clean, trace greenish very fine fragments, trace greenish waxy non calcareous shale, 10-15% loose fine to medium quartz, from above or floating with silty matrix. Minor fine micaceous Sandstone laminations.



2276.0 to 2281.0 SANDSTONE

(5.0) Loose, lower to upper medium to lower coarse, quartz, clean, opaque, translucent, frosted ?, moderate poorer overall sorting, very weakly cemented, no to trace very friable fragments, slightly chalky siliceous cement, rare to no calcareous, subrounded to rounded, minor fractured, Possible 4-6% ineffective porosity due to chalky to clay ? matrix, ROP apx 3.5 m/hr, Gas show up to 120 units, No Show, no cut.

2281.0 to 2288.0 SANDSTONE to SILTSTONE

(7.0) Upper silt to fine Sandstone, interbedded to laminated moderate well cemented, overall very slightly greenish siltstone, slightly calcareous, minor greenish clay infilling to slightly chalky, siliceous with very fine to fine poorer sorted cleaner Sandstone, quartz, trace to no lithics, minor calcareous, minor lower to upper medium loose quartz, subrounded to rounded, overall tighter better cemented, ROP down to 1.5 m/hr.

2288.0 to 2298.0 SANDSTONE to SILTSTONE with SHALE

(10.0)

Predominately Siltstone to very fine to fine Sandstone, off white, clean, massive, blocky, moderate overall calcareous samples, 15-30% calcareous matrix, moderate well cemented, competent, crushable, minor trace lithics only, minor upper fine to lower fine white micaceous laminations?, moderate sorted, subangular to subrounded, 2294 sample predominately Shale, grey black, argillaceous to silty, massive, platy to microcrystalline to cryptocrystalline, hard, slightly dolomitic, good trace blocky pyrite with shale, slower ROP, (see stained calcite photos).



2298.0 to 2301.0 <u>SANDSTONE</u>

(3.0)

Off white to very light grey white, very fine to upper fine, massive, blocky, clean, quartz, opaque, translucent, trace very fine lithics only, overall very calcareous, no loose quartz, well cemented but friable, local abundant white micromicaceous, slow ROP, hard, no gas.

2301.0 to 2309.0 SANDSTONE

(8.0)

Predominately loose, medium to lower coarse quartz, opaque, white, translucent, with abundant medium to fine sandstone matrix, poorer sorted, subrounded to subangular, abundant rounded, weaker slightly chalky cement, very slightly calcareous only, some apparent white chalky infilling, trace black lithics, rare trace slightly greenish clay fragments, also very fine slightly greenish white finer matrix infilling?, ROP apx 3 m/hr, trace gas only, possible minor shale laminations.



2309.0 to 2312.0 SANDSTONE

(3.0)

Loose, medium to coarse very clean quartz, translucent, whitish, frosted, rare trace lithics, weakly cemented?, siliceous to minor fragments with trace calcareous only, minor to no chalky infilling (no fragments), moderate sorted, subrounded to rounded, minor subangular, trace clean silty to very fine fragments, minor poorer sorted possible matrix?, Gas show 111 units, no Stain, no show



2312.0 to 2314.0 SANDSTONE

(2.0)

Off white, slightly dirty, very fine, massive, calcareous quartz, opaque, white, translucent, well cemented, minor lithics, minor fine to medium floating grains, moderate well sorted, subangular to subrounded, POOH at 2314 meters for Schlumberger MWD.

2314.0 to 2327.0

Interlaminated SILTSTONE to SANDSTONE with SHALE

(13.0)

Interlaminated calcareous clean Siltstone to very fine Sandstone, quartz, massive, well cemented in general, crushable, interbedded to probably laminated with dirtier Siltstone, greyish to minor greyish black, silty to argillaceous component, calcareous in part, also localized Shale, medium to darker grey, massive, platy, fissile, microcrystalline to cryptocrystalline in part, slightly calcareous to dolomitic, Marley, thin dirty Limestone lenses?, overall very uniform with depth, no loose coarse sands.

2327.0 to 2330.0 SHALE with micro Coal

(3.0)

Mottled grey black, firm, soft, blocky, carbonaceous to localized coaly?, silty in part, apparent micro calcitic veining?, abundant vitreous to shinny "Shear" laminated surfaces to or possible coal partings to microlams sheared from drill bit, (some apparent reworked softer chalky calcite within black carbonaceous or coaly fragments, Possible minor fault activated due to softer bedding plane? No drill break, no gas. no show.



2330.0 to 2342.0 SILTSTONE

(12.0)

Predominately off white, moderate to local very clean, quartz, rare trace lithics, rare trace carbonaceous specks?, massive, blocky, well but moderate weaker cemented from slightly softer chalky? to microcrystalline calcite matrix, interbedded with localized dirty to slightly argillaceous harder microcrystalline Siltstone, rare trace slightly micaceous, minor Shale interlams throughout, darker grey black, possible carbonaceous or cavings from above, uniform with depth, no sands.

2342.0 to 2355.0 <u>Interlaminated SILTSTONE with minor SHALE</u>

(13.0)

As Above, uniform with depth, interlaminated cleaner off white to very light greyish white uniform quartz calcareous Siltstone and dirtier greyish to greyish black argillaceous Siltstone, minor apparent fine coaly fragments with dirty Siltstone, local to 15% Shale interlams throughout, black to grey black, massive, amorphous, non to silty, siliceous to local trace calcareous only, some silty, very uniform throughout with depth, steady even ROP, no gas, no shows.



2355.0 to 2365.0 SILTSTONE to SANDSTONE

(10.0) Slightly muddy gray samples at shakers with minor reddish clays at shakers?, dried samples

overall very clean laminated Siltstone to very fine to fine Sandstone, quartz, opaque, white, rare greyish, overall moderate well cemented, calcareous throughout, crystalline in part, increasing to abundant chalky, samples at shakers possible more clay rich?, possible softer interlaminated shales to calcareous Siltstone to Sandstone, uniform ROP, tough

sliding due to sticky hole?.

2365.0 to 2378.0 SILTSTONE with CLAYSTONE?

(13.0) Overall very soft samples, chalky, (grey muddy at shakers), off white lower to upper silt,

massive, blocky, competent but weakly cemented, friable, 10-15% calcareous component only, very uniform silty, crystalline in part, local? abundant apparent softer chalky white clay infilling, minor softer very fine Sandstone laminations?, rare shaly laminations?, overall

soft samples, 2372 sample very soft to clay rich (dried powdery dried sample).

2378.0 to 2385.0 SHALE with bedded SILTSTONE

(7.0) 20% grading to 60% grey black, massive, amorphous, blocky to platy, (general non calcareous), minor localized calcareous component only, firm, harder but crushable, trace micromicaceous only, interlaminated with decreasing Siltstone, off white to very light

dirty grey white, soft, chalky, calcareous component, as above.



2385.0 to 2397.0 SANDSTONE with SILTSTONE

(12.0) 5-10% loose medium to lower coarse rounded to subrounded quartz only, minor poorer sorted medium quartz Sandstone, calcareous in part, very clean, quartz, opaque, white, translucent,

medium quartz Sandstone, calcareous in part, very clean, quartz, opaque, white, translucent, minor greyish, smaller gas show of 115 units, overall softer chalky moderate calcareous Siltstone, with silty to very fine to minor poorer sorted interlaminated Sandstone, minor to 5%

possible darker grey Shale laminations?. No shows, no cut.

2397.0 to 2402.0 SILTSTONE

(5.0) Dirty, mottled light grey Siltstone, massive, blocky, slightly calcareous, possible trace

carbonaceous, argillaceous, minor trace micromicaceous, overall softer, friable,

interbedded with up to 20% cleaner off white Siltstone, minor medium to darker grey Shale

only.

2402.0 to 2415.0 SILTSTONE grading to SHALE

(13.0)

Light to medium mottled grey to slightly greyish tan, massive, blocky, soft, weakly cemented, quartz, trace lithics, grey to grey black argillaceous matrix, possible minor white feldspars?, moderate well sorted, subangular to subrounded, (*Possible very weak residual cut*?), possible minor carbonaceous? with micro coaly fragments to specks, trace white micromicaceous, some black mica, 10-15% maximum calcareous component, fairly chalky in part, some secondary micro crystalline calcite?, overall very uniform, minor grading to very fine dirty Sandstone, increasing and grading to Shale with depth, basal 5 meters interbedded darker argillaceous Shales and cleaner with transition to clean calcareous Siltstone, also chalky, minor very fine to fine quartz. Gas show apx 160 units, No fluorescence, possible? very weak cut?. (cut and florescence from Sawdust).



2415. 0 to 2424.0 SANDSTONE

(9.0)

Off white, predominately loose quartz, lower to upper medium, rare lithics, moderate sorted, subangular to abundant subrounded, minor rounded spherical coarse, some coarse fractured, minor fragments only, poorly sorted, silty to very fine to fine matrix, chalky, some more crystalline, 10-15% calcareous only, increase fragments with depth, abundant very fine to silty, calcareous, some chalky, rare trace pyritic fragments, minor Shale, as above, ROP up to 10 m/hr with gas show of 180 units at 2417 meters. no shows, no cut.



2424.0 to 2428.0 Chalky SILTSTONE with SANDSTONE?

(4.0) Very soft, chalky powdery dried sample, off white, calcareous in part, loose lower to upper fine

quartz, translucent, whitish, opaque, abundant very soft chalky siltstone, off white, very

calcareous, minor shale only.

2428.0 to 2435.0 Interlaminated SILTSTONE

(7.0) Overall dirty light grey samples, softer argillaceous lower to upper Siltstone, local white micromicaceous, interlaminated to thinly bedded with cleaner calcareous Siltstone, off white to

slightly mottled greyish white, micromicaceous in part, 10-15% calcareous component, quartz, rare trace lithic, abundant chalky to semi crystalline, off white very fine Sandstone to very slightly greyish moderate cemented fine Sandstone fragments, grading cleaner with depth, apparent micro coaly laminations? within cleaner very fine Sandstone with depth. 10-15%

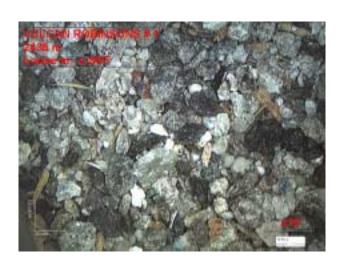
siliceous to very slightly dolomitic Shale, decreasing with depth.

2435.0 to 2441.0 SANDSTONE

(6.0) Predominately loose, quartz, opaque, white, minor greyish, semi translucent, lower to upper medium to coarse, moderate sorted, subangular to subrounded with rounded, abundant

fractured throughout, minor silty fragments, grading to upper fine to lower coarse with depth, fining down?, increased very fine to trace fine to silty calcareous fragments with depth, ROP

up to 10 m/hr, minor gas show only apx 45 units, no Show, no cut.



2441.0 to 2448.0 SANDSTONE to SILTSTONE

(7.0) Off white, chalky, fine to very fine, massive, blocky, 10-20% calcareous component, quartz,

abundant loose medium, grading to very fine Sandstone to upper Siltstone, mottled off white, chalky, soft, moderate sorted, quartz, white to greyish, rare trace lithic, rare crystalline, competent but friable, calcareous component, Muddy grey Clay? at shakers, dried samples cleaner off white, chalky in part, assuming softer clay rich to chalky interval, ROP down to 2

m/hr, Assuming Drill bit balling up ?, some Pecan shells in samples.

2448.0 to 2454.0 SILTSTONE to SHALE

(6.0) Mottled off white to dirty light grey, interlaminated cleaner to slightly dirty calcareous Siltstone,

rare trace Shale, grading to medium to darker grey SHALE basal bedding with depth, massive, amorphous, minor silty, siliceous in part, trace to minor calcareous, minor grey

black, some slightly carbonaceous?, trace micro calcite filling?

2454.0 to 2465.0 SILTSTONE to SANDSTONE

(11.0) Interlaminated off white cleaner very fine Sandstone to Siltstone, 10-15% calcareous, quartz,

massive, moderate well cemented, lighter greyish Siltstone to Sandstone, very slightly to non calcareous, siliceous in part, Muddy at shakers to greyish muddy bagged samples, Extra

clays washed out by drilling ?, rare shale fragments, uniform with depth.

2465.0 to 2473.0 SILTSTONE to SANDSTONE

(8.0) General off white, cleaner, massive, blocky fragments, quartz, opaque greyish, white, some translucent, moderate sorted, medium to upper silt to very fine Sandstone, 10% calcareous

component, slightly chalky ?, minor siliceous, overall weaker cemented ?, minor laminated

lighter slightly dirty grey Siltstone, rare Shale, uniform with depth.

2473.0 to 2483.0 SHALE with SILTSTONE

(10.0) Slightly dirty Siltstone grading to darker grey argillaceous Siltstone grading to Shale with depth, medium grey, massive, amorphous, platy to blocky, minor possible micro coaly laminations in 2480 sample, minor very fine silty argillaceous fragments, siliceous in part, overall siliceous, rare slightly calcareous, minor upper shales microcrystalline to cryptocrystalline, hard, siliceous to trace dolomitic?, minor interlaminated lighter grey to off

white slightly calcareous Sltsts. Predominately darker argillaceous Siltstone – Shale with depth.



2483.0 to 2493.0 SILTSTONE

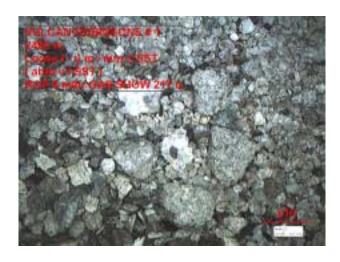
3 m/hr, no gas.

(10.0) Dirty argillaceous Siltstone with minor Shale grading with depth into cleaner Siltstone, off white, medium to upper silt to minor very fine micaceous Sandstone, moderate well sorted, quartz, opaque, white, rare trace lithic, 10% calcareous component, competent, moderate hard, friable, easily crushable, predominately cleaner Siltstone with depth, overall calcareous samples, minor chalky fragments, 10-15% calcareous component to Silts, minor lithics, 10-15% laminated very fine Sandstone to upper Siltstone, slightly dirty, possible trace carbonaceous grains, trace shale to dirty siltstone laminations only, uniform, steady ROP apx

2493.0 to 2499.0 SANDSTONE with SILTSTONE

(6.0)

Loose lower to upper medium quartz, clean, white, opaque, semi translucent, slightly frosted ?. abundant Siltstone to very fine to minor fine Sandstone, off white, very clean, quartz, rare trace lithics, blocky but weakly cemented, 10% calcareous component, crystalline but local slightly chalky, minor poorer sorted fragments medium Sandstone, clean, subangular to subrounded, weakly cemented, minor visible floating rounded medium quartz within Siltstone fragments, rare coarse to very coarse quartz grains, Possible minor Sandstone with predominately weakly cemented clean Siltstone with floating medium to rare coarse quartz throughout ?, assuming 2-3% effective porosity? only due to cement, ROP 8 m/hr, GAS show 217 units, No shows.



2499.0 to 2508.0 SILTSTONE to Pebble SANDSTONE

(9.0)

Off white medium to upper silt to very fine calcareous clean Siltstone to Sandstone, quartz, 10-15% calcareous matrix?, firm to harder but friable, crushable, rare trace floating medium quartz within matrix, trace quartz shards increasing with depth to 10%+ coarse fractured quartz, shards, up to 3 mm in length, white, cream, slightly grayish, rare slightly greenish, possible minor Chert fragments, possible feldspars lithics, minor medium well cemented slightly calcareous tight Sandstone, abundant loose medium quartz, with pebbles to some cobbles? ROP under 1 m/hr, POOH at 2508 meters due to ROP.



2508.0 to 2515.0 Pebble CONGLOMERATE with SANDSTONE

(7.0)Varied coloured quartz, greenish, cream, white, greyish, some varied lithics, reddish to blackish grey, possible trace jasper, angular fractured fragments apx 3 mm in length, no loose quartz, varied harder very fine to upper fine, minor medium well cemented siliceous

> grayish quartz Sandstone, minor calcite, some chalky calcareous fragments, overall well cemented throughout.



2515.0 to 2526.0 **SANDSTONE**

(11.0)90% + loose quartz, medium to coarse, moderate to moderate poorer sorted, off white, opaque, rare translucent, minor softer chalky fragments, minor fragments overall, very fine

to coarse poorer sorted well cemented quartz Sandstone with minor black argillaceous lithics, trace disseminated pyrite, overall trace calcareous component only, 1-2% coarser fractured grains, assuming floating pebbles, reddish to white quartz, overall uniform with

depth, steady ROP at apx 4 m/hr, trace gas only with depth.

2526.0 to 2535.0 SANDSTONE

(9.0)95% loose, quartz, white, opaque, no cement, medium to lower coarse to minor coarser rounded to fractured, overall possibly slightly finer overall to predominately medium moderate sorted, subrounded to rounded to abundant subangular, increased overall apparent chalky component in dried samples, chalky fragments slightly calcareous only, assuming siliceous clay infilling?, minor gas shows to apx 130 units, probably chalky clay

richer than tighter siliceous cemented upper Sandstone, abundant Pecan Shells. No Shows.



SANDSTONE 2535.0 to 2545.0

(10.0)85% loose, quartz, white, opaque, no cement, medium to lower coarse, moderate sorted,

subrounded to subangular, abundant coarser rounded, as above, increasing but minor fragments, very fine to fine siliceous to slightly calcareous poorer sorted Sandstone with coarser floating Quartz, continued weaker cemented overall, visible chalky infilling

throughout fragments, Continued smaller gas shows under 100 units from sands, No shows.

SANDSTONE grading to CONGLOMERATE? 2545.0 to 2555.0

(10.0)Loose clean medium to coarse quartz, white, opaque, semi translucent, as above, abundant chalky fragments, minor semi crystalline quartz to lithic very poorly sorted fragments, slightly calcareous only, grading to a possible thin bedded basal Pebble Conglomerate to Pebble Sandstone, fine to medium poorly sorted slightly siliceous to rare calcareous cement, quartz, opaque, white, grayish, black lithics, abundant fractured quartz, white, light grayish, trace greenish, opaque grey?, minor translucent quartz, trace black lithics, siliceous overall, apx

10% grey black Shale fragments, laminations?, grading to Shale with depth.



SNAKES BIGHT 2555.0 m MD, 2551.82 TVD, -2376.52 SSL

2555.0 to 2562.0 SANDSTONE grading to SHALE

(7.0)Apx 60% SHALE grading to 90% with depth, dark grey to grey black, massive, blocky to platy, hard, black micromicaceous in part, carbonaceous ? component, loose medium to coarse

quartz with minor fractured pebbles?, grading to very fine to fine mottled calcareous lithic quartz Sandstone, slightly chalky, calcareous, grading to predominately Shale with depth, overall siliceous with minor trace calcareous to possible dolomitic component, trace calcitic

fracture infilling.

2562.0 to 2576.0 Interlaminated SHALE with SILTSTONE

(14.0)Predominately grey black, blackish, massive, amorphous, blocky to platy, crystalline in part, abundant micromicaceous to silty micaceous, probable carbonaceous component, siliceous in part with apparent minor dolomitic component, overall very competent, harder, minor dirty grey black upper silt to very fine Sandstone, rare off white calcareous Siltstone with depth

only, very uniform samples, even ROP apx 5 m/hr, trace gas only.

2576.0 to 2583.0 SANDSTONE

(7.0) Mottled off white to dirty white, lower to upper fine, quartz, black lithics, brown micaceous,

moderate sorted, subangular to subrounded with abundant rounded lower medium to upper fine quartz to black lithic fragments, moderate clean, abundant semi crystalline but friable to weaker cement, moderate easily crushable, possible some chalky, 10-15% calcareous

component, overall light greyish color with fair calcareous cement.

2583.0 to 2,588.0 SHALE

(5.0) Grey black, micromicaceous to black, massive, amorphous, platy to fissile in part, carbonaceous, micro Coaly laminations, white calcite micro fracture infilling, trace calcareous to possible trace dolomitic.



2588.00 to 2594.0 SANDSTONE

(6.0) Off white, very fine, clean, quartz, whitish, to opaque greyish, rare trace lithics, moderate well sorted, subangular?, friable, slightly calcareous, Gas Show of 289 units, grading to fine Sandstone, quartz, clean, white, greyish, slightly moderate to poorer sorted, slightly calcareous component, low to moderate relief, friable, crushable, weakly cemented, no visible porosity at x45 power, Gas Show of 530 units, Samples taken at peak of show at shakers, Very chalky to clay rich at shakers, abundant apparent chalky in dried samples, possible fracturing?, No stain, no show, no cut.



2594.0 to 2600.0 SHALE with SILTSTONE

(6.0) Medium to darker grey Shale, massive, amorphous, blocky to platy, abundant slightly cryptocrystalline, very slightly dolomitic, trace micromicaceous, interbedded with cleaner

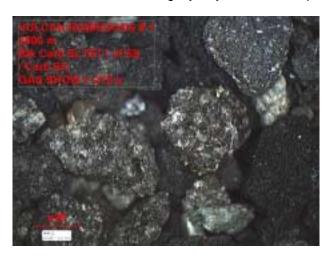
off white slightly moderate calcareous Siltstone to slightly calcareous very fine

Sandstone with depth, quartz, trace lithics, minor micromicaceous.

2600.0 to 2607.0 <u>Interlaminated SILTSTONE with SHALE</u>

(7.0) Cleaner off white medium to upper Siltstone, quartz, slightly calcareous, tighter, interbedded with medium to minor darker grey shale, massive, amorphous, blocky, hard, minor cryptocrystalline, siliceous to trace dolomitic?, minor silty, smaller gas shows form softer dirtier carbonaceous Siltstone to very fine Sandstone, mottled darker grey white, quartz, lithics, slightly mica, carbonaceous fragments?, moderate high relief, easily crushable, 2-3% effective porosity?, no stain, No Shows, no cut, Basal 2600 sample abundant dark grey to

grey black carbonaceous? Shale, slightly silty. Gas shows up to 213 units.



2607.0 to 2611.0 SANDSTONE

(4.0) Loose to fragments, off white to very light grey white, lower to upper fine, quartz, opaque, white, minor translucent, trace lithics only, minor micaceous. moderate sorted, subangular to subrounded, weakly cemented, siliceous? to slightly calcareous only, very easily crushable, moderate relief, no visible porosity, 3-4% effective?, No stain, No shows, no cut, two GAS Shows maximum 333 units. Thinner bedding?, No ROP increase.



2611.0 to 2621.0 <u>Interlaminated SHALE with SILTSTONE</u>

(10.0) Predominately light to medium grey to darker grey Shale, massive, amorphous, platy, minor

local silty, siliceous in part, rare calcareous to possible minor dolomitic, possible minor marly limestone lenses?, interlaminated with minor Siltstone, off white, lower to medium silt to minor upper silt to very fine Sandstone, tighter, calcareous in part, guartz, rare trace lithics, no gas.

2621.0 to 2624.0 SILTSTONE to SANDSTONE

(3.0) Mottled off white, upper silt to very fine to fine quartz calcite Sandstone, opaque, white,

greyish, trace lithics, possible trace carbonaceous, overall weaker cemented, easily

crushed, no visible porosity, minor lighter grey shale.

2624.0 to 2631.0 Interlaminated SHALE with SILTSTONE

(7.0) Medium grey, massive, amorphous, blocky, platy, firm to harder, competent, siliceous with

slightly calcareous to dolomitic component, minor trace micromicaceous, trace silty, minor

interlaminated very fine dirty to cleaner calcareous Sandstone to Siltstone.

2631.0 to 2634.0 SANDSTONE

(3.0) As Above, Gas Show of 316 units, possible upper fine to lower medium poorer sorted

slightly calcareous Sandstone, minor chalky calcareous infilling, trace lithics, poor relief, slightly fractured appearance due to calcite infilling?, trace interstitial argillaceous to possible

micro carbonaceous matter, predominately Shale with minor Siltstone in sample.



2634.0 to 2639.0 Black SHALE

(5.0)

Black to medium gray, massive, blocky to platy, local slightly micromicaceous, competent, firm to slightly harder only, easily crushed, abundant apparent carbonaceous?, minor to 5% dark black possible slightly coaly only, minor traces calcite fracture infilling, overall slightly calcareous (fragments break down in acid), trace lighter grey shale laminations, Gas Show of 295 units, no sands.



2639.0 to 2648.0 <u>Interlaminated SHALE</u>

(9.0)

Mottled light to medium grey to minor darker grey, massive, softer slightly chalky light grey to firmer harder medium to darker grey, overall slightly calcareous throughout, minor localized silty, trace blocky pyrite, 10-15% lighter greyish to off white slightly micromicaceous calcareous Siltstone, uniform / depth.

2648.0 to 2659.0

SHALE with minor SILTSTONE

(11.0)

Interlaminated light grey, massive, amorphous, moderate soft, slightly chalky, calcareous in part, minor localized silty, with medium to slightly darker grey Shale, massive, amorphous, blocky to platy, harder, siliceous to slightly calcareous throughout, minor silty, crushable but very competent, No Sands.



2659.0 to 2666.0 Interbedded SILTSTONE to SHALE with basal SAND

(7.0)

Off white to very light grey, lower to upper silt to very fine, rare fine, quartz, opaque, white, minor translucent, trace lithics, slightly chalky throughout, minor greyish harder Siltstone, interlaminated with minor Shale, light to medium grey, massive, amorphous, Basal 1 meter Sandstone, off white, fine to medium, quartz, opaque, white, minor lithics, poorly sorted, subangular to minor angular, subrounded, trace micromicaceous, trace calcareous, also finer micaceous very fine calcareous Sandstone, apx 5% loose quartz, fine to medium, from weaker cemented Sandstone?, moderate relief, 3-4 % effective porosity, Gas show 277 units. No Shows, no cut.



2666.0 to 2678.0 Interlaminated SHALE with SILTSTONE

(12.0)

Medium to darker grey, massive, amorphous, blocky, competent, harder, crystalline in part, siliceous with trace dolomitic, interbedded with lighter grey softer clay rich Siltstone, lower to medium silt, and upper silt to very fine to rare fine off white calcareous Sandstone, quartz, trace lithic, micromicaceous in part, trace pyrite, uniform with depth.

2678.00 to 2684.0 Pebble CONGLOMERATE

(6.0)

Fractured medium to very coarse quartz, translucent, white, grey, varied lithics, igneous red feldspars, greyish cherty, trace cream, rare greenish, predominately white quartz, fragments up to 3 mm, abundant fractured fine to medium quartz, trace to rare Sandstone fragments. Gas show 310 units. No Shows, no cut.



2684.0 to 2693.0 SHALE

(9.0) Predominately darker grey, abundant grey black, massive, amorphous, blocky, siliceous in part, slightly calcareous to dolomitic?, minor silty, minor interlaminated softer lighter grey Shale, Abundant loose quartz, lower to upper medium, translucent to white, decreasing with depth, minor carbonaceous black shales, trace calcite filled fracturing?.



2693.0 to 2696.0 SANDSTONE

(3.0) Off white, lower to upper medium, lower coarse, abundant loose, quartz, opaque, white, translucent, black lithics to possible coaly to very carbonaceous fragments, trace mica, abundant very poorly sorted Sandstone fragments, apparent white clay chalky infilling, friable,

calcareous in part, no visible porosity, minor gas show only.

2696.0 to 2704.0 SHALE

(8.0) Medium grey, darker grey, massive, amorphous, blocky to platy, local silty laminations, overall slightly calcareous, minor lighter grey laminations, localized probable grey black

carbonaceous laminations, increasing with depth, uniform ROP apx 5 m/hr steady.

2704.0 to 2709.0 Carbonaceous SHALE

(5.0) Darker grey to grey black, massive, amorphous, blocky, slightly calcareous, minor calcite fragments to rare trace calcite filled fractures?, minor apparent flaky coaly laminations, no sands, Gas show 173 units.



2709.0 to 2715.0 Interlaminated SILTSTONE with SANDSTONE

(6.0) Mottled off white soft chalky Siltstone, moderate calcareous to local non calcareous?,

interlaminated with very clean white very fine Sandstone, quartz, opaque, white, calcareous, well cemented, also minor slightly dirty very light grey Siltstone to very fine Sandstone, quartz, slightly micromicaceous, 10-15% possible laminated light to darker grey shales, no

loose quartz.

2715.0 to 2723.0 Interlaminated SHALE

(8.0) Bedded to laminated lighter to medium grey, massive, amorphous, blocky, harder, slightly

cryptocrystalline texture to slightly silty, slightly calcareous to dolomitic, to medium to darker grey slightly softer, trace micromicaceous, minor micro lenses softer slightly chalky to micromicaceous slightly calcareous Siltstone throughout, uniform ROP and samples with

depth.

2723.0 to 2735.0 <u>Interlaminated SHALE with SILTSTONE</u>

(12.0) Light to medium grey, massive, amorphous, blocky to platy, local softer, slightly chalky?,

calcareous, minor silty with laminated medium to slightly darker grey Shale, massive, amorphous, harder, slightly calcareous to possible minor dolomitic, minor very fine to upper silt micromicaceous Sandstone interlams?, uniform with depth, as above, steady ROP.

2735.0 to 2737.0 Carbonaceous SHALE?

(2.0) Grey black to black, massive, amorphous, blocky, very firm, harder, competent, crushable,

minor silty, carbonaceous in part, trace mica to translucent quartz grains?, trace dolomitic, with 50% medium grey massive Shale, trace calcite fragments, minor gas show or possible

connection gas.

2737.0 to 2748.0 SILTSTONE to SHALE with SANDSTONE

(11.0) Interlaminated varied Siltstone, light grey, slightly chalky, soft to crystalline calcareous, quartz, clean, rare lithics, trace micromicaceous, minor dirty greyish throughout, with thinly bedded

50% Shale, medium grey, massive, amorphous, blocky, firm to moderate harder, siliceous in part, trace dolomitic, local slightly silty, minor very fine Sandstone, quartz, trace lithics, slightly dirty, grading and coarsening down to fine Sandstone, moderate clean off white, quartz, trace lithics, slightly calcareous, well cemented, moderate sorted, subangular to subrounded, to minor very clean very fine calcareous quartz only, minor dirtier slightly greyish cream,

overall very uniform ROP, minor gas at 2744 meters, No shows, no cut.



2748.0 to 2758.0 SHALE

(10.0)

Medium to darker grey, massive, amorphous, blocky, siliceous with trace dolomitic, abundant slightly lighter grey, harder, semi cryptocrystalline texture in part, silty component, 10-15% darker grey black slightly carbonaceous? Shale, minor light grey to dirty off white chalky fragments throughout, minor gas peak 150 units at 2756 meters, No Shows, no cut.



2758.0 to 2762.0 SILTSTONE to SANDSTONE

(4.0)

Lighter grey, firm to competent, quartz, slightly chalky, siliceous to trace calcareous, rare very calcareous fragments, amorphous, grading to fine Sandstone, lower to upper fine, quartz, clean, opaque, greyish, white, moderate sorted, subrounded to subangular, well cemented siliceous to 10% calcareous component, low relief, no visible porosity, tight. POOH at 2762 meters due to MWD Failure. (Bit trashed also).

2762.0 to 2766.0 SILTSTONE to SANDSTONE

(4.0)

Dirty medium to lighter grey argillaceous Siltstone, massive, blocky, firm, siliceous to slightly calcareous, trace fine to medium poorer sorted moderate clean Sandstone, quartz, trace lithics, subrounded to subangular, minor loose fine quartz, one meter gas show at 2764 meters of 250 units.

2766.0 to 2777.0 <u>Interlaminated SHALE with SILTSTONE</u>

(11.0)

Medium to darker grey, massive, amorphous, blocky to platy, siliceous in part, trace calcareous to possible minor dolomitic, trace to 2% grey black to black Shale, minor local thin silty laminations, minor lighter to medium grey harder semi crystalline to microcrystalline hard Siltstone, siliceous to trace dolomitic, interlaminated with dirty to grading to cleaner light grey to off white Siltstone with depth. Gas show of 200 units at 2776 meters.

2777.0 to 2785.0 Interlaminated SHALE grading to SILTSTONE

(8.0)

Medium grey, massive, amorphous, as above, minor darker grey, abundant microcrystalline harder slightly buff grey, siliceous to trace dolomitic, minor silty, interlaminated with dirty greyish Siltstone, moderate soft to harder crystalline, with depth Siltstone grading to cleaner off white to very slightly greyish, 10-15% calcareous component, quartz, tighter, minor very fine to fine clean slightly calcareous quartz Sandstone laminations, No shows, no cut.

2785.0 to 2790.0 SILTSTONE grading to SANDSTONE

(5.0) Mottled off white to white, very clean well sorted upper Siltstone with interlaminated very fine Sandstone grading with depth to very fine to lower fine, massive, blocky, clean, quartz, 10 - 15% calcareous component, rare trace micro lithics, minor fragments with disseminated pyrite, apparent coarsening down with depth, Good ROP 8-10 m/hr, Gas show of 240 units

averaging 100 units, No shows, no cut.



2790.0 to 2800.0 <u>SANDSTONE</u>

(10.0) White, off white, very clean, very fine to fine grading to medium to coarser with depth, moderate well sorted very fine to abundant upper Siltstone, quartz only, clean, 10-15% calcareous component, fragments only with trace medium to coarse rounded to fractured quartz grading to abundant looser medium to coarse quartz with depth, continued calcareous Siltstone to very fine Sandstone matrix?, increasing fractured quartz pebbles? with depth, ROP decreasing with depth, minor gas show 80 units at 2797 meters, No Show, no cut.



2900.0 to 2803.0 <u>CONGLOMERATE</u>

(3.0)

Predominately loose fractured quartz fragments to shards, white, greyish, minor apparent hard light colored lithics?, minor poorly sorted fragments, coarse, opaque, black lithics, minor very fine to fine to medium Sandstone matrix, rare trace pyrite, abundant soft chalky white drill bit smear?, calcareous, some calcareous chalky fragments have very light brownish tan coating, ROP with PDC down to under 1 m/hr. POOH at 2803 meters due to Conglomerate.





2803.0 to 2808.0 Basal CONGLOMERATE

(5.0)

Fractured quartz shards to fragments as above, increasing darker lithics, greyish quartz Sandstone, siliceous Shale?, trace volcanic?, increasing poorer sorted silt to fine to medium well cemented siliceous to slightly calcareous, quartz to lithic rich, trace disseminated to blocky pyrite within quartz, 10% shale?, cavings?, possible minor lenses?.

2808.0 to 2818.0 <u>Interlaminated SILTSTONE with SHALE</u>

(10.0)

Dirty light grey Siltstone, lower to upper silt, quartz, local trace micromicaceous, 10-15% calcareous, with laminated very clean off white calcareous Siltstone, grading to minor very fine Sandstone, quartz, trace lithics, minor micromicaceous, blocky, well cemented, rare trace disseminated pyrite, calcareous, no porosity, ROP apx 2 m/hr with depth, No Gas.

2818.0 to 2825.0 SILTSTONE to SHALE

(7.0)

Medium to darker grey lower to upper Siltstone, argillaceous, massive, blocky, softer to slightly chalky to predominately harder with siliceous to minor calcareous component, minor semi crystalline lighter mottled grey upper silt grading to very fine Sandstone, hard, massive, well cemented, minor calcareous to dolomitic, minor interlaminated Shale, darker grey, rare grey black, massive, amorphous, blocky to platy, slightly silty, trace micromicaceous.



2825.0 to 2834.0 Interlaminated SILTSTONE with minor SHALE

(9.0)

Predominately lighter grey slightly softer, chalky in part, calcareous component, dirty clay rich?, interlaminated with dirty mottled medium to darker grey Siltstone, lower to upper silt, argillaceous, quartz, siliceous with minor calcareous, minor harder semi crystalline cleaner hard well cemented Siltstone, slightly calcareous to possible minor dolomitic?, minor interlaminated Shale, as above, overall lighter coloured to more calcareous than above, ROP apx 2 m/hr, no gas.

2834.0 to 2845.0 Interlaminated SILTSTONE to SHALE

(11.0)

Lighter grey softer to semi crystalline SILTSTONE, local slightly chalky to calcareous, dirty to slightly argillaceous in part, interlaminated with lighter to medium grey silty Shales, firmer to slightly harder, blocky to platy, slightly calcareous, minor overall slightly siliceous to weaker cemented, minor grading to very fine Sandstone, dirty grey, argillaceous to semi crystalline cleaner very light grey, minor interlaminated darker grey Shale with depth, No Gas, slightly increasing ROP with depth.

2845.0 to 2852.0 Black SHALE

(7.0)

Darker grey to grey black, massive, amorphous, siliceous with minor calcareous component, minor slightly silty, trace micromicaceous, minor carbonaceous, minor trace carbonaceous to coaly partings, minor trace calcareous fragments, calcite infilling along partings to trace fractures, uniform with depth, ROP increasing up to 3.5 m/hr, minor trace Gas background increasing to 50 units.

2852.0 to 2862.0 Interlaminated BLACK SHALE

(10.0)

Darker grey to grey black, massive, amorphous, blocky, platy, firm to slightly harder, localized slightly silty, minor carbonaceous only, possible trace carbonaceous to coaly micro partings, increasing to good trace softer chalky calcite fragments, rare trace crystalline calcite micro fracture infilling, basal section interlaminated with cleaner Siltstone, off white, calcareous, abundant very chalky, minor lighter to medium grey shales, calcareous in part.



2862.0 to 2867.0 SILTSTONE grading to SANDSTONE

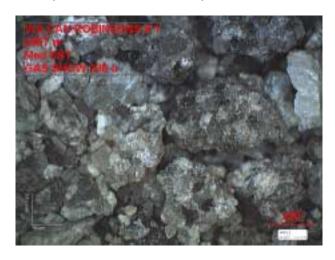
(5.0)

Off white cleaner upper silt to very fine SANDSTONE, quartz, trace lithics, moderate sorted, subangular to subrounded, 10-20% calcareous component, minor trace loose medium to lower coarse floating quartz, grading to a 1-2 meter Sandstone Bed, abundant loose subrounded to slightly fractured quartz, medium, quartz, trace rounded black shale lithics, poorer sorted, subrounded to subangular, minor coarser to lower coarse quartz, cleaner matrix, crystalline, trace interstitial brownish? slightly carbonaceous to argillaceous infilling around grains, siliceous to minor trace calcareous component only, Poorer ROP to apx 3 m/hr, No visible porosity, 4-5% effective, Gas show 236 units, No Shows, no cut.

2867.0 to 2873.0 SILTSTONE

(6.0)

Off white, clean, massive, blocky, quartz, rare trace micromicaceous, minor grading to very fine Sandstone, calcareous in part, tighter, abundant chalky fragments, drill bit gouge?, variegated?, very calcareous to minor only.



SILTSTONE to SANDSTONE 2873.0 to 2880.0

(7.0)Very light grey to greyish white, massive, blocky, upper silt to very fine, clean, quartz, opaque,

greyish, silty to slightly clay matrix?, possible trace micro carbonaceous specks, Siltstone moderate softer with very fine to lower fine Sandstone moderate well cemented, apx 5% calcareous component only, overall sample moderate calcareous throughout, abundant softer chalky very calcareous fragments, very uniform with depth, small gas at 2873 meters.

SILTSTONE to CONGLOMERATE 2880.0 to 2882.0

(2.0)Predominately Siltstone, in samples, abundant loose fractured quartz, opaque, white, greyish, with fragments upper medium to lower coarse rounded quartz within a medium to fine quartz to slightly black lithic matrix, very poorly sorted, siliceous to well cemented tight, to slightly softer, calcareous, no visible porosity, no gas, assuming thinner bedded layer only, minor dirty

very fine to upper silty greyish tan? micromicaceous Siltstone laminations to trace darker grey

shale. Probably Pebble Sandstone?.



SILTSTONE to minor SHALE 2882.0 to 2892.0

(10.0)Lighter grey, massive, amorphous, slightly dirty, clay rich ?, interlaminated with cleaner off

white calcareous Siltstone to trace very fine Sandstone, fractured grey to white quartz decreasing with depth, minor blackish shales and increasing blackish mottled Siltstone grading to apx 40% with depth, massive, hard, well cemented, siliceous, micromicaceous to minor trace mica flakes, minor interlaminated or lenses darker grey black shale, trace very

slightly calcareous, no Shows, no gas.

2892.0 to 2900.0 Interlaminated SHALE with SILTSTONE

Darker grev to grev black Shale, massive, amorphous, blocky to platy, local slightly silty. (8.0)minor micromicaceous, possible minor carbonaceous, harder, siliceous in part, slightly calcareous to possible minor dolomitic, interlaminated with apx 20% varied Siltstone, lighter grey, softer, slightly chalky, calcareous, to harder, darker grey, siliceous in part, trace pyrite,

minor chalky calcareous to rare calcite fragments throughout, Gas shows under 150 units with

ROP apx 3.5 m/hr, no sands.

2900.0 to 2908.0 SHALE with minor SILTSTONE

(8.0) Darker grey to grey black laminated with lighter to medium grey Shale, massive, amorphous, blocky, darker very firm to harder with lighter softer, calcareous, localized silty, trace micromicaceous, minor interlaminated softer Siltstone, slightly chalky, calcareous in part.

2908.0 to 2917.0 SILTSTONE to minor SANDSTONE

(9.0)

(6.0)

Laminated Siltstone, lighter to medium grey, massive, blocky, softer, calcareous in part, micromicaceous, with laminated fine Sandstone, mottled lighter grey, quartz, lithic, dirty, moderate sorted, subangular, minor calcareous, with medium to darker grey laminated shale, silty, siliceous in part, with minor calcareous component, rare trace disseminated pyrite, minor coarse fractured grey to opaque quartz with depth, possible floating pebbles with silty matrix.



2917.0 to 2923.0 Argillaceous CONGLOMERATE?

No loose sands or rounded quartz, 5-10% up to 25% (2921sample) fractured quartz shards to fragments, quartz, opaque grayish, white, rare greenish, rare trace reddish lithics, minor black to darker grey cryptocrystalline lithic, minor fragments fine to medium lithic quartz Sandstone, poorer sorted, subangular to subrounded, siliceous with trace calcareous, rare trace disseminated blocky pyrite, abundant black harder Shale (matrix assumed), siliceous to trace dolomitic, minor apparent micro calcite fracture infilling, minor chalky white calcareous fragments throughout, Assuming Lithic to Quartz pebbles to cobbles within a shale matrix support?



2923.0 to 2927.0 CONGLOMERATE grading to SILTSTONE?

(4.0) Fractured fragments as above, no loose sand quartz grains, Possible floating pebbles to cobbles decreasing with depth within a mixed darker grey black Shale, siliceous to non calcareous and a softer lighter grey calcareous Siltstone (fining down?), abundant softer chalky calcareous fragments, Gas show 190 units.



2927.0 to 2936,0 Interlaminated SILTSTONE with SHALE

(9.0) 70% lighter grey massive Siltstone, firm to minor harder with abundant apparent softer, dirty slightly chalky, lower to medium silt, 10% calcareous? component, interlaminated with medium grey firm Shale, non to very slightly calcareous only, minor to 5% darker grey black Shale, trace white chalky calcareous fragments, uniform with depth.

2936.0 to 2948.0 Interlaminated SHALE with minor SILTSTONE

Predominately medium grey, massive, amorphous, platy, blocky, harder, very competent, very slightly calcareous to possible slightly dolomitic, siliceous in part, Shale becoming harder and more siliceous than above, 20-30% lighter grey, slightly softer, moderate calcareous, clay rich, lower to medium silt only.



(12.0)

2948.0 to 2957.0 SHALE

(9.0)

Medium gray, massive, blocky to platy, harder to competent in general, siliceous in part to rare trace dolomitic, abundant very slightly lighter gray, softer, very slightly calcareous, interlaminated with minor softer lighter grey Siltstone, minor darker grey to trace grey black, slightly calcareous to very clean Siltstone lenses to laminations?, off white, clean, quartz, calcareous in part, trace disseminated blocky pyrite, uniform with depth, minor gas only, No shows, no cut.

2957.0 to 2967.0 SHALE

(10.0)

Medium grey, rare darker grey, massive, amorphous, blocky to platy, siliceous in part with very slightly calcareous to dolomitic component, trace pyrite, continued harder to indurated compared to shales above 2900 meters, interlaminated with minor softer lighter grey shales and minor Siltstone, off white, chalky in part, calcareous, very uniform samples with depth. POOH at 2967 meters for Drill bit and Pressure testing.



2967.0 to 2975.0 SHALE with SILTSTONE

(8.0)

Medium grey to gray black, massive, amorphous, blocky, hard, siliceous with trace calcareous to dolomitic only, abundant off white Siltstone from first sample after bit trip, clean, lower to upper silt, quartz, crystalline in part, some chalky fragments, slightly calcareous but less than 10% overall, moderate well cemented, siliceous in part, minor harder lower Siltstone?, trace gas only, No Shows, no cut.

2975.0 to 2982.0 SANDSTONE

(7.0)

Off white, clean very fine Sandstone, well sorted, quartz only, siliceous in part, well cemented, apx 5% calcareous only, minor chalky, local grading to fine quartz sandstone, abundant medium Sandstone, clean, off white with quartz, opaque, white, trace black lithics, moderate sorted, subangular to subrounded, minor upper medium to lower coarse rounded quartz, siliceous in general with 3-6% calcareous component, moderate relief, no visible porosity under x45 power but inferred 5-7% hidden to possible 3-4% effective?, ROP up to 6 m/hr with maximum Gas Show 604 units, No shows, no stain, no cut.



2982.0 to 2985.0 <u>SANDSTONE</u>

(3.0)

Off white, clean, predominately very fine to upper silt, quartz, siliceous in part with less than 10% calcareous, continued upper fine to lower medium Sandstone, quartz, clean, minor lithics, crystalline in part, no to trace chalky only, poorer sorted, some upper medium to rare lower coarse quartz, subrounded to subangular with rounded coarser, siliceous with less than 5% calcareous cement, moderate relief, no visible porosity, 2-3% effective? Good trace chalky siliceous to slightly calcareous gouge?, (see photos).

2985.0 to 2993.0 SHALE with SILTSTONE

(8.0)

Medium to darker grey, massive, amorphous, blocky, hard, siliceous with trace calcareous to dolomitic, abundant semi crystalline to lower silt, minor dirty lower to medium Siltstone, greyish, softer, slightly chalky to harder, crystalline, rare Sandstone fragments, as above, trace coarse fractured guartz shards, possible some pebbles to cobbles within Shales?

2993.0 to 3003.0 SHALE with minor SILTSTONE

(10.0) Medium to predominately darker grey, massive, amorphous, siliceous with trace carbonate

dolomitic component, gritty, lower silty?, abundant crystalline to microcrystalline, slightly brittle, very competent, hard to crush or break, minor pyritic blocky to disseminated fragments,

minor to 10% lighter grey shale to silty laminations throughout, uniform ROP, no gas.

3003.0 to 3012.0 SILTSTONE grading to SANDSTONE

(9.0) Off white to very light grey, general clean, 10-15% calcareous cement, predominant upper silt, competent, well cemented but crushable, minor slightly dirty harder siliceous crystalline laminations?, with depth grading to and interlaminated with fine Sandstone, quartz, opaque,

grey, black argillaceous lithics, moderate sorted, subrounded to subangular, well cemented, calcareous in part, poorer relief, trace to minor coarse fractured quartz throughout, possible lithics, assuming poorer sorted floating quartz pebbles? Within a better sorted fine Sandstone,

no visible porosity, 10-15% Shale laminations?, trace gas only, No shows, no cut.



3012.0 to 3019.0 SILTSTONE to SANDSTONE

(7.0) Predominately upper Siltstone to very fine Sandstone, off white, very slightly salt and pepper, quartz, clear to opaque, minor grayish, good trace black argillaceous lithics,10-15% calcareous component, generally well cemented, lower relief, with depth localized fine to minor lower medium poorer sorted quartz Sandstone, trace lithics, subangular to subrounded, minor coarser floating quartz within finer matrix, Apparent coarser floating pebbles? To

coarser component within top of interval, Gas Show 180 units, tighter 2-3% effective porosity.



3019.0 to 3032.0 Interlaminated SHALE to SILTSTONE

(13.0) Medium to darker grey Shale, interlaminated slightly softer lighter grey, minor calcareous

to harder semi crystalline to microcrystalline slightly gritty to lower silty siliceous with trace dolomitic component, very competent, harder to crush, with minor slightly dirty mottled calcareous Siltstone to minor very fine Sandstone laminations throughout, uniform

with depth, no gas, No shows.

3032.0 to 3038.0 SILTSTONE grading to SHALE

(6.0) 20-30% grayish slightly dirty softer Siltstone, argillaceous in part (rare darker medium grey to

lithic), with minor very clean off white quartz calcareous Siltstone, interlaminated with medium to darker grey Shale, massive, blocky, very firm to local hard, siliceous with very slightly calcareous to dolomitic component, minor softer chalky siliceous to slightly to very calcareous mechanical "bit gouge" type fragments. Small increased gas background from Silts?.

3038.0 to 3050.0 SHALE

(12.0) Medium to darker grey to increasing greyish black, massive, amorphous, localized micromicaceous, generally moderate hard, competent, siliceous with slightly calcareous to minor dolomitic component, minor interlaminated graded dirty blackish microcrystalline

Siltstone, rare trace micro calcareous fracture filled, 3047 samples has indications of striations to shearing from drill bit? or formation?.minor trace lighter grey Siltstone, possible very thin

lenses to laminations, No shows, no cut.



3050.0 to 3060.0 <u>Interlaminated SILTSTONE with SHALE</u>

(10.0) 30-40% cleaner off white upper Siltstone grading to very fine Sandstone, quartz, rare lithics, well sorted, subangular, calcareous, well cemented, to abundant softer slightly calcareous chalky, rare trace pyrite, interlaminated to thinly bedded with Shale, medium grey,

massive, amorphous, blocky, moderate hard, some microcrystalline, rare cryptocrystalline, minor very hard, brittle, siliceous to localized dolomitic component, localized darker grey,

minor grading to upper siltstone, uniform with depth, low to no gas.

3060.0 to 3068.0 Interlaminated SILTSTONE with SHALE

(8.0) As above, increasing cleaner Siltstone grading to very fine to rare lower fine Sandstone with

depth, overall clean, whitish, quartz, rare lithics, minor mica with lower fine Sands, good calcareous component, tight, no visible porosity, interlaminated with Shale, medium grey, massive, amorphous, blocky to platy, harder, minor microcrystalline texture, siliceous with slightly dolomitic component, rare trace pyrite, no trace gas only, No shows, no cut.

3068.0 to 3077.0 SILTSTONE to SANDSTONE

(9.0) Very light grey to off white, medium to upper silt, clean, massive, calcareous in part, very slightly dirty?, interlaminated with grading to increasing very fine to lower fine Sandstone throughout and with depth, fine Sandstone predominately quartz, off white, semi translucent.

throughout and with depth, fine Sandstone predominately quartz, off white, semi translucent, minor greyish, rare trace black lithics, very rare trace reddish orange feldspars grains, minor

localized micaceous, stained samples indicate 5% calcareous component.

3077.0 to 3084.0 SANDSTONE with SILTSTONE

(7.0) 50-60% upper silt to very fine moderate well cemented Siltstone to Sandstone, calcareous in part, overall increasing fine to trace lower medium Sandstone with depth, abundant loose quartz, abundant fragments, upper fine Sandstone quartz, opaque, whitish, semi translucent, apparent frosted?, moderate sorted loose quartz, subrounded to subangular, medium quartz rounded, fragments weakly cemented, siliceous with less than 3% calcite, trace possible chalky, poorer sorted, subangular to rare angular fragments, general subrounded, trace

floating medium to occasional loose coarse quartz, no visible porosity but moderate relief, thin bedding to laminations?, 5-7% hidden porosity?, possible 3-4% effective, trace gas only.



3084.0 to 3096.0

SANDSTONE with CONGLOMERATE

(12.0)

Predominately loose lower to upper medium, lower coarse quartz, fractured to subangular to subrounded, abundant loose rounded upper medium to coarse, weaker cemented, 10-20% fractured lithics to shards of quartz, opaque, white, very slightly greenish, varied gray, rare trace pinkish to reddish, no apparent chert, very minor poorer sorted fragments, quartz, trace black argillaceous? lithics, rare trace mica, abundant very fine Sandstone to Siltstone throughout, well sorted, calcareous in part, rare trace lithics, rare orange fragments, well cemented, continued with depth, angular shards throughout, increasing better cemented upper medium quartz fragments with depth, siliceous with fragments fractured through quartz grains, (cemented), siliceous, other fragments 5% calcareous, 5-7% hidden porosity?, effective?, Assuming a laminated medium poorer sorted Sandstone with floating pebbles to cobbles and or thinner Conglomerate banding, some apparent Siltstone bedding?, poor ROP, no Gas. (Drill bit wearing out?). Loose Quartz indicates some porosity? but poor ROP and trace Gas only? (wet?) – (Bit Graded 7-7)





3096.0 to 3104.0 SANDSTONE with CONGLOMERATE

(8.0) As above, loose medium to upper fine quartz +coarser fractured Shards, apparent increasing finer Sandstone to very fine to upper silt calcareous Siltstone with depth, minor increasing Shale, transition into shaly lower unit with depth.





3104.0 to 3110.0 <u>Interlaminated SHALE to SILTSTONE</u>

(6.0) 20-30% harder grey black massive Shale, very competent, siliceous with trace dolomitic?, with interlaminated softer lighter grey clay? rich Siltstone, general very argillaceous, slightly calcareous, increasing Siltstone to softer silty greyish Shales to clays with depth, minor softer silty with micromicaceous to trace disseminated pyrite, rare coarser quartz shards, cavings?, no loose sands, slower ROP, drill bit dull ?. (Graded 7-7). POOH at 3110 meters due to poor ROP.

3110.0 to 3125.0 Interlaminated SHALE to SILTSTONE

(15.0)

Medium to darker grey, massive, amorphous, local micromicaceous, blocky, platy, siliceous in part with minor trace calcareous, hard, competent, local grading to lower silt, some darker grey to lighter grey very hard, siliceous, abundant softer slightly silty laminations, grading to lower Siltstone, increased calcareous, interlaminated with cleaner Siltstone, off white, very light grey, quartz, opaque white, minor greyish, trace to very rare black lithic specks, siliceous component with 5-10% calcareous, grading from apx 10% to 40% with depth, very uniform, no Sands, No shows, no cut, (ROP slowing with depth from start of PDC Run).



3125.0 to 3140.0 <u>Interlaminated SILTSTONE</u>

(15.0)

Lighter grey to off white, massive, lower to medium silt to rare upper silt, no sands, quartz, rare race lithic specks, slightly to 10% maximum calcitic component, siliceous in part, interlaminated with lighter to medium mottled grey silty Shale to argillaceous Siltstone, massive, amorphous, blocky, hard, minor microcrystalline, slightly calcareous, grading with depth to predominately lighter grey slightly argillaceous Siltstone, siliceous with slightly calcareous component, hard, abundant slightly microcrystalline, minor cleaner off white calcareous lenses?, very uniform with depth, steady ROP apx 3.5 m/hr.



3140.0 to 3150.0 Interlaminated SILTSTONE with minor SHALE

(10.0)

As above, lighter grey to local medium grey, argillaceous, dirty, massive, siliceous with trace calcareous only, minor micromicaceous, interlaminated with cleaner Siltstone, off white to very light mottled grey, quartz, rare trace black lithics, possible trace micro carbonaceous to coaly laminations, 5-10% calcareous component, (good fizz but dies quickly) to overall moderate siliceous non calcareous cement?, dirtier with depth, minor increasing apparent silty Shale with depth, darker grey, blocky, massive, harder, siliceous in part, rare calcareous, Uniform ROP apx 3.5 m/hr, no to trace Gas background, very poor slide attempts.

3150.0 to 3160.0 SHALE with minor SILTSTONE

(10.0)

Grading to 80% Shale with depth, darker grey to slightly grey black, massive, amorphous, platy to blocky, harder, siliceous in part with trace dolomitic only, minor initial weakly calcareous?, minor silty throughout, trace micromicaceous, interlaminated with dirty to clean very light grey to off white lower to medium Siltstone, quartz, slightly calcareous only, no sands, slightly increasing Gas background with depth.

3160.0 to 3167.0 SHALE with minor SILTSTONE

(7.0)

Medium to darker grey throughout, massive, amorphous, blocky, platy, harder, very firm, siliceous in general with very slightly calcareous to trace dolomitic component, abundant slightly lower to medium silty component, generally slightly black micromicaceous, rare medium Siltstone, very dirty, argillaceous, apparent micro laminations darker argillaceous Shale with possible slightly lighter greyish very slightly calcareous softer Siltstone?, less than 3% off white calcareous Siltstone as above, cavings or trace micro lenses to laminations, rare trace micro calcite filled fractures?, rare trace apparent slightly coaly micro partings?. Gas background up to 60 units, ROP steady apx 3.5 m/hr. no sands, minor brown walnut shells added for sliding.



3167.0 to 3173.0 SHALE with minor SILTSTONE

(6.0)

Darker grey to minor grey black, massive, amorphous, blocky to platy, hard, silty in part, local grading to lower to medium Siltstone, very dirty, argillaceous, trace disseminated pyrite, minor cleaner off white quartz Silt to very fine Sandstone, well cemented, siliceous with very minor calcareous, rare upper fine well cemented fragments, poor ROP after slide.

3173.0 to 3180.0 SANDSTONE

(7.0)

Mottled off white very fine to upper fine well cemented quartz, rare trace lithics, moderate sorted, abundant hard well cemented Siltstone, minor poorer sorted upper fine to medium lithics Sandstone fragments with depth, minor to 1% coarse to fractured pebble quartz Shards, no loose quartz or sand grains, predominately flaky well cemented Sandstone to Siltstone fragments, abundant small wafer thin fragments, continued Shale, 10-20%, hard, silty in part, grading back into Shale with depth to 80% hard massive grey black, siliceous with trace calcareous to dolomitic only, rare trace pyrite. Gas show at 3174 meters of 338 units. Slow ROP under 1 m/hr decreasing to 0.3 m/hr. POOH for Bit.



3180.0 to 3193.0 Pebble SANDSTONE with SHALE

(13.0)

Off white to slightly salt and pepper, very fine to fine to medium fragments with fractured quartz shards pebbles?, abundant upper silt, quartz, clean, opaque, white, translucent, good trace black shale lithics, poorer sorted, angular to subrounded, well cemented, siliceous with 5 to 10% calcitic cement, local moderate relief, no visible porosity, 3-4% effective, abundant laminated siliceous harder slightly calcareous upper Siltstone to very fine Sandstone, interlaminated with Shale, medium to darker grey to grey black, massive, amorphous, blocky, microcrystalline, hard, siliceous with very slightly trace dolomitic, increasing black Shale with depth, very hard, siliceous, trace micromicaceous.



3193.0 to 3203.0 Interlaminated SHALE

(10.0)

Medium to darker grey, massive, amorphous, platy to blocky, hard to local very hard, very competent but generally crushable, local lower silty, abundant slightly microcrystalline to rare cryptocrystalline, siliceous with very slightly calcareous to minor dolomitic component, local micromicaceous to slightly micaceous, minor to rare micro calcitic filled fractures to partings, minor interlaminated slightly softer greyish silty shales to slightly calcareous off white to very light grey calcareous chalky Siltstone, uniform with depth, No Shows, no cut.



3203.0 to 3215.0 Interlaminated SHALE

(12.0)

Predominately darker grey, massive, amorphous, blocky to platy, very hard to hard, competent, crushable in part, minor interlaminated lighter to darker grey black silty to amorphous SHALE, uniform with depth, as above, siliceous with slightly calcareous to dolomitic component, (generally remaining compact after sitting in acid), No shows, no cut.

3215.0 to 3232.0 SHALE

(17.0)

Darker grey, interlaminated with and to predominately grey black to blackish with depth, massive, amorphous, blocky to platy, hard to abundant very hard, local lower silty component, minor trace calcitic filled micro fractures ?, very uniform, grey black Shale slightly carbonaceous throughout ?, siliceous, trace dolomitic, ROP apx 3.5 m/hr, silty component with trace porosity ?, Gas show 248 units, No Shows, no cut.



3232.0 to 3240.0 SHALE grading to bedded SILTSTONE

(8.0)

Grey black to black, as above, grading to medium grey, massive, amorphous, blocky, hard to very hard, some cryptocrystalline, siliceous with trace dolomitic, interlaminated with very light grey lower to medium Siltstone, slightly earthy texture, calcareous in part with cleaner off white, Siltstone increasing to 70% with depth, off white, massive, blocky, lower to upper silt to abundant very fine to medium fine Sandstone, quartz, clean, trace black shale lithics, trace micromicaceous, rare trace pyrite, moderate sorted, subrounded to subangular, well cemented, siliceous with 10% calcareous component, no visible porosity, 1-2% effective?, No shows, no cut.



3240.0 to 3245.0 SILTSTONE to SANDSTONE

(5.0)

Predominately very light grey to off white Siltstone, crystalline to slightly chalky, overall clean, quartz, trace lithics, siliceous with 10% calcareous component, to softer moderate calcareous fragments, moderate well sorted, subangular to subrounded, local very fine, micromicaceous, minor fine to lower medium Sandstone with depth, general well cemented, moderate to lower relief, quartz, trace lithics, siliceous to 5% calcareous, no visible porosity, 2-3% effective?, Gas show 3242 meters of 287 units, possible thin Sandstone or fracture?, Poor ROP, No shows, no cut.



3245.0 to 3248.0 SANDSTONE

(3.0)

Predominately very fine to fine moderate well cemented Sandstone, off white, quartz, trace lithics, rare trace disseminated pyrite, rare micromicaceous, siliceous with minor calcareous, abundant upper Siltstone, abundant soft Chalky fragments, calcareous, gouge?, minor fine to upper medium Sandstone fragments, clean, trace lithics, moderate poor sorted, siliceous with 5% calcareous, moderate cemented, poor to moderate relief, 4-5% effective streaky porosity, possible fractures, trace Calcite rhombs, abundant possible gouge?, possible Faulting?





3248.0 to 3252.0 SILTSTONE to SANDSTONE

(4.0)

Well cemented clean off white to very light grey lower to upper Silt to laminated very fine to lower fine Sandstone, siliceous with 15-15% calcareous, quartz, trace lithics, rare micromicaceous, minor coarser fragments, rare coarse angular quartz, tight, no visible porosity.

3252.0 to 3257.0 SANDSTONE

(5.0)

Off white to very light grey, fine to upper medium with coarse, abundant loose quartz, subrounded to well rounded lower coarse, minor coarse fractured shards, fragments fine to upper medium poorer sorted in general, quartz, clean, minor finer to silty matrix only, grain support, subrounded to subangular, abundant rounded, moderate cemented, moderate relief, siliceous with 5-10% calcareous cement, possible 6-8% non visible porosity, 4-5% effective, Gas show 180 units, Better clean Sandstone quality overall, ROP apx 2.5 m/hr assuming tighter but interesting, No Shows, no cut.





3257.0 to 3266.0 Interlaminated SILTSTONE to SANDSTONE

(9.0)

Off white, clean, massive, medium to upper silt, interlaminated with very fine to abundant fine Sandstone, quartz, opaque, translucent, trace black lithics only, minor trace pyrite, minor micromicaceous to sparsely micaceous, overall well cemented, siliceous with 10-15% calcareous component, abundant softer chalky to calcareous to slightly calcareous fragments, gouge like, minor upper fine to medium moderate cemented fragments, possible cavings or thin bedding?, slow ROP apx 1 m/hr or less while sliding and no gas.

3266.0 to 3268.0 SANDSTONE

(2.0)

Off white, clean, lower to upper medium, rare angular coarse, quartz, opaque, translucent, grey, trace black lithics, moderate well cemented, siliceous to 5 to 10% calcareous, moderate to poorer sorted, subangular to subrounded, minor rounded, grain support and crystalline to grain support with finer to silty matrix infilling, no loose quartz, fragments fractured through and around quartz grains, some slightly weaker cemented with moderate relief, no visible porosity, 2-3% effective, continued abundant upper Siltstone to well cemented very fine to fine Sandstone, Gas show 152 units.



3268.0 to 3276.0 Interlaminated SILTSTONE to SANDSTONE

(8.0)

Off white to very light grey massive well cemented Siltstone, general very clean, quartz, siliceous with minor calcareous component, interlaminated to thinly bedded very fine to fine moderate well to well cemented Sandstone, overall clean, off white, quartz, opaque, translucent, minor grayish, trace lithics, trace disseminated pyrite, siliceous with 10% calcareous component, minor slightly dirty argillaceous Siltstone, trace grayish black Shales, cavings to thin laminations?

3276.0 to 3284.0 SANDSTONE grading to SHALE

(7.0)

Dirty mottled medium grey very fine to upper fine Sandstone, argillaceous, quartz, opaque, white, translucent, shale lithics to interstitial argillaceous material, minor calcareous, weaker cemented, general good relief, moderate poorer sorted, subrounded to subangular to rounded, softer fragments appear to have calcite replacement?, assuming overall 7-10% ineffective porosity, grading to medium to darker grey Shale, massive, amorphous, micromicaceous in part, platy, siliceous with slightly calcareous to dolomitic, trace disseminated pyrite. POOH due to rig failure – Swivel failure.

3284.0 to 3290.0 SILTSTONE with SHALE

(6.0)

Minor lighter grey cleaner very fine to upper Siltstone, off white, crystalline in part, quartz, grading to dirty argillaceous medium to upper Siltstone, greyish black to dark grey, hard, quartz, micromicaceous to micaceous, siliceous with minor to non calcareous, minor floating fine to medium quartz, translucent, interbedded with and increasing with depth to massive Shale, medium to darker grey, hard to minor very hard, siliceous, minor cryptocrystalline to microcrystalline, very hard, brittle, minor interlaminated darker grey black, slightly carbonaceous?, firm to slightly softer, minor silty.

3290.0 to 3297.0 SHALE with interlaminated SILTSTONE to SANDSTONE

(7.0)

Medium to local darker grey, massive, amorphous, blocky, hard, siliceous with trace dolomitic?, interlaminated with dirty medium to darker grey Siltstone to very fine Sandstone, minor grey black, quartz, argillaceous matrix, micromicaceous to micaceous, hard, crystalline in part, siliceous. Minor trace calcareous, uniform, No Shows, no cut.



3297.0 to 3303.0 SILTSTONE with SHALE

(6.0)

Off white to dirty mottled grey, massive, amorphous, blocky to platy, calcareous to cleaner, micaceous, well cemented with minor to grading to very hard crystalline upper silt to very fine Sandstone, light greyish, siliceous to slightly calcareous to dolomitic, grey black massive Shale, as above, decreasing with depth, no gas.

3303.0 to 3309,0 Pebble SANDSTONE with CONGLOMERATE

(6.0)

Upper salt and pepper Sandstone, fine to lower medium, quartz, translucent, off white, opaque, black shale lithics, massive, blocky, well cemented, siliceous to calcareous component, poorer sorted, subangular to angular to minor subrounded, with quartz pebbles, varied grayish, minor very slightly tan to greenish, trace pink feldspathic, fractured shards up to 3 mm, increasing fractured quartz, fine to very coarse with depth, minor loose angular quartz only, decreasing Sandstone fragments with depth, fine to medium Sandstone matrix, no gas, No Shows, no gas.



3309.0 to 3315.0 CONGLOMERATE to SANDSTONE

(6.0)

As above, fractured loose Quartz, Conglomerate grading to fine to medium very poorer sorted Sandstone, fine to upper medium, quartz, opaque, translucent, grey, black shale lithics, trace white micaceous, angular to subangular to subrounded, well cemented, (fragments fractures through quartz grains), no visible porosity, minor possible shale lithic fragments, No visible porosity, No Shows, no cut.





3315.0 to 3318.0 SHALE

(3.0)Grey black, massive, amorphous, hard, silty, local micromicaceous, minor grading to dirty

grey black Siltstone, trace disseminated pyrite.

3318.0 to 3321.0 **SANDSTONE**

(3.0)Off white to very slightly dirty mottled grey white, fine to upper medium fragments, minor floating pebbles, fractured shards, Quartz, opaque, translucent, black lithic fragments, minor micaceous, rare trace disseminated pyrite, very well cemented, siliceous with trace calcareous, poorer sorted, angular to subangular to subrounded, probable Shale laminations to thin bedding?, grey black massive shales, no visible porosity, No shows, no cut.

3321.0 to 3329.0 Interlaminated SHALE with SANDSTONE

(8.0)

Medium to darker grey interlaminated Shales, massive, amorphous, local micromicaceous, hard, blocky to platy, abundant slightly softer, silty, siliceous with minor calcareous to dolomitic component, thinly bedded fine to upper medium poorer sorted Sandstone?, as above, increasing dirty laminated Siltstone with depth, ROP up to 3 m/hr in rotation, No Shows, no cut.



3329.0 to 3338.0 Interlaminated SHALE with SILTSTONE

(9.0)

Medium to darker grey to grey black, massive, amorphous, blocky to platy, abundant silty, general hard to minor very hard, local interlaminated Siltstone, dirty grey black, semi crystalline to crystalline, very hard, quartz, argillaceous, trace micromicaceous, minor localized carbonaceous, siliceous, trace dolomitic to calcareous, no sands, minor upper cleaner off white medium to upper Siltstone to very fine Sandstone laminations to lenses ?, very well cemented, siliceous with minor calcareous, (lithic contaminants from mud transfer to active in 3338 sample)

3338.0 to 3347.0 Interlaminated SHALE with SILTSTONE

(9.0)

Darker grey to grey black, medium grey, massive, amorphous, micromicaceous in part, slightly carbonaceous, hard, slightly silty, semi crystalline, siliceous with calcareous to minor dolomitic, minor interlaminated Siltstone, grey black, lower to medium silt, hard, massive, rare upper Siltstone, rare trace to local calcite, (fracturing?), minor increasing cleaner calcareous salt and pepper, upper Siltstone with depth, uniform ROP apx 3 m/hr, slightly increased Gas Background apx 50 units, No shows, no cut.

3347.0 to 3355.0 SHALE

(8.0)

Interlaminated medium to darker grey, minor increasing lighter grey, massive, amorphous, platy to blocky, competent, siliceous with good calcareous component, rare micromicaceous, rare silty, minor chalky to microcrystalline calcite, possible fracture filling?, rare micro Siltstone laminations?, Gas show 150 units at 3353 meters, no Shows, no cut. (sulphur smell when acid added)

3355.0 to 3364.0 SHALE

(9.0)

Darker to medium grey, minor grey black, massive, amorphous, blocky to platy, firm to hard, competent, siliceous with good calcareous component, rare silty, good trace calcite, rare blocky, general micro laminations to possible fracture infilling, trace "distorted blacker shale fragments". Possible minor shear to faulting? or possible fractures?, ROP steady, Gas Show 370 units at 3357 meters, Gas background apx 70 units.



3364.0 to 3371.0 SHALE

(7.0)

Interlaminated medium to darker grey Shale, as above, massive, amorphous, blocky to platy, calcareous in part, with lighter grey softer silty Claystone grading to softer chalky Siltstone, minor calcareous only, grading with depth to upper Siltstone, semi crystalline, harder, slightly calcareous, quartz, tight, No shows, no gas.

3371.0 to 3380.0

Interlaminated SILTSTONE with SHALE

(9.0)

Lighter grey, lower to upper silt, quartz, opaque, translucent, trace black lithic only, non to local micromicaceous to minor micaceous, very firm to moderate hard, easily crushable, slightly chalky to softer in part, minor calcareous only, rare trace disseminated pyrite, minor crystalline very fine Sandstone, interlaminated with Shale, medium to darker grey, massive, amorphous, blocky, platy, rare silty, hard, good calcareous component, no Shows, no Gas, Steady ROP.



3380.0 to 3391.0 Black SHALE

(11.0)

Darker grey to grey black, massive, amorphous, blocky, larger fragments, rare silty, minor grey black to black lower Siltstone, slightly carbonaceous, minor medium grey Shale only, laminations?, rare trace white calcite, uniform with depth, No Shows, no cut.



3391.0 to 3394.0 <u>SANDSTONE</u>

(3.0)

Off white, slightly mottled grey white, very fine to upper fine, quartz, translucent, opaque, white, rare trace black lithic to rare interstitial argillaceous matter, overall clean, moderate well cemented, crushable, siliceous with minor to 10% calcareous, rare trace slightly chalky fragments, crystalline in part, no visible porosity, no gas, grading to very fine to Siltstone to Shale with depth, No Shows, no cut.

3394.0 to 3403.0

Black SHALE

(9.0)

Darker grey to grey black, massive, amorphous, blocky to platy, hard to very firm, minor very hard to trace brittle, local slightly micromicaceous, minor carbonaceous only, localized lower silty, siliceous with fair calcareous component, minor to 10% black possible carbonaceous laminations, minor thin lighter grey calcareous lenses?, uniform with depth, No Shows, no cut.

KENNELS BROOK 3403.0 m MD, 3395.17 TVD, -3219.87 SSL

3403.0 to 3416.0 <u>Interlaminated SILTSTONE with SANDSTONE</u>

(13.0)

Light grey to dirty off white Siltstone, softer, massive, blocky, slightly chalky, calcareous in part, with laminated Shale?, as above, decreasing with depth, increasing cleaner Siltstone, off white, medium to upper silt, chalky in part to more crystalline, minor calcareous component, quartz, trace mica only, rare trace black lithics, grading to interlaminated very fine to trace fine Sandstone, off white, clean, massive, blocky, crystalline, quartz, white, grey, silty siliceous to slightly calcareous matrix, moderate sorted, subangular to subrounded, rare trace upper fine quartz rounded, well cemented, (good trace chalky softer fragments, slightly calcareous), no visible porosity, No Shows, no cut, no gas.

3416.0 to 3420.0 SILTSTONE with SANDSTONE

(4.0)

Predominantly medium to upper Siltstone, very light grey to off white, clean, massive, blocky, siliceous with slightly calcareous component, with Sandstone, off white, fine to upper medium to coarse, quartz, opaque, white, translucent, clean, abundant matrix support, siliceous to slightly calcareous infilling, poorly sorted, subrounded to subangular, well rounded coarse to fractured floating very coarse to pebbles?, no visible porosity, well cemented but crushable weaker cement, no visible porosity, No shows, no cut, Gas show 120 units.



3420.0 to 3428.0 SILTSTONE with SANDSTONE

(8.0)

Continued very light grey to off white Siltstone to very fine Sandstone, as above, Upper Sandstone becoming harder and better cemented with depth, very light grey, fine to lower medium quartz siliceous to slightly calcareous matrix, well cemented, (fragments fractures through grains), tight, moderate sorted, subrounded to subangular, continued minor coarse rounded and fractured pebbles?, ROP slowdown, No gas, No shows.



3428.0 to 3440.0 <u>Interlaminated SANDSTONE with SILTSTONE</u>

(12.0)

Very light grey, off white, very fine to upper silt, rare medium lower fine, massive, blocky, competent, quartz, opaque, white, trace grey, hard to very firm, generally easily crushable, siliceous with 3-10% calcareous cement, minor lower to upper fine Sandstone lenses to laminations?, poorer sorted, subangular to subrounded with rounded fine quartz, well cemented, no visible porosity, tight, Possible minor medium to lighter grey slightly calcareous Shale laminations, No shows, no cut, No Gas, uniform with depth., no visible porosity, tight, Possible minor medium to lighter grey slightly calcareous Shale laminations, No shows, no cut, No Gas, uniform with depth.

3440.0 to 3452.0 SILTSTONE grading to SANDSTONE

(12.0)

Very light grey to off white, medium to upper silt, quartz, clean, siliceous with minor to 10% calcareous, firm, friable to easily crushable, rare micromicaceous, interlaminated with very fine quartz Sandstone grading to fine to medium poorer sorted Sandstone with depth, competent, firm to hard, crushable, siliceous with 5-10% calcareous cement, general lower relief, minor coarser Sandstone with moderate relief, minor floating coarse rounded quartz, rare trace lithic, rare mica flakes, (local very slightly greenish tinge), overall slightly calcareous poorer sorted fine to coarse Sandstone, moderate weaker cemented, No Show, no cut, no gas, (Slight sulphur smell to samples when acid added) POOH at 3452 meters for drill bit.

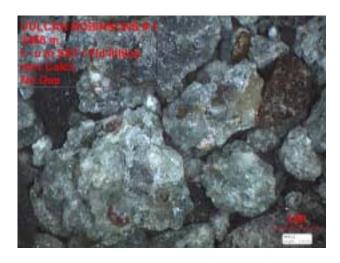




3452.00 to 3460.0 SILTSTONE to SANDSTONE

(8.0)

Interlaminated off white to very light grey to greyish Siltstone, massive, amorphous, blocky, platy, minor micromicaceous, hard, siliceous with 5-10% calcareous, with thin Sandstone bedding?, very fine to upper fine, quartz, clean, rare trace lithic, moderate sorted, subangular to subrounded, moderate well cemented in general, siliceous to 3-5% calcareous, (fragments general broken through quartz grains), low relief, crushable, minor upper medium poorer sorted quartz Sandstone, trace red feldspar lithics, minor loose rounded floating coarse quartz, local trace greenish matrix?, moderate well cemented, crushable, minor fine brownish micaceous rich, trace black shale only, No shows, no cut, Zero Gas.



3460.0 to 3468.0 SILTSTONE to SANDSTONE with Redbeds

(8.0)

Predominately very light grey to off white cleaner Siltstone, quartz, opaque, white, greyish, massive, blocky, siliceous to slightly calcareous, minor white micromicaceous, rare trace reddish micro lithics, interlaminated with very fine to minor fine Sandstone, off white, to greyish, quartz, opaque, translucent, greyish, rare trace lithics, clean, minor very slightly greenish matrix?, rare slightly greenish to reddish feldspars? lithics, minor white micaceous to abundant fragments with red brown micaceous, 5 to 10% Redbeds interlams? reddish brown, massive, blocky, slightly calcareous, trace silty to minor micromicaceous, No Shows, no cut, no gas



3468.0 to 3481.0 SILTSTONE with SANDSTONE and minor Redbeds

(13.0)

Overall very light grey to very slightly greenish grey, very fine to fine Sandstone, quartz, opaque, translucent, rare trace black lithic to pink feldspar, moderate to moderate poorer sorted, subangular, massive, blocky, moderate hard but softer, slightly friable, weaker cemented, siliceous in part, rare trace to 3% calcareous cement only, possible minor green clay infilling?, easily crushable, lower relief, crystalline in part but crushable to minor higher relief, weakly cemented, no loose quartz, abundant whiter clean Siltstone to very fine Sandstone, firm, softer, weakly cemented, siliceous to minor calcareous only, trace mica to micromicaceous, rare trace black lithics, pink to orange feldspar?, minor crystalline poorer sorted angular medium Sandstone only, trace redbeds with 5% in 3479 sample, minor lighter grey semi waxy shale, No Shows, no cut, no gas.

3481.0 to 3488.0 SANDSTONE

(7.0)

Very light mottled greenish white, off white, (wet samples pale green), very fine to fine poorer sorted Sandstone grading with depth to fine to medium to minor very poorly sorted medium with floating? coarse quartz with depth, overall finer moderate well cemented, weakly siliceous with minor clay matrix infilling?, tighter, crushable but very low relief grains, grading to higher relief poorer sorted fine to medium Sandstone, subangular to subrounded to minor rounded coarser grains with more subangular matrix, trace gas only at 3484 meters with looser weaker cemented poor sorted subrounded to rounded Sandstone, general low relief, tighter, siliceous, minor Siltstone, as above, minor loose fractured lithics, pinkish feldspars, greyish brown cherty?, clear translucent quartz, No Shows, no cut, no gas.

3488.0 to 3497.0 Interlaminated SILTSTONE to SANDSTONE with minor Redbeds

(9.0)

Off white, clean, massive, quartz, softer, weaker cemented, quartz, rare trace reddish specks, siliceous to slightly calcareous component, interlaminated with slightly greenish Siltstone to very fine Sandstone, clean, possible very slightly clay rich (greenish), massive, blocky, crystalline in part, minor poorer sorted fine quartz Sandstone, greenish, subrounded to subangular, weaker cemented, minor clays?, siliceous to trace calcareous only, minor Redbeds to reddish soft shale in samples, (non calcareous to silty red calcareous), minor Sandstone fragments with apparent argillaceous specks, possible minor reddish clays laminated within greenish Sandstone, (bagged samples reddish prior to washing), No shows, no cut, no gas.



3497.0 to 3509.0 SAND

SANDSTONE

(12.0)

Overall very slightly greenish, very fine to fine to upper medium with minor coarse, Quartz, opaque, translucent, minor greenish?, trace pinkish feldspars, minor green clay lithics to infilling?, poorer to very poor sorted, angular to subangular silt to very fine with increasing rounded upper medium to coarse quartz to feldspars, moderate well cemented, siliceous with trace calcareous only, (fragments predominately broken through grains), some weaker cemented, minor loose quartz, minor higher relief fragments, abundant interlaminated greenish moderate well cemented siliceous Siltstone to off white calcareous Siltstone, minor trace redbed fragments only, No Shows, no gas.



3509.0 to 3521.0 Mixed SANDSTONE with Pebbles and SHALE?

(12.0)

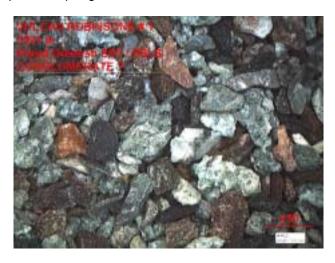
Intermixed fine to medium greenish Sandstone to very light greenish white Siltstone, as above, with abundant poorly sorted dirty lithic medium to coarse Sandstone, quartz, opaque, translucent, white, minor red stained, minor greenish, fragments with blackish to reddish matrix, very poorly sorted, angular to subangular with coarser rounded, abundant loose fractured coarse to pebble lithics, pinkish to reddish feldspars, greyish to creamy chert, grey black siliceous lithics, opaque white coarse fractured quartz, trace grey black platy shale, minor reddish Siltstone to silty shale laminations, reworked intermixed to laminated poorly sorted dirty medium to Pebble Sands and probably cleaner greenish sands and minor red to grey clays to shale, No shows, no gas.



3521.0 to 3526.0 SANDSTONE

(5.0)

Greenish grey to very light greenish white, fine to lower medium, quartz, opaque, translucent, minor trace greenish, minor apparent greenish clay infilling, weaker cemented siliceous, very slightly trace calcareous, moderate relief, interlaminated with Siltstone to very fine Sandstone, greenish, competent, blocky, moderate hard, micro to cryptocrystalline in part, trace coarse quartz to pink feldspar grains.



3526.0 to 3536.0 <u>Interlaminated REDBEDS with SANDSTONE</u>

(10.0)

20-50% Redbeds to reddish brown shale, massive, amorphous, blocky to platy, competent, moderate hard, siliceous in part to slightly calcareous silty, uniform, interlaminated with greenish clay rich? Siltstone to very fine Sandstone, moderate sorted, quartz, clean to upper fine to lower medium poorer sorted Sandstone, greenish, moderate sorted, subangular to subrounded finer matrix with medium rounded quartz, weaker cemented, siliceous with minor trace calcareous only, uniform with depth.



3536.0 to 3545.0 SANDSTONE with minor Redbeds

(9.0)

Intermixed varied very fine to upper medium generally poorly sorted greenish Sandstone, predominant quartz, opaque, translucent, greenish, rare trace orange stained floating quartz, minor rare trace pink feldspar lithic grains, coarser sands minor black argillaceous lithic fragments, generally tighter, lower relief, massive, blocky, siliceous with trace calcareous only, some clay infilling cement?, minor very fine to greenish Siltstone interlams, minor -15% thinly bedded Redbeds to reddish silty shales, uniform with depth, no shows, no cut, no gas.



3545.0 to 3552.0 SANDSTONE with minor Redbeds

(7.0)

Predominately very fine to upper fine greenish Sandstone, quartz, clean?, opaque, translucent, minor greenish, as above, minor lower medium, general poorly sorted, subangular to subrounded to well rounded medium quartz, general lower to moderate low relief, harder, moderate well cemented, minor calcareous, crystalline, to higher relief, (fragments broken around grains), weaker cemented, minor greenish clay matrix?, siliceous with minor trace calcareous, 10-30% interlaminated Redbeds to silty reddish brown shales, minor very hard siliceous to generally very firm slightly siliceous, rare slightly silty, calcareous, No Shows, no gas.



3552.0 to 3560.0

Interlaminated SANDSTONE

(8.0)

Predominately very light greenish Sandstone, very fine to upper fine, massive, blocky, quartz, opaque, translucent, minor greenish, rare trace pinkish feldspars?, possible black lithic, generally lower relief, moderate well to well cemented, siliceous to minor calcareous only, interlaminated with off white very fine to lower silt Sandstone to Siltstone, clean, quartz, softer to calcareous component, rare trace micromicaceous, minor chalky, no apparent Redbeds, rare trace black shale fragments, uniform with depth, slower ROP, No Shows, No cut, No gas.



FTD Well at 3560 meters, October 02, 2009 at 1500 hrs.

Date October 7, 2009 Service Company: Baker Hughes

Run No1Tool TypeRCORTop Depth2,172.61Cores Required30Base Depth3,310.69Cores Obtained28

Geologist: Michael Smith Cores Lost (2 Canceled due to Sticky Hole)

Geologist Comments regarding visual / microscopic porosity estimates:

The estimates of porosity / cementation in the Sidewall Cores and Cuttings during the drilling operation of the Robinsons # 1 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 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 Wellsite geologist used an x20 power magnification for the Robinsons # 1 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 Robinsons # 1 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)

Grain Relief / Cementation: 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.

Date October 7, 2009 Service Company: Baker Hughes

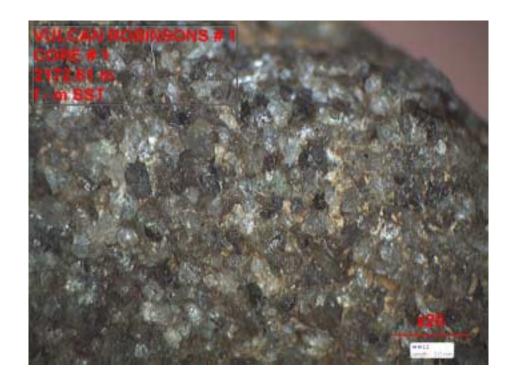
Run No 1 Tool Type RCOR
Top Depth 2,172.61 Cores Required 30
Base Depth 3,310.69 Cores Obtained 28

Geologist: Michael Smith Cores Lost (2 Canceled due to Sticky Hole)

Core #1 Recovered 80% 2.172.61 m

SANDSTONE

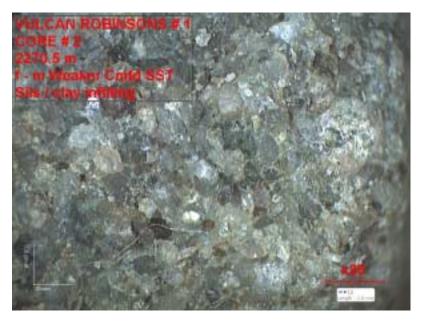
Lighter to medium grey, lower to upper fine with minor medium, quartz, translucent, opaque, greyish, trace black argillaceous lithics, rare trace altered clay? lithics, massive, moderate well cemented, siliceous with 1-2% calcareous, crystalline, grain supported with siliceous silty? infilling cement to 5-10% very light greyish white clay?, moderate sorted, angular to subangular to subrounded with lower medium rounded, moderate high relief (Core broken around quartz grains to minor fractured larger translucent quartz, 7-10% ineffective porosity, 2-3% effective porosity, CN 16.2%, ZDEN 5.4%, No Shows.



Core #2 Recovered 20% 2,270.50 m

SANDSTONE

Very light grey, grayish white, fine to upper medium, quartz, opaque, translucent, white, rare trace black lithic, moderate sorted, subangular to subrounded, minor angular to abundant medium rounded, weaker cemented, poorer recovery of core and overall softness to friability of core suggest poorer weaker cemented, siliceous with minor to 2% calcareous, localized minor very light greyish to rare very slightly pale greenish clay infilling, high relief, (Core broken and fractured around grains), 7-9% ineffective porosity, 3-4% effective porosity due to apparent clay to soft siliceous component, questionable black "dry" argillaceous? Isolated infilling to micro blotches around quartz grains, character and appearance of Pyrobitumen, CN 13.7% ZDEN 4.3%, No Shows.

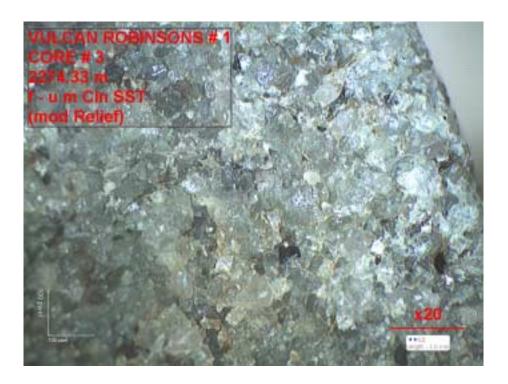




Core #3 Recovered 100% 2,274.33 m

SANDSTONE

Very light grey, fine to upper medium, quartz, opaque, white, translucent, grayish, clean, trace white mica, rare trace argillaceous lithic fragments only, crystalline, massive, moderate sorted, subangular to subrounded with abundant rounded, moderate cemented, competent but slightly friable, siliceous to less than 5% calcareous component, trace greenish clay grains, rare to minor apparent very light grayish white to siliceous clay infilling only, moderate relief, 2-3% ineffective porosity, 3-4% effective porosity?, CN 15.1% ZDEN 5.1%, No Shows.

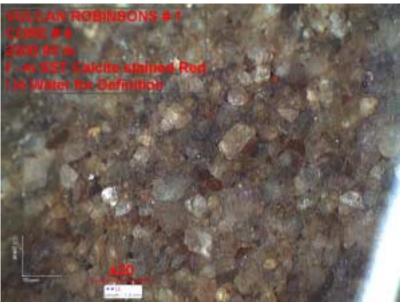


Core #4 Recovered 50% 2,300.95 m

SANDSTONE

Very light grey, fine to upper medium with minor isolated floating coarse, quartz, opaque, white - light greyish, some translucent, rare trace black shale lithics, overall clean, no apparent clay matrix, moderate well cemented, siliceous with less 1% calcareous, moderate sorted, subangular to subrounded with rounded upper medium to coarse quartz, grain supported with fine to very fine matrix infilling to siliceous silt cement?, moderate relief, Core fractures and breaks through matrix and around quartz grains, 4-6% ineffective porosity, 1-2% effective porosity, CN 14.5% ZDEN 3.4%, No Shows.





Core #5 Recovered 20% 2,302.86 m

SANDSTONE

Light grey, fine to upper medium with 10% coarse, quartz, opaque, white, greyish, translucent, trace black argillaceous lithic only, moderate to moderate poor sorted, subangular to generally subrounded with abundant coarse rounded, rare angular, grain supported, appearance clean, weaker cemented, siliceous with apparent siliceous whiter clay matrix infilling to cement, minor to less than 1% calcareous component, (core sides very rough), poor core recovery, friable remaining piece, higher relief, 8-10% ineffective porosity, 1-2% effective porosity due to clays?, CN 14% ZDEN 3.5%, No Shows.



Core #6 Recovered 75% 2,412.81 m

SANDSTONE

Light grey, predominately lower to upper fine with 15% medium, rare lower coarse, quartz, opaque, white, grayish, semi translucent, rare trace black argillaceous? lithics, overall clean, moderate sorted, subangular to subrounded, minor trace coarser rounded, moderate well cemented, siliceous with 2-3% calcareous, staining indicates minor calcareous clay? matrix infilling, grain supported, visible silty? siliceous cement, overall more competent core but stress fractures from coring? cutting across axis, (Core breaks around quartz grains), varied relief, moderate lower relief within finer quartz to moderate higher within poorer sorted medium to fine, 6-8% ineffective porosity, 2-3% effective porosity, CN 15.1% ZDEN 4.5%, No Shows.



Core #7 Recovery 100% 2,418.12 m

SANDSTONE

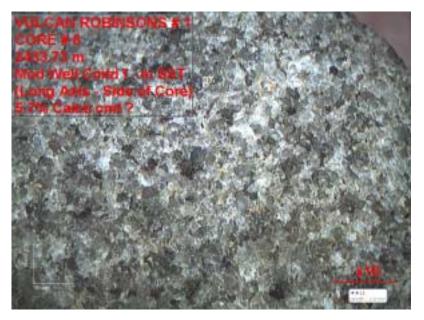
Lighter grey, fine to lower medium with 10% upper medium, rare coarse, quartz, opaque, white, greyish, translucent, rare to trace black lithics, trace white mica, overall clean, minor very light grayish clay? isolated infilling, moderate sorted, subangular to subrounded with minor rounded, competent, moderate well cemented, siliceous with 5-7% calcareous component, rare apparent clay infilling, silty to abundant very fine matrix, grain supported, moderate to local moderate low relief, Core breaks around and 20% through quartz grains, 4-5% ineffective porosity, 2-3% effective porosity, CN 13.4% ZDEN 3.9%, No Shows.

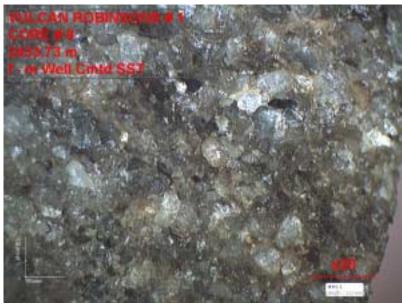


Core #8 Recovery 90% 2,433.73 m

SANDSTONE

Lighter grey, fine to medium, quartz, opaque, translucent, grayish to white, minor black lithics, minor very slightly argillaceous, trace white mica, rare trace disseminated pyrite specks, moderate well cemented, siliceous with 5-7% calcareous component?, moderate to moderate poorer sorted, subangular to subrounded, grain supported, with silty to very fine quartz siliceous matrix infilling, no apparent clay, moderate lower relief, Core breaks around finer grains but through coarser quartz, 4-5% ineffective porosity, 1-2% effective porosity, CN 14.1% ZDEN 2.9%, No Shows.

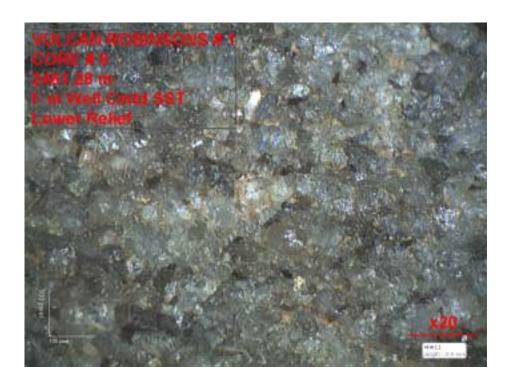




Core #9 Recovered 100% 2,461.28 m

SANDSTONE

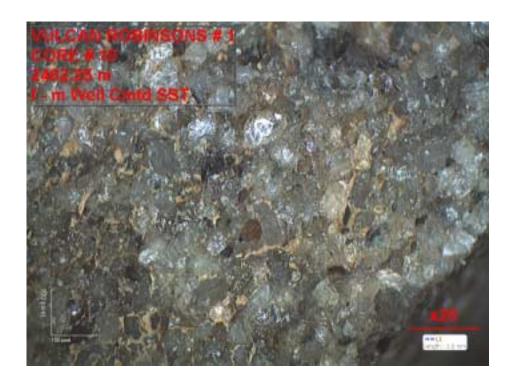
Lighter grey, lower fine to upper medium, rare trace lower coarse, abundant very fine matrix, quartz, opaque, greyish, translucent, minor trace black lithics, trace white mica, moderate poorer sorted, subangular to subrounded to rounded coarser, moderate well cemented, siliceous with 6-8% calcareous component, (moderate good fizz to core), no apparent clays, grain support with minor silty matrix, siliceous to calcareous silty? cement, lower relief, tighter, 3-5% ineffective porosity, 1% effective porosity, CN 13.3% ZDEN 3.9%, No Shows.



Core #10 Recovered 70% 2,462.25 m

SANDSTONE

Light grey, fine to upper medium with very fine matrix, quartz, grayish, translucent, opaque, trace lithics, trace white mica, moderate sorted, subangular to subrounded to medium rounded, clean, no visible clays, moderate well cemented, siliceous with 3-5% calcareous component, competent, moderate relief, Core breaks fractures around quartz grains, 4-6% ineffective porosity, 1-2% effective porosity?, CN 13.1% ZDEN 3.6%, No Shows.



Core #11 Recovered 90% 2,492.23 m

SANDSTONE

Light grey, very fine to lower fine, quartz, opaque, greyish, translucent, minor trace black lithics to possible vitreous black coaly specks?, rare white mica, moderate sorted, subangular to subrounded, moderate well cemented, siliceous with 3-5% calcareous component, clean, no apparent clay infilling, moderate relief, 3-5% ineffective porosity, 1-2% effective porosity?, CN 14.3% ZDEN 3.9%, No Shows.

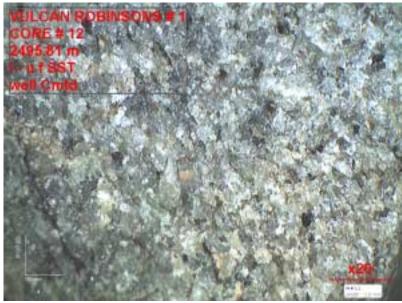


Core #12 Recovered 70% 2,495.81 m

SANDSTONE

Very light grey, very fine to lower to upper fine, quartz, opaque, translucent, grayish, trace black lithics to micro laminae coaly to carbonaceous, coaly specks?, trace white mica, moderate sorted, subangular to subrounded, minor lower medium rounded, moderate well cemented, siliceous to 5-7% calcareous component, clean, no apparent clays, moderate to moderate lower relief, 4-6% ineffective porosity, 2-3% effective porosity, CN 14.9% ZDEN 5.6%, No Shows.

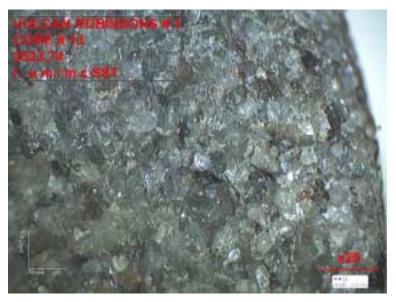


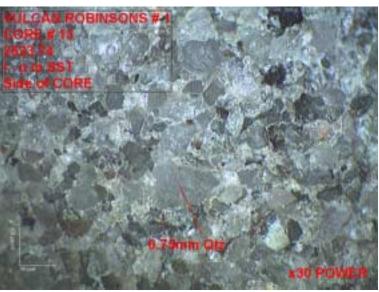


Core #13 Recovered 80% 2.523.74 m

SANDSTONE

Light grey, predominately lower to upper medium with rare lower coarse and finer to very fine matrix, quartz, opaque, translucent, grayish, trace lithics, rare trace white mica, moderate poorer sorted, subangular to subrounded with abundant upper medium to lower coarse rounded, moderate cemented, siliceous with 3-5% calcareous component, no apparent clay infilling, moderate to higher relief, competent, 4-7% ineffective porosity, 2-3% effective porosity, CN 15.2% ZDEN 5.1%, No Shows.

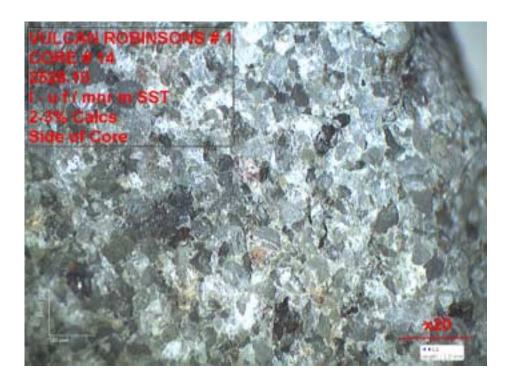




Core #14 Recovered 70% 2,528.10 m

SANDSTONE

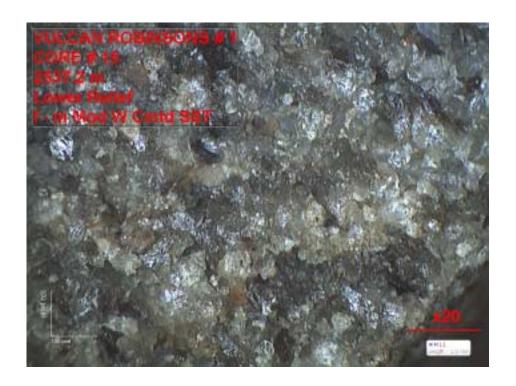
Light grey, lower to upper fine with 20% lower medium, quartz, opaque, translucent, grayish, trace black lithics, rare white mica, moderate sorted, subangular to subrounded with coarser rounded, moderate well cemented, siliceous with 2-3% calcareous only, competent, grain supported, minor possible clay infilling, clean, silty siliceous matrix?, moderate relief, 5-7% ineffective porosity, 2-3% effective porosity, CN 15.3% ZDEN 3.3%, No Shows.



Core #15 Recovered 90% 2,537.20 m

SANDSTONE

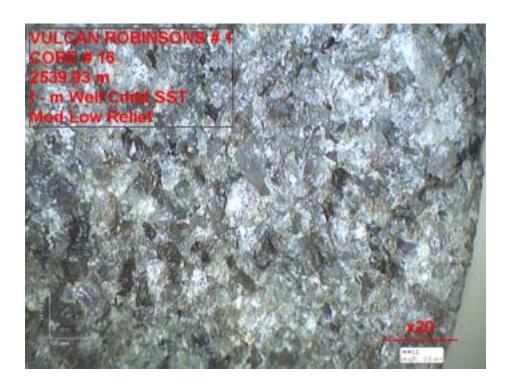
Lighter to slightly medium grey, lower to upper fine to upper medium, quartz, opaque, translucent, grayish, trace black argillaceous lithic only, rare trace white mica, clean, no apparent clay infilling, moderate sorted, subangular to subrounded with abundant medium rounded, well cemented, siliceous with 2-3% calcareous component, grain supported, Core broken and fractured through and around quartz grains, minor very fine matrix only, moderate to moderate lower relief, 3-4% ineffective porosity, 1-2% effective porosity, CN 13.5% ZDEN 3.3%, No Shows.



Core #16 Recovered 40% 2,539.93 m

SANDSTONE

Lighter grey, grayish white, very slightly salt and pepper, quartz, translucent, opaque, grayish, good trace black lithics, trace white mica, moderate sorted, subangular to subrounded, abundant medium rounded, well cemented, siliceous with 2-3% calcareous component, no apparent clay infilling, very rare clay slightly greenish? micro clasts, black argillaceous micro laminae through center of core, competent, some fracturing to core across axis due to coring?, moderate to lower relief, 4-5% ineffective porosity, 1-2% effective porosity, CN 14.7% ZDEN 4.0%, No Shows.

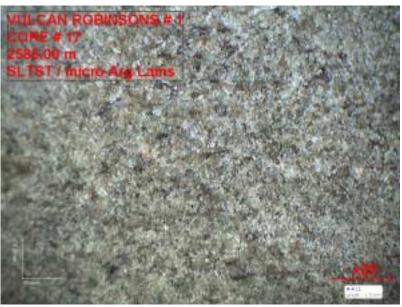


Core #17 Recovered 2,586.00 m

SILTSTONE

Very light grey, medium to upper silt to rare very fine, quartz, opaque, translucent, minor grayish, rare trace micro lithic specks, trace vitreous black micro specks, rare white mica, faint micro argillaceous laminations throughout core, no apparent clay infilling, moderate well cemented, siliceous with 6-8% calcareous component, moderate well sorted, subangular to subrounded, moderate lower relief, 8-10% ineffective porosity, 2-3% effective porosity?, CN 14.3% ZDEN 4.9%, No Shows.

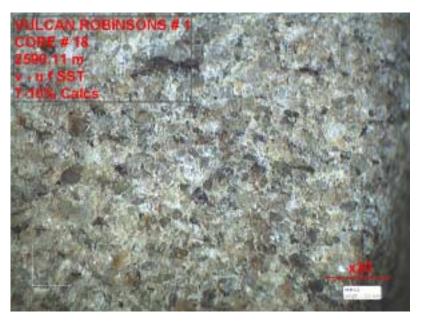




Core #18 Recovered 90% 2590.11 m

SANDSTONE

Lighter grey, lower to upper fine, abundant very fine, quartz, opaque, grey, translucent, minor black argillaceous lithics, possible trace black micro carbonaceous specks, rare micro argillaceous laminae, trace white mica, very faintly banded slightly grayer more siliceous with whiter more calcareous, grain supported with micro to silty siliceous infilling to matrix, well cemented, siliceous with 8-10% calcareous component, moderate relief, 7-10% ineffective porosity, 2-3% effective porosity, CN 13.6% ZDEN 5.6%, No Shows.

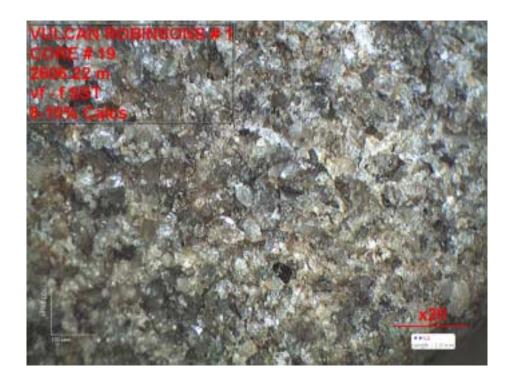




Core #19 Recovered 80% 2,606.22 m

SANDSTONE

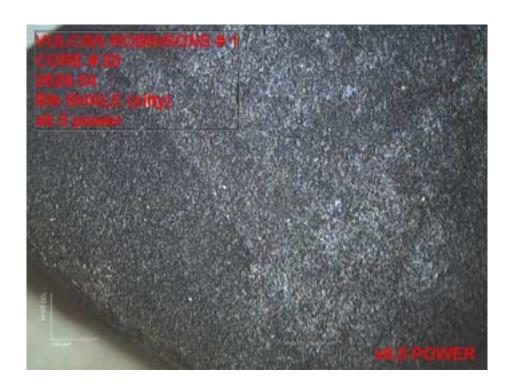
Light to slightly medium grey, very fine to lower to upper fine with trace lower medium, quartz, opaque, translucent, grey, trace to 1% argillaceous lithics, trace black carbonaceous specks?, trace micro argillaceous laminae, trace white mica, moderate sorted, subangular to subrounded with rounded upper fine to lower medium quartz, well cemented, siliceous with 8-10% calcareous component, minor to 2% argillaceous component, grain supported, siliceous to silty matrix, moderate cemented, Core breaks or fractures around and through quartz grains, trace clays around some quartz grains only, 8-10% ineffective porosity, 1-2% effective porosity, CN 13.5% ZDEN 3.9%, No Shows.



Core #20 Recovered 100% 2,629.54 m

SHALE

Grey black, massive, amorphous, hard, siliceous with trace calcareous, grading to lower Silt, faint laminations to banding, uniform, No effective porosity, CN 13.1% ZDEN 7.8%, No Shows. (Core Cut off Depth?)



Core #21 Recovered 60% 2,631.85 m

SHALE

Black, massive, Fractured Core, fractures apx 20 degrees to core axis, convoluted shiny vitreous black surfaces, slickenside?, brownish calcite within healed fractures to no calcareous, possible carbonaceous?, Shale itself is hard, massive, Good Gas show of 295 units through interval, No Primary porosity but assuming some secondary fracture porosity, CN 28.3% ZDEN - 3.7%, No Shows.

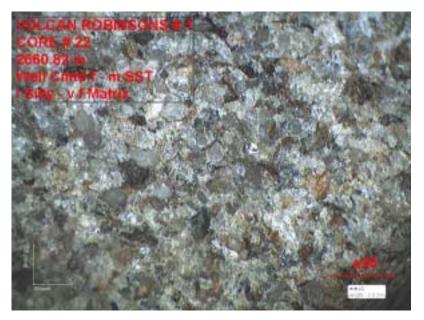




Core #22 Recovered 60% 2,660.82 m

SANDSTONE

Light to slightly medium grey, lower to upper fine with minor medium, quartz, opaque, translucent, grey, trace to 1% shale lithics, minor black micro coaly? specks, trace micro argillaceous laminae to micro argillaceous infilling around grains, trace white mica, moderate to moderate poorer sorted, subangular to subrounded, abundant upper fine to lower medium rounded, grain supported, with finer silty to very fine matrix infilling, minor argillaceous only, well cemented, siliceous with 3-5% calcareous component, moderate relief, Core breaks or fractures around quartz grains, 6-8% ineffective porosity, 2-3% effective porosity, CN 14.0% ZDEN 3.5%, No Shows.

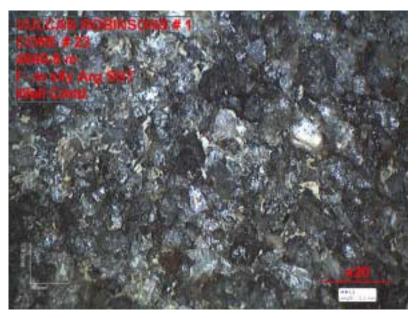


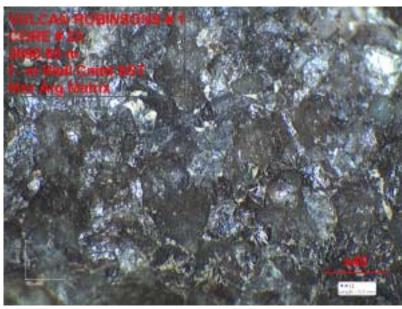


Core #23 Recovered 100% 2,690.80 m

SANDSTONE

Medium grey, predominately lower to upper fine with 20% medium, quartz, opaque, translucent, grey, 3-5% grayish to black Shale lithics grains, with 5-8% argillaceous matrix, possible some micro pyrobitumen? within argillaceous component?, poorer sorted, subangular to subrounded with upper medium rounded, rare angular, abundant very fine angular matrix within argillaceous infilling, grain supported with minor floating quartz within argillaceous matrix, well cemented, siliceous with 2-3% calcareous component, moderate poorer relief overall, Core broken predominately through quartz grains, 10-13% ineffective porosity, 2-3% effective porosity, CN 14.1% ZDEN 2.6%, No Shows.



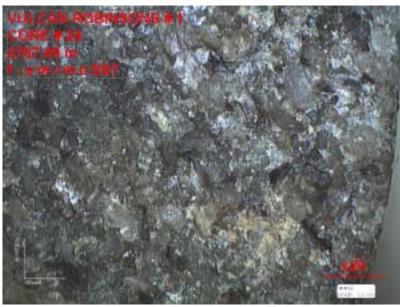


Core #24 Recovered 100% 2,787.89

SANDSTONE

Light to slightly medium grey, lower to upper fine to upper medium with medium coarse, quartz, opaque, translucent, grey, minor to 1% black argillaceous lithic grains with orientated argillaceous laminae, moderate sorted, subangular to subrounded with more rounded upper medium to rare coarse, possible minor very light grey white clay infilling, moderate well cemented, siliceous with 4-6% calcareous component, moderate to moderate low relief, grain supported, 4-6% ineffective porosity, 1-2% effective porosity, CN 12.1% ZDEN 3.7%, No Shows.





Core #25 Recovered 20% 2,862.62

SANDSTONE

Medium to darker grey, lower to upper fine, minor medium, quartz, opaque, grey, translucent, 3-5% grey to grey black argillaceous lithics, 10-15% argillaceous matrix?, moderate sorted, subangular to subrounded with upper fine to medium rounded, moderate weaker cemented, siliceous with 5-7% calcareous component with argillaceous matrix?, moderate relief, 8-10% ineffective porosity, 1% effective porosity, CN 10.3% ZDEN 4.6%, No Shows.

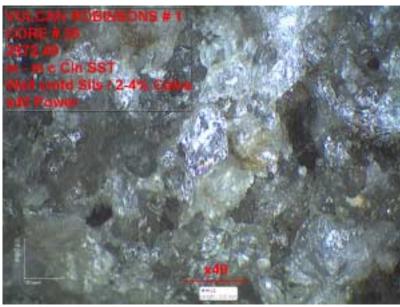


Core #26 Recovered 60% 2,972.49 m

SANDSTONE

Light grey, fine to upper medium with minor lower coarse, quartz, opaque, translucent, minor black to grey lithics only, clean, well crystalline, moderate sorted, subangular to subrounded, minor rounded, grain supported, minor finer matrix, well cemented, siliceous with 2-4% calcareous component only?, lower overall relief, Core broken predominately through quartz grains, Good overall Sandstone but well cemented, 4-5% ineffective, 1-2% effective porosity, CN 11.0% ZDEN 4.1%, No Shows.

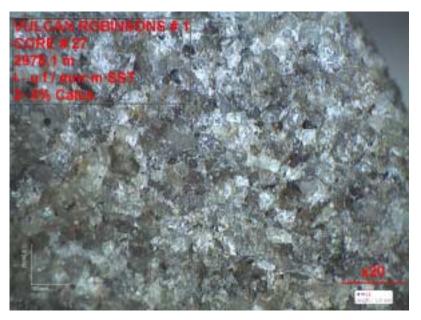


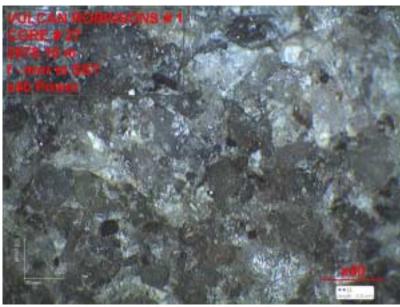


Core #27 Recovered 70% 2,978.10 m

SANDSTONE

Light grey, lower to upper fine with minor medium, quartz, opaque, translucent, grayish, trace to less than 1% black lithics, clean, moderate sorted, subangular to subrounded with minor rounded medium, minor finer silty matrix, well cemented, siliceous with 2-4% calcareous component, grain supported, moderate relief, Core breaks generally around quartz grains, 6-8% ineffective porosity, 2-3% effective porosity, CN 11.6% ZDEN 5.4%, No Shows.





Core #28 Recovered 15% 3,310.69 m

Fractured SHALE with SANDSTONE

Rubble recovery, black massive Shale, micromicaceous, (partings) lithic clast? or intermixed with fine to upper fine Sandstone, poor sorted, quartz, opaque to white, translucent, lithic argillaceous fragments, siliceous to trace calcareous, no apparent porosity, very poor Sample, CN 12.6% ZDEN 0.0%, No Shows





END OF CORE DESCRIPTIONS

VULCAN INVESTCAN ROBINSONS # 1

END OF WELLSITE GEOLOGICAL REPORT

SEE STRIPLOGS AND INCLOSED CD's FOR ADDITIONAL INFORMATION

PPENDIX 7: GEOLOGICAL STRIPLOG						

	(A full copy of the log is on the CD accompanying this report)
lcan Investcan	Robinsons #1

APPENDIX 8: V	VIRELINE	LOGS		
ulcan Investcan Ro	obinsons #1			

(hardcopies of all logs were submitted with this report and full digital copies are inclu-	
(hardcopies of all logs were submitted with this report and full digital copies are inclu-	
(hardcopies of all logs were submitted with this report and full digital copies are inclu-	
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(hardcopies of all logs were submitted with this report and full digital copies are inclu-	
the accompanying CD)	ded or
/ulcan Investcan Robinsons #1	



Run #: 1 **Date:** Aug 18, 2009

Test #: 1 Misrun: Yes
Test Company: Northstar Drillstem Testers Representative: Bob Tokar Representative: Northstar Drillstem Testers Representative: n/a
Unit #: K.B. Elevation: 175.30

Test Type: Inflate Bottom Hole

Formations Tested From the: Sprout Falls To the: Sprout Falls

Test Interval: From: 2,012.90 (MD) **To:** 2,063.50 (MD) (50.60)

From: 2,011.16 (TVD) To: 2,061.73 (TVD) (50.57)

Total Depth: 2,063.50 (MD) 2,061.73 (TVD) (At the time of the Test)

String Configuration: 41 m Heavy Weight Pipe Tail

/ packer assembly - xovers, subs, recorders

1.52 meters Perforations(See Engineering Reports)

Drilling Fluid Type and Properties: MW = 1095

VIS = 89 pH = 9.7 WL = 6.2

Cushion Type / Amount: Cushion Run but unknown length - check with Drilling department

Hole Condition: Excellent - No apparent hole problems Logging

Bottom Hole Temperature: O Tool Chased Distance: Mud Drop:

Period	Intitial Pressure	Final Pressure	Flow Description

Recovery: N/A
Analyses: N/A

Remarks: Failed Test - Unable to seat Tool / Packers

Storage Units:

Run #: 2 **Date:** Aug 19, 2009

Test #: 1 Misrun: Yes
Test Company: Northstar Drillstem Testers Representative: Bob Tokar Representative: Northstar Drillstem Testers Representative: n/a
Unit #: K.B. Elevation: 175.30

Test Type: Inflate Straddle

Formations Tested From the: Sprout Falls To the: Sprout Falls

Test Interval: From: 872.00 (MD) **To:** 901.00 (MD) (29.00)

From: 870.54 (TVD) To: 899.53 (TVD) (28.99)

Total Depth: 2,063.50 (MD) 2,061.73 (TVD) (At the time of the Test)

String Configuration: Two Inflate Packers

0.86 m Perforations within interval

Drillpipe to surface

(See Drilling Dept for complete details)

Drilling Fluid Type and Properties: MW = 1100

VIS = 89 pH = 10.6 WL = 6.4

Cushion Type / Amount: Cushion run but unknow length

Hole Condition: Excellent

Bottom Hole Temperature: O Tool Chased Distance: Mud Drop:

Period	Intitial Pressure	Final Pressure	Flow Description

Recovery: N/A
Analyses: N/A

Remarks: Test Failed - Unable to obtain seat with Packers.

Storage Units:

Storage Units:

Run #: 3 **Date:** Oct 09, 2009

Test #: 1 Misrun:

Test Company:Holland TestersClosed Chamber Company:n/aRepresentative:Dale HollandRepresentative:n/aUnit #:K.B. Elevation:175.30

Test Type: Conventional Straddle

Formations Tested From the: Snakes Bight To the: Snakes Bight

Test Interval: From: 2,963.00 (MD) **To:** 2,990.00 (MD) (27.00)

From: 2,959.01 (TVD) To: 2,985.96 (TVD) (26.95)

Total Depth: 3,560.00 (MD) 3,548.55 (TVD) (At the time of the Test)

String Configuration: 561.75 m Tail Pipe (127 mm, 31.9 kg/m)

Conventional Compression Packer 196.85 mm Set @ 2990.01 m

9.45 m Perforations between Packers

17.61 m of Packers, blanks, x-overs, DC, Recorders

Conventional Compression Packer 196.85 mm Set @ 2962.95 m

Drilling Fluid Type and Properties: Polymere Water Base

MW = 1135Vis = 75 WL = 7.0 pH = 10.4

Filter Cake = 0.5 mm No Cushion, NGTS

Hole Condition: 216 mm Wellbore in Excellent Condition. No Logging Problems, No Issues

RIH / DST Packers.

Bottom Hole Temperature: 44.3° Tool Chased Distance: Mud Drop: 0.0

Period	Intitial Pressure	Final Pressure	Times	Flow Description
Initial Hydrostatic	33,677.0	11000010		
Flow 1 Flow Details	4,235.0	993.0	10	Open for Preflow with weak initial puff. Bubbles to bottom of Pail in three (3) minutes. Steady throughout, NGTS
Time / Pressure No Flow Rates	/ Flow Rate	Measuremei	nts	Choke Type Orifice Diameter Units of measurement
Shut-in 1	993.0	2,154.0	90	
Flow 2	885.0	942.0	60	Open for Valve Open with weak initial Puff 1 inch Bubble Pail increasing to 6 inches in Bubble Pail after ten (10) minutes. Opened to Flair, No Gas to Surface (NGTS). Closed Manifold and back to Pail with only 2 inches for remainder of Valve Open.
Flow Details				
Time / Pressure	/ Flow Rate	Measuremei	nts	Choke Type Orifice Diameter Units of measurement
No Flow rate obs	served - weal	k 2 inch bubl	ole flow	

Cushion Type / Amount:

only form pail.						
Shut-in 2	942.0	2,684.0	360			
Final Hydrostatic		33,565.0				

Recovery: 65 meters Drilling Fluid

Analyses: Drilling fluid Samples taken at 54 m, 27 m and 5 m above top packer from recoverey fluid column

1 gas sample collected from Bottom Hole Sampler (#05004278)

No Gas to Surface

Remarks: DUEL STRADDLE CONVENTIONAL

Sucessful Test No problems

Extended Final Shut in Time due to poor indicators during final Valve Open / Final Flow

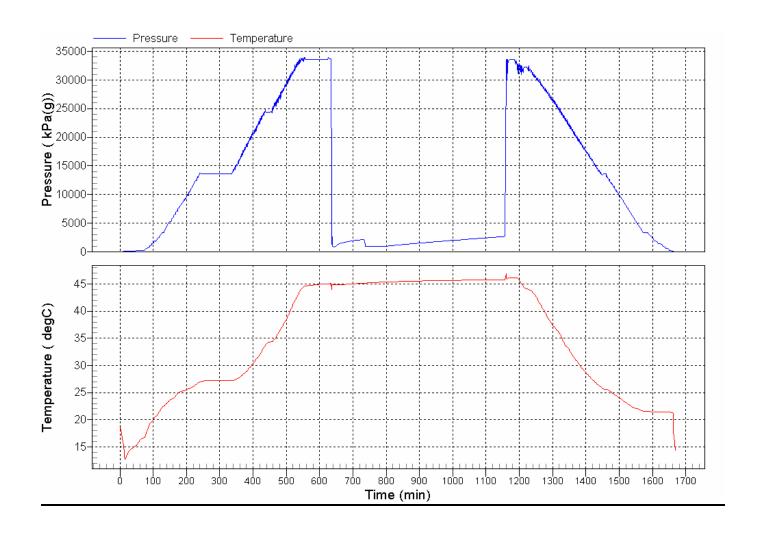
No Gas to Surface (NGTS)

Storage Units:

VULCAN ROBINSONS #1

DST # 3 CHART

(See Written Report)



Run #: 4 **Date:** Oct 10, 2009

Test #: 1 Misrun:

Test Company: Holland Testers Closed Chamber Company: n/a Representative: Dale Holland Representative: n/a N/a Unit #: K.B. Elevation: 175.30

Test Type: Conventional Straddle

Formations Tested From the: Snakes Bight To the: Snakes Bight

Test Interval: From: 2,574.00 (MD) **To:** 2,640.00 (MD) (66.00)

From: 2,570.77 (TVD) To: 2,636.64 (TVD) (65.87)

Total Depth: 3,560.00 (MD) 3,548.55 (TVD) (At the time of the Test)

String Configuration: 920.2 m Tail Pipe (127 mm, 31.9 kg/m) Conventional Compression

Packer 196.85 mm Set at 2573.94 m 7.62 m Perforations between Packers

66.0 m of Packers. blanks. x-overs, DC, Recorders

Conventional Compression Packer 196.85 mm Set @ 2639.99 m

Drilling Fluid Type and Properties: Polymere Water Base

MW = 1135 VIs = 75 WL = 7.0 pH = 10.4

Filter Cake = 0.5 mm No Cushion, NGTS

Hole Condition: Hole in Good Condition - Weather sucked. Possible that lower packer was

set in larger hole than reco

Bottom Hole Temperature: 39.1 ° Tool Chased Distance: Mud Drop: 0.0

Period	Intitial Pressure	Final Pressure	Times	Flow Description
Initial Hydrostatic	29,271.0			
Flow 1	2,306.0	1,032.0	30	Open for preflow with weak initial puff 2 inches in bubble pail, to bottom of pail in 4 mins, NGTS.
Flow Details				
Time / Pressure	/ Flow Rate	Measuremer	nts	Choke Type Orifice Diameter Units of measurement
N/A				
Shut-in 1			90	Bearing failure in Shut-In tool did not allow for full closure on Initial Shutin - No Pressures Recorded - See Charts and Raw data for further analysis.
Flow 2	1,279.0	1,243.0	65	Valve Open with faint Airblow 1/4 inch in Bubble Pail and increasing to 2 inches in Bubble Pail at end of Valve open. NGTS
Flow Details				
Time / Pressure	/ Flow Rate	Measuremer	nts	Choke Type Orifice Diameter Units of measurement
NO FLOWS RE	CORDED.			

Vulcan Minerals Inc UWI Robinsons 1

Cushion Type / Amount:

Vulcan Investcan Robinsons 1

Storage Units:

Storage Units: 115

Flow Details

Shut-in 2

Time / Pressure / Flow Rate Measurements Choke Type Orifice Diameter Units of measurement

Partial Communication around bottom packer. Nothing changed / moved at surface during shutin so no reason for loss of seal after apx 2 hours shutin is known.

1,243.0

Final Hydrostatic 29,180.0 N/A

Flow Details

Time / Pressure / Flow Rate Measurements Orifice Diameter Units of measurement Choke Type

All Packers came out of hole in good shape but upper section of lower packer was slightly damaged. Possible set in bigger hole than calipers indicated.

Two Donuts damaged but not destroyed.

88 meters Drilling Fluid - NGTS. Recovery:

Samples of fluid recover caught at 83 m, 27 m, 5 m above tools. **Analyses:**

2,050.0

Sample from Bottom Hole sample chamber probably Drilling Fluid plus Gas?.

NGTS

Upon retrieving tools, found Shut-In tool bearing disinagrated, Charts indicate that tool did not shut in Remarks:

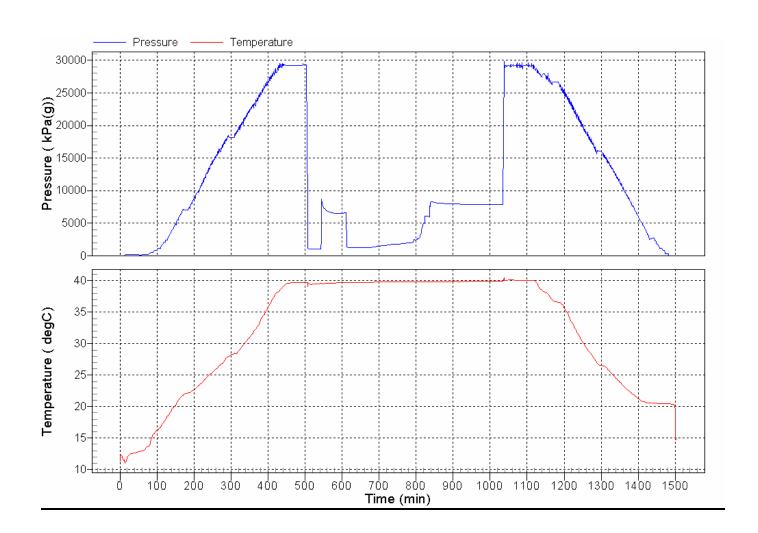
after 15 mins. Preflow / remained opened for apx 30 mins. Partial Communication around bottom

Packer indicated. No Initial Shut-In Recorded.

VULCAN ROBINSONS #1

DST # 4 CHART

(See Written Report)



Run #: 5 **Date:** Oct 11, 2009

Test #: 1 Misrun:

Test Company: Holland Testers Closed Chamber Company: n/a Representative: Dale Holland Representative: n/a N/a Unit #: K.B. Elevation: 175.30

Test Type: Conventional Straddle

Formations Tested From the: Friar's Cove To the: Friar's Cove

Test Interval: From: 2,517.00 (MD) **To:** 2,572.00 (MD) (55.00)

From: 2,513.89 (TVD) To: 2,568.77 (TVD) (54.88)

Total Depth: 3,560.00 (MD) 3,548.55 (TVD) (At the time of the Test)

String Configuration: 988.1 m Tail Pipe (127 mm, 31.9 km/m)

Conventional Compression Packer 196.85 mm Set at 2517.19 m

10.1 m Perforations between Packers

55.0 m of Packers. blanks. x-overs, DC, Recorders

Conventional Compression Packer 196.85 mm Set @ 2572.1 m

Drilling Fluid Type and Properties: Polymere Water Base

MW = 1135 VIs = 75 WL = 7.0 pH = 10.4

Filter Cake = 0.5 mm No Cushion / NGTS

Hole Condition: Good

Cushion Type / Amount:

Bottom Hole Temperature: 37.9 ° Tool Chased Distance: Mud Drop: 150.0

Period	Intitial Pressure	Final Pressure	Times	Flow Description
Initial Hydrostatic	28,621.0			
Flow 1	1,230.0	1,660.0	10	Open for Preflow with weak initial Puff to bottom of Pail in four (4) minutes. Steady throughout. NGTS.
Flow Details				
Time / Pressure	e / Flow Rate	Measureme	nts	Choke Type Orifice Diameter Units of measurement
n/a				
Shut-in 1	1,660.0		100	Picked up on tool string at end of Preflow to lessen chance of damaging Shut In Tool Bearing, Lost 260 litres of mud.
Flow Details				
Time / Pressure	e / Flow Rate	Measureme	nts	Choke Type Orifice Diameter Units of measurement
n/a				

Storage Units:

Shut-in 2 Flow Details	2,044.0	2,100.0	90	to faint in 2 mi minutes Turn	nutes. Dead after 1 Shut In Tool two (2) ail, Increasing 2 incl	off 1/2" in pail decreasing 5 minutes. After 60 turnes and had faint air nes (2") in bubble pail
I low Details						
Time / Pressure	/ Flow Rate	Measuremen	ts	Choke Type	Orifice Diameter	Units of measurement
n/a						
Shut-in 2	2,100.0	3,940.0	380	Shut in on fina Seat on Initial		show Lost upper Packer
Flow Details						
Time / Pressure	/ Flow Rate	Measuremen	ts	Choke Type	Orifice Diameter	Units of measurement
n/a						
Final Hydrostatic		28,649.0				

Recovery: 140 m Drilling Fluid (NGTS)

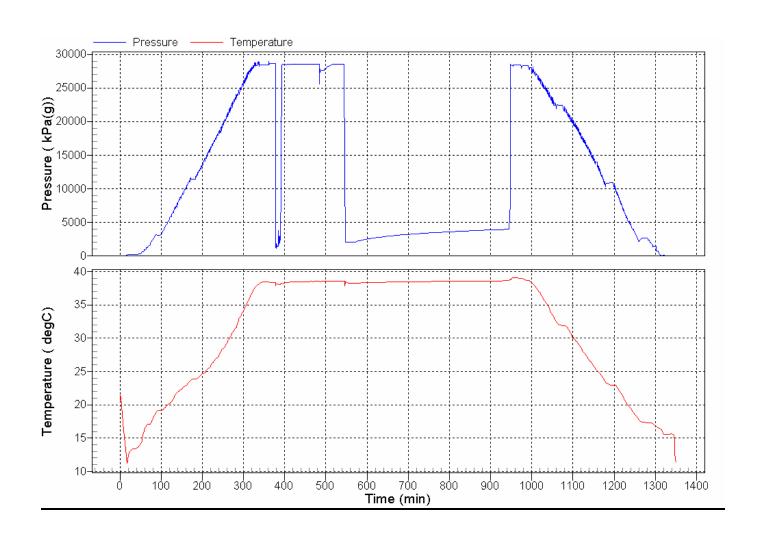
Analyses: Drilling fluid Samples caught 158 m, 55 m, 1.5 m above tool in pipe.

Remarks: Failed test due to leaking upper packer

VULCAN ROBINSONS #1

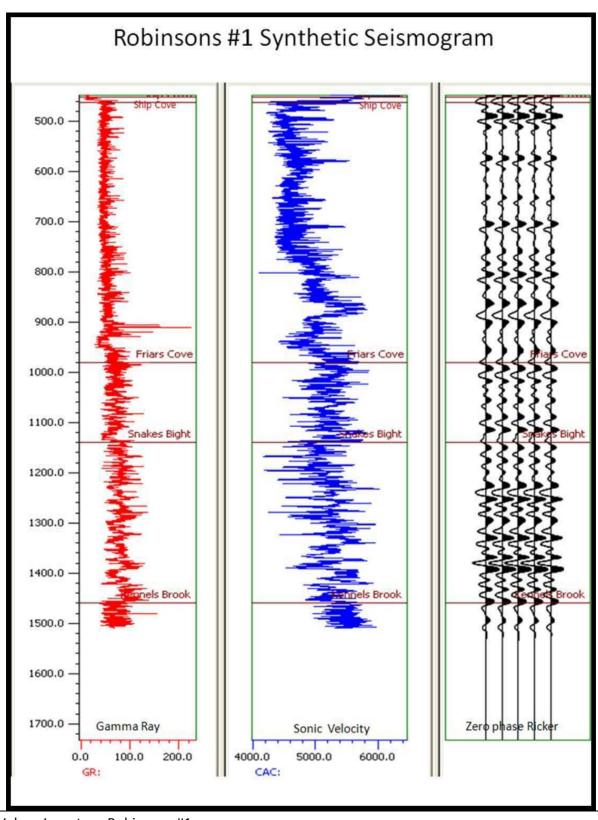
DST # 5 CHART

(See Written Report)



<u>2517 – 2572 m</u>

PENDIX 10: S	TINIMETIC	, SEISIVIIC	INFORIVIA	TION	



Vulcan Investcan Robinsons #1 Final Well Report Appendix



ZERO OFFSET VSP & ACOUSTIC LOG CALIBRATION

REPORT

for

Vulcan Minerals Inc.

Well: Vulcan Investcan Robinson #1 Location: Newfoundland, Canada

Report Status: **Final Report**Authors: Zhiqiang Luo
Reviewer: Nicholas Dray
Date: October 2009

VSFusion 10300 Town Park Drive, Houston, Texas, 77072, United States. Tel: +1-832-351-8175, Fax: +1-832-351-8628



based on accuracy	ce and have inferences for the cori	exercised the from acoustic rectness of a	eir best judgme al or other med	ent. However, asurements, we ons. As such,	since all interpo c cannot and we we shall not b	loyees have relie retations are opi e do not guarante e liable for any

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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 Robinson #1** well, located in Canada.

The VSP was acquired in two runs ensuring good coupling of the downhole geophone to the formation and avoiding operating behind multiple strings of casing.

The objectives of the VSP survey were to:

- Provide time-depth information
- Generate a VSP corridor stack

At the time of the 2^{nd} survey, the well had been drilled to depth of 3,560 m and cased to a depth of 2,058.5 m. All measured depths are referenced to the Kelly Bushing (KB.) elevation of 175.3 m above MSL. The ground elevation at the wellhead was 169 m above mean sea level.

The well had a maximum deviation of 13.24° at 3,560 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 1C in the back of this report. The display of the deviation survey is included (Figure 3).

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	30 – 2,055 m	131	1,143	ASR	Single 5 Level
2	VSP	1,005 – 3,555 m	110	840	ASR	2 Level MLR



1.2 DATA ACQUISITION

The data were collected in 2 runs.

Run1: The survey began at 11:20 hrs on August 16, 2009 and was finished at 03:00 hrs on August 17, 2009 recording between 30 m and 2,055 m MD.

Run2: The survey began at 11:12 *hrs* on October 4, 2009 and was finished at 23:03 *hrs* on same day, recording between 1,005 m and 3,555 m MD.

The source used for both runs of the ZVSP survey was 500 cu. In. airgun array. Table 2 is a summary of the source location information for the 2 runs. The elevation of the source was 169 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, single ASR downhole receiver tool was used to record the first survey; a 3-component, 2 level, ASR downhole receiver array was used to record the 2nd 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 going down the well until reaching a run 1 maximum depth of 2,055 m KB. The survey recording then proceeded as the geophone was raised to the shallowest station depth of 30 m KB. For the second run, the tool was stopped at a number of depths going down the well until reaching a maximum depth of 3,555 m KB. ZVSP survey recording then proceeded as the geophone was raised to the shallowest station depth of 1,950 m KB. The data from corresponding depth in both surveys yielded compatible results.

Data was gathered at 231 downhole receiver stations. There were a total of 1,983 files acquired during the two surveys. Data was recorded for 6 seconds using a one millisecond sampling rate.

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

The source information is listed in table 2.

Table 2: Source information

Run	•			Source Elevation	-	Instrument
#	Type	Easting	Northing	from Sea Level	Below Ground Level	Delay
1	ZVSP	-39.6 m	224.5 m	169 m	2.1 m	3.13 ms
2	ZVSP	-39.6 m	224.5 m	169 m	2.4 m	3.13 ms

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, caliper and gamma ray logs over the interval of 1,999.4 – 3,555.7 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**2 (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 4 and Figure 5.

The FK analysis shows that while some downgoing energy extends as high as 80 Hz, much of the energy is confined to below 50 Hz. Similarly, the upgoing energy is indistinct but does not extend beyond the band of 60 Hz noise.

There are large amounts of high amplitude noise present on many traces above 2,430 m MDKB. It was not possible to attenuate this noise whilst retaining valid data beneath so some traces were removed. Strong tube waves on the rest of the data were attenuated using dip median filter. A display of the edited VSP total wavefield is shown in *panel 3* of Enclosure 3.

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)-45(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 4 of Enclosure 3.

The residual upcoming wavefield after wavefield separation is shown in panel 6 of Enclosure 3.

Residual Upcoming Wavefield Enhancement

The residual upcoming wavefield is time aligned to two-way time. A 5-trace dip 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)-45(36) Hz (dB/Oct) bandpass filter was applied to the enhanced upcoming wavefield. The upcoming wavefield is shown in *panel 8* 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 700 ms operator was used to collapse the downgoing wavetrain to a unit spike. A zero phase 10(18)-45(36) Hz (dB/Oct) bandpass filter was applied to the deconvolved data. The deconvolved downgoing and upcoming wavefields are shown in *panel 5* and *panel 9* 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 5-trace dip 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)-45(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 10* 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 11 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.

Bandpass filters of 10(18)-45(36), 10(18)-35(36), 10(18)-25(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 four 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: Vulcan Minerals Inc.

Well: Vulcan Investcan Robinson #1

Location: Canada

Survey Type: Zero Offset VSP

Date Survey Completed: 17 August, 2009 for run 1

4 October, 2009 for run 2

Wireline Contractor: Baker Atlas

Casing: 45 mm from 0 to 829 m MDKB

311 mm from 829 to 2.058 m MDKB

Total Depth: 3,555 m MDKB

Elevations:

Kelly Bushing Elevation: 175.3 m above sea level Ground Elevation at Wellhead: 169 m above mean sea level

Seismic Datum: Ground level

Recording System:

Type: VSProwess
Format: RCD
Record Length: 6 seconds
Sample Rate: 1 msec

Geophone

Geophone Type: 3-component, single level ASR for run1

3-component, 2 level, ASR for run2

Total Number of Levels Occupied: 231 levels
Shallowest Geophone Level: 30 m (K.B.)
Deepest Geophone Level: 3,555 m (K.B.)

Quality of Geophone Breaks: poor above 2,430 m depth level

Source:

Table 3: Source information

Run	Survey	Source from	Source from	Source Elevation	Source Depth
#	Type	Easting	Northing	from Sea Level	Below Ground Level
1	ZVSP	-39.6 m	224.5 m	169 m	2.1 m
2	ZVSP	-39.6 m	224.5 m	169 m	2.4 m

Personnel:

Seismic Observer: Lloyd Hicks Client Representative: Phonse Fagan



2 VELOCITY SURVEY COMPUTATIONS

2.1 VELOCITY SURVEY

CLIENT VULCAN MINERALS INC. WELL ROBINSON #1 AREA CANADA CONTRACTOR BAKER ATLAS SURVEY DATE 16 AUG 09 SURVEY UNITS RCVR REF. ELEVATION 175.30 M ABOVE SEA LEVEL DATUM ELEVATION 169.00 M ABOVE SEA LEVEL 175.30 M ABOVE SEA LEVEL KB ELEVATION WELL GROUND ELEVATION 169.00 M ABOVE SEA LEVEL DATUM CORRECT. VELOCITY 1500.00 M /SEC SOURCE TYPE AIR GUN GEOPHONE TYPE ANALOG SAMPLE RATE 1.00 MSEC 445 MM FROM 0 TO 829 M WELL CASING 311 MM FROM 829 TO 2,058 M VULCAN MINERALS INC.

WELL ROBINSON #1

2.2 DIRECTIONAL SURVEY CONTRACTOR BAKER ATLAS SURVEY DATE 16 AUG 09

REFERENCE ELEVATION 175.30 M ABOVE SEA LEVEL

MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
0.00 103.36 131.01 158.44 185.36 212.92 234.43 254.23 268.64 282.12 295.43 308.96 323.03 337.43 350.99 364.29 377.43 391.66 405.24 419.00 432.77 446.38 460.67 474.04 487.33 500.97 514.76 529.05 542.90 556.44 570.53 584.01 597.01 610.61 624.10 638.29 652.34 665.87 679.36	0.00 103.32 130.94 158.33 185.20 212.71 234.17 253.94 268.32 281.78 295.07 308.57 322.62 336.99 350.53 363.81 376.93 391.14 404.71 418.46 432.22 445.81 460.07 473.41 486.66 500.26 514.00 528.22 542.01 555.47 569.48 582.91 595.87 609.44 622.89 637.05 651.07 664.58 678.05	(M) 0.00 0.19 0.25 0.25 0.25 0.33 0.49 0.70 0.89 1.13 1.40 1.67 1.98 2.32 2.63 2.94 3.25 3.53 3.75 4.00 4.33 4.73 5.22 5.72 6.21 6.72 7.24 7.74 8.27 8.87 9.53 10.14 10.78 11.45 12.05 12.66 13.23 13.75 14.27	(M) 0.00 2.36 3.72 5.18 6.79 8.54 9.88 11.09 11.92 12.67 13.40 14.13 14.90 15.71 16.44 17.14 17.80 18.37 18.80 19.24 19.75 20.35 21.07 21.86 22.75 23.72 24.79 26.02 27.30 28.61 29.91 30.95 31.70 32.39 33.11 33.86 34.58 35.22 35.74
695.52 706.77 720.73 732.34 761.95 775.58 789.59 806.75 831.82 844.74	694.19 705.43 719.38 730.98 760.56 774.18 788.18 805.33 830.38 843.29	14.91 15.37 15.94 16.39 17.59 18.16 18.67 19.14 19.68	36.15 36.29 36.38 36.39 36.54 36.71 36.97 37.42 38.16 38.50

MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
858.31 872.27 885.85 899.79 913.43 927.28 941.80 954.57 968.34 982.51 995.79 1009.85 1023.38 1036.69 1100.00 1170.00 1265.00 1362.00 1456.00 1456.00 14907.00 2054.00 2103.00 2157.00 2211.36 2266.45 2295.75 2309.42 2323.33 2336.99 2350.08 2364.18 2378.64 2391.38 2405.14 2418.82 2432.99 2446.36	856.85 870.81 884.38 898.32 911.95 925.80 940.31 953.08 966.84 981.01 994.28 1008.34 1021.86 1035.17 1098.46 1168.46 1263.45 1360.43 1454.42 1646.37 1700.35 1799.32 1905.30 2052.24 2101.21 2155.17 2209.46 2264.31 2293.43 2307.01 2320.85 2334.46 2347.50 2361.54 2375.95 2388.65 2402.37 2416.01 2430.14 2443.48	NORTH = + (M) 20.23 20.49 20.77 21.06 21.36 21.67 21.98 22.27 22.55 22.84 23.15 23.48 23.76 24.04 25.26 25.93 26.82 28.48 30.08 33.71 34.94 37.00 39.00 42.62 44.10 45.94 47.67 49.34 50.40 50.90 51.34 51.67 52.02 52.42 52.78 53.07 53.31 53.49 53.69 53.86	EAST = + (M) 38.81 39.10 39.39 39.68 39.94 40.17 40.39 40.59 40.79 40.97 41.14 41.35 41.54 41.71 42.41 42.79 43.30 44.25 45.17 47.25 47.95 49.14 50.29 52.36 53.21 54.26 52.86 48.01 44.94 43.51 42.17 41.01 39.91 38.72 37.55 36.59 35.58 34.59 33.56 32.60
2446.36	2443.48	53.86	32.60
2459.80	2456.88	54.01	31.61
2473.38	2470.42	54.14	30.54
2487.56	2484.55	54.29	29.40
2500.86	2497.81	54.46	28.32
2514.52	2511.42	54.59	27.27
2528.81	2525.68	54.71	26.28
2541.93	2538.77	54.83	25.45
2556.18	2553.00	54.96	24.58
2569.27	2566.05	55.11	23.67
2582.84	2579.58	55.31	22.62
2597.24	2593.94	55.55	21.62
2610.98	2607.66	55.80	20.87
2624.19	2620.85	56.09	20.23
2638.93	2635.57	56.46	19.42
2652.53	2649.13	56.80	18.52
2665.21	2661.77	57.09	17.59
2678.97	2675.50	57.42	16.76
2692.92	2689.44	57.77	16.23



MEASURED DEPTH	VERTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)	(M)	(M)	(M)
(M) 2706.24 2720.92 2734.01 2761.60 2775.45 2789.61 2802.43 2817.22 2830.18 2843.25 2857.80 2871.65 2885.27 2899.02 2912.43 2926.39 2940.21 2953.98 2966.90 2980.69 2994.76 3008.46 3021.91 3035.44 3048.91 3063.35 3076.72 3090.57 3104.38 3117.81 3131.54 3145.49 3158.75 3172.05 3186.28 3200.41 3213.77 3227.96 3241.40 3254.57	(M) 2702.75 2717.40 2730.47 2757.99 2771.80 2785.92 2798.72 2813.49 2826.43 2839.48 2853.99 2867.81 2881.40 2895.12 2908.50 2942.44 2936.2	NORTH = +	EAST = +
3241.40 3254.57 3268.54 3282.21 3295.66 3309.34 3323.39 3337.46 3352.25	3235.85 3248.86 3262.68 3276.21 3289.50 3303.03 3316.92 3330.81 3345.39	78.08 78.98 79.84 80.70 81.64 82.57 83.50 84.46 85.50	-22.62 -24.49 -26.29 -28.07 -29.89 -31.73 -33.60 -35.60 -37.89
3365.50 3378.04 3391.88 3406.35 3419.41 3433.19 3448.17 3460.80 3474.10 3488.23 3501.86	3358.42 3370.72 3384.28 3398.45 3411.22 3424.70 3439.36 3451.72 3464.72 3478.52 3491.84	86.49 87.51 88.68 89.95 91.15 92.41 93.75 94.89 96.16 97.51 98.79	-40.10 -42.30 -44.78 -47.46 -49.91 -52.48 -55.24 -57.58 -60.10 -62.79 -65.37



<u>Vulcan Minerals Inc.</u> Well: Vulcan Investcan Robinson #1

MEASURED D	EPTH VEI	RTICAL DEPTH	NORTH-SOUTH COORDINATE NORTH = +	EAST-WEST COORDINATE EAST = +
(M)		(M)	(M)	(M)
3516.0 3529.2 3542.5 3560.0	6 5	3505.66 3518.59 3531.55 3548.55	100.22 101.63 103.04 104.86	-68.05 -70.58 -73.17 -76.67

VULCAN MINERALS INC.

WELL ROBINSON #1

2.3 SOURCE / RECEIVER GEOMETRY TABLE

RECEIVER REFERENCE ELEVATION = 175.30 M ABOVE SEA LEVEL SOURCE / RECEIVER COORDINATES ARE REFERENCED TO WELLHEAD SOURCE / RECEIVER (S-R) OFFSET IS PLAN VIEW

RECEIVER				SOURCE				OFFSET
MEASURED DEPTH	VERT. DEPTH	X COORD.	Y COORD.	ELEV	DEPTH (DC)	X COORD.	Y COORD.	(S-R)
(DGM) (M)	(M)	(M)	(M)	(ES) (M)	(DS) (M)	(M)	(M)	(M)
30.0	30.0	0.7	0.1	169.0	2.1	-12.1	68.4	69.6
60.0 90.0	60.0 90.0	1.4 2.1	0.1 0.2	169.0 169.0	$2.1 \\ 2.1$	-12.1 -12.1	68.4 68.4	69.6 69.7
120.0	119.9	3.2	0.2	169.0	2.1	-12.1	68.4	69.7
150.0	149.9	4.7	0.2	169.0	2.1	-12.1	68.4	70.2
180.0	179.8	6.5	0.2	169.0	2.1	-12.1	68.4	70.7
195.0	194.8	7.4	0.3	169.0	2.1	-12.1	68.4	70.9
210.0	209.8	8.4	0.3	169.0	2.1	-12.1	68.4	71.1
225.0	224.8	9.3	0.4	169.0	2.1	-12.1	68.4	71.3
240.0	239.7	10.2	0.5	169.0	2.1	-12.1	68.4	71.5
255.0 270.0	254.7 269.7	11.1 12.0	0.7 0.9	169.0 169.0	$2.1 \\ 2.1$	-12.1 -12.1	68.4 68.4	71.6 71.7
285.0	284.7	12.8	1.2	169.0	2.1	-12.1	68.4	71.7
300.0	299.6	13.6	1.5	169.0	2.1	-12.1	68.4	71.7
315.0	314.6	14.5	1.8	169.0	2.1	-12.1	68.4	71.7
330.0	329.6	15.3	2.1	169.0	2.1	-12.1	68.4	71.7
345.0	344.5	16.1	2.5	169.0	2.1	-12.1	68.4	71.7
360.0	359.5	16.9	2.8	169.0	2.1	-12.1	68.4	71.7
375.0 390.0	374.5 389.5	17.7 18.3	3.2 3.5	169.0 169.0	$2.1 \\ 2.1$	-12.1 -12.1	68.4 68.4	71.7 71.7
405.0	404.5	18.8	3.5	169.0	2.1	-12.1	68.4	71.7
420.0	419.5	19.3	4.0	169.0	2.1	-12.1	68.4	71.6
435.0	434.4	19.8	4.4	169.0	2.1	-12.1	68.4	71.6
450.0	449.4	20.5	4.9	169.0	2.1	-12.1	68.4	71.5
465.0	464.4	21.3	5.4	169.0	2.1	-12.1	68.4	71.4
480.0	479.4	22.3	5.9	169.0	2.1	-12.1	68.4	71.3
495.0 510.0	494.3 509.3	23.3 24.4	6.5 7.1	169.0 169.0	$2.1 \\ 2.1$	-12.1 -12.1	68.4 68.4	71.3 71.4
525.0	524.2	25.7	7.1	169.0	2.1	-12.1	68.4	71.4
540.0	539.1	27.0	8.2	169.0	2.1	-12.1	68.4	71.9
555.0	554.0	28.5	8.8	169.0	2.1	-12.1	68.4	72.1
570.0	569.0	29.9	9.5	169.0	2.1	-12.1	68.4	72.3
585.0	583.9	31.0	10.2	169.0	2.1	-12.1	68.4	72.5
600.0	598.9	31.9	10.9	169.0	2.1	-12.1	68.4	72.4
615.0 630.0	613.8 628.8	32.6 33.4	11.6 12.3	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	72.3 72.3
645.0	643.7			169.0		-12.1		72.3
660.0	658.7	34.9			2.1			72.3
675.0	673.7	35.6	14.1	169.0	2.1			72.3
690.0	688.7	36.0	14.7	169.0	2.1		68.4	72.1
705.0	703.7	36.3	15.3	169.0	2.1	-12.1	68.4	71.8
720.0	718.7	36.4	15.9	169.0	2.1	-12.1	68.4	71.5
735.0	733.6	36.4	16.5	169.0	2.1	-12.1	68.4	71.0
750.0 765.0	748.6 763.6	36.5 36.6	17.1 17.7	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	70.7 70.3
780.0	778.6	36.8	18.3	169.0	2.1	-12.1	68.4	70.3
795.0	793.6	37.1	18.8	169.0	2.1		68.4	69.9
810.0	808.6	37.5	19.2	169.0	2.1	-12.1	68.4	69.9



RECEIVER				SOURCE			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)
DEPTH (DGM) (M) 825.0 840.0 855.0 870.0 885.0 900.0 915.0 930.0 945.0 960.0 975.0 990.0 1005.0 1020.0 1035.0 1050.0 110.0 1125.0 1140.0 1155.0 1170.0 1185.0 1170.0 1185.0 1200.0 1215.0 1230.0 1245.0 1290.0 1305.0 1320.0 1335.0 1350.0 1365.0 1380.0 1395.0 1410.0	DEPTH (M) 823.6 838.6 853.5 868.5 898.5 913.5 928.5 943.5 958.5 1003.5 1018.5 1048.5 1063.5 1078.5 1108.5 1123.5 1138.5 1153.5 1168.5 1183.5 1153.5 1168.5 1183.5	COORD. (M) 38.0 38.4 38.7 39.1 39.4 39.7 40.0 40.2 40.4 40.7 41.3 41.5 41.7 41.9 42.0 42.2 42.4 42.5 42.5 42.6 42.7 42.8 43.0 43.1 43.2 43.3 43.4 43.5 43.7 43.8 44.0 44.1 44.3 44.6 44.7	COORD. (M) 19.5 19.9 20.2 20.4 20.8 21.1 21.4 21.7 22.1 22.4 22.7 23.0 23.4 23.7 24.0 24.3 24.6 24.9 25.2 25.4 25.5 25.6 25.8 25.9 26.1 26.2 26.4 26.5 26.6 27.0 27.5 27.8 28.0 27.2 27.5 27.8 28.0 29.3	(ES) (M) 169.0	(DS) (M) 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	COORD. (M) -12.1	COORD. (M) 68.4 68.4 68.4 68.4 68.4 68.4 68.4 68.	(M) 70.0 70.0 70.1 70.1 70.2 70.2 70.1 70.0 70.0 69.9 69.8 69.7 69.6 69.5 69.5 69.5 69.5 69.4 69.4 69.4 69.4 69.3 69.3 69.3 69.3 69.3 69.3 69.3 69.3
1425.0 1440.0 1455.0 1470.0 1485.0	1423.4 1438.4 1453.4 1468.4 1483.4	44.9 45.0 45.2 45.3 45.5	29.6 29.8 30.1 30.3 30.6	169.0 169.0 169.0 169.0	2.1 2.1 2.1 2.1 2.1	-12.1 -12.1 -12.1 -12.1 -12.1	68.4 68.4 68.4 68.4	69.0 68.9 68.9 68.9
1500.0 1515.0 1530.0 1545.0 1560.0 1575.0 1590.0 1605.0 1620.0 1635.0	1498.4 1513.4 1528.4 1543.4 1558.4 1573.4 1603.4 1618.4 1633.4 1648.4	45.6 45.8 46.0 46.1 46.3 46.5 46.6 46.8 46.9 47.1 47.3	30.9 31.2 31.5 31.8 32.0 32.3 32.6 32.9 33.2 33.5 33.8 34.1	169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0	2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	-12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1	68.4 68.4 68.4 68.4 68.4 68.4 68.4 68.4	68.8 68.8 68.8 68.8 68.8 68.8 68.7 68.7



RECEIVER				SOURCE			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)
1680.0 1695.0	1678.4 1693.4	47.7 47.9	34.4 34.8	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	68.7 68.7
1710.0	1708.3	48.0	35.1	169.0	2.1	-12.1	68.4	68.7
1725.0	1723.3	48.2	35.4	169.0	2.1	-12.1	68.4	68.7
1740.0 1755.0	1738.3 1753.3	48.4 48.6	35.7 36.0	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	68.8 68.8
1770.0	1768.3	48.8	36.4	169.0	2.1	-12.1 -12.1	68.4	68.8
1785.0	1783.3	48.9	36.7	169.0	2.1	-12.1	68.4	68.8
1800.0	1798.3	49.1	37.0	169.0	2.1	-12.1	68.4	68.8
1815.0 1830.0	1813.3 1828.3	49.3 49.5	37.3 37.5	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	68.8 68.8
1845.0	1843.3	49.6	37.8	169.0	2.1	-12.1	68.4	68.9
1860.0	1858.3	49.8	38.1	169.0	2.1	-12.1	68.4	68.9
1875.0 1890.0	1873.3 1888.3	49.9 50.1	38.4 38.7	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	68.9 68.9
1905.0	1903.3	50.3	39.0	169.0	2.1	-12.1	68.4	69.0
1920.0	1918.3	50.5	39.3	169.0	2.1	-12.1	68.4	69.0
1935.0 1950.0	1933.3 1948.3	50.7 50.9	39.7 40.1	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	69.0 69.1
1965.0	1963.3	51.1	40.1	169.0	2.1	-12.1	68.4	69.1
1980.0	1978.3	51.3	40.8	169.0	2.1	-12.1	68.4	69.2
1995.0	1993.3	51.5 51.7	41.2	169.0	2.1	-12.1	68.4	69.2
2010.0 2025.0	2008.3 2023.3	52.0	41.5 41.9	169.0 169.0	2.1 2.1	-12.1 -12.1	68.4 68.4	69.3 69.3
2040.0	2038.2	52.2	42.3	169.0	2.4	-12.1	68.4	69.4
2055.0	2053.2	52.4	42.7	169.0	2.4	-12.1	68.4	69.4
2070.0 2085.0	2068.2 2083.2	52.6 52.9	43.1 43.6	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	69.5 69.6
2100.0	2098.2	53.2	44.0	169.0	2.4	-12.1	68.4	69.7
2115.0	2113.2	53.4	44.5	169.0	2.4	-12.1	68.4	69.7
2130.0 2145.0	2128.2 2143.2	53.7 54.0	45.0 45.5	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	69.8 70.0
2160.0	2158.2	54.2	46.0	169.0	2.4	-12.1	68.4	69.9
2175.0	2173.1	53.8	46.5	169.0	2.4	-12.1	68.4	69.4
2190.0 2205.0	2188.1 2203.1	53.4 53.0	47.0 47.5	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	68.9 68.4
2220.0	2218.1	52.1	47.9	169.0	2.4	-12.1	68.4	67.4
2235.0	2233.0	50.8	48.4	169.0	2.4	-12.1	68.4	66.0
2250.0 2265.0	2247.9 2262.9	49.5 48.1	48.8 49.3	169.0 169.0	2.4 2.4	-12.1 -12.1	68.4 68.4	64.6 63.2
2280.0	2277.8	46.6	49.8	169.0	2.4	-12.1	68.4	61.5
2295.0	2292.7	45.0	50.4	169.0	2.4	-12.1	68.4	59.9
2310.0 2325.0	2307.6 2322.5	43.5 42.0	50.9 51.4	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	58.2 56.7
2340.0	2327.5	40.8	51.8	169.0	2.4	-12.1	68.4	55.4
2355.0	2352.4	39.5	52.2	169.0	2.4	-12.1	68.4	54.1
2370.0 2385.0	2367.3 2382.3	38.2 37.1	52.6 52.9	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	52.8 51.5
2400.0	2302.3	36.0	53.2	169.0	2.4	-12.1	68.4	50.4
2415.0	2412.2	34.9	53.4	169.0	2.4	-12.1	68.4	49.3
2430.0 2445.0	2427.2 2442.1	33.8 32.7	53.6 53.8	169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	48.2 47.1
2445.0	2442.1	32.7	53.8	169.0 169.0	2.4	-12.1 -12.1	68.4	47.1
2475.0	2472.0	30.4	54.2	169.0	2.4	-12.1	68.4	44.8
2490.0	2487.0	29.2	54.3	169.0	2.4	-12.1	68.4	43.6
2505.0 2520.0	2501.9 2516.9	28.0 26.9	54.5 54.6	169.0 169.0	$2.4 \\ 2.4$	-12.1 -12.1	68.4 68.4	42.4 41.3

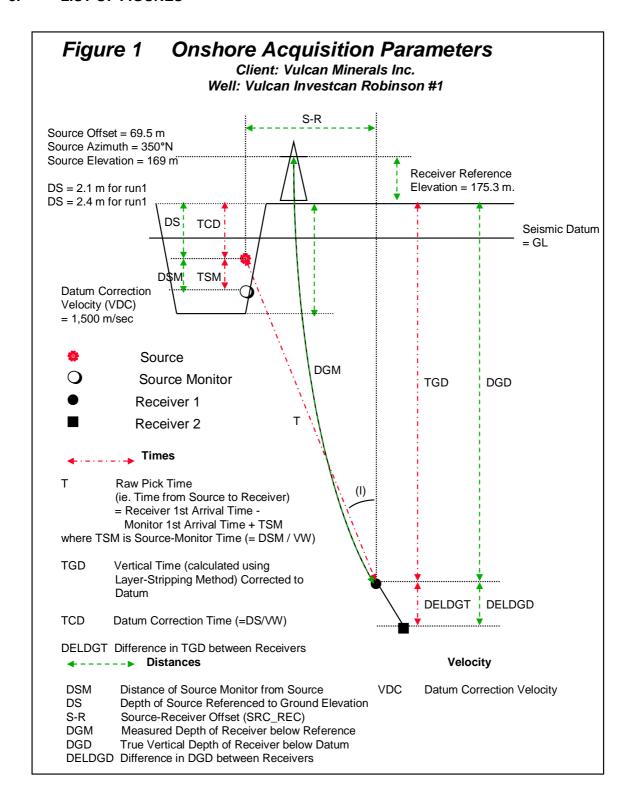


	- RECEIV	ER			SOUR	CE		OFFSET
MEASURED DEPTH	VERT. DEPTH	X COORD.	Y COORD.	ELEV	DEPTH	X COORD.	Y COORD.	(S-R)
(DGM) (M)	(M)	(M)	(M)	(ES) (M)	(DS) (M)	(M)	(M)	(M)
DEPTH (DGM) (M) 2535.0 2550.0 2565.0 2580.0 2595.0 2610.0 2625.0 2640.0 2655.0 2700.0 2715.0 2730.0 2745.0 2760.0 2775.0 2790.0 2805.0 2820.0 2835.0 2850.0 2895.0 2895.0 2910.0 2925.0 2940.0 2925.0 2940.0 2955.0 2970.0 2985.0 3000.0 3015.0 3030.0 3045.0 3075.0 3090.0 3105.0	DEPTH (M) 2531.9 2546.8 2561.8 2561.7 2696.7 2636.6 2666.5 2681.5 2696.5 2711.5 2726.5 2741.4 2756.4 2756.4 2771.4 2786.3 2801.3 2816.3 2831.2 2846.2 2861.2 2876.1 2995.9 3010.9 3025.9 3040.8 3055.7 3070.6 3085.6 3100.5	COORD. (M) 25.9 24.0 22.8 21.8 20.9 20.2 19.3 16.5 16.0 15.3 14.6 11.5 10.4 9.5 8.8 8.0 7.1 6.2 5.4 4.5 3.6 2.8 2.3 1.7 0.9 0.1 -0.7 -1.5 -2.4 -3.6 -4.9 -6.2 -7.3 -8.4	COORD. (M) 54.8 55.1 55.5 56.5 57.6 58.4 59.5 59.7 59.9 60.5 61.5 62.9 63.3 63.5 64.9 65.3 66.1 68.8 69.7	(ES) (M) 169.0	(DS) (M) 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4	COORD. (M) -12.1	COORD. (M) 68.4 68.4 68.4 68.4 68.4 68.4 68.4 68.	(M) 40.3 39.4 38.4 37.3 36.2 35.3 34.5 31.4 30.6 29.9 29.2 28.3 27.3 26.3 25.2 24.1 23.3 22.6 21.8 20.8 19.7 18.8 15.9 15.3 14.7 13.9 12.9 11.2 10.0 8.7 7.3 5.9 4.8 3.9
3120.0 3135.0 3150.0 3165.0 3180.0 3195.0 3210.0 3225.0 3240.0 3255.0 3270.0 3285.0 3300.0 3315.0 3345.0 3360.0 3375.0	3115.5 3130.4 3145.3 3160.2 3175.1 3190.0 3204.9 3219.7 3234.5 3249.3 3264.1 3279.0 3293.8 3308.6 3323.4 3338.2 3353.0 3367.7	-9.4 -10.6 -11.9 -13.2 -14.6 -16.1 -18.0 -20.1 -22.4 -24.5 -26.5 -28.4 -30.5 -32.5 -34.5 -36.8 -39.2 -41.8	70.6 71.4 72.2 72.9 73.8 74.7 75.8 76.9 78.0 79.0 79.9 80.9 81.9 82.9 84.0 85.0 86.1 87.3	169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0 169.0	2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4	-12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1 -12.1	68.4 68.4 68.4 68.4 68.4 68.4 68.4 68.4	3.4 3.3 3.7 4.6 5.9 7.5 9.4 11.7 14.1 16.3 18.4 20.6 22.8 25.0 27.3 29.7 32.3 35.2



	- RECEIV	ER			SOUR	CE		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)
3390.0	3382.4	-44.4	88.5	169.0	2.4	-12.1	68.4	38.1
3405.0	3397.1	-47.2	89.8	169.0	2.4	-12.1	68.4	41.1
3420.0	3411.8	-50.0	91.2	169.0	2.4	-12.1	68.4	44.3
3435.0	3426.5	-52.8	92.6	169.0	2.4	-12.1	68.4	47.4
3450.0	3441.2	-55.6	93.9	169.0	2.4	-12.1	68.4	50.4
3465.0	3455.8	-58.4	95.3	169.0	2.4	-12.1	68.4	53.5
3480.0	3470.5	-61.2	96.7	169.0	2.4	-12.1	68.4	56.7
3495.0	3485.1	-64.1	98.1	169.0	2.4	-12.1	68.4	59.9
3510.0	3499.8	-66.9	99.6	169.0	2.4	-12.1	68.4	63.1
3525.0	3514.4	-69.8	101.2	169.0	2.4	-12.1	68.4	66.3
3540.0	3529.1	-72.7	102.8	169.0	2.4	-12.1	68.4	69.7
3555.0	3543.7	-75.7	104.3	169.0	2.4	-12.1	68.4	73.0

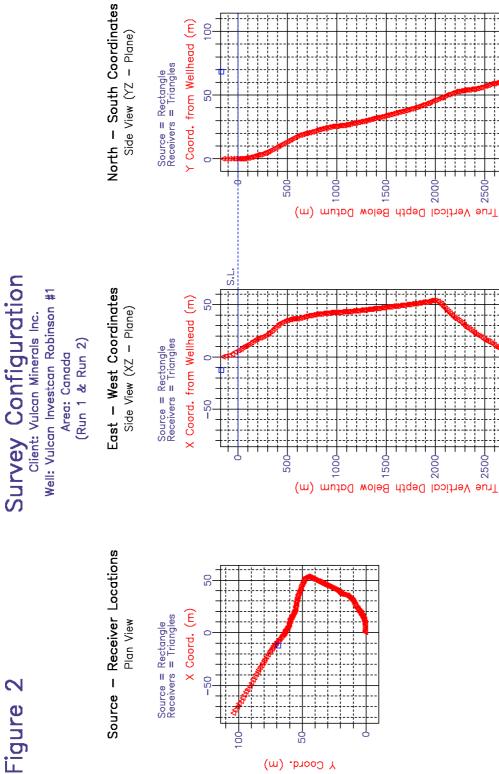
3. LIST OF FIGURES





3000-

3000





1500-

Survey Configuration Client: Vulcan Minerals Inc.

Well: Vulcan Investcan Robinson #1

Area: Canada (Run 1)





Y Coord, from Wellhead (m)

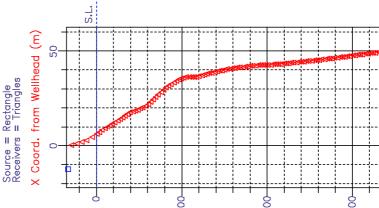
Source = Rectangle Receivers = Triangles



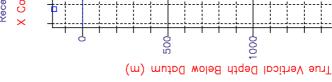
Source - Receiver Locations

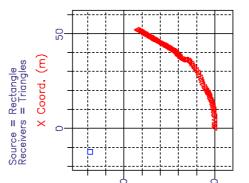
Plan View





True Vertical Depth Below Datum (m)





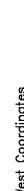
Y Coord. (m)

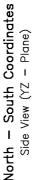
3000-

Figure 2B

Survey Configuration Client: Vulcan Minerals Inc.

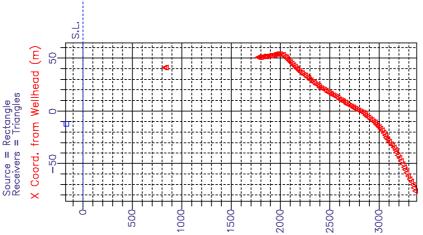
Well: Vulcan Investcan Robinson #1 Area: Canada (Run 2)









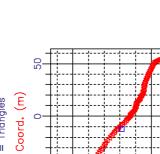


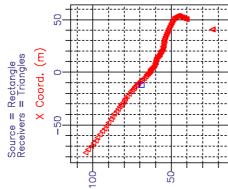
True Vertical Depth Below Datum (m)

True Vertical Depth Below Datum (m)



Source - Receiver Locations





VSFusion

Y Coord. (m)



3500

3500

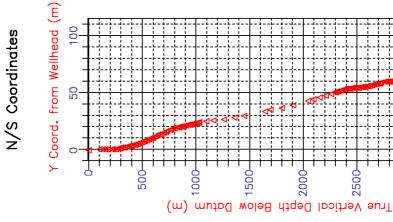
3000

Directional Survey Display Client: Vulcan Minerals Inc.

Well: Vulcan Investcan Robinson #1

Area: Canada

E/W Coordinates



X Coord, from Wellhead (m) True Vertical Depth Below Datum (m)

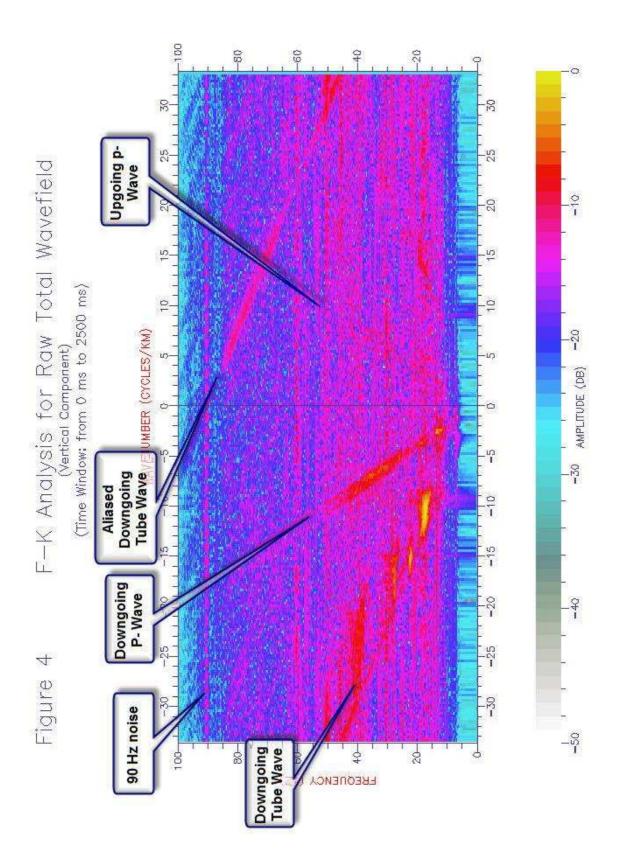


X Coord. (m) Plan View

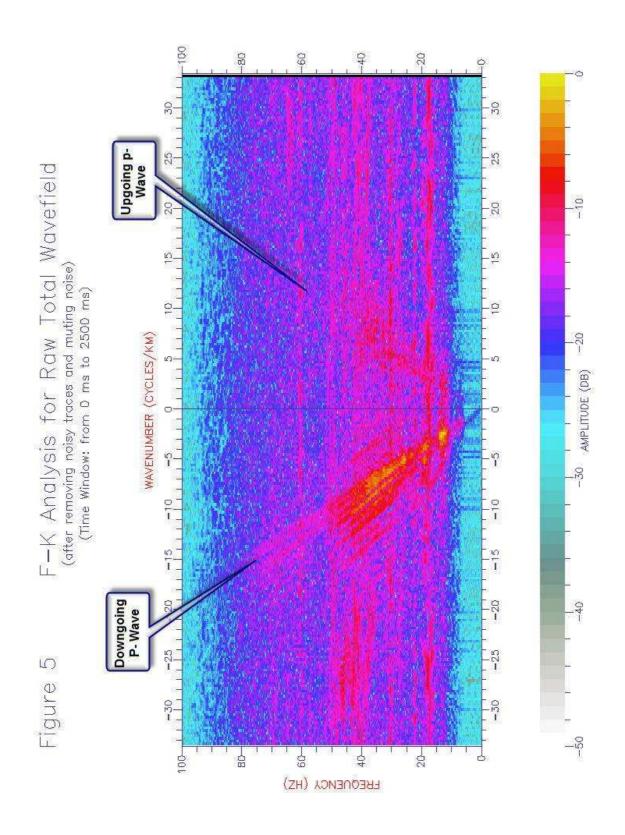
Figure 3

Y Coord. (m)









PENDIX 12	: EMPLOY	EE BENE	FITS SUN	IMARY	

Vulcan Investcan Robinsons #1: Drilling Operations

	Resid	dence	
Week	NL	Other	Total
1	24	5	29
2	26	6	32
3	23	9	32
4	24	5	29
5	23	5	28
6	21	1	22
7	24	5	29
8	24	11	35
9	20	3	23
10	19	3	22
11	18	4	22
12	18	4	22
13	19	4	23
14	19	2	21
15	21	4	25
16	18	8	26

Average number of workers on site each week	26
Percentage of workers residents of NL	81.2%
Percentage of workers non-residents of NL	18.8%

Week		1: 29	June - 5 July	7			2: (6 July - 12 Ju	ıly	
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	7			1	1	7			1
Supervisors	1	7	1	7	2					0
Rig Mangers	1	7	1	7	2	1	7	1	4	2
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	1	7	1	2	2			1	7	1
Mud Loggers					0					0
MWD/Directional					0	5	7			5
Wireline Logging					0					0
Cementing					0			2	2	2
Testing					0					0
Casing Handling			2	3	2			2	2	2
Administration					0	1	2			1
Security	2	5			2	1	7			1
Heavy Equipment Operators	5	7			5	5	4.25			5
Welders & Helpers	1	6			1					0
Fuel Hauler	1	2			1	1	2			1
Winterization					0					0
Waste Disposal	1	1			1	1	1			1
Total	24		5		29	26		6		32

Week		3: 13	July - 19 Ju	ıly			4: 20	July - 26 J	uly	
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	7			1	1	7			1
Supervisors					0					0
Rig Mangers			1	7	1			1	7	1
Drillers	2	7			2	2	7			2
Floorhands	6	7	2	7	8	8	7			8
Geologists			1	7	1			1	7	1
Mud Loggers					0					0
MWD/Directional	2	7			2	2	7			2
Wireline Logging					0					0
Cementing			3	7	3			3	1	3
Testing					0					0
Casing Handling	2	6	2	6	4					
Administration	1	2			1	1	2			1
Security	1	7			1	1	7			1
Heavy Equipment Operators	5	4			5	5	4			5
Welders & Helpers	1	2			1	2	2			2
Fuel Hauler	1	3			1	1	2			1
Winterization					0					0
Waste Disposal	1	1			1	1	1			1
Total	23		9		32	24		5		29

Week		5: 2	27 July - 2 A	Aug			6:	3 Aug - 9 A	ug	
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	7			1					0
Supervisors					0					0
Rig Mangers			1	7	1	1	7			1
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	1	2	1	5	2	1	2	1	7	2
Mud Loggers					0					0
MWD/Directional	2	3			2	0	0			0
Wireline Logging					0					0
Cementing			3	1	3					0
Testing					0					0
Casing Handling										
Administration	1	3			1	1	3			1
Security	1	7			1	1	7			1
Heavy Equipment Operators	4	3.5			4	4	3.5			4
Welders & Helpers	1	1			1	1	1			1
Fuel Hauler	1	2			1	1	2			1
Winterization					0					0
Waste Disposal	1	1			1	1	3			1
Total	23		5		28	21		1		22

Week		7: 1	0 Aug - 16	Aug			8: 1	7 Aug - 23	Aug	Total 1 0 1 2 8 1 0 2 5 2 2 1 1 4 1			
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	7			1	1	7			1			
Supervisors					0					0			
Rig Mangers	1	7			1			1	7	1			
Drillers	2	7			2	2	7			2			
Floorhands	8	7			8	8	7			8			
Geologists	0	0	1	7	1	0	0	1	7	1			
Mud Loggers					0					0			
MWD/Directional	0	0			0	1	2	1	5	2			
Wireline Logging	3	4	2	4	5	3	2	2	2	5			
Cementing					0			2	4	2			
Testing			2	5	2			2	4	2			
Casing Handling								2	5	2			
Administration	1	3			1	1	3			1			
Security	1	7			1	1	7			1			
Heavy Equipment Operators	4	4			4	4	4			4			
Welders & Helpers	1	3			1	1	3			1			
Fuel Hauler	1	3			1	1	3			1			
Winterization					0					0			
Waste Disposal	1	2			1	1	1			1			
Total	24		5		29	24		11		35			

Week		9: 2	24 Aug - 30	Aug			10:	31 Aug - 6	Sept	
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	7			1	1	7			1
Supervisors					0					0
Rig Mangers			1	7	1			1	7	1
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	0	0	1	7	1	0	0	1	7	1
Mud Loggers					0					0
MWD/Directional	1	7	1	7	2	1	7	1	7	2
Wireline Logging	0	0	0	0	0	0	0	0	0	0
Cementing			0	0	0			0	0	0
Testing			0	0	0			0	0	0
Casing Handling			0	0				0	0	
Administration	1	3			1	1	2			1
Security	1	7			1	0	0			0
Heavy Equipment Operators	3	4			3	2	2			2
Welders & Helpers	1	2			1	1	1			1
Fuel Hauler	1	3			1	1	3			1
Winterization					0					0
Waste Disposal	1	1			1	2	3			2
Total	20		3		23	19		3		22

Week		1	1: 7-13 Sep	ot			12	2: 14 - 20 Se	ept	
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	7			1	1	7			1
Supervisors			1	7	1			1	7	1
Rig Mangers			1	7	1	1	4	1	3	2
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	0	0	1	7	1	0	0	1	7	1
Mud Loggers					0					0
MWD/Directional	1	7	1	7	2	1	7	1	7	2
Wireline Logging	0	0	0	0	0	0	0	0	0	0
Cementing			0	0	0			0	0	0
Testing			0	0	0			0	0	0
Casing Handling			0	0				0	0	
Administration	1	2			1	1	1			1
Security	0	0			0	0	0			0
Heavy Equipment Operators	1	2			1	1	3			1
Welders & Helpers	1	3			1	1	2			1
Fuel Hauler	1	3			1	1	3			1
Winterization					0					0
Waste Disposal	2	4			2	1	3			1
Total	18		4		22	18		4		22

Week		13	3: 21 - 27 Se	ept			14:	28 Sept - 4	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	7			1	1	7			1
Supervisors	1	7	1	1	2	1	7	0	0	1
Rig Mangers	1	4	1	3	2	1	7	0	0	1
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	0	0	1	7	1	0	0	1	7	1
Mud Loggers					0					0
MWD/Directional	1	7	1	7	2	1	7	1	7	2
Wireline Logging	0	0	0	0	0	0	0	0	0	0
Cementing			0	0	0			0	0	0
Testing			0	0	0			0	0	0
Casing Handling			0	0				0	0	
Administration	1	1			1	1	1			1
Security	0	0			0	0	0			0
Heavy Equipment Operators	1	3			1	1	2			1
Welders & Helpers	1	1			1	1	2			1
Fuel Hauler	1	2			1	1	2			1
Winterization					0					0
Waste Disposal	1	4			1	1	1			1
Total	19		4		23	19		2		21

Week		1	5: 5 - 11 O	ct			10	6: 12 - 15 O	ct	
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	7			1	1	7			1
Supervisors	1	7	0	0	1	1	7	1	1	2
Rig Mangers	1	7	0	0	1	1	7	0	0	1
Drillers	2	7			2	2	7			2
Floorhands	8	7			8	8	7			8
Geologists	0	0	1	7	1	0	0	1	4	1
Mud Loggers					0					0
MWD/Directional	1	5	1	5	2	0	0	0	0	0
Wireline Logging	2	4	2	4	4	0	0	0	0	0
Cementing			0	0	0			3	3	3
Testing			0	0	0			1	5	1
Casing Handling			0	0		0		2	3	
Administration	1	1			1	1	1			1
Security	0	0			0	0	0			0
Heavy Equipment Operators	1	2			1	1	2			1
Welders & Helpers	1	2			1	1	4			1
Fuel Hauler	1	2			1	1	1			1
Winterization	Ī				0					0
Waste Disposal	1	1			1	1	2			1
Total	21		4		25	18		8		24

APPENDIX 13:	OPERATIONA	L COST SUM	MARY	
_	_			
Vulcan Investcan Ro Final Well Report A				

Well: Vulcan Investcan Robinsons #1 Well Cost Summary (All funds in CAD)

Category	С	ost (108 days)
Lease Preparation	\$	338,718.06
Rig & Camp Move	\$	687,997.00
Fuel & Boiler	\$	252,974.31
Crew Travel & Subsistence	\$	174,820.00
Drilling - Rat hole & Mouse hole & Cellar a	\$	60,300.00
Drilling - directional	\$	533,407.46
Drilling - day work \$14,500 + extra	\$	1,530,631.24
Drilling - Bit & BHA	\$	364,644.00
Drilling - mud and chemicals	\$	225,410.95
Cementing Services	\$	241,325.73
Casing	\$	884,211.74
Welding	\$	13,796.05
Power tongs and casing tools	\$	152,705.07
Trucking and hauling	\$	298,065.00
Wellhead	\$	150,159.48
Safety services	\$	20,685.00
Drill stem testing	\$	102,521.98
Logging	\$	457,626.00
Cutting Disposal	\$	82,074.31
Drilling supervision	\$	187,155.02
Engineering supervision	\$	570,839.00
Geological supervision	\$	162,387.00
Equipment Rentals	\$	69,013.29
Tanks	\$	25,790.00
Centrifuge	\$	196,691.51
Ssub / Jars / Stab	\$	106,052.80
Pason and gas detection equipment	\$	110,027.35
Communication	\$	13,846.00
Misc. Rentals	\$	152,497.00
Survey equipment & Monels	\$ \$	12,998.31
Demobilization		850,000.00
Overhead	\$	94,698.00
Inventory (casing)	\$	218,427.45
TOTAL	\$	9,342,496.11

PPENDIX 14: COPIES OF GOVERNMENT APPROVALS						



Government of Newfoundland and Labrador Department of Natural Resources Energy Branch

DRILLING PROGRAM APPROVAL - APPLICATION

Pursuant to sections 8 and	9 of the Petroleum and Nati	ural Gas Act(I,) ,	VV	-CAN	MINERALS	7,00
as operator on behalf of	VULCAN	MINER	ALS	1/06		, holding a
subsisting licence, permit of	or lease issued pursuant to th	ne Petroleum Regul	ations(2), namel	y; #03-106	(licence, permit, or lea	se ‡)
hereby applies for approva	al to conduct a drilling progra	am using the drillin	g rig Stonehan	n Drilling Rig#	11	
and equipment and proced	fures described in the detaile	d program dated.	9-Jun-09			
	s Representative hereby decein and in the attached detail		accurate and co		the]
Operator'	's Representative Pal	hd + APPRO	Date:	Vu	e 15/07	
Pursuant to sections 8 and	19 of the Petroleum and Nat	ural Gas Act, the o	perator named ir	the Applicati	on is hereby	
authorized to conduct the	proposed drilling program s	ubject to the follow	ing conditions:			
1. This Drilling Program	Approval shall, unless other	wise extended or ter	rminated, expire	upon the	day of July	, 20 [O]
2. This Authorization shall	Il be prominently displayed a	at the well site at al	l times during w	hich operation	s are being conducted;	
	esponsibility, as required purperator to the Minister of N		of the Petrolei	um Drilling Re	gulations (3),	
	the equipment and procedure uipment or procedures is app				June 21, 2009	Broadwelline Menter a note a service des ervicios de la constitución
5. The operator shall com	nply with such other condition	ons as are appended	to this Approva	for a		
Signed:	note -		Effective Date:	209	7-07-03	-ya-gankah kelimberikan
Drilling Program Appr	roved No. Z009-116	- 02				
(1) - (R.S.N	I.L. 1990, c. P-10)					
(2) - CNR 1	151/96					

(3) - CNR 1150/96

SCHEDULE "A" TO DRILLING PROGRAM APPROVAL #2009-116-02 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.

July 3, 2009



Government of Newfoundland and Labrador Department of Natural Resources Energy Branch

AUTHORITY TO DRILL A WELL - APPLICATION

Pursuant to se	llina Regulations (I	CNR 1150/96)	VULCAN MINER	ALS INC.	, as operator,			
			be known as ROB		A A STATE OF THE S			
			d in the well program		0 09			
	ce or Lease to whi			Petroleum Exploration Permit #03-	106			
***************************************	western Newfour			CO-0	RDINATES UTM (N A D 27)			
Field/Pool: B	ay St. George			Long:	Northing 343046.987			
Drilling Rig.	Stoneham rig #11	nongoning and the second second		l.at:	Easting: 379774.568			
Rig Type: Te	elescopic Triple			ELEVATION	DEPTH			
Duilling Cons	ractor: Stoneham	Drilling		□ RT 🔀 KB □ RF 174	T.D.: 3600 m			
Draining Com	racioi Sunchani	Dining		G.L.: 169m	TVD: 3600 m			
	EST	IMATES		TARGE	T HORIZONS			
Spud Date: 2 Days on Loc	. =	Well	Cost:8M	All vertical well targets: Ship Cove at 800m, Friar's Cove	@ 2100m and Snake's Bight @2600m			
***************************************	elementaria de descrito de esta contrata e elementaria e esta entre en esta de la composición del composición de la composición de la composición del composición de la composición de la composición del composición de la composición de la composición de la composición de la composición de la composición de la composición dela composición del composición del composición de la composición d		EVALU	ATION PROGRAM				
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		f	C (12 F)	Cementing Program				
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O.D. (mm)	Weight (kg/m)	Grade <u>X-56</u>	Setting Depth (m)	As per attached program	ng Program			
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SCHEDULE "A" TO AUTHORITY TO DRILL A WELL #2009-116-02-01 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 commencing drilling operations out of the conductor, the Operator shall supply a statement signed by a Registered Professional Engineer attesting that the drilling rig and associated equipment, including the diverter assembly and the PVT system and fluid returns monitoring system have been installed, inspected and are operational, and pursuant to Section 34 of the Regulations, meet all regulatory requirements and will perform the drilling operations as outlined in the Drilling Program. In addition, the statement must confirm that 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.

- 9. Prior to commencing drilling operations out of the surface casing, the Operator shall supply a statement signed by a Registered Professional Engineer attesting that the drilling rig and associated drilling equipment, including the BOP system and manifold has been installed, inspected and is operational, and pursuant to Section 34 of the Regulations, meets all regulatory requirements and will perform the drilling operations as outlined in the Drilling Program. These statements must be accompanied by a site inspection report completed by a person qualified to provide it. These statements will be accompanied, if not previously provided to the Department, with documentation showing the BOP system meets necessary certification requirements.
- 10. If deficiencies are noted in the inspection report provided in items 8 and/or 9 above, follow-up report(s) must be submitted by the site supervisor attesting that work to correct the deficiencies has been completed.
- 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 ensure crew is familiar with diverting procedures and related equipment.

19. 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.

July 3, 2009

Shane Halley

From: Stoyles, Mike [mikestoyles@gov.nl.ca]

Sent: September 9, 2009 5:02 PM

To: Shane Halley

Subject: BOP Pressure Testing

Shane,

In response to your request for exemption to pressure testing BOPs:

Mike,

As per the Consolidated NL Regulations section 62 (v) we are required to pressure test the BOPs every 15 drilling days. The last pressure test was conducted using the cementing equipment on August 23rd. The next BOP test is required today. We had recieved the pumping equipment required to do the BOP tests ourselves on the rig without cementing equipment but over the Labor Day weekend we we not able to get a air compressor mobilized to test the BOPS during the last trip. We respectfully ask the department's approval to extend the pressure testing requirement for our next trip.

Best Regards,

Shane E. Halley Project Manager Vulcan Minerals Inc. (709) 754-3186 Ext. 225 shalley@vulcanminerals.ca GMT -3.5

GMT -3.5

Please be advised that waiver has been granted for pressure testing at this time with the stipulation that testing be conducted at the next trip.

Regards,

Mike

[&]quot;This email and any attached files are intended for the sole use of the primary and copied addressee(s) and may contain privileged and/or confidential information. Any distribution, use or copying by any means of this information is strictly prohibited. If you received this email in error, please delete it immediately and notify the sender."



Government of Newfoundland and Labrador Department of Natural Resources Energy Branch

WELL TERMINATION RECORD

WELL DATA

Vell Name:	Vulcan Investcan F	Sohinsons #1				CO-OR	DINAT	TES	
	Tunus invested in				and the same and	NATIONAL CONTRACTOR			
Operator:	Vulcan Minerials Ir	nc.		Lon	9:	7	Northing	TM (NAD 27)	
Orilling Rig:	Stoneham Rig #11			Lat			Easting:		
Rig Type :	Telescopic Triple				ELEVA	TION	DEPTH		
-				RT KB RF 6.3 m M.D.: 3560 m					
Orilling Contractor: Stoneham Drilling					.: 169 m		T.V.D. :	3548.55 m	
				FOR INTERNAL USE ONLY					
Spud Date:						of interpreting sins, the rig releas		154 (5) of the Petroleum	
.D. Date:	02-Oct-2009				ining riegolatio	its/tite sig releas	ic date is	deerned to be.	
	Date: 15-Oct-2009	200	-	=	October	15,20	90		
	Termination:	Suspension	I Abandanna	- 10		Other:			
urpose or	Termination.	Suspension	CASING AND	-					
0.D. ()	WEIGHT (low/on)	CDADE	CETTING DEPTH	()		CEMENTII	NC DET	All C	
O.D. (mm)	WEIGHT (kg/m)	GRADE	SETTING DEPTH	(m)		CEMENTI	AG DET	AIL3	
508	139.9	X-56	88		27.7 t Class "A"	+ 3% CaCl @ 18	71 kg/m3	3	
339.7	90.8	K-55	829			+ 3% CaCl @ 16			
244.5	64.7	L-80	2058.5			10.1 t Class "G" \			
177.8	38.7	L-80	3547.6		18.2t Fill-Lite*	"+11t Class "G" v	v/2% Mici	rsil @1901kg/m3	
Тур	e of Plug	Inter	val Fe	lt/Pres	dated sure Tested		Cemen	t and Additives	
Lost Circu	ation/Overpressur	e Zones:	None encountered				n a li		
	Downhole C	ompletio	n/Suspension Equi	ipmen	t (Describe Be	low and Attack	n Sketch	of Wellbore)	
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			Di	ECLAR	ATION				
			NTATIVE hereby de			sis of personal k	nowledg	e of operations undertake	
Name	Merich		RACY]	Title /	rend	len'	V	
Signed	Joff X	par	ely		Date No	010/0	9.		
	1/2	51-A	AL ACK	NOW	LEDGEMENT	<i>(</i>	20	10	
Acknowled	dged by:	Direct	or		Date:	an 6	,00	10	

Revised January 2007 FRM-62



Government of Newfoundland and Labrador Department of Environment and Conservation

Lands Branch Western Regional Lands Office

JUN 18, 2008

In Reply Please Quote File Reference No. 3014503

VULCAN MINERALS INC. 333 DUCKWORTH ST ST. JOHN'S NL A1C 1G9

Dear Sir:

RE: APPLICATION NO.: 132338

TYPE: Licence PURPOSE: Other

LOCATION: Robinsons

This will acknowledge receipt of the above referenced application for a Crown title. The application has now been registered and via a copy of this letter, the Department and/or agencies on the attached schedule have been asked to forward their comments and recommendations on your application to the Regional Lands Office.

Your application will be reviewed and a final decision will be made when the recommendations have been received from these Departments and/or agencies.

To assist inspectors in locating the area applied for and to avoid delays in processing your application it is advisable to place your name and application number on the site. Your application is being processed for the site indicated on the attached map.

Please note that the land is not to be occupied until you receive a fully executed title document.

If you require any additional information concerning the processing of this application please contact the Regional Lands Office at the address below.

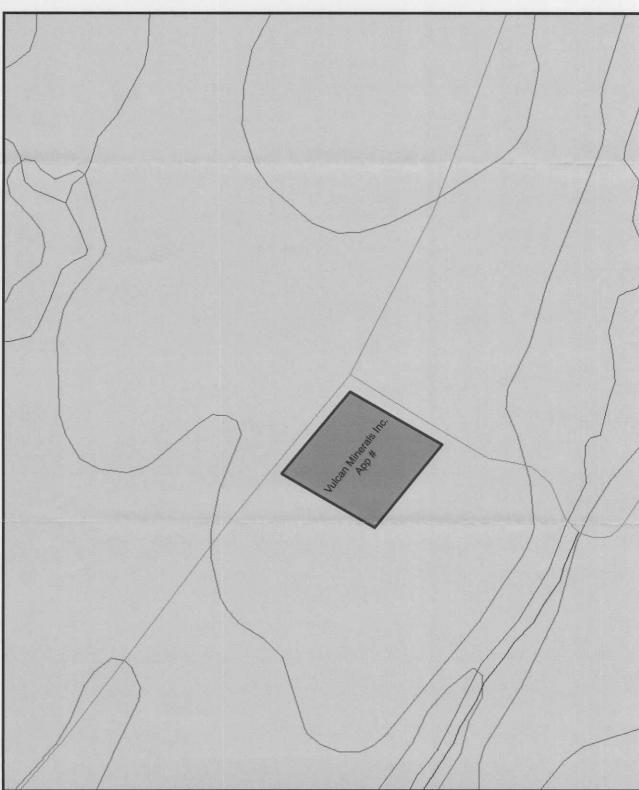
Yours truly,

COOLENE BRAKE LANDS OFFICER

Attachment(s)

Dept. of Transportation & Works	709-635-4100
Dept. of Natural Resources	709-647-3761
Dept. of Natural Resources	709-729-6408
Dept of Environment and Conservation	709-729-2563
Dept of Tourism, Culture & Rec. (Htg)	709-729-2462
Department of Natural Resources	709-637-2257

Government of Newfoundland & Labrador Department of Environment & Conservation



Newfoundland Labrador

NOTE TO USERS

The information on this map was compiled from land surveys registered in the Crown Lands Registry.

Since the Registry does not contain information on all land ownership within the Province, the information depicted cannot be considered complete.

The boundary lines shown are intended to be used as an index to land titles issued by the Crown. The accuracy of the plot is not sufficient for measurement purposes and does not guarantee title.

Users finding any errors or omissions on this map sheet are asked to contact the Crown Titles Mapping Section, Howley Building Higgins Line St. John's Newfoundland.

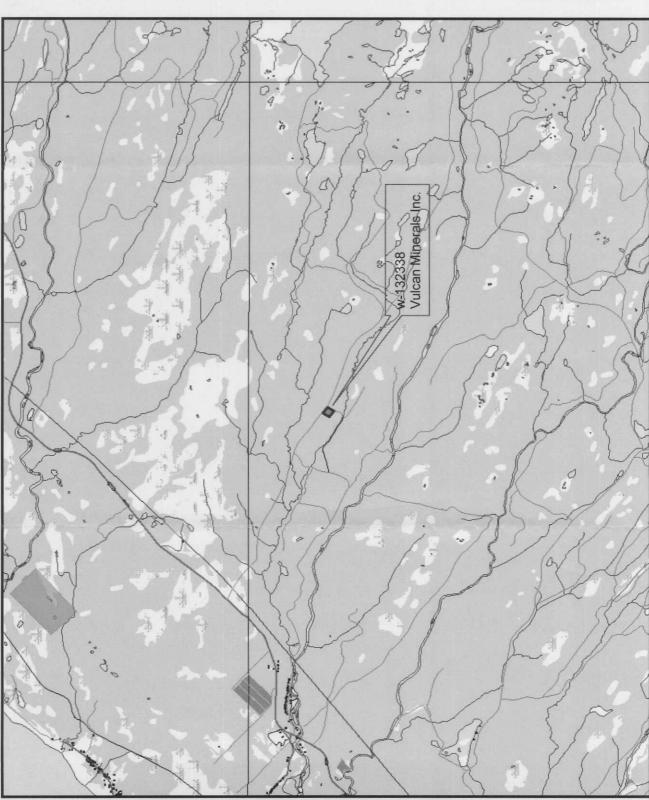
Users finding error or omissions can contact the Crown Titles Mapping Section by telephone at 729-0061. Some titles may not be plotted due to Crown Lands volumes missing from the Crown Lands registry or not plotted due to insufficient survey information.

The User hereby indemnifies and saves harmless the Minister, his officers employees and agents from and against all claims, demands, liabilities, actions or cause of actions alleging any loss, injury, damages and matter (including claims or demands for any widiation of copyright or intellectual property) arising out of any missing or intellectual property arising out of any missing or intellectual property arising out of any missing or intellectual property arising out of any missing or intellectual property arising out of any missing or intellectual property arising out of any missing or intellectual property arising out or any arising or any loss of profits or contracts or any other loss of any kind as a result.

For inquiries please contact a Regional Lands Office. Corner Brook - 637-2387 Gander - 256-1400

Goose Bay - 896-2488 St. John's - 729-2654 Clarenville - 466-4074

Government of Newfoundland & Labrador Department of Environment & Conservation



Newfoundland Lahrador

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The User hereby indemnifies and aseves harmless the Minister, his officers, employees and agents from and against all claims, demands, liabilities, actions or cause of actions actions alleging any loss, injury, damages and matter (including claims or demands for any wlotation of copyright or intellectual property) arising out of any missing or intellectual property arising out of any missing or the Minister, his or her officers, employees and agents shall not be liable for any loss of profits or contracts or any other loss of any kind as a result.

For inquiries please contact a Regional Lands Office. Corner Brook - 637-2387

Gander - 256-1400

Goose Bay - 896-2488 St. John's - 729-2654 Clarenville - 466-4074



Government of Newfoundland and Labrador Department of Environment and Conservation

DATE: November 27, 2008 FILE:

Water Rights Section Water Resources Management Division Department of Environment and Conservation PO Box 8700 St. John's NL A1B 4J6

NOTIFICATION OF ACCEPTANCE OF TEMPORARY WATER USE LICENCE [Temporary Water Withdrawal from Unnamed Body of Water - Robinsons # 1 Property]

Temporary Water Use Licence No. WUL-08-101 issued on November 27, 2008 and valid until July 31, 2009 .

As a Licensee of Temporary Water Use Licence No. WUL-08-101 , issued pursuant to the Water Resources Act, Vulcan Minerals Inc. (the "Licensee"), agrees to accept this Licence for the stated duration and abide by all terms and conditions, reservations, exceptions and provisions stated therein. The Licensee acknowledges that failure to abide by the terms and conditions, reservations, exceptions and provisions indicated in Appendices A and B and the maps for Exploration Approval E080163 of the Licence and the Water Resources Act will render the Licence null and void, place the Licensee and/or their agent(s) in violation of the Water Resources Act and regulations thereunder and cause the Licensee to be responsible for any and all remedial measures which may be prescribed by the Department of Environment and Conservation.

Signed, sealed, and delivered by Vulcan Minerals Inc.

in accordance with its rules and

regulations in that behalf at Stolding NELD., this 3 day

of Dec., 2008 in the presence

of:

Seal:

The attached Water Use Licence is not valid unless the Licensee completes and Important: turns this notification to the address above within ten (10) days of receipt.



Government of Newfoundland and Labrador

Department of Environment and Conservation

TEMPORARY WATER USE LICENCE (Industrial - Mineral Exploration)

Pursuant to the Water Resources Act, SNL 2002 cW-4-01

Date of Issuance: November 27, 2008

No: WUL-08-101

Licensee: Vulcan Minerals Inc.

333 Duckworth St.

St. John's NL A1C 1G9

Attention: Mr. Patrick Laracy, Exploration Manager

Re: Temporary Water Withdrawal from Unnamed Body of Water (Robinsons # 1 Property)

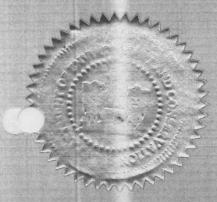
The Minister of Environment and Conservation (the "Minister") hereby grants a non-exclusive water right to: **Vulcan Minerals Inc.** (the "Licensee") to temporarily withdraw water from unnamed body of water (48°13'52"N, 58°37'07"W), as indicated in the map for Exploration Approval E080163 (attached), and use it for the purpose of supplying water to the Licensee's mineral exploration project (**Robinsons #1 Property**) in reference to the application received on November 18, 2008.

This Temporary Licence is subject to the terms and conditions, reservations, exceptions, and provisions stated herein and the *Water Resources Act* and regulations thereunder. Appendices A and B and the map for exploration approval E080163 form part and parcel of this Temporary Licence.

This Temporary Licence does not release the Licensee from the obligation to obtain appropriate approvals, permits or licences from other concerned federal and provincial agencies.

The Licensee shall complete and return the attached Notification of Acceptance of Temporary Water Use Licence (attached) to the Water Rights Section of the Department of Environment and Conservation within ten (10) days of receipt of this Temporary Licence.

Failure to comply with the terms and conditions, reservations, exceptions, and provisions set out herein will render this Temporary Licence null and void, place the Licensee and/or its agents in violation of the *Water Resources Act*, and cause the Licensee to be responsible for any and all remedial measures which may be prescribed by the Department of Environment and Conservation.



Jun Teeled Minister

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

APPENDIX A

NO: _ FILE:	WUL-08-101
	514

TERMS AND CONDITIONS FOR TEMPORARY WATER USE LICENCE

- In consideration of the terms and conditions, reservations, exceptions, and provisions herein contained, the Minister hereby grants the Licensee a non-exclusive right to temporarily withdraw water from unnamed body of water (48°13'52"N, 58°37'07"W), as indicated in the map for Exploration Approval E080163 (attached), and use it for the purpose of supplying water to the Licensee's mineral exploration project (Robinsons # 1 Property) in reference to the application received on November 18, 2008.
- Ownership of water rights remains with the Crown and is not transferred. The Temporary Water Use Licence only provides permission for the Licensee to use water for the purpose indicated in this Temporary Licence.
- 3. The non-exclusive rights and privileges hereby demised by this Temporary Licence shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the Licensee without obtaining prior written approval from the Minister.
- 4. The Licensee acknowledges and agrees that this Temporary Licence does not grant any interest in land.
- 5. This Temporary Licence shall expire on July 31, 2009 or earlier if suspended or cancelled by the Minister. The Licensee may apply for an extension at least fifteen (15) days before the expiry of the initial term for continuing use of water.
- 6. The designated purpose of the temporary water use is "Industrial/Mineral Exploration".
- 7. The estimated daily water withdrawal from the said body of water shall not exceed 3,000 litres, subject to water availability without changing the hydraulic characteristics of the said body of water or impact on other existing water users. The Licensee shall not at any time withdraw and use amounts of water in excess of the need for the Licensee's mineral exploration activities, irrespective of the amount of water approved.
- 8. The Licensee shall not at any time impair, pollute or cause to be polluted the quality of water in the said body of water or any nearby body of water. Also, this Temporary Licence shall not be interpreted as granting any rights to cause adverse effect(s) on water in or outside the drilling activities areas and all operations must be carried out in a manner that prevents damage to land, vegetation, and body of water. The Water Resources Management Division of the Department of Environment and Conservation must be informed if drilling activities have a potential to impair water quality of the said body of water or any nearby body of water. In addition, any and all waste material that may result from drilling activities must be removed from drilling activities and disposed at a site approved by the regional Government Service Centre of the Department of Government Services. The Department of Government Services may require samples to be submitted for testing and analysis.

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION APPENDIX A (CONTINUED)

NO: WUL-08-101 FILE: 514

TERMS AND CONDITIONS FOR TEMPORARY WATER USE LICENCE

- 9. Water pumped or discharged from drilling activities, or any runoff or effluent directed out of the drilling activities areas, must have silt and turbidity removed by settling ponds, filtration, or other suitable treatment before discharging to any body of water. Effluent discharged into receiving waters must comply with the Environmental Control Water and Sewage Regulations, 2003.
- 10. Used drilling mud and cuttings must be collected in a closed system of settling tanks and disposed of at a site approved by the regional Government Service Centre of the Department of Government Services. This site must not be within 100 metres of any body of water. The water in the system must be recycled.
- 11. The Licensee shall keep records for water withdrawals and complete and file a form following the format of Appendix B with the Water Rights Section of the Department of Environment and Conservation within thirty (30) days of the completion of the mineral exploration activities.
- 12. The Licensee shall not construct any systems/works, make changes in the purpose, rates and amounts of water specified in this Temporary Licence, or divert the course or alter the physical features of the said body of water or any nearby body of water without the prior written permission of the Minister.
- 13. The Licensee shall keep all systems/equipment and vehicles used for drilling in clean and good condition and repair, free of oil, or other harmful substances that could impair water quality of any body of water and shall notify the Minister immediately if any problem arises which may adversely affect public safety or other existing water users. Also, the Licensee shall restore all areas that may be affected by drilling activities to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if necessary in the opinion of this Department.
- 14. The Licensee and the Licensee's contractor(s) are responsible for reporting any environmental problem encountered in connection with the said body of water or any nearby body of water to the Water Resources Division and environmental monitors within 24 hours. This includes, but is not limited to, any spillage of fuel, lubricant, drilling mud or any other material, siltation of water or depletion of any source of water used for any purpose in connection with the drilling activities.
- 15. The employees of the Department of Environment and Conservation, authorized by the Minister, may at all reasonable times during the term created by this Temporary Licence enter into the mineral exploration activities areas and the Licensee's designated place of business to inspect the systems/equipment, records, statements, and accounts, and shall be entitled to copy such information as may be required by the Minister in relation to this Temporary Licence.

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION APPENDIX A (CONTINUED)

NO:	WUL-08-101		
FILE:	514		

TERMS AND CONDITIONS FOR TEMPORARY WATER USE LICENCE

- 16. The Licensee shall pay the applicable charges or royalties for the use of water, if imposed under the *Water Resources Act*, during the term of this Temporary Licence.
- 17. The Licensee indemnifies and holds the Minister and Government harmless against any and all liabilities, losses, claims, demands, damages or expenses including legal expenses of any nature whatsoever whether arising in tort, contract, statute, trust or otherwise resulting directly or indirectly from the water rights granted under this Temporary Licence, systems/equipment in the mineral exploration activities areas, or any act or omission of the Licensee in the mineral exploration areas, or arising out of a breach or non-performance of any of the terms and conditions, and provisions of this Temporary Licence by the Licensee.
- 18. If the Licensee fails to perform, fulfil, or observe any of the terms and conditions, reservations, exceptions, and provisions of this Temporary Licence and/or Ministerial orders and guidelines, as determined by the Department of Environment and Conservation, the Minister may, after providing a ten (10) days notice by personal service or registered mail or facsimile to the Licensee at any time during the term created by this Temporary Licence, modify or cancel this Temporary Licence.
- 19. Should any provision of this Temporary Licence be unenforceable, it shall be considered separate and severable from the remaining provisions of this Temporary Licence which shall remain in force and be binding as though the provision had not been included.
- 20. This Temporary Licence is subject to the *Water Resources Act* and any regulations in effect thereunder from time to time and any other relevant legislation enacted by the Province of Newfoundland and Labrador in the future.
- 21. This Temporary Licence shall be construed and interpreted in accordance with all applicable laws of the Province Newfoundland and Labrador.
- 22. All notices to be given pursuant to the terms and conditions of this Temporary Licence shall be given in writing and delivered by facsimile with auto confirmation or registered mail. If a notice is delivered by facsimile, it is deemed to have been received on the day it was sent if that day is a normal business day, if not, it is deemed to have been received on the next normal business day. If a notice is sent by registered mail, it is deemed to have been received three days after the day it was mailed. The address and facsimile of the Licensee is:

Vulcan Minerals Inc.

333 Duckworth St. St. John's NL A1C 1G9 (709) 726-3946

The address and facsimile number of the Department of Environment and Conservation is: Water Rights Section

Department of Environment and Conservation

PO Box 8700

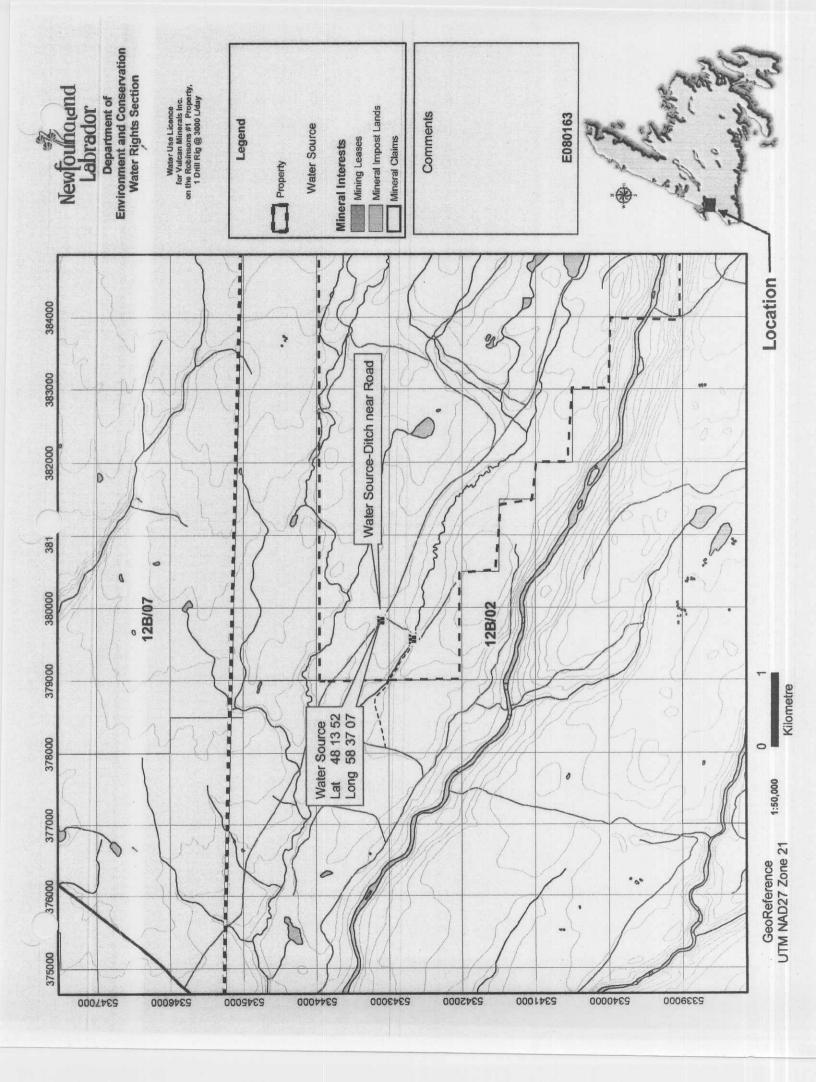
St. John's NL A1B 4J6

(709) 729-0320

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION APPENDIX B

Water Use Report to Department of Environment and Conservation

To:	Water Rights Section			No: WUL		
	Water Resources Management Division		File:		514	
	Department of Environment and Conservation	Authorized:	Nov	rember	27, 2	008
	PO Box 8700					
	St. John's NL AlB 4J6					
Re:	Temporary Water Withdrawal from Unnamed Body	of Water (Pohinsons	# 1 Dro	narrul		
-	report must be completed and filed within thirty (3			The same division in	-	ara1
-	ration activities. Provide the information required belonger		ipiction	or un	e min	Clai
CAPIOI	ation activities. From the information required being	•				
1.	Has the Licensee used water during the approved te	mporary period?				
			Yes		No	
	If no, explain (use extra sheet to provide more infor	rmation, if any)				
			4			
						-
2.	Does the Licensee wish to extend the non-exclusive	water rights for furt	ner temi	orary	nerio	19
1	Does the Discusse with to extend the non executive	water rights for furt	Yes		No	
	If no, explain (use extra sheet to provide more infor	rmation, if any).	100		110	
3.	Has the Licensee exceeded the estimated daily water	er withdrawal of tha				
	A during the approved temporary period?		Yes		No	
	If yes, explain in the space below (use extra sheet to	provide more inform	nation,	if any).	
	·					
	If no, report exact water withdrawal in the space be	low (use extra sheet	if neces	ssarv)		
	State the total volume of water used during the appr			oury).		
4.	Is there any other matter on which the Licens					
	Environment and Conservation regarding this Temp	orary Licence and its	Yes			
	If yes, explain (use extra sheet to provide more info	rmation if any)	ies		No	L
	if yes, explain (use extra sheet to provide more into	illiation, it any).				
	I/We acknowledge that the information contained in	this report are true a	and corr	ect.		
	n Minerals Inc.	Signature:				
	buckworth St.	Nama/Title				
St. J01	nn's NL A1C 1G9	Name/Title:				
	`	Date:				
		Date.		-		





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

February 25, 2009

E090029

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

Dear Mr. Halley:

Re: Exploration Approval (1 DDH) & Notification Work (Geology) for Vulcan Minerals Inc. on the Robinsons #1 Property,

NTS: 12B/01, 12B/02

Licence: 012501M

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. 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."
 - Companies are advised not to over-fly caribou if possible or to maintain an altitude of 300 metres over concentrations of caribou.
 - 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.
- 7. 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.

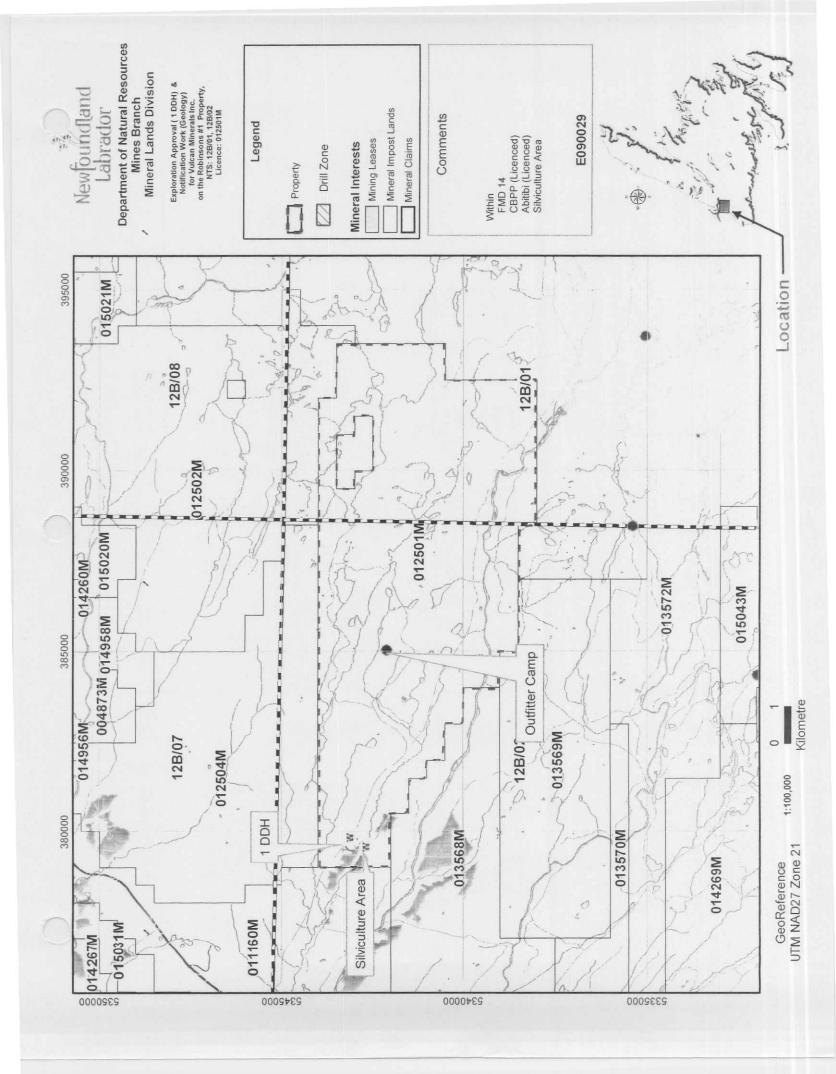
- 7. If trees have to be cut to access the sites then you are advised to contact the nearest Natural Resources, Forest Resources Branch, local office to obtain a cutting permit before starting your exploration program.
- Pursuant to Section 13 of the Forest Fire Regulations, industrial operations conducted on forest land during the
 forest fire season must be carried out under an operating permit available from the nearest district office of the
 Department of Natural Resources, Forest Resources Branch.
- 9. Your exploration program is within an area of licenced timber rights and you will want to avoid or mitigate impacts on their resource interest. You are advised to contact the office of Corner Brook Pulp and Paper (Steven Balsom 709-637-3027) before starting your mineral exploration.
- 10. This approval is due to expire on August 30, 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

Jim Hinchey, Manager of Mineral Rights Mark Lawlor, Forestry Steve Balsom, CBPP Mike Stoyles, Petroleum





Government of Newfoundland and Labrador

Department of Natural Resources

Office of the Minister

January 8, 2008

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

Dear Mr. Laracy:

RE: Exploration Permits 03-106 and 03-107

Further to your applications submitted December 3, 2007 please find enclosed fully executed copies of the extended Exploration Permits 03-106 and 03-107. The expiry date of these permits is February 12, 2010.

I wish you every success in your exploration activities.

Yours sincerely,

KATHY DUNDERDALE, MHA

Minister

Encls (2)



Government of Newfoundland and Labrador
Department of Natural Resources
Energy Branch



SCHEDULE C

	A	PERMIT OR SECONDARY	A		
Applicant: 23	3 DULKINOR	MINERALS 1	JOHN'S NI	1 100 11	<u> </u>
	thav	ST TOTALO	15	7 710 10	27
Geographical Area:	DH1	ps 1:50,000 or as otherwise re-	eVC		_
L L	YEARS (attach ma)	Sacandary Tarr	n: 2 YEA	105	
Initial Term:	1 Date: (FB 17	2003 Termin	nation Data: CEB I	2 2010	
(if applying for secondary		7000 Tellilli	nation Date. 1 CVO 1	0 0010	-
(11 app.) 116 111 areas.		Description of Lands			
SEE ATTACE	+ MENT 'A'	EXPLORATION as follows:	N PERMIT O	3-106	
Grid	Block	Section	Quadrant	Unit	
		Work Obligations			
The work obligations associa	ted with this exploration perr		NOT APPLIC	CABLE	7
The work obligations associa	The state of the s		101 1117	21112-12	=
					Ħ
	Day of the state of the Bar	relaum and Natural Cas Asta	- d - 11 d d d	- (-7	
I hereby apply for an Explora	tion Permit subject to the Pet	roleum and Natural Gas Act a	nd all regulations thereunde	1. SECONDALL	1 IERNI
Signed Tash	Maraca	Name:	PATRICIC J.	LARACY	
Title: PRESI	dent.	Company:		MINERALS 1	NC -
Date: DEZEMP	DER 3, 2007	Phone:	709.75	4. 3186	
		Authorization			
Terms and Conditions:		- Cartist Barrell			
Torrito and Container					
					-
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,					
		^			
Signed	madada	Date:			
Minister	of Natural Resources				
(or a market recognition				
				2	
		Explora	tion Permit No.:	3-106	1715

ATTACHMENT A-LANDS

Parcel #	Grid	Block	Sections*
11	UD	73	87-89, 97-99
38 800 ha	(UP)	74	80-89, 90-99
		75	80-89, 90-99
		83	07-09, 17-19, 27-29, 37-39, 47-49, 57-59, 67-69, 77-79, 87-89, 97-99
		84	00-09, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, 90-99
		85	00-09, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, 90-99
		93	07-09, 17-19, 27-29, 37-39, 47-49, 57-59, 67-69, 77-79
		94	00-09, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79

(VF) NAD 27 Block Identification

* Sections of land do not include any area of a park, reserve, fee-simple mining grant, or island along the coast. Sections only include areas within the application of section 6 of the *Petroleum Regulations*:

"These Regulations shall apply to those lands and submerged areas within the Province that lie landward of the ordinary low water mark along the open coast of the Province."

Al.



Government of Newfoundland and Labrador Department of Natural Resources

June 9, 2009

Shane Halley Drilling Project Manager Vulcan Minerals Inc.

Dear Mr. Halley:

RE: Surface Casing Waiver Request

Your request for exemption under Section 43 (1)(b), which states that surface casing is to be set "at a depth of not less than 150 metres and not more than 4 times the depth of the previous conductor casing or 500 metres, whichever is greater", is granted based on the following information requested by DNR staff and provided by Vulcan:

- Casing performance ratings from the manufacturer noting that the casing you have selected surpasses API minimum requirements.
- Offset well information for BSG #1 core hole with core description and identifying a lost circulation zone at 168m and hole integrity issues at 343m.

This information, along with Vulcan's two Hurricane wells to the northwest of the proposed location leaves a gap of approximately 150m without record. Due care and caution is required while drilling. Please ensure that a set of diverter procedures is provided with ADW/DPA documentation and that the rig crew is trained in the use of the diverter. Any encountered geohazards (lost circulation zones, hole stability issues, etc.) are to be included in the daily drilling reports.

Please note that this is approval for the surface casing to be set at ± 750 metres and full ADW/DPA documentation remains outstanding.

Yours sincerely,

Keith Hynes, P. Eng.

Director

Petroleum Engineering