

DISTRICT I
1626 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 86210
Phone: (575) 746-1283 Fax: (575) 746-9720

DISTRICT III
1000 Rio Brasso Rd., Artec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3400 Fax: (505) 476-3402

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

☒ AS-DRILLED
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21200		*Pool Code 98174	*Pool Name ALAMITO MANCOS N (OIL)
*Property Code 325267	*Property Name NMOCD NORTH ALAMITO UNIT		*Well Number 233H
*GRID No. 371838	*Operator Name DJR OPERATING, LLC		*Elevation 6945'

DISTRICT III

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	28	23N	7W		1317'	SOUTH	43'	EAST	SANDOVAL

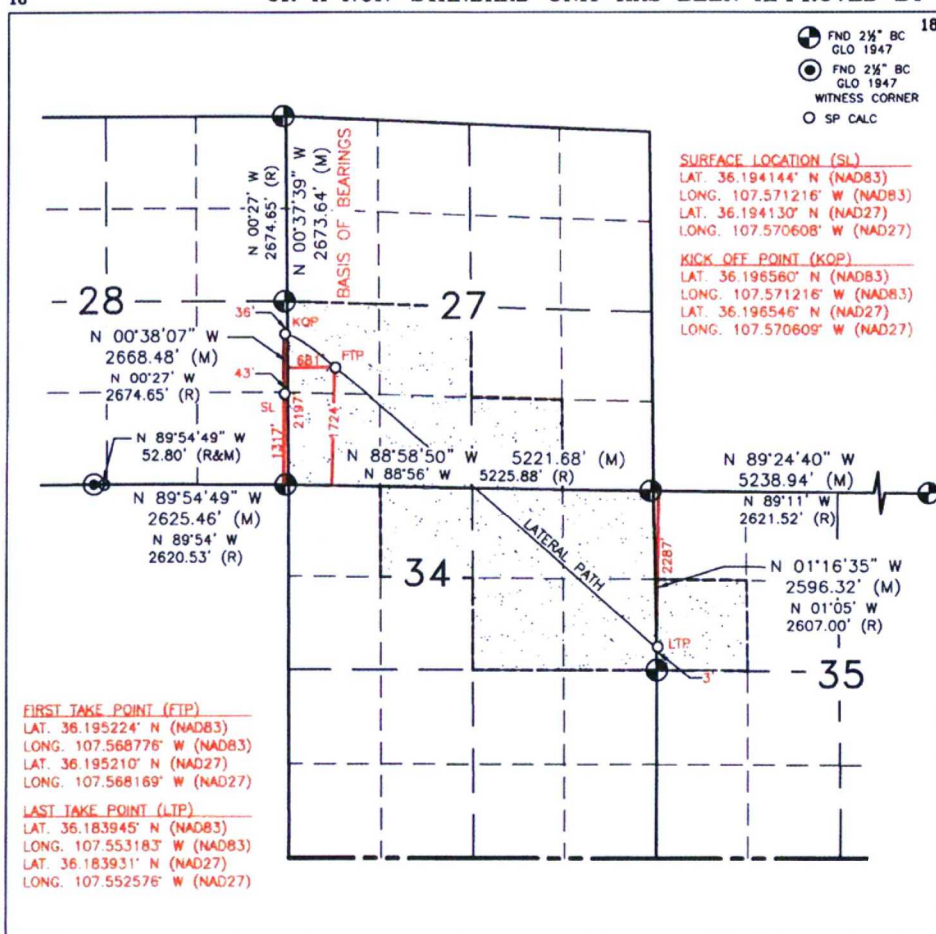
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	35	23N	7W		2287'	NORTH	3'	WEST	SANDOVAL

¹² Dedicated Acres SW/4 & SW/SE SEC. 27 (200 AC.); NE/NW & NE/4 SEC. 34 (200 AC.); SW/NW SEC. 35 (40 AC.) = 440 ACRES TOTAL	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14081-A (14,262.78 ACRES)
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

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¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Shaw Ford 7/12/19
Signature Date
Shaw Ford
Printed Name
sford@djrlc.com
E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

OCTOBER 23, 2018
Date of Survey
Signature and Seal of Professional Surveyor:

Henry P. Brothman, Jr.
HENRY P. BROTHMAN, JR.
PROFESSIONAL SURVEYOR
10/23/18

Certificate Number 11393

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1000 Rio Bravo Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

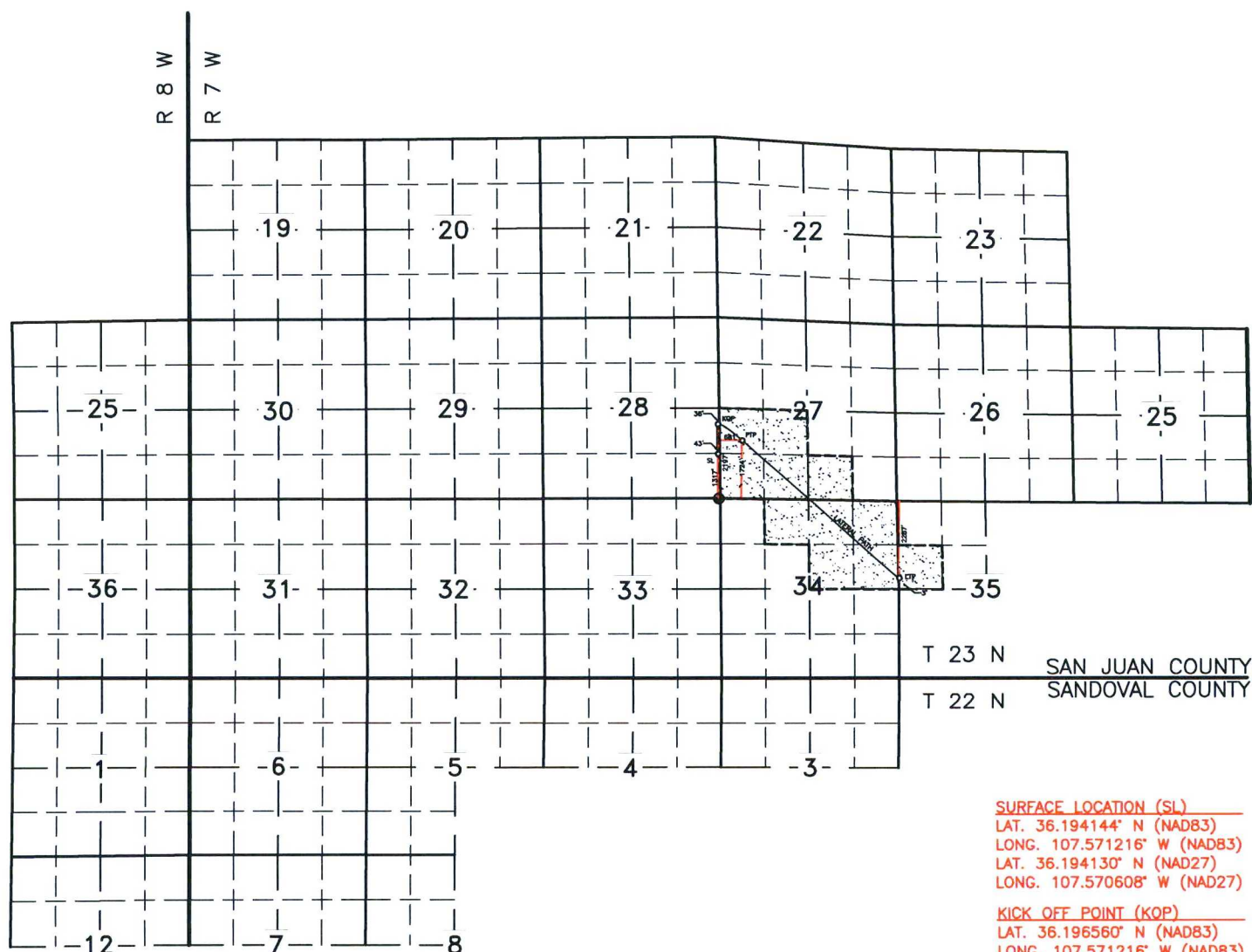
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District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

☒ AS-DRILLED
☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NORTH ALAMITO UNIT #233H



PENETRATED SPACING UNIT;
SW/4 & SW/SE SEC. 27 (200 AC.); NE/NW &
NE/4 SEC. 34 (200 AC.), SW/NW SEC. 35 (40 AC.)
= 440 ACRES TOTAL

SURFACE LOCATION (SL)
LAT. 36.194144° N (NAD83)
LONG. 107.571216° W (NAD83)
LAT. 36.194130° N (NAD27)
LONG. 107.570608° W (NAD27)

KICK OFF POINT (KOP)
LAT. 36.196560° N (NAD83)
LONG. 107.571216° W (NAD83)
LAT. 36.196546° N (NAD27)
LONG. 107.570609° W (NAD27)

FIRST TAKE POINT (FTP)
LAT. 36.195224° N (NAD83)
LONG. 107.568776° W (NAD83)
LAT. 36.195210° N (NAD27)
LONG. 107.568169° W (NAD27)

LAST TAKE POINT (LTP)
LAT. 36.183945° N (NAD83)
LONG. 107.553183° W (NAD83)
LAT. 36.183931° N (NAD27)
LONG. 107.552576° W (NAD27)



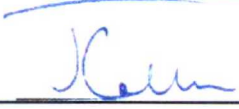
Scientific Drilling

Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

Operator	EnCana
Well Name & No.	North Alamito Unit 233H
County & State	Sandoval County, NM
SDI Job No.	OP.0013083
Rig	Aztec 920

I, Janie Collins, having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 365 feet to a measured depth of 12,068 feet is true and correct as determined from all available records.


Signature

24-Sep-18
Date

Janie Collins

Colorado District Well Planner
Scientific Drilling International

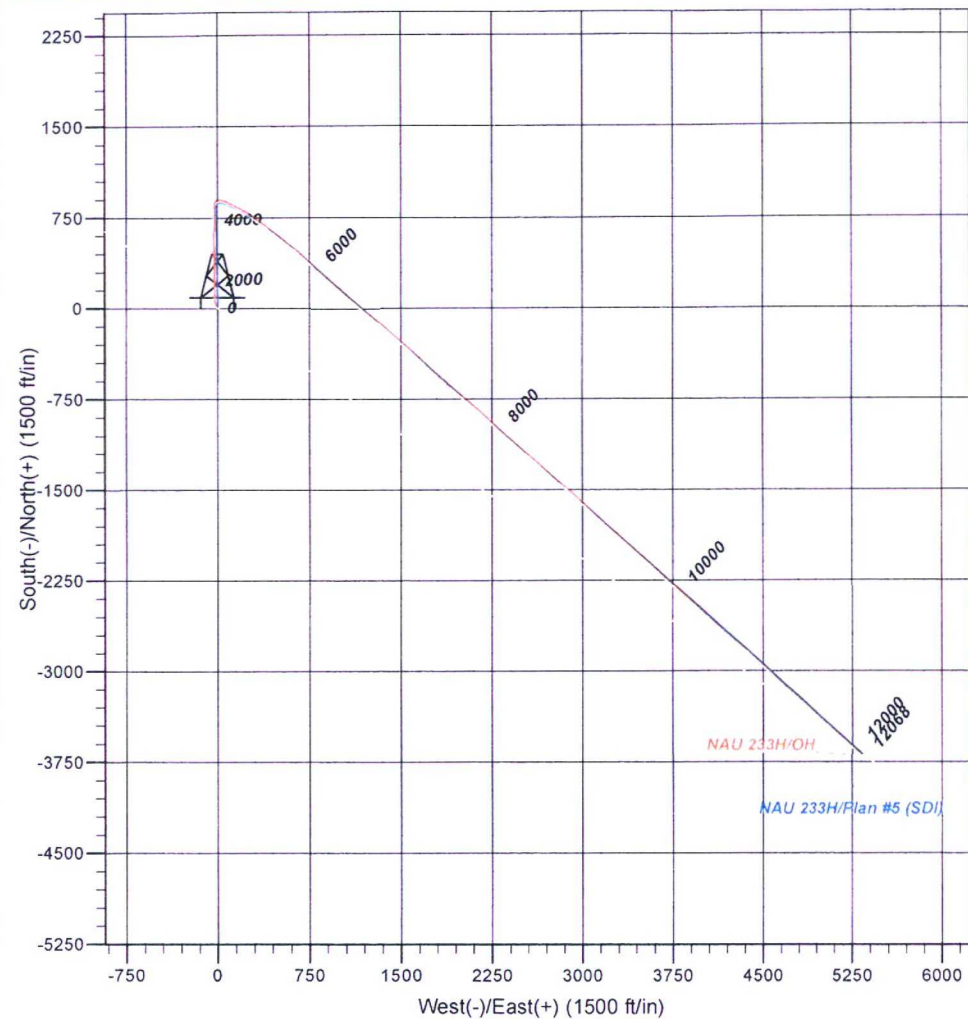
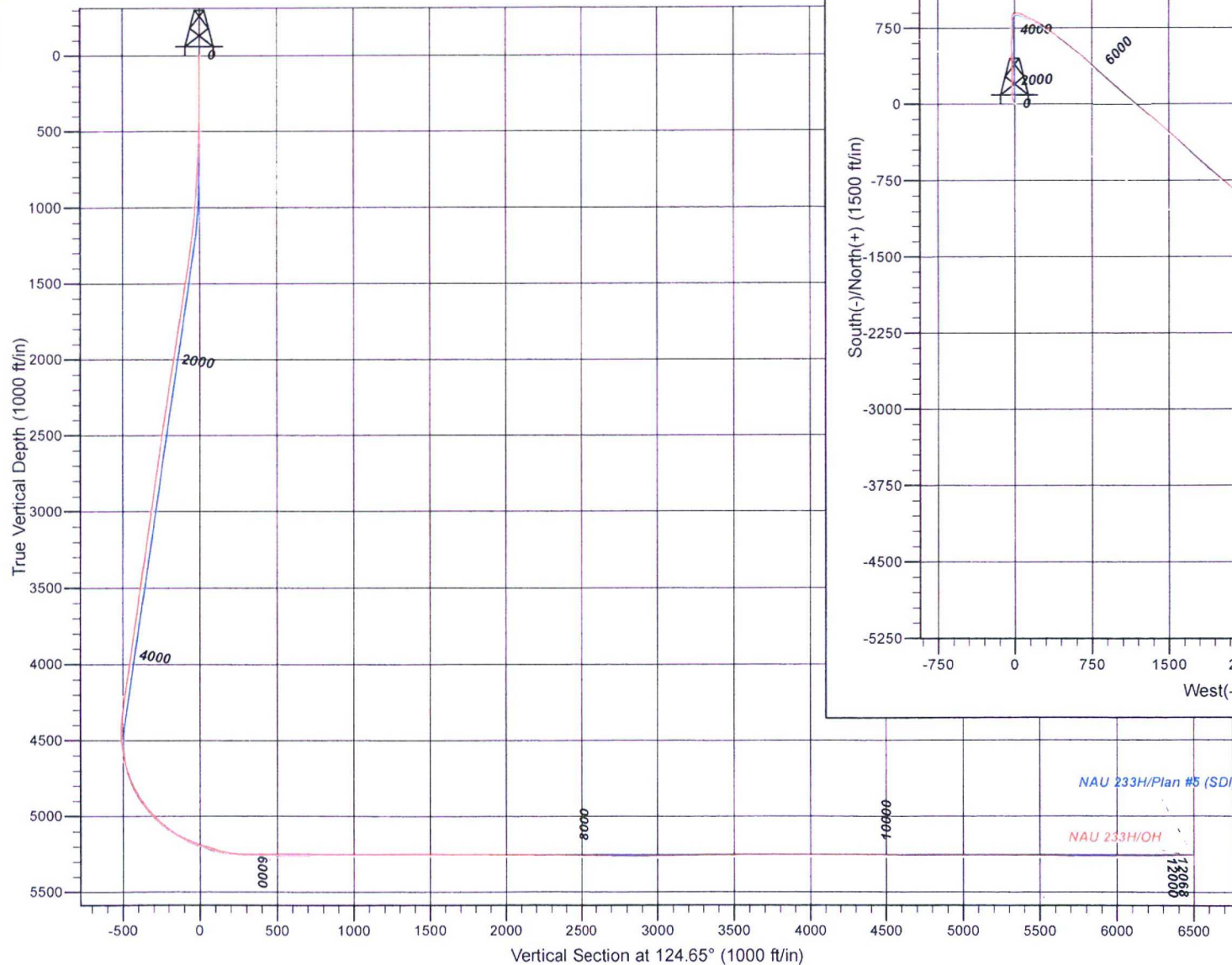


Company Name: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM NAD83
Site: North Alamoito
Well: NAU 233H
Wellbore: OH



WELL DETAILS: NAU 233H

+N/-S	+E/-W	GL 6945' & RKB 14' @ 6959.01ft (Aztec 920) 6945.01	North	East	Latitude	Longitude
0.00	0.00		1892588.80	1250573.71	36.1941440	-107.5712160



Design: OH (NAU 233H/OH)

Created By: Janie Collins Date: 15:34, September 24 2018

PROJECT DETAILS: Sandoval County, NM NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone

System Datum: Mean Sea Level
Local North: True



Scientific Drilling, Intl
Survey Report



Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM NAD83
Site: North Alamito
Well: NAU 233H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NAU 233H
TVD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
MD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Project Sandoval County, NM NAD83

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Central Zone
System Datum: Mean Sea Level

Site North Alamito

Site Position: Northing: 1,892,618.67 usft Latitude: 36.1942260
From: Lat/Long Easting: 1,250,573.52 usft Longitude: -107.5712180
Position Uncertainty: 0.00 ft Slot Radius: 13.200 in Grid Convergence: -0.78 °

Well NAU 233H

Well Position +N/-S 0.00 ft Northing: 1,892,588.81 usft Latitude: 36.1941440
+E/-W 0.00 ft Easting: 1,250,573.70 usft Longitude: -107.5712160
Position Uncertainty 0.00 ft Wellhead Elevation: 0.00 ft Ground Level: 6,945.01 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/14/2018	8.82	62.82	49,446

Design OH

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:

Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
0.00	0.00	0.00	124.65

Survey Program Date 9/24/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
365.00	4,625.00	Survey #1 - Surface MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
4,657.00	5,838.00	Survey #2 - Curve MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM
5,900.00	12,068.00	Survey #3 - Lateral MWD Survey (OH)	MWD+HDGM	OWSG MWD + HDGM

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
365.00	0.67	40.37	364.99	1.63	1.38	0.21	0.18	0.18	0.00
427.00	0.64	325.85	426.99	2.19	1.42	-0.07	1.28	-0.05	-120.19
487.00	1.64	285.57	486.98	2.70	0.41	-1.20	2.04	1.67	-67.13
548.00	2.48	283.54	547.94	3.24	-1.72	-3.25	1.38	1.38	-3.33
610.00	2.63	287.59	609.88	3.98	-4.38	-5.87	0.38	0.24	6.53
671.00	2.63	291.42	670.81	4.92	-7.01	-8.57	0.29	0.00	6.28
732.00	2.67	290.62	731.75	5.93	-9.65	-11.31	0.09	0.07	-1.31
793.00	2.69	298.94	792.68	7.12	-12.23	-14.11	0.64	0.03	13.64



Scientific Drilling, Intl
Survey Report



Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM NAD83
Site: North Alamo
Well: NAU 233H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NAU 233H
TVD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
MD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
854.00	3.20	316.23	853.60	9.04	-14.66	-17.20	1.67	0.84	28.34
916.00	4.20	340.37	915.47	12.43	-16.62	-20.74	2.95	1.61	38.94
977.00	5.49	347.64	976.25	17.39	-17.99	-24.69	2.34	2.11	11.92
1,038.00	6.33	352.20	1,036.93	23.57	-19.08	-29.09	1.58	1.38	7.48
1,099.00	7.96	356.71	1,097.46	31.12	-19.77	-33.96	2.82	2.67	7.39
1,159.00	9.80	359.02	1,156.73	40.37	-20.10	-39.49	3.12	3.07	3.85
1,220.00	11.56	358.20	1,216.67	51.67	-20.38	-46.15	2.90	2.89	-1.34
1,281.00	13.17	359.22	1,276.26	64.73	-20.67	-53.81	2.66	2.64	1.67
1,342.00	13.19	358.47	1,335.65	78.64	-20.95	-61.95	0.28	0.03	-1.23
1,403.00	13.94	358.28	1,394.95	92.94	-21.35	-70.41	1.23	1.23	-0.31
1,463.00	14.66	358.21	1,453.09	107.75	-21.81	-79.21	1.20	1.20	-0.12
1,524.00	14.96	357.36	1,512.06	123.33	-22.41	-88.56	0.61	0.49	-1.39
1,585.00	14.87	357.17	1,571.01	139.01	-23.16	-98.10	0.17	-0.15	-0.31
1,645.00	14.49	359.23	1,629.05	154.21	-23.64	-107.13	1.08	-0.63	3.43
1,706.00	14.64	359.52	1,688.09	169.55	-23.81	-115.99	0.27	0.25	0.48
1,766.00	15.13	0.38	1,746.08	184.96	-23.82	-124.77	0.90	0.82	1.43
1,827.00	15.37	0.40	1,804.93	201.01	-23.71	-133.80	0.39	0.39	0.03
1,887.00	15.00	359.53	1,862.83	216.72	-23.72	-142.74	0.72	-0.62	-1.45
1,948.00	14.66	358.06	1,921.80	232.33	-24.05	-151.89	0.83	-0.56	-2.41
2,008.00	14.27	356.54	1,979.90	247.30	-24.75	-160.98	0.91	-0.65	-2.53
2,069.00	13.91	358.10	2,039.06	262.13	-25.45	-169.98	0.86	-0.59	2.56
2,130.00	14.76	0.28	2,098.16	277.23	-25.65	-178.74	1.65	1.39	3.57
2,191.00	14.97	0.87	2,157.12	292.88	-25.49	-187.51	0.42	0.34	0.97
2,253.00	14.65	359.52	2,217.06	308.73	-25.44	-196.47	0.76	-0.52	-2.18
2,314.00	14.21	358.38	2,276.14	323.92	-25.71	-205.34	0.86	-0.72	-1.87
2,374.00	14.18	359.43	2,334.31	338.63	-26.00	-213.94	0.43	-0.05	1.75
2,435.00	14.16	0.60	2,393.45	353.57	-25.99	-222.42	0.47	-0.03	1.92
2,496.00	14.20	0.95	2,452.59	368.51	-25.79	-230.75	0.16	0.07	0.57
2,558.00	14.78	1.66	2,512.62	384.02	-25.43	-239.28	0.98	0.94	1.15
2,619.00	14.53	359.54	2,571.64	399.45	-25.27	-247.92	0.97	-0.41	-3.48
2,680.00	14.55	358.64	2,630.68	414.76	-25.51	-256.83	0.37	0.03	-1.48
2,742.00	14.73	358.51	2,690.67	430.42	-25.90	-266.05	0.30	0.29	-0.21
2,803.00	13.81	355.97	2,749.79	445.44	-26.62	-275.18	1.82	-1.51	-4.16
2,863.00	13.45	357.67	2,808.10	459.55	-27.40	-283.85	0.90	-0.60	2.83
2,924.00	13.76	359.39	2,867.39	473.90	-27.77	-292.31	0.84	0.51	2.82
2,985.00	12.82	358.03	2,926.75	487.91	-28.08	-300.54	1.62	-1.54	-2.23
3,046.00	13.09	357.78	2,986.20	501.58	-28.58	-308.72	0.45	0.44	-0.41
3,107.00	13.57	359.43	3,045.56	515.64	-28.92	-316.99	1.00	0.79	2.70
3,167.00	14.32	1.98	3,103.79	530.09	-28.73	-325.06	1.62	1.25	4.25
3,228.00	14.55	1.62	3,162.86	545.29	-28.25	-333.31	0.40	0.38	-0.59
3,290.00	13.88	0.69	3,222.96	560.51	-27.94	-341.71	1.14	-1.08	-1.50
3,350.00	14.20	0.09	3,281.17	575.07	-27.85	-349.90	0.59	0.53	-1.00
3,411.00	14.57	359.75	3,340.26	590.22	-27.87	-358.54	0.62	0.61	-0.56



Scientific Drilling, Intl
Survey Report



Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM NAD83
Site: North Alamo
Well: NAU 233H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well NAU 233H
TVD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
MD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,472.00	14.13	358.98	3,399.36	605.34	-28.03	-367.27	0.79	-0.72	-1.26
3,534.00	14.53	2.02	3,459.43	620.68	-27.89	-375.88	1.37	0.65	4.90
3,595.00	14.69	3.17	3,518.45	636.05	-27.20	-384.04	0.54	0.26	1.89
3,656.00	14.12	2.10	3,577.54	651.21	-26.50	-392.09	1.03	-0.93	-1.75
3,717.00	13.59	1.38	3,636.76	665.81	-26.05	-400.02	0.91	-0.87	-1.18
3,779.00	14.20	0.67	3,696.95	680.69	-25.79	-408.27	1.02	0.98	-1.15
3,840.00	14.47	0.74	3,756.05	695.80	-25.60	-416.70	0.44	0.44	0.11
3,901.00	13.55	0.85	3,815.23	710.56	-25.40	-424.93	1.51	-1.51	0.18
3,961.00	14.07	359.80	3,873.50	724.88	-25.32	-433.01	0.96	0.87	-1.75
4,025.00	14.25	358.58	3,935.55	740.54	-25.54	-442.09	0.54	0.28	-1.91
4,088.00	13.70	357.53	3,996.69	755.74	-26.05	-451.16	0.96	-0.87	-1.67
4,152.00	14.84	357.48	4,058.71	771.50	-26.74	-460.69	1.78	1.78	-0.08
4,215.00	15.46	0.65	4,119.52	787.96	-27.00	-470.26	1.64	0.98	5.03
4,278.00	14.78	1.76	4,180.34	804.39	-26.66	-479.32	1.17	-1.08	1.76
4,342.00	13.54	0.27	4,242.40	820.04	-26.37	-487.99	2.02	-1.94	-2.33
4,405.00	12.99	359.19	4,303.72	834.50	-26.44	-496.26	0.96	-0.87	-1.71
4,436.00	12.74	358.76	4,333.94	841.40	-26.56	-500.28	0.86	-0.81	-1.39
4,468.00	12.93	5.22	4,365.14	848.49	-26.31	-504.11	4.52	0.59	20.19
4,499.00	12.70	16.18	4,395.37	855.22	-25.05	-506.90	7.87	-0.74	35.35
4,531.00	12.40	27.55	4,426.61	861.64	-22.48	-508.44	7.76	-0.94	35.53
4,563.00	12.58	39.69	4,457.86	867.37	-18.66	-508.56	8.21	0.56	37.94
4,594.00	12.45	48.12	4,488.13	872.20	-14.02	-507.48	5.90	-0.42	27.19
4,625.00	12.26	58.16	4,518.41	876.17	-8.73	-505.39	6.95	-0.61	32.39
4,657.00	13.38	68.46	4,549.62	879.32	-2.40	-501.97	7.94	3.50	32.19
4,689.00	14.80	76.66	4,580.66	881.62	5.02	-497.18	7.65	4.44	25.63
4,720.00	14.82	85.60	4,610.63	882.84	12.83	-491.45	7.36	0.06	28.84
4,753.00	14.49	97.86	4,642.57	882.60	21.13	-484.48	9.44	-1.00	37.15
4,784.00	15.92	102.15	4,672.48	881.18	29.13	-477.09	5.87	4.61	13.84
4,815.00	18.07	104.41	4,702.13	879.08	37.94	-468.65	7.25	6.94	7.29
4,847.00	20.11	106.92	4,732.37	876.25	48.01	-458.76	6.87	6.38	7.84
4,878.00	22.00	109.98	4,761.30	872.71	58.57	-448.06	7.05	6.10	9.87
4,910.00	23.71	113.58	4,790.78	868.09	70.10	-435.95	6.90	5.34	11.25
4,941.00	25.82	115.96	4,818.93	862.64	81.88	-423.16	7.53	6.81	7.68
4,973.00	28.73	116.83	4,847.37	856.12	95.01	-408.65	9.18	9.09	2.72
5,004.00	31.43	116.84	4,874.19	849.10	108.88	-393.25	8.71	8.71	0.03
5,035.00	33.75	116.98	4,900.31	841.55	123.76	-376.71	7.49	7.48	0.45
5,066.00	35.73	117.44	4,925.78	833.47	139.47	-359.19	6.44	6.39	1.48
5,098.00	37.63	118.11	4,951.45	824.56	156.38	-340.22	6.07	5.94	2.09
5,130.00	39.88	117.99	4,976.40	815.14	174.06	-320.32	7.04	7.03	-0.38
5,161.00	42.92	118.58	4,999.65	805.42	192.11	-299.95	9.89	9.81	1.90
5,193.00	45.23	120.23	5,022.64	794.49	211.50	-277.79	8.06	7.22	5.16
5,224.00	47.19	122.25	5,044.09	782.88	230.62	-255.45	7.88	6.32	6.52
5,256.00	49.33	124.03	5,065.39	769.82	250.61	-231.58	7.87	6.69	5.56



Scientific Drilling, Intl
Survey Report



Company: EnCana Oil & Gas (USA) Inc
Project: Sandoval County, NM NAD83
Site: North Alamo
Well: NAU 233H
Wellbore: OH
Design: OH

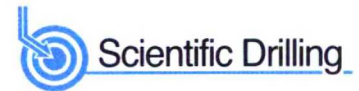
Local Co-ordinate Reference: Well NAU 233H
TVD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
MD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,288.00	52.10	124.64	5,085.65	755.85	271.06	-206.82	8.78	8.66	1.91
5,319.00	55.25	125.08	5,104.02	741.58	291.55	-181.85	10.23	10.16	1.42
5,351.00	57.74	126.10	5,121.68	726.05	313.24	-155.17	8.22	7.78	3.19
5,382.00	60.56	126.18	5,137.57	710.35	334.74	-128.57	9.10	9.10	0.26
5,414.00	63.14	126.74	5,152.67	693.59	357.42	-100.37	8.21	8.06	1.75
5,445.00	66.47	127.39	5,165.86	676.68	379.80	-72.35	10.91	10.74	2.10
5,521.00	72.22	129.65	5,192.66	632.39	435.40	-1.43	8.06	7.57	2.97
5,553.00	72.02	128.61	5,202.49	613.17	459.02	28.93	3.16	-0.63	-3.25
5,585.00	71.44	128.92	5,212.52	594.15	482.72	59.24	2.03	-1.81	0.97
5,616.00	71.13	128.40	5,222.47	575.81	505.64	88.53	1.88	-1.00	-1.68
5,648.00	72.68	128.34	5,232.41	556.93	529.49	118.88	4.85	4.84	-0.19
5,680.00	76.38	128.30	5,240.94	537.81	553.68	149.65	11.56	11.56	-0.13
5,711.00	79.15	129.10	5,247.51	518.87	577.32	179.87	9.28	8.94	2.58
5,743.00	81.75	129.79	5,252.82	498.82	601.69	211.31	8.40	8.13	2.16
5,775.00	84.65	130.44	5,256.61	478.35	625.99	242.94	9.28	9.06	2.03
5,807.00	87.81	131.33	5,258.71	457.45	650.12	274.68	10.26	9.88	2.78
5,838.00	90.84	132.39	5,259.08	436.77	673.21	305.43	10.35	9.77	3.42
5,900.00	89.93	132.42	5,258.66	394.96	718.98	366.86	1.47	-1.47	0.05
5,964.00	89.77	132.59	5,258.83	351.71	766.17	430.26	0.36	-0.25	0.27
6,027.00	90.74	132.93	5,258.55	308.94	812.42	492.63	1.63	1.54	0.54
6,090.00	90.10	132.33	5,258.09	266.28	858.77	555.01	1.39	-1.02	-0.95
6,153.00	89.63	131.97	5,258.23	224.00	905.48	617.48	0.94	-0.75	-0.57
6,216.00	89.46	131.42	5,258.73	182.10	952.52	680.00	0.91	-0.27	-0.87
6,280.00	89.53	130.94	5,259.30	139.96	1,000.68	743.58	0.76	0.11	-0.75
6,343.00	89.50	130.77	5,259.83	98.75	1,048.33	806.21	0.27	-0.05	-0.27
6,406.00	90.23	130.75	5,259.98	57.62	1,096.05	868.85	1.16	1.16	-0.03
6,470.00	90.20	130.56	5,259.74	15.92	1,144.61	932.50	0.30	-0.05	-0.30
6,533.00	90.30	129.59	5,259.46	-24.64	1,192.81	995.22	1.55	0.16	-1.54
6,597.00	90.03	130.75	5,259.28	-65.92	1,241.72	1,058.92	1.86	-0.42	1.81
6,661.00	90.17	130.35	5,259.17	-107.53	1,290.35	1,122.58	0.66	0.22	-0.63
6,723.00	90.27	132.29	5,258.93	-148.46	1,336.91	1,184.16	3.13	0.16	3.13
6,787.00	90.44	132.65	5,258.53	-191.67	1,384.11	1,247.56	0.62	0.27	0.56
6,850.00	90.24	132.02	5,258.16	-234.10	1,430.68	1,310.00	1.05	-0.32	-1.00
6,913.00	90.50	131.48	5,257.75	-276.05	1,477.69	1,372.51	0.95	0.41	-0.86
6,974.00	89.02	130.63	5,258.01	-316.11	1,523.68	1,433.13	2.80	-2.43	-1.39
7,034.00	89.87	131.04	5,258.59	-355.34	1,569.07	1,492.78	1.57	1.42	0.68
7,094.00	90.00	132.39	5,258.66	-395.27	1,613.86	1,552.32	2.26	0.22	2.25
7,155.00	89.80	132.85	5,258.76	-436.57	1,658.75	1,612.73	0.82	-0.33	0.75
7,216.00	88.79	133.29	5,259.52	-478.22	1,703.31	1,673.07	1.81	-1.66	0.72
7,278.00	88.79	132.50	5,260.82	-520.42	1,748.72	1,734.41	1.27	0.00	-1.27
7,338.00	88.99	132.27	5,261.99	-560.85	1,793.03	1,793.86	0.51	0.33	-0.38
7,399.00	89.29	131.18	5,262.90	-601.45	1,838.55	1,854.39	1.85	0.49	-1.79
7,460.00	89.80	130.98	5,263.39	-641.53	1,884.53	1,915.00	0.90	0.84	-0.33
7,521.00	90.40	130.90	5,263.28	-681.50	1,930.61	1,975.63	0.99	0.98	-0.13



Scientific Drilling, Intl
Survey Report



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Local Co-ordinate Reference: Well NAU 233H
TVD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
MD Reference: GL 6945' & RKB 14' @ 6959.01ft (Aztec 920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,583.00	89.87	130.30	5,263.13	-721.85	1,977.68	2,037.30	1.29	-0.85	-0.97
7,644.00	90.17	129.59	5,263.11	-761.01	2,024.45	2,098.04	1.26	0.49	-1.16
7,705.00	89.87	130.38	5,263.09	-800.21	2,071.19	2,158.77	1.39	-0.49	1.30
7,766.00	89.06	131.05	5,263.66	-840.00	2,117.42	2,219.43	1.72	-1.33	1.10
7,828.00	89.50	130.61	5,264.44	-880.53	2,164.33	2,281.07	1.00	0.71	-0.71
7,889.00	90.07	132.10	5,264.67	-920.83	2,210.11	2,341.65	2.62	0.93	2.44
7,950.00	89.29	132.44	5,265.01	-961.86	2,255.25	2,402.11	1.39	-1.28	0.56
8,010.00	89.39	133.13	5,265.70	-1,002.62	2,299.28	2,461.50	1.16	0.17	1.15
8,070.00	89.13	132.44	5,266.48	-1,043.37	2,343.31	2,520.89	1.23	-0.43	-1.15
8,131.00	87.89	131.40	5,268.06	-1,084.11	2,388.69	2,581.38	2.65	-2.03	-1.70
8,193.00	88.68	131.08	5,269.92	-1,124.96	2,435.29	2,642.94	1.37	1.27	-0.52
8,253.00	89.73	130.47	5,270.75	-1,164.14	2,480.72	2,702.59	2.02	1.75	-1.02
8,313.00	89.93	130.03	5,270.93	-1,202.91	2,526.51	2,762.31	0.81	0.33	-0.73
8,375.00	90.73	129.91	5,270.57	-1,242.73	2,574.03	2,824.04	1.30	1.29	-0.19
8,435.00	90.23	132.88	5,270.07	-1,282.40	2,619.03	2,883.61	5.02	-0.83	4.95
8,496.00	90.13	133.33	5,269.88	-1,324.09	2,663.56	2,943.95	0.76	-0.16	0.74
8,556.00	89.97	131.46	5,269.82	-1,364.54	2,707.87	3,003.40	3.13	-0.27	-3.12
8,617.00	90.75	130.89	5,269.44	-1,404.70	2,753.79	3,064.00	1.58	1.28	-0.93
8,677.00	90.71	130.66	5,268.68	-1,443.88	2,799.22	3,123.66	0.39	-0.07	-0.38
8,738.00	90.34	130.74	5,268.12	-1,483.66	2,845.46	3,184.32	0.62	-0.61	0.13
8,798.00	90.60	131.10	5,267.63	-1,522.95	2,890.80	3,243.96	0.74	0.43	0.60
8,858.00	90.74	131.86	5,266.92	-1,562.69	2,935.75	3,303.53	1.29	0.23	1.27
8,919.00	91.74	133.50	5,265.60	-1,604.03	2,980.58	3,363.91	3.15	1.64	2.69
8,980.00	90.47	133.24	5,264.43	-1,645.91	3,024.91	3,424.19	2.13	-2.08	-0.43
9,041.00	90.03	132.37	5,264.16	-1,687.36	3,069.67	3,484.58	1.60	-0.72	-1.43
9,103.00	90.13	132.15	5,264.07	-1,729.06	3,115.55	3,546.03	0.39	0.16	-0.35
9,164.00	90.17	131.89	5,263.91	-1,769.89	3,160.87	3,606.53	0.43	0.07	-0.43
9,225.00	90.57	131.60	5,263.52	-1,810.50	3,206.38	3,667.06	0.81	0.66	-0.48
9,286.00	90.77	131.75	5,262.81	-1,851.06	3,251.94	3,727.60	0.41	0.33	0.25
9,347.00	89.70	131.86	5,262.56	-1,891.72	3,297.41	3,788.12	1.76	-1.75	0.18
9,408.00	89.29	131.48	5,263.10	-1,932.27	3,342.97	3,848.66	0.92	-0.67	-0.62
9,470.00	89.76	131.42	5,263.61	-1,973.32	3,389.44	3,910.22	0.76	0.76	-0.10
9,531.00	89.87	131.13	5,263.81	-2,013.55	3,435.29	3,970.82	0.51	0.18	-0.48
9,592.00	90.20	131.25	5,263.77	-2,053.73	3,481.19	4,031.42	0.58	0.54	0.20
9,653.00	89.80	131.56	5,263.77	-2,094.07	3,526.95	4,092.00	0.83	-0.66	0.51
9,713.00	89.90	131.48	5,263.93	-2,133.84	3,571.87	4,151.57	0.21	0.17	-0.13
9,774.00	90.50	132.16	5,263.71	-2,174.52	3,617.33	4,212.09	1.49	0.98	1.11
9,835.00	89.43	133.19	5,263.75	-2,215.86	3,662.17	4,272.49	2.43	-1.75	1.69
9,896.00	89.06	132.84	5,264.55	-2,257.47	3,706.77	4,332.84	0.83	-0.61	-0.57
9,957.00	89.39	132.59	5,265.38	-2,298.85	3,751.59	4,393.23	0.68	0.54	-0.41
10,018.00	89.80	132.64	5,265.81	-2,340.15	3,796.48	4,453.64	0.68	0.67	0.08
10,078.00	89.26	132.62	5,266.30	-2,380.78	3,840.62	4,513.06	0.90	-0.90	-0.03
10,140.00	88.89	132.29	5,267.30	-2,422.63	3,886.36	4,574.47	0.80	-0.60	-0.53



Scientific Drilling, Intl
Survey Report



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Local Co-ordinate Reference: Well NAU 233H
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North Reference: True
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Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,201.00	89.53	131.97	5,268.14	-2,463.54	3,931.59	4,634.95	1.17	1.05	-0.52
10,261.00	90.03	132.07	5,268.37	-2,503.71	3,976.17	4,694.45	0.85	0.83	0.17
10,323.00	90.54	131.62	5,268.07	-2,545.07	4,022.35	4,755.97	1.10	0.82	-0.73
10,384.00	89.90	131.82	5,267.83	-2,585.66	4,067.88	4,816.50	1.10	-1.05	0.33
10,445.00	89.73	131.43	5,268.03	-2,626.18	4,113.48	4,877.05	0.70	-0.28	-0.64
10,506.00	89.76	130.72	5,268.30	-2,666.26	4,159.46	4,937.67	1.16	0.05	-1.16
10,567.00	90.07	130.23	5,268.39	-2,705.86	4,205.87	4,998.35	0.95	0.51	-0.80
10,629.00	90.34	129.83	5,268.17	-2,745.73	4,253.34	5,060.08	0.78	0.44	-0.65
10,691.00	90.24	130.48	5,267.86	-2,785.71	4,300.73	5,121.79	1.06	-0.16	1.05
10,751.00	90.03	131.00	5,267.71	-2,824.87	4,346.19	5,181.45	0.93	-0.35	0.87
10,812.00	90.47	130.63	5,267.45	-2,864.74	4,392.35	5,242.10	0.94	0.72	-0.61
10,875.00	89.66	131.52	5,267.38	-2,906.14	4,439.84	5,304.70	1.91	-1.29	1.41
10,938.00	89.50	131.47	5,267.84	-2,947.87	4,487.03	5,367.25	0.27	-0.25	-0.08
11,002.00	89.43	132.21	5,268.44	-2,990.56	4,534.71	5,430.75	1.16	-0.11	1.16
11,065.00	89.53	133.74	5,269.01	-3,033.51	4,580.80	5,493.08	2.43	0.16	2.43
11,128.00	89.06	134.83	5,269.78	-3,077.49	4,625.90	5,555.19	1.88	-0.75	1.73
11,191.00	88.56	132.68	5,271.09	-3,121.05	4,671.39	5,617.38	3.50	-0.79	-3.41
11,253.00	87.85	130.65	5,273.03	-3,162.24	4,717.68	5,678.88	3.47	-1.15	-3.27
11,316.00	89.40	130.64	5,274.55	-3,203.27	4,765.47	5,741.51	2.46	2.46	-0.02
11,380.00	90.13	130.88	5,274.81	-3,245.05	4,813.94	5,805.15	1.20	1.14	0.38
11,443.00	90.54	130.53	5,274.44	-3,286.14	4,861.70	5,867.80	0.86	0.65	-0.56
11,506.00	91.14	130.05	5,273.52	-3,326.87	4,909.75	5,930.49	1.22	0.95	-0.76
11,570.00	91.61	130.40	5,271.98	-3,368.19	4,958.60	5,994.17	0.92	0.73	0.55
11,633.00	90.97	131.03	5,270.56	-3,409.27	5,006.34	6,056.80	1.43	-1.02	1.00
11,696.00	89.97	131.46	5,270.04	-3,450.80	5,053.71	6,119.38	1.73	-1.59	0.68
11,759.00	90.27	131.61	5,269.91	-3,492.58	5,100.86	6,181.92	0.53	0.48	0.24
11,821.00	90.03	132.13	5,269.75	-3,533.96	5,147.03	6,243.43	0.92	-0.39	0.84
11,885.00	90.30	131.96	5,269.57	-3,576.82	5,194.56	6,306.90	0.50	0.42	-0.27
11,948.00	90.94	131.81	5,268.88	-3,618.88	5,241.46	6,369.39	1.04	1.02	-0.24
12,010.00	91.31	130.98	5,267.67	-3,659.87	5,287.96	6,430.95	1.47	0.60	-1.34
12,068.00	91.31	130.98	5,266.34	-3,697.89	5,331.74	6,488.58	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____