

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (505) 748-1263 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brazos 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

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

Submit one copy to appropriate
District Office

☐ AMENDED REPORT
☒ AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35545		*Pool Code 5890	*Pool Name BISTI LOWER-GALLUP
*Property Code 40267	*Property Name ESCRITO L17-2409		*Well Number 03H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6791.8'

¹⁰ Surface Location

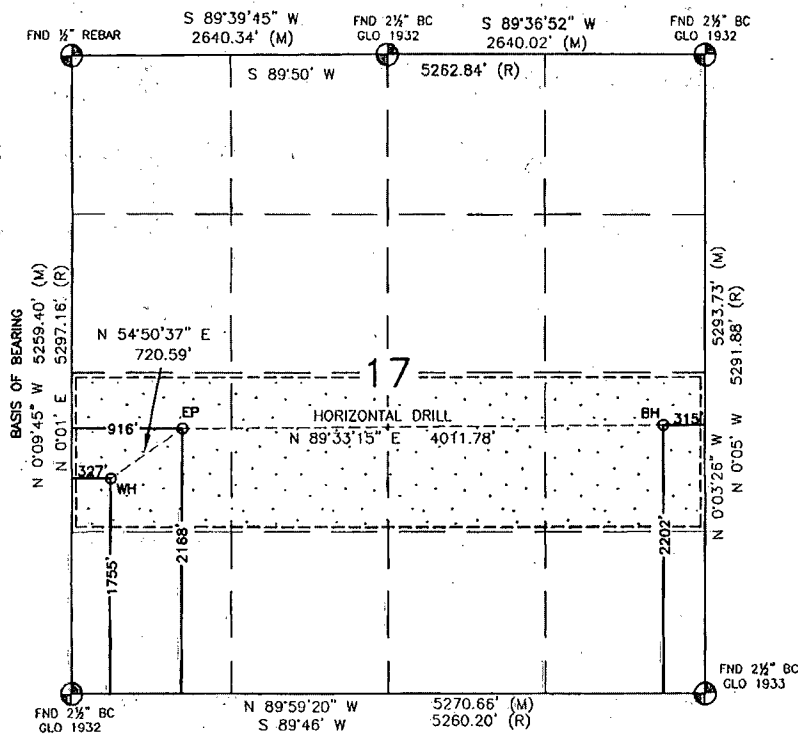
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	17	24N	9W		1755'	SOUTH	327'	WEST	SAN JUAN

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
I	17	24N	9W	3	2202'	SOUTH	315'	EAST	SAN JUAN
Dedicated Acres 160.00 ACRES N/2 S/2 SEC. 17		PROJECT AREA		Joint or Infill		Consolidation Code		Order No.	

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

16



WELL HEAD
LAT. 36.311616' N (NAD83)
LONG. 107.820298' W (NAD83)
LAT. 36.311605' N (NAD27)
LONG. 107.819682' W (NAD27)

ENTRY POINT
LAT. 36.312756' N (NAD83)
LONG. 107.818300' W (NAD83)
LAT. 36.312745' N (NAD27)
LONG. 107.817684' W (NAD27)

BOTTOM HOLE
LAT. 36.312845' N (NAD83)
LONG. 107.804689' W (NAD83)
LAT. 36.312833' N (NAD27)
LONG. 107.804074' W (NAD27)

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.

Brenda Linster 04.02.14
Signature Date

Brenda R. Linster

Printed Name

Brenda.Linster@encana.com

E-mail Address

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.

AS-BUILT - AUGUST 14, 2014
SURVEYED - MARCH 17, 2013

Date of Survey

Signature and Seal of Professional Surveyors:

David R. Russell
DAVID R. RUSSELL
REGISTERED PROFESSIONAL SURVEYOR
NEW MEXICO
10201
OIL CONSERVATION DIST. 3
Certificate Number 10201
SEP 08 2014

FV

CONFIDENTIAL

DEVIATION SURVEYS
Well Name: Escrito L17-2409 03H
API: 30-045-35545

MD (Feet)	Inclination (Degree)
325'	0.40
650'	1.00
965'	1.60
1281'	1.50
1598'	0.20
1914'	0.70
2230'	0.60
2546'	0.60
2862'	0.50
3178'	1.50
3494'	0.50
3810'	0.70
4125'	0.60
4378'	1.0
4536'	11.20

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Cristi Bauer

Cristi Bauer, Operations Technician

9/2/14

Date

ACKNOWLEDGMENT

State of Colorado
City and County of Denver

This instrument was acknowledged before me on this 2 day of September 2014 by Cristi Bauer as Attorney in Fact of Encana Oil & Gas (USA) Inc., on behalf of said corporation.

In witness whereof, I hereunto set my hand and official seal.

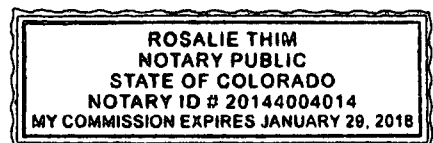
Notary Public:

Rosalie Thim

My Commission Expires:

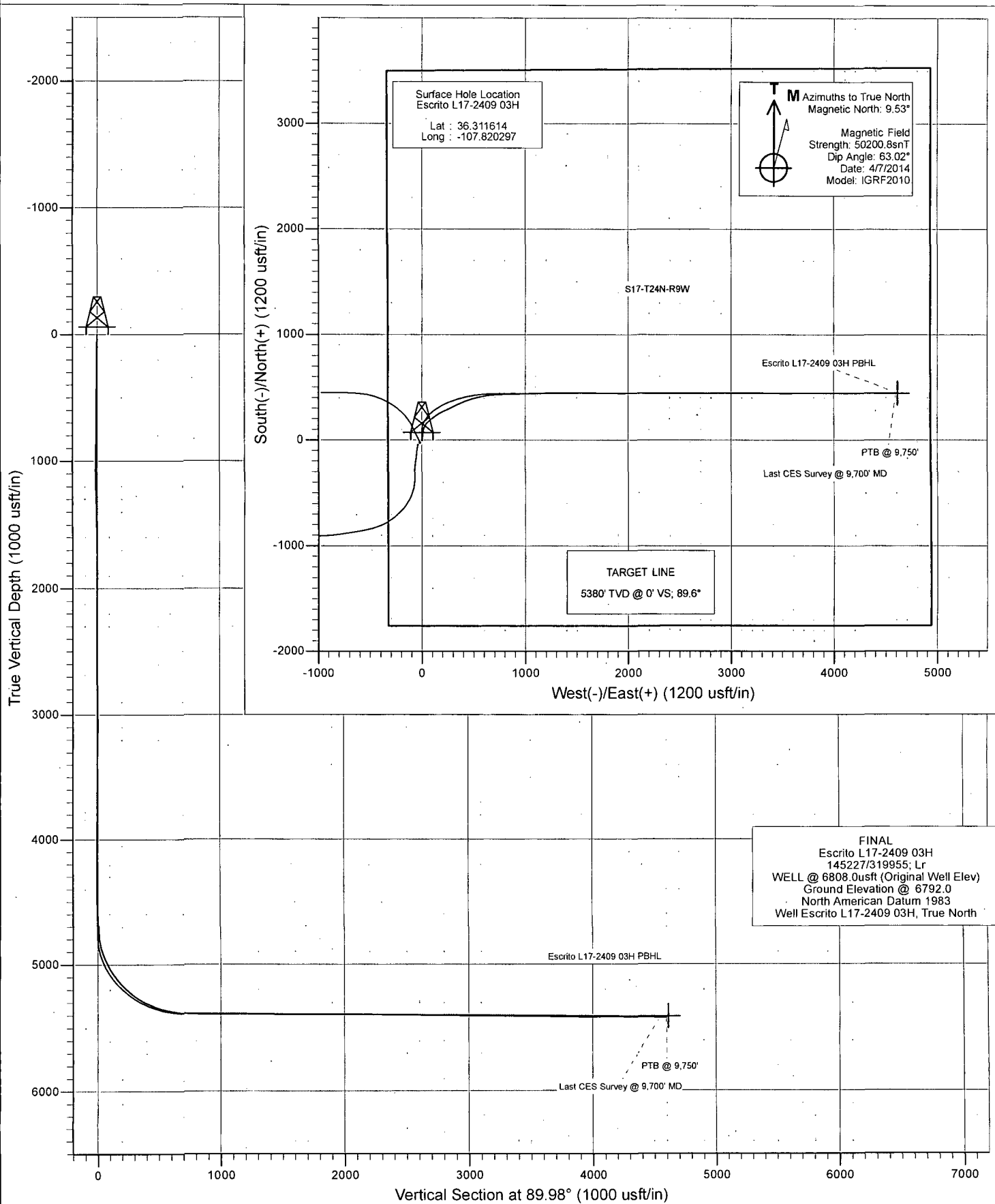
1/29/18

TV



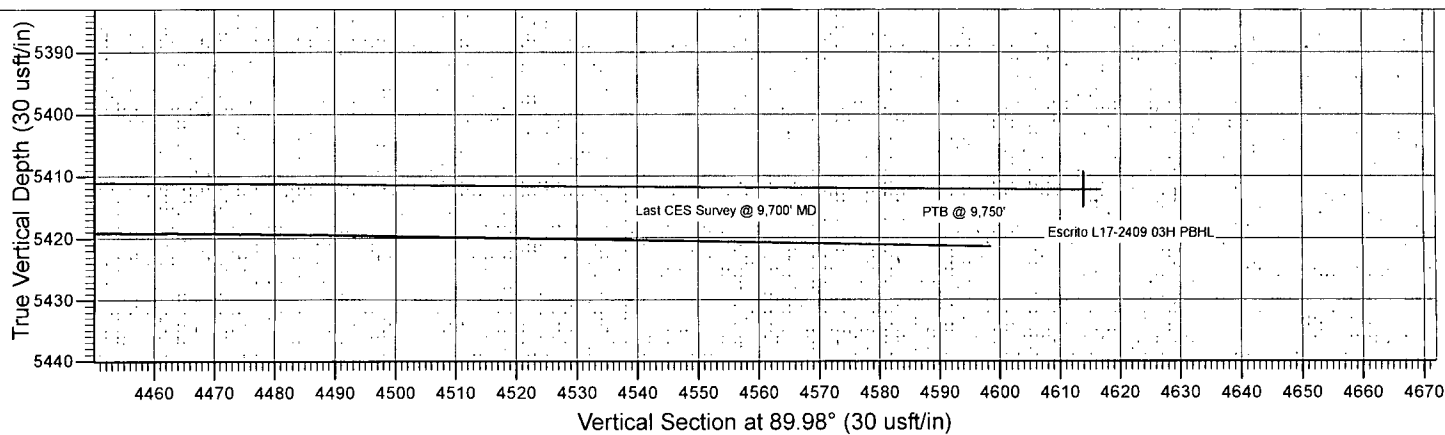
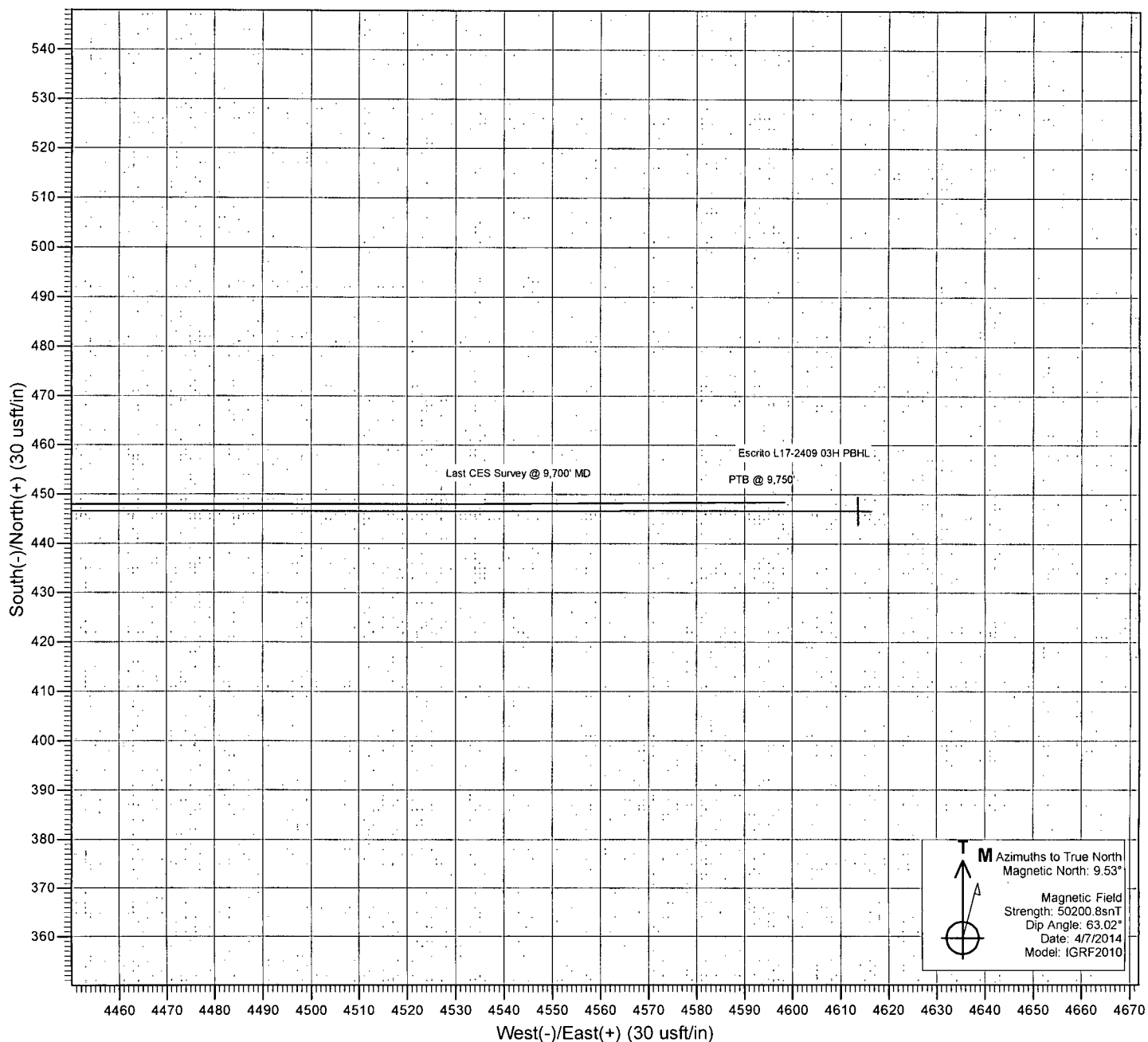


Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL





Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Project	San Juan County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	S17-T24N-R9W (Escrito)		
Site Position:		Northing:	1,932,703.40 usft
From:	Lat/Long	Easting:	2,726,914.75 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	36.311547
		Longitude:	-107.820357
		Grid Convergence:	0.01 °

Well	Escrito L17-2409 03H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	36.311614
		Longitude:	-107.820297
		Ground Level:	6,792.0 usft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	4/7/2014	(°)
			9.53
			Dip Angle
			(°)
			63.02
			Field Strength
			(nT)
			50,201

Design	FINAL		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			89.98

Survey Program	Date 7/24/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
111.0	9,750.0	Survey #1 (Hz)	Geolink MWD
			Description
			Geolink MWD

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Formations /
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Comments
(usft)			(usft)			(usft)	(°/100usf	(°/100u	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
111.0	0.20	231.20	111.0	-0.1	-0.2	-0.2	0.18	0.18	
199.0	0.20	181.60	199.0	-0.4	-0.3	-0.3	0.19	0.00	
262.0	0.50	200.20	262.0	-0.7	-0.4	-0.4	0.50	0.48	
325.0	0.40	187.30	325.0	-1.2	-0.5	-0.5	0.23	-0.16	
387.0	0.60	188.70	387.0	-1.8	-0.6	-0.6	0.32	0.32	
455.0	0.60	232.20	455.0	-2.3	-0.9	-0.9	0.65	0.00	
523.0	0.80	230.00	523.0	-2.8	-1.6	-1.6	0.30	0.29	
587.0	0.80	231.20	587.0	-3.4	-2.2	-2.2	0.03	0.00	
650.0	1.00	234.70	650.0	-4.0	-3.0	-3.0	0.33	0.32	
713.0	0.90	234.10	713.0	-4.6	-3.9	-3.9	0.16	-0.16	
776.0	1.10	4.50	776.0	-4.3	-4.2	-4.2	2.88	0.32	
839.0	1.50	16.40	838.9	-2.9	-4.0	-4.0	0.76	0.63	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
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Wellbore: Hz
Design: FINAL

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MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
902.0	1.60	9.20	901.9	-1.2	-3.6	-3.6	0.35	0.16	
965.0	1.60	301.40	964.9	0.1	-4.2	-4.2	2.83	0.00	
1,029.0	1.90	298.80	1,028.9	1.1	-5.9	-5.9	0.48	0.47	
1,092.0	1.50	226.80	1,091.8	1.0	-7.4	-7.4	3.21	-0.63	
1,155.0	1.20	132.50	1,154.8	0.0	-7.5	-7.5	3.16	-0.48	
1,218.0	1.50	120.10	1,217.8	-0.9	-6.3	-6.3	0.66	0.48	
1,281.0	1.50	111.90	1,280.8	-1.6	-4.8	-4.8	0.34	0.00	
1,345.0	1.10	111.40	1,344.8	-2.1	-3.5	-3.5	0.63	-0.63	
1,408.0	1.50	118.50	1,407.8	-2.7	-2.2	-2.2	0.68	0.63	
1,471.0	1.30	117.20	1,470.7	-3.5	-0.8	-0.8	0.32	-0.32	
1,534.0	0.50	67.60	1,533.7	-3.7	0.0	0.0	1.66	-1.27	
1,598.0	0.20	78.00	1,597.7	-3.6	0.4	0.4	0.48	-0.47	
1,661.0	0.50	102.30	1,660.7	-3.6	0.8	0.8	0.52	0.48	
1,724.0	0.10	122.10	1,723.7	-3.7	1.1	1.1	0.65	-0.63	
1,787.0	0.60	68.90	1,786.7	-3.6	1.5	1.5	0.87	0.79	
1,850.0	0.70	99.50	1,849.7	-3.5	2.1	2.1	0.57	0.16	
1,914.0	0.70	78.90	1,913.7	-3.5	2.9	2.9	0.39	0.00	
1,977.0	0.40	290.30	1,976.7	-3.4	3.1	3.1	1.69	-0.48	
2,040.0	0.80	283.70	2,039.7	-3.2	2.5	2.5	0.64	0.63	
2,103.0	0.80	263.20	2,102.7	-3.1	1.6	1.6	0.45	0.00	
2,166.0	0.70	256.40	2,165.7	-3.3	0.8	0.8	0.21	-0.16	
2,230.0	0.60	262.70	2,229.7	-3.4	0.1	0.1	0.19	-0.16	
2,293.0	1.00	254.70	2,292.7	-3.6	-0.8	-0.8	0.66	0.63	
2,356.0	0.60	12.30	2,355.7	-3.4	-1.2	-1.3	2.20	-0.63	
2,419.0	0.70	51.00	2,418.7	-2.9	-0.9	-0.9	0.70	0.16	
2,483.0	0.60	56.30	2,482.7	-2.4	-0.3	-0.3	0.18	-0.16	
2,546.0	0.60	74.70	2,545.7	-2.2	0.3	0.3	0.30	0.00	
2,609.0	0.80	68.10	2,608.7	-1.9	1.0	1.0	0.34	0.32	
2,672.0	0.60	83.40	2,671.7	-1.7	1.8	1.8	0.43	-0.32	
2,736.0	0.60	94.50	2,735.7	-1.7	2.4	2.4	0.18	0.00	
2,799.0	0.70	96.90	2,798.7	-1.8	3.1	3.1	0.16	0.16	
2,862.0	0.50	120.90	2,861.7	-2.0	3.8	3.8	0.50	-0.32	
2,925.0	0.80	125.90	2,924.7	-2.4	4.3	4.3	0.48	0.48	
2,989.0	0.70	132.40	2,988.6	-2.9	5.0	5.0	0.20	-0.16	
3,052.0	0.50	339.60	3,051.6	-2.9	5.2	5.2	1.85	-0.32	
3,115.0	1.20	321.50	3,114.6	-2.1	4.7	4.7	1.18	1.11	
3,178.0	1.50	327.20	3,177.6	-0.9	3.8	3.8	0.52	0.48	
3,241.0	0.60	290.40	3,240.6	-0.1	3.1	3.1	1.72	-1.43	
3,305.0	1.00	276.20	3,304.6	0.1	2.2	2.2	0.69	0.63	
3,368.0	0.90	295.10	3,367.6	0.4	1.2	1.2	0.52	-0.16	
3,431.0	0.30	180.80	3,430.6	0.4	0.8	0.8	1.68	-0.95	
3,494.0	0.50	209.90	3,493.6	0.0	0.6	0.6	0.44	0.32	
3,557.0	0.70	190.40	3,556.6	-0.6	0.4	0.4	0.45	0.32	
3,621.0	0.60	216.80	3,620.6	-1.3	0.1	0.1	0.49	-0.16	
3,684.0	0.60	195.60	3,683.6	-1.9	-0.2	-0.2	0.35	0.00	
3,747.0	0.90	213.80	3,746.6	-2.6	-0.5	-0.5	0.60	0.48	
3,810.0	0.70	209.20	3,809.6	-3.3	-1.0	-1.0	0.33	-0.32	
3,873.0	0.70	215.40	3,872.6	-4.0	-1.4	-1.4	0.12	0.00	
3,936.0	0.50	206.40	3,935.6	-4.5	-1.7	-1.7	0.35	-0.32	
3,999.0	0.60	232.50	3,998.6	-5.0	-2.1	-2.1	0.42	0.16	
4,062.0	0.80	238.80	4,061.6	-5.4	-2.8	-2.8	0.34	0.32	
4,125.0	0.60	242.80	4,124.5	-5.8	-3.4	-3.4	0.33	-0.32	
4,189.0	0.40	240.80	4,188.5	-6.1	-3.9	-3.9	0.31	-0.31	

Cathedral Energy Services

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North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
4,252.0	0.10	248.20	4,251.5	-6.2	-4.2	-4.2	0.48	-0.48	
4,315.0	0.20	266.50	4,314.5	-6.2	-4.3	-4.3	0.17	0.16	
4,346.0	0.50	216.30	4,345.5	-6.3	-4.5	-4.5	1.30	0.97	
4,378.0	1.00	53.20	4,377.5	-6.3	-4.3	-4.3	4.64	1.56	
4,409.0	3.40	29.40	4,408.5	-5.3	-3.6	-3.7	8.12	7.74	
4,441.0	5.70	17.90	4,440.4	-3.0	-2.7	-2.7	7.70	7.19	
4,473.0	7.90	8.50	4,472.2	0.7	-1.9	-1.9	7.68	6.88	
4,504.0	9.70	3.10	4,502.8	5.4	-1.4	-1.4	6.38	5.81	
4,536.0	11.20	7.50	4,534.3	11.2	-0.9	-0.9	5.31	4.69	
4,567.0	12.00	12.80	4,564.7	17.3	0.2	0.2	4.30	2.58	
4,599.0	14.30	12.70	4,595.8	24.4	1.8	1.8	7.19	7.19	
4,630.0	16.40	10.00	4,625.7	32.5	3.4	3.5	7.15	6.77	
4,662.0	18.10	7.30	4,656.3	41.9	4.9	4.9	5.87	5.31	
4,694.0	20.20	6.40	4,686.5	52.3	6.1	6.1	6.63	6.56	
4,725.0	21.80	6.80	4,715.4	63.3	7.4	7.4	5.18	5.16	
4,757.0	23.60	8.80	4,745.0	75.6	9.1	9.1	6.12	5.63	
4,788.0	26.00	10.80	4,773.1	88.4	11.3	11.3	8.20	7.74	
4,820.0	28.70	13.40	4,801.5	102.7	14.4	14.4	9.22	8.44	
4,851.0	29.00	19.90	4,828.7	117.0	18.7	18.7	10.16	0.97	
4,883.0	28.10	27.50	4,856.8	131.0	24.8	24.8	11.69	-2.81	
4,915.0	27.90	35.30	4,885.1	143.8	32.6	32.7	11.45	-0.63	
4,946.0	28.70	41.30	4,912.4	155.3	41.7	41.8	9.53	2.58	
4,978.0	30.30	44.10	4,940.2	166.9	52.4	52.5	6.60	5.00	
5,009.0	32.40	46.40	4,966.7	178.2	63.9	63.9	7.80	6.77	
5,041.0	34.50	49.40	4,993.4	190.1	76.9	77.0	8.35	6.56	
5,072.0	36.10	52.50	5,018.7	201.3	90.9	90.9	7.75	5.16	
5,104.0	37.80	53.30	5,044.3	212.9	106.2	106.3	5.52	5.31	
5,136.0	39.40	54.10	5,069.3	224.8	122.3	122.4	5.24	5.00	
5,167.0	40.90	56.60	5,093.0	236.1	138.7	138.8	7.10	4.84	
5,199.0	43.10	58.80	5,116.7	247.5	156.8	156.9	8.27	6.88	
5,230.0	45.30	61.30	5,139.0	258.3	175.6	175.7	9.05	7.10	
5,262.0	47.70	63.10	5,161.0	269.1	196.1	196.2	8.54	7.50	
5,293.0	50.10	64.50	5,181.4	279.4	217.1	217.2	8.46	7.74	
5,325.0	51.80	65.20	5,201.5	290.0	239.6	239.7	5.58	5.31	
5,357.0	53.40	65.40	5,221.0	300.6	262.6	262.8	5.02	5.00	
5,388.0	55.00	65.30	5,239.1	311.1	285.5	285.6	5.17	5.16	
5,420.0	57.50	65.70	5,256.9	322.1	309.7	309.8	7.88	7.81	
5,451.0	60.60	65.50	5,272.8	333.1	333.9	334.0	10.02	10.00	
5,482.0	63.90	65.50	5,287.2	344.5	358.9	359.0	10.65	10.65	
5,514.0	67.10	66.50	5,300.5	356.3	385.5	385.6	10.40	10.00	
5,546.0	68.70	68.90	5,312.6	367.6	412.9	413.0	8.56	5.00	
5,577.0	69.90	71.00	5,323.5	377.5	440.1	440.3	7.43	3.87	
5,609.0	70.90	73.30	5,334.3	386.8	468.8	469.0	7.46	3.13	
5,640.0	72.10	75.10	5,344.1	394.8	497.1	497.3	6.73	3.87	
5,662.0	73.20	76.10	5,350.7	400.0	517.5	517.6	6.62	5.00	
5,706.0	76.30	77.50	5,362.2	409.7	558.8	558.9	7.69	7.05	
5,737.0	78.20	79.20	5,369.1	415.8	588.4	588.5	8.13	6.13	
5,767.0	80.60	81.10	5,374.6	420.8	617.4	617.6	10.14	8.00	
5,798.0	82.60	83.20	5,379.1	425.0	647.8	648.0	9.30	6.45	
5,828.0	83.90	84.30	5,382.6	428.3	677.4	677.6	5.66	4.33	
5,860.0	85.30	85.30	5,385.6	431.1	709.2	709.3	5.37	4.38	
5,892.0	86.80	87.20	5,387.9	433.2	741.0	741.2	7.55	4.69	
5,923.0	88.60	88.70	5,389.1	434.3	772.0	772.1	7.56	5.81	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
5,987.0	89.00	88.30	5,390.4	436.0	835.9	836.1	0.88	0.63	
6,050.0	89.00	88.20	5,391.5	437.9	898.9	899.0	0.16	0.00	
6,111.0	89.50	87.80	5,392.3	440.1	959.8	960.0	1.05	0.82	
6,173.0	90.20	88.20	5,392.5	442.2	1,021.8	1,022.0	1.30	1.13	
6,234.0	90.50	87.80	5,392.1	444.4	1,082.8	1,082.9	0.82	0.49	
6,295.0	90.00	88.60	5,391.9	446.3	1,143.7	1,143.9	1.55	-0.82	
6,358.0	90.60	88.80	5,391.5	447.7	1,206.7	1,206.9	1.00	0.95	
6,422.0	89.50	89.00	5,391.5	448.9	1,270.7	1,270.9	1.75	-1.72	
6,485.0	88.90	90.40	5,392.4	449.3	1,333.7	1,333.9	2.42	-0.95	
6,548.0	89.20	90.40	5,393.4	448.8	1,396.7	1,396.8	0.48	0.48	
6,612.0	89.40	90.40	5,394.2	448.4	1,460.7	1,460.8	0.31	0.31	
6,656.0	89.90	90.10	5,394.4	448.2	1,504.7	1,504.8	1.33	1.14	
6,717.0	89.70	89.90	5,394.7	448.2	1,565.7	1,565.8	0.46	-0.33	
6,778.0	89.00	90.90	5,395.4	447.8	1,626.7	1,626.8	2.00	-1.15	
6,842.0	89.10	90.10	5,396.4	447.2	1,690.7	1,690.8	1.26	0.16	
6,901.0	89.70	91.00	5,397.0	446.6	1,749.7	1,749.8	1.83	1.02	
6,964.0	90.20	90.80	5,397.1	445.6	1,812.6	1,812.8	0.85	0.79	
7,027.0	91.20	91.10	5,396.3	444.6	1,875.6	1,875.8	1.66	1.59	
7,090.0	91.20	89.70	5,395.0	444.2	1,938.6	1,938.8	2.22	0.00	
7,153.0	90.30	89.60	5,394.2	444.5	2,001.6	2,001.8	1.44	-1.43	
7,217.0	89.10	90.50	5,394.5	444.5	2,065.6	2,065.8	2.34	-1.88	
7,280.0	89.60	90.40	5,395.2	444.0	2,128.6	2,128.8	0.81	0.79	
7,343.0	89.10	89.50	5,395.9	444.0	2,191.6	2,191.7	1.63	-0.79	
7,406.0	89.70	89.70	5,396.6	444.5	2,254.6	2,254.7	1.00	0.95	
7,470.0	89.00	89.70	5,397.3	444.8	2,318.6	2,318.7	1.09	-1.09	
7,533.0	89.40	90.40	5,398.2	444.8	2,381.6	2,381.7	1.28	0.63	
7,596.0	88.70	89.30	5,399.2	444.9	2,444.6	2,444.7	2.07	-1.11	
7,659.0	89.30	89.70	5,400.3	445.5	2,507.6	2,507.7	1.14	0.95	
7,723.0	90.00	89.70	5,400.7	445.8	2,571.6	2,571.7	1.09	1.09	
7,786.0	89.30	89.70	5,401.1	446.1	2,634.5	2,634.7	1.11	-1.11	
7,849.0	89.60	89.60	5,401.7	446.5	2,697.5	2,697.7	0.50	0.48	
7,912.0	88.80	89.30	5,402.6	447.1	2,760.5	2,760.7	1.36	-1.27	
7,976.0	89.00	89.80	5,403.8	447.6	2,824.5	2,824.7	0.84	0.31	
8,039.0	90.00	89.70	5,404.4	447.9	2,887.5	2,887.7	1.60	1.59	
8,102.0	88.80	90.30	5,405.0	447.9	2,950.5	2,950.7	2.13	-1.90	
8,165.0	88.90	89.70	5,406.3	447.9	3,013.5	3,013.7	0.97	0.16	
8,229.0	89.10	90.00	5,407.4	448.1	3,077.5	3,077.6	0.56	0.31	
8,292.0	89.60	89.50	5,408.1	448.4	3,140.5	3,140.6	1.12	0.79	
8,355.0	90.40	90.10	5,408.1	448.6	3,203.5	3,203.6	1.59	1.27	
8,418.0	89.20	90.50	5,408.4	448.2	3,266.5	3,266.6	2.01	-1.90	
8,482.0	89.40	90.60	5,409.1	447.6	3,330.5	3,330.6	0.35	0.31	
8,545.0	90.10	90.50	5,409.4	447.0	3,393.5	3,393.6	1.12	1.11	
8,608.0	89.20	90.40	5,409.8	446.5	3,456.5	3,456.6	1.44	-1.43	
8,671.0	89.70	89.70	5,410.4	446.5	3,519.5	3,519.6	1.37	0.79	
8,734.0	89.50	89.80	5,410.8	446.7	3,582.5	3,582.6	0.35	-0.32	
8,798.0	88.20	89.70	5,412.1	447.0	3,646.4	3,646.6	2.04	-2.03	
8,861.0	88.40	89.80	5,414.0	447.3	3,709.4	3,709.6	0.35	0.32	
8,924.0	88.40	89.30	5,415.8	447.8	3,772.4	3,772.6	0.79	0.00	
8,987.0	89.70	89.50	5,416.8	448.5	3,835.4	3,835.5	2.09	2.06	
9,050.0	89.60	90.70	5,417.2	448.3	3,898.4	3,898.5	1.91	-0.16	
9,114.0	89.90	90.60	5,417.5	447.6	3,962.4	3,962.5	0.49	0.47	
9,177.0	89.70	90.40	5,417.7	447.1	4,025.4	4,025.5	0.45	-0.32	
9,240.0	89.90	89.70	5,417.9	447.0	4,088.4	4,088.5	1.16	0.32	

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S17-T24N-R9W (Escrito)
 Well: Escrito L17-2409 03H
 Wellbore: Hz
 Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
 TVD Reference: WELL @ 6808.0usft (Original Well Elev)
 MD Reference: WELL @ 6808.0usft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100u)	Formations / Comments
9,304.0	90.10	89.50	5,417.9	447.5	4,152.4	4,152.5	0.44	0.31	
9,367.0	89.50	90.10	5,418.1	447.7	4,215.4	4,215.5	1.35	-0.95	
9,430.0	89.60	89.80	5,418.6	447.7	4,278.4	4,278.5	0.50	0.16	
9,493.0	89.80	89.90	5,419.0	447.9	4,341.4	4,341.5	0.35	0.32	
9,557.0	90.20	89.80	5,419.0	448.1	4,405.4	4,405.5	0.64	0.62	
9,620.0	89.30	90.20	5,419.2	448.1	4,468.4	4,468.5	1.56	-1.43	
9,683.0	89.00	89.70	5,420.2	448.1	4,531.4	4,531.5	0.93	-0.48	
9,700.0	89.00	89.70	5,420.5	448.2	4,548.4	4,548.5	0.00	0.00	Last CES Survey @ 9,700' MD
9,750.0	89.00	89.70	5,421.3	448.5	4,598.4	4,598.5	0.00	0.00	PTB @ 9,750'

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Escrito L17-2409 03H PI - actual wellpath misses target center by 42.4usft at 5710.0usft MD (5363.2 TVD, 410.5 N, 562.6 E) - Point	0.00	0.00	5,383.8	445.6	550.6	1,933,173.44	2,727,483.00	36.312838	-107.818428
Escrito L17-2409 03H PI - actual wellpath misses target center by 17.9usft at 9750.0usft MD (5421.3 TVD, 448.5 N, 4598.4 E) - Point	0.00	0.00	5,412.2	446.7	4,613.7	1,933,175.08	2,731,546.03	36.312840	-107.804637

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
9,700.0	5,420.5	448.2	4,548.4	Last CES Survey @ 9,700' MD
9,750.0	5,421.3	448.5	4,598.4	PTB @ 9,750'

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S17-T24N-R9W (Escrito)

Escrito L17-2409 03H

Hz

Design: FINAL

Survey Report - Geographic

24 July, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L17-2409 03H
Project:	San Juan County, NM	TVD Reference:	WELL @ 6808.0usft (Original Well Elev)
Site:	S17-T24N-R9W (Escrito)	MD Reference:	WELL @ 6808.0usft (Original Well Elev)
Well:	Escrito L17-2409 03H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	San Juan County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	S17-T24N-R9W (Escrito)				
Site Position:		Northing:	1,932,703.40 usft	Latitude:	36.311547
From:	Lat/Long	Easting:	2,726,914.75 usft	Longitude:	-107.820357
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well	Escrito L17-2409 03H					
Well Position	+N/-S	0.0 usft	Northing:	1,932,727.80 usft	Latitude:	36.311614
	+E/-W	0.0 usft	Easting:	2,726,932.42 usft	Longitude:	-107.820297
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	6,792.0 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2014	9.53	63.02	50,201

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	89.98	

Survey Program	Date 7/24/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
111.0	9,750.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,932,727.80	2,726,932.42	36.311614	-107.820297
111.0	0.20	231.20	111.0	-0.1	-0.2	1,932,727.67	2,726,932.27	36.311614	-107.820298
199.0	0.20	181.60	199.0	-0.4	-0.3	1,932,727.42	2,726,932.15	36.311613	-107.820298
262.0	0.50	200.20	262.0	-0.7	-0.4	1,932,727.06	2,726,932.05	36.311612	-107.820299
325.0	0.40	187.30	325.0	-1.2	-0.5	1,932,726.58	2,726,931.93	36.311611	-107.820299
387.0	0.60	188.70	387.0	-1.8	-0.6	1,932,726.05	2,726,931.85	36.311609	-107.820299
455.0	0.60	232.20	455.0	-2.3	-0.9	1,932,725.48	2,726,931.52	36.311608	-107.820300
523.0	0.80	230.00	523.0	-2.8	-1.6	1,932,724.95	2,726,930.87	36.311606	-107.820303
587.0	0.80	231.20	587.0	-3.4	-2.2	1,932,724.38	2,726,930.18	36.311605	-107.820305
650.0	1.00	234.70	650.0	-4.0	-3.0	1,932,723.79	2,726,929.39	36.311603	-107.820308
713.0	0.90	234.10	713.0	-4.6	-3.9	1,932,723.18	2,726,928.54	36.311601	-107.820310
776.0	1.10	4.50	776.0	-4.3	-4.2	1,932,723.50	2,726,928.19	36.311602	-107.820312

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
839.0	1.50	16.40	838.9	-2.9	-4.0	1,932,724.89	2,726,928.47	36.311606	-107.820311
902.0	1.60	9.20	901.9	-1.2	-3.6	1,932,726.55	2,726,928.84	36.311611	-107.820309
965.0	1.60	301.40	964.9	0.1	-4.2	1,932,727.88	2,726,928.23	36.311614	-107.820312
1,029.0	1.90	298.80	1,028.9	1.1	-5.9	1,932,728.85	2,726,926.54	36.311617	-107.820317
1,092.0	1.50	226.80	1,091.8	1.0	-7.4	1,932,728.79	2,726,925.02	36.311617	-107.820322
1,155.0	1.20	132.50	1,154.8	0.0	-7.5	1,932,727.78	2,726,924.91	36.311614	-107.820323
1,218.0	1.50	120.10	1,217.8	-0.9	-6.3	1,932,726.92	2,726,926.11	36.311612	-107.820319
1,281.0	1.50	111.90	1,280.8	-1.6	-4.8	1,932,726.20	2,726,927.58	36.311610	-107.820314
1,345.0	1.10	111.40	1,344.8	-2.1	-3.5	1,932,725.66	2,726,928.93	36.311608	-107.820309
1,408.0	1.50	118.50	1,407.8	-2.7	-2.2	1,932,725.05	2,726,930.22	36.311607	-107.820305
1,471.0	1.30	117.20	1,470.7	-3.5	-0.8	1,932,724.33	2,726,931.58	36.311605	-107.820300
1,534.0	0.50	67.60	1,533.7	-3.7	0.0	1,932,724.11	2,726,932.47	36.311604	-107.820297
1,598.0	0.20	78.00	1,597.7	-3.6	0.4	1,932,724.24	2,726,932.84	36.311604	-107.820296
1,661.0	0.50	102.30	1,660.7	-3.6	0.8	1,932,724.20	2,726,933.22	36.311604	-107.820295
1,724.0	0.10	122.10	1,723.7	-3.7	1.1	1,932,724.11	2,726,933.53	36.311604	-107.820294
1,787.0	0.60	68.90	1,786.7	-3.6	1.5	1,932,724.20	2,726,933.88	36.311604	-107.820292
1,850.0	0.70	99.50	1,849.7	-3.5	2.1	1,932,724.26	2,726,934.57	36.311604	-107.820290
1,914.0	0.70	78.90	1,913.7	-3.5	2.9	1,932,724.27	2,726,935.34	36.311604	-107.820287
1,977.0	0.40	290.30	1,976.7	-3.4	3.1	1,932,724.42	2,726,935.51	36.311605	-107.820287
2,040.0	0.80	283.70	2,039.7	-3.2	2.5	1,932,724.60	2,726,934.88	36.311605	-107.820289
2,103.0	0.80	263.20	2,102.7	-3.1	1.6	1,932,724.65	2,726,934.02	36.311605	-107.820292
2,166.0	0.70	256.40	2,165.7	-3.3	0.8	1,932,724.51	2,726,933.20	36.311605	-107.820295
2,230.0	0.60	262.70	2,229.7	-3.4	0.1	1,932,724.38	2,726,932.49	36.311605	-107.820297
2,293.0	1.00	254.70	2,292.7	-3.6	-0.8	1,932,724.19	2,726,931.63	36.311604	-107.820300
2,356.0	0.60	12.30	2,355.7	-3.4	-1.2	1,932,724.37	2,726,931.17	36.311605	-107.820302
2,419.0	0.70	51.00	2,418.7	-2.9	-0.9	1,932,724.93	2,726,931.54	36.311606	-107.820300
2,483.0	0.60	56.30	2,482.7	-2.4	-0.3	1,932,725.36	2,726,932.13	36.311607	-107.820298
2,546.0	0.60	74.70	2,545.7	-2.2	0.3	1,932,725.63	2,726,932.72	36.311608	-107.820296
2,609.0	0.80	68.10	2,608.7	-1.9	1.0	1,932,725.88	2,726,933.45	36.311609	-107.820294
2,672.0	0.60	83.40	2,671.7	-1.7	1.8	1,932,726.09	2,726,934.18	36.311609	-107.820291
2,736.0	0.60	94.50	2,735.7	-1.7	2.4	1,932,726.10	2,726,934.85	36.311609	-107.820289
2,799.0	0.70	96.90	2,798.7	-1.8	3.1	1,932,726.03	2,726,935.56	36.311609	-107.820287
2,862.0	0.50	120.90	2,861.7	-2.0	3.8	1,932,725.84	2,726,936.18	36.311609	-107.820285
2,925.0	0.80	125.90	2,924.7	-2.4	4.3	1,932,725.44	2,726,936.77	36.311608	-107.820283
2,989.0	0.70	132.40	2,988.6	-2.9	5.0	1,932,724.91	2,726,937.42	36.311606	-107.820280
3,052.0	0.50	339.60	3,051.6	-2.9	5.2	1,932,724.91	2,726,937.61	36.311606	-107.820280
3,115.0	1.20	321.50	3,114.6	-2.1	4.7	1,932,725.69	2,726,937.10	36.311608	-107.820281
3,178.0	1.50	327.20	3,177.6	-0.9	3.8	1,932,726.90	2,726,936.24	36.311612	-107.820284
3,241.0	0.60	290.40	3,240.6	-0.1	3.1	1,932,727.70	2,726,935.49	36.311614	-107.820287
3,305.0	1.00	276.20	3,304.6	0.1	2.2	1,932,727.88	2,726,934.62	36.311614	-107.820290
3,368.0	0.90	295.10	3,367.6	0.4	1.2	1,932,728.15	2,726,933.62	36.311615	-107.820293
3,431.0	0.30	180.80	3,430.6	0.4	0.8	1,932,728.19	2,726,933.17	36.311615	-107.820295
3,494.0	0.50	209.90	3,493.6	0.0	0.6	1,932,727.79	2,726,933.03	36.311614	-107.820295
3,557.0	0.70	190.40	3,556.6	-0.6	0.4	1,932,727.17	2,726,932.83	36.311612	-107.820296
3,621.0	0.60	216.80	3,620.6	-1.3	0.1	1,932,726.52	2,726,932.56	36.311611	-107.820297
3,684.0	0.60	195.60	3,683.6	-1.9	-0.2	1,932,725.94	2,726,932.27	36.311609	-107.820298
3,747.0	0.90	213.80	3,746.6	-2.6	-0.5	1,932,725.21	2,726,931.91	36.311607	-107.820299
3,810.0	0.70	209.20	3,809.6	-3.3	-1.0	1,932,724.46	2,726,931.44	36.311605	-107.820301
3,873.0	0.70	215.40	3,872.6	-4.0	-1.4	1,932,723.81	2,726,931.03	36.311603	-107.820302
3,936.0	0.50	206.40	3,935.6	-4.5	-1.7	1,932,723.25	2,726,930.69	36.311602	-107.820303
3,999.0	0.60	232.50	3,998.6	-5.0	-2.1	1,932,722.81	2,726,930.30	36.311600	-107.820304
4,062.0	0.80	238.80	4,061.6	-5.4	-2.8	1,932,722.38	2,726,929.67	36.311599	-107.820307
4,125.0	0.60	242.80	4,124.5	-5.8	-3.4	1,932,722.00	2,726,929.00	36.311598	-107.820309
4,189.0	0.40	240.80	4,188.5	-6.1	-3.9	1,932,721.74	2,726,928.50	36.311597	-107.820311
4,252.0	0.10	248.20	4,251.5	-6.2	-4.2	1,932,721.61	2,726,928.26	36.311597	-107.820311

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,315.0	0.20	266.50	4,314.5	-6.2	-4.3	1,932,721.58	2,726,928.10	36.311597	-107.820312
4,346.0	0.50	216.30	4,345.5	-6.3	-4.5	1,932,721.47	2,726,927.97	36.311597	-107.820312
4,378.0	1.00	53.20	4,377.5	-6.3	-4.3	1,932,721.52	2,726,928.11	36.311597	-107.820312
4,409.0	3.40	29.40	4,408.5	-5.3	-3.6	1,932,722.49	2,726,928.77	36.311600	-107.820310
4,441.0	5.70	17.90	4,440.4	-3.0	-2.7	1,932,724.83	2,726,929.73	36.311606	-107.820306
4,473.0	7.90	8.50	4,472.2	0.7	-1.9	1,932,728.52	2,726,930.54	36.311616	-107.820304
4,504.0	9.70	3.10	4,502.8	5.4	-1.4	1,932,733.23	2,726,931.00	36.311629	-107.820302
4,536.0	11.20	7.50	4,534.3	11.2	-0.9	1,932,739.00	2,726,931.55	36.311645	-107.820300
4,567.0	12.00	12.80	4,564.7	17.3	0.2	1,932,745.13	2,726,932.65	36.311662	-107.820296
4,599.0	14.30	12.70	4,595.8	24.4	1.8	1,932,752.23	2,726,934.26	36.311681	-107.820291
4,630.0	16.40	10.00	4,625.7	32.5	3.4	1,932,760.28	2,726,935.86	36.311703	-107.820286
4,662.0	18.10	7.30	4,656.3	41.9	4.9	1,932,769.66	2,726,937.28	36.311729	-107.820281
4,694.0	20.20	6.40	4,686.5	52.3	6.1	1,932,780.08	2,726,938.52	36.311758	-107.820277
4,725.0	21.80	6.80	4,715.4	63.3	7.4	1,932,791.12	2,726,939.80	36.311788	-107.820272
4,757.0	23.60	8.80	4,745.0	75.6	9.1	1,932,803.35	2,726,941.48	36.311822	-107.820266
4,788.0	26.00	10.80	4,773.1	88.4	11.3	1,932,816.16	2,726,943.70	36.311857	-107.820259
4,820.0	28.70	13.40	4,801.5	102.7	14.4	1,932,830.52	2,726,946.79	36.311896	-107.820248
4,851.0	29.00	19.90	4,828.7	117.0	18.7	1,932,844.84	2,726,951.08	36.311936	-107.820234
4,883.0	28.10	27.50	4,856.8	131.0	24.8	1,932,858.82	2,726,957.20	36.311974	-107.820213
4,915.0	27.90	35.30	4,885.1	143.8	32.6	1,932,871.62	2,726,965.00	36.312009	-107.820187
4,946.0	28.70	41.30	4,912.4	155.3	41.7	1,932,883.13	2,726,974.11	36.312041	-107.820156
4,978.0	30.30	44.10	4,940.2	166.9	52.4	1,932,894.71	2,726,984.80	36.312073	-107.820119
5,009.0	32.40	46.40	4,966.7	178.2	63.9	1,932,906.05	2,726,996.25	36.312104	-107.820081
5,041.0	34.50	49.40	4,993.4	190.1	76.9	1,932,917.87	2,727,009.34	36.312136	-107.820036
5,072.0	36.10	52.50	5,018.7	201.3	90.9	1,932,929.14	2,727,023.26	36.312167	-107.819989
5,104.0	37.80	53.30	5,044.3	212.9	106.2	1,932,940.75	2,727,038.60	36.312199	-107.819937
5,136.0	39.40	54.10	5,069.3	224.8	122.3	1,932,952.56	2,727,054.69	36.312231	-107.819882
5,167.0	40.90	56.60	5,093.0	236.1	138.7	1,932,963.92	2,727,071.13	36.312263	-107.819826
5,199.0	43.10	58.80	5,116.7	247.5	156.8	1,932,975.36	2,727,089.23	36.312294	-107.819765
5,230.0	45.30	61.30	5,139.0	258.3	175.6	1,932,986.14	2,727,107.95	36.312324	-107.819701
5,262.0	47.70	63.10	5,161.0	269.1	196.1	1,932,996.96	2,727,128.48	36.312353	-107.819632
5,293.0	50.10	64.50	5,181.4	279.4	217.1	1,933,007.27	2,727,149.44	36.312382	-107.819561
5,325.0	51.80	65.20	5,201.5	290.0	239.6	1,933,017.83	2,727,171.94	36.312411	-107.819484
5,357.0	53.40	65.40	5,221.0	300.6	262.6	1,933,028.46	2,727,195.03	36.312440	-107.819406
5,388.0	55.00	65.30	5,239.1	311.1	285.5	1,933,038.95	2,727,217.88	36.312469	-107.819328
5,420.0	57.50	65.70	5,256.9	322.1	309.7	1,933,049.98	2,727,242.09	36.312499	-107.819246
5,451.0	60.60	65.50	5,272.8	333.1	333.9	1,933,060.97	2,727,266.29	36.312529	-107.819164
5,482.0	63.90	65.50	5,287.2	344.5	358.9	1,933,072.35	2,727,291.25	36.312560	-107.819079
5,514.0	67.10	66.50	5,300.5	356.3	385.5	1,933,084.19	2,727,317.85	36.312593	-107.818989
5,546.0	68.70	68.90	5,312.6	367.6	412.9	1,933,095.44	2,727,345.28	36.312624	-107.818896
5,577.0	69.90	71.00	5,323.5	377.5	440.1	1,933,105.38	2,727,372.52	36.312651	-107.818803
5,609.0	70.90	73.30	5,334.3	386.8	468.8	1,933,114.62	2,727,401.21	36.312677	-107.818706
5,640.0	72.10	75.10	5,344.1	394.8	497.1	1,933,122.63	2,727,429.49	36.312699	-107.818610
5,662.0	73.20	76.10	5,350.7	400.0	517.5	1,933,127.85	2,727,449.83	36.312713	-107.818541
5,706.0	76.30	77.50	5,362.2	409.7	558.8	1,933,137.55	2,727,491.15	36.312739	-107.818401
5,737.0	78.20	79.20	5,369.1	415.8	588.4	1,933,143.66	2,727,520.76	36.312756	-107.818300
5,767.0	80.60	81.10	5,374.6	420.8	617.4	1,933,148.70	2,727,549.81	36.312770	-107.818202
5,798.0	82.60	83.20	5,379.1	425.0	647.8	1,933,152.89	2,727,580.19	36.312782	-107.818098
5,828.0	83.90	84.30	5,382.6	428.3	677.4	1,933,156.14	2,727,609.80	36.312790	-107.817998
5,860.0	85.30	85.30	5,385.6	431.1	709.2	1,933,159.03	2,727,641.53	36.312798	-107.817890
5,892.0	86.80	87.20	5,387.9	433.2	741.0	1,933,161.12	2,727,673.38	36.312804	-107.817782
5,923.0	88.60	88.70	5,389.1	434.3	772.0	1,933,162.23	2,727,704.33	36.312807	-107.817677
5,987.0	89.00	88.30	5,390.4	436.0	835.9	1,933,163.92	2,727,768.30	36.312812	-107.817460
6,050.0	89.00	88.20	5,391.5	437.9	898.9	1,933,165.85	2,727,831.26	36.312817	-107.817246
6,111.0	89.50	87.80	5,392.3	440.1	959.8	1,933,167.99	2,727,892.21	36.312823	-107.817039

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,173.0	90.20	88.20	5,392.5	442.2	1,021.8	1,933,170.16	2,727,954.17	36.312829	-107.816829
6,234.0	90.50	87.80	5,392.1	444.4	1,082.8	1,933,172.30	2,728,015.14	36.312835	-107.816622
6,295.0	90.00	88.60	5,391.9	446.3	1,143.7	1,933,174.22	2,728,076.10	36.312840	-107.816415
6,358.0	90.60	88.80	5,391.5	447.7	1,206.7	1,933,175.66	2,728,139.09	36.312844	-107.816201
6,422.0	89.50	89.00	5,391.5	448.9	1,270.7	1,933,176.89	2,728,203.07	36.312847	-107.815984
6,485.0	88.90	90.40	5,392.4	449.3	1,333.7	1,933,177.23	2,728,266.06	36.312848	-107.815770
6,548.0	89.20	90.40	5,393.4	448.8	1,396.7	1,933,176.80	2,728,329.05	36.312847	-107.815557
6,612.0	89.40	90.40	5,394.2	448.4	1,460.7	1,933,176.36	2,728,393.05	36.312846	-107.815339
6,656.0	89.90	90.10	5,394.4	448.2	1,504.7	1,933,176.18	2,728,437.05	36.312845	-107.815190
6,717.0	89.70	89.90	5,394.7	448.2	1,565.7	1,933,176.19	2,728,498.04	36.312845	-107.814983
6,778.0	89.00	90.90	5,395.4	447.8	1,626.7	1,933,175.77	2,728,559.04	36.312844	-107.814776
6,842.0	89.10	90.10	5,396.4	447.2	1,690.7	1,933,175.22	2,728,623.03	36.312842	-107.814559
6,901.0	89.70	91.00	5,397.0	446.6	1,749.7	1,933,174.66	2,728,682.02	36.312841	-107.814358
6,964.0	90.20	90.80	5,397.1	445.6	1,812.6	1,933,173.68	2,728,745.01	36.312838	-107.814145
7,027.0	91.20	91.10	5,396.3	444.6	1,875.6	1,933,172.64	2,728,808.00	36.312835	-107.813931
7,090.0	91.20	89.70	5,395.0	444.2	1,938.6	1,933,172.21	2,728,870.98	36.312834	-107.813717
7,153.0	90.30	89.60	5,394.2	444.5	2,001.6	1,933,172.60	2,728,933.97	36.312835	-107.813503
7,217.0	89.10	90.50	5,394.5	444.5	2,065.6	1,933,172.56	2,728,997.97	36.312835	-107.813286
7,280.0	89.60	90.40	5,395.2	444.0	2,128.6	1,933,172.07	2,729,060.96	36.312834	-107.813072
7,343.0	89.10	89.50	5,395.9	444.0	2,191.6	1,933,172.13	2,729,123.96	36.312834	-107.812858
7,406.0	89.70	89.70	5,396.6	444.5	2,254.6	1,933,172.58	2,729,186.95	36.312835	-107.812645
7,470.0	89.00	89.70	5,397.3	444.8	2,318.6	1,933,172.93	2,729,250.95	36.312836	-107.812427
7,533.0	89.40	90.40	5,398.2	444.8	2,381.6	1,933,172.88	2,729,313.94	36.312836	-107.812214
7,596.0	88.70	89.30	5,399.2	444.9	2,444.6	1,933,173.05	2,729,376.93	36.312836	-107.812000
7,659.0	89.30	89.70	5,400.3	445.5	2,507.6	1,933,173.61	2,729,439.92	36.312838	-107.811786
7,723.0	90.00	89.70	5,400.7	445.8	2,571.6	1,933,173.96	2,729,503.92	36.312838	-107.811569
7,786.0	89.30	89.70	5,401.1	446.1	2,634.5	1,933,174.29	2,729,566.91	36.312839	-107.811355
7,849.0	89.60	89.60	5,401.7	446.5	2,697.5	1,933,174.69	2,729,629.91	36.312840	-107.811141
7,912.0	88.80	89.30	5,402.6	447.1	2,760.5	1,933,175.30	2,729,692.90	36.312842	-107.810927
7,976.0	89.00	89.80	5,403.8	447.6	2,824.5	1,933,175.81	2,729,756.88	36.312843	-107.810710
8,039.0	90.00	89.70	5,404.4	447.9	2,887.5	1,933,176.09	2,729,819.88	36.312844	-107.810496
8,102.0	88.80	90.30	5,405.0	447.9	2,950.5	1,933,176.10	2,729,882.88	36.312844	-107.810282
8,165.0	88.90	89.70	5,406.3	447.9	3,013.5	1,933,176.11	2,729,945.86	36.312844	-107.810069
8,229.0	89.10	90.00	5,407.4	448.1	3,077.5	1,933,176.29	2,730,009.85	36.312845	-107.809851
8,292.0	89.60	89.50	5,408.1	448.4	3,140.5	1,933,176.57	2,730,072.85	36.312845	-107.809638
8,355.0	90.40	90.10	5,408.1	448.6	3,203.5	1,933,176.80	2,730,135.85	36.312846	-107.809424
8,418.0	89.20	90.50	5,408.4	448.2	3,266.5	1,933,176.48	2,730,198.84	36.312845	-107.809210
8,482.0	89.40	90.60	5,409.1	447.6	3,330.5	1,933,175.87	2,730,262.83	36.312843	-107.808993
8,545.0	90.10	90.50	5,409.4	447.0	3,393.5	1,933,175.28	2,730,325.83	36.312842	-107.808779
8,608.0	89.20	90.40	5,409.8	446.5	3,456.5	1,933,174.79	2,730,388.83	36.312840	-107.808565
8,671.0	89.70	89.70	5,410.4	446.5	3,519.5	1,933,174.74	2,730,451.82	36.312840	-107.808351
8,734.0	89.50	89.80	5,410.8	446.7	3,582.5	1,933,175.03	2,730,514.82	36.312841	-107.808137
8,798.0	88.20	89.70	5,412.1	447.0	3,646.4	1,933,175.31	2,730,578.81	36.312841	-107.807920
8,861.0	88.40	89.80	5,414.0	447.3	3,709.4	1,933,175.60	2,730,641.78	36.312842	-107.807707
8,924.0	88.40	89.30	5,415.8	447.8	3,772.4	1,933,176.10	2,730,704.77	36.312844	-107.807493
8,987.0	89.70	89.50	5,416.8	448.5	3,835.4	1,933,176.77	2,730,767.75	36.312845	-107.807279
9,050.0	89.60	90.70	5,417.2	448.3	3,898.4	1,933,176.67	2,730,830.75	36.312845	-107.807065
9,114.0	89.90	90.60	5,417.5	447.6	3,962.4	1,933,175.95	2,730,894.75	36.312843	-107.806848
9,177.0	89.70	90.40	5,417.7	447.1	4,025.4	1,933,175.41	2,730,957.75	36.312841	-107.806634
9,240.0	89.90	89.70	5,417.9	447.0	4,088.4	1,933,175.36	2,731,020.74	36.312841	-107.806420
9,304.0	90.10	89.50	5,417.9	447.5	4,152.4	1,933,175.82	2,731,084.74	36.312842	-107.806203
9,367.0	89.50	90.10	5,418.1	447.7	4,215.4	1,933,176.05	2,731,147.74	36.312843	-107.805989
9,430.0	89.60	89.80	5,418.6	447.7	4,278.4	1,933,176.11	2,731,210.74	36.312843	-107.805775
9,493.0	89.80	89.90	5,419.0	447.9	4,341.4	1,933,176.28	2,731,273.74	36.312844	-107.805562
9,557.0	90.20	89.80	5,419.0	448.1	4,405.4	1,933,176.46	2,731,337.74	36.312844	-107.805344

Cathedral Energy Services

Survey Report - Geographic

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S17-T24N-R9W (Escrito)
Well: Escrito L17-2409 03H
Wellbore: Hz
Design: FINAL

Local Co-ordinate Reference: Well Escrito L17-2409 03H
TVD Reference: WELL @ 6808.0usft (Original Well Elev)
MD Reference: WELL @ 6808.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,620.0	89.30	90.20	5,419.2	448.1	4,468.4	1,933,176.47	2,731,400.74	36.312844	-107.805130
9,683.0	89.00	89.70	5,420.2	448.1	4,531.4	1,933,176.53	2,731,463.73	36.312844	-107.804917
9,700.0	89.00	89.70	5,420.5	448.2	4,548.4	1,933,176.62	2,731,480.73	36.312844	-107.804859
Last CES Survey @ 9,700' MD									
9,750.0	89.00	89.70	5,421.3	448.5	4,598.4	1,933,176.89	2,731,530.72	36.312845	-107.804689
PTB @ 9,750'									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Escrito L17-2409 03H PI	0.00	0.00	5,412.2	446.7	4,613.7	1,933,175.09	2,731,546.03	36.312840	-107.804637
- actual wellpath misses target center by 17.9usft at 9750.0usft MD (5421.3 TVD, 448.5 N, 4598.4 E)									
- Point									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
9,700.0	5,420.5	448.2	4,548.4	Last CES Survey @ 9,700' MD	
9,750.0	5,421.3	448.5	4,598.4	PTB @ 9,750'	

Checked By: _____ Approved By: _____ Date: _____