

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach
Division Director
Oil Conservation Division



New Mexico Oil Conservation Division approval and conditions listed below are made in accordance with OCD Rule 19.15.7.11 and are in addition to the actions approved by BLM on the following 3160-3 APD form.

Operator Signature Date: 12-22-14

Well information;

Operator Encana, Well Name and Number Pinon Unit M03-2410#2H

API# 30-045-35029, Section 3, Township 24N/S, Range 10 E/W

Conditions of Approval:

(See the below checked and handwritten conditions)

- ☒ Notify Aztec OCD 24hrs prior to casing & cement.
- ☒ Hold C-104 for directional survey & "As Drilled" Plat
- ☒ Hold C-104 for NSL, NSP, DHC
 - ☐ Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
 - ☐ Regarding the use of a pit, closed loop system or below grade tank, the operator must comply with the following as applicable:
 - A pit requires a complete C-144 be submitted and approved prior to the construction or use of the pit, pursuant to 19.15.17.8.A
 - A closed loop system requires notification prior to use, pursuant to 19.15.17.9.A
 - A below grade tank requires a registration be filed prior to the construction or use of the below grade tank, pursuant to 19.15.17.8.C
 - ☐ Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
- ☒ Regarding Hydraulic Fracturing, review EPA Underground Injection Control Guidance 84
- ☒ Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
- ☒ Well-bore communication is regulated under 19.15.29 NMAC. This requires well-bore Communication to be reported in accordance with 19.15.29.8.

Chad Horn
NMOCD Approved by Signature

1-15-15
Date KC

OIL CONS. DIV DIST. 3 RECEIVED

JAN 08 2015

DEC 29 2014

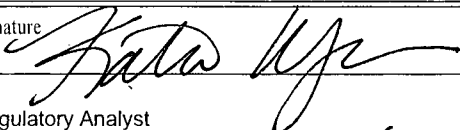
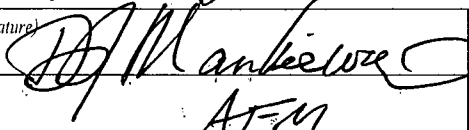
Form 3160-3
(March 2012)FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. Pinon Unit NMNM 104606
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Encana Oil & Gas (USA) Inc.		7. If Unit or CA Agreement, Name and No. Pinon Unit NMNM 133844X NMNM133481Y
3a. Address 370 17th Street, Suite 1700, Denver, CO 80202		8. Lease Name and Well No. Pinon Unit M03-2410 02H
3b. Phone No. (include area code) 720-876-3533		9. API Well No. 3004535629
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface M 226' FSL and 1261' FWL in Section 3, T24N, R10W SWSW At proposed prod. zone H 2360' FNL and 330' FEL in Section 10, T24N, R10W SENE		10. Field and Pool, or Exploratory Pinon Unit HZ (Oil)
11. Sec., T. R. M. or Blk. and Survey or Area Section 3, T24N, R10WN		12. County or Parish San Juan
13. State NM		14. Distance in miles and direction from nearest town or post office* 34.7 miles South from the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) BHL is 2360' FSL and 330' FEL in Sec. 10, T24N, R10W		16. No. of acres in lease NMNM 133841X - 7845.44 Acres 8005.44
17. Spacing Unit dedicated to this well 8005.44 7,845.44 acres - Sections 5-10; 15-18; 21; E2 of Section 4; N2 of Sections 22 and 28		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Pinon Unit M03-2410 01H is +/- 30' from SHL
19. Proposed Depth 5,472' TVD, 9,254' MD		20. BLM/BIA Bond No. on file COB 000235
21. Elevations (Show whether DF, KDB, RT, GL, etc.) GL 6,953', 6,968' KB		22. Approximate date work will start* 03/22/2015
23. Estimated duration 20 days		24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) Katie Wegner	Date 12/22/2014
Title Regulatory Analyst		
Approved by (Signature) 	Name (Printed/Typed) AFM	Date 1/5/15
Title AFM	Office FFO	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS.

(Instructions on page 2)
DRILLING OPERATIONS
AUTHORIZED ARE SUBJECT TO
COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS"

NMOCDA

JAN 08 2015

DISTRICT I

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II

811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 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) 476-3463State 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 DEC 29 2014

1220 South St. Francis Dr.

Santa Fe, NM 87505

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35029	² Pool Code 98102	³ Pool Name PIÑON UNIT HZ (OIL)
⁴ Property Code 314087	⁵ Property Name PIÑON UNIT M03-2410	⁶ Well Number 02H
⁷ OGRIID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6952.6'

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
M	3	24N	10W		226'	SOUTH	1261'	WEST	SAN JUAN

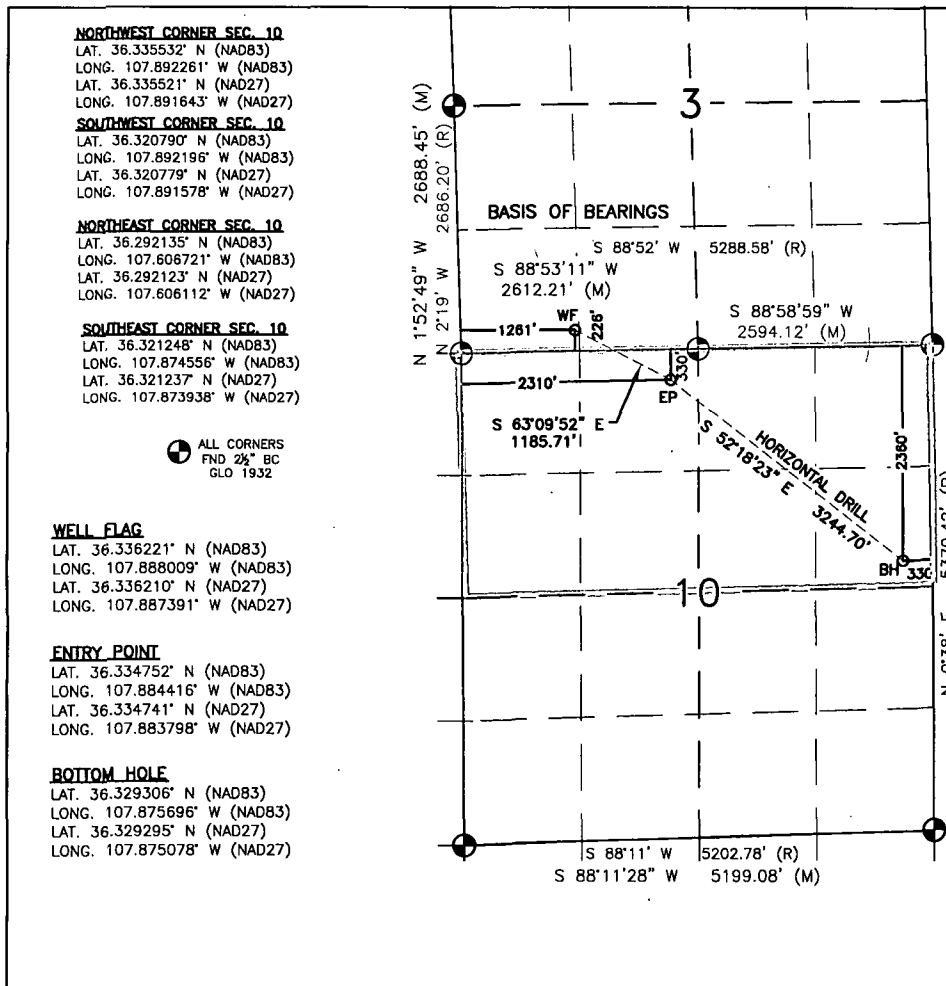
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	10	24N	10W		2360'	NORTH	330'	EAST	SAN JUAN

¹² Dedicated Acres PROJECT AREA 7845.44 ACRES W/2 OF SEC. 4, SEC. 5-10, 15-18, 21, N/2 OF SEC. 22, & N/2 OF SEC. 28 - UNDIVIDED UNIT, PENETRATED SPACING UNITS - N2 SEC 10 (320 ACRES)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13857 (7845.44 acres) 8,005.44
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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

16



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.

Katie Wegner 12/22/14
Signature Date

Printed Name

katie.wegner@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.

OCTOBER 29, 2012

Date of Survey

Signature and Seal of Professional Surveyor:

David B. Russell
DAVID B. RUSSELL
NEW MEXICO
REGISTERED PROFESSIONAL LAND SURVEYOR
10201
Certificate Number 10201

1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

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State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

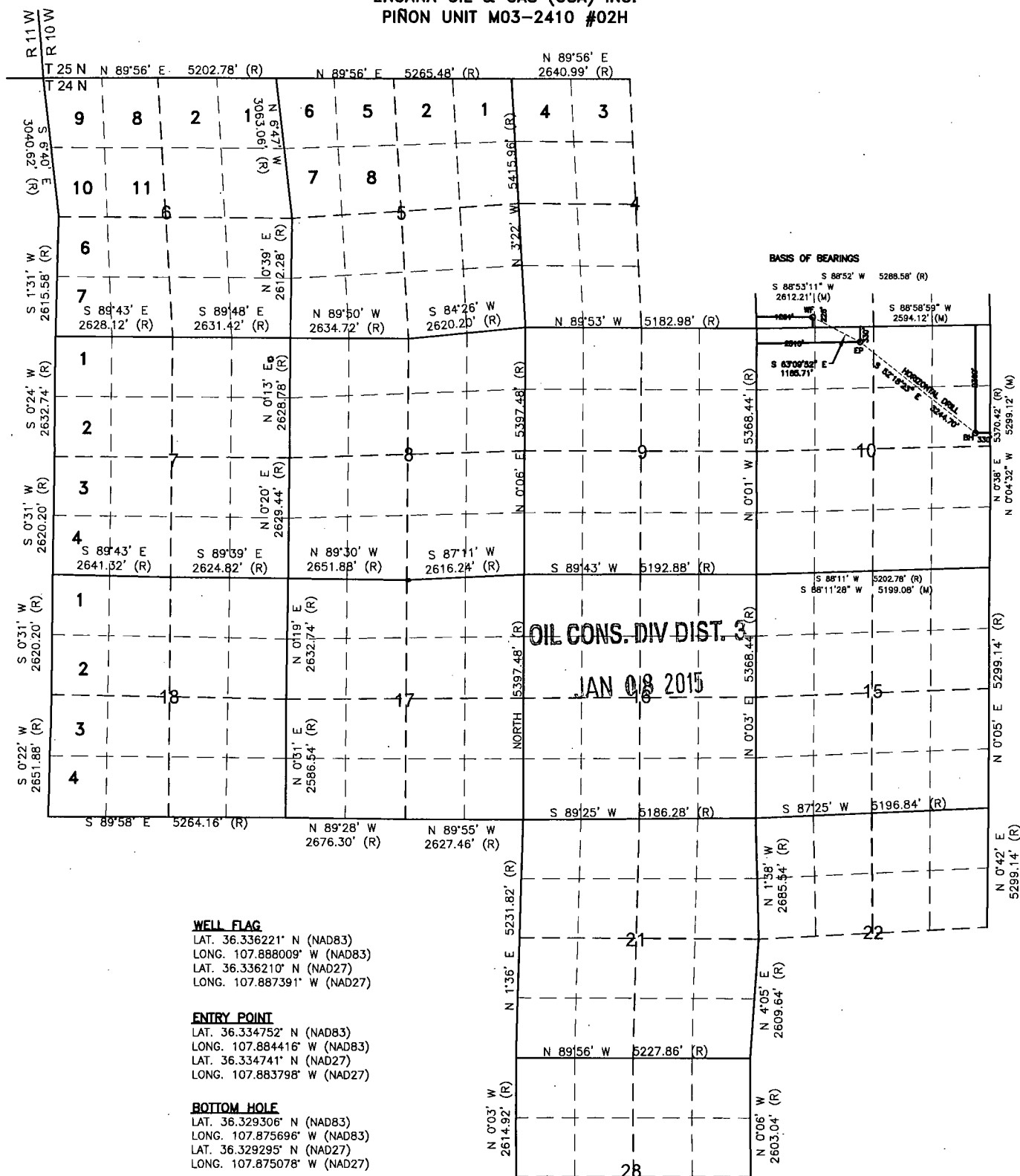
**Submit one copy to appropriate
District Office**

OIL CONSERVATION DIVISION

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

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
PIÑON UNIT M03-2410 #02H



Pinon Unit M03-2410 02H

SHL: SW/4 SW/4 Sec 3 T24N R10W, 226' FSL, 1261' FWL

BHL: S/2 SW/4 Sec 10 T24N R10W, 2360' FNL, 330' FEL

San Juan, New Mexico

**Encana Oil & Gas (USA) Inc.
Drilling Plan**

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS (TVD)

The estimated tops of important geologic markers are as follows:

Formation	Depth (TVD) units = feet
San Jose Fn.	n/a
Nacimiento Fn.	surface
Ojo Alamo Ss.	879
Kirtland Shale	1,036
Fruitland Coal	1,412
Pictured Cliffs Ss.	1,701
Lewis Shale	1,844
Cliffhouse Ss.	2,517
Menefee Fn.	3,264
Point Lookout Ss.	4,208
Mancos Shale	4,386
Mancos Silt	4,999
Gallup Fn.	5,245
Base Gallup	5,549

The referenced surface elevation is 6953', KB 6968'

**2. ESTIMATED DEPTH OF POTENTIAL WATER, OIL, GAS,
& OTHER MINERAL BEARING FORMATIONS**

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,412
Oil/Gas	Pictured Cliffs Ss.	1,701
Oil/Gas	Cliffhouse Ss.	2,517
Gas	Menefee Fn.	3,264
Oil/Gas	Point Lookout Ss.	4,208
Oil/Gas	Mancos Shale	4,386
Oil/Gas	Mancos Silt	4,999
Oil/Gas	Gallup Fn.	5,245

All shows of fresh water and minerals will be reported and protected.

Pinon Unit M03-2410 02H

SHL: SW/4 SW/4 Sec 3 T24N R10W, 226' FSL, 1261' FWL

BHL: S/2 SW/4 Sec 10 T24N R10W, 2360' FNL, 330' FEL

San Juan, New Mexico

3. PRESSURE CONTROL

- a) Pressure control equipment and configuration will be designed to meet 2M standards.
- b) Working pressure on rams and BOPE will be 3,000 psi.
- c) Function test and visual inspection of the BOP will be conducted daily and noted in the IADC Daily Drilling Report.
- d) The Annular BOP will be pressure tested to a minimum of 50 percent of its rated working pressure.
- e) Blind and Pipe Rams/BOP will be tested against a test plug to 100 percent of rated working pressure.
- f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
- g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
- h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
- i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.
- j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
- k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
- l) The choke and manifold shall contain two adjustable chokes.
- m) Hand wheels shall be installed on all ram preventers.
- n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.
- o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones, and any prospectively valuable deposits of minerals. Any isolating medium other than cement shall receive approval prior to use. The casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during normal drilling operations. All indications of useable water shall be reported.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Conductor	0'-60'	26"	16"	42.09#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5586'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5486'-9254'	6 1/8"	4 1/2"	11.6#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (ppf)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lbs)	Collapse	Burst	Tension
9 5/8"	36	J55	STC	2020	3520	394	1.125	1.1	1.5
7"	26	J55	LTC	4320	4980	367	1.125	1.1	1.5
4.5"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

*B80 pipe specifications are attached

Casing design is subject to revision based on geologic conditions encountered

Pinon Unit M03-2410 02H**SHL: SW/4 SW/4 Sec 3 T24N R10W, 226' FSL, 1261' FWL****BHL: S/2 SW/4 Sec 10 T24N R10W, 2360' FNL, 330' FEL****San Juan, New Mexico**

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string length or 1,500 psi, whichever is greater, but not to exceed 70 percent of the minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

b) The proposed cementing program is as follows

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Conductor	0'-60'	100 sks	Type I Neat 16 ppg	Surface	None
Surface	0'-500'	228 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5586'	100% open hole excess Stage 1 Lead: 521 sks Stage 1 Tail: 396 sks	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5486'- 9254'	50% OH excess Stage 1 Blend Total: 217sks	Blend: Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwoc Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL- 52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk	Liner Hanger	N/A

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed horizontal well will have a kick off point of 3500'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5472'/9254'	Gallup

Pinon Unit M03-2410 02H

SHL: SW/4 SW/4 Sec 3 T24N R10W, 226' FSL, 1261' FWL

BHL: S/2 SW/4 Sec 10 T24N R10W, 2360' FNL, 330' FEL

San Juan, New Mexico

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60'/60'	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0'-500'/500'	Fresh Water	8.3-10	60-70	NC
8 3/4"	500'/500'-5376'/5586'	Fresh Water LSND	8.3-10	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	Depth (TVD/MD)	Mud Type	Density (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5376'/5586'- 5472'/9254'	Fresh Water LSND	8.3-10	15-25	<15

- c) There will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.
- d) A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance with the Surface Use Plan of Operations.

7. TESTING, CORING, & LOGGING

- a) Drill Stem Testing - None anticipated.
- b) Coring - None anticipated.
- c) Mudd Logging - Mud loggers will be on location from kick off point to TD.
- d) Logging - See below

Cased Hole:

CBL/CCL/GR/VDL will be run as needed for perforating control

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

The anticipated bottom hole pressure is +/- 2578 psi based on a 9.0 ppg at 5510' TVD of the horizontal lateral target. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H₂S is encountered, the guidelines in Onshore Order No. 6 will be followed.

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on March 22, 2015. It is anticipated that completion operations will begin within 30 days after the well has been drilled depending on fracture treatment schedules with various pumping service companies.

It is anticipated that the drilling of this well will take approximately 20 days.

LOC: SW/4 SW/4 Sec 3 T24N R10W, 226' FSL County: San Juan WELL: Pinon Unit M03-2410 02H			Encana Natural Gas WELL SUMMARY				ENG: David Scadden RIG: Aztec 920 GLE: 6953 RKBE: 6967.5		12/22/14	
MWD	OPEN HOLE	FORM	DEPTH			HOLE	CASING	MW	DEVIATION	
LWD	LOGGING		TVD	MD			SPECS	MUD TYPE	INFORMATION	
			60	60'		26	16" 42.09# 100sx Type I Neat 16.0ppg cmt	Fresh wtr 8.3-9.2		
Multi-Well pad take survey every stand and run anti-collision report prior to spud	None	San Jose Fn.	0			12 1/4	9 5/8" 36ppf J55 STC TOC Surface with 100% OH Excess: 228 sks Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water.	Fresh wtr 8.3-10	Vertical <1°	
		Nacimiento Fn. 9 5/8" Csg	surface 500	500.00						
Survey Every 60'-120', updating anticollision report after surveys. Stop operations and contact drilling engineer if separation factor approaches 1.5	No OH logs	Ojo Alamo Ss. Kirtland Shale	879 1,036			8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 917sks Stage 1 Lead: 521 sks Premium Lite FM + 3% CaCl2 + 0.25/sk Cello Flake + 5#/sk LCM-1 + 8% Bentonite + 0.4% FL-52A + 0.4% Sodium Metasilicate. Mixed at 12.1 ppg. Yield 2.13 cuft/sk.	Fresh Wtr 8.3-10	Vertical <1°	
		Fruitland Coal	1,412							
Surveys every 30' through the curve	Mud logger onsite	Pictured Cliffs Ss. Lewis Shale	1,701 1,844							
		Cliffhouse Ss. Menefee Fn.	2,517 3,264							
		Point Lookout Ss. Mancos Shale	4,208 4,386							
		KOP	3,500	3,500'						
		Mancos Silt	4,999				Stage 1 Tail: 396 sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk.			
		Gallup Fn.	5,245							
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	7" Csg	5,376	5,586'		6 1/8	100' overlap at liner top		Horz Inc/TVD 90.5deg/5509.5ft	
		Horizontal Target TD	5,510 5,472	9,254			3668' Drilled Lateral		TD = 9253.9 MD	
MWD Gamma Directional		Base Gallup	5,549				4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 217sks Stage 1 Blend: 217 sks Premium Lite High Strength FM + 0.7% bwoc R-3 + 3% bwow Potassium Chloride + 0.25lbs/sack Cello Flake + 0.5% bwoc CD-32 + 1.15% bwoc FL-52A + 60 lbs/sack Calcium Carbonate + 124.4% Fresh Water. Yield 2.63 cuft/sk.	WBM 8.3-10		

NOTES:

- 1) Drill with 26" bit to 60', set 16" 42.09ppf conductor pipe
- 2) Drill surface to 500', R&C 9 5/8" casing
- 3) N/U BOP and surface equipment
- 4) Drill to KOP of 3500', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5586' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at ~90 deg, drill lateral to 9254' run 4 1/2 inch cemented liner

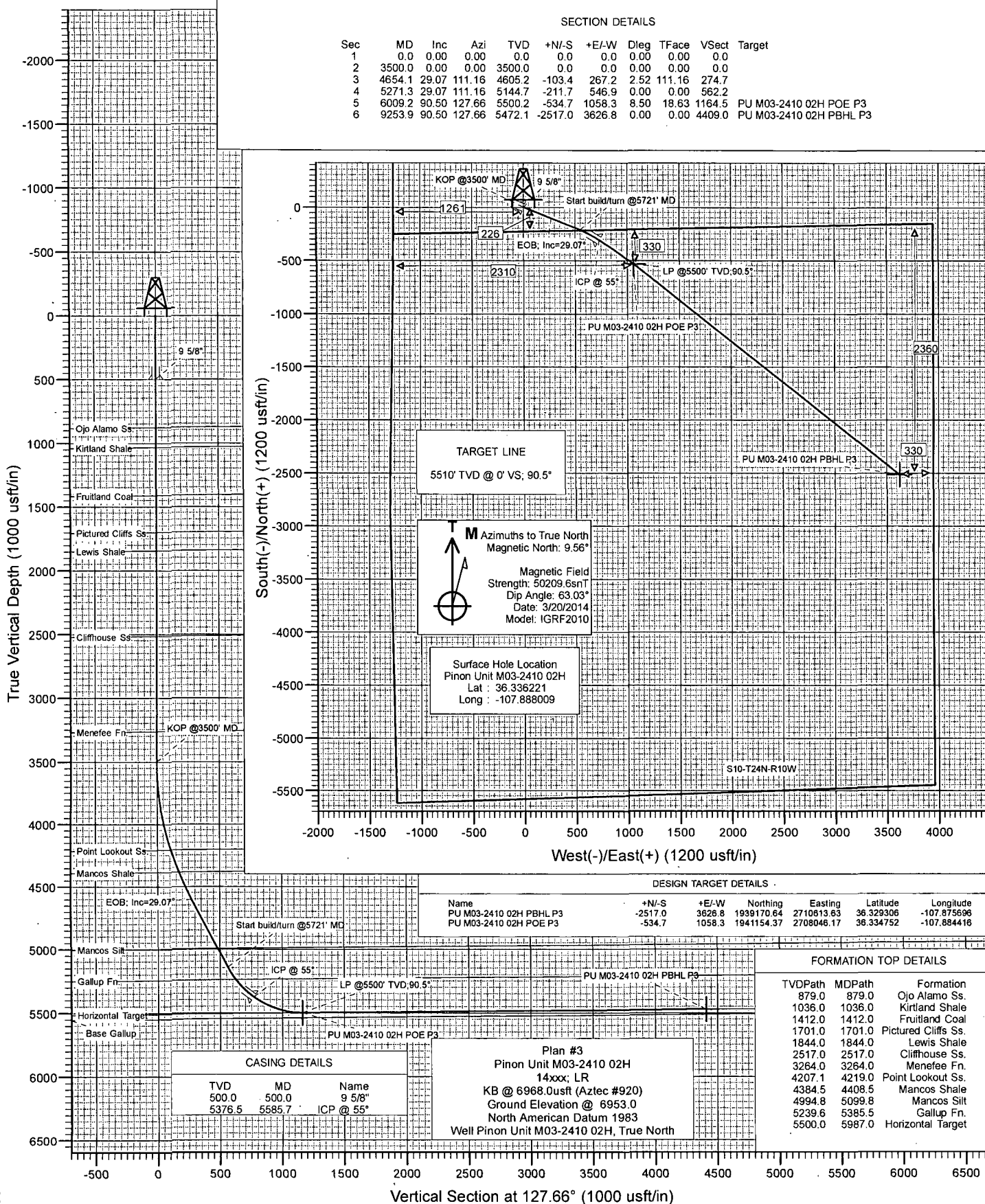


Project: San Juan County, NM
 Site: S3-T24N-R10W
 Well: Pinon Unit M03-2410 02H
 Wellbore: Hz
 Design: Plan #3



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V/Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3500.0	0.00	0.00	3500.0	0.0	0.0	0.00	0.00	0.0	
3	4654.1	29.07	111.16	4605.2	-103.4	267.2	2.52	111.16	274.7	
4	5271.3	29.07	111.16	5144.7	-211.7	546.9	0.00	0.00	562.2	
5	6009.2	90.50	127.66	5500.2	-534.7	1058.3	8.50	18.63	1164.5	PU M03-2410 02H POE P3
6	9253.9	90.50	127.66	5472.1	-2517.0	3626.8	0.00	0.00	4409.0	PU M03-2410 02H PBHL P3



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Project:	San Juan County, NM	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site:	* S3-T24N-R10W	North Reference:	True
Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

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	S3-T24N-R10W		
Site Position:		Northing:	1,941,698.10 usft
From:	Lat/Long	Easting:	2,706,959.36 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	36.336244
		Longitude:	-107.888107
		Grid Convergence:	-0.03 °

Well	Pinon Unit M03-2410 02H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	36.336221
		Longitude:	-107.888009
		Ground Level:	6,953.0 usft

Wellbore	Hz		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	3/20/2014	9.56
			Dip Angle
			(°)
			63.03
			Field Strength
			(nT)
			50,210

Design	Plan #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			127.66

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,654.1	29.07	111.16	4,605.2	-103.4	267.2	2.52	2.52	0.00	111.16	
5,271.3	29.07	111.16	5,144.7	-211.7	546.9	0.00	0.00	0.00	0.00	
6,009.2	90.50	127.66	5,500.2	-534.7	1,058.3	8.50	8.32	2.24	18.63	PU M03-2410 02H PC
9,253.9	90.50	127.66	5,472.1	-2,517.0	3,626.8	0.00	0.00	0.00	0.00	PU M03-2410 02H PE

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000, Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Project:	San Juan County, NM	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site:	S3-T24N-R10W	North Reference:	True
Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	9 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
879.0	0.00	0.00	879.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,036.0	0.00	0.00	1,036.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,412.0	0.00	0.00	1,412.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,701.0	0.00	0.00	1,701.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,844.0	0.00	0.00	1,844.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,517.0	0.00	0.00	2,517.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,264.0	0.00	0.00	3,264.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	KOP @3500' MD
3,600.0	2.52	111.16	3,600.0	-0.8	2.0	2.1	2.52	2.52	
3,700.0	5.04	111.16	3,699.7	-3.2	8.2	8.4	2.52	2.52	
3,800.0	7.56	111.16	3,799.1	-7.1	18.4	18.9	2.52	2.52	
3,900.0	10.07	111.16	3,897.9	-12.7	32.7	33.6	2.52	2.52	
4,000.0	12.59	111.16	3,996.0	-19.8	51.0	52.5	2.52	2.52	
4,100.0	15.11	111.16	4,093.1	-28.4	73.4	75.4	2.52	2.52	
4,200.0	17.63	111.16	4,189.0	-38.6	99.7	102.5	2.52	2.52	
4,219.0	18.11	111.16	4,207.1	-40.7	105.1	108.0	2.52	2.52	Point Lookout Ss.
4,300.0	20.15	111.16	4,283.6	-50.3	129.8	133.5	2.52	2.52	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Project:	San Juan County, NM	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site:	S3-T24N-R10W	North Reference:	True
Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,400.0	22.67	111.16	4,376.7	-63.4	163.9	168.5	2.52	2.52	
4,408.5	22.88	111.16	4,384.5	-64.6	166.9	171.6	2.52	2.52	Mancos Shale
4,500.0	25.19	111.16	4,468.1	-78.1	201.7	207.4	2.52	2.52	
4,600.0	27.71	111.16	4,557.6	-94.1	243.2	250.1	2.52	2.52	
4,654.1	29.07	111.16	4,605.2	-103.4	267.2	274.7	2.52	2.52	EOB; Inc=29.07°
4,700.0	29.07	111.16	4,645.3	-111.5	288.0	296.1	0.00	0.00	
4,800.0	29.07	111.16	4,732.7	-129.0	333.3	342.7	0.00	0.00	
4,900.0	29.07	111.16	4,820.1	-146.6	378.6	389.3	0.00	0.00	
5,000.0	29.07	111.16	4,907.6	-164.1	423.9	435.9	0.00	0.00	
5,099.8	29.07	111.16	4,994.8	-181.6	469.2	482.4	0.00	0.00	Mancos Silt
5,100.0	29.07	111.16	4,995.0	-181.6	469.3	482.5	0.00	0.00	
5,200.0	29.07	111.16	5,082.4	-199.2	514.6	529.0	0.00	0.00	
5,271.3	29.07	111.16	5,144.7	-211.7	546.9	562.2	0.00	0.00	Start build/turn @5721' MD
5,300.0	31.39	112.66	5,169.5	-217.1	560.3	576.2	8.50	8.09	
5,385.5	38.38	116.14	5,239.6	-237.4	604.7	623.7	8.50	8.18	Gallup Fn.
5,400.0	39.58	116.62	5,250.8	-241.4	612.9	632.7	8.50	8.24	
5,500.0	47.86	119.41	5,323.1	-274.0	673.8	700.8	8.50	8.28	
5,585.7	55.00	121.26	5,376.5	-307.8	731.5	767.2	8.50	8.33	ICP @ 55°
5,600.0	56.19	121.54	5,384.5	-314.0	741.6	778.9	8.50	8.35	
5,700.0	64.55	123.29	5,433.9	-360.6	814.9	865.4	8.50	8.36	
5,800.0	72.93	124.82	5,470.2	-412.7	892.0	958.3	8.50	8.38	
5,900.0	81.33	126.21	5,492.4	-469.3	971.3	1,055.7	8.50	8.39	
5,987.0	88.63	127.37	5,500.0	-521.2	1,040.7	1,142.3	8.50	8.40	Horizontal Target
6,000.0	89.72	127.54	5,500.2	-529.1	1,051.0	1,155.3	8.50	8.40	
6,009.2	90.50	127.66	5,500.2	-534.7	1,058.3	1,164.5	8.50	8.40	LP @5500' TVD;90.5°
6,100.0	90.50	127.66	5,499.4	-590.2	1,130.1	1,255.2	0.00	0.00	
6,200.0	90.50	127.66	5,498.5	-651.3	1,209.3	1,355.2	0.00	0.00	
6,300.0	90.50	127.66	5,497.7	-712.4	1,288.4	1,455.2	0.00	0.00	
6,400.0	90.50	127.66	5,496.8	-773.5	1,367.6	1,555.2	0.00	0.00	
6,500.0	90.50	127.66	5,496.0	-834.6	1,446.8	1,655.2	0.00	0.00	
6,600.0	90.50	127.66	5,495.1	-895.7	1,525.9	1,755.2	0.00	0.00	
6,700.0	90.50	127.66	5,494.2	-956.7	1,605.1	1,855.2	0.00	0.00	
6,800.0	90.50	127.66	5,493.4	-1,017.8	1,684.3	1,955.2	0.00	0.00	
6,900.0	90.50	127.66	5,492.5	-1,078.9	1,763.4	2,055.2	0.00	0.00	
7,000.0	90.50	127.66	5,491.6	-1,140.0	1,842.6	2,155.2	0.00	0.00	
7,100.0	90.50	127.66	5,490.8	-1,201.1	1,921.8	2,255.2	0.00	0.00	
7,200.0	90.50	127.66	5,489.9	-1,262.2	2,000.9	2,355.2	0.00	0.00	
7,300.0	90.50	127.66	5,489.0	-1,323.3	2,080.1	2,455.2	0.00	0.00	
7,400.0	90.50	127.66	5,488.2	-1,384.4	2,159.2	2,555.2	0.00	0.00	
7,500.0	90.50	127.66	5,487.3	-1,445.5	2,238.4	2,655.2	0.00	0.00	
7,600.0	90.50	127.66	5,486.4	-1,506.6	2,317.6	2,755.2	0.00	0.00	
7,700.0	90.50	127.66	5,485.6	-1,567.7	2,396.7	2,855.2	0.00	0.00	
7,800.0	90.50	127.66	5,484.7	-1,628.8	2,475.9	2,955.2	0.00	0.00	
7,900.0	90.50	127.66	5,483.8	-1,689.9	2,555.1	3,055.2	0.00	0.00	
8,000.0	90.50	127.66	5,483.0	-1,751.0	2,634.2	3,155.2	0.00	0.00	
8,100.0	90.50	127.66	5,482.1	-1,812.1	2,713.4	3,255.2	0.00	0.00	
8,200.0	90.50	127.66	5,481.2	-1,873.2	2,792.5	3,355.2	0.00	0.00	
8,300.0	90.50	127.66	5,480.4	-1,934.2	2,871.7	3,455.2	0.00	0.00	
8,400.0	90.50	127.66	5,479.5	-1,995.3	2,950.9	3,555.2	0.00	0.00	
8,500.0	90.50	127.66	5,478.6	-2,056.4	3,030.0	3,655.2	0.00	0.00	
8,600.0	90.50	127.66	5,477.8	-2,117.5	3,109.2	3,755.2	0.00	0.00	
8,700.0	90.50	127.66	5,476.9	-2,178.6	3,188.4	3,855.2	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Project:	San Juan County, NM	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site:	S3-T24N-R10W	North Reference:	True
Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
8,800.0	90.50	127.66	5,476.0	-2,239.7	3,267.5	3,955.1	0.00	0.00	
8,900.0	90.50	127.66	5,475.2	-2,300.8	3,346.7	4,055.1	0.00	0.00	
9,000.0	90.50	127.66	5,474.3	-2,361.9	3,425.9	4,155.1	0.00	0.00	
9,100.0	90.50	127.66	5,473.5	-2,423.0	3,505.0	4,255.1	0.00	0.00	
9,200.0	90.50	127.66	5,472.6	-2,484.1	3,584.2	4,355.1	0.00	0.00	
9,253.9	90.50	127.66	5,472.1	-2,517.0	3,626.8	4,409.0	0.00	0.00	TD at 9253.9

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	
PU M03-2410 02H PBHI - plan hits target center - Point	0.00	0.00	5,472.1	-2,517.0	3,626.8	1,939,170.64	2,710,613.63	36.329306	-107.875696	
PU M03-2410 02H POE - plan misses target center by 799.4usft at 6470.6usft MD (5496.2 TVD, -816.6 N, 1423.5 E) - Point	0.00	0.00	4,783.7	-526.0	1,640.0	1,941,162.76	2,708,627.92	36.334776	-107.882441	
GT M03-2410 02H POE - plan misses target center by 530.9usft at 4868.9usft MD (4792.9 TVD, -141.1 N, 364.5 E) - Point	0.00	0.00	4,876.3	-555.5	43.3	1,941,134.18	2,707,031.20	36.334695	-107.887862	
GT M03-2410 02H PBHI - plan misses target center by 4512.2usft at 8171.8usft MD (5481.5 TVD, -1855.9 N, 2770.2 E) - Point	0.00	0.00	4,783.7	-5,381.4	41.8	1,936,308.26	2,707,027.01	36.321438	-107.887867	
PU M03-2410 02H POE - plan hits target center - Point	0.00	0.00	5,500.2	-534.7	1,058.3	1,941,154.37	2,708,046.17	36.334752	-107.884416	
GT M03-2410 02H PBHI - plan misses target center by 688.6usft at 9253.9usft MD (5472.1 TVD, -2517.0 N, 3626.8 E) - Point	0.00	0.00	4,783.7	-2,530.0	3,621.0	1,939,157.64	2,710,607.79	36.329270	-107.875716	
	500.0	500.0	9 5/8"					0	0	
	5,585.7	5,376.5	ICP @ 55°					0	0	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Project:	San Juan County, NM	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site:	S3-T24N-R10W	North Reference:	True
Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
879.0	879.0	Ojo Alamo Ss.		-0.50	127.66
1,036.0	1,036.0	Kirtland Shale		-0.50	127.66
1,412.0	1,412.0	Fruitland Coal		-0.50	127.66
1,701.0	1,701.0	Pictured Cliffs Ss.		-0.50	127.66
1,844.0	1,844.0	Lewis Shale		-0.50	127.66
2,517.0	2,517.0	Cliffhouse Ss.		-0.50	127.66
3,264.0	3,264.0	Menefee Fn.		-0.50	127.66
4,219.0	4,208.0	Point Lookout Ss.		-0.50	127.66
4,408.5	4,386.0	Mancos Shale		-0.50	127.66
5,099.8	4,999.0	Mancos Silt		-0.50	127.66
5,385.5	5,245.0	Gallup Fn.		-0.50	127.66
5,987.0	5,510.0	Horizontal Target		-0.50	127.66

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,500.0	3,500.0	0.0	0.0	KOP @3500' MD
4,654.1	4,605.2	-103.4	267.2	EOB; Inc=29.07°
5,271.3	5,144.7	-211.7	546.9	Start build/turn @5721' MD
6,009.2	5,500.2	-534.7	1,058.3	LP @5500' TVD;90.5°
9,253.9	5,472.1	-2,517.0	3,626.8	TD at 9253.9

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S3-T24N-R10W

Pinon Unit M03-2410 02H

Hz

Plan #3

Anticollision Report

16 December, 2014

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Project:	San Juan County, NM	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Reference Site:	S3-T24N-R10W	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Reference	Plan #3
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.0usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	12/16/2014
From (usft)	To (usft)	Survey (Wellbore)
0.0	9,253.5	Plan #3 (Hz)
		Tool Name
		Geolink MWD
		Description
		Geolink MWD

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S2-T24N-R10W						
Good Times N02-2410 01H - Hz - Plan #1	9,253.9	8,064.0	1,080.4	957.9	8.816	CC, ES, SF
S3-T24N-R10W						
Pinon Unit M03-2410 01H - Hz - Plan #4	2,466.3	2,467.3	30.5	22.0	3.570	CC
Pinon Unit M03-2410 01H - Hz - Plan #4	2,500.0	2,501.0	30.5	21.9	3.521	ES, SF

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Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S2-T24N-R10W - Good Times N02-2410 01H - Hz - Plan #1											Offset Site Error: 0.0 usft		
Survey Program: 0-Geolink MWD											Offset Well Error: 0.0 usft		
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-/S (usft)	+E-/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis		Separation Factor
0.0	0.0	0.0	0.0	0.0	0.0	88.07	177.1	5,267.6	5,271.3				
100.0	100.0	13.0	13.0	0.1	0.0	88.07	177.1	5,267.6	5,270.6	5,270.4	0.17	N/A	
200.0	200.0	113.0	113.0	0.3	0.2	88.07	177.1	5,267.6	5,270.6	5,270.1	0.49	N/A	
300.0	300.0	213.0	213.0	0.5	0.3	88.07	177.1	5,267.6	5,270.6	5,269.7	0.84	6,265.512	
400.0	400.0	313.0	313.0	0.7	0.5	88.07	177.1	5,267.6	5,270.6	5,269.4	1.19	4,428.045	
500.0	500.0	413.0	413.0	0.8	0.7	88.07	177.1	5,267.6	5,270.6	5,269.0	1.54	3,423.922	
600.0	600.0	513.0	513.0	1.0	0.9	88.07	177.1	5,267.6	5,270.6	5,268.7	1.89	2,791.018	
700.0	700.0	613.0	613.0	1.2	1.0	88.07	177.1	5,267.6	5,270.6	5,268.3	2.24	2,355.593	
800.0	800.0	713.0	713.0	1.4	1.2	88.07	177.1	5,267.6	5,270.6	5,268.0	2.59	2,037.693	
900.0	900.0	813.0	813.0	1.5	1.4	88.07	177.1	5,267.6	5,270.6	5,267.6	2.94	1,795.395	
1,000.0	1,000.0	913.0	913.0	1.7	1.6	88.07	177.1	5,267.6	5,270.6	5,267.3	3.28	1,604.596	
1,100.0	1,100.0	1,013.0	1,013.0	1.9	1.7	88.07	177.1	5,267.6	5,270.6	5,266.9	3.63	1,450.454	
1,200.0	1,200.0	1,113.0	1,113.0	2.1	1.9	88.07	177.1	5,267.6	5,270.6	5,266.6	3.98	1,323.331	
1,300.0	1,300.0	1,213.0	1,213.0	2.2	2.1	88.07	177.1	5,267.6	5,270.6	5,266.2	4.33	1,216.696	
1,400.0	1,400.0	1,313.0	1,313.0	2.4	2.3	88.07	177.1	5,267.6	5,270.6	5,265.9	4.68	1,125.964	
1,500.0	1,500.0	1,413.0	1,413.0	2.6	2.4	88.07	177.1	5,267.6	5,270.6	5,265.5	5.03	1,047.826	
1,600.0	1,600.0	1,513.0	1,513.0	2.8	2.6	88.07	177.1	5,267.6	5,270.6	5,265.2	5.38	979.829	
1,700.0	1,700.0	1,613.0	1,613.0	2.9	2.8	88.07	177.1	5,267.6	5,270.6	5,264.8	5.73	920.119	
1,800.0	1,800.0	1,713.0	1,713.0	3.1	3.0	88.07	177.1	5,267.6	5,270.6	5,264.5	6.08	867.268	
1,900.0	1,900.0	1,813.0	1,813.0	3.3	3.1	88.07	177.1	5,267.6	5,270.6	5,264.1	6.43	820.160	
2,000.0	2,000.0	1,913.0	1,913.0	3.5	3.3	88.07	177.1	5,267.6	5,270.6	5,263.8	6.78	777.905	
2,100.0	2,100.0	2,013.0	2,013.0	3.6	3.5	88.07	177.1	5,267.6	5,270.6	5,263.4	7.12	739.791	
2,200.0	2,200.0	2,113.0	2,113.0	3.8	3.7	88.07	177.1	5,267.6	5,270.6	5,263.1	7.47	705.237	
2,300.0	2,300.0	2,213.0	2,213.0	4.0	3.8	88.07	177.1	5,267.6	5,270.6	5,262.7	7.82	673.767	
2,400.0	2,400.0	2,313.0	2,313.0	4.2	4.0	88.07	177.1	5,267.6	5,270.6	5,262.4	8.17	644.986	
2,500.0	2,500.0	2,413.0	2,413.0	4.3	4.2	88.07	177.1	5,267.6	5,270.6	5,262.0	8.52	618.562	
2,600.0	2,600.0	2,513.0	2,513.0	4.5	4.4	88.07	177.1	5,267.6	5,270.6	5,261.7	8.87	594.219	
2,700.0	2,700.0	2,613.0	2,613.0	4.7	4.5	88.07	177.1	5,267.6	5,270.6	5,261.3	9.22	571.719	
2,800.0	2,800.0	2,713.0	2,713.0	4.9	4.7	88.07	177.1	5,267.6	5,270.6	5,261.0	9.57	550.861	
2,900.0	2,900.0	2,813.0	2,813.0	5.0	4.9	88.07	177.1	5,267.6	5,270.6	5,260.6	9.92	531.471	
3,000.0	3,000.0	2,913.0	2,913.0	5.2	5.1	88.07	177.1	5,267.6	5,270.6	5,260.3	10.27	513.400	
3,100.0	3,100.0	3,013.0	3,013.0	5.4	5.2	88.07	177.1	5,267.6	5,270.6	5,259.9	10.62	496.517	
3,200.0	3,200.0	5,950.0	5,428.8	5.6	19.2	94.88	-401.7	4,708.0	5,262.1	5,239.1	23.00	228.827	
3,300.0	3,300.0	5,950.0	5,428.8	5.7	19.2	94.88	-401.7	4,708.0	5,218.8	5,195.7	23.17	225.238	
3,400.0	3,400.0	5,950.0	5,428.8	5.9	19.2	94.88	-401.7	4,708.0	5,177.2	5,153.8	23.34	221.769	
3,500.0	3,500.0	5,950.0	5,428.8	6.1	19.2	94.88	-401.7	4,708.0	5,137.1	5,113.6	23.52	218.420	
3,600.0	3,600.0	5,950.0	5,428.8	6.3	19.2	-16.60	-401.7	4,708.0	5,096.8	5,074.4	22.38	227.786	
3,700.0	3,699.7	5,950.0	5,428.8	6.4	19.2	-16.94	-401.7	4,708.0	5,054.2	5,031.8	22.43	225.282	
3,800.0	3,799.1	5,950.0	5,428.8	6.6	19.2	-17.31	-401.7	4,708.0	5,009.5	4,987.0	22.46	223.071	
3,900.0	3,897.9	5,950.0	5,428.8	6.8	19.2	-17.71	-401.7	4,708.0	4,962.6	4,940.1	22.44	221.132	
4,000.0	3,996.0	5,950.0	5,428.8	7.1	19.2	-18.15	-401.7	4,708.0	4,913.5	4,891.1	22.39	219.438	
4,100.0	4,093.1	5,950.0	5,428.8	7.3	19.2	-18.62	-401.7	4,708.0	4,862.4	4,840.1	22.31	217.963	
4,200.0	4,189.0	5,950.0	5,428.8	7.6	19.2	-19.13	-401.7	4,708.0	4,809.3	4,787.1	22.20	216.673	
4,300.0	4,283.6	5,950.0	5,428.8	8.0	19.2	-19.69	-401.7	4,708.0	4,754.1	4,732.0	22.06	215.529	
4,400.0	4,376.7	5,950.0	5,428.8	8.4	19.2	-20.29	-401.7	4,708.0	4,696.9	4,675.0	21.90	214.479	
4,500.0	4,468.1	5,950.0	5,428.8	8.9	19.2	-20.94	-401.7	4,708.0	4,637.8	4,616.1	21.73	213.461	
4,600.0	4,557.6	5,973.4	5,429.9	9.5	19.4	-21.28	-424.9	4,705.7	4,576.4	4,554.5	21.87	209.288	
4,654.1	4,605.2	5,974.7	5,430.0	9.9	19.4	-21.66	-426.3	4,705.6	4,542.5	4,520.7	21.78	208.542	
4,700.0	4,645.3	5,975.9	5,430.0	10.2	19.4	-21.84	-427.4	4,705.5	4,513.7	4,491.8	21.92	205.893	
4,800.0	4,732.7	5,978.5	5,430.1	10.9	19.5	-21.60	-430.0	4,705.3	4,451.9	4,429.7	22.23	200.225	
4,900.0	4,820.1	6,000.0	5,430.6	11.7	19.7	-21.25	-451.5	4,704.0	4,391.8	4,369.0	22.80	192.592	
5,000.0	4,907.6	6,000.0	5,430.6	12.4	19.7	-21.25	-451.5	4,704.0	4,332.9	4,309.8	23.09	187.613	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

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Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	H2	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S2-T24N-R10W - Good Times N02-2410 01H - H2 - Plan #1														Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning		
5,100.0	4,995.0	6,000.0	5,430.6	13.2	19.7	-21.25	-451.5	4,704.0	4,275.4	4,252.0	23.39	182.772			
5,200.0	5,082.4	6,000.0	5,430.6	14.0	19.7	-21.25	-451.5	4,704.0	4,219.5	4,195.8	23.70	178.073			
5,271.3	5,144.7	6,000.0	5,430.6	14.6	19.7	-21.25	-451.5	4,704.0	4,180.7	4,156.8	23.92	174.814			
5,300.0	5,169.5	6,000.0	5,430.6	14.9	19.7	-23.59	-451.5	4,704.0	4,164.9	4,141.3	23.65	176.093			
5,350.0	5,211.2	6,000.0	5,430.6	15.4	19.7	-27.43	-451.5	4,704.0	4,136.0	4,112.7	23.23	178.006			
5,400.0	5,250.8	6,000.0	5,430.6	16.0	19.7	-31.16	-451.5	4,704.0	4,105.2	4,082.3	22.91	179.171			
5,450.0	5,288.2	6,000.0	5,430.6	16.6	19.7	-34.91	-451.5	4,704.0	4,072.8	4,050.0	22.75	179.059			
5,500.0	5,323.1	6,000.0	5,430.6	17.2	19.7	-38.79	-451.5	4,704.0	4,038.8	4,016.0	22.80	177.126			
5,550.0	5,355.2	6,000.0	5,430.6	18.0	19.7	-42.88	-451.5	4,704.0	4,003.5	3,980.4	23.15	172.941			
5,600.0	5,384.5	6,000.0	5,430.6	18.7	19.7	-47.24	-451.5	4,704.0	3,967.0	3,943.2	23.85	166.362			
5,650.0	5,410.8	6,000.0	5,430.6	19.6	19.7	-51.90	-451.5	4,704.0	3,929.5	3,904.6	24.92	157.670			
5,700.0	5,433.9	6,000.0	5,430.6	20.4	19.7	-56.89	-451.5	4,704.0	3,891.1	3,864.7	26.37	147.577			
5,750.0	5,453.8	6,015.2	5,430.6	21.4	19.9	-61.97	-466.7	4,703.5	3,851.8	3,823.7	28.11	137.032			
5,800.0	5,470.2	6,030.8	5,430.5	22.3	20.1	-67.34	-482.3	4,703.4	3,812.3	3,782.3	30.01	127.021			
5,850.0	5,483.1	6,030.8	5,430.5	23.3	20.1	-73.10	-482.3	4,703.4	3,772.3	3,740.3	31.95	118.079			
5,900.0	5,492.4	6,030.8	5,430.5	24.3	20.1	-78.90	-482.3	4,703.4	3,732.2	3,698.5	33.75	110.581			
5,950.0	5,498.1	6,040.8	5,430.3	25.3	20.2	-84.57	-492.3	4,703.4	3,692.3	3,657.0	35.31	104.574			
6,000.0	5,500.2	6,071.1	5,429.8	26.3	20.5	-90.07	-522.5	4,703.5	3,652.5	3,616.0	36.57	99.868			
6,009.2	5,500.2	6,076.7	5,429.7	26.5	20.6	-91.06	-528.2	4,703.5	3,645.3	3,608.5	36.77	99.131			
6,100.0	5,499.4	6,132.3	5,428.7	28.4	21.2	-91.07	-583.7	4,703.6	3,573.5	3,534.7	38.78	92.143			
6,200.0	5,498.5	6,193.6	5,427.6	30.5	22.0	-91.07	-645.0	4,703.7	3,494.4	3,453.4	41.04	85.144			
6,300.0	5,497.7	6,254.8	5,426.6	32.6	22.7	-91.08	-706.2	4,703.8	3,415.4	3,372.0	43.37	78.756			
6,400.0	5,496.8	6,316.0	5,425.5	34.7	23.5	-91.08	-767.5	4,703.9	3,336.3	3,290.6	45.73	72.957			
6,500.0	5,496.0	6,377.3	5,424.4	36.8	24.3	-91.09	-828.7	4,704.0	3,257.3	3,209.2	48.14	67.659			
6,600.0	5,495.1	6,438.5	5,423.4	39.0	25.1	-91.09	-889.9	4,704.1	3,178.2	3,127.7	50.60	62.816			
6,700.0	5,494.2	6,499.8	5,422.3	41.2	26.0	-91.10	-951.2	4,704.3	3,099.2	3,046.1	53.08	58.389			
6,800.0	5,493.4	6,561.0	5,421.2	43.3	26.9	-91.10	-1,012.4	4,704.4	3,020.2	2,964.5	55.60	54.315			
6,900.0	5,492.5	6,622.3	5,420.2	45.5	27.7	-91.11	-1,073.7	4,704.5	2,941.1	2,883.0	58.15	50.574			
7,000.0	5,491.6	6,683.5	5,419.1	47.7	28.6	-91.11	-1,134.9	4,704.6	2,862.1	2,801.3	60.73	47.126			
7,100.0	5,490.8	6,744.8	5,418.0	49.8	29.5	-91.12	-1,196.1	4,704.7	2,783.0	2,719.7	63.34	43.939			
7,200.0	5,489.9	6,806.0	5,417.0	52.0	30.5	-91.13	-1,257.4	4,704.8	2,704.0	2,638.0	65.96	40.994			
7,300.0	5,489.0	6,867.3	5,415.9	54.2	31.4	-91.13	-1,318.6	4,705.0	2,624.9	2,556.3	68.61	38.260			
7,400.0	5,488.2	6,928.5	5,414.8	56.4	32.3	-91.14	-1,379.9	4,705.1	2,545.9	2,474.6	71.27	35.721			
7,500.0	5,487.3	6,989.8	5,413.8	58.6	33.3	-91.15	-1,441.1	4,705.2	2,466.8	2,392.9	73.95	33.357			
7,600.0	5,486.4	7,051.0	5,412.7	60.8	34.2	-91.16	-1,502.3	4,705.3	2,387.8	2,311.1	76.65	31.152			
7,700.0	5,485.6	7,112.3	5,411.6	63.0	35.2	-91.17	-1,563.6	4,705.4	2,308.7	2,229.4	79.36	29.093			
7,800.0	5,484.7	7,173.5	5,410.5	65.2	36.2	-91.18	-1,624.8	4,705.5	2,229.7	2,147.6	82.08	27.165			
7,900.0	5,483.8	7,234.8	5,409.5	67.4	37.1	-91.19	-1,686.0	4,705.6	2,150.6	2,065.8	84.81	25.357			
8,000.0	5,483.0	7,296.0	5,408.4	69.6	38.1	-91.20	-1,747.3	4,705.8	2,071.6	1,984.0	87.55	23.660			
8,100.0	5,482.1	7,357.3	5,407.3	71.8	39.1	-91.22	-1,808.5	4,705.9	1,992.5	1,902.2	90.31	22.063			
8,200.0	5,481.2	7,418.5	5,406.3	74.0	40.1	-91.23	-1,869.8	4,706.0	1,913.5	1,820.4	93.07	20.560			
8,300.0	5,480.4	7,479.8	5,405.2	76.3	41.1	-91.24	-1,931.0	4,706.1	1,834.4	1,738.6	95.84	19.141			
8,400.0	5,479.5	7,541.0	5,404.1	78.5	42.1	-91.26	-1,992.2	4,706.2	1,755.4	1,656.8	98.62	17.800			
8,500.0	5,478.6	7,602.3	5,403.1	80.7	43.1	-91.28	-2,053.5	4,706.3	1,676.3	1,574.9	101.40	16.532			
8,600.0	5,477.8	7,663.5	5,402.0	82.9	44.1	-91.30	-2,114.7	4,706.4	1,597.3	1,493.1	104.19	15.331			
8,700.0	5,476.9	7,724.8	5,400.9	85.1	45.1	-91.32	-2,176.0	4,706.6	1,518.2	1,411.3	106.98	14.191			
8,800.0	5,476.0	7,786.0	5,399.9	87.3	46.1	-91.34	-2,237.2	4,706.7	1,439.2	1,329.4	109.78	13.109			
8,900.0	5,475.2	7,847.3	5,398.8	89.5	47.1	-91.37	-2,298.4	4,706.8	1,360.1	1,247.6	112.59	12.081			
9,000.0	5,474.3	7,908.5	5,397.7	91.8	48.2	-91.40	-2,359.7	4,706.9	1,281.1	1,165.7	115.40	11.102			
9,100.0	5,473.5	7,969.8	5,396.7	94.0	49.2	-91.43	-2,420.9	4,707.0	1,202.1	1,083.8	118.21	10.169			
9,200.0	5,472.6	8,031.0	5,395.6	96.2	50.2	-91.47	-2,482.2	4,707.1	1,123.0	1,002.0	121.03	9.279			
9,253.9	5,472.1	8,064.0	5,395.0	97.4	50.8	-91.50	-2,515.1	4,707.2	1,080.4	957.9	122.55	8.816 CC, ES, SF			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Project:	San Juan County, NM	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Reference Site:	S3-T24N-R10W	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Cathedral Energy Services

Anticollision Report

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Project:	San Juan County, NM	TVD Reference:	KB @ 6968.0usft (Aztec #920)
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Site Error:	0.0usft	North Reference:	True
Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	HZ	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S3-T24N-R10W - Pinon Unit M03-2410 01H - Hz - Plan #4													Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)
0.0	0.0	1.0	1.0	0.0	0.0	-76.88	6.9	-29.7	30.5					
100.0	100.0	101.0	101.0	0.1	0.1	-76.88	6.9	-29.7	30.5	0.30	102.962			
200.0	200.0	201.0	201.0	0.3	0.3	-76.88	6.9	-29.7	30.5	0.65	47.303			
300.0	300.0	301.0	301.0	0.5	0.5	-76.88	6.9	-29.7	30.5	0.99	30.704			
400.0	400.0	401.0	401.0	0.7	0.7	-76.88	6.9	-29.7	30.5	1.34	22.729			
500.0	500.0	501.0	501.0	0.8	0.8	-76.88	6.9	-29.7	30.5	1.69	18.042			
600.0	600.0	601.0	601.0	1.0	1.0	-76.88	6.9	-29.7	30.5	2.04	14.958			
700.0	700.0	701.0	701.0	1.2	1.2	-76.88	6.9	-29.7	30.5	2.39	12.774			
800.0	800.0	801.0	801.0	1.4	1.4	-76.88	6.9	-29.7	30.5	2.74	11.147			
900.0	900.0	901.0	901.0	1.5	1.5	-76.88	6.9	-29.7	30.5	3.09	9.888			
1,000.0	1,000.0	1,001.0	1,001.0	1.7	1.7	-76.88	6.9	-29.7	30.5	3.44	8.884			
1,100.0	1,100.0	1,101.0	1,101.0	1.9	1.9	-76.88	6.9	-29.7	30.5	3.79	8.065			
1,200.0	1,200.0	1,201.0	1,201.0	2.1	2.1	-76.88	6.9	-29.7	30.5	4.14	7.384			
1,300.0	1,300.0	1,301.0	1,301.0	2.2	2.2	-76.88	6.9	-29.7	30.5	4.49	6.810			
1,400.0	1,400.0	1,401.0	1,401.0	2.4	2.4	-76.88	6.9	-29.7	30.5	4.83	6.318			
1,500.0	1,500.0	1,501.0	1,501.0	2.6	2.6	-76.88	6.9	-29.7	30.5	5.18	5.893			
1,600.0	1,600.0	1,601.0	1,601.0	2.8	2.8	-76.88	6.9	-29.7	30.5	5.53	5.521			
1,700.0	1,700.0	1,701.0	1,701.0	2.9	2.9	-76.88	6.9	-29.7	30.5	5.88	5.193			
1,800.0	1,800.0	1,801.0	1,801.0	3.1	3.1	-76.88	6.9	-29.7	30.5	6.23	4.902			
1,900.0	1,900.0	1,901.0	1,901.0	3.3	3.3	-76.88	6.9	-29.7	30.5	6.58	4.642			
2,000.0	2,000.0	2,001.0	2,001.0	3.5	3.5	-76.88	6.9	-29.7	30.5	6.93	4.408			
2,100.0	2,100.0	2,101.0	2,101.0	3.6	3.6	-76.88	6.9	-29.7	30.5	7.28	4.197			
2,200.0	2,200.0	2,201.0	2,201.0	3.8	3.8	-76.88	6.9	-29.7	30.5	7.63	4.005			
2,300.0	2,300.0	2,301.0	2,301.0	4.0	4.0	-76.88	6.9	-29.7	30.5	7.98	3.829			
2,400.0	2,400.0	2,401.0	2,401.0	4.2	4.2	-76.88	6.9	-29.7	30.5	8.33	3.669			
2,466.3	2,466.3	2,467.3	2,467.3	4.3	4.3	-76.88	6.9	-29.7	30.5	8.56	3.570 CC			
2,500.0	2,500.0	2,501.0	2,501.0	4.3	4.3	-76.88	6.9	-29.7	30.5	8.67	3.521 ES, SF			
2,600.0	2,600.0	2,600.0	2,600.0	4.5	4.5	-78.51	6.4	-31.4	32.1	9.02	3.554			
2,700.0	2,700.0	2,698.9	2,698.7	4.7	4.7	-82.52	4.8	-36.3	36.7	9.37	3.914			
2,800.0	2,800.0	2,797.2	2,796.7	4.9	4.9	-87.29	2.1	-44.4	44.6	9.73	4.588			
2,900.0	2,900.0	2,894.9	2,893.6	5.0	5.1	-91.64	-1.6	-55.5	56.1	10.10	5.553			
3,000.0	3,000.0	2,991.6	2,989.2	5.2	5.3	-95.14	-6.3	-69.7	71.0	10.48	6.773			
3,100.0	3,100.0	3,087.2	3,083.1	5.4	5.5	-97.80	-11.9	-86.7	89.3	10.88	8.207			
3,200.0	3,200.0	3,181.5	3,175.1	5.6	5.8	-99.81	-18.4	-106.4	111.0	11.31	9.812			
3,300.0	3,300.0	3,274.3	3,264.9	5.7	6.1	-101.31	-25.7	-128.5	135.9	11.77	11.547			
3,400.0	3,400.0	3,365.5	3,352.4	5.9	6.4	-102.45	-33.8	-153.0	164.0	12.26	13.372			
3,500.0	3,500.0	3,454.9	3,437.4	6.1	6.8	-103.33	-42.5	-179.5	195.1	12.79	15.253			
3,600.0	3,600.0	3,541.9	3,519.1	6.3	7.2	144.58	-51.9	-207.7	230.9	12.40	18.615			
3,700.0	3,699.7	3,625.4	3,596.7	6.4	7.6	144.13	-61.5	-237.0	272.6	12.70	21.474			
3,800.0	3,799.1	3,705.1	3,669.9	6.6	8.1	143.92	-71.4	-266.9	320.2	12.97	24.677			
3,900.0	3,897.9	3,780.7	3,738.5	6.8	8.6	143.81	-81.4	-297.1	373.1	13.24	28.189			
4,000.0	3,996.0	3,853.5	3,803.7	7.1	9.1	143.71	-91.5	-327.7	431.2	13.49	31.967			
4,100.0	4,093.1	3,931.8	3,873.6	7.3	9.6	143.72	-102.6	-361.3	493.0	13.75	35.850			
4,200.0	4,189.0	4,007.6	3,941.2	7.6	10.2	143.71	-113.3	-393.7	557.6	14.01	39.800			
4,300.0	4,283.6	4,080.8	4,006.5	8.0	10.7	143.64	-123.7	-425.1	625.0	14.28	43.783			
4,400.0	4,376.7	4,151.1	4,069.3	8.4	11.3	143.50	-133.7	-455.2	695.2	14.56	47.763			
4,500.0	4,468.1	4,218.5	4,129.5	8.9	11.8	143.26	-143.2	-484.1	768.1	14.86	51.692			
4,600.0	4,557.6	4,282.9	4,186.9	9.5	12.3	142.89	-152.3	-511.7	843.5	15.20	55.494			
4,654.1	4,605.2	4,316.4	4,216.8	9.9	12.6	142.64	-157.1	-526.1	885.3	15.40	57.478			
4,700.0	4,645.3	4,344.5	4,241.8	10.2	12.8	143.25	-161.0	-538.1	921.1	15.59	59.090			
4,800.0	4,732.7	4,405.5	4,296.3	10.9	13.3	144.44	-169.7	-564.2	999.3	16.00	62.439			
4,900.0	4,820.1	4,466.6	4,350.8	11.7	13.8	145.47	-178.3	-590.4	1,077.6	16.43	65.571			

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Project:	San Juan County, NM	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Reference Site:	S3-T24N-R10W	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S3-T24N-R10W - Pinon Unit M03-2410 01H - Hz - Plan #4														Offset Site Error: 0.0 usft	
Survey Program: 0-Geolink MWD														Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning		
5,000.0	4,907.6	4,527.7	4,405.3	12.4	14.3	146.36	-187.0	-616.6	1,156.0	1,139.1	16.87	68.510			
5,100.0	4,995.0	4,588.7	4,459.8	13.2	14.7	147.14	-195.6	-642.7	1,234.5	1,217.2	17.32	71.269			
5,200.0	5,082.4	4,649.8	4,514.3	14.0	15.2	147.83	-204.3	-668.9	1,313.2	1,295.4	17.78	73.863			
5,271.3	5,144.7	6,374.7	5,477.1	14.6	25.2	117.94	-1,124.8	-381.0	1,343.4	1,314.0	29.39	45.715			
5,297.8	5,167.6	6,386.8	5,477.0	14.9	25.3	116.30	-1,133.5	-372.6	1,343.1	1,313.4	29.67	45.267			
5,300.0	5,169.5	6,387.8	5,477.0	14.9	25.4	116.17	-1,134.2	-371.8	1,343.1	1,313.4	29.69	45.231			
5,350.0	5,211.2	6,413.2	5,476.9	15.4	25.6	113.33	-1,152.3	-354.1	1,344.2	1,313.8	30.35	44.295			
5,400.0	5,250.8	6,441.6	5,476.7	16.0	25.9	110.67	-1,172.6	-334.2	1,347.1	1,315.9	31.13	43.270			
5,450.0	5,288.2	6,473.0	5,476.5	16.6	26.3	108.13	-1,195.0	-312.2	1,351.5	1,319.5	32.02	42.211			
5,500.0	5,323.1	6,507.1	5,476.4	17.2	26.7	105.68	-1,219.3	-288.3	1,357.4	1,324.4	33.03	41.090			
5,550.0	5,355.2	6,543.8	5,476.2	18.0	27.2	103.31	-1,245.5	-262.6	1,364.4	1,330.1	34.25	39.835			
5,600.0	5,384.5	6,582.9	5,476.0	18.7	27.7	101.04	-1,273.4	-235.2	1,372.2	1,336.6	35.55	38.598			
5,650.0	5,410.8	6,624.1	5,475.8	19.6	28.2	98.87	-1,302.8	-206.4	1,380.6	1,343.6	37.05	37.263			
5,700.0	5,433.9	6,667.2	5,475.5	20.4	28.8	96.85	-1,333.6	-176.2	1,389.4	1,350.8	38.66	35.939			
5,750.0	5,453.8	6,712.0	5,475.3	21.4	29.4	95.00	-1,365.6	-144.8	1,398.4	1,358.0	40.41	34.609			
5,800.0	5,470.2	6,758.3	5,475.0	22.3	30.1	93.33	-1,398.6	-112.4	1,407.4	1,365.3	42.08	33.442			
5,850.0	5,483.1	6,805.7	5,474.8	23.3	30.8	91.88	-1,432.4	-79.1	1,416.1	1,372.0	44.09	32.115			
5,900.0	5,492.4	6,854.1	5,474.5	24.3	31.5	90.66	-1,466.9	-45.3	1,424.4	1,378.3	46.09	30.902			
5,950.0	5,498.1	6,903.1	5,474.3	25.3	32.3	89.68	-1,501.9	-10.9	1,432.3	1,384.0	48.25	29.685			
6,000.0	5,500.2	6,952.5	5,474.0	26.3	33.0	88.95	-1,537.2	23.7	1,439.5	1,389.1	50.40	28.564			
6,009.2	5,500.2	6,961.6	5,474.0	26.5	33.2	88.84	-1,543.7	30.1	1,440.8	1,390.0	50.80	28.362			
6,100.0	5,499.4	7,051.5	5,473.5	28.4	34.7	88.86	-1,607.9	93.1	1,453.2	1,398.8	54.45	26.688			
6,200.0	5,498.5	7,150.6	5,473.0	30.5	36.3	88.88	-1,678.6	162.5	1,466.9	1,408.4	58.51	25.070			
6,300.0	5,497.7	7,249.6	5,472.5	32.6	38.0	88.91	-1,749.3	231.8	1,480.6	1,418.0	62.61	23.648			
6,400.0	5,496.8	7,348.7	5,472.0	34.7	39.8	88.93	-1,820.0	301.2	1,494.3	1,427.6	66.74	22.392			
6,500.0	5,496.0	7,447.8	5,471.4	36.8	41.6	88.95	-1,890.6	370.6	1,508.0	1,437.1	70.88	21.274			
6,600.0	5,495.1	7,546.8	5,470.9	39.0	43.4	88.98	-1,961.3	440.0	1,521.7	1,446.7	75.05	20.275			
6,700.0	5,494.2	7,645.9	5,470.4	41.2	45.3	89.00	-2,032.0	509.4	1,535.4	1,456.2	79.24	19.376			
6,800.0	5,493.4	7,744.9	5,469.9	43.3	47.1	89.02	-2,102.7	578.8	1,549.1	1,465.7	83.44	18.565			
6,900.0	5,492.5	7,844.0	5,469.4	45.5	49.0	89.04	-2,173.4	648.2	1,562.8	1,475.1	87.66	17.829			
7,000.0	5,491.6	7,943.0	5,468.8	47.7	50.9	89.06	-2,244.1	717.5	1,576.5	1,484.6	91.88	17.158			
7,100.0	5,490.8	8,042.1	5,468.3	49.8	52.8	89.08	-2,314.8	786.9	1,590.2	1,494.1	96.12	16.544			
7,200.0	5,489.9	8,141.2	5,467.8	52.0	54.8	89.10	-2,385.5	856.3	1,603.9	1,503.5	100.36	15.982			
7,300.0	5,489.0	8,240.2	5,467.3	54.2	56.7	89.12	-2,456.2	925.7	1,617.6	1,513.0	104.61	15.463			
7,400.0	5,488.2	8,339.3	5,466.8	56.4	58.7	89.14	-2,526.9	995.1	1,631.3	1,522.4	108.86	14.984			
7,500.0	5,487.3	8,438.3	5,466.2	58.6	60.7	89.16	-2,597.6	1,064.5	1,645.0	1,531.8	113.13	14.541			
7,600.0	5,486.4	8,537.4	5,465.7	60.8	62.7	89.17	-2,668.3	1,133.9	1,658.7	1,541.3	117.39	14.129			
7,700.0	5,485.6	8,636.4	5,465.2	63.0	64.7	89.19	-2,739.0	1,203.2	1,672.3	1,550.7	121.66	13.746			
7,800.0	5,484.7	8,735.5	5,464.7	65.2	66.7	89.21	-2,809.6	1,272.6	1,686.0	1,560.1	125.94	13.388			
7,900.0	5,483.8	8,834.5	5,464.2	67.4	68.7	89.23	-2,880.3	1,342.0	1,699.7	1,569.5	130.22	13.053			
8,000.0	5,483.0	8,933.6	5,463.7	69.6	70.7	89.25	-2,951.0	1,411.4	1,713.4	1,578.9	134.50	12.739			
8,100.0	5,482.1	9,032.7	5,463.1	71.8	72.7	89.26	-3,021.7	1,480.8	1,727.1	1,588.3	138.79	12.445			
8,200.0	5,481.2	9,131.7	5,462.6	74.0	74.7	89.28	-3,092.4	1,550.2	1,740.8	1,597.8	143.07	12.167			
8,300.0	5,480.4	9,230.8	5,462.1	76.3	76.8	89.30	-3,163.1	1,619.6	1,754.5	1,607.2	147.37	11.906			
8,400.0	5,479.5	9,329.8	5,461.6	78.5	78.8	89.31	-3,233.8	1,688.9	1,768.2	1,616.6	151.66	11.659			
8,500.0	5,478.6	9,428.9	5,461.1	80.7	80.8	89.33	-3,304.5	1,758.3	1,781.9	1,626.0	155.95	11.426			
8,600.0	5,477.8	9,527.9	5,460.5	82.9	82.9	89.34	-3,375.2	1,827.7	1,795.6	1,635.4	160.25	11.205			
8,700.0	5,476.9	9,627.0	5,460.0	85.1	84.9	89.36	-3,445.9	1,897.1	1,809.3	1,644.8	164.55	10.996			
8,800.0	5,476.0	9,726.1	5,459.5	87.3	87.0	89.38	-3,516.6	1,966.5	1,823.0	1,654.2	168.85	10.797			
8,900.0	5,475.2	9,825.1	5,459.0	89.5	89.0	89.39	-3,587.3	2,035.9	1,836.7	1,663.6	173.15	10.608			
9,000.0	5,474.3	9,924.2	5,458.5	91.8	91.1	89.40	-3,658.0	2,105.3	1,850.4	1,673.0	177.46	10.427			
9,100.0	5,473.5	10,023.2	5,457.9	94.0	93.1	89.42	-3,728.7	2,174.6	1,864.1	1,682.3	181.76	10.256			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Pinon Unit M03-2410 02H
Project:	San Juan County, NM	TVD Reference:	KB @ 6968.0usft (Aztec #920)
Reference Site:	S3-T24N-R10W	MD Reference:	KB @ 6968.0usft (Aztec #920)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Pinon Unit M03-2410 02H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	Offset TVD Reference:	Offset Datum

Offset Design S3-T24N-R10W - Pinon Unit M03-2410 01H - Hz - Plan #4												Offset Site Error:	0.0 usft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
9,200.0	5,472.6	10,122.3	5,457.4	96.2	95.2	89.43	-3,799.3	2,244.0	1,877.8	1,691.7	186.07	10.092	
9,253.9	5,472.1	10,175.6	5,457.1	97.4	96.3	89.44	-3,837.4	2,281.4	1,885.2	1,696.8	188.39	10.007	

Cathedral Energy Services

Anticollision Report

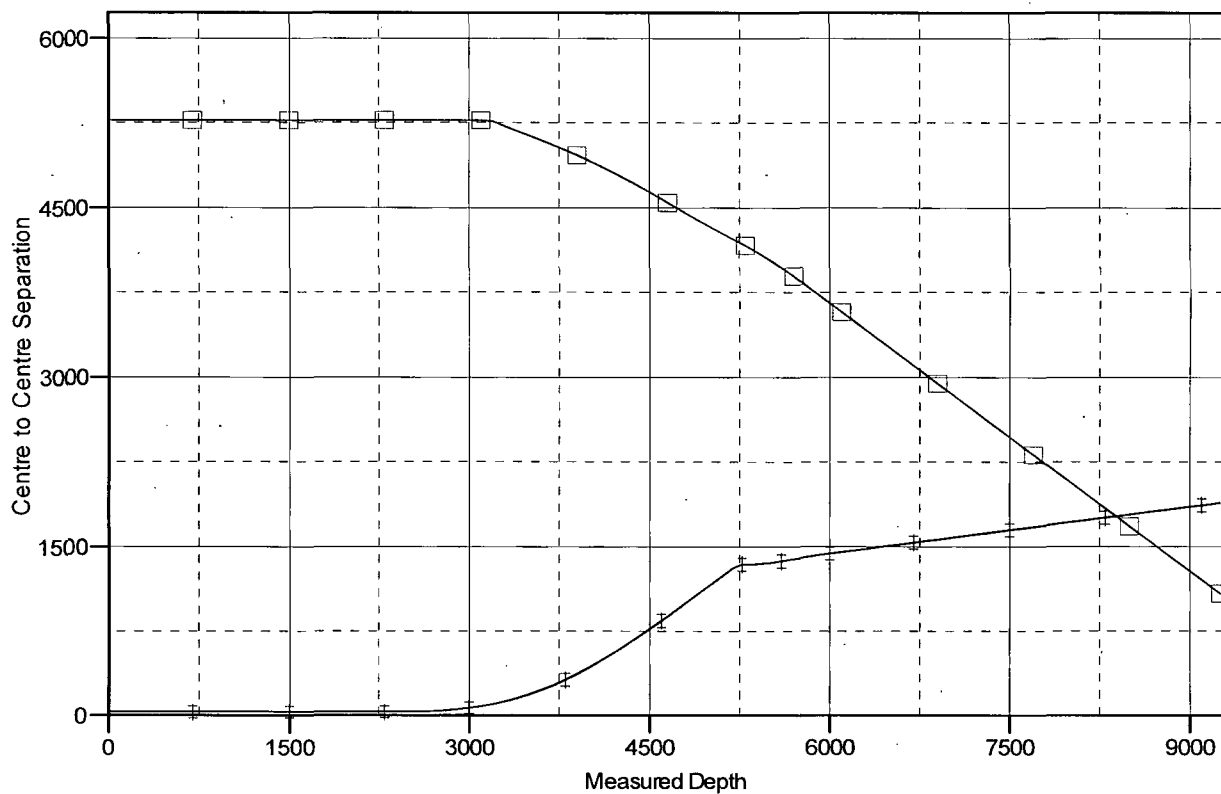
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S3-T24N-R10W
Site Error: 0.0usft
Reference Well: Pinon Unit M03-2410 02H
Well Error: 0.0usft
Reference Wellbore: Hz
Reference Design: Plan #3

Local Co-ordinate Reference: Well Pinon Unit M03-2410 02H
TVD Reference: KB @ 6968.0usft (Aztec #920)
MD Reference: KB @ 6968.0usft (Aztec #920)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA EDM 5000 Multi Users DB
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 6968.0usft (Aztec #920)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: Pinon Unit M03-2410 02H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: -0.03°

Ladder Plot



LEGEND

Good Times N02-2410 01H, Hz, Plan #1 V0
 Pinon Unit M03-2410 01H, Hz, Plan #4 V0

Piñon M03-2410 02H

**SHL: SWSW Section 3, T24N, R10W
226' FSL and 1261' FWL**

**BHL: SENE Section 10, T24N, R10W
2360' FNL and 330' FEL**

San Juan County, New Mexico

Lease Number: NMNM 133481X

If the location becomes prone to wind or water erosion, Encana will take appropriate measures to prevent topsoil loss from wind. Such measures may include using tackifiers or water to wet the topsoil stockpile so that a crust is created across the exposed soil to prevent soil loss.

3. All construction materials for the well pad will consist of native borrow and subsoil accumulated during well pad construction. If additional fill or surfacing material is required, it will be obtained from existing permitted or private sources and will be hauled in by trucks over existing access roads.

The maximum cut will be approximately 7.0 feet on the Northwest corner (corner 2) and the maximum fill will be approximately 5.7 feet on the Southeast corner (corner 5).

4. As determined during the onsite on February 5, 2014, the following best management practices will be implemented:
 - a. Water will be diverted around the pad and silt traps installed as needed upon interim reclamation.
5. Construction equipment may include chain saws, a brush hog, scraper, maintainer, excavator, and dozer. Construction for the access road and well pad will take approximately 2 weeks.
6. An existing fence line will be braced, cut and re-routed around the EOD at corner 5 (Southeast corner) for well pad construction. It will be re-built upon interim reclamation to BLM Gold Book standards in the original fence line. H-braces will be installed prior to cutting the fence. The H-braces will be constructed in accordance with the BLM Gold Book standard.

C. Pipeline

See the Plan of Development submitted with the final Standard SF-299 Application for authorization to construct, operate, maintain and terminate a 951 foot, up to 6-inch outside diameter, buried steel well connect pipeline that will be submitted to the BLM concurrently with the APD.

7. METHODS FOR HANDLING WASTE

✓ **A. Cuttings**

1. A closed-loop system will be used. Cuttings will be moved through a shaker system on the drill rig that separates drilling fluids from the cuttings. Cuttings will be stored onsite in above-ground storage tanks. Cuttings will be pulled from the storage tanks, mixed with saw dust or similar absorbent material, and disposed of at the Envirotech, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.
2. The closed-loop system storage tanks will be adequately sized to ensure confinement of all fluids and will provide sufficient freeboard to prevent uncontrolled releases.
3. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

B. Drilling Fluids

1. A closed-loop system will be used. Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as

ENCANA OIL & GAS (USA) INC.

Pinon Unit M03-2410 #02H

226' FSL & 1261' FWL

LOCATED IN THE SW/4 SW/4 OF SECTION 3,
T24N, R10W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 550 AND HWY 64, TRAVEL SOUTH ON 550 FOR 28.2 MILES TO HWY 57.
- 2) TURN RIGHT ON HWY 57 AND GO 3.1 MILES TO CR 7610.
- 3) TURN RIGHT ONTO CR 7610 AND GO 2.6 MILES TO CR 7515.
- 4) TURN RIGHT AND GO 0.8 MILES WHERE ACCESS IS STAKED ON RIGHT SIDE OF ROAD NORTH OF POWER LINES.

WELL FLAG LOCATED AT LAT. 36.336221° N, LONG. 107.888009° W (NAD 83).

JOB No.: ENC027
DATE: 11/26/12



**Scorpion Survey &
Consulting, L.L.C.**
Aztec, New Mexico 87410
(505) 334-4007

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Pinion Unit M03-2410 02H

