

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: 7-30-15

Well information;

Operator Encana, Well Name and Number Escrito E22 2409 # 1H

API# 30-045-35709, Section 22, Township 24 N/S, Range 9 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.

Brand Pell For: Charlie Perrin
NMOCD Approved by Signature

11-30-15
Date RV

NOV 19 2015

RECEIVED

JUL 31 2015

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Farmington Field Office
Bureau of Land Management

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM 36474	
6. If Indian, Allottee or Tribe Name N/A	
7. If Unit or CA Agreement, Name and No. N/A	
8. Lease Name and Well No. Escrito E22-2409 01H	
9. API Well No. 30-045-35709	
10. Field and Pool, or Exploratory Bisti-Lower Gallup & Basin Mancos Gas	
11. Sec., T. R. M. or Blk. and Survey or Area Section 22, T24N, R9W NMPM	
12. County or Parish San Juan	13. State NM
14. Distance in miles and direction from nearest town or post office* +/- 33 miles South from the intersection of US HWY 64 & US HWY 550 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 330' FWL Section 21, T24N, R9W	16. No. of acres in lease NMNM 36474: 320 Acres
17. Spacing Unit dedicated to this well 80 acres- N/2 NW/4 of Sec. 21, T24N, R9W 80 acres- N/2 NE/4 of Sec. 21, T24N, R9W	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. SHL is +/- 30' West of Escrito E22-2409 02H	19. Proposed Depth 5,408' TVD; 10,394' MD
20. BLM/BIA Bond No. on file COB-000235	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6,814 GL; 6,830' KB	22. Approximate date work will start* 03/15/2016
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 <i>Jillian McGrath</i>	Name (Printed/Typed) Jillian McGrath	Date 7/30/15
Title Regulatory Analyst		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed) AFM	Date 11/17/15
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)

*(Instructions on page 2)

DRILLING OPERATIONS AUTHORIZED
ARE SUBJECT TO COMPLIANCE WITH
ATTACHED "GENERAL REQUIREMENTS"

NMOC D PV

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

This action is subject to
technical and procedural review
pursuant to 43 CFR 3165.3 and
appeal pursuant to 43 CFR 3165.4

CONFIDENTIAL

RECEIVED

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

Farmington Field Office
Bureau of Land Management

Submit one copy to appropriate
District Office

AMENDED REPORT

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) 478-3460 Fax: (505) 478-3482

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35709		*Pool Code 97232 / 5890	*Pool Name BASIN MANCOS / BISTI LOWER GALLUP
*Property Code 315078	*Property Name ESCRITO E22-2409		*Well Number 01H
*GRID No. 282327	*Operator Name ENCANA OIL & GAS (USA) INC.		*Elevation 6813.9'

¹⁰ Surface Location

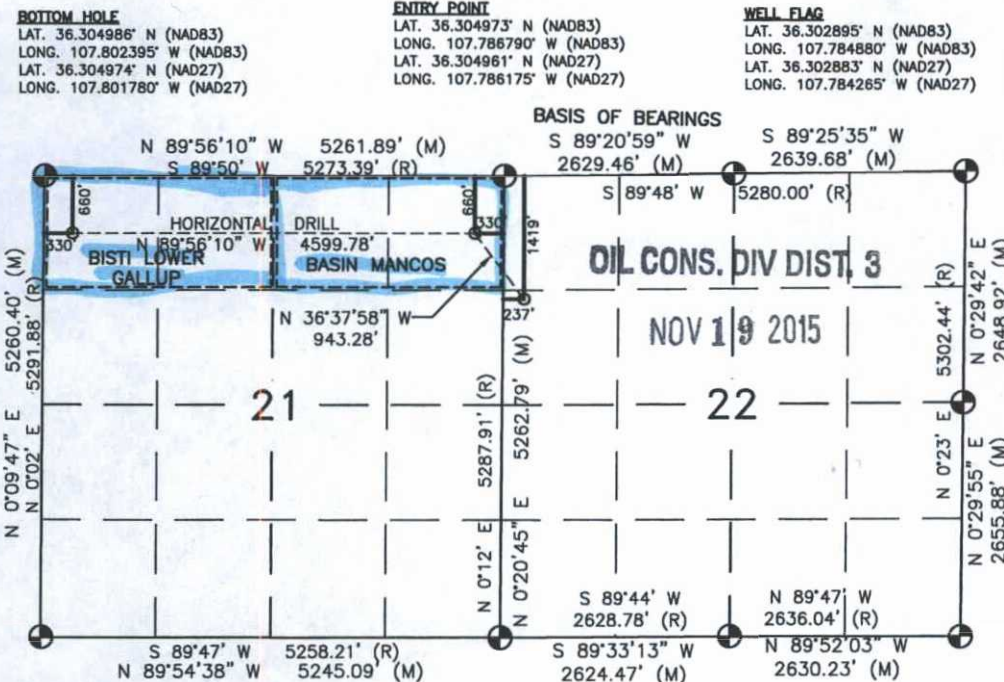
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	22	24N	9W		1419'	NORTH	237'	WEST	SAN JUAN

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
D	21	24N	9W		660'	NORTH	330'	WEST	SAN JUAN

*Dedicated Acres 80.00 ACRES N/2 NW/4 SEC. 21 (BISTI LOWER GALLUP) 80.00 ACRES N/2 NE/4 SEC. 21 (BASIN MANCOS)	PROJECT AREA	*Joint or Infill	*Consolidation Code	*Order No.
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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



ALL CORNERS
FND 2 1/2" BC
GLO 1933

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.

Jillian McGrath 7/30/15
Signature Date

Jillian McGrath
Printed Name

Jillian.McGrath@encana.com
E-mail Address

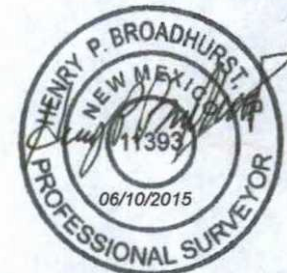
SURVEYOR CERTIFICATION

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.

MAY 19, 2014

Date of Survey

Signature and Seal of Professional Surveyor:



NORTHWEST CORNER SEC. 20
LAT. 36.306799° N (NAD83)
LONG. 107.803508° W (NAD83)
LAT. 36.306787° N (NAD27)
LONG. 107.802893° W (NAD27)

NORTHEAST CORNER SEC. 21
LAT. 36.306784° N (NAD83)
LONG. 107.785657° W (NAD83)
LAT. 36.306772° N (NAD27)
LONG. 107.785042° W (NAD27)

SOUTHWEST CORNER SEC. 20
LAT. 36.292354° N (NAD83)
LONG. 107.803555° W (NAD83)
LAT. 36.292342° N (NAD27)
LONG. 107.802940° W (NAD27)

SOUTHEAST CORNER SEC. 21
LAT. 36.292333° N (NAD83)
LONG. 107.785764° W (NAD83)
LAT. 36.292321° N (NAD27)
LONG. 107.785149° W (NAD27)

Escrito E22-2409 01H
 SHL: 1419' FNL, 237' FWL, Sec 22, T24N, R9W
 BHL: 660' FNL, 330' FWL, Sec 21, T24N, R9W
 San Juan, New Mexico
 Lease Number: NMNM 36474

**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.	880
Kirtland Shale	1,072
Fruitland Coal	1,372
Pictured Cliffs Ss.	1,649
Lewis Shale	1,796
Cliffhouse Ss.	2,489
Menefee Fn.	3,213
Point Lookout Ss.	4,107
Mancos Shale	4,266
Mancos Silt	4,884
Gallup Fn.	5,137
Base Gallup	5,458

The referenced surface elevation is 6814', KB 6830'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,372
Oil/Gas	Pictured Cliffs Ss.	1,649
Oil/Gas	Cliffhouse Ss.	2,489
Gas	Menefee Fn.	3,213
Oil/Gas	Point Lookout Ss.	4,107
Oil/Gas	Mancos Shale	4,266
Oil/Gas	Mancos Silt	4,884
Oil/Gas	Gallup Fn.	5,137

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

Escrito E22-2409 01H

SHL: 1419' FNL, 237' FWL, Sec 22, T24N, R9W

BHL: 660' FNL, 330' FWL, Sec 21, T24N, R9W

San Juan, New Mexico

Lease Number: NMNM 36474

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'-5904'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5804'-10394'	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.

Escrito E22-2409 01H

SHL: 1419' FNL, 237' FWL, Sec 22, T24N, R9W

BHL: 660' FNL, 330' FWL, Sec 21, T24N, R9W

San Juan, New Mexico

Lease Number: NMNM 36474

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'-5904'	100% open hole excess Stage 1 Lead: 552 sks Stage 1 Tail: 417 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	5804'- 10394'	50% OH excess Stage 1 Blend Total: 261sks	Blend: 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	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 500'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5408'/10394'	Gallup

Escrito E22-2409 01H

SHL: 1419' FNL, 237' FWL, Sec 22, T24N, R9W

BHL: 660' FNL, 330' FWL, Sec 21, T24N, R9W

San Juan, New Mexico

Lease Number: NMNM 36474

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'-5431'/5904'	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"	5431'/5904'- 5408'/10394'	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 +/- 2533 psi based on a 9.0 ppg at 5413' 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 15, 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: 1419' FNL, 237' FWL, Sec 22, T24N, R9W		Encana Oil & Gas (USA) Inc.			ENG: 0		7/30/15	
County: San Juan		WELL SUMMARY			RIG: Unassigned		GLE: 6813.9	
WELL: Escrito E22-2409 01H					RKBE: 6829.9			
MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH		HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			TVD	MD				
			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					
		Nacimiento Fn.	surface		12 1/4	9 5/8" 36ppf J55 LTC 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*
		9 5/8" Csg	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	880 1,072		8 3/4	7" 26ppf J55 LTC TOC @ surface (100% OH excess - 70% Lead 30% Tail) Stage 1 Total: 969sks Stage 1 Lead: 552 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	1,372					
		Pictured Cliffs Ss. Lewis Shale	1,649 1,796					
		Cliffhouse Ss. Menefee Fn.	2,489 3,213					
		Point Lookout Ss. Mancos Shale	4,107 4,266					
Surveys every 30' through the curve	Mud logger onsite	KOP	500	500				
		Mancos Silt	4,884					
		Gallup Fn.	5,137					
		7" Csg	5,431	5,904'				
Surveys every stand to TD unless directed otherwise by Geologist	No OH Logs	Horizontal Target TD	5,413 5,408	10,394	6 1/8	100' overlap at liner top 4490' Drilled Lateral		Horz Inc/TVD 90.34deg/5412.9ft TD = 10393.5 MD
MWD Gamma Directional		Base Gallup	5,458			4 1/2" 11.6ppf SB80 LTC TOC @ hanger (50% OH excess) Stage 1 Total: 261sks Stage 1 Blend: 261 sks 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.	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 500', 8 3/4 inch holesize
- 5) Start curve at 10deg/100' build rate
- 6) Drill to csg point of 5904' MD
- 7) R&C 7" csg, circ cmt to surface
- 8) Land at -55 deg, drill lateral to 10394' run 4 1/2 inch cemented liner



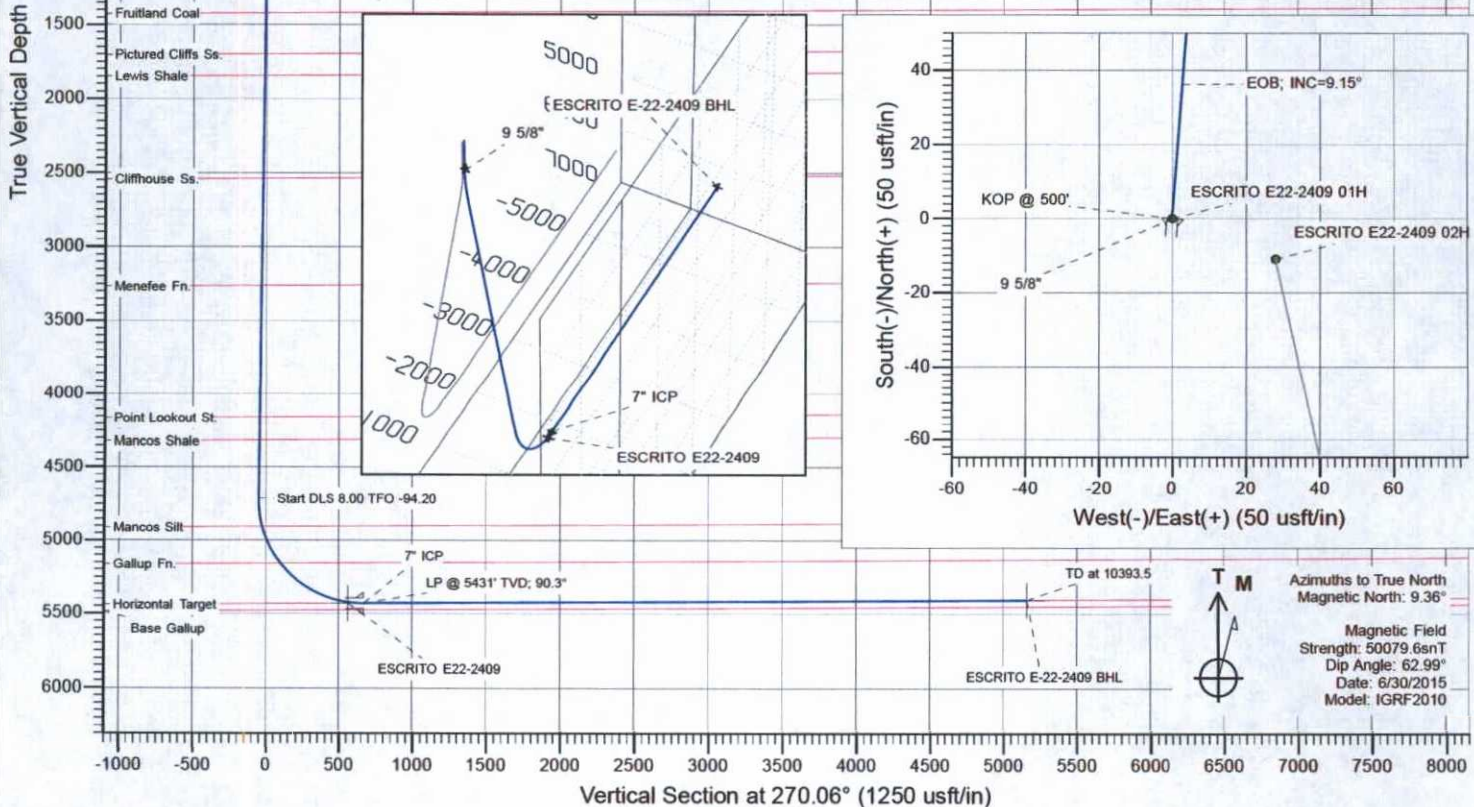
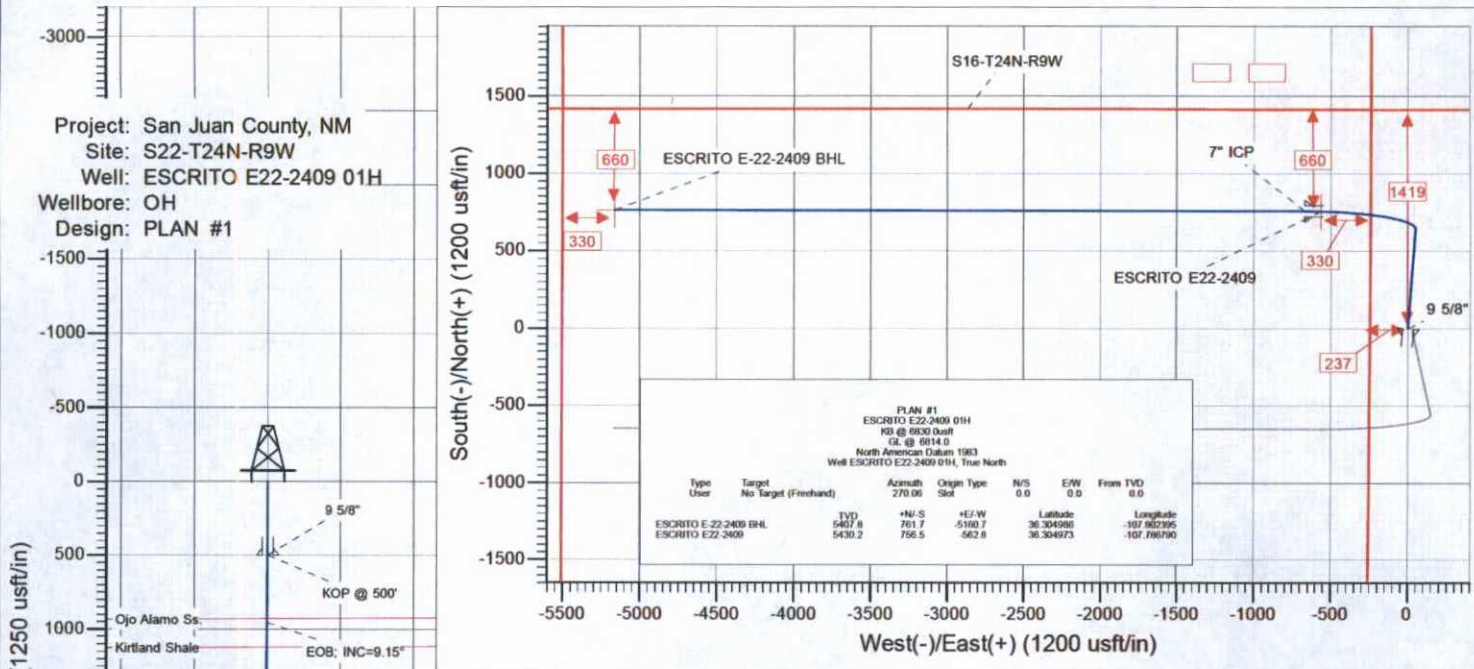
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	957.5	9.15	4.37	955.6	36.3	2.8	2.00	4.37	-2.7	
4	4766.2	9.15	4.37	4715.8	640.2	48.9	0.00	0.00	-48.3	
5	5903.5	90.30	270.06	5431.3	756.6	-670.8	8.00	-94.20	671.6	ESCRITO E-22-2409 BHL
6	10393.5	90.30	270.06	5407.8	761.7	-5160.7	0.00	0.00	5161.5	

OIL CONS. DIV DIST. 3

NOV 19 2015

Project: San Juan County, NM
 Site: S22-T24N-R9W
 Well: ESCRITO E22-2409 01H
 Wellbore: OH
 Design: PLAN #1



WELL DETAILS: ESCRITO E22-2409 01H

+N/-S	+E/-W	Northing	Ground Level: Easting	6814.0 Latitude	Longitude	Slot
0.0	0.0	1929557.16	2737368.56	36.302895	-107.784880	

CATHEDRAL



TM
 Azimuths to True North
 Magnetic North: 9.36°
 Magnetic Field
 Strength: 50079.6snT
 Dip Angle: 62.99°
 Date: 6/30/2015
 Model: IGRF2010

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6830.0usft
Project:	San Juan County, NM	MD Reference:	KB @ 6830.0usft
Site:	S22-T24N-R9W	North Reference:	True
Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

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	S22-T24N-R9W				
Site Position:		Northing:	1,927,518.97 usft	Latitude:	36.297296
From:	Lat/Long	Easting:	2,737,354.54 usft	Longitude:	-107.784931
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.03 °

Well	ESCRITO E22-2409 01H					
Well Position	+N/-S	0.0 usft	Northing:	1,929,557.16 usft	Latitude:	36.302895
	+E/-W	0.0 usft	Easting:	2,737,368.56 usft	Longitude:	-107.784880
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	6,814.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/30/2015	9.36	62.99	50,080

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	270.06

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
957.5	9.15	4.37	955.6	36.3	2.8	2.00	2.00	0.00	4.37	
4,766.2	9.15	4.37	4,715.8	640.2	48.9	0.00	0.00	0.00	0.00	
5,903.5	90.30	270.06	5,431.3	756.6	-670.8	8.00	7.14	-8.29	-94.20	
10,393.5	90.30	270.06	5,407.8	761.7	-5,160.7	0.00	0.00	0.00	0.00	ESCRITO E-22-2409

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S22-T24N-R9W
 Well: ESCRITO E22-2409 01H
 Wellbore: OH
 Design: PLAN #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well ESCRITO E22-2409 01H
 KB @ 6830.0usft
 KB @ 6830.0usft
 True
 Minimum Curvature

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	KOP @ 500' - 9 5/8"
600.0	2.00	4.37	600.0	1.7	0.1	-0.1	2.00	2.00	
700.0	4.00	4.37	699.8	7.0	0.5	-0.5	2.00	2.00	
800.0	6.00	4.37	799.5	15.6	1.2	-1.2	2.00	2.00	
900.0	8.00	4.37	898.7	27.8	2.1	-2.1	2.00	2.00	
930.6	8.61	4.37	929.0	32.2	2.5	-2.4	2.00	2.00	Ojo Alamo Ss.
957.5	9.15	4.37	955.6	36.3	2.8	-2.7	2.00	2.00	EOB; INC=9.15°
1,000.0	9.15	4.37	997.5	43.1	3.3	-3.2	0.00	0.00	
1,100.0	9.15	4.37	1,096.2	58.9	4.5	-4.4	0.00	0.00	
1,125.1	9.15	4.37	1,121.0	62.9	4.8	-4.7	0.00	0.00	Kirtland Shale
1,200.0	9.15	4.37	1,195.0	74.8	5.7	-5.6	0.00	0.00	
1,300.0	9.15	4.37	1,293.7	90.7	6.9	-6.8	0.00	0.00	
1,400.0	9.15	4.37	1,392.4	106.5	8.1	-8.0	0.00	0.00	
1,429.0	9.15	4.37	1,421.0	111.1	8.5	-8.4	0.00	0.00	Fruitland Coal
1,500.0	9.15	4.37	1,491.2	122.4	9.4	-9.2	0.00	0.00	
1,600.0	9.15	4.37	1,589.9	138.2	10.6	-10.4	0.00	0.00	
1,700.0	9.15	4.37	1,688.6	154.1	11.8	-11.6	0.00	0.00	
1,709.6	9.15	4.37	1,698.1	155.6	11.9	-11.7	0.00	0.00	Pictured Cliffs Ss.
1,800.0	9.15	4.37	1,787.3	169.9	13.0	-12.8	0.00	0.00	
1,858.5	9.15	4.37	1,845.1	179.2	13.7	-13.5	0.00	0.00	Lewis Shale
1,900.0	9.15	4.37	1,886.1	185.8	14.2	-14.0	0.00	0.00	
2,000.0	9.15	4.37	1,984.8	201.6	15.4	-15.2	0.00	0.00	
2,100.0	9.15	4.37	2,083.5	217.5	16.6	-16.4	0.00	0.00	
2,200.0	9.15	4.37	2,182.2	233.4	17.8	-17.6	0.00	0.00	
2,300.0	9.15	4.37	2,281.0	249.2	19.1	-18.8	0.00	0.00	
2,400.0	9.15	4.37	2,379.7	265.1	20.3	-20.0	0.00	0.00	
2,500.0	9.15	4.37	2,478.4	280.9	21.5	-21.2	0.00	0.00	
2,560.5	9.15	4.37	2,538.1	290.5	22.2	-21.9	0.00	0.00	Cliffhouse Ss.
2,600.0	9.15	4.37	2,577.2	296.8	22.7	-22.4	0.00	0.00	
2,700.0	9.15	4.37	2,675.9	312.6	23.9	-23.6	0.00	0.00	
2,800.0	9.15	4.37	2,774.6	328.5	25.1	-24.8	0.00	0.00	
2,900.0	9.15	4.37	2,873.3	344.3	26.3	-26.0	0.00	0.00	
3,000.0	9.15	4.37	2,972.1	360.2	27.5	-27.2	0.00	0.00	
3,100.0	9.15	4.37	3,070.8	376.1	28.7	-28.4	0.00	0.00	
3,200.0	9.15	4.37	3,169.5	391.9	30.0	-29.6	0.00	0.00	
3,293.8	9.15	4.37	3,262.2	406.8	31.1	-30.7	0.00	0.00	Menefee Fn.
3,300.0	9.15	4.37	3,268.3	407.8	31.2	-30.7	0.00	0.00	
3,400.0	9.15	4.37	3,367.0	423.6	32.4	-31.9	0.00	0.00	
3,500.0	9.15	4.37	3,465.7	439.5	33.6	-33.1	0.00	0.00	
3,600.0	9.15	4.37	3,564.4	455.3	34.8	-34.3	0.00	0.00	
3,700.0	9.15	4.37	3,663.2	471.2	36.0	-35.5	0.00	0.00	
3,800.0	9.15	4.37	3,761.9	487.0	37.2	-36.7	0.00	0.00	
3,900.0	9.15	4.37	3,860.6	502.9	38.4	-37.9	0.00	0.00	
4,000.0	9.15	4.37	3,959.3	518.8	39.7	-39.1	0.00	0.00	
4,100.0	9.15	4.37	4,058.1	534.6	40.9	-40.3	0.00	0.00	
4,199.4	9.15	4.37	4,156.2	550.4	42.1	-41.5	0.00	0.00	Point Lookout St.
4,200.0	9.15	4.37	4,156.8	550.5	42.1	-41.5	0.00	0.00	

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S22-T24N-R9W
 Well: ESCRITO E22-2409 01H
 Wellbore: OH
 Design: PLAN #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:

Well ESCRITO E22-2409 01H
 KB @ 6830.0usft
 KB @ 6830.0usft
 True
 Minimum Curvature

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
4,300.0	9.15	4.37	4,255.5	566.3	43.3	-42.7	0.00	0.00	
4,360.5	9.15	4.37	4,315.2	575.9	44.0	-43.4	0.00	0.00	Mancos Shale
4,400.0	9.15	4.37	4,354.3	582.2	44.5	-43.9	0.00	0.00	
4,500.0	9.15	4.37	4,453.0	598.0	45.7	-45.1	0.00	0.00	
4,600.0	9.15	4.37	4,551.7	613.9	46.9	-46.3	0.00	0.00	
4,700.0	9.15	4.37	4,650.4	629.7	48.1	-47.5	0.00	0.00	
4,766.2	9.15	4.37	4,715.8	640.2	48.9	-48.3	0.00	0.00	Start DLS 8.00 TFO -94.20
4,800.0	9.35	347.54	4,749.2	645.6	48.6	-47.9	8.00	0.58	
4,900.0	13.52	312.01	4,847.3	661.4	38.1	-37.4	8.00	4.18	
4,961.1	17.43	300.89	4,906.1	670.9	24.9	-24.2	8.00	6.39	Mancos Silt
5,000.0	20.13	296.10	4,943.0	676.8	13.9	-13.2	8.00	6.95	
5,100.0	27.47	288.11	5,034.4	691.6	-23.5	24.2	8.00	7.34	
5,200.0	35.08	283.33	5,119.9	705.4	-73.5	74.2	8.00	7.61	
5,248.3	38.81	281.63	5,158.5	711.6	-101.8	102.6	8.00	7.72	Gallup Fn.
5,300.0	42.82	280.09	5,197.6	718.0	-135.0	135.8	8.00	7.76	
5,400.0	50.63	277.69	5,266.1	729.1	-206.9	207.7	8.00	7.81	
5,500.0	58.48	275.77	5,324.0	738.6	-287.7	288.5	8.00	7.85	
5,600.0	66.35	274.15	5,370.3	746.2	-376.0	376.8	8.00	7.87	
5,700.0	74.23	272.71	5,404.0	751.8	-469.9	470.7	8.00	7.89	
5,800.0	82.13	271.39	5,424.5	755.3	-567.6	568.4	8.00	7.89	
5,900.0	90.02	270.11	5,431.3	756.6	-667.3	668.1	8.00	7.90	
5,903.5	90.30	270.06	5,431.3	756.6	-670.8	671.6	7.97	7.87	LP @ 5431' TVD; 90.3° - 7" ICP
6,000.0	90.30	270.06	5,430.8	756.7	-767.3	768.1	0.00	0.00	
6,100.0	90.30	270.06	5,430.3	756.8	-867.3	868.1	0.00	0.00	
6,200.0	90.30	270.06	5,429.7	756.9	-967.3	968.1	0.00	0.00	
6,300.0	90.30	270.06	5,429.2	757.0	-1,067.3	1,068.1	0.00	0.00	
6,400.0	90.30	270.06	5,428.7	757.1	-1,167.3	1,168.1	0.00	0.00	
6,500.0	90.30	270.06	5,428.2	757.3	-1,267.3	1,268.1	0.00	0.00	
6,600.0	90.30	270.06	5,427.7	757.4	-1,367.3	1,368.1	0.00	0.00	
6,700.0	90.30	270.06	5,427.1	757.5	-1,467.3	1,468.1	0.00	0.00	
6,800.0	90.30	270.06	5,426.6	757.6	-1,567.3	1,568.1	0.00	0.00	
6,900.0	90.30	270.06	5,426.1	757.7	-1,667.3	1,668.1	0.00	0.00	
7,000.0	90.30	270.06	5,425.6	757.8	-1,767.3	1,768.1	0.00	0.00	
7,100.0	90.30	270.06	5,425.0	757.9	-1,867.3	1,868.1	0.00	0.00	
7,200.0	90.30	270.06	5,424.5	758.0	-1,967.3	1,968.1	0.00	0.00	
7,300.0	90.30	270.06	5,424.0	758.2	-2,067.3	2,068.1	0.00	0.00	
7,400.0	90.30	270.06	5,423.5	758.3	-2,167.3	2,168.1	0.00	0.00	
7,500.0	90.30	270.06	5,422.9	758.4	-2,267.3	2,268.1	0.00	0.00	
7,600.0	90.30	270.06	5,422.4	758.5	-2,367.3	2,368.1	0.00	0.00	
7,700.0	90.30	270.06	5,421.9	758.6	-2,467.3	2,468.1	0.00	0.00	
7,800.0	90.30	270.06	5,421.4	758.7	-2,567.3	2,568.0	0.00	0.00	
7,900.0	90.30	270.06	5,420.8	758.8	-2,667.3	2,668.0	0.00	0.00	
8,000.0	90.30	270.06	5,420.3	758.9	-2,767.3	2,768.0	0.00	0.00	
8,100.0	90.30	270.06	5,419.8	759.1	-2,867.3	2,868.0	0.00	0.00	
8,200.0	90.30	270.06	5,419.3	759.2	-2,967.2	2,968.0	0.00	0.00	
8,300.0	90.30	270.06	5,418.8	759.3	-3,067.2	3,068.0	0.00	0.00	
8,400.0	90.30	270.06	5,418.2	759.4	-3,167.2	3,168.0	0.00	0.00	
8,500.0	90.30	270.06	5,417.7	759.5	-3,267.2	3,268.0	0.00	0.00	
8,600.0	90.30	270.06	5,417.2	759.6	-3,367.2	3,368.0	0.00	0.00	
8,700.0	90.30	270.06	5,416.7	759.7	-3,467.2	3,468.0	0.00	0.00	
8,800.0	90.30	270.06	5,416.1	759.9	-3,567.2	3,568.0	0.00	0.00	
8,900.0	90.30	270.06	5,415.6	760.0	-3,667.2	3,668.0	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 6830.0usft
Project:	San Juan County, NM	MD Reference:	KB @ 6830.0usft
Site:	S22-T24N-R9W	North Reference:	True
Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

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
9,000.0	90.30	270.06	5,415.1	760.1	-3,767.2	3,768.0	0.00	0.00	
9,100.0	90.30	270.06	5,414.6	760.2	-3,867.2	3,868.0	0.00	0.00	
9,200.0	90.30	270.06	5,414.0	760.3	-3,967.2	3,968.0	0.00	0.00	
9,300.0	90.30	270.06	5,413.5	760.4	-4,067.2	4,068.0	0.00	0.00	
9,400.0	90.30	270.06	5,413.0	760.5	-4,167.2	4,168.0	0.00	0.00	
9,500.0	90.30	270.06	5,412.5	760.6	-4,267.2	4,268.0	0.00	0.00	
9,600.0	90.30	270.06	5,411.9	760.8	-4,367.2	4,368.0	0.00	0.00	
9,700.0	90.30	270.06	5,411.4	760.9	-4,467.2	4,468.0	0.00	0.00	
9,800.0	90.30	270.06	5,410.9	761.0	-4,567.2	4,568.0	0.00	0.00	
9,900.0	90.30	270.06	5,410.4	761.1	-4,667.2	4,668.0	0.00	0.00	
10,000.0	90.30	270.06	5,409.9	761.2	-4,767.2	4,768.0	0.00	0.00	
10,100.0	90.30	270.06	5,409.3	761.3	-4,867.2	4,868.0	0.00	0.00	
10,200.0	90.30	270.06	5,408.8	761.4	-4,967.2	4,968.0	0.00	0.00	
10,300.0	90.30	270.06	5,408.3	761.5	-5,067.2	5,068.0	0.00	0.00	
10,393.5	90.30	270.06	5,407.8	761.7	-5,160.7	5,161.5	0.00	0.00	TD at 10393.5

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
ESCRITO E-22-2409 BH - hit/miss target - Shape - Point	0.00	0.00	5,407.8	761.7	-5,160.7	1,930,316.22	2,732,207.47	36.304986	-107.802395
ESCRITO E22-2409 - plan misses target center by 6.4usft at 5796.5usft MD (5424.0 TVD, 755.2 N, -564.1 E) - Point	0.00	0.00	5,430.2	756.5	-562.8	1,930,313.33	2,736,805.40	36.304973	-107.786790

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
5,903.5	5,431.3	7" ICP	0	0	
500.0	500.0	9 5/8"	0	0	

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well ESCRITO E22-2409 01H	
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB @ 6830.0usft	
Project: San Juan County, NM	MD Reference: KB @ 6830.0usft	
Site: S22-T24N-R9W	North Reference: True	
Well: ESCRITO E22-2409 01H	Survey Calculation Method: Minimum Curvature	
Wellbore: OH		
Design: PLAN #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
930.6	929.0	Ojo Alamo Ss.		-0.30	270.06	
1,125.1	1,121.0	Kirtland Shale		-0.30	270.06	
1,429.0	1,421.0	Fruitland Coal		-0.30	270.06	
1,709.6	1,698.0	Pictured Cliffs Ss.		-0.30	270.06	
1,858.5	1,845.0	Lewis Shale		-0.30	270.06	
2,560.5	2,538.0	Cliffhouse Ss.		-0.30	270.06	
3,293.8	3,262.0	Menefee Fn.		-0.30	270.06	
4,199.4	4,156.0	Point Lookout St.		-0.30	270.06	
4,360.5	4,315.0	Mancos Shale		-0.30	270.06	
4,961.1	4,906.0	Mancos Silt		-0.30	270.06	
5,248.3	5,159.0	Gallup Fn.		-0.30	270.06	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
500.0	500.0	0.0	0.0	KOP @ 500'	
957.5	955.6	36.3	2.8	EOB; INC=9.15°	
4,766.2	4,715.8	640.2	48.9	Start DLS 8.00 TFO -94.20	
5,903.5	5,431.3	756.6	-670.8	LP @ 5431' TVD; 90.3°	
10,393.5	5,407.8	761.7	-5,160.7	TD at 10393.5	



EnCana Oil & Gas (USA) Inc

San Juan County, NM

S22-T24N-R9W

ESCRITO E22-2409 01H

OH

PLAN #1

Anticollision Report

01 July, 2015

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Project:	San Juan County, NM	TVD Reference:	KB @ 6830.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	KB @ 6830.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Reference	PLAN #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.0usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	7/1/2015	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,393.4	PLAN #1 (OH)	MWD	MWD - Standard

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Summary						
Offset Well - Wellbore - Design						
S22-T24N-R9W						
ESCRITO E22-2409 02H - OH - PLAN #1	500.0	500.0	30.0	26.9	9.478	CC, ES
ESCRITO E22-2409 02H - OH - PLAN #1	10,393.5	10,505.2	1,409.6	1,091.5	4.431	SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Project:	San Juan County, NM	TVD Reference:	KB @ 6830.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	KB @ 6830.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S22-T24N-R9W - ESCRITO E22-2409 02H - OH - PLAN #1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.0	0.0	0.0	0.0	0.0	0.0	111.31	-10.9	28.0	30.0					
100.0	100.0	100.0	100.0	0.2	0.2	111.31	-10.9	28.0	30.0	29.7	0.30	99.747		
200.0	200.0	200.0	200.0	0.5	0.5	111.31	-10.9	28.0	30.0	29.0	1.02	29.503		
300.0	300.0	300.0	300.0	0.9	0.9	111.31	-10.9	28.0	30.0	28.3	1.74	17.311		
400.0	400.0	400.0	400.0	1.2	1.2	111.31	-10.9	28.0	30.0	27.6	2.45	12.250		
500.0	500.0	500.0	500.0	1.6	1.6	111.31	-10.9	28.0	30.0	26.9	3.17	9.478	CC, ES	
600.0	600.0	599.3	599.3	1.9	1.9	112.50	-12.6	28.4	31.7	27.8	3.88	8.163		
700.0	699.8	697.9	697.7	2.3	2.3	125.68	-17.6	29.5	38.0	33.4	4.62	8.227		
800.0	799.5	795.1	794.6	2.7	2.6	139.07	-25.7	31.3	51.4	46.0	5.40	9.510		
900.0	898.7	890.3	889.1	3.0	2.9	148.73	-36.8	33.8	72.6	66.4	6.19	11.720		
1,000.0	997.5	986.1	984.0	3.4	3.3	155.04	-49.6	36.6	99.5	92.6	6.87	14.473		
1,100.0	1,096.2	1,081.8	1,078.8	3.8	3.7	158.84	-62.4	39.5	127.5	120.0	7.53	16.929		
1,200.0	1,195.0	1,177.5	1,173.6	4.2	4.1	161.27	-75.2	42.4	155.9	147.7	8.20	19.010		
1,300.0	1,293.7	1,273.2	1,268.4	4.6	4.4	162.96	-88.0	45.2	184.5	175.6	8.88	20.781		
1,400.0	1,392.4	1,369.0	1,363.2	5.1	4.8	164.19	-100.8	48.1	213.1	203.6	9.56	22.299		
1,500.0	1,491.2	1,464.7	1,458.0	5.5	5.2	165.13	-113.6	51.0	241.9	231.6	10.25	23.610		
1,600.0	1,589.9	1,560.4	1,552.9	5.9	5.6	165.87	-126.4	53.8	270.7	259.7	10.94	24.752		
1,700.0	1,688.6	1,656.1	1,647.7	6.3	6.0	166.46	-139.2	56.7	299.5	287.9	11.63	25.753		
1,800.0	1,787.3	1,751.8	1,742.5	6.7	6.4	166.96	-152.0	59.5	328.4	316.0	12.33	26.638		
1,900.0	1,886.1	1,847.5	1,837.3	7.2	6.8	167.37	-164.8	62.4	357.2	344.2	13.03	27.424		
2,000.0	1,984.8	1,943.2	1,932.1	7.6	7.2	167.72	-177.6	65.3	386.1	372.4	13.73	28.127		
2,100.0	2,083.5	2,038.9	2,026.9	8.0	7.6	168.02	-190.4	68.1	415.0	400.6	14.43	28.759		
2,200.0	2,182.2	2,134.7	2,121.7	8.5	8.0	168.29	-203.2	71.0	443.9	428.8	15.14	29.330		
2,300.0	2,281.0	2,230.4	2,216.5	8.9	8.4	168.52	-216.0	73.9	472.8	457.0	15.84	29.848		
2,400.0	2,379.7	2,326.1	2,311.3	9.3	8.8	168.72	-228.8	76.7	501.7	485.2	16.55	30.321		
2,500.0	2,478.4	2,421.8	2,406.2	9.7	9.2	168.90	-241.6	79.6	530.7	513.4	17.26	30.753		
2,600.0	2,577.2	2,517.5	2,501.0	10.2	9.6	169.07	-254.4	82.4	559.6	541.6	17.96	31.150		
2,700.0	2,675.9	2,613.2	2,595.8	10.6	10.0	169.21	-267.2	85.3	588.5	569.8	18.67	31.516		
2,800.0	2,774.6	2,708.9	2,690.6	11.0	10.4	169.35	-280.0	88.2	617.5	598.1	19.38	31.854		
2,900.0	2,873.3	2,804.7	2,785.4	11.5	10.8	169.47	-292.8	91.0	646.4	626.3	20.09	32.167		
3,000.0	2,972.1	2,900.4	2,880.2	11.9	11.2	169.58	-305.6	93.9	675.3	654.5	20.81	32.458		
3,100.0	3,070.8	2,996.1	2,975.0	12.3	11.6	169.68	-318.4	96.8	704.3	682.8	21.52	32.730		
3,200.0	3,169.5	3,091.8	3,069.8	12.8	12.0	169.78	-331.2	99.6	733.2	711.0	22.23	32.983		
3,300.0	3,268.3	3,187.5	3,164.6	13.2	12.4	169.86	-344.0	102.5	762.2	739.2	22.94	33.220		
3,400.0	3,367.0	3,283.2	3,259.4	13.6	12.8	169.94	-356.7	105.3	791.1	767.5	23.66	33.443		
3,500.0	3,465.7	3,378.9	3,354.3	14.1	13.2	170.02	-369.5	108.2	820.1	795.7	24.37	33.652		
3,600.0	3,564.4	3,474.6	3,449.1	14.5	13.6	170.09	-382.3	111.1	849.0	823.9	25.08	33.848		
3,700.0	3,663.2	3,570.4	3,543.9	14.9	14.1	170.15	-395.1	113.9	878.0	852.2	25.80	34.034		
3,800.0	3,761.9	3,666.1	3,638.7	15.4	14.5	170.21	-407.9	116.8	906.9	880.4	26.51	34.209		
3,900.0	3,860.6	3,761.8	3,733.5	15.8	14.9	170.27	-420.7	119.7	935.9	908.6	27.22	34.375		
4,000.0	3,959.3	3,857.5	3,828.3	16.2	15.3	170.32	-433.5	122.5	964.8	936.9	27.94	34.532		
4,100.0	4,058.1	3,953.2	3,923.1	16.7	15.7	170.38	-446.3	125.4	993.8	965.1	28.65	34.681		
4,200.0	4,156.8	4,048.9	4,017.9	17.1	16.1	170.42	-459.1	128.2	1,022.7	993.4	29.37	34.823		
4,300.0	4,255.5	4,144.6	4,112.7	17.5	16.5	170.47	-471.9	131.1	1,051.7	1,021.6	30.08	34.958		
4,400.0	4,354.3	4,240.3	4,207.6	18.0	16.9	170.51	-484.7	134.0	1,080.6	1,049.8	30.80	35.086		
4,500.0	4,453.0	4,336.1	4,302.4	18.4	17.3	170.55	-497.5	136.8	1,109.6	1,078.1	31.52	35.208		
4,600.0	4,551.7	4,431.8	4,397.2	18.8	17.7	170.59	-510.3	139.7	1,138.5	1,106.3	32.23	35.325		
4,700.0	4,650.4	4,527.5	4,492.0	19.3	18.1	170.63	-523.1	142.6	1,167.5	1,134.6	32.95	35.437		
4,800.0	4,749.2	4,623.2	4,586.8	19.7	18.5	-171.95	-535.9	145.4	1,196.5	1,162.9	33.66	35.546		
4,900.0	4,847.3	4,717.9	4,680.6	20.1	18.9	-135.09	-548.6	148.3	1,226.3	1,192.0	34.36	35.693		
5,000.0	4,943.0	4,821.1	4,782.8	20.5	19.3	-118.44	-562.4	148.9	1,256.7	1,221.6	35.10	35.801		
5,100.0	5,034.4	4,938.3	4,897.8	20.9	19.8	-109.91	-577.9	133.3	1,286.4	1,250.4	35.92	35.814		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Project:	San Juan County, NM	TVD Reference:	KB @ 6830.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	KB @ 6830.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

Offset Design S22-T24N-R9W - ESCRITO E22-2409 02H - OH - PLAN #1														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
5,200.0	5,119.9	5,062.1	5,014.8	21.3	20.2	-104.65	-593.7	96.6	1,314.3	1,277.6	36.76	35.753			
5,300.0	5,197.6	5,192.9	5,129.7	21.7	20.6	-101.00	-609.1	36.3	1,339.9	1,302.1	37.72	35.525			
5,400.0	5,266.1	5,330.3	5,236.5	22.1	21.0	-98.25	-623.5	-48.6	1,362.2	1,323.3	38.96	34.962			
5,500.0	5,324.0	5,473.1	5,328.4	22.8	21.4	-96.07	-635.9	-156.9	1,380.8	1,340.0	40.79	33.852			
5,600.0	5,370.3	5,619.4	5,398.6	23.7	22.4	-94.26	-645.4	-284.6	1,394.9	1,351.4	43.49	32.076			
5,700.0	5,404.0	5,766.5	5,441.8	24.9	24.3	-92.73	-651.2	-424.7	1,404.2	1,357.0	47.19	29.758			
5,800.0	5,424.5	5,911.2	5,455.8	26.5	27.0	-91.45	-653.1	-568.6	1,408.7	1,357.0	51.72	27.237			
5,900.0	5,431.3	6,011.7	5,455.1	28.4	29.1	-90.97	-652.9	-669.0	1,409.7	1,353.9	55.86	25.237			
6,000.0	5,430.8	6,111.7	5,454.4	30.4	31.3	-90.96	-652.8	-769.0	1,409.7	1,349.4	60.30	23.377			
6,100.0	5,430.3	6,211.7	5,453.7	32.6	33.7	-90.95	-652.7	-869.0	1,409.7	1,344.7	65.03	21.678			
6,200.0	5,429.7	6,311.7	5,453.0	35.0	36.2	-90.95	-652.6	-969.0	1,409.7	1,339.7	69.98	20.145			
6,300.0	5,429.2	6,411.7	5,452.3	37.4	38.8	-90.94	-652.5	-1,069.0	1,409.7	1,334.6	75.11	18.769			
6,400.0	5,428.7	6,511.7	5,451.6	40.0	41.4	-90.93	-652.4	-1,169.0	1,409.7	1,329.3	80.38	17.538			
6,500.0	5,428.2	6,611.7	5,450.9	42.6	44.1	-90.92	-652.3	-1,269.0	1,409.7	1,323.9	85.77	16.435			
6,600.0	5,427.7	6,711.7	5,450.2	45.3	46.9	-90.92	-652.1	-1,369.0	1,409.7	1,318.4	91.26	15.447			
6,700.0	5,427.1	6,811.7	5,449.5	48.0	49.6	-90.91	-652.0	-1,469.0	1,409.7	1,312.9	96.83	14.558			
6,800.0	5,426.6	6,911.7	5,448.8	50.8	52.5	-90.90	-651.9	-1,569.0	1,409.7	1,307.2	102.47	13.757			
6,900.0	5,426.1	7,011.7	5,448.1	53.6	55.3	-90.90	-651.8	-1,669.0	1,409.7	1,301.5	108.16	13.033			
7,000.0	5,425.6	7,111.7	5,447.4	56.4	58.2	-90.89	-651.7	-1,769.0	1,409.7	1,295.8	113.90	12.376			
7,100.0	5,425.0	7,211.7	5,446.7	59.3	61.1	-90.88	-651.6	-1,869.0	1,409.7	1,290.0	119.69	11.778			
7,200.0	5,424.5	7,311.7	5,446.0	62.2	64.0	-90.88	-651.5	-1,969.0	1,409.7	1,284.2	125.51	11.232			
7,300.0	5,424.0	7,411.7	5,445.3	65.1	66.9	-90.87	-651.4	-2,069.0	1,409.7	1,278.3	131.35	10.732			
7,400.0	5,423.5	7,511.7	5,444.7	68.0	69.9	-90.86	-651.2	-2,169.0	1,409.7	1,272.4	137.23	10.272			
7,500.0	5,422.9	7,611.7	5,444.0	70.9	72.8	-90.85	-651.1	-2,269.0	1,409.7	1,266.5	143.13	9.849			
7,600.0	5,422.4	7,711.7	5,443.3	73.8	75.8	-90.85	-651.0	-2,369.0	1,409.7	1,260.6	149.05	9.458			
7,700.0	5,421.9	7,811.7	5,442.6	76.8	78.7	-90.84	-650.9	-2,469.0	1,409.7	1,254.7	154.99	9.095			
7,800.0	5,421.4	7,911.7	5,441.9	79.7	81.7	-90.83	-650.8	-2,569.0	1,409.7	1,248.7	160.95	8.758			
7,900.0	5,420.8	8,011.7	5,441.2	82.7	84.7	-90.83	-650.7	-2,669.0	1,409.7	1,242.7	166.92	8.445			
8,000.0	5,420.3	8,111.7	5,440.5	85.7	87.7	-90.82	-650.6	-2,769.0	1,409.7	1,236.8	172.90	8.153			
8,100.0	5,419.8	8,211.7	5,439.8	88.7	90.7	-90.81	-650.5	-2,869.0	1,409.7	1,230.8	178.90	7.890			
8,200.0	5,419.3	8,311.7	5,439.1	91.7	93.7	-90.80	-650.3	-2,969.0	1,409.7	1,224.7	184.90	7.624			
8,300.0	5,418.8	8,411.7	5,438.4	94.7	96.7	-90.80	-650.2	-3,069.0	1,409.7	1,218.7	190.92	7.383			
8,400.0	5,418.2	8,511.7	5,437.7	97.7	99.7	-90.79	-650.1	-3,169.0	1,409.6	1,212.7	196.94	7.158			
8,500.0	5,417.7	8,611.7	5,437.0	100.7	102.7	-90.78	-650.0	-3,269.0	1,409.6	1,206.7	202.98	6.945			
8,600.0	5,417.2	8,711.7	5,436.3	103.7	105.7	-90.78	-649.9	-3,369.0	1,409.6	1,200.6	209.02	6.744			
8,700.0	5,416.7	8,811.7	5,435.6	106.7	108.8	-90.77	-649.8	-3,469.0	1,409.6	1,194.6	215.06	6.555			
8,800.0	5,416.1	8,911.7	5,434.9	109.7	111.8	-90.76	-649.7	-3,569.0	1,409.6	1,188.5	221.12	6.375			
8,900.0	5,415.6	9,011.7	5,434.2	112.7	114.8	-90.76	-649.5	-3,669.0	1,409.6	1,182.5	227.17	6.205			
9,000.0	5,415.1	9,111.7	5,433.5	115.7	117.8	-90.75	-649.4	-3,769.0	1,409.6	1,176.4	233.24	6.044			
9,100.0	5,414.6	9,211.7	5,432.8	118.8	120.9	-90.74	-649.3	-3,869.0	1,409.6	1,170.3	239.31	5.890			
9,200.0	5,414.0	9,311.7	5,432.1	121.8	123.9	-90.73	-649.2	-3,969.0	1,409.6	1,164.3	245.38	5.745			
9,300.0	5,413.5	9,411.7	5,431.4	124.8	127.0	-90.73	-649.1	-4,069.0	1,409.6	1,158.2	251.46	5.606			
9,400.0	5,413.0	9,511.7	5,430.7	127.9	130.0	-90.72	-649.0	-4,169.0	1,409.6	1,152.1	257.54	5.473			
9,500.0	5,412.5	9,611.7	5,430.0	130.9	133.0	-90.71	-648.9	-4,268.9	1,409.6	1,146.0	263.62	5.347			
9,600.0	5,411.9	9,711.7	5,429.3	133.9	136.1	-90.71	-648.8	-4,368.9	1,409.6	1,139.9	269.71	5.226			
9,700.0	5,411.4	9,811.7	5,428.6	137.0	139.1	-90.70	-648.6	-4,468.9	1,409.6	1,133.8	275.80	5.111			
9,800.0	5,410.9	9,911.7	5,427.9	140.0	142.2	-90.69	-648.5	-4,568.9	1,409.6	1,127.7	281.89	5.001			
9,900.0	5,410.4	10,011.7	5,427.2	143.1	145.2	-90.68	-648.4	-4,668.9	1,409.6	1,121.6	287.99	4.895			
10,000.0	5,409.9	10,111.7	5,426.5	146.1	148.3	-90.68	-648.3	-4,768.9	1,409.6	1,115.5	294.09	4.793			
10,100.0	5,409.3	10,211.7	5,425.8	149.2	151.3	-90.67	-648.2	-4,868.9	1,409.6	1,109.4	300.19	4.696			
10,200.0	5,408.8	10,311.7	5,425.1	152.2	154.4	-90.66	-648.1	-4,968.9	1,409.6	1,103.3	306.29	4.602			
10,300.0	5,408.3	10,411.7	5,424.4	155.2	157.4	-90.66	-648.0	-5,068.9	1,409.6	1,097.2	312.40	4.512			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well ESCRITO E22-2409 01H
Project:	San Juan County, NM	TVD Reference:	KB @ 6830.0usft
Reference Site:	S22-T24N-R9W	MD Reference:	KB @ 6830.0usft
Site Error:	0.0usft	North Reference:	True
Reference Well:	ESCRITO E22-2409 01H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	PLAN #1	Offset TVD Reference:	Offset Datum

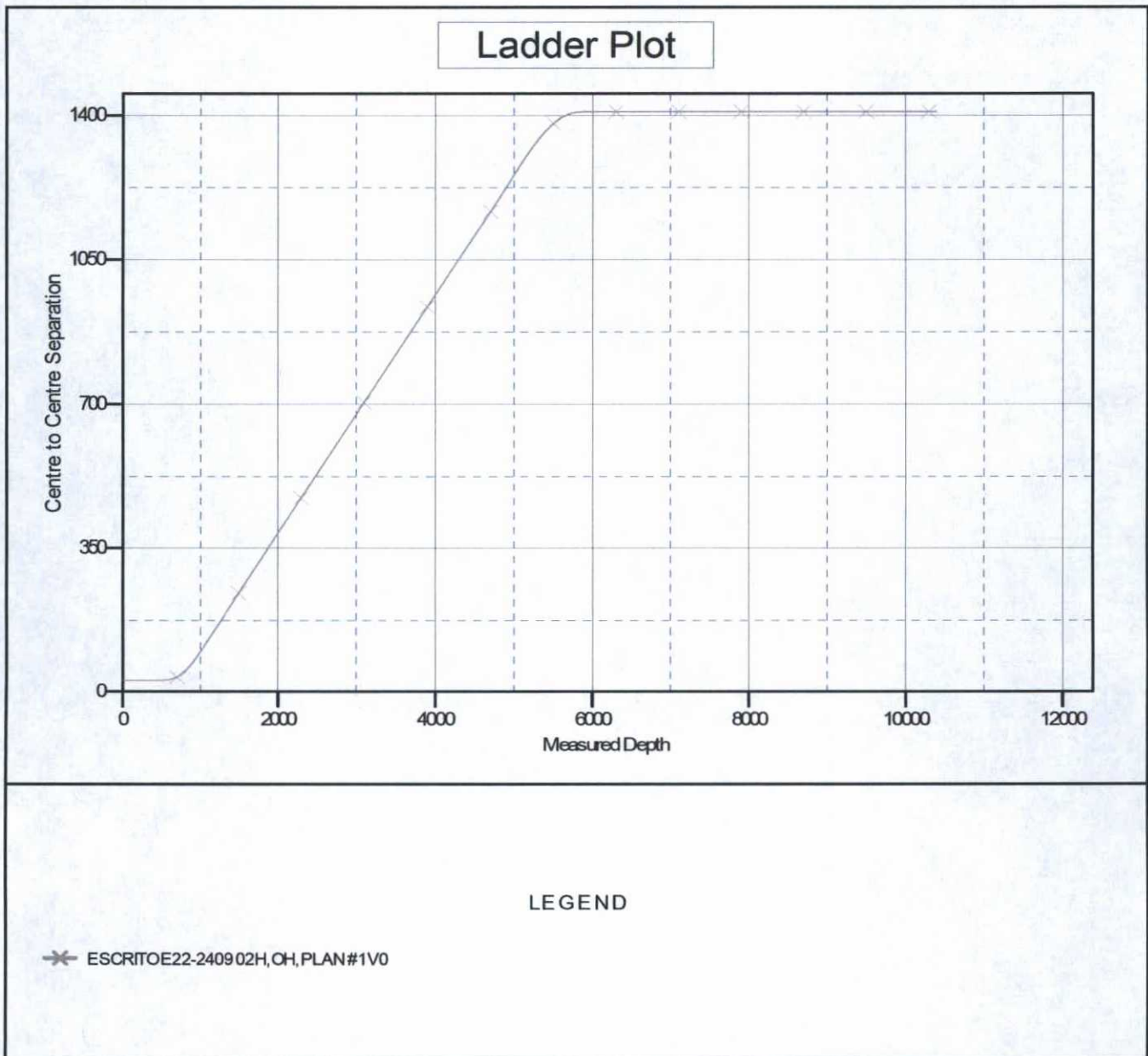
Offset Design S22-T24N-R9W - ESCRITO E22-2409 02H - OH - PLAN #1													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical 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		
10,393.5	5,407.8	10,505.2	5,423.8	158.1	160.3	-90.65	-647.9	-5,162.4	1,409.6	1,091.5	318.11	4.431 SF		

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Reference Depths are relative to KB @ 6830.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: ESCRITO E22-2409 01H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°



Escrito E22-2409 01H

**SHL: SWNW Section 22, T24N, R9W
1,419' FNL and 237' FWL**

**BHL: NWNW Section 21, T24N, R9W
660' FNL and 330' FWL**

San Juan County, New Mexico

Lease Number: NMNM 36474

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 to 4 weeks.

C. Pipeline

See the Plan of Development submitted with the final modifications to the Standard Form 299 Application for authorization to construct, maintain and terminate a 892 foot, up to 6-inch outside diameter, buried steel well connect pipeline that was 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 practical. Residual fluids will be vacuumed from the storage tanks and disposed of at Basin Disposal, 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. The closed-loop system storage tanks will be placed in bermed secondary containment sized to accommodate a minimum of 110 percent of the volume of the largest storage tank.
4. A 20-mil liner will be installed under tanks, pumps, ancillary facilities, and truck loading/unloading areas associated with the closed-loop system.

C. Flowback Water

1. The water-based solution that flows back to the surface during and after completion operations will be placed in storage tanks on the location.
2. Flowback water will be confined to a storage tank for a period not to exceed 90 days after initial production and will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystem, Inc. waste disposal facilities.

- D. Spills – any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site. Encana will also notify the BLM within 24 hours of any spill.**

ENCANA OIL & GAS (USA) INC.

ESCRITO E22-2409 #01H

1419' FNL & 237' FWL

LOCATED IN THE SW/4 NW/4 OF SECTION 22, T24N, R9W, N.M.P.M.,
SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, TRAVEL SOUTH FOR 32.0 MILES. (M.P. 119.6).
- 2) TURN RIGHT ON DIRT ROAD AND GO 1.0 MILE TO WHERE ACCESS IS STAKED ON RIGHT SIDE OF ROAD.

WELL FLAG LOCATED AT LAT. 36.302895° N, LONG.107.784880° W (NAD 83).

JOB No.: ENC207
DATE: 09/19/2014
DRAWN BY: TWT



CCI

CHENAULT CONSULTING INC.

4800 COLLEGE BLVD.
SUITE 201
FARMINGTON, NM 87402
(505) 325-7707

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
Escrito E22-2409 01H

