State of New Mexico
Energy, Minerals and Natural Resources Department

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 3160-4 or 3160-5 form.

Operator Signature Date: 10/29/13

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC

☒ Location Change ☐ Other: _____

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-045-35432-00-00	ESCRITO E07 2409	001H	ENCANA OIL & GAS (USA) INC.	O	N	San Juan	F	E	7	24	N	9	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations.

Hold C 104 for Directional survey, "as drilled plat", and NSP/exception to special pool rules

NMOCD Approved by Signature

11-13-2013
Date

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIDENTIAL

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE *– Other instructions on page 2*

5. Lease Serial No.
NMNM 112955

6. If Indian, Allottee or Tribe Name
N/A

7. If Unit of CA/Agreement, Name and/or No.
N/A

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

OCT 31 2013

8. Well Name and No.
Escrito E07-2409 01H

2. Name of Operator
Encana Oil & Gas (USA) Inc.

9. API Well No.
30-045-35432

3a. Address
370 17th Street, Suite 1700
Denver, CO 80202

3b. Phone No. *(include area code)*
720-876-3567

10. Field and Pool or Exploratory Area
Bisti Lower-Gallup

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
SHL: 1640' FNL and 262' FWL Section 7, T24N, R9W
BHL: 1320' FNL and 330' FWL Section 12, T24N, R10W

11. Country or Parish, State
San Juan, New Mexico

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Revising BHL and project area
	☑ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Encana Oil & Gas (USA) Inc. (Encana) wishes to revise the bottom hole location (BHL) approved by the BLM 4/08/2013 and to re-adjust the project area (PA) dedicated to the Escrito E07-2409 01H.

On April 3, 2013, Encana submitted a sundry to revise the BHL and re-adjust the PA for the Escrito E07-2409 01H well The sundry was submitted and approved with an 160-acre PA and a BHL located in the NWNW Section 12 T24N R10W 890' FNL and 330' FWL with a proposed submitted depth of 5,437' TVD/10,715' MD.

Encana wishes to increase the project area for this well to 320-acres by stringing four (4) stand-up 80-acre spacing units. The Escrito E07-2409 01H proposed wellbore will produce from an 80-acre spacing unit from the Bisti-Lower Gallup Pool (Pool Code 5890). Pursuant to NMAC 19.15.15.11.B, subject well does not meet the spacing unit requirement, therefore Encana will file a non-standard proration (NSP) to increase the requirement from an 80-acre spacing unit to a 320-acre spacing unit.

Encana also wishes to revise the bottom hole location to the NWNW Section 12 T24N R10W 1320' FNL and 330' FWL with a new proposed depth of 5,505' TVD/10,493' MD.

Please see attached C-102, wellbore diagram, 10-point drilling plan and directional plan for details. Estimated spud date is February 13, 2014.

OIL CONS. DIV DIST. 3

NOV 05 2013

14. I hereby certify that the foregoing is true and correct.
Name *(Printed/Typed)*
Catherine Anadu

Title Regulatory Analyst

Signature Catherine Anadu

Date 10/29/13

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by William Tambekou

Title Petroleum Engineer

Date 11/1/2013

Conditions of approval, if any, are attached. Approval of this notice 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.

Office FFO

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.

(Instructions on page 2)

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations.

NMOCD

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

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

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

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

[X] AMENDED REPORT

RECEIVED

OCT 31 2013

Farmington Field Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35432	5890	BISTI LOWER - GALLUP

[4] Property Code	[5] Property Name	[6] Well Number
39809	ESCRITO E07-2409	01H

[7] OGRID No.	[8] Operator Name	[9] Elevation
282327	ENCANA OIL & GAS (USA) INC.	6876'

[10] Surface Location

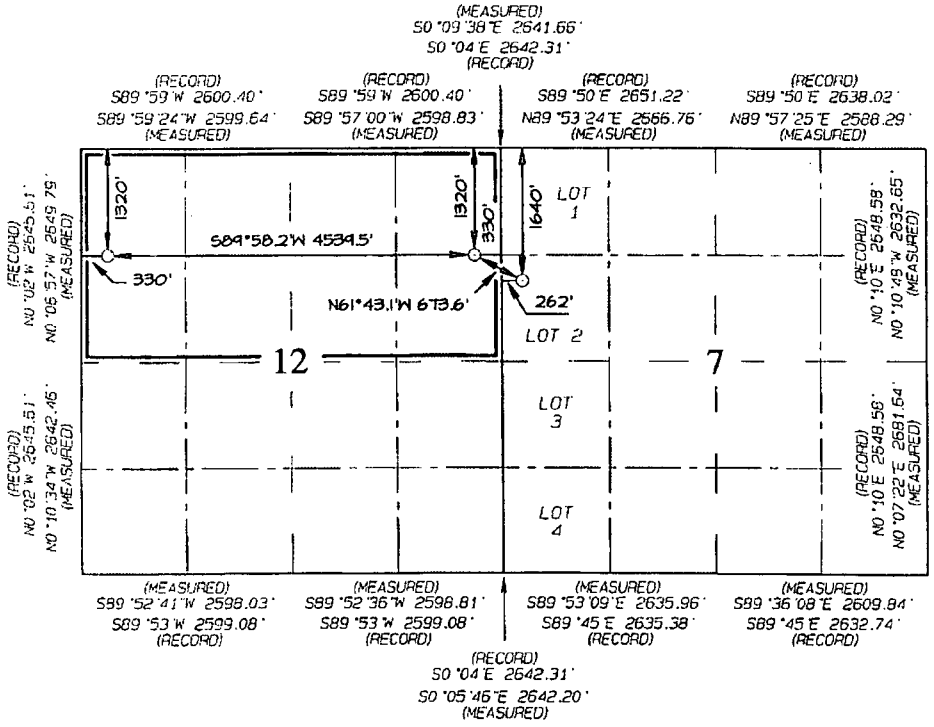
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	7	24N	9W	2	1640	NORTH	262	WEST	SAN JUAN

[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	12	24N	10W		1320	NORTH	330	WEST	SAN JUAN

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.0 Acres N/2 - Section 12			

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



END-OF-LATERAL
1320' FNL 330' FWL
SECTION 12, T24N, R10W
LAT: 36.33217 'N
LONG: 107.85520 'W
DATUM: NAD1927

LAT: 36.33219 'N
LONG: 107.85582 'W
DATUM: NAD1983

POINT-OF-ENTRY
1320' FNL 330' FEL
SECTION 12, T24N, R10W
LAT: 36.33218 'N
LONG: 107.83979 'W
DATUM: NAD1927

LAT: 36.33219 'N
LONG: 107.84041 'W
DATUM: NAD1983

SURFACE LOCATION
1640' FNL 262' FWL
SECTION 7, T24N, R9W
LAT: 36.33131 'N
LONG: 107.83777 'W
DATUM: NAD1927

LAT: 36.33132 'N
LONG: 107.83839 'W
DATUM: NAD1983

[17] OPERATOR CERTIFICATION

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

Brenda R. Linster 10-30-13
Signature Date

Brenda R. Linster
Printed Name

brenda.linster@encana.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: OCTOBER 17, 2013
Date of Survey: JULY 9, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

LOC: Sec 7-T24N-R9W County: San Juan WELL: Escrito E07-2409 01H	Encana Natural Gas WELL SUMMARY	encana	ENG: RIG: GLE: 6876 RKBE: 6892	10/30/13

MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVD	DEPTH MD	HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			60	60'	30	**20" 94#** 100sx Type I Neat 16ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None		**500**	500	**12 1/4**	**9 5/8" 36ppf J55 STC** TOC @ surface 178 sks Type III Cmt	Fresh wtr 8.4-8.6	Vertical <1°
Surveys every 500' Mud logger onsite	No OH logs	Ojo Alamo Kirtland Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn **KICK OFF PT** Point Lookout Ss Mancos Sh Mancos Silt Gallup Top 7" Csg	945 1123 1533 1781 1925 2609 3318 4833 4245 4455 5048 5250 5539	5860	**8 3/4**	**7" 26ppf J55 LTC** Stage tool @1831' TOC @ surface 30% OH excess: 597 sksTotal. **Stage 1 Lead**: 259sks 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. **Stage 1 Tail**: 177sks Type III Cement + 1% CaCl2 + 0.25#/sk Cello Flake + 0.2% FL-52A. Mixed at 14.6 ppg. Yield 1.38 cuft/sk. **Stage 2**: 161 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 8.5-8.6	Vertical <1° KOP 4833 10 deg/100'
		horz target Base Gallup	**5545** 5583	**5954**	**6 1/8**	200' overlap at liner top 4539' Lateral	8.6-9.0 OBM	25deg updip 5505' TVD TD = 10493' MD
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs					**4 1/2" 11.6ppf SB80 LTC** Running external swellable csg packers for isolation of prod string Plan on setting top packer within 100' of intermediate casing shoe	Switch to OBM 8.6-9.0	

NOTES:

1) Drill with 30" bit to 60', set 20" 94# 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 4833' , 8 3/4" hole size,
5) PU directional tools and start curve at 10deg/100' build rate
6) Drill to casing point of 5860' MD
7) R&C 7" casing, circ cmt to surface, switch to OBM
8) Land at 90deg, drill 4539' lateral to 10493', run 4 1/2" liner with external swellable csg packers

Escrito E07-2409 01H – API: 30-045-35432
SHL: SWNW Section 7, T24N, R9W
1640 FNL and 262 FWL
BHL: NWNW Section 12, T24N, R10W
1320 FNL and 330 FWL
San Juan County, New Mexico
Lease Number: NMNM 112955

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
Ojo Alamo Ss.	945
Kirtland Sh.	1,123
Fruitland Coal	1,533
Pictured Cliffs Ss.	1,781
Lewis Sh.	1,925
Cliffhouse Ss.	2,609
Menefee Fn.	3,318
Point Lookout Ss.	4,245
Mancos Sh.	4,455
Mancos Silt	5,048
Gallup Fn.	5,250

The referenced surface elevation is 6,876', KB 6,892'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,533
Oil/Gas	Pictured Cliffs Ss.	1,781
Oil/Gas	Cliffhouse Ss.	2,609
Gas	Menefee Fn.	3,318
Oil/Gas	Point Lookout Ss.	4,245
Oil/Gas	Mancos Sh.	4,455
Oil/Gas	Mancos Silt	5,048
Oil/Gas	Gallup Fn.	5,250

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

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	Hole Size	Csg Size	Weight	Grade
Conductor	0-60'	30"	20"	94#	H40, STC New
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5860'MD	8 3/4"	7"	26#	J55, LTC New
Production Liner	5660'-10493'MD	6 1/8"	4 1/2"	11.6#	B80, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (lb/ft)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lb)	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 1/2"	11.6	B80	LTC	6350	7780	201	1.125	1.1	1.5

Casing design is subject to revision based on geologic conditions encountered.

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:

Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	100sk	Type I Neat 16 ppg	Surface	None
Surface	500'	178sk	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 16ppg, 1.38cuf/sk	Surface	1 per joint on bottom 3 joints
Intermediate	5860'MD	30% open hole excess Stage 1 Lead: 259sks Stage 1 Tail: 177sks Stage 2 Lead: 161sks	**Lead** (Stages 1 and 2): PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk **Tail** (Stage 1): Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	5660'-10493'	None – External casing packers	N/A	N/A	N/A

*Production liner clarification: Utilizing external swell casing packer system for zonal isolation will not use cement in the production liner.

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 a 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 4833'. Directional plans are attached.

Escrito E07-2409 01H – API: 30-045-35432
SHL: SWNW Section 7, T24N, R9W
1640 FNL and 262 FWL
BHL: NWNW Section 12, T24N, R10W
1320 FNL and 330 FWL
San Juan County, New Mexico
Lease Number: NMNM 112955

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5505'/10493'	Gallup

6. DRILLING FLUIDS PROGRAM

a) Surface through Intermediate Casing Point:

Hole Size (in)	Depth (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
30"	0-60' TVD	Fresh Water	8.3-9.2	38-100	4-28
12 1/4"	0-500'.TVD	Fresh Water	8.4-8.6	60-70	NC
8 3/4"	500'TVD-5539'TVD/5860'MD	Fresh Water LSND	8.5-8.8	40-50	8-10

b) Intermediate Casing Point to TD:

Hole Size (in)	MD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
6 1/8"	5860'-10493'	Synthetic Oil Based Mud	8.6-9.0	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, including fresh water and oil-based operations. 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 and LOGGING

a) Drill Stem Testing – None anticipated
b) Coring – None anticipated.
c) Mud 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 +/- 2595 psi based on a 9.0 ppg at 5545' TVD of the landing point of the horizontal lateral. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H_2S 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 February 13, 2014. 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 25 days.

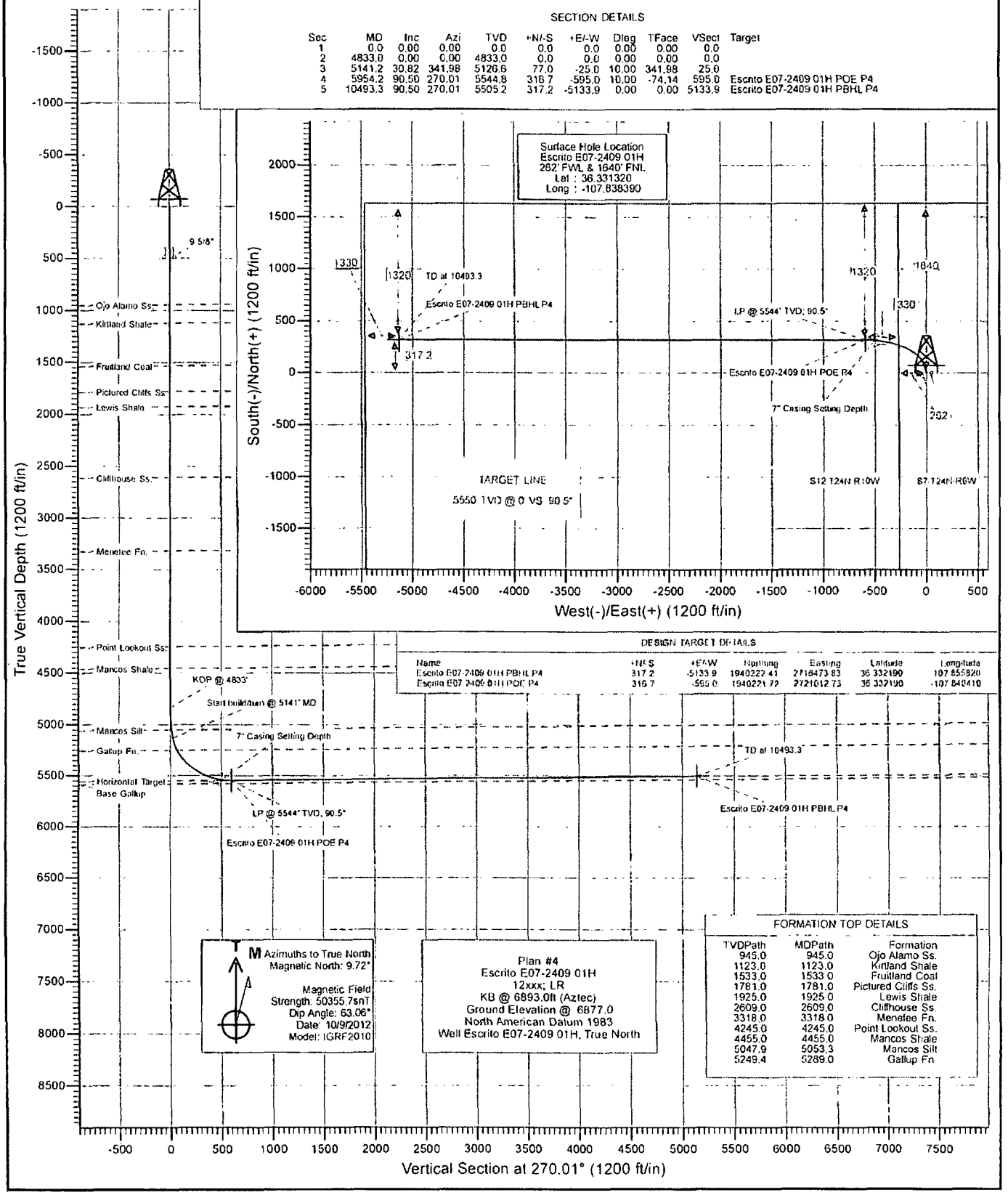
encana natural gas

Project: San Juan County, NM
Site: S7- T24N-R9W
Well: Escrito E07-2409 01H
Wellbore: Hz
Design: Plan #4

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4833.0	0.00	0.00	4833.0	0.0	0.0	0.00	0.00	0.0	
3	5141.2	30.82	341.98	5126.6	77.0	-25.0	10.00	341.98	25.0	
4	5954.2	90.50	270.01	5544.8	316.7	-595.0	10.00	-74.14	595.0	Escrito E07-2409 01H POE P4
5	10493.3	90.50	270.01	5505.2	317.2	-5133.9	0.00	0.00	5133.9	Escrito E07-2409 01H PBHL P4



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Escrito E07-2409 01H PBHL P4	317.2	-5133.9	1940222.41	2718473.83	36.332190	-107.855820
Escrito E07-2409 01H POE P4	316.7	-595.0	1940221.72	2721012.73	36.332190	-107.846410

Azimuths to True North
Magnetic North: 9.72°

Magnetic Field
Strength: 50355.7snT
Dip Angle: 63.06°
Date: 10/9/2012
Model: IGRF2010

Plan #4
Escrito E07-2409 01H
12xxx; LR
KB @ 6893.0ft (Aztec)
Ground Elevation @ 6877.0
North American Datum 1983
Well Escrito E07-2409 01H, True North

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
945.0	945.0	Ojo Alamo Ss.
1123.0	1123.0	Kirtland Shale
1533.0	1533.0	Fruitland Coal
1781.0	1781.0	Pictured Cliffs Ss.
1925.0	1925.0	Lewis Shale
2609.0	2609.0	Cliffhouse Ss.
3318.0	3318.0	Menefee Fm.
4245.0	4245.0	Point Lookout Ss.
4455.0	4455.0	Mancos Shale
5047.9	5053.3	Mancos Silt
5249.4	5289.0	Gallup Fm.

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito E07-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 6893.0ft (Aztec)
Project:	San Juan County, NM	**MD Reference:**	KB @ 6893.0ft (Aztec)
Site:	S7- T24N-R9W	**North Reference:**	True
Well:	Escrito E07-2409 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

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	S7- T24N-R9W				
Site Position:		**Northing:**	1,939,904.96 ft	**Latitude:**	36.331320
From:	Lat/Long	**Easting:**	2,721,607.69 ft	**Longitude:**	-107.838390
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.00 °

Well	Escrito E07-2409 01H				
Well Position	**+N/-S**	0.0 ft	**Northing:**	1,939,904.96 ft	**Latitude:** 36.331320
	+E/-W	0.0 ft	**Easting:**	2,721,607.69 ft	**Longitude:** -107.838390
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:** 6,877.0 ft

Wellbore	Hz				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	10/9/2012	9.72	63.06	50,356

Design	Plan #4				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	270.01	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,833.0	0.00	0.00	4,833.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,141.2	30.82	341.98	5,126.6	77.0	-25.0	10.00	10.00	0.00	341.98	
5,954.2	90.50	270.01	5,544.8	316.7	-595.0	10.00	7.34	-8.85	-74.14	Escrito E07-2409 01H
10,493.3	90.50	270.01	5,505.2	317.2	-5,133.9	0.00	0.00	0.00	0.00	Escrito E07-2409 01H

PBHL { Y-D $(1640 - 317.2)_{ft} = 1325.8 \approx 1326$ ft/N (Sec: 12, T: 24N, R: 10W)
{ X-D $(262 + 2598.83 + 2599.64 - 5133.9)_{ft} = 326.57 \approx 327$ ft/W (Sec: 12, T: 24N, R: 10W)

William Tambekou
11/1/2013

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito E07-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 6893.0ft (Aztec)
Project:	San Juan County, NM	**MD Reference:**	KB @ 6893.0ft (Aztec)
Site:	S7- T24N-R9W	**North Reference:**	True
Well:	Escrito E07-2409 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	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	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
945.0	0.00	0.00	945.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,123.0	0.00	0.00	1,123.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,533.0	0.00	0.00	1,533.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
1,781.0	0.00	0.00	1,781.0	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	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
1,925.0	0.00	0.00	1,925.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,609.0	0.00	0.00	2,609.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss
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	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,318.0	0.00	0.00	3,318.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn
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	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,245.0	0.00	0.00	4,245.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito E07-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 6893.0ft (Aztec)
Project:	San Juan County, NM	**MD Reference:**	KB @ 6893.0ft (Aztec)
Site:	S7- T24N-R9W	**North Reference:**	True
Well:	Escrito E07-2409 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,455.0	0.00	0.00	4,455.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	
4,833.0	0.00	0.00	4,833.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4833'
4,900.0	6.70	341.98	4,899.8	3.7	-1.2	1.2	10.00	10.00	
5,000.0	16.70	341.98	4,997.6	23.0	-7.5	7.5	10.00	10.00	
5,053.3	22.03	341.98	5,047.9	39.8	-12.9	12.9	10.00	10.00	Mancos Silt
5,100.0	26.70	341.98	5,090.4	58.1	-18.9	18.9	10.00	10.00	
5,141.2	30.82	341.98	5,126.6	77.0	-25.0	25.0	10.00	10.00	Start build/turn @ 5141' MD
5,200.0	32.87	331.53	5,176.5	105.3	-37.3	37.3	10.00	3.48	
5,289.0	37.38	318.14	5,249.4	146.7	-66.9	66.9	10.00	5.07	Gallup Fn
5,300.0	38.03	316.69	5,258.1	151.7	-71.5	71.5	10.00	5.92	
5,400.0	44.64	305.29	5,333.3	194.5	-121.4	121.4	10.00	6.61	
5,500.0	52.14	296.41	5,399.7	232.5	-185.6	185.6	10.00	7.50	
5,600.0	60.18	289.23	5,455.4	264.4	-262.1	262.1	10.00	8.04	
5,700.0	68.55	283.15	5,498.7	289.3	-348.6	348.6	10.00	8.37	
5,800.0	77.11	277.74	5,528.2	306.5	-442.4	442.5	10.00	8.56	
5,860.0	82.31	274.68	5,538.9	312.9	-501.1	501.2	10.00	8.66	7" Casing Setting Depth
5,900.0	85.78	272.68	5,543.0	315.5	-540.8	540.8	10.00	8.69	
5,954.2	90.50	270.01	5,544.8	316.7	-595.0	595.0	10.00	8.70	LP @ 5544' TVD; 90.5° - Escrito E07-2409 01H
5,954.8	90.50	270.01	5,544.8	316.7	-595.6	595.6	0.00	0.00	Escrito E07-2409 01H POE (10.25)
6,000.0	90.50	270.01	5,544.4	316.7	-640.7	640.8	0.00	0.00	
6,100.0	90.50	270.01	5,543.5	316.7	-740.7	740.8	0.00	0.00	
6,200.0	90.50	270.01	5,542.7	316.7	-840.7	840.8	0.00	0.00	
6,300.0	90.50	270.01	5,541.8	316.8	-940.7	940.8	0.00	0.00	
6,400.0	90.50	270.01	5,540.9	316.8	-1,040.7	1,040.8	0.00	0.00	
6,500.0	90.50	270.01	5,540.0	316.8	-1,140.7	1,140.8	0.00	0.00	
6,600.0	90.50	270.01	5,539.2	316.8	-1,240.7	1,240.8	0.00	0.00	
6,700.0	90.50	270.01	5,538.3	316.8	-1,340.7	1,340.8	0.00	0.00	
6,800.0	90.50	270.01	5,537.4	316.8	-1,440.7	1,440.8	0.00	0.00	
6,900.0	90.50	270.01	5,536.5	316.8	-1,540.7	1,540.7	0.00	0.00	
7,000.0	90.50	270.01	5,535.7	316.8	-1,640.7	1,640.7	0.00	0.00	
7,100.0	90.50	270.01	5,534.8	316.8	-1,740.7	1,740.7	0.00	0.00	
7,200.0	90.50	270.01	5,533.9	316.8	-1,840.7	1,840.7	0.00	0.00	
7,300.0	90.50	270.01	5,533.1	316.9	-1,940.7	1,940.7	0.00	0.00	
7,400.0	90.50	270.01	5,532.2	316.9	-2,040.7	2,040.7	0.00	0.00	
7,500.0	90.50	270.01	5,531.3	316.9	-2,140.7	2,140.7	0.00	0.00	
7,600.0	90.50	270.01	5,530.4	316.9	-2,240.7	2,240.7	0.00	0.00	
7,700.0	90.50	270.01	5,529.6	316.9	-2,340.7	2,340.7	0.00	0.00	
7,800.0	90.50	270.01	5,528.7	316.9	-2,440.7	2,440.7	0.00	0.00	
7,900.0	90.50	270.01	5,527.8	316.9	-2,540.7	2,540.7	0.00	0.00	
8,000.0	90.50	270.01	5,526.9	316.9	-2,640.7	2,640.7	0.00	0.00	
8,100.0	90.50	270.01	5,526.1	316.9	-2,740.6	2,740.7	0.00	0.00	
8,200.0	90.50	270.01	5,525.2	316.9	-2,840.6	2,840.7	0.00	0.00	
8,300.0	90.50	270.01	5,524.3	317.0	-2,940.6	2,940.7	0.00	0.00	
8,400.0	90.50	270.01	5,523.5	317.0	-3,040.6	3,040.7	0.00	0.00	
8,500.0	90.50	270.01	5,522.6	317.0	-3,140.6	3,140.7	0.00	0.00	
8,600.0	90.50	270.01	5,521.7	317.0	-3,240.6	3,240.7	0.00	0.00	
8,700.0	90.50	270.01	5,520.8	317.0	-3,340.6	3,340.7	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito E07-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 6893.0ft (Aztec)
Project:	San Juan County, NM	**MD Reference:**	KB @ 6893.0ft (Aztec)
Site:	S7- T24N-R9W	**North Reference:**	True
Well:	Escrito E07-2409 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,800.0	90.50	270.01	5,520.0	317.0	-3,440.6	3,440.7	0.00	0.00	
8,900.0	90.50	270.01	5,519.1	317.0	-3,540.6	3,540.7	0.00	0.00	
9,000.0	90.50	270.01	5,518.2	317.0	-3,640.6	3,640.7	0.00	0.00	
9,100.0	90.50	270.01	5,517.3	317.0	-3,740.6	3,740.7	0.00	0.00	
9,200.0	90.50	270.01	5,516.5	317.0	-3,840.6	3,840.7	0.00	0.00	
9,300.0	90.50	270.01	5,515.6	317.1	-3,940.6	3,940.7	0.00	0.00	
9,400.0	90.50	270.01	5,514.7	317.1	-4,040.6	4,040.7	0.00	0.00	
9,500.0	90.50	270.01	5,513.9	317.1	-4,140.6	4,140.7	0.00	0.00	
9,600.0	90.50	270.01	5,513.0	317.1	-4,240.6	4,240.6	0.00	0.00	
9,700.0	90.50	270.01	5,512.1	317.1	-4,340.6	4,340.6	0.00	0.00	
9,800.0	90.50	270.01	5,511.2	317.1	-4,440.6	4,440.6	0.00	0.00	
9,900.0	90.50	270.01	5,510.4	317.1	-4,540.6	4,540.6	0.00	0.00	
10,000.0	90.50	270.01	5,509.5	317.1	-4,640.6	4,640.6	0.00	0.00	
10,100.0	90.50	270.01	5,508.6	317.1	-4,740.6	4,740.6	0.00	0.00	
10,200.0	90.50	270.01	5,507.7	317.1	-4,840.6	4,840.6	0.00	0.00	
10,300.0	90.50	270.01	5,506.9	317.2	-4,940.6	4,940.6	0.00	0.00	
10,400.0	90.50	270.01	5,506.0	317.2	-5,040.6	5,040.6	0.00	0.00	
10,493.3	90.50	270.01	5,505.2	317.2	-5,133.9	5,133.9	0.00	0.00	TD at 10493.3 - Escrito E07-2409 01H PBHL (1

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Escrito E07-2409 01H P	0.00	0.00	5,417.5	740.0	-7,728.7	1,940,645.40	2,713,879.05	36.333350	-107.864630
- plan misses target center by 2630.5ft at 10493.3ft MD (5505.2 TVD, 317.2 N, -5133.9 E)									
- Point									
Escrito E07-2409 01H P	0.00	0.00	5,505.2	317.2	-5,133.9	1,940,222.41	2,716,473.83	36.332190	-107.855820
- plan hits target center									
- Point									
Escrito E07-2409 01H P	0.00	0.00	5,544.8	316.7	-595.0	1,940,221.72	2,721,012.73	36.332190	-107.840410
- plan hits target center									
- Point									
Escrito E07-2409 01H P	0.00	0.00	5,479.8	746.3	-595.0	1,940,651.27	2,721,012.77	36.333370	-107.840410
- plan misses target center by 434.4ft at 5954.8ft MD (5544.8 TVD, 316.7 N, -595.6 E)									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
5,860.0	5,538.9	7" Casing Setting Depth	0.000	0.000
500.0	500.0	9 5/8"	0.000	0.000

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Escrito E07-2409 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 6893.0ft (Aztec)
Project:	San Juan County, NM	**MD Reference:**	KB @ 6893.0ft (Aztec)
Site:	S7- T24N-R9W	**North Reference:**	True
Well:	Escrito E07-2409 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #4		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
945.0	945.0	Ojo Alamo Ss.		-0.50	270.01
1,123.0	1,123.0	Kirtland Shale		-0.50	270.01
1,533.0	1,533.0	Fruitland Coal		-0.50	270.01
1,781.0	1,781.0	Pictured Cliffs Ss.		-0.50	270.01
1,925.0	1,925.0	Lewis Shale		-0.50	270.01
2,609.0	2,609.0	Cliffhouse Ss.		-0.50	270.01
3,318.0	3,318.0	Menefee Fn.		-0.50	270.01
4,245.0	4,245.0	Point Lookout Ss.		-0.50	270.01
4,455.0	4,455.0	Mancos Shale		-0.50	270.01
5,053.3	5,048.0	Mancos Silt		-0.50	270.01
5,289.0	5,250.0	Gallup Fn.		-0.50	270.01

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,833.0	4,833.0	0.0	0.0	KOP @ 4833'
5,141.2	5,126.6	77.0	-25.0	Start build/turn @ 5141' MD
5,954.2	5,544.8	316.7	-595.0	LP @ 5544' TVD; 90.5°
10,493.3	5,505.2	317.2	-5,133.9	TD at 10493.3