

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

AUG 08 2014

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.

5. Lease Serial No.
NMNM12374
6. Allottee or Tribe Name
N/A

SUBMIT IN TRIPLICATE - Other instructions on page 2.

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

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

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

ATTN: Jessica Gregg

3b. Phone No. (include area code)
720-876-3926

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

8. Well Name and No.
Escrito L27-2409 01H

9. API Well No.
30-045-35478

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

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
SHL: 2399' FSL and 333' FWL, Sec 27, T24N, R9W
BHL: 2400' FNL and 330' FWL, Sec 28, T24N, R9W

11. Country or Parish, State
San Juan County, NM

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
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other _____
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 submit an updated 10-Point Drilling Plan, Well Summary Diagram, BOP diagram, Pipeline Specifications, and Directional Drilling Plan to the Escrito L27-2409 01H Application for Permit to Drill. These documents reflect a change from open hole packers to a cemented liner with acid soluble cement.

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations

OIL CONS. DIV. DIST. 3

AUG 13 2014

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

14. I hereby certify that the foregoing is true and correct.

Name (Printed/Typed)
Jessica Gregg

Title Regulatory Analyst

Signature

Jessica Gregg

Date 08/07/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Title

Petroleum Engineer

Date

8/12/2014

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)

NMOCD

Escrito L27-2409 01H
SHL: NWSW 27 24N 9W
2399 FSL 333 FWL
BHL: SWNW 28 24N 9W
2400 FNL 330 FWL
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
Ojo Alamo	892
Kirtland Shale	1,077
Fruitland Coal	1,382
Pictured Cliffs Ss.	1,667
Lewis Shale	1,770
Cliffhouse Ss.	2,428
Menefee Fn.	3,196
Point Lookout Ss.	4,133
Mancos Shale	4,306
Mancos Silt	4,854
Gallup Fn.	5,116

The referenced surface elevation is 6924', KB 6940'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,382
Oil/Gas	Pictured Cliffs Ss.	1,667
Oil/Gas	Cliffhouse Ss.	2,428
Gas	Menefee Fn.	3,196
Oil/Gas	Point Lookout Ss.	4,133
Oil/Gas	Mancos Shale	4,306
Oil/Gas	Mancos Silt	4,854
Oil/Gas	Gallup Fn.	5,116

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.

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- 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'	30"	20"	94#	
Surface	0'-500'	12 1/4"	9 5/8"	36#	J55, STC New
Intermediate	0'-5807'	8 3/4"	7"	26#	J55, LTC New
Production Liner	5607'-10513'	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

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.

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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'	227 sks	Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52A + 58.9% Fresh Water Mixed at 14.6 ppg Yield 1.38 cuft/sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5807'	70% open hole excess Stage 1 Lead: 546 sks Stage 1 Tail: 380 sks	Stage 1 Lead: Premium Lite FM + 3% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 5 lbs/sack LCM-1 + 8% bwoc Bentonite + 0.4% bwoc Sodium Metasilicate + 0.4% bwoc FL-52 + 112.3% Fresh Water Mixed at 12.1 ppg Yield 2.13 cuft/sk Stage 1 Tail: Type III Cement + 1% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.2% bwoc FL-52 + 58.9% Fresh Water Mixed at 14.6 ppg Yield 1.38 cuft/sk	Surface	1 every 3 joints through water bearing zones
Production Liner	5607'-10513'	30% open hole excess Cement Slurry: 249 sks	Premium Lite High Strength FM + 0.7% bwoc R-3 + 1.15% bwoc FL-52A + 0.25 lbs/sack Cello Flake + 0.5% bwoc CD-32 + 3% bwoc Potassium Chloride + 60 lbs/sack Calcium Chloride + 76.8% Fresh Water Mixed at 13.5 ppg 2.63 cuft/sk	Top of Liner	N/A

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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 4435'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5304'/10513'	Gallup

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'-5380'/5807'	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"	5380'/5807'- 5304'/10513'	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.

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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 +/- 2525 psi based on a 9.0 ppg at 5396' 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 August 8, 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 20 days.

[illegible]

encana

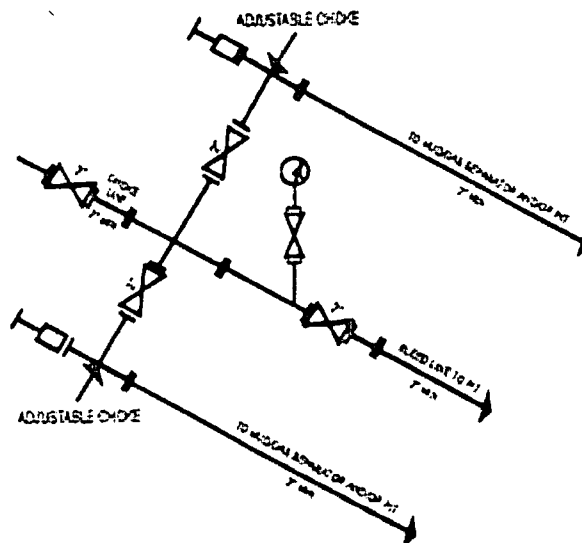
Escrito L27-2409 01H



11" 3K Annular

3K Double Ram
Top: Pipe Ram
Bottom: Blind Ram
3" Outlets Below Ram

3K Mud Cross 3" gate valves





Boomerang Tube LLC

CASING (OR) TUBING DESCRIPTION AND PERFORMANCE PROPERTIES

Pipe Outside Diameter (ins)	_____	4.500
Pipe Wall Thickness (ins)	_____	0.250
Nominal Weight Per Foot (lbs)	_____	11.60

Thread Name	_____	Long Thread CSG
Grade Name	_____	SB-80

Pipe Minimum Yield (psi)	_____	80,000
Pipe Minimum Ultimate (psi)	_____	90,000

Coupling Minimum Yield (psi)	_____	80,000
Coupling Minimum Ultimate (psi)	_____	100,000

Coupling or Joint Outside Diameter (ins)	_____	5.000
Drift Diameter (ins)	_____	3.875
Plain End Weight per Foot (lbs)	_____	11.36

Joint Strength (lbs)	_____	201,000
Internal Yield (psi)	_____	7,780
Collapse Rating (psi)	_____	6,350

MAXIMUM DEPTH/LENGTH BASED ON MUD WTS & SAFETY FACTORS

Drilling Mud Weight (ppg)	_____	9.625
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Tension Safety Factor	_____	1.80
Maximum Tension Length (ft)	_____	9,630

Internal Yield Safety Factor	_____	1.10
Maximum Depth for Internal Yield (ft)	_____	14,150

Collapse Safety Factor	_____	1.125
Maximum Collapse Depth (ft)	_____	11,290

API RELATED VALUES and INTERMEDIATE CALCULATION RESULTS

Coupling Thread Fracture Strength	_____	464,000
Pipe Thread Fracture Strength (lbs)	_____	201,000

Pipe Body Plain End Yield (lbs)	_____	267,000
Round Thread Pull-Out (lbs)	_____	219,000

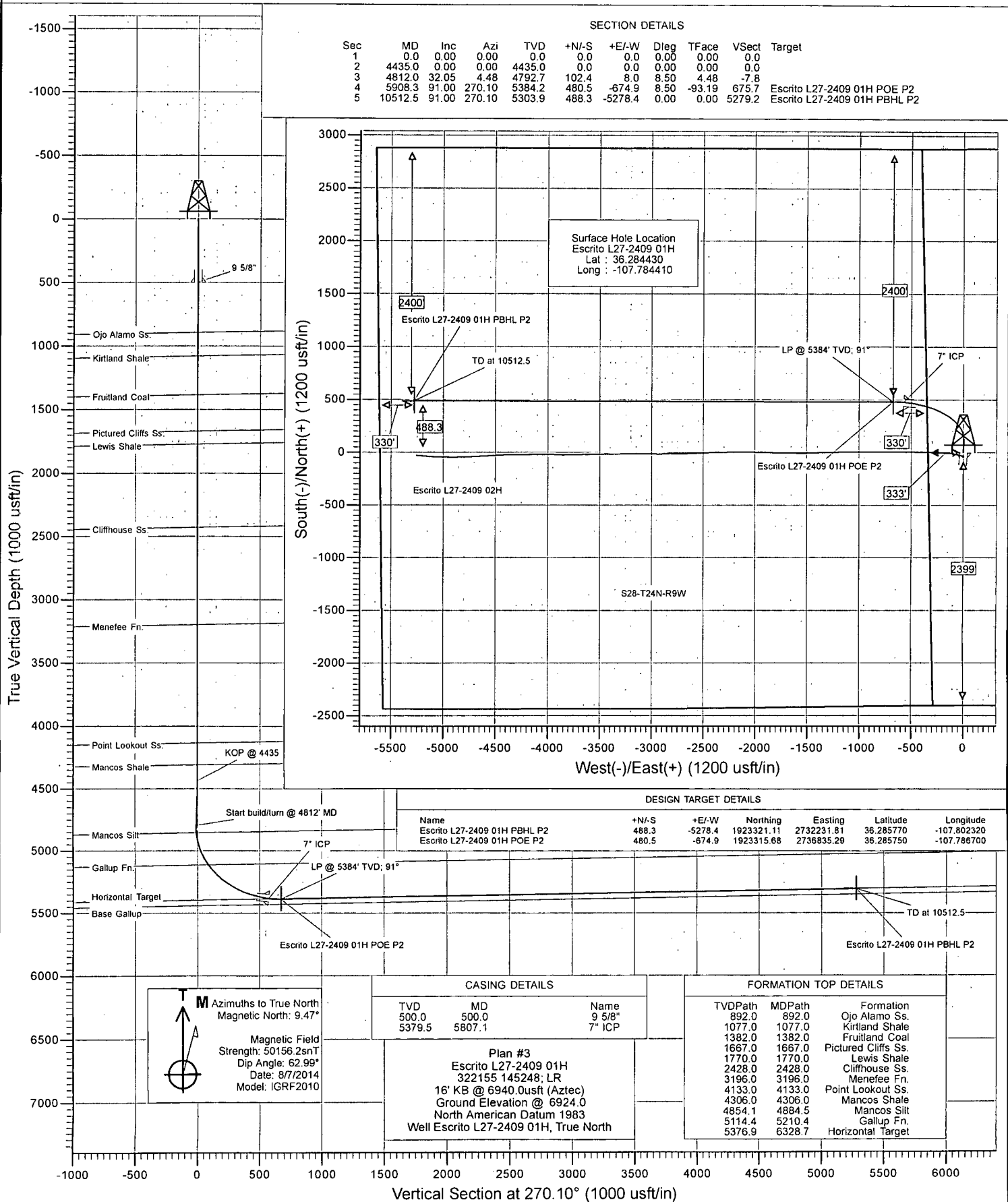
Minimum Make-up Torque (ft-lbs)	_____	1,640
Nominal Make-up Torque (ft-lbs)	_____	2,190
Maximum Make-up Torque (ft-lbs)	_____	2,740

Coupling Internal Yield (psi)	_____	10,660
Pipe Body Internal Yield (psi)	_____	7,780
Leak @ E1 or E7 plane (psi)	_____	17,920

Pipe Hydrostatic Test Pressure @ 80 % SMYS	_____	7,100
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Project: San Juan County, NM
Site: S27-T24N-R9W
Well: Escrito L27-2409 01H
Wellbore: Hz
Design: Plan #3



Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S27-T24N-R9W
 Well: Escrito L27-2409 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
 TVD Reference: 16' KB @ 6940.0usft (Aztec)
 MD Reference: 16' KB @ 6940.0usft (Aztec)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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	S27-T24N-R9W			
Site Position:		Northing:	1,922,835.50 usft	Latitude: 36.284430
From:	Lat/Long	Easting:	2,737,510.43 usft	Longitude: -107.784410
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence: 0.03 °

Well	Escrito L27-2409 01H			
Well Position	+N/-S	0.0 usft	Northing:	1,922,835.50 usft
	+E/-W	0.0 usft	Easting:	2,737,510.43 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level: 6,924.0 usft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/7/2014	9.47	62.99	50,156

Design	Plan #3			
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	270.10

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	
4,435.0	0.00	0.00	4,435.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,812.0	32.05	4.48	4,792.7	102.4	8.0	8.50	8.50	0.00	4.48	
5,908.3	91.00	270.10	5,384.2	480.5	-674.9	8.50	5.38	-8.61	-93.19	Escrito L27-2409 01H
10,512.5	91.00	270.10	5,303.9	488.3	-5,278.4	0.00	0.00	0.00	0.00	Escrito L27-2409 01H

Planning Report

Database: USA EDM 5000 Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Site: S27-T24N-R9W
 Well: Escrito L27-2409 01H
 Wellbore: Hz
 Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
 TVD Reference: 16' KB @ 6940.0usft (Aztec)
 MD Reference: 16' KB @ 6940.0usft (Aztec)
 North Reference: True
 Survey Calculation Method: 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	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	
892.0	0.00	0.00	892.0	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	
1,077.0	0.00	0.00	1,077.0	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	
1,382.0	0.00	0.00	1,382.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,667.0	0.00	0.00	1,667.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,770.0	0.00	0.00	1,770.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
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	
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	
2,428.0	0.00	0.00	2,428.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
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	
2,700.0	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	
3,196.0	0.00	0.00	3,196.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
3,400.0	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	
4,133.0	0.00	0.00	4,133.0	0.0	0.0	0.0	0.00	0.00	Point Lookout Ss.
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	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: S27-T24N-R9W
Well: Escrito L27-2409 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
North Reference: True
Survey Calculation Method: 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
4,306.0	0.00	0.00	4,306.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,435.0	0.00	0.00	4,435.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4435
4,500.0	5.52	4.48	4,499.9	3.1	0.2	-0.2	8.50	8.50	
4,600.0	14.02	4.48	4,598.3	20.0	1.6	-1.5	8.50	8.50	
4,700.0	22.52	4.48	4,693.2	51.3	4.0	-3.9	8.50	8.50	
4,800.0	31.02	4.48	4,782.4	96.1	7.5	-7.4	8.50	8.50	
4,812.0	32.05	4.48	4,792.7	102.4	8.0	-7.8	8.50	8.50	Start build/turn @ 4812' MD
4,884.5	32.23	352.88	4,854.1	140.8	7.1	-6.9	8.50	0.26	Mancos Silt
4,900.0	32.41	350.45	4,867.2	149.0	5.9	-5.7	8.50	1.13	
5,000.0	34.61	335.54	4,950.7	201.4	-10.3	10.7	8.50	2.21	
5,100.0	38.40	322.72	5,031.2	252.0	-40.9	41.4	8.50	3.79	
5,200.0	43.35	312.14	5,106.9	299.9	-85.3	85.8	8.50	4.95	
5,210.4	43.92	311.16	5,114.4	304.6	-90.7	91.2	8.50	5.45	Gallup Fn.
5,300.0	49.11	303.47	5,176.1	343.8	-142.4	143.0	8.50	5.79	
5,400.0	55.41	296.24	5,237.3	382.9	-210.9	211.6	8.50	6.30	
5,500.0	62.07	290.06	5,289.2	416.3	-289.5	290.2	8.50	6.66	
5,600.0	68.98	284.61	5,330.6	443.3	-376.3	377.1	8.50	6.91	
5,700.0	76.04	279.65	5,360.7	463.3	-469.5	470.3	8.50	7.06	
5,800.0	83.20	274.99	5,378.7	475.7	-567.0	567.8	8.50	7.16	
5,807.1	83.71	274.67	5,379.5	476.3	-574.0	574.8	8.50	7.19	7" ICP
5,900.0	90.40	270.47	5,384.3	480.5	-666.6	667.4	8.50	7.20	
5,908.3	91.00	270.10	5,384.2	480.5	-674.9	675.7	8.50	7.21	LP @ 5384' TVD; 91°
6,000.0	91.00	270.10	5,382.6	480.7	-766.6	767.4	0.00	0.00	
6,100.0	91.00	270.10	5,380.9	480.8	-866.6	867.4	0.00	0.00	
6,200.0	91.00	270.10	5,379.1	481.0	-966.5	967.4	0.00	0.00	
6,300.0	91.00	270.10	5,377.4	481.2	-1,066.5	1,067.4	0.00	0.00	
6,328.7	91.00	270.10	5,376.9	481.2	-1,095.3	1,096.1	0.00	0.00	Horizontal Target
6,400.0	91.00	270.10	5,375.6	481.3	-1,166.5	1,167.4	0.00	0.00	
6,500.0	91.00	270.10	5,373.9	481.5	-1,266.5	1,267.3	0.00	0.00	
6,600.0	91.00	270.10	5,372.1	481.7	-1,366.5	1,367.3	0.00	0.00	
6,700.0	91.00	270.10	5,370.4	481.9	-1,466.5	1,467.3	0.00	0.00	
6,800.0	91.00	270.10	5,368.6	482.0	-1,566.5	1,567.3	0.00	0.00	
6,900.0	91.00	270.10	5,366.9	482.2	-1,666.4	1,667.3	0.00	0.00	
7,000.0	91.00	270.10	5,365.2	482.4	-1,766.4	1,767.3	0.00	0.00	
7,100.0	91.00	270.10	5,363.4	482.5	-1,866.4	1,867.2	0.00	0.00	
7,200.0	91.00	270.10	5,361.7	482.7	-1,966.4	1,967.2	0.00	0.00	
7,300.0	91.00	270.10	5,359.9	482.9	-2,066.4	2,067.2	0.00	0.00	
7,400.0	91.00	270.10	5,358.2	483.0	-2,166.4	2,167.2	0.00	0.00	
7,500.0	91.00	270.10	5,356.4	483.2	-2,266.3	2,267.2	0.00	0.00	
7,600.0	91.00	270.10	5,354.7	483.4	-2,366.3	2,367.2	0.00	0.00	
7,700.0	91.00	270.10	5,353.0	483.5	-2,466.3	2,467.2	0.00	0.00	
7,800.0	91.00	270.10	5,351.2	483.7	-2,566.3	2,567.1	0.00	0.00	
7,900.0	91.00	270.10	5,349.5	483.9	-2,666.3	2,667.1	0.00	0.00	
8,000.0	91.00	270.10	5,347.7	484.0	-2,766.3	2,767.1	0.00	0.00	
8,100.0	91.00	270.10	5,346.0	484.2	-2,866.3	2,867.1	0.00	0.00	
8,200.0	91.00	270.10	5,344.2	484.4	-2,966.2	2,967.1	0.00	0.00	
8,300.0	91.00	270.10	5,342.5	484.6	-3,066.2	3,067.1	0.00	0.00	
8,400.0	91.00	270.10	5,340.7	484.7	-3,166.2	3,167.0	0.00	0.00	
8,500.0	91.00	270.10	5,339.0	484.9	-3,266.2	3,267.0	0.00	0.00	
8,600.0	91.00	270.10	5,337.3	485.1	-3,366.2	3,367.0	0.00	0.00	
8,700.0	91.00	270.10	5,335.5	485.2	-3,466.2	3,467.0	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: S27-T24N-R9W
Well: Escrito L27-2409 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
North Reference: True
Survey Calculation Method: 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
8,800.0	91.00	270.10	5,333.8	485.4	-3,566.1	3,567.0	0.00	0.00	
8,900.0	91.00	270.10	5,332.0	485.6	-3,666.1	3,667.0	0.00	0.00	
9,000.0	91.00	270.10	5,330.3	485.7	-3,766.1	3,767.0	0.00	0.00	
9,100.0	91.00	270.10	5,328.5	485.9	-3,866.1	3,866.9	0.00	0.00	
9,200.0	91.00	270.10	5,326.8	486.1	-3,966.1	3,966.9	0.00	0.00	
9,300.0	91.00	270.10	5,325.0	486.2	-4,066.1	4,066.9	0.00	0.00	
9,400.0	91.00	270.10	5,323.3	486.4	-4,166.1	4,166.9	0.00	0.00	
9,500.0	91.00	270.10	5,321.6	486.6	-4,266.0	4,266.9	0.00	0.00	
9,600.0	91.00	270.10	5,319.8	486.7	-4,366.0	4,366.9	0.00	0.00	
9,700.0	91.00	270.10	5,318.1	486.9	-4,466.0	4,466.8	0.00	0.00	
9,800.0	91.00	270.10	5,316.3	487.1	-4,566.0	4,566.8	0.00	0.00	
9,900.0	91.00	270.10	5,314.6	487.2	-4,666.0	4,666.8	0.00	0.00	
10,000.0	91.00	270.10	5,312.8	487.4	-4,766.0	4,766.8	0.00	0.00	
10,100.0	91.00	270.10	5,311.1	487.6	-4,865.9	4,866.8	0.00	0.00	
10,200.0	91.00	270.10	5,309.4	487.8	-4,965.9	4,966.8	0.00	0.00	
10,300.0	91.00	270.10	5,307.6	487.9	-5,065.9	5,066.8	0.00	0.00	
10,400.0	91.00	270.10	5,305.9	488.1	-5,165.9	5,166.7	0.00	0.00	
10,500.0	91.00	270.10	5,304.1	488.3	-5,265.9	5,266.7	0.00	0.00	
10,512.5	91.00	270.10	5,303.9	488.3	-5,278.4	5,279.2	0.00	0.00	TD at 10512.5

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Escrito L27-2409 01H PI	0.00	0.00	5,278.7	488.3	-5,278.4	1,923,321.11	2,732,231.81	36.285770	-107.802320
- plan misses target center by 25.2usft at 10512.5usft MD (5303.9 TVD, 488.3 N, -5278.4 E)									
- Point									
Escrito L27-2409 01H PI	0.00	0.00	5,303.9	488.3	-5,278.4	1,923,321.11	2,732,231.81	36.285770	-107.802320
- plan hits target center									
- Point									
Escrito L27-2409 01H PI	0.00	0.00	5,326.9	480.5	-674.9	1,923,315.68	2,736,835.29	36.285750	-107.786700
- plan misses target center by 57.3usft at 5909.3usft MD (5384.2 TVD, 480.5 N, -675.9 E)									
- Point									
Escrito L27-2409 01H PI	0.00	0.00	5,384.2	480.5	-674.9	1,923,315.68	2,736,835.29	36.285750	-107.786700
- plan hits target center									
- Point									

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,807.1	5,379.5	7" ICP	0	0
500.0	500.0	9 5/8"	0	0

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S27-T24N-R9W
Well: Escrito L27-2409 01H
Wellbore: Hz
Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
892.0	892.0	Ojo Alamo Ss.		-1.00	270.10
1,077.0	1,077.0	Kirtland Shale		-1.00	270.10
1,382.0	1,382.0	Fruitland Coal		-1.00	270.10
1,667.0	1,667.0	Pictured Cliffs Ss.		-1.00	270.10
1,770.0	1,770.0	Lewis Shale		-1.00	270.10
2,428.0	2,428.0	Cliffhouse Ss.		-1.00	270.10
3,196.0	3,196.0	Menefee Fn.		-1.00	270.10
4,133.0	4,133.0	Point Lookout Ss.		-1.00	270.10
4,306.0	4,306.0	Mancos Shale		-1.00	270.10
4,884.5	4,854.0	Mancos Silt		-1.00	270.10
5,210.4	5,116.0	Gallup Fn.		-1.00	270.10
6,328.7	5,396.0	Horizontal Target		-1.00	270.10

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,435.0	4,435.0	0.0	0.0	KOP @ 4435
4,812.0	4,792.7	102.4	8.0	Start build/turn @ 4812' MD
5,908.3	5,384.2	480.5	-674.9	LP @ 5384' TVD; 91°
10,512.5	5,303.9	488.3	-5,278.4	TD at 10512.5

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S27-T24N-R9W

Escrito L27-2409 01H

Hz

Plan #3

Anticollision Report

05 August, 2014

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Escrito L27-2409 01H
Project:	San Juan County, NM	TVD Reference:	16' KB @ 6940.0usft (Aztec)
Reference Site:	S27-T24N-R9W	MD Reference:	16' KB @ 6940.0usft (Aztec)
Site Error:	0.0usft	North Reference:	True
Reference Well:	Escrito L27-2409 01H	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:	MD Interval 100.0usft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,192.2usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	8/5/2014
From (usft)	To (usft)	Survey (Wellbore)
0.0	10,512.5	Plan #3 (Hz)
		Tool Name
		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						
S27-T24N-R9W						
Escrito L27-2409 02H - Hz - FINAL	1,375.6	1,375.6	26.3	21.6	5.548	CC, ES
Escrito L27-2409 02H - Hz - FINAL	10,512.5	10,140.0	553.7	311.2	2.283	SF

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S27-T24N-R9W
Site Error: 0.0usft
Reference Well: Escrito L27-2409 01H
Well Error: 0.0usft
Reference Wellbore: Hz
Reference Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
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

Offset Design S27-T24N-R9W - Escrito L27-2409 02H - Hz - FINAL												Offset Site Error:	0.0 usft
Survey Program: 587-Geolink MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		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)	Uncertainty Axis	Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.2	179.98	-32.8	0.0	32.8	32.4	0.32	103.533	
200.0	200.0	200.0	200.0	0.3	0.3	179.91	-32.7	0.1	32.7	32.1	0.66	49.538	
300.0	300.0	300.0	300.0	0.5	0.5	179.80	-32.7	0.1	32.7	31.7	1.01	32.526	
400.0	400.0	400.0	400.0	0.7	0.7	179.65	-32.6	0.2	32.6	31.3	1.35	24.185	
500.0	500.0	500.0	500.0	0.8	0.8	179.45	-32.6	0.3	32.6	30.9	1.69	19.226	
600.0	600.0	600.0	600.0	1.0	1.0	179.21	-32.5	0.4	32.5	30.4	2.04	15.932	
609.1	609.1	609.1	609.1	1.0	1.0	179.19	-32.5	0.5	32.5	30.4	2.07	15.686	
700.0	700.0	699.9	699.9	1.2	1.2	179.18	-32.6	0.5	32.6	30.2	2.39	13.653	
800.0	800.0	800.1	800.1	1.4	1.4	179.88	-32.6	0.1	32.6	29.9	2.74	11.920	
900.0	900.0	900.1	900.1	1.5	1.5	-179.36	-32.1	-0.4	32.1	29.0	3.09	10.394	
1,000.0	1,000.0	1,000.3	1,000.3	1.7	1.7	-177.56	-31.3	-1.3	31.3	27.9	3.44	9.118	
1,100.0	1,100.0	1,100.4	1,100.3	1.9	1.9	-175.60	-30.1	-2.3	30.2	26.4	3.78	7.968	
1,200.0	1,200.0	1,200.4	1,200.4	2.1	2.1	-173.53	-28.8	-3.3	29.0	24.8	4.13	7.005	
1,300.0	1,300.0	1,300.5	1,300.5	2.2	2.2	-171.19	-27.1	-4.2	27.5	23.0	4.48	6.127	
1,375.6	1,375.6	1,375.6	1,375.6	2.4	2.4	-168.76	-25.8	-5.1	26.3	21.6	4.75	5.548 CC, ES	
1,400.0	1,400.0	1,399.7	1,399.6	2.4	2.4	-168.33	-26.0	-5.4	26.5	21.7	4.83	5.483	
1,500.0	1,500.0	1,499.7	1,499.6	2.6	2.6	-167.21	-27.2	-6.2	27.9	22.7	5.18	5.383	
1,600.0	1,600.0	1,599.7	1,599.6	2.8	2.8	-166.14	-28.3	-7.0	29.2	23.6	5.53	5.274	
1,700.0	1,700.0	1,699.8	1,699.7	2.9	2.9	-165.76	-29.2	-7.4	30.1	24.2	5.88	5.119	
1,800.0	1,800.0	1,799.7	1,799.6	3.1	3.1	-165.05	-30.1	-8.0	31.2	25.0	6.23	5.009	
1,900.0	1,900.0	1,899.5	1,899.4	3.3	3.3	-163.95	-31.4	-9.0	32.7	26.1	6.58	4.963	
2,000.0	2,000.0	1,999.6	1,999.4	3.5	3.5	-162.86	-32.9	-10.1	34.4	27.5	6.93	4.969	
2,100.0	2,100.0	2,099.6	2,099.5	3.6	3.6	-165.46	-34.7	-9.0	35.9	28.6	7.28	4.929	
2,200.0	2,200.0	2,199.5	2,199.3	3.8	3.8	-168.80	-36.7	-7.3	37.4	29.8	7.62	4.911	
2,300.0	2,300.0	2,299.4	2,299.2	4.0	4.0	-171.41	-38.9	-5.9	39.3	31.3	7.97	4.930	
2,400.0	2,400.0	2,399.3	2,399.0	4.2	4.2	-173.23	-41.4	-4.9	41.7	33.4	8.32	5.012	
2,500.0	2,500.0	2,500.1	2,499.8	4.3	4.3	-175.61	-42.6	-3.3	42.8	34.1	8.67	4.932	
2,600.0	2,600.0	2,600.6	2,600.3	4.5	4.5	-178.40	-42.6	-1.2	42.6	33.6	9.02	4.720	
2,700.0	2,700.0	2,701.1	2,700.8	4.7	4.7	179.15	-41.4	0.6	41.4	32.0	9.37	4.419	
2,800.0	2,800.0	2,801.3	2,800.9	4.9	4.9	178.17	-39.2	1.3	39.2	29.5	9.72	4.032	
2,900.0	2,900.0	2,901.2	2,900.8	5.0	5.0	177.48	-36.8	1.6	36.8	26.7	10.07	3.655	
3,000.0	3,000.0	3,000.9	3,000.5	5.2	5.2	177.70	-35.2	1.4	35.2	24.8	10.42	3.378	
3,100.0	3,100.0	3,100.8	3,100.4	5.4	5.4	178.41	-33.7	0.9	33.7	23.0	10.77	3.132	
3,166.8	3,166.8	3,167.2	3,166.8	5.5	5.5	178.29	-33.3	1.0	33.4	22.4	11.00	3.033	
3,200.0	3,200.0	3,200.3	3,199.9	5.6	5.6	178.06	-33.4	1.1	33.4	22.3	11.11	3.007	
3,300.0	3,300.0	3,300.3	3,299.8	5.7	5.7	176.87	-33.8	1.8	33.8	22.3	11.46	2.949	
3,400.0	3,400.0	3,400.1	3,399.7	5.9	5.9	175.30	-34.3	2.8	34.5	22.6	11.81	2.917	
3,500.0	3,500.0	3,500.1	3,499.7	6.1	6.1	173.35	-35.5	4.1	35.7	23.5	12.16	2.936	
3,600.0	3,600.0	3,600.2	3,599.8	6.3	6.3	172.99	-36.1	4.4	36.3	23.8	12.51	2.905	
3,700.0	3,700.0	3,700.2	3,699.8	6.4	6.4	173.60	-36.5	4.1	36.7	23.8	12.86	2.853	
3,800.0	3,800.0	3,800.2	3,799.8	6.6	6.6	174.03	-36.9	3.9	37.1	23.9	13.21	2.811	
3,900.0	3,900.0	3,900.2	3,899.8	6.8	6.8	174.40	-37.8	3.7	38.0	24.4	13.56	2.800	
4,000.0	4,000.0	4,000.5	4,000.0	7.0	7.0	174.26	-37.9	3.8	38.1	24.2	13.91	2.739	
4,051.7	4,051.7	4,052.1	4,051.6	7.0	7.0	174.63	-37.9	3.6	38.1	24.0	14.09	2.703	
4,100.0	4,100.0	4,100.4	4,100.0	7.1	7.1	175.28	-38.0	3.1	38.1	23.8	14.26	2.671	
4,200.0	4,200.0	4,200.4	4,199.9	7.3	7.3	176.40	-38.2	2.4	38.3	23.7	14.61	2.621	
4,300.0	4,300.0	4,300.4	4,300.0	7.5	7.5	176.45	-38.2	2.4	38.3	23.3	14.95	2.561	
4,400.0	4,400.0	4,400.3	4,399.8	7.7	7.7	176.67	-38.4	2.2	38.5	23.2	15.30	2.513	
4,500.0	4,499.9	4,501.0	4,500.5	7.8	7.8	175.02	-38.4	0.6	41.5	25.9	15.61	2.659	
4,600.0	4,598.4	4,601.6	4,600.4	8.0	8.0	-172.73	-34.3	-9.6	55.5	39.8	15.70	3.533	
4,700.0	4,693.2	4,695.2	4,691.5	8.2	8.2	-159.35	-26.4	-29.8	84.7	69.1	15.67	5.409	

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

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
 Project: San Juan County, NM
 Reference Site: S27-T24N-R9W
 Site Error: 0.0usft
 Reference Well: Escrito L27-2409 01H
 Well Error: 0.0usft
 Reference Wellbore: Hz
 Reference Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
 TVD Reference: 16' KB @ 6940.0usft (Aztec)
 MD Reference: 16' KB @ 6940.0usft (Aztec)
 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

Offset Design S27-T24N-R9W - Escrito L27-2409 02H - Hz - FINAL													Offset Site Error: 0.0 usft
Survey Program: 587-Geolink MWD													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Total		Separation		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)	Uncertainty Axis	Factor	
4,800.0	4,782.4	4,776.7	4,767.9	8.6	8.4	-149.80	-18.0	-56.5	131.6	116.0	15.66	8.407	
4,900.0	4,867.2	4,844.7	4,828.4	9.0	8.6	-130.20	-11.6	-86.9	189.4	172.8	16.61	11.404	
5,000.0	4,950.7	4,914.0	4,886.1	9.5	8.9	-112.80	-6.4	-124.8	245.8	228.1	17.69	13.898	
5,100.0	5,031.2	4,977.0	4,934.8	10.1	9.3	-99.03	-2.3	-164.5	298.7	280.0	18.74	15.935	
5,200.0	5,106.9	5,040.0	4,979.0	10.7	9.8	-88.44	0.0	-209.2	348.7	328.9	19.85	17.564	
5,300.0	5,176.1	5,113.1	5,025.4	11.6	10.5	-80.75	1.4	-265.7	393.9	372.8	21.15	18.625	
5,400.0	5,237.3	5,183.2	5,065.2	12.6	11.4	-75.18	2.7	-323.3	432.3	409.6	22.63	19.097	
5,500.0	5,289.2	5,257.3	5,100.1	13.8	12.5	-71.08	4.0	-388.7	464.4	439.9	24.43	19.009	
5,600.0	5,330.7	5,332.0	5,127.6	15.2	13.7	-68.12	5.7	-458.1	489.3	462.8	26.49	18.469	
5,700.0	5,360.7	5,405.4	5,148.6	16.8	15.1	-66.34	7.0	-528.3	506.6	477.8	28.77	17.606	
5,800.0	5,378.7	5,481.0	5,164.4	18.6	16.6	-65.70	7.1	-602.3	516.5	485.2	31.29	16.509	
5,900.0	5,384.3	5,558.6	5,173.4	20.5	18.3	-66.06	5.8	-679.3	519.5	485.6	33.96	15.297	
6,000.0	5,382.6	5,652.3	5,177.2	22.5	20.3	-66.61	6.2	-772.9	517.1	479.2	37.90	13.642	
6,071.1	5,381.4	5,714.3	5,178.7	23.9	21.7	-66.88	5.9	-834.9	516.3	475.6	40.72	12.681	
6,100.0	5,380.9	5,738.1	5,179.1	24.5	22.3	-66.99	5.5	-858.7	516.5	474.6	41.84	12.344	
6,200.0	5,379.1	5,851.5	5,177.7	26.7	24.9	-67.05	5.7	-972.1	516.2	469.9	46.36	11.136	
6,300.0	5,377.4	5,943.4	5,176.3	28.9	27.0	-67.02	7.0	-1,064.5	515.1	464.6	50.45	10.210	
6,300.6	5,377.4	5,944.0	5,176.3	28.9	27.0	-67.02	7.0	-1,064.5	515.1	464.6	50.47	10.205	
6,400.0	5,375.6	6,034.9	5,176.2	31.1	29.1	-67.26	5.0	-1,155.4	516.6	461.9	54.67	9.448	
6,500.0	5,373.9	6,130.9	5,175.0	33.4	31.4	-67.40	3.2	-1,251.3	518.2	459.2	59.00	8.783	
6,600.0	5,372.1	6,230.2	5,173.9	35.7	33.8	-67.61	-0.2	-1,350.6	521.3	457.8	63.47	8.213	
6,700.0	5,370.4	6,325.9	5,172.3	38.0	36.1	-67.76	-3.4	-1,446.2	524.5	456.6	67.87	7.728	
6,800.0	5,368.6	6,434.1	5,170.5	40.3	38.7	-67.88	-6.0	-1,554.4	526.8	454.2	72.56	7.260	
6,900.0	5,366.9	6,555.7	5,169.0	42.7	41.6	-67.97	-6.3	-1,676.0	527.1	449.6	77.56	6.797	
7,000.0	5,365.2	6,655.9	5,167.4	45.1	44.0	-67.87	-3.4	-1,776.1	524.6	442.6	81.99	6.398	
7,100.0	5,363.4	6,762.8	5,166.2	47.4	46.6	-67.80	0.1	-1,883.0	521.5	434.9	86.59	6.022	
7,200.0	5,361.7	6,862.8	5,166.9	49.8	49.0	-67.93	3.1	-1,982.8	517.9	426.7	91.17	5.680	
7,300.0	5,359.9	6,953.8	5,169.9	52.2	51.3	-68.36	4.5	-2,073.8	514.8	419.0	95.75	5.376	
7,372.6	5,358.7	7,016.5	5,170.5	54.0	52.8	-68.53	4.5	-2,136.5	514.1	415.2	98.93	5.197	
7,400.0	5,358.2	7,040.9	5,170.6	54.6	53.4	-68.60	4.3	-2,160.9	514.2	414.1	100.15	5.134	
7,500.0	5,356.4	7,138.5	5,168.4	57.0	55.8	-68.55	4.3	-2,258.5	514.5	409.9	104.61	4.919	
7,600.0	5,354.7	7,236.0	5,166.9	59.5	58.1	-68.66	2.3	-2,355.9	516.5	407.3	109.18	4.731	
7,700.0	5,353.0	7,316.8	5,164.6	61.9	60.1	-68.68	-0.3	-2,436.7	520.1	406.7	113.31	4.590	
7,800.0	5,351.2	7,410.0	5,162.4	64.3	62.4	-68.85	-5.9	-2,529.7	526.1	408.2	117.84	4.464	
7,900.0	5,349.5	7,539.0	5,160.3	66.7	65.6	-69.06	-10.7	-2,658.5	529.6	406.3	123.24	4.297	
8,000.0	5,347.7	7,642.1	5,159.8	69.2	68.1	-69.25	-12.0	-2,761.6	530.5	402.4	128.05	4.143	
8,100.0	5,346.0	7,732.8	5,157.8	71.6	70.3	-69.21	-12.1	-2,852.3	531.0	398.6	132.39	4.011	
8,200.0	5,344.2	7,843.5	5,155.8	74.0	73.0	-69.23	-12.5	-2,963.0	531.4	394.1	137.25	3.872	
8,300.0	5,342.5	7,945.2	5,153.5	76.5	75.5	-69.17	-12.3	-3,064.6	531.6	389.8	141.83	3.748	
8,309.0	5,342.3	7,953.3	5,153.3	76.7	75.7	-69.17	-12.3	-3,072.7	531.6	389.4	142.22	3.738	
8,400.0	5,340.7	8,045.5	5,151.5	78.9	78.0	-69.16	-12.4	-3,164.9	531.9	385.5	146.41	3.633	
8,500.0	5,339.0	8,144.5	5,150.2	81.4	80.4	-69.20	-12.1	-3,263.8	531.6	380.6	151.02	3.520	
8,501.1	5,339.0	8,145.5	5,150.2	81.4	80.4	-69.20	-12.1	-3,264.9	531.6	380.5	151.08	3.519	
8,600.0	5,337.3	8,236.1	5,152.2	83.8	82.7	-69.64	-14.0	-3,355.4	532.3	376.5	155.86	3.415	
8,700.0	5,335.5	8,333.8	5,152.8	86.3	85.1	-69.97	-16.5	-3,453.1	534.1	373.3	160.76	3.322	
8,800.0	5,333.8	8,438.2	5,150.0	88.7	87.6	-69.93	-18.1	-3,557.4	536.0	370.6	165.45	3.240	
8,900.0	5,332.0	8,533.3	5,144.8	91.2	90.0	-69.60	-18.6	-3,652.4	538.0	368.4	169.60	3.172	
9,000.0	5,330.3	8,638.2	5,142.3	93.6	92.6	-69.59	-20.0	-3,757.2	539.6	365.2	174.32	3.095	
9,100.0	5,328.5	8,745.3	5,143.2	96.1	95.2	-69.94	-21.8	-3,864.2	540.5	361.0	179.50	3.011	
9,200.0	5,326.8	8,853.6	5,139.5	98.5	97.9	-69.69	-19.4	-3,972.5	539.1	355.1	184.02	2.930	
9,248.9	5,325.9	8,893.9	5,138.0	99.7	98.8	-69.57	-18.5	-4,012.7	538.6	352.6	185.94	2.896	
9,300.0	5,325.0	8,936.0	5,137.4	101.0	99.9	-69.61	-19.2	-4,054.8	539.2	351.1	188.14	2.866	

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

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S27-T24N-R9W
Site Error: 0.0usft
Reference Well: Escrito L27-2409 01H
Well Error: 0.0usft
Reference Wellbore: Hz
Reference Design: Plan #3

Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
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

Offset Design S27-T24N-R9W - Escrito L27-2409 02H - Hz - FINAL												Offset Site Error:	0.0 usft
Survey Program: 587-Geolink 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)			
9,400.0	5,323.3	9,043.4	5,136.6	103.4	102.5	-69.80	-21.0	-4,162.2	540.7	347.5	193.16	2.799	
9,500.0	5,321.6	9,139.1	5,134.6	105.9	104.9	-69.78	-21.2	-4,257.8	541.1	343.5	197.66	2.738	
9,600.0	5,319.8	9,232.7	5,131.2	108.3	107.2	-69.64	-22.2	-4,351.4	542.9	341.0	201.97	2.688	
9,700.0	5,318.1	9,313.0	5,128.0	110.8	109.2	-69.55	-24.2	-4,431.6	546.4	340.4	206.01	2.652	
9,800.0	5,316.3	9,409.8	5,125.2	113.2	111.5	-69.66	-30.2	-4,528.2	552.7	342.0	210.70	2.623	
9,900.0	5,314.6	9,507.1	5,120.7	115.7	113.9	-69.58	-35.3	-4,625.2	558.9	343.7	215.14	2.598	
10,000.0	5,312.8	9,617.6	5,116.8	118.2	116.7	-69.64	-42.2	-4,735.4	565.6	345.5	220.09	2.570	
10,100.0	5,311.1	9,729.4	5,113.7	120.6	119.4	-69.66	-45.7	-4,847.2	569.0	343.9	225.02	2.528	
10,200.0	5,309.3	9,858.0	5,110.1	123.1	122.6	-69.54	-45.9	-4,975.7	569.7	339.6	230.14	2.476	
10,300.0	5,307.6	9,974.6	5,107.1	125.5	125.5	-69.27	-40.7	-5,092.1	566.0	331.3	234.73	2.411	
10,400.0	5,305.9	10,090.0	5,104.0	128.0	128.3	-68.84	-31.5	-5,207.1	558.9	319.9	239.01	2.339	
10,493.6	5,304.2	10,140.0	5,103.1	130.3	129.5	-68.68	-27.2	-5,256.9	553.3	311.3	242.04	2.286	
10,500.0	5,304.1	10,140.0	5,103.1	130.5	129.5	-68.68	-27.2	-5,256.9	553.4	311.2	242.19	2.285	
10,512.5	5,303.9	10,140.0	5,103.1	130.8	129.5	-68.68	-27.2	-5,256.9	553.7	311.2	242.48	2.283 SF	

Anticollision Report

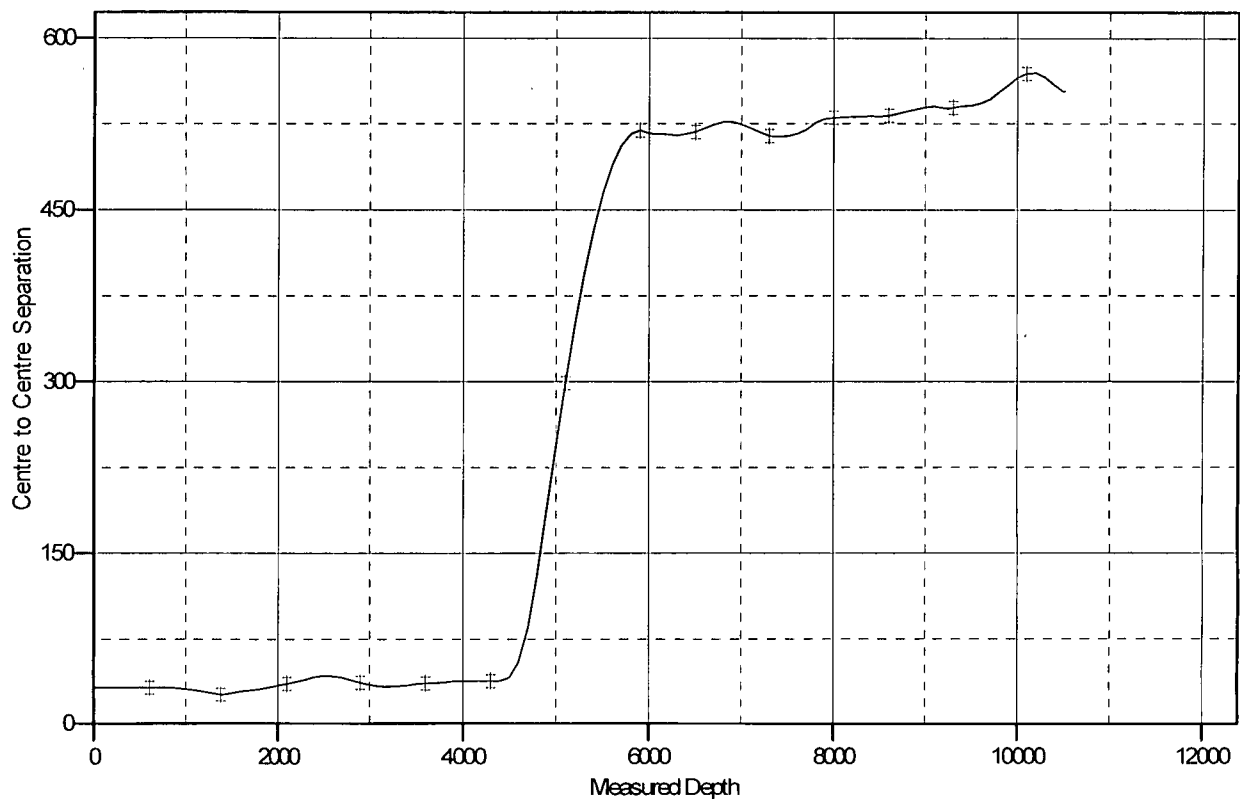
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S27-T24N-R9W
Site Error: 0.0usft
Reference Well: Escrito L27-2409 01H
Well Error: 0.0usft
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Local Co-ordinate Reference: Well Escrito L27-2409 01H
TVD Reference: 16' KB @ 6940.0usft (Aztec)
MD Reference: 16' KB @ 6940.0usft (Aztec)
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 16' KB @ 6940.0usft (Aztec)
 Offset Depths are relative to Offset Datum
 Central Meridian is -107.833333 °

Coordinates are relative to: Escrito L27-2409 01H
 Coordinate System is US State Plane 1983, New Mexico Western Zone
 Grid Convergence at Surface is: 0.03°

Ladder Plot



LEGEND

Escrito L27-2409 02H, Hz, FINAL V0