

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division



New Mexico Oil Conservation Division Conditions of Approval
C-101 Application for Permit to Drill

Operator Signature Date: 11/14/2017

Well information;

Operator Enxana, Well Name and Number Nayeezi Unit 509H

API# 30-045-35858, Section 9, Township 23 N, 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
- ☐ Submit Gas Capture Plan form prior to spudding or initiating recompletion operations
- ☒ 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.

Charles H. Sayer
NMOCD Approved by Signature

5-2-2018
Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMNM 8005
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name EASTERN NAVAJO
2. Name of Operator ENCANA OIL & GAS (USA) INCORPORATED		7. If Unit or CA Agreement, Name and No. NMNM132981A
3a. Address 370 17TH STREET, SUITE 1700 DENVER CO		8. Lease Name and Well No. NAGEEZI UNIT 509H
3b. Phone No. (include area code) (970)285-2600		9. API Well No. 30-045-35858
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface NENE / 260 FNL / 369 FEL / LAT 36.248044 / LONG -107.786622 At proposed prod. zone SWSE / 330 FSL / 2530 FEL / LAT 36.234846 / LONG -107.77571		10. Field and Pool, or Exploratory MANCOS
14. Distance in miles and direction from nearest town or post office* 39.3 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 9 / T23N / R9W / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 260 feet	16. No. of acres in lease 2083.66	17. Spacing Unit dedicated to this well 10415.12
18. Distance from proposed location* to nearest well, drilling, completed, 30 feet applied for, on this lease, ft.	19. Proposed Depth 4755 feet / 10806 feet	20. BLM/BIA Bond No. on file FED: COB000235 / IND: 105073453
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6748 feet	22. Approximate date work will start* 03/19/2018	23. Estimated duration 10 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:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Steven Merrell / Ph: (505)599-2411	Date 11/14/2017
Title Senior Regulatory Analyst		
Approved by (Signature) <i>[Signature]</i>	Name (Printed/Typed)	Date 4/19/18
Title AEM		
Office FARMINGTON		

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)

NMOCD
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NMOCD

APR 20 2018

DISTRICT III

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 Rancho Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-8170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 478-3480 Fax: (505) 478-3482

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-35858	² Pool Code 98080	³ Pool Name NAGEEZI UNIT, HZ (OIL)
⁴ Property Code 315244	⁵ Property Name NAGEEZI UNIT	⁶ Well Number 509H
⁷ OGRID No. 282327	⁸ Operator Name ENCANA OIL & GAS (USA) INC.	⁹ Elevation 6747

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
A	9	23N	9W		260'	NORTH	369'	EAST	SAN JUAN

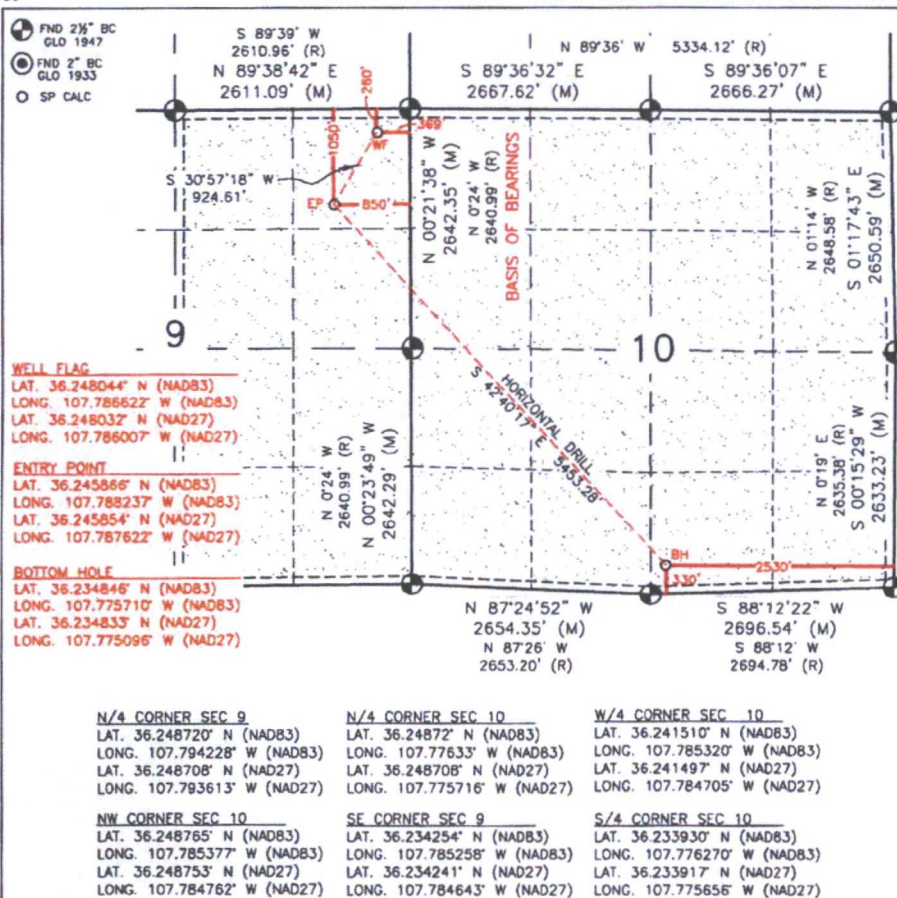
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	10	23N	9W		330'	SOUTH	2530'	EAST	SAN JUAN

¹² Dedicated Acres PENETRATED SPACING UNIT; ALL SEC. 10 (640 ACRES); E/2 SEC 9 (320 ACRES); 960 ACRES TOTAL	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-13856-A (10,415.12 acres)
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

16



17

OPERATOR CERTIFICATION

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

Steven Merrell 10-26-17
Signature Date

Steven Merrell
Printed Name
Steven.Merrell@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.
AUGUST 21, 2017

Date of Survey
Signature and Seal of Professional Surveyor:



Surface = Indian

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DISTRICT IV

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

State of New Mexico
Energy, Minerals & Natural Resources Department

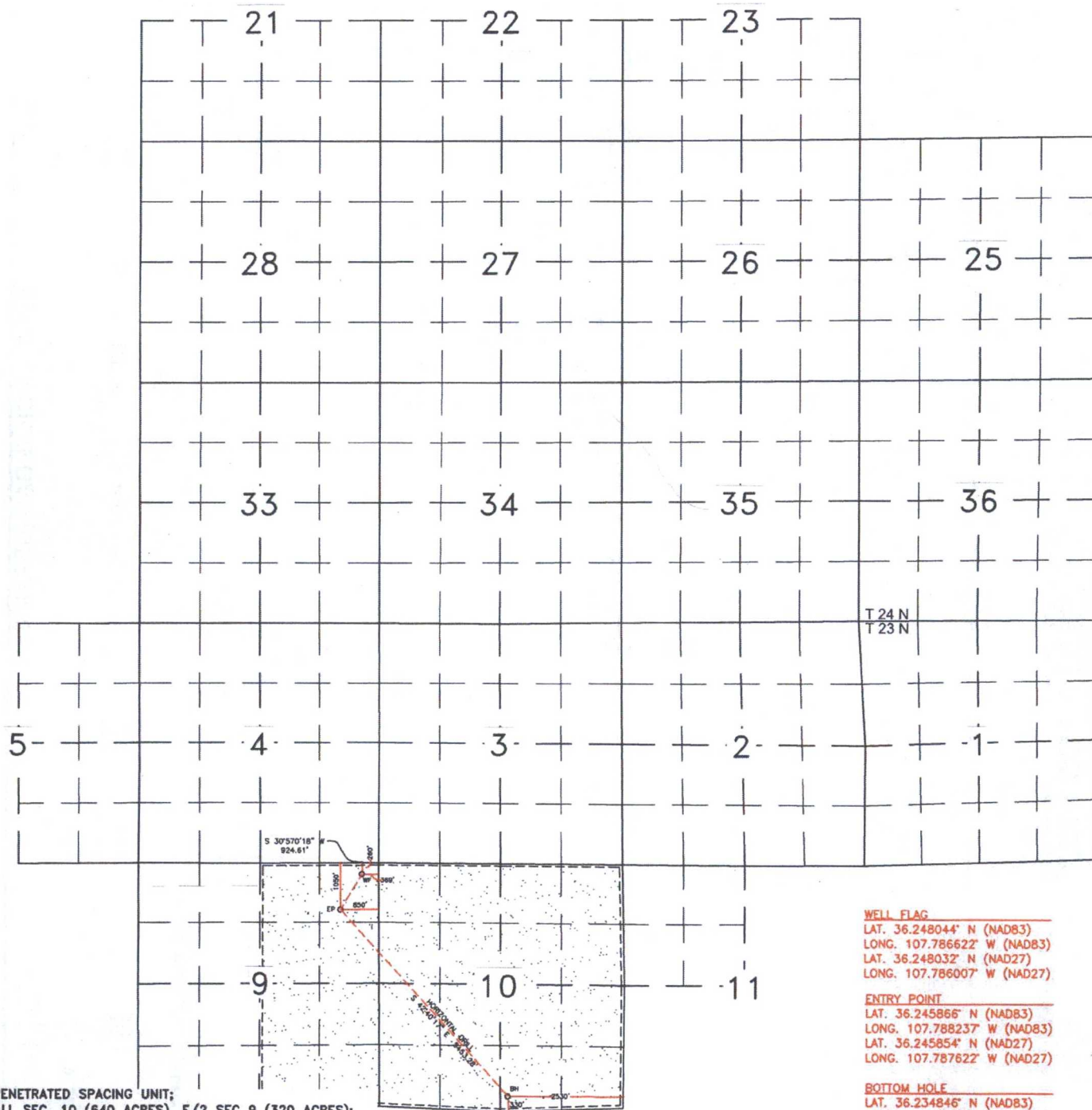
Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

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

☐ AMENDED REPORT

ENCANA OIL & GAS (USA) INC.
NAGEEZI UNIT #509H



PENETRATED SPACING UNIT;
ALL SEC. 10 (640 ACRES), E/2 SEC 9 (320 ACRES);
960.00 ACRES TOTAL
10,415.12 ACRES;
SEC. 21-23 (S/2); 25-28, 33-36, 1-4, 9-10 (ALL);
5 (W/2); 11 (NW/4) - UNDIVIDED UNIT

WELL FLAG
LAT. 36.248044° N (NAD83)
LONG. 107.786622° W (NAD83)
LAT. 36.248032° N (NAD27)
LONG. 107.786607° W (NAD27)

ENTRY POINT
LAT. 36.245866° N (NAD83)
LONG. 107.788237° W (NAD83)
LAT. 36.245854° N (NAD27)
LONG. 107.787622° W (NAD27)

BOTTOM HOLE
LAT. 36.234846° N (NAD83)
LONG. 107.775710° W (NAD83)
LAT. 36.234833° N (NAD27)
LONG. 107.775096° W (NAD27)

Nageezi Unit 509H

SHL: NENE Section 9, T23N, R9W, 260' FNL and 369' FEL

BHL: SWSE Section 10, T23N, R9W, 330' FSL and 2530' FEL

San Juan County, New Mexico

Unit Number: NMNM 132981A

Lease Number: NMNM 8005

**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	470
Kirtland Shale	640
Fruitland Coal	1,020
Pictured Cliffs Ss.	1,191
Lewis Shale	1,329
Cliffhouse Ss.	1,870
Menefee Fn.	2,600
Point Lookout Ss.	3,570
Mancos Shale	3,723
Mancos Silt	4,261
Gallup Fn.	4,534

The referenced surface elevation is 6748', KB 6762'

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

Substance	Formation	Depth (TVD) units = feet
Water/Gas	Fruitland Coal	1,020
Water/Gas	Pictured Cliffs Ss.	1,191
Water/Gas	Cliffhouse Ss.	1,870
Water/Gas	Menefee Fn.	2,600
Water/Gas	Point Lookout Ss.	3,570
Oil/Gas	Mancos Shale	3,723
Oil/Gas	Mancos Silt	4,261
Oil/Gas	Gallup Fn.	4,534

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.

Nageezi Unit 509H**SHL: NENE Section 9, T23N, R9W, 260' FNL and 369' FEL****BHL: SWSE Section 10, T23N, R9W, 330' FSL and 2530' FEL****San Juan County, New Mexico****Unit Number: NMNM 132981A****Lease Number: NMNM 8005**

- 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
- 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 higher grade of casing may be run at the Operator's discretion, but a lower grade will not be substituted without prior approval of the BLM.

- a) The proposed casing design is as follows:

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade
Surface	0'-320'	12 1/4"	9 5/8"	32.3	H40, STC New
Intermediate	0'-5100'	8 3/4"	7"	26	J55, LTC New
Production Liner	4900'-10806'	6 1/8"	4 1/2"	11.6	B80*, BTC 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"	32.3	H40	STC	1370	2270	365	1.0	1.1	1.5
7"	26	J55	LTC	4330	4980	367	1.0	1.1	1.5
4.5"	11.6	B80	BTC	6350	7780	267	1.0	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.

- b) The proposed cementing program is as follows

Nageezi Unit 509H**SHL: NENE Section 9, T23N, R9W, 260' FNL and 369' FEL****BHL: SWSE Section 10, T23N, R9W, 330' FSL and 2530' FEL****San Juan County, New Mexico****Unit Number: NMNM 132981A****Lease Number: NMNM 8005**

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Surface	0'-320'	132 sks	Class V cement w/ 2% CaCl Weight 15.6ppg Yield: 1.21 ft ³ /sk	Surface	1 per joint on bottom 3 joints
Intermediate	0'-5100'	100% open hole excess Stage 1 Lead: 611 sks Stage 1 Tail: 237 sks	Lead: Extended Class G w/ 6% BWOC bentonite + 2.5 lb/sk Kol-Seal + 0.125 lb/sk Poly-flake Weight: 12.3ppg Yield: 1.952 ft ³ /sk Tail: Extended Class G w/ 1% BWOC bentonite + 0.3% BWOC Halad-567 + 0.2% BWOC Versaset + 0.05% SA-1015 Weight: 13.5ppg Yield: 1.305 ft ³ /sk	Surface	1 every 3 joints through water bearing zones
Production Liner	4900'- 10806'	30% open hole excess Cement Vol: 535 sks	Extended Class G w/ 2.5 lb/sk Kol-seal + 0.7% BWOC Halad-567 + 0.20% BWOC Halad-9 + 0.05% SA-1015 Weight: 13.3ppg Yield: 1.36 ft ³ /sk	Top of Liner	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.

Nageezi Unit 509H**SHL: NENE Section 9, T23N, R9W, 260' FNL and 369' FEL****BHL: SWSE Section 10, T23N, R9W, 330' FSL and 2530' FEL****San Juan County, New Mexico****Unit Number: NMNM 132981A****Lease Number: NMNM 8005****5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM**

The proposed horizontal well will have a kick off point of 4018'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	4755'/10806'	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)
12 1/4"	0'-320'/320'	Fresh Water	0	60-70	NC
8 3/4"	320'/320'-4772'/5100'	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"	4772'/5100'- 4755'/10806'	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) Mud Logging - Mancos Top 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 +/- 2253 psi based on a 9.0 ppg at 4815' 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

Nageezi Unit 509H

SHL: NENE Section 9, T23N, R9W, 260' FNL and 369' FEL

BHL: SWSE Section 10, T23N, R9W, 330' FSL and 2530' FEL

San Juan County, New Mexico

Unit Number: NMNM 132981A

Lease Number: NMNM 8005

Drilling is estimated to commence on January 1st, 2018. 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 10 days.

EnCana Oil & Gas (USA) Inc

San Juan County, NM

S9-T23N-R9W

NAGEEZI UNIT 509H

OH

PLAN #1

Anticollision Report

26 September, 2017

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Project:	San Juan County, NM	TVD Reference:	14' KB @ 6762.00usft
Reference Site:	S9-T23N-R9W	MD Reference:	14' KB @ 6762.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 509H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 100.00usft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,176.98usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 9/26/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	10,805.67	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

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						
S9-T23N-R9W						
NAGEEZI UNIT 10H - OH - PLAN #1	200.00	200.00	30.37	29.35	29.623	CC
NAGEEZI UNIT 10H - OH - PLAN #1	300.00	299.89	30.54	28.80	17.537	ES
NAGEEZI UNIT 10H - OH - PLAN #1	600.00	596.89	38.46	34.59	9.931	SF
NAGEEZI UNIT 507H - OH - PLAN #1	200.00	200.00	59.86	58.84	58.388	CC, ES
NAGEEZI UNIT 507H - OH - PLAN #1	600.00	588.39	93.79	89.95	24.404	SF
NAGEEZI UNIT 508H - OH - PLAN #1	413.08	413.25	30.07	27.53	11.867	CC, ES
NAGEEZI UNIT 508H - OH - PLAN #1	5,071.89	5,117.23	130.53	89.81	3.205	SF
NAGEEZI UNIT 513H - OH - PLAN #1						Out of range
NAGEEZI UNIT 514H - OH - PLAN #1						Out of range

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

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S9-T23N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 509H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEEZI UNIT 509H
TVD Reference: 14' KB @ 6762.00usft
MD Reference: 14' KB @ 6762.00usft
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 S9-T23N-R9W - NAGEEZI UNIT 10H - OH - PLAN #1												Offset Site Error: 0.00 usf
Survey Program: 0-MWD+HDGM												Offset Well Error: 0.00 usf
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	
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-30.37	30.37			
100.00	100.00	100.00	100.00	0.15	0.15	-90.00	0.00	-30.37	30.37	30.06	0.31	98.514
200.00	200.00	200.00	200.00	0.51	0.51	-90.00	0.00	-30.37	30.37	29.35	1.03	29.623 CC
300.00	300.00	299.89	299.87	0.87	0.87	-86.74	1.74	-30.49	30.54	28.80	1.74	17.537 ES
400.00	400.00	399.53	399.37	1.23	1.24	-77.34	6.93	-30.85	31.62	29.16	2.46	12.859
500.00	499.98	498.66	498.12	1.58	1.60	37.95	15.52	-31.43	33.72	30.55	3.17	10.639
600.00	599.84	596.89	595.62	1.93	1.96	58.08	27.38	-32.25	38.46	34.59	3.87	9.931 SF
700.00	699.45	693.85	691.41	2.28	2.34	77.50	42.36	-33.28	49.14	44.56	4.58	10.735
800.00	798.70	789.93	785.81	2.66	2.73	92.19	60.21	-34.50	66.68	61.39	5.29	12.599
900.00	897.47	886.51	880.56	3.04	3.14	102.56	78.86	-35.78	88.32	82.28	6.04	14.631
1,000.00	995.62	982.42	974.66	3.45	3.54	110.22	97.37	-37.05	112.94	106.15	6.80	16.615
1,100.00	1,093.06	1,077.55	1,067.99	3.89	3.95	116.20	115.74	-38.31	140.44	132.86	7.58	18.526
1,200.00	1,189.87	1,172.03	1,160.68	4.36	4.36	121.18	133.98	-39.56	170.37	161.99	8.38	20.342
1,300.00	1,286.66	1,266.47	1,253.34	4.83	4.76	124.82	152.21	-40.81	201.26	192.09	9.17	21.951
1,400.00	1,383.44	1,360.91	1,345.99	5.32	5.17	127.49	170.45	-42.06	232.70	222.73	9.96	23.352
1,500.00	1,480.22	1,455.35	1,438.65	5.82	5.59	129.53	188.68	-43.31	264.49	253.72	10.76	24.572
1,600.00	1,577.00	1,549.79	1,531.30	6.32	6.00	131.13	206.91	-44.56	296.51	284.95	11.57	25.639
1,700.00	1,673.79	1,644.23	1,623.96	6.83	6.41	132.42	225.15	-45.81	328.71	316.34	12.37	26.577
1,800.00	1,770.57	1,738.67	1,716.61	7.33	6.82	133.48	243.38	-47.06	361.03	347.86	13.17	27.407
1,900.00	1,867.35	1,833.11	1,809.26	7.85	7.24	134.37	261.61	-48.31	393.44	379.46	13.98	28.144
2,000.00	1,964.14	1,927.55	1,901.92	8.36	7.65	135.12	279.85	-49.56	425.93	411.14	14.79	28.804
2,100.00	2,060.92	2,021.99	1,994.57	8.87	8.07	135.77	298.08	-50.81	458.47	442.87	15.60	29.397
2,200.00	2,157.70	2,116.43	2,087.23	9.39	8.48	136.33	316.31	-52.07	491.05	474.65	16.41	29.933
2,300.00	2,254.48	2,210.87	2,179.88	9.91	8.90	136.82	334.55	-53.32	523.67	506.46	17.22	30.419
2,400.00	2,351.27	2,305.31	2,272.54	10.43	9.31	137.25	352.78	-54.57	556.33	538.30	18.03	30.862
2,500.00	2,448.05	2,400.25	2,365.19	10.95	9.73	137.64	371.01	-55.82	589.01	570.17	18.84	31.263
2,600.00	2,544.83	2,505.81	2,457.85	11.47	10.19	137.98	389.25	-57.07	621.71	602.01	19.70	31.561
2,700.00	2,641.62	2,588.63	2,550.50	11.99	10.56	138.29	407.48	-58.32	654.42	633.96	20.46	31.980
2,800.00	2,738.40	2,683.07	2,643.15	12.52	10.98	138.57	425.71	-59.57	687.16	665.88	21.28	32.296
2,900.00	2,835.18	2,777.51	2,735.81	13.04	11.39	138.83	443.95	-60.82	719.90	697.81	22.09	32.589
3,000.00	2,931.96	2,871.95	2,828.46	13.56	11.81	139.06	462.18	-62.07	752.66	729.76	22.90	32.861
3,100.00	3,028.75	2,966.39	2,921.12	14.09	12.22	139.28	480.41	-63.32	785.43	761.71	23.72	33.114
3,200.00	3,125.53	3,060.83	3,013.77	14.61	12.64	139.47	498.64	-64.57	818.21	793.68	24.53	33.350
3,300.00	3,222.31	3,155.27	3,106.43	15.14	13.06	139.66	516.88	-65.82	851.00	825.65	25.35	33.571
3,400.00	3,319.09	3,249.71	3,199.08	15.66	13.47	139.82	535.11	-67.07	883.79	857.62	26.16	33.778
3,500.00	3,415.88	3,344.15	3,291.74	16.19	13.89	139.98	553.34	-68.32	916.59	889.61	26.98	33.972
3,600.00	3,512.66	3,438.58	3,384.39	16.71	14.31	140.12	571.58	-69.57	949.39	921.60	27.80	34.155
3,700.00	3,609.44	3,533.02	3,477.04	17.24	14.73	140.26	589.81	-70.82	982.20	953.59	28.61	34.328
3,800.00	3,706.23	3,627.46	3,569.70	17.76	15.14	140.39	608.04	-72.07	1,015.02	985.59	29.43	34.490
3,900.00	3,803.01	3,721.90	3,662.35	18.29	15.56	140.51	626.28	-73.32	1,047.83	1,017.59	30.25	34.644
4,000.00	3,899.79	3,816.34	3,755.01	18.82	15.98	140.62	644.51	-74.57	1,080.66	1,049.59	31.06	34.790
4,100.00	3,996.57	3,910.78	3,847.66	19.34	16.39	140.72	662.74	-75.83	1,113.48	1,081.60	31.88	34.928
4,200.00	4,093.77	4,004.98	3,940.08	19.84	16.81	167.44	680.93	-77.07	1,146.79	1,114.12	32.67	35.099

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Project:	San Juan County, NM	TVD Reference:	14' KB @ 6762.00usft
Reference Site:	S9-T23N-R9W	MD Reference:	14' KB @ 6762.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 509H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 S9-T23N-R9W - NAGEEZI UNIT 507H - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 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		
0.00	0.00	0.00	0.00	0.00	0.00	89.30	0.73	59.86	59.86					
100.00	100.00	100.00	100.00	0.15	0.15	89.30	0.73	59.86	59.86	59.55	0.31	194.173		
200.00	200.00	200.00	200.00	0.51	0.51	89.30	0.73	59.86	59.86	58.84	1.03	58.388	CC, ES	
300.00	300.00	297.93	297.91	0.87	0.86	89.11	0.95	61.51	61.56	59.82	1.73	35.520		
400.00	400.00	395.63	395.48	1.23	1.21	88.60	1.63	66.47	66.65	64.21	2.44	27.309		
500.00	499.98	492.69	492.18	1.58	1.56	-172.27	2.74	74.66	76.84	73.69	3.14	24.450		
600.00	599.84	588.39	587.20	1.93	1.92	-173.32	4.26	85.90	93.79	89.95	3.84	24.404	SF	
700.00	699.45	682.09	679.82	2.28	2.29	-174.30	6.17	99.96	117.41	112.87	4.54	25.870		
800.00	798.70	776.35	772.61	2.66	2.68	-175.11	8.41	116.42	146.82	141.59	5.24	28.045		
900.00	897.47	870.76	865.51	3.04	3.08	-175.73	10.67	133.06	179.73	173.79	5.94	30.276		
1,000.00	995.62	963.96	957.22	3.45	3.47	-176.21	12.90	149.49	215.92	209.29	6.63	32.562		
1,100.00	1,093.06	1,055.84	1,047.63	3.89	3.87	-176.59	15.10	165.69	255.35	248.02	7.33	34.848		
1,200.00	1,189.87	1,146.67	1,137.01	4.36	4.26	-176.93	17.27	181.70	297.16	289.14	8.02	37.063		
1,300.00	1,286.66	1,237.43	1,226.33	4.83	4.65	-177.19	19.44	197.70	339.11	330.41	8.70	38.985		
1,400.00	1,383.44	1,328.20	1,315.65	5.32	5.05	-177.39	21.62	213.70	381.06	371.68	9.38	40.609		
1,500.00	1,480.22	1,418.96	1,404.96	5.82	5.44	-177.56	23.79	229.70	423.02	412.95	10.07	41.996		
1,600.00	1,577.00	1,509.73	1,494.28	6.32	5.84	-177.69	25.96	245.70	464.98	454.22	10.76	43.194		
1,700.00	1,673.79	1,600.50	1,583.60	6.83	6.23	-177.80	28.14	261.70	506.94	495.48	11.46	44.237		
1,800.00	1,770.57	1,708.74	1,672.92	7.33	6.71	-177.90	30.31	277.70	548.91	536.68	12.22	44.909		
1,900.00	1,867.35	1,782.03	1,762.24	7.85	7.03	-177.98	32.48	293.70	590.87	578.02	12.86	45.964		
2,000.00	1,964.14	1,872.79	1,851.55	8.36	7.43	-178.05	34.65	309.71	632.84	619.28	13.56	46.686		
2,100.00	2,060.92	1,963.56	1,940.87	8.87	7.82	-178.11	36.83	325.71	674.80	660.54	14.26	47.333		
2,200.00	2,157.70	2,054.33	2,030.19	9.39	8.22	-178.17	39.00	341.71	716.77	701.81	14.96	47.915		
2,300.00	2,254.48	2,145.09	2,119.51	9.91	8.62	-178.22	41.17	357.71	758.73	743.07	15.66	48.443		
2,400.00	2,351.27	2,235.86	2,208.83	10.43	9.02	-178.26	43.34	373.71	800.70	784.33	16.37	48.922		
2,500.00	2,448.05	2,326.62	2,298.15	10.95	9.42	-178.30	45.52	389.71	842.67	825.60	17.07	49.360		
2,600.00	2,544.83	2,417.39	2,387.46	11.47	9.82	-178.34	47.69	405.71	884.64	866.86	17.78	49.761		
2,700.00	2,641.62	2,508.16	2,476.78	11.99	10.22	-178.37	49.86	421.71	926.60	908.12	18.48	50.129		
2,800.00	2,738.40	2,601.08	2,566.10	12.52	10.63	-178.40	52.03	437.71	968.57	949.37	19.20	50.448		
2,900.00	2,835.18	2,689.69	2,655.42	13.04	11.02	-178.42	54.21	453.71	1,010.54	990.64	19.90	50.784		
3,000.00	2,931.96	2,780.45	2,744.74	13.56	11.42	-178.45	56.38	469.71	1,052.51	1,031.90	20.61	51.075		
3,100.00	3,028.75	2,871.22	2,834.05	14.09	11.82	-178.47	58.55	485.71	1,094.48	1,073.16	21.32	51.347		
3,200.00	3,125.53	2,961.99	2,923.37	14.61	12.22	-178.49	60.72	501.72	1,136.45	1,114.42	22.02	51.599		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Project:	San Juan County, NM	TVD Reference:	14' KB @ 6762.00usft
Reference Site:	S9-T23N-R9W	MD Reference:	14' KB @ 6762.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 509H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 S9-T23N-R9W - NAGEEZI UNIT 508H - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	90.00	0.00	30.37	30.37					
100.00	100.00	100.00	100.00	0.15	0.15	90.00	0.00	30.37	30.37	30.06	0.31	98.514		
200.00	200.00	200.00	200.00	0.51	0.51	90.00	0.00	30.37	30.37	29.35	1.03	29.623		
300.00	300.00	300.00	300.00	0.87	0.87	90.00	0.00	30.37	30.37	28.63	1.74	17.433		
400.00	400.00	400.15	400.13	1.23	1.21	93.28	-1.72	30.05	30.10	27.65	2.44	12.317		
413.08	413.08	413.25	413.22	1.28	1.26	-165.84	-2.20	29.96	30.07	27.53	2.53	11.867	CC, ES	
500.00	499.98	500.09	499.93	1.58	1.56	-157.98	-6.87	29.08	31.49	28.36	3.13	10.054		
600.00	599.84	599.59	599.04	1.93	1.91	-147.50	-15.38	27.49	37.18	33.34	3.84	9.694		
700.00	699.45	698.42	697.14	2.28	2.27	-138.68	-27.19	25.28	47.57	43.01	4.56	10.439		
800.00	798.70	796.37	793.89	2.66	2.65	-132.50	-42.16	22.47	62.53	57.23	5.30	11.807		
900.00	897.47	893.23	889.00	3.04	3.05	-128.44	-60.16	19.10	81.73	75.67	6.05	13.504		
1,000.00	995.62	989.58	983.00	3.45	3.47	-125.88	-80.91	15.21	104.77	97.93	6.83	15.329		
1,100.00	1,093.06	1,086.30	1,077.25	3.89	3.90	-125.14	-102.28	11.20	130.15	122.50	7.65	17.011		
1,200.00	1,189.87	1,182.62	1,171.10	4.36	4.33	-125.60	-123.56	7.22	157.00	148.50	8.49	18.486		
1,300.00	1,286.66	1,278.91	1,264.93	4.83	4.77	-126.06	-144.83	3.23	183.93	174.59	9.34	19.686		
1,400.00	1,383.44	1,375.21	1,358.76	5.32	5.22	-126.40	-166.10	-0.76	210.87	200.67	10.21	20.663		
1,500.00	1,480.22	1,471.50	1,452.60	5.82	5.67	-126.66	-187.38	-4.74	237.82	226.75	11.08	21.472		
1,600.00	1,577.00	1,567.80	1,546.43	6.32	6.12	-126.87	-208.65	-8.73	264.77	252.82	11.95	22.151		
1,700.00	1,673.79	1,664.09	1,640.26	6.83	6.57	-127.04	-229.92	-12.72	291.73	278.89	12.84	22.728		
1,800.00	1,770.57	1,760.39	1,734.09	7.33	7.03	-127.18	-251.20	-16.70	318.68	304.96	13.72	23.224		
1,900.00	1,867.35	1,856.68	1,827.92	7.85	7.48	-127.30	-272.47	-20.69	345.64	331.03	14.61	23.653		
2,000.00	1,964.14	1,952.98	1,921.75	8.36	7.94	-127.40	-293.75	-24.68	372.60	357.10	15.51	24.029		
2,100.00	2,060.92	2,049.27	2,015.58	8.87	8.40	-127.49	-315.02	-28.66	399.56	383.16	16.40	24.360		
2,200.00	2,157.70	2,145.57	2,109.42	9.39	8.86	-127.57	-336.29	-32.65	426.52	409.22	17.30	24.655		
2,300.00	2,254.48	2,241.87	2,203.25	9.91	9.31	-127.64	-357.57	-36.64	453.49	435.29	18.20	24.917		
2,400.00	2,351.27	2,338.16	2,297.08	10.43	9.77	-127.70	-378.84	-40.63	480.45	461.35	19.10	25.153		
2,500.00	2,448.05	2,434.46	2,390.91	10.95	10.23	-127.75	-400.11	-44.61	507.41	487.41	20.00	25.366		
2,600.00	2,544.83	2,530.75	2,484.74	11.47	10.69	-127.80	-421.39	-48.60	534.37	513.47	20.91	25.560		
2,700.00	2,641.62	2,627.05	2,578.57	11.99	11.15	-127.85	-442.66	-52.59	561.34	539.53	21.81	25.736		
2,800.00	2,738.40	2,723.34	2,672.40	12.52	11.62	-127.89	-463.93	-56.57	588.30	565.58	22.72	25.897		
2,900.00	2,835.18	2,819.64	2,766.24	13.04	12.08	-127.92	-485.21	-60.56	615.26	591.64	23.62	26.044		
3,000.00	2,931.96	2,915.93	2,860.07	13.56	12.54	-127.95	-506.48	-64.55	642.23	617.70	24.53	26.181		
3,100.00	3,028.75	3,012.23	2,953.90	14.09	13.00	-127.99	-527.75	-68.53	669.19	643.75	25.44	26.306		
3,200.00	3,125.53	3,108.52	3,047.73	14.61	13.46	-128.01	-549.03	-72.52	696.16	669.81	26.35	26.423		
3,300.00	3,222.31	3,204.82	3,141.56	15.14	13.92	-128.04	-570.30	-76.51	723.12	695.87	27.26	26.531		
3,400.00	3,319.09	3,301.11	3,235.39	15.66	14.39	-128.06	-591.57	-80.49	750.09	721.92	28.17	26.632		
3,500.00	3,415.88	3,402.59	3,329.23	16.19	14.87	-128.09	-612.85	-84.48	777.05	747.95	29.10	26.704		
3,600.00	3,512.66	3,506.29	3,423.06	16.71	15.37	-128.11	-634.12	-88.47	804.02	773.97	30.04	26.762		
3,700.00	3,609.44	3,610.00	3,516.89	17.24	15.87	-128.13	-655.40	-92.45	830.98	799.99	30.99	26.817		
3,800.00	3,706.23	3,686.30	3,610.72	17.76	16.24	-128.15	-676.67	-96.44	857.95	826.14	31.81	26.974		
3,900.00	3,803.01	3,782.59	3,704.55	18.29	16.70	-128.16	-697.94	-100.43	884.91	852.20	32.72	27.047		
4,000.00	3,899.79	3,878.89	3,798.38	18.82	17.16	-128.18	-719.22	-104.41	911.88	878.25	33.63	27.116		
4,100.00	3,996.57	3,975.49	3,891.90	19.34	17.06	-128.19	-740.50	-108.40	938.85	904.45	34.54	27.185		
4,200.00	4,093.77	4,072.96	3,982.00	19.84	17.26	-128.20	-761.69	-112.39	965.82	929.81	35.45	27.254		
4,300.00	4,191.28	4,170.83	4,072.97	20.24	17.20	-128.21	-783.06	-116.38	992.79	957.57	36.36	27.323		
4,400.00	4,287.26	4,266.84	4,172.79	20.55	17.88	-128.22	-804.34	-120.37	1019.76	985.03	37.27	27.392		
4,500.00	4,379.85	4,359.31	4,261.47	20.79	18.32	-128.23	-825.62	-124.36	1046.73	1012.48	38.18	27.461		
4,600.00	4,467.24	4,446.84	4,348.02	20.98	18.55	-128.24	-846.90	-128.35	1073.70	1039.99	39.09	27.530		
4,700.00	4,547.72	4,527.27	4,428.44	21.12	18.58	-128.25	-868.18	-132.34	1100.67	1067.53	40.00	27.599		
4,800.00	4,619.74	4,599.68	4,499.74	21.23	18.59	-128.26	-889.46	-136.33	1127.64	1095.58	40.91	27.668		
4,900.00	4,681.90	4,661.77	4,561.36	21.32	18.59	-128.27	-910.74	-140.32	1154.61	1123.44	41.82	27.737		
5,000.00	4,732.97	4,712.94	4,603.38	21.39	18.59	-128.28	-932.02	-144.31	1181.58	1151.41	42.73	27.806		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Project:	San Juan County, NM	TVD Reference:	14' KB @ 6762.00usft
Reference Site:	S9-T23N-R9W	MD Reference:	14' KB @ 6762.00usft
Site Error:	0.00usft	North Reference:	True
Reference Well:	NAGEEZI UNIT 509H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00usft	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 S9-T23N-R9W - NAGEEZI UNIT 508H - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.00 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		
5,071.89	4,762.28	5,117.23	4,789.09	21.46	20.25	-102.73	-497.73	-558.58	130.53	89.81	40.72	3.205 SF		
5,100.00	4,771.97	5,095.40	4,782.53	21.50	20.03	-96.51	-512.17	-543.58	131.68	91.09	40.59	3.244		
5,200.00	4,798.14	5,020.47	4,755.37	21.78	19.87	-76.21	-559.90	-492.65	151.83	114.32	37.51	4.047		
5,300.00	4,810.97	4,949.00	4,722.93	22.62	19.88	-60.90	-602.37	-445.25	187.54	153.26	34.28	5.471		
5,400.00	4,811.77	4,880.91	4,686.40	23.99	19.88	-51.43	-639.68	-401.59	230.20	197.32	32.88	7.001		
5,500.00	4,810.72	4,820.21	4,649.47	25.61	19.86	-45.46	-670.05	-364.23	282.44	249.82	32.62	8.659		
5,600.00	4,809.67	4,767.08	4,613.99	27.40	19.84	-41.01	-694.23	-332.96	343.28	310.28	33.00	10.403		
5,700.00	4,808.63	4,720.67	4,580.74	29.30	19.81	-37.68	-713.40	-306.87	410.84	377.18	33.66	12.207		
5,800.00	4,807.58	4,680.10	4,550.08	31.29	19.77	-35.16	-728.60	-285.10	483.65	449.27	34.38	14.067		
5,900.00	4,806.53	4,650.00	4,526.42	33.36	19.75	-33.50	-738.92	-269.62	560.66	525.42	35.24	15.910		
6,000.00	4,805.49	4,613.30	4,496.59	35.48	19.70	-31.68	-750.34	-251.55	640.89	605.19	35.70	17.953		
6,100.00	4,804.44	4,585.70	4,473.50	37.66	19.67	-30.45	-758.09	-238.57	723.85	687.61	36.24	19.972		
6,200.00	4,803.39	4,561.22	4,452.57	39.88	19.63	-29.45	-764.34	-227.53	809.00	772.29	36.72	22.034		
6,300.00	4,802.34	4,550.00	4,442.84	42.13	19.62	-29.02	-767.01	-222.61	896.10	858.82	37.28	24.036		
6,400.00	4,801.30	4,519.89	4,416.35	44.41	19.56	-27.93	-773.56	-209.89	984.43	946.96	37.47	26.271		
6,500.00	4,800.25	4,500.00	4,398.56	46.72	19.53	-27.27	-777.39	-201.87	1,074.18	1,036.43	37.75	28.457		
6,600.00	4,799.20	4,500.00	4,398.56	49.05	19.53	-27.27	-777.39	-201.87	1,165.20	1,127.03	38.17	30.528		

Cathedral Energy Services

Anticollision Report

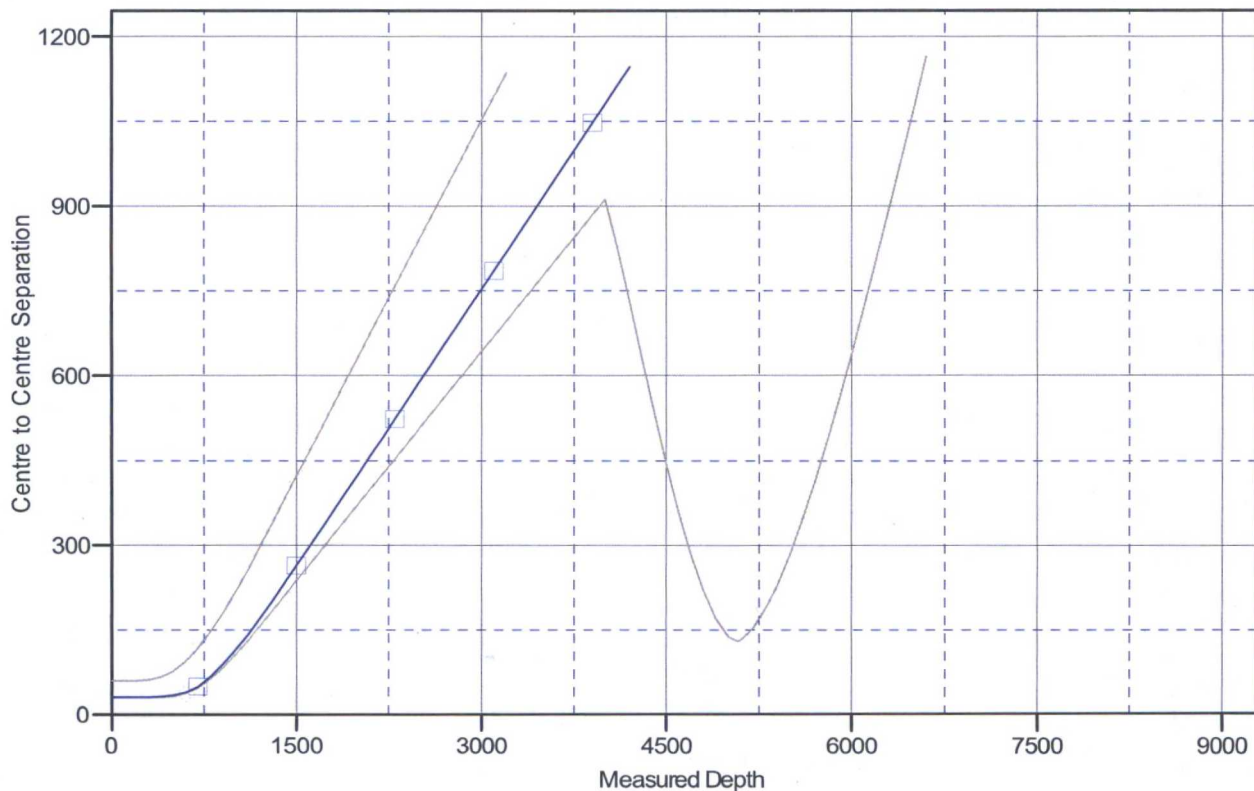
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Reference Site: S9-T23N-R9W
Site Error: 0.00usft
Reference Well: NAGEEZI UNIT 509H
Well Error: 0.00usft
Reference Wellbore: OH
Reference Design: PLAN #1

Local Co-ordinate Reference: Well NAGEEZI UNIT 509H
TVD Reference: 14' KB @ 6762.00usft
MD Reference: 14' KB @ 6762.00usft
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 14' KB @ 6762.00usft
Offset Depths are relative to Offset Datum
Central Meridian is -107.833333 °

Coordinates are relative to: NAGEEZI UNIT 509H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.03°

Ladder Plot



LEGEND

◆ NAGEEZI UNIT 508H, OH, PLAN #1 V0 ✕ NAGEEZI UNIT 507H, OH, PLAN #1 V0 ■ NAGEEZI UNIT 10H, OH, PLAN #1 V0

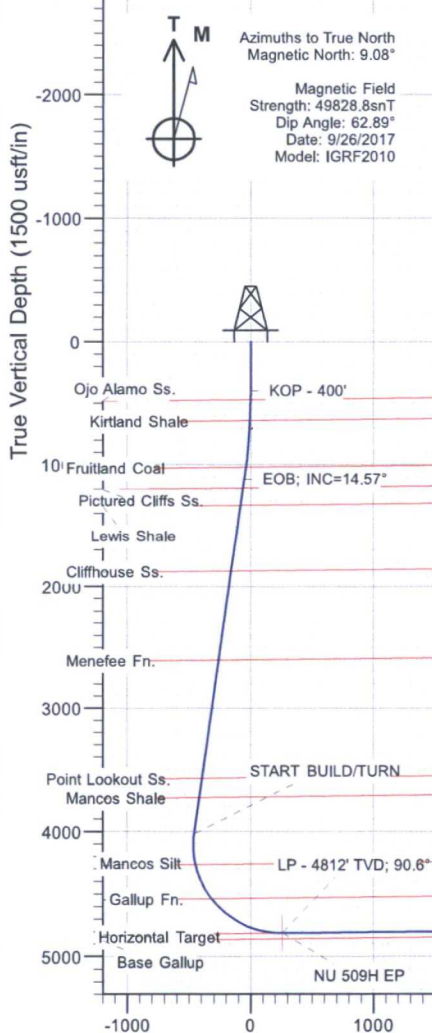
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Project: San Juan County, NM
Site: S9-T23N-R9W
Well: NAGEEZI UNIT 509H
Wellbore: OH
Design: PLAN #1

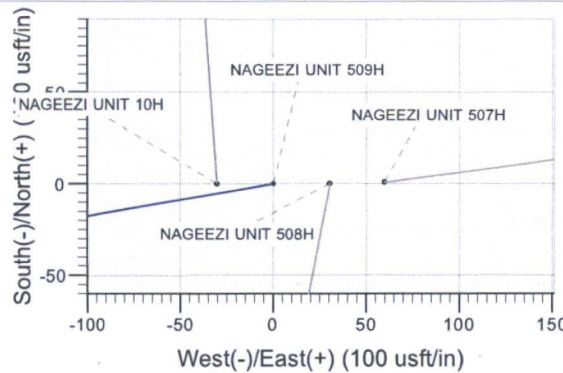
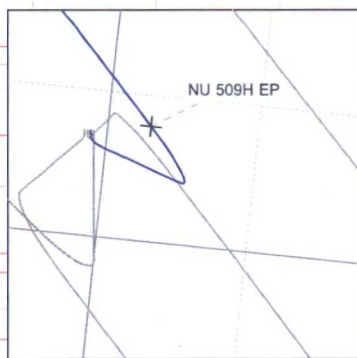
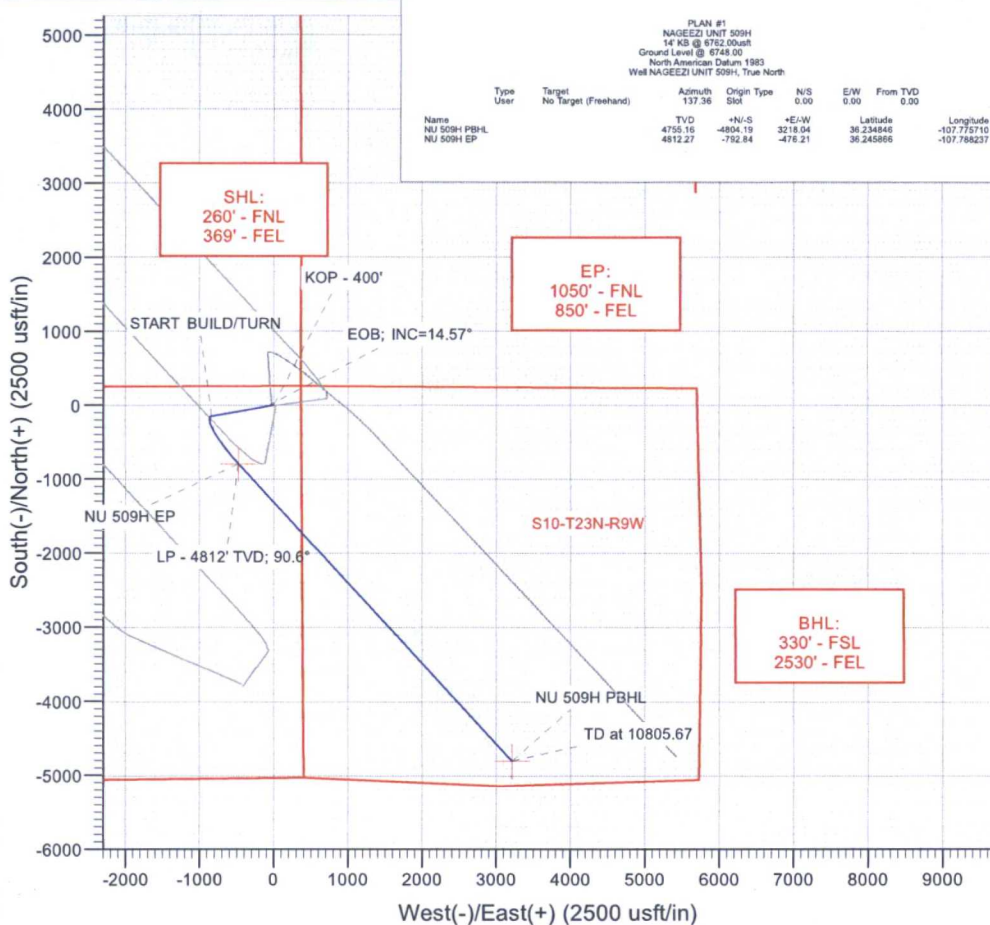
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
470.00	470.01	Ojo Alamo Ss.
640.06	640.34	Kirtland Shale
1020.38	1025.34	Fruitland Coal
1191.62	1201.81	Pictured Cliffs Ss.
1329.83	1344.61	Lewis Shale
1871.62	1904.41	Cliffhouse Ss.
2602.70	2659.79	Menefee Fn.
3574.13	3663.51	Point Lookout Ss.
3727.35	3821.83	Mancos Shale
4265.67	4377.26	Mancos Silt
4537.31	4686.49	Gallup Fn.



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1128.65	14.57	260.02	1120.82	-15.97	-90.77	2.00	260.02	-49.74	
4	4122.19	14.57	260.02	4018.05	-146.47	-832.60	0.00	0.00	-456.25	
5	5352.08	90.60	137.36	4812.27	-792.84	-476.21	8.00	-121.69	260.65	NU 509H EP
6	10805.67	90.60	137.36	4755.16	-4804.19	3218.04	0.00	0.00	5713.94	NU 509H PBHL



Vertical Section at 137.36° (1500 usft/in)

WELL DETAILS: NAGEEZI UNIT 509H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1909589.80	2736864.89	36.248044	-107.786622



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	14' KB @ 6762.00usft
Project:	San Juan County, NM	MD Reference:	14' KB @ 6762.00usft
Site:	S9-T23N-R9W	North Reference:	True
Well:	NAGEEZI UNIT 509H	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		S9-T23N-R9W			
Site Position:		Northing:	1,905,830.70 usft	Latitude:	36.237718
From:	Lat/Long	Easting:	2,736,435.86 usft	Longitude:	-107.788083
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.03 °

Well	NAGEEZI UNIT 509H					
Well Position	+N/-S	0.00 usft	Northing:	1,909,589.80 usft	Latitude:	36.248044
	+E/-W	0.00 usft	Easting:	2,736,864.89 usft	Longitude:	-107.786622
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	6,748.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/26/2017	9.08	62.89	49,828.77709811

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	137.36

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,128.65	14.57	260.02	1,120.82	-15.97	-90.77	2.00	2.00	0.00	260.02	
4,122.19	14.57	260.02	4,018.05	-146.47	-832.60	0.00	0.00	0.00	0.00	
5,352.08	90.60	137.36	4,812.27	-792.84	-476.21	8.00	6.18	-9.97	-121.69	NU 509H EP
10,805.67	90.60	137.36	4,755.16	-4,804.19	3,218.04	0.00	0.00	0.00	0.00	NU 509H PBHL

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S9-T23N-R9W
Well: NAGEEZI UNIT 509H
Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference: Well NAGEEZI UNIT 509H
TVD Reference: 14' KB @ 6762.00usft
MD Reference: 14' KB @ 6762.00usft
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	KOP - 400'
470.01	1.40	260.02	470.00	-0.15	-0.84	-0.46	2.00	2.00	Ojo Alamo Ss.
500.00	2.00	260.02	499.98	-0.30	-1.72	-0.94	2.00	2.00	
600.00	4.00	260.02	599.84	-1.21	-6.87	-3.77	2.00	2.00	
640.34	4.81	260.02	640.06	-1.75	-9.92	-5.44	2.00	2.00	Kirtland Shale
700.00	6.00	260.02	699.45	-2.72	-15.46	-8.47	2.00	2.00	
800.00	8.00	260.02	798.70	-4.83	-27.46	-15.05	2.00	2.00	
900.00	10.00	260.02	897.47	-7.54	-42.86	-23.49	2.00	2.00	
1,000.00	12.00	260.02	995.62	-10.85	-61.66	-33.79	2.00	2.00	
1,025.34	12.51	260.02	1,020.38	-11.78	-66.95	-36.69	2.00	2.00	Fruitland Coal
1,100.00	14.00	260.02	1,093.06	-14.74	-83.81	-45.93	2.00	2.00	
1,128.65	14.57	260.02	1,120.82	-15.97	-90.77	-49.74	2.00	2.00	EOB; INC=14.57°
1,200.00	14.57	260.02	1,189.87	-19.08	-108.45	-59.43	0.00	0.00	
1,201.81	14.57	260.02	1,191.62	-19.16	-108.90	-59.68	0.00	0.00	Pictured Cliffs Ss.
1,300.00	14.57	260.02	1,286.66	-23.44	-133.23	-73.01	0.00	0.00	
1,344.61	14.57	260.02	1,329.83	-25.38	-144.29	-79.07	0.00	0.00	Lewis Shale
1,400.00	14.57	260.02	1,383.44	-27.80	-158.02	-86.59	0.00	0.00	
1,500.00	14.57	260.02	1,480.22	-32.16	-182.80	-100.17	0.00	0.00	
1,600.00	14.57	260.02	1,577.00	-36.52	-207.58	-113.75	0.00	0.00	
1,700.00	14.57	260.02	1,673.79	-40.88	-232.36	-127.33	0.00	0.00	
1,800.00	14.57	260.02	1,770.57	-45.24	-257.14	-140.91	0.00	0.00	
1,900.00	14.57	260.02	1,867.35	-49.59	-281.92	-154.49	0.00	0.00	
1,904.41	14.57	260.02	1,871.62	-49.79	-283.01	-155.09	0.00	0.00	Cliffhouse Ss.
2,000.00	14.57	260.02	1,964.14	-53.95	-306.70	-168.07	0.00	0.00	
2,100.00	14.57	260.02	2,060.92	-58.31	-331.48	-181.64	0.00	0.00	
2,200.00	14.57	260.02	2,157.70	-62.67	-356.26	-195.22	0.00	0.00	
2,300.00	14.57	260.02	2,254.48	-67.03	-381.04	-208.80	0.00	0.00	
2,400.00	14.57	260.02	2,351.27	-71.39	-405.82	-222.38	0.00	0.00	
2,500.00	14.57	260.02	2,448.05	-75.75	-430.60	-235.96	0.00	0.00	
2,600.00	14.57	260.02	2,544.83	-80.11	-455.38	-249.54	0.00	0.00	
2,659.79	14.57	260.02	2,602.70	-82.72	-470.20	-257.66	0.00	0.00	Menefee Fn.
2,700.00	14.57	260.02	2,641.62	-84.47	-480.17	-263.12	0.00	0.00	
2,800.00	14.57	260.02	2,738.40	-88.83	-504.95	-276.70	0.00	0.00	
2,900.00	14.57	260.02	2,835.18	-93.19	-529.73	-290.28	0.00	0.00	
3,000.00	14.57	260.02	2,931.96	-97.55	-554.51	-303.86	0.00	0.00	
3,100.00	14.57	260.02	3,028.75	-101.91	-579.29	-317.44	0.00	0.00	
3,200.00	14.57	260.02	3,125.53	-106.27	-604.07	-331.02	0.00	0.00	
3,300.00	14.57	260.02	3,222.31	-110.63	-628.85	-344.60	0.00	0.00	
3,400.00	14.57	260.02	3,319.09	-114.99	-653.63	-358.18	0.00	0.00	
3,500.00	14.57	260.02	3,415.88	-119.34	-678.41	-371.76	0.00	0.00	
3,600.00	14.57	260.02	3,512.66	-123.70	-703.19	-385.34	0.00	0.00	
3,663.51	14.57	260.02	3,574.13	-126.47	-718.93	-393.96	0.00	0.00	Point Lookout Ss.
3,700.00	14.57	260.02	3,609.44	-128.06	-727.97	-398.91	0.00	0.00	
3,800.00	14.57	260.02	3,706.23	-132.42	-752.75	-412.49	0.00	0.00	
3,821.83	14.57	260.02	3,727.35	-133.37	-758.16	-415.46	0.00	0.00	Mancos Shale
3,900.00	14.57	260.02	3,803.01	-136.78	-777.53	-426.07	0.00	0.00	
4,000.00	14.57	260.02	3,899.79	-141.14	-802.32	-439.65	0.00	0.00	
4,100.00	14.57	260.02	3,996.57	-145.50	-827.10	-453.23	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	14' KB @ 6762.00usft
Project:	San Juan County, NM	MD Reference:	14' KB @ 6762.00usft
Site:	S9-T23N-R9W	North Reference:	True
Well:	NAGEEZI UNIT 509H	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
4,122.19	14.57	260.02	4,018.05	-146.47	-832.60	-456.25	0.00	0.00	START BUILD/TURN
4,200.00	12.46	234.70	4,093.77	-153.02	-849.10	-462.61	8.00	-2.72	
4,300.00	13.92	199.66	4,191.28	-170.61	-861.97	-458.39	8.00	1.46	
4,377.26	17.60	181.19	4,265.67	-191.06	-865.35	-445.63	8.00	4.77	Mancos Silt
4,400.00	18.93	177.21	4,287.26	-198.18	-865.24	-440.32	8.00	5.84	
4,500.00	25.47	164.88	4,379.85	-235.20	-858.83	-408.74	8.00	6.54	
4,600.00	32.64	157.50	4,467.24	-280.95	-842.88	-364.28	8.00	7.17	
4,686.49	39.07	153.15	4,537.31	-326.87	-821.62	-316.10	8.00	7.44	Gallup Fn.
4,700.00	40.09	152.58	4,547.72	-334.53	-817.69	-307.80	8.00	7.53	
4,800.00	47.70	148.99	4,619.74	-394.91	-783.75	-240.40	8.00	7.61	
4,900.00	55.39	146.19	4,681.90	-460.90	-741.73	-163.39	8.00	7.69	
5,000.00	63.14	143.86	4,732.97	-531.23	-692.45	-78.27	8.00	7.75	
5,100.00	70.92	141.84	4,771.97	-604.53	-636.85	13.31	8.00	7.78	
5,200.00	78.72	139.99	4,798.14	-679.36	-576.04	109.55	8.00	7.80	
5,300.00	86.53	138.25	4,810.97	-754.27	-511.17	208.60	8.00	7.81	
5,352.08	90.60	137.36	4,812.27	-792.84	-476.21	260.65	8.00	7.81	LP - 4812' TVD; 90.6°
5,400.00	90.60	137.36	4,811.77	-828.08	-443.75	308.57	0.00	0.00	
5,500.00	90.60	137.36	4,810.72	-901.64	-376.01	408.56	0.00	0.00	
5,600.00	90.60	137.36	4,809.67	-975.19	-308.27	508.55	0.00	0.00	
5,700.00	90.60	137.36	4,808.63	-1,048.75	-240.53	608.55	0.00	0.00	
5,800.00	90.60	137.36	4,807.58	-1,122.30	-172.79	708.54	0.00	0.00	
5,900.00	90.60	137.36	4,806.53	-1,195.85	-105.05	808.54	0.00	0.00	
6,000.00	90.60	137.36	4,805.49	-1,269.41	-37.31	908.53	0.00	0.00	
6,100.00	90.60	137.36	4,804.44	-1,342.96	30.43	1,008.53	0.00	0.00	
6,200.00	90.60	137.36	4,803.39	-1,416.52	98.17	1,108.52	0.00	0.00	
6,300.00	90.60	137.36	4,802.34	-1,490.07	165.91	1,208.52	0.00	0.00	
6,400.00	90.60	137.36	4,801.30	-1,563.63	233.65	1,308.51	0.00	0.00	
6,500.00	90.60	137.36	4,800.25	-1,637.18	301.39	1,408.51	0.00	0.00	
6,600.00	90.60	137.36	4,799.20	-1,710.73	369.13	1,508.50	0.00	0.00	
6,700.00	90.60	137.36	4,798.15	-1,784.29	436.87	1,608.49	0.00	0.00	
6,800.00	90.60	137.36	4,797.11	-1,857.84	504.61	1,708.49	0.00	0.00	
6,900.00	90.60	137.36	4,796.06	-1,931.40	572.34	1,808.48	0.00	0.00	
7,000.00	90.60	137.36	4,795.01	-2,004.95	640.08	1,908.48	0.00	0.00	
7,100.00	90.60	137.36	4,793.97	-2,078.51	707.82	2,008.47	0.00	0.00	
7,200.00	90.60	137.36	4,792.92	-2,152.06	775.56	2,108.47	0.00	0.00	
7,300.00	90.60	137.36	4,791.87	-2,225.61	843.30	2,208.46	0.00	0.00	
7,400.00	90.60	137.36	4,790.82	-2,299.17	911.04	2,308.46	0.00	0.00	
7,500.00	90.60	137.36	4,789.78	-2,372.72	978.78	2,408.45	0.00	0.00	
7,600.00	90.60	137.36	4,788.73	-2,446.28	1,046.52	2,508.45	0.00	0.00	
7,700.00	90.60	137.36	4,787.68	-2,519.83	1,114.26	2,608.44	0.00	0.00	
7,800.00	90.60	137.36	4,786.64	-2,593.39	1,182.00	2,708.43	0.00	0.00	
7,900.00	90.60	137.36	4,785.59	-2,666.94	1,249.74	2,808.43	0.00	0.00	
8,000.00	90.60	137.36	4,784.54	-2,740.49	1,317.48	2,908.42	0.00	0.00	
8,100.00	90.60	137.36	4,783.49	-2,814.05	1,385.22	3,008.42	0.00	0.00	
8,200.00	90.60	137.36	4,782.45	-2,887.60	1,452.96	3,108.41	0.00	0.00	
8,300.00	90.60	137.36	4,781.40	-2,961.16	1,520.70	3,208.41	0.00	0.00	
8,400.00	90.60	137.36	4,780.35	-3,034.71	1,588.44	3,308.40	0.00	0.00	
8,500.00	90.60	137.36	4,779.31	-3,108.27	1,656.18	3,408.40	0.00	0.00	
8,600.00	90.60	137.36	4,778.26	-3,181.82	1,723.92	3,508.39	0.00	0.00	
8,700.00	90.60	137.36	4,777.21	-3,255.37	1,791.66	3,608.38	0.00	0.00	
8,800.00	90.60	137.36	4,776.16	-3,328.93	1,859.40	3,708.38	0.00	0.00	
8,900.00	90.60	137.36	4,775.12	-3,402.48	1,927.14	3,808.37	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well NAGEEZI UNIT 509H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	14' KB @ 6762.00usft
Project:	San Juan County, NM	MD Reference:	14' KB @ 6762.00usft
Site:	S9-T23N-R9W	North Reference:	True
Well:	NAGEEZI UNIT 509H	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
9,000.00	90.60	137.36	4,774.07	-3,476.04	1,994.88	3,908.37	0.00	0.00	
9,100.00	90.60	137.36	4,773.02	-3,549.59	2,062.62	4,008.36	0.00	0.00	
9,200.00	90.60	137.36	4,771.97	-3,623.15	2,130.36	4,108.36	0.00	0.00	
9,300.00	90.60	137.36	4,770.93	-3,696.70	2,198.10	4,208.35	0.00	0.00	
9,400.00	90.60	137.36	4,769.88	-3,770.26	2,265.84	4,308.35	0.00	0.00	
9,500.00	90.60	137.36	4,768.83	-3,843.81	2,333.58	4,408.34	0.00	0.00	
9,600.00	90.60	137.36	4,767.79	-3,917.36	2,401.32	4,508.34	0.00	0.00	
9,700.00	90.60	137.36	4,766.74	-3,990.92	2,469.06	4,608.33	0.00	0.00	
9,800.00	90.60	137.36	4,765.69	-4,064.47	2,536.80	4,708.32	0.00	0.00	
9,900.00	90.60	137.36	4,764.64	-4,138.03	2,604.54	4,808.32	0.00	0.00	
10,000.00	90.60	137.36	4,763.60	-4,211.58	2,672.28	4,908.31	0.00	0.00	
10,100.00	90.60	137.36	4,762.55	-4,285.14	2,740.02	5,008.31	0.00	0.00	
10,200.00	90.60	137.36	4,761.50	-4,358.69	2,807.76	5,108.30	0.00	0.00	
10,300.00	90.60	137.36	4,760.46	-4,432.24	2,875.49	5,208.30	0.00	0.00	
10,400.00	90.60	137.36	4,759.41	-4,505.80	2,943.23	5,308.29	0.00	0.00	
10,500.00	90.60	137.36	4,758.36	-4,579.35	3,010.97	5,408.29	0.00	0.00	
10,600.00	90.60	137.36	4,757.31	-4,652.91	3,078.71	5,508.28	0.00	0.00	
10,700.00	90.60	137.36	4,756.27	-4,726.46	3,146.45	5,608.28	0.00	0.00	
10,800.00	90.60	137.36	4,755.22	-4,800.02	3,214.19	5,708.27	0.00	0.00	
10,805.67	90.60	137.36	4,755.16	-4,804.19	3,218.04	5,713.94	0.00	0.00	TD at 10805.67

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									
NU 509H PBHL	0.00	0.00	4,755.16	-4,804.19	3,218.04	1,904,787.17	2,740,085.24	36.234846	-107.775710
- plan hits target center									
- Point									
NU 509H EP	0.00	0.00	4,812.27	-792.84	-476.21	1,908,796.74	2,736,389.07	36.245866	-107.788237
- plan hits target center									
- Point									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
470.01	470.00	Ojo Alamo Ss.		-0.60	137.36
640.34	640.00	Kirtland Shale		-0.60	137.36
1,025.34	1,020.00	Fruitland Coal		-0.60	137.36
1,201.81	1,191.00	Pictured Cliffs Ss.		-0.60	137.36
1,344.61	1,329.00	Lewis Shale		-0.60	137.36
1,904.41	1,870.00	Cliffhouse Ss.		-0.60	137.36
2,659.79	2,600.00	Menefee Fn.		-0.60	137.36
3,663.51	3,570.00	Point Lookout Ss.		-0.60	137.36
3,821.83	3,723.00	Mancos Shale		-0.60	137.36
4,377.26	4,261.00	Mancos Silt		-0.60	137.36
4,686.49	4,534.00	Gallup Fn.		-0.60	137.36

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: San Juan County, NM
Site: S9-T23N-R9W
Well: NAGEEZI UNIT 509H
Wellbore: OH
Design: PLAN #1

Local Co-ordinate Reference: Well NAGEEZI UNIT 509H
TVD Reference: 14' KB @ 6762.00usft
MD Reference: 14' KB @ 6762.00usft
North Reference: True
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	KOP - 400'
1,128.65	1,120.82	-15.97	-90.77	EOB; INC=14.57°
4,122.19	4,018.05	-146.47	-832.60	START BUILD/TURN
5,352.08	4,812.27	-792.84	-476.21	LP - 4812' TVD; 90.6°
10,805.67	4,755.16	-4,804.19	3,218.04	TD at 10805.67

Operator Name: ENCANA OIL & GAS (USA) INCORPORATED

Well Name: NAGEEZI UNIT

Well Number: 509H

Section 7 - Methods for Handling Waste

Waste type: SEWAGE

Waste content description: Sewer waste generated from onsite living accommodations on drill pad. Sewage – self-contained, chemical toilets will be provided for human waste disposal. The toilet holding tanks will be pumped, as needed, and the contents thereof disposed of in an approved sewage disposal facility. The toilets will be onsite during all operations. Please note, the volumes provided are estimates only.

Amount of waste: 1000 gallons

Waste disposal frequency : Weekly

Safe containment description: Will be stored in above ground tank that includes secondary containment in the form of berms or similar.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Sewage will be disposed of at an authorized sanitary landfill.

Waste type: DRILLING

Waste content description: Water-based mud drill cuttings produced from drilling the well bore. 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. Please note, the volumes provided are estimates only.

Amount of waste: 2500 barrels

Waste disposal frequency : Weekly

Safe containment description: 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 commercial facility.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Commercial facility such as Envirotech or Industrial Ecosystem.

Waste type: GARBAGE

Waste content description: Garbage associated with mud material packaging, drilling expendable packaging and onsite living accommodations (domestic waste). F. Garbage and other waste material – garbage, trash and other waste materials will be collected in a portable, self-contained and fully-enclosed trash container during drilling and completion operations. The accumulated trash will be removed, as needed, and will be disposed of at an authorized sanitary landfill. No trash will be buried or burned on location. Please note, the volumes provided are estimates only.

Amount of waste: 1500 pounds

Waste disposal frequency : Weekly

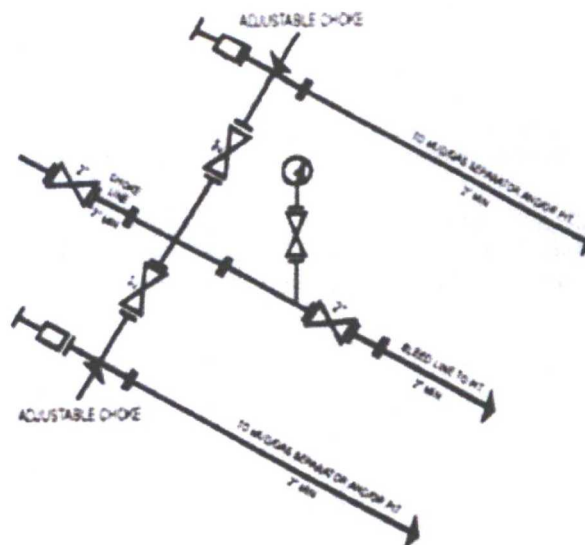
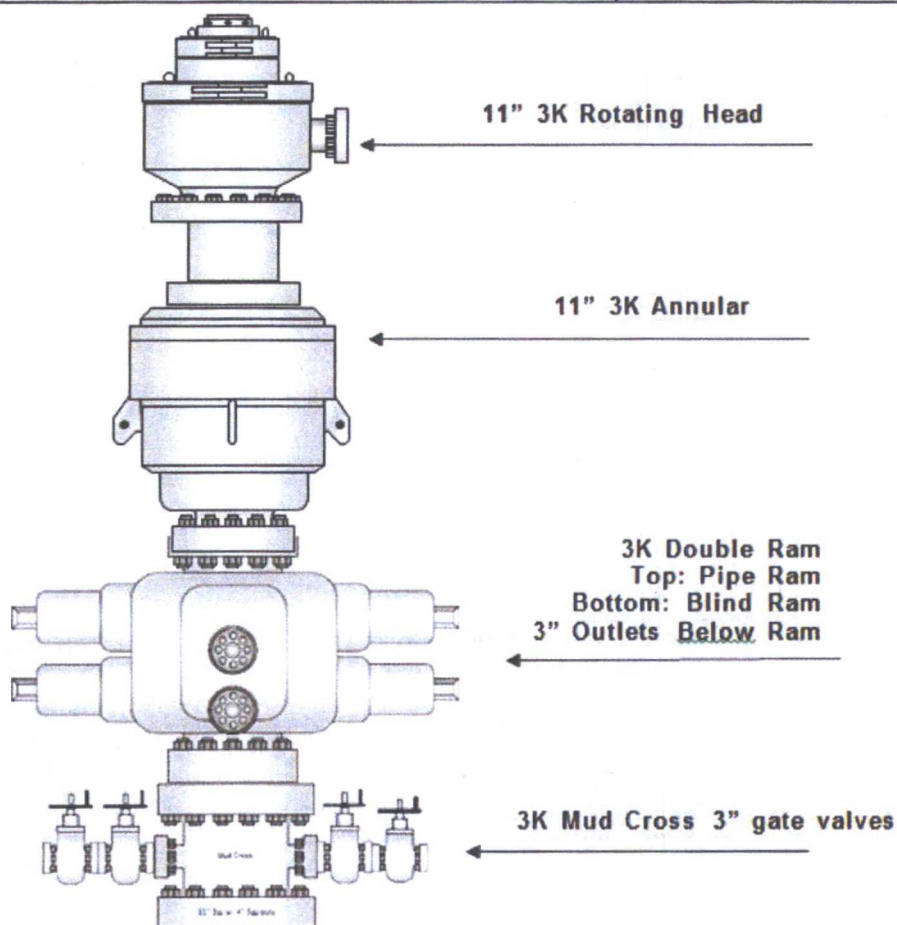
Safe containment description: Garbage on location will be stored in above ground mobile dumpster with scheduled disposals. Product waste is dry and dumpster is a sealed, steel container.

Safe containmant attachment:

WELLHEAD BLOWOUT CONTROL SYSTEM

encana

Well Name and Number:
NU 509H



ENCANA OIL & GAS (USA) INC.

NAGEEZI UNIT #509H

(FKA A09-2309)

260' FNL & 369' FEL

LOCATED IN THE NE/4 NE/4 OF SECTION 9,

T23N, R9W, N.M.P.M.,

SAN JUAN COUNTY, NEW MEXICO

DIRECTIONS

- 1) FROM THE INTERSECTION OF HWY 64 & HWY 550 IN BLOOMFIELD, GO SOUTH ON HWY 550, 36.0 MILES TO M.P. 115.6.
- 2) TURN RIGHT AT THE NAGEEZI POST OFFICE ON ROAD 7800 AND GO 3 MILES TO A NEW ACCESS ROAD.
- 3) TURN LEFT AND GO 0.3 MILES TO THE STAKED ACCESS ROAD ON THE RIGHT.

WELL FLAG LOCATED AT LAT. 36.248044° N, LONG. 107.786622° W (NAD 83).



JOB No.: ENC360
DATE: 08/22/17

CCI

CHENAULT CONSULTING INC.

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