State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

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

Jami Bailey, Division Director
Oil Conservation Division

STATE OF NEW MEXICO OIL CONSERVATION DIVISION

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

Operator Signature Date: 5-21-12
Well information;
Operator Encana, Well Name and Number Lybrook H01-2206 #1H

API# 30-043-21122, Section 1, Township 22 (N)/S, Range 6 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
- o Hold C-104 for NSL, NSP, DHC
- o 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
- o 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
- o 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

[signature]
NMOCD Approved by Signature

7-8-13
Date

JUL 0 9 2013 ca

RECEIVED

MAY 22 2012

Farmington Field Office
Bureau of Land Management

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM NM 109385

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

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. Lybrook H01-2206 01H

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

9. API Well No. 30-043-21122

3a. Address 370 17th Street, Suite 1700 Denver, CO 80202	3b. Phone No. *(include area code)* 720-876-3989	10. Field and Pool, or Exploratory Wildcat Gallup

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 2323' FNL and 497' FEL Section 1, T22N, R6W
At proposed prod. zone 2323' FNL and 330' FWL Section 1, 22N, R6W

11. Sec., T. R. M. or Blk. and Survey or Area Section 1, T22N, R6W NMPM

14. Distance in miles and direction from nearest town or post office* +/- 59.4 miles S of Bloomfield, NM	12. County or Parish Sandoval	13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) BHL is 497' from east lease line	16. No. of acres in lease NM NM 109385: 1,761.4	17. Spacing Unit dedicated to this well 160 acres (S2N2 Sec. 1)
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Gulf State-36 is 7000' north of wellbore	19. Proposed Depth 6658' TVD/9604' MD	20. BLM/BIA Bond No. on file COB-000235
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6931' GL, 6944' KB	22. Approximate date work will start* 09/01/2012	23. Estimated duration 45 days

RCVD JUN 17 '13
OIL CONS. DIV.
DIST. 3

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

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

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature [signature]	Name *(Printed/Typed)* Brenda R. Linster	Date 05·21·12
Title Regulatory Advisor		
Approved by *(Signature)* [signature]	Name *(Printed/Typed)*	Date 6/18/13
Title AFM	Office FFO	

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

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

(Continued on page 2) *(Instructions on page 2)

NMOCD

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

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MAY 22 2012

Farmington Field Office
Bureau of Land Management

District I
1625 N. French Drive, Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First Street, Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Drive, Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised August 1, 2011

Submit one copy to Appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-043-21122		WILDCAT (GALLUP)

[4] Property Code	[5] Property Name	[6] Well Number
39999	LYBROOK H01-2206	01H

[7] OGRID No.	[8] Operator Name	[9] Elevation
28327	ENCANA OIL & GAS (USA) INC.	6931'

[10] Surface Location

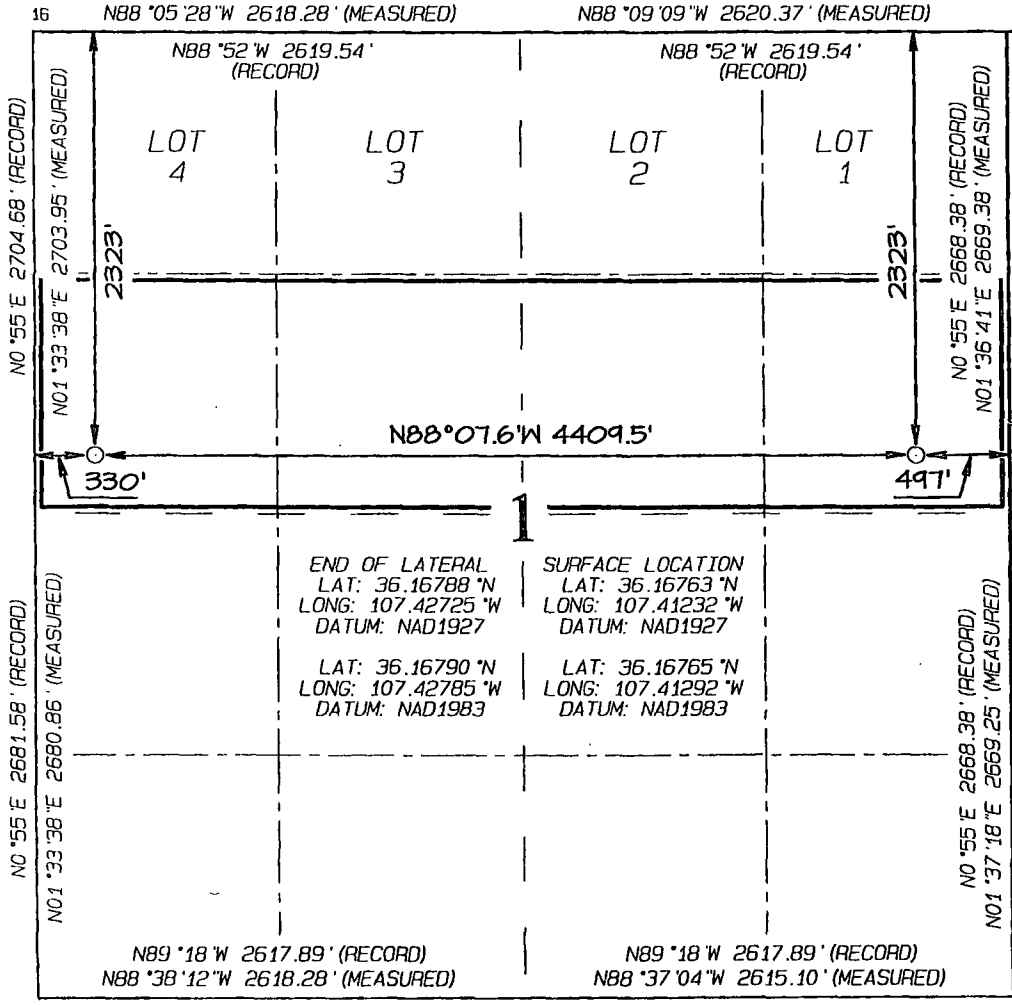
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	1	22N	6W		2323	NORTH	497	EAST	SANDOVAL

[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
E	1	22N	6W		2323	NORTH	330	WEST	SANDOVAL

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160.0 Acres - (S/2 N/2)			

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



[17] OPERATOR CERTIFICATION

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

Brenda L. Linster 05.21

Signature Date

Brenda R. Linster, Regulatory Advisor

Printed Name

brenda.linster@encana.com

E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date of Survey: JANUARY 4, 2012

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS

Certificate Number 15269

SHEET A

Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Encana Oil & Gas (USA) Inc. Lybrook H01-2206 01H

2323' FNL & 497' FEL, Section 1, T22N, R6W, N.M.P.M., Sandoval County, NM

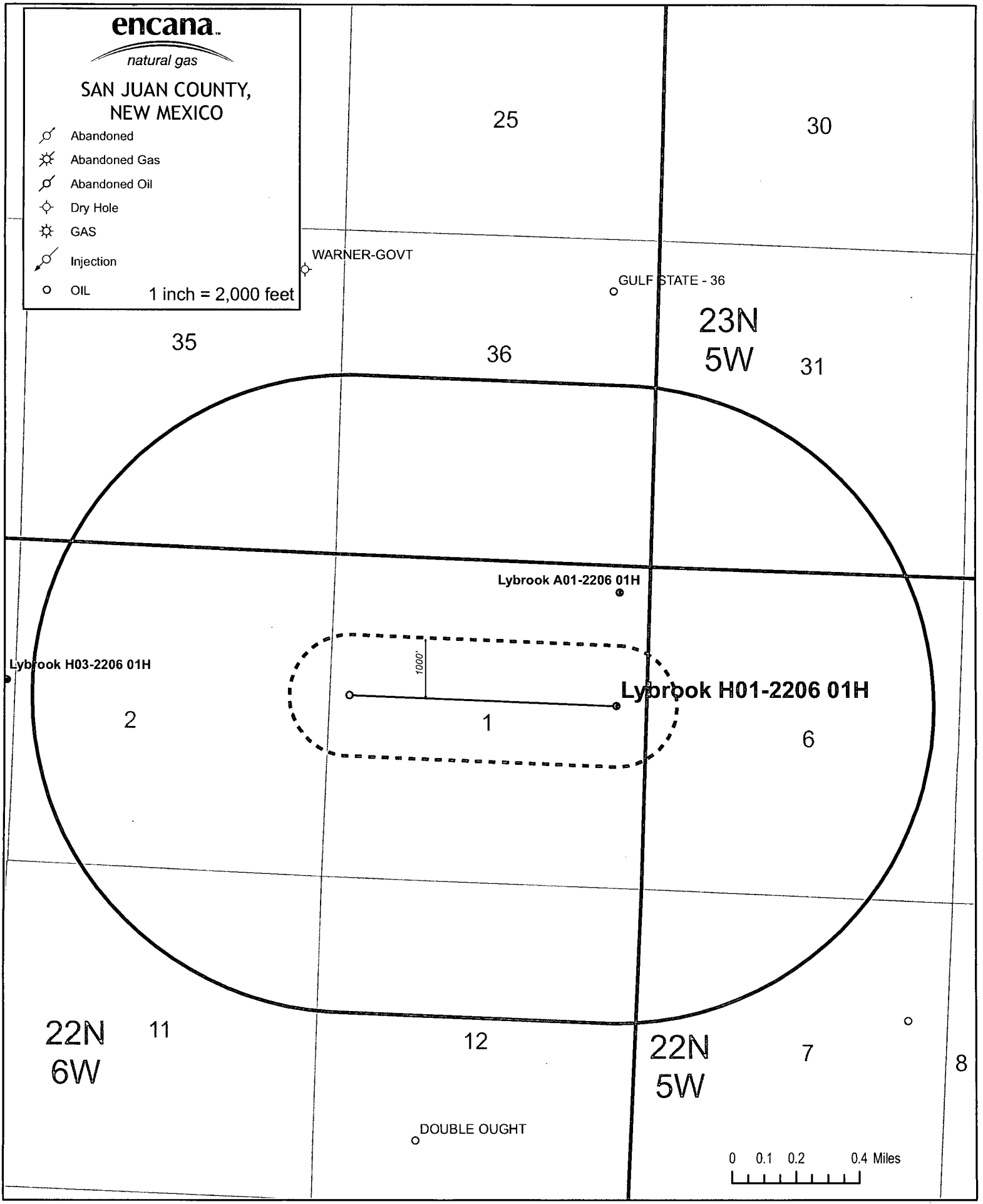
Latitude: 36.16765°N Longitude: 107.41292°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.6 miles to Mile Marker 97.7;

Go right (South-casterly) for 3.3 miles to an unimproved roadway;

Go left (South-easterly) along unimproved roadway for 12,105' to fork in proposed roadway;

Go left (Northerly) for an additional 7,365' along proposed roadway to staked Encana Lybrook H01-2206 01H location.


encana
natural gas
SAN JUAN COUNTY,
NEW MEXICO
Abandoned
Abandoned Gas
Abandoned Oil
Dry Hole
GAS
Injection
OIL
1 inch = 2,000 feet
25
30
WARNER-GOVT
GULF STATE - 36
23N
5W
35
36
31
Lybrook A01-2206 01H
Lybrook H03-2206 01H
1000'
Lybrook H01-2206 01H
2
1
6
22N
6W
11
12
22N
5W
7
8
DOUBLE OUGHT
0 0.1 0.2 0.4 Miles

SHEET D

Lybrook H01-2206 01H
SHL: SENE Section 1, T22N, R6W
2323 FNL and 497 FEL
BHL: SWNW Section 1, T22N, R6W
2323 FNL and 330 FWL
Sandoval County, New Mexico
Lease Number: NM NM 109385

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)
Ojo Alamo Ss.	1362'
Kirtland	1491'
Fruitland Coal	1579'
Pictured Cliffs	1880'
Lewis	2004'
Cliffhouse	2677'
Menefee	3443'
Point Lookout	4111'
Mancos	4314'
Gallup	5151'

The referenced surface elevation is 6931', KB 6944'

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

Substance	Formation	Depth (TVD)
Gas	Fruitland Coal	1579'
Gas	Pictured Cliffs	1880'
Gas	Cliffhouse	2677'
Gas	Point Lookout	4111'
Oil/Gas	Mancos	4314'

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 either 70 percent of the casings internal yield pressure or 100 percent of rated working pressure.
f) Pressure tests are required before drilling out from under all casing strings set and cemented in place.
g) BOP controls must be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
h) BOP testing procedures and testing frequency will conform to Onshore Order No. 2.
i) BOP remote controls shall be located on the rig floor at a location readily accessible to the driller. Master controls shall be on the ground at the accumulator and shall have the capability to function all preventers.

j) The kill line shall be 2-inch minimum and contain two kill line valves, one of which shall be a check valve.
k) The choke line shall be a 2-inch minimum and contain two choke line valves (2-inch minimum).
l) The choke and manifold shall contain two adjustable chokes.
m) Hand wheels shall be installed on all ram preventers.
n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times.
o) Inside BOP or float sub shall also be available on the rig floor at all times.

Proposed BOP and choke manifold arrangements are attached.

4. CASING & CEMENTING PROGRAM

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

a) The proposed casing design is as follows:

Casing	Depth	Hole Size	Csg Size	Weight	Grade
Conductor	0-60'	26"	20"	94#	H40, STC New
Surface	0'-500'	17 1/2"	13 3/8"	48#	H40, STC New
Intermediate	0'-4650'	12 1/4"	9 5/8"	40#	J55, STC New
Production Liner	4450'-9604'	8 1/2"	5 1/2"	17#	B80*, LTC New

Casing String				Casing Strength Properties			Minimum Design Factors		
Size	Weight (lb/ft)	Grade	Connection	Collapse (psi)	Burst (psi)	Tensile (1000lb)	Collapse	Burst	Tension
13 3/8"	48	H40	STC	740	1730	322	1.125	1.1	1.5
9 5/8"	40	J55	STC	2570	3950	452	1.125	1.1	1.5
5 1/2"	17	B80	LTC	6290	7740	320	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.

b) The proposed cementing program is as follows:

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

Lybrook H01-2206 01H
SHL: SENE Section 1, T22N, R6W
2323 FNL and 497 FEL
BHL: SWNW Section 1, T22N, R6W
2323 FNL and 330 FWL
Sandoval County, New Mexico
Lease Number: NM NM 109385

Casing	Depth	Cement Volume (sacks)	Cement Type&Yield	Designed TOC	Centralizers
Conductor	60'	80sk	Redi-mix Construction Grade Cement	Surface	None
Surface	500'	291sk	Type III Cement + 1% CaCl + 0.25lb/sk Cello Flake + 0.2% FL, 14.6ppg, 1.38cuf/sk	Surface	1 per joint on bottom 3 joints
Intermediate	4650'	50% open hole excess Lead:912sk Tail: 182sk	Lead: PremLite + 3% CaCl + 0.25lb/sk CelloFlake + 5lb/sk LCM, 12.1ppg 2.13cuft/sk Tail: Type III Cmt + 1% CaCl + 0.25lb/sk Cello Flake 14.5ppg 1.38cuft/sk	Surface	1 per joint for bottom 3 joints, 1 every 3 joints for remaining joints
Production Liner*	4450'-9604'	None – External casing packers	N/A	N/A	N/A

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

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

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

5. WELL PLAN & DIRECTIONAL DRILLING PROGRAM

The proposed horizontal well will have a kick off point of 4818'. Directional plans are attached.

Description	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	5400'/9604'	Gallup

Lybrook H01-2206 01H
SHL: SENE Section 1, T22N, R6W
2323 FNL and 497 FEL
BHL: SWNW Section 1, T22N, R6W
2323 FNL and 330 FWL
Sandoval County, New Mexico
Lease Number: NM NM 109385

6. DRILLING FLUIDS PROGRAM

a) Vertical Portion

Hole Size (in)	TVD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
26"	0-60'	Fresh Water	8.3-9.2	38-100	4-28
17 1/2"	0-500'	Fresh Water	8.4-8.6	60-70	NC
12 1/4"	500-4650'	Fresh Water LSND	8.5-8.8	40-50	8-10
8 1/2"	4650-4752'	Fresh Water LSND	8.5-8.8	40-50	8-10

b) Kick off to Horizontal Lateral:

Hole Size (in)	MD (ft)	Mud Type	Density (lb/gal)	Viscosity (sec/qt)	Fluid Loss (cc)
8 1/2"	4752' (KOP)-9604'	Synthetic Oil Based Mud	8.6-9.0	15-25	<15

c) There will be sufficient mud on location to control a blowout should one occur. Mud flow and volume will be monitored both visually and with electronic pit volume totalizers. Mud tests shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

d) A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals, including fresh water and oil-based operations. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of at Basin Disposal, Inc. and/or Industrial Ecosystems, Inc. The location will be lined in accordance wit the Surface Use Plan of Operations.

7. TESTING, CORING and LOGGING

a) Drill Stem Testing – None anticipated
b) Coring – None anticipated.
c) Mud Logging – Mud loggers will be on location from intermediate casing 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 +/- 2540 psi based on a 9.0 ppg at 5427' TVD of the landing point of the horizontal lateral. No abnormal pressure or temperatures are anticipated.

No hydrogen sulfide gas is anticipated, however, if H_2S is encountered, the guidelines in Onshore Order No. 6 will be followed.

9. ANTICIPATED START DATE AND DURATION OF OPERATIONS

Drilling is estimated to commence on September 1, 2012. 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 45 days.

LOC: Sec 1-T22N-R6W County: Sandoval WELL: Lybrook H01-2206-#01H	**Encana Natural Gas** **New Mexico Mancos Test** **WELL SUMMARY**	encana natural gas	ENG: J. Fox/ A. 4/18/12 RIG: GLE: 6931 RKBE:

MWD LWD	OPEN HOLE LOGGING	FORM	DEPTH TVD	DEPTH MD	HOLE SIZE	CASING SPECS	MW MUD TYPE	DEVIATION INFORMATION
			60	60'	26	**20" 94#** 80sx Type I Neat 48.8ppg cmt	Fresh wtr 8.3-9.2	
Surveys After csg is run	None	Ojo Alamo Kirtland Shale	1,362 1,491		17 1/2	**13 3/8" 48ppf H40 STC**	Fresh wtr 8.4-8.6	Vertical <1°
			500	**500**		TOC @ surface		
Surveys every 500'	No OH logs	Fruitland Coal Pictured Cliffs Ss Lewis Shale Cliffhouse Ss Menefee Fn Point Lookout Ss	1579 1880 2004 2677 3443 4111		12 1/4	**9 5/8" 40ppf J55 STC**	Fresh Wtr 8.5-8.8	Vertical <1°
	Mud logger onsite	Mancos Sh	4314 **4650**	**4650**		TOC @ surface		
Surveys every 500' Gyro at CP MWD Gamma Directional	No OH Logs	KICK OFF PT Mancos Silt Gallup Top horz target Base Gallup Juana Lopez Lower Carlile Greenhorn Graneros Dakota Morrison **Pilot TD**	4752 4902 5151 **5427** 5474 5792 5916 6116 6165 6178 6558 **6658**	**5803**	8 1/2	**5 1/2" 17ppf I/L80 LTC** Running external swellable csg packers for isolation of prod string 200' overlap at liner top 3800' Lateral	Fresh Wtr LSND-in pilot 8.5-8.8 Switch to OBM at K/O 8.6-9.0 8.6-9.0 OBM	KOP 4752 10 deg/100' .25deg updip 5400'TVD TD = 9604' MD

NOTES:

1) Drill with 26" bit to 60', set 20" 94# conductor pipe
2) Drill surface to 500', R&C 13 3/8" casing
3) N/U BOP and surface equipment
4) Drill to 4650' , 12 1/4" hole size
5) R&C 9 5/8" casing, circ cmt 50' into sur csg shoe
6) Drill 8 1/2" hole to KOP, switch to OBM
7) PU directional tools and start curve at 10deg/100' build rate
8)If drill curve without hole issues, omit contingent csg string and proceed with 8 1/2 bit to landing depth
9)Land at 90deg, drill 3800' lateral to 9604', run 5 1/2" liner with external swellable csg packers

Boomerang Tube LLC

CASING (OR) TUBING DESCRIPTION AND PERFORMANCE PROPERTIES

Pipe Outside Diameter (ins)	5.500
Pipe Wall Thickness (ins)	0.304
Nominal Weight Per Foot (lbs)	17.00
Thread Name	Long Thread CSG
Grade Name	B-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)	6.050
Drift Diameter (ins)	4.767
Plain End Weight per Foot (lbs)	16.89
Joint Strength (lbs)	320,000
Internal Yield (psi)	7,740
Collapse Rating (psi)	6,290

MAXIMUM DEPTH/LENGTH BASED ON MUD WTS & SAFETY FACTORS

Drilling Mud Weight (ppg)	9.625
Tension Safety Factor	1.80
Maximum Tension Length (ft)	10,460
Internal Yield Safety Factor	1.10
Maximum Depth for Internal Yield (ft)	14,070
Collapse Safety Factor	1.125
Maximum Collapse Depth (ft)	11,180

API RELATED VALUES and INTERMEDIATE CALCULATION RESULTS

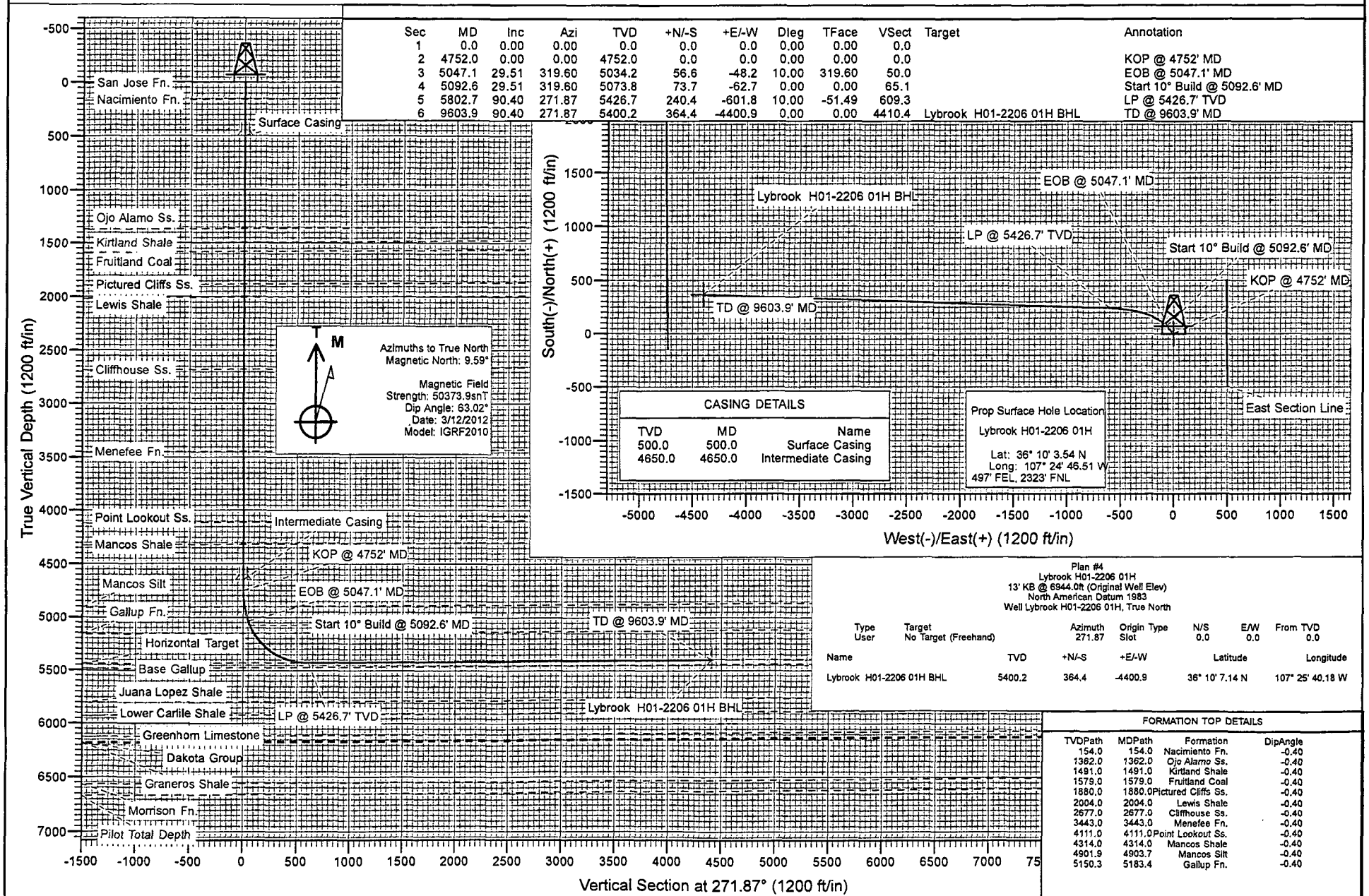
Coupling Thread Fracture Strength	633,000
Pipe Thread Fracture Strength (lbs)	320,000
Pipe Body Plain End Yield (lbs)	397,000
Round Thread Pull-Out (lbs)	335,000
Minimum Make-up Torque (ft-lbs)	2,510
Nominal Make-up Torque (ft-lbs)	3,350
Maximum Make-up Torque (ft-lbs)	4,190
Coupling Internal Yield (psi)	9,880
Pipe Body Internal Yield (psi)	7,740
Leak @ E1 or E7 plane (psi)	13,160
Pipe Hydrostatic Test Pressure @ 80 % SMYS	7,100

encana™ natural gas

Project: Sandoval County, NM
Site: Lybrook
Well: Lybrook H01-2206 01H
Wellbore: HZ
Design: Plan #4

CATHEDRAL

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4752.0	0.00	0.00	4752.0	0.0	0.0	0.00	0.00	0.0		KOP @ 4752' MD
3	5047.1	29.51	319.60	5034.2	56.6	-48.2	10.00	319.60	50.0		EOB @ 5047.1' MD
4	5092.6	29.51	319.60	5073.8	73.7	-62.7	0.00	0.00	65.1		Start 10° Build @ 5092.6' MD
5	5802.7	90.40	271.87	5426.7	240.4	-601.8	10.00	-51.49	609.3		LP @ 5426.7' TVD
6	9603.9	90.40	271.87	5400.2	364.4	-4400.9	0.00	0.00	4410.4	Lybrook H01-2206 01H BHL	TD @ 9603.9' MD



CASING DETAILS

TVD	MD	Name
500.0	500.0	Surface Casing
4650.0	4650.0	Intermediate Casing

Prop Surface Hole Location
Lybrook H01-2206 01H
Lat: 36° 10' 3.54 N
Long: 107° 24' 46.51 W
497' FEL, 2323' FNL

Plan #4
Lybrook H01-2206 01H
13' KB @ 6944.0ft (Original Well Elev)
North American Datum 1983
Well Lybrook H01-2206 01H, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
User	No Target (Freehand)	271.87	Slot	0.0	0.0	0.0

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Lybrook H01-2206 01H BHL	5400.2	364.4	-4400.9	36° 10' 7.14 N	107° 25' 40.18 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle
154.0	154.0	Nacimiento Fn.	-0.40
1362.0	1362.0	Ojo Alamo Ss.	-0.40
1491.0	1491.0	Kirtland Shale	-0.40
1579.0	1579.0	Fruitland Coal	-0.40
1880.0	1880.0	Pictured Cliffs Ss.	-0.40
2004.0	2004.0	Lewis Shale	-0.40
2677.0	2677.0	Cliffhouse Ss.	-0.40
3443.0	3443.0	Menefee Fn.	-0.40
4111.0	4111.0	Point Lookout Ss.	-0.40
4314.0	4314.0	Mancos Shale	-0.40
4901.9	4903.7	Mancos Silt	-0.40
5150.3	5183.4	Gallup Fn.	-0.40

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook H01-2206 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	13' KB @ 6944.0ft (Original Well Elev)
Project:	Sandoval County, NM	**MD Reference:**	13' KB @ 6944.0ft (Original Well Elev)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook H01-2206 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Project Sandoval County, NM

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site Lybrook

Site Position:		**Northing:**	1,882,676.45 ft	**Latitude:**	36° 10' 5.56 N
From:	Lat/Long	**Easting:**	1,287,068.90 ft	**Longitude:**	107° 26' 49.74 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	-0.71 °

Well Lybrook H01-2206 01H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,882,349.77 ft	**Latitude:**	36° 10' 3.54 N
	+E/-W	0.0 ft	**Easting:**	1,297,170.23 ft	**Longitude:**	107° 24' 46.51 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,931.0 ft

Wellbore HZ

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2012	9.59	63.02	50,374

Design Plan #4

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	271.87

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,752.0	0.00	0.00	4,752.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,047.1	29.51	319.60	5,034.2	56.6	-48.2	10.00	10.00	0.00	319.60	
5,092.6	29.51	319.60	5,073.8	73.7	-62.7	0.00	0.00	0.00	0.00	
5,802.7	90.40	271.87	5,426.7	240.4	-601.8	10.00	8.57	-6.72	-51.49	
9,603.9	90.40	271.87	5,400.2	364.4	-4,400.9	0.00	0.00	0.00	0.00	Lybrook H01-2206 01

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Lybrook H01-2206 01H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	13' KB @ 6944.0ft (Original Well Elev)
Project:	Sandoval County, NM	**MD Reference:**	13' KB @ 6944.0ft (Original Well Elev)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook H01-2206 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
154.0	0.00	0.00	154.0	0.0	0.0	0.0	0.00	0.00	Nacimiento Fn.
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	Surface Casing
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	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	
1,362.0	0.00	0.00	1,362.0	0.0	0.0	0.0	0.00	0.00	Ojo Alamo Ss.
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,491.0	0.00	0.00	1,491.0	0.0	0.0	0.0	0.00	0.00	Kirtland Shale
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,579.0	0.00	0.00	1,579.0	0.0	0.0	0.0	0.00	0.00	Fruitland Coal
1,600.0	*0.00*	*0.00*	*1,600.0*	*0.0*	*0.0*	*0.0*	*0.00*	*0.00*	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	Pictured Cliffs Ss.
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	
2,004.0	0.00	0.00	2,004.0	0.0	0.0	0.0	0.00	0.00	Lewis Shale
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,677.0	0.00	0.00	2,677.0	0.0	0.0	0.0	0.00	0.00	Cliffhouse Ss.
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,443.0	0.00	0.00	3,443.0	0.0	0.0	0.0	0.00	0.00	Menefee Fn.
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	
4,111.0	0.00	0.00	4,111.0	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	

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Project:	Sandoval County, NM	**MD Reference:**	13' KB @ 6944.0ft (Original Well Elev)
Site:	Lybrook	**North Reference:**	True
Well:	Lybrook H01-2206 01H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #4		

Planned Survey

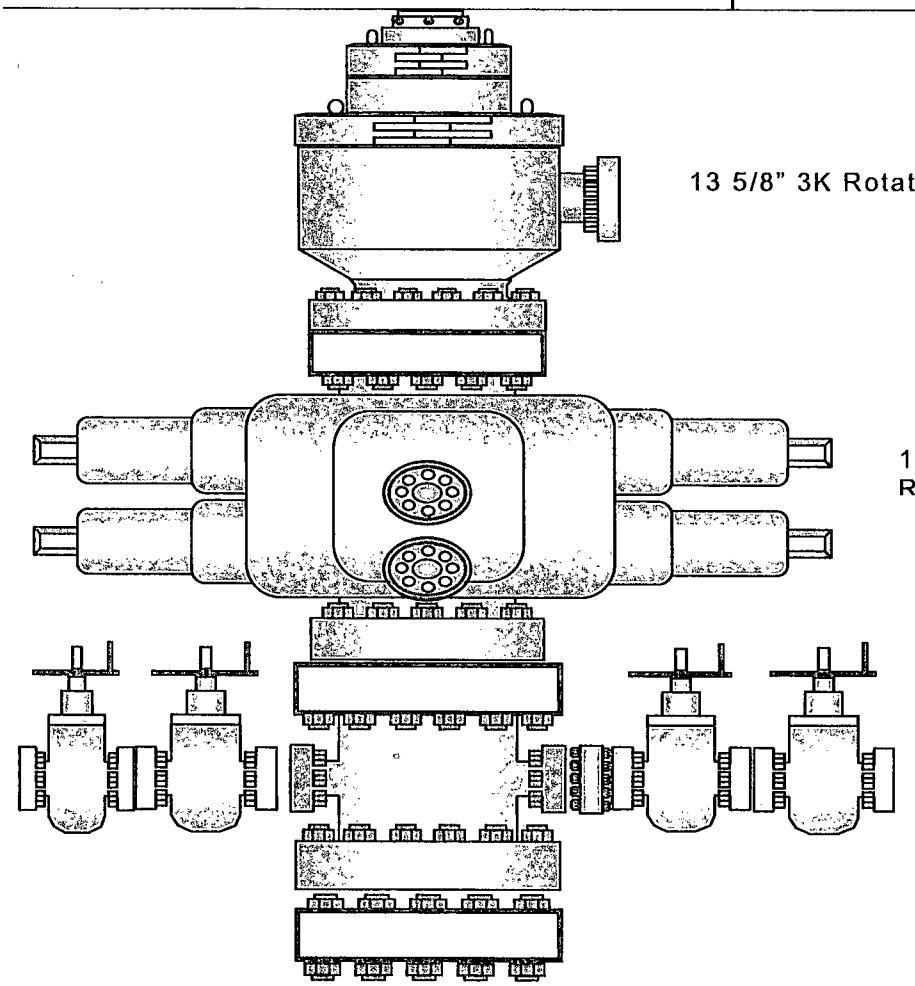
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,314.0	0.00	0.00	4,314.0	0.0	0.0	0.0	0.00	0.00	Mancos Shale
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,650.0	0.00	0.00	4,650.0	0.0	0.0	0.0	0.00	0.00	Intermediate Casing
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,752.0	0.00	0.00	4,752.0	0.0	0.0	0.0	0.00	0.00	KOP @ 4752' MD
4,800.0	4.80	319.60	4,799.9	1.5	-1.3	1.4	10.00	10.00	
4,900.0	14.80	319.60	4,898.4	14.5	-12.3	12.8	10.00	10.00	
4,903.7	15.17	319.60	4,901.9	15.2	-12.9	13.4	10.00	10.00	Mancos Silt
5,000.0	24.80	319.60	4,992.3	40.2	-34.2	35.5	10.00	10.00	
5,047.1	29.51	319.60	5,034.2	56.6	-48.2	50.0	10.00	10.00	EOB @ 5047.1' MD
5,092.6	29.51	319.60	5,073.8	73.7	-62.7	65.1	0.00	0.00	Start 10° Build @ 5092.6' MD
5,100.0	29.98	318.43	5,080.2	76.4	-65.1	67.6	10.00	6.30	
5,183.4	35.81	307.41	5,150.3	106.9	-98.4	101.8	10.00	7.00	Gallup Fn.
5,200.0	37.08	305.60	5,163.7	112.8	-106.3	109.9	10.00	7.61	
5,300.0	45.15	296.59	5,239.0	146.3	-162.7	167.3	10.00	8.08	
5,400.0	53.76	289.87	5,304.0	175.9	-232.5	238.1	10.00	8.61	
5,500.0	62.67	284.51	5,356.6	200.8	-313.6	320.0	10.00	8.91	
5,600.0	71.75	279.96	5,395.3	220.2	-403.6	410.6	10.00	9.08	
5,700.0	80.93	275.86	5,419.0	233.5	-499.7	507.1	10.00	9.18	
5,800.0	90.15	271.98	5,426.7	240.3	-599.1	606.6	10.00	9.22	
5,802.7	90.40	271.87	5,426.7	240.4	-601.8	609.3	10.00	9.23	LP @ 5426.7' TVD
5,900.0	90.40	271.87	5,426.0	243.5	-699.0	706.6	0.00	0.00	
6,000.0	90.40	271.87	5,425.3	246.8	-799.0	806.6	0.00	0.00	
6,100.0	90.40	271.87	5,424.6	250.1	-898.9	906.6	0.00	0.00	
6,200.0	90.40	271.87	5,423.9	253.3	-998.8	1,006.6	0.00	0.00	
6,300.0	90.40	271.87	5,423.2	256.6	-1,098.8	1,106.6	0.00	0.00	
6,400.0	90.40	271.87	5,422.5	259.9	-1,198.7	1,206.6	0.00	0.00	
6,500.0	90.40	271.87	5,421.8	263.1	-1,298.7	1,306.6	0.00	0.00	
6,600.0	90.40	271.87	5,421.2	266.4	-1,398.6	1,406.6	0.00	0.00	
6,700.0	90.40	271.87	5,420.5	269.6	-1,498.6	1,506.6	0.00	0.00	
6,800.0	90.40	271.87	5,419.8	272.9	-1,598.5	1,606.6	0.00	0.00	
6,900.0	90.40	271.87	5,419.1	276.2	-1,698.5	1,706.6	0.00	0.00	
7,000.0	90.40	271.87	5,418.4	279.4	-1,798.4	1,806.6	0.00	0.00	
7,100.0	90.40	271.87	5,417.7	282.7	-1,898.3	1,906.6	0.00	0.00	
7,200.0	90.40	271.87	5,417.0	286.0	-1,998.3	2,006.6	0.00	0.00	
7,300.0	90.40	271.87	5,416.3	289.2	-2,098.2	2,106.6	0.00	0.00	
7,400.0	90.40	271.87	5,415.6	292.5	-2,198.2	2,206.6	0.00	0.00	
7,500.0	90.40	271.87	5,414.9	295.7	-2,298.1	2,306.6	0.00	0.00	
7,600.0	90.40	271.87	5,414.2	299.0	-2,398.1	2,406.5	0.00	0.00	
7,700.0	90.40	271.87	5,413.5	302.3	-2,498.0	2,506.5	0.00	0.00	
7,800.0	90.40	271.87	5,412.8	305.5	-2,598.0	2,606.5	0.00	0.00	
7,900.0	90.40	271.87	5,412.1	308.8	-2,697.9	2,706.5	0.00	0.00	
8,000.0	90.40	271.87	5,411.4	312.1	-2,797.8	2,806.5	0.00	0.00	
8,100.0	90.40	271.87	5,410.7	315.3	-2,897.8	2,906.5	0.00	0.00	
8,200.0	90.40	271.87	5,410.0	318.6	-2,997.7	3,006.5	0.00	0.00	
8,300.0	90.40	271.87	5,409.3	321.9	-3,097.7	3,106.5	0.00	0.00	
8,400.0	90.40	271.87	5,408.6	325.1	-3,197.6	3,206.5	0.00	0.00	
8,500.0	90.40	271.87	5,407.9	328.4	-3,297.6	3,306.5	0.00	0.00	
8,600.0	90.40	271.87	5,407.2	331.6	-3,397.5	3,406.5	0.00	0.00	

WELLHEAD BLOWOUT CONTROL SYSTEM

encana
natural gas

Well name and number:

Lybrook H01-2206 01H



13 5/8" 3K Rotating Head

13 5/8" 3K Double (Blind/Pipe) Ram

3K Mud Cross 3" gate valves