

RECEIVED

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Fannington Field Office
Bureau of Land Management

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

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

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☒ Oil Well

☐ Gas Well

☐ Other

OIL CONS. DIV DIST. 3

2. Name of Operator

WPX Energy Production, LLC

3a. Address

PO Box 640 Aztec, NM 87410

3b. Phone No. (include area code)

505-333-1816

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

SHL: 1311' FSL & 2284' FEL, Sec 7, T23N, R8W

BHL: 330' FSL & 1985' FEL, Sec 17, T23N, R8W

5. Lease Serial No.

N0G14011867

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.
NMNM 135216A

8. Well Name and No.

W Lybrook Unit 746H

9. API Well No.

30-045-35751

10. Field and Pool or Exploratory Area

Lybrook Mancos W

11. Country or Parish, State

San Juan, NM

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

TYPE OF SUBMISSION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☒ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Hydraulic Fracturing

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

TYPE OF ACTION

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water ShutOff

☐ Well Integrity

☐ Other

Change in

Plans

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

WPX Energy requests a change in plans to shift the POE/BHL Lateral to the Southwest per attached C102, ops and directional plans.

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

Lacey Granillo

Title Permit Tech III

Signature

Date 7/11/17

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

PE

Date

7/12/17

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

Office

FPO

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.

NMOCD

ADHERE TO PREVIOUS NMOCD
CONDITIONS OF APPROVAL

13

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

Form C-102
Revised August 1, 2011

Submit one copy to
Appropriate District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Drive
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-35751		*Pool Code 98157	*Pool Name LYBROOK MANCOS W
*Property Code 315250	*Property Name W LYBROOK UNIT		*Well Number 746H
*OGRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 6778'

¹⁰ Surface Location

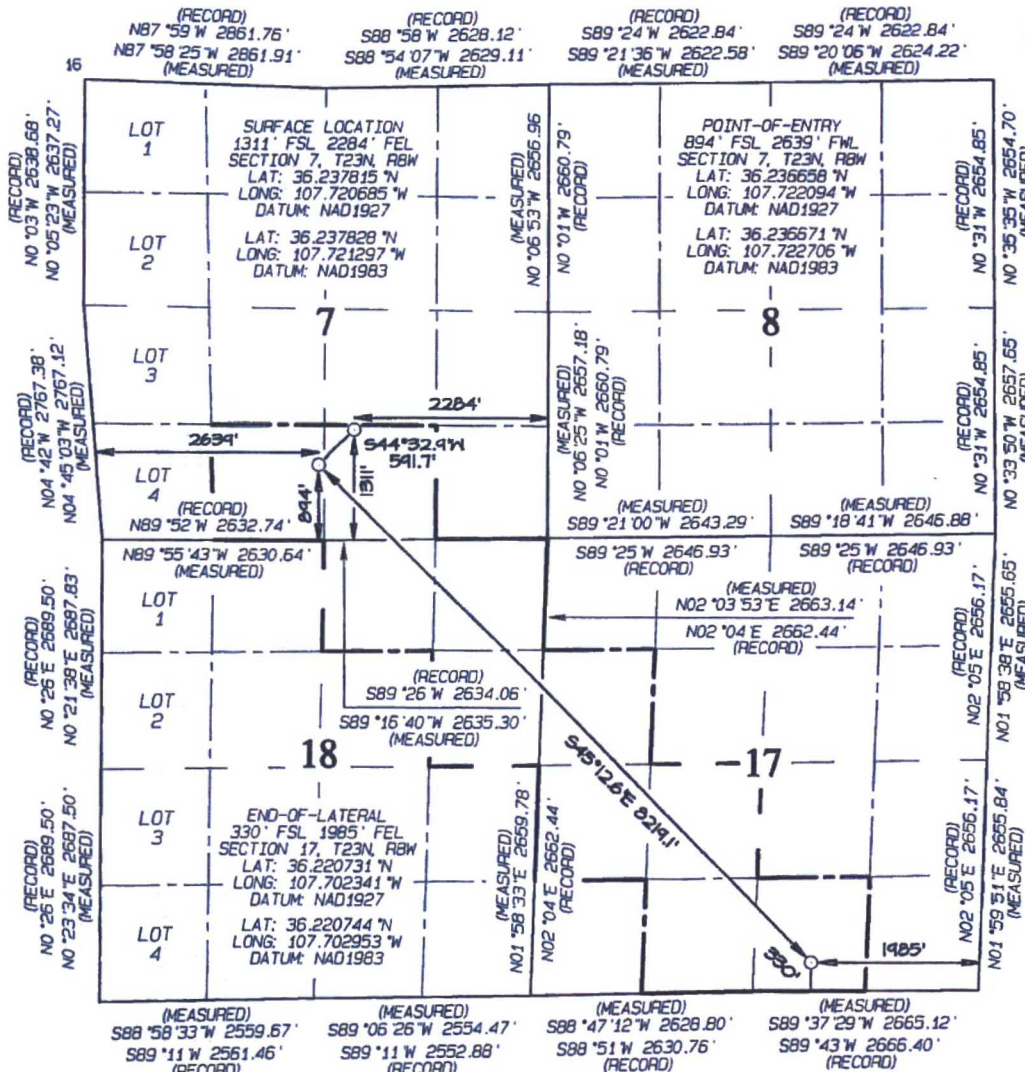
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	7	23N	8W		1311	SOUTH	2284	EAST	SAN JUAN

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
0	17	23N	8W		330	SOUTH	1985	EAST	SAN JUAN

¹² Dedicated Acres 400.00 SW/4 NW/4, N/2 SW/4 SE/4 SW/4, SW/4 SE/4 - Section 17 N/2 NE/4, SE/4 NE/4 - Section 18 SE/4 SW/4, SW/4 SE/4 - Section 7	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. R-14051 - 12,807.24 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



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.

Signature: *Lacey Granillo* Date: 7/11/17

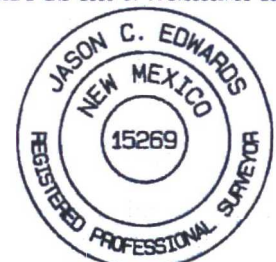
Printed Name: Lacey Granillo
E-mail Address: lacey.granillo@wpxenergy.com

¹⁸ SURVEYOR CERTIFICATION

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

Date Revised: JULY 11, 2017
Date of Survey: MAY 15, 2015

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



WPX Energy

Operations Plan

(Note: This procedure will be adjusted onsite based upon actual conditions)

<u>Date:</u>	July 11, 2017	<u>Field:</u>	Lybrook Mancos W
<u>Well Name:</u>	W Lybrook Unit #746H	<u>Surface:</u>	IA
<u>SH Location:</u>	SWSE Sec 7-23N-08W	<u>Elevation:</u>	6778' GR
<u>BH Location:</u>	SWSE Sec 17-23N-08W	<u>Minerals:</u>	FED

Measured Depth: 13908.19'

I. GEOLOGY: SURFACE FORMATION - NACIMIENTO

A. FORMATION TOPS (KB)

NAME	MD	TVD	NAME	MD	TVD
OJO ALAMO	763	763	POINT LOOKOUT	3,847	3,750
KIRTLAND	973	971	MANCOS	4,041	3,937
PICTURED CLIFFS	1,359	1,347	GALLUP	4,402	4,286
LEWIS	1,474	1,458	KICKOFF POINT	4,394	4,279
CHACRA	1,742	1,717	TOP TARGET	5,326	5,013
CLIFF HOUSE	2,855	2,792	LANDING POINT	5,540	5,047
MENEFEE	2,906	2,841	BASE TARGET	5540	5047
			TD	13908	4987

B. MUD LOGGING PROGRAM: Mudlogger on location from surface csg to TD.

C. LOGGING PROGRAM: LWD GR from surface casing to TD.

D. NATURAL GAUGES: Gauge any noticeable increases in gas flow. Record all gauges in Tour book and on morning reports.

II. DRILLING

A. **MUD PROGRAM:** LSND mud (WBM) will be used to drill the 12-1/4" Surface hole, the 8 3/4" Directional Vertical hole, and the curve portion of the wellbore. A LSND (WBM) or (OBM) will be used to drill the lateral portion of well. Treat for lost circulation as necessary. Obtain 100% returns prior to cementing. Notify Engineering of any mud losses.

B. **BOP TESTING:** While drill pipe is in use, the pipe rams and the blind rams will be function tested once each trip. The anticipated reservoir is expected to be less than 1300 psi, so the BOPE will be tested to **250 psi (Low) for 5 minutes** and **1500 psi (High) for 10 minutes**. Pressure test surface casing to **600 psi for 30 minutes** and intermediate casing to **1500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. The drum brakes will be inspected and tested each tour. **All tests and inspections will be recorded in the tour book as to time and results.**

III. MATERIALS

A. CASING PROGRAM:

CASING TYPE	OH SIZE (IN)	DEPTH (MD)	CSG SIZE	WEIGHT	GRADE	CONN
SURFACE	12.25"	320.00'	9.625"	36 LBS	J-55 or equiv	STC
INTERMEDIATE	8.75"	5539.57'	7"	23 LBS	J-55 or equiv	LTC
PRODUCTION	6.125"	5389.57' - 13908.19'	4.5"	11.6 LBS	P-110 or equiv	LTC
TIE BACK	6.125"	Surf. - 5389.57'	4.5"	11.6 LBS	P-110 or equiv	LTC

B. FLOAT EQUIPMENT:

1. SURFACE CASING: 9-5/8" notched regular pattern guide shoe. Run (1) standard centralizer on each of the bottom (4) joints of Surface Casing.

2. INTERMEDIATE CASING: 7" cement nose guide shoe with a self-fill insert float. Place float collar one joint above the shoe. Install (1) centralizer on each of the bottom (3) joints and one standard centralizer every (3) joints to 2,500 ft. Run (1) centralizer at 2,500 ft., 2,300ft., 2,000ft., 1,500 ft., and 1,000 ft. **A DV tool will be placed 100' above the top of the Chacra formation. If cement is circulated back to surface on the first stage, a cancelation device will be dropped to shift the dv tool closed and the 2nd stage cement job will be aborted at that time.**

3. PRODUCTION LINER: Run 4-1/2" Liner with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Landing Collar + 4-1/2" pup joint + 1 RSI (Sliding Sleeve) positioned inside the 330ft Hard line. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers. Set seals on Liner Hanger. Test TOL to 1500 psi for 15 minutes.

C. CEMENTING:

(Note: Volumes may be adjusted onsite due to actual conditions)

1. Surface 5 bbl Fresh Water Spacer, 100 sx (160 cu.ft.) of 14.5 ppg Type I-II (Neat G) + 20% Fly Ash cement w/ 7.41 gal/sack mix water ratio @ 1.61 cu ft/sx yield. Calculated @ volume + 50% excess. WOC 12 hours. Test csg to 600psi. Total Volume: (160 cu-ft/100 sx/ Bbls).TOC at Surface.

2. Intermediate STAGE 1: Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 107 bbls, 306 sks, (603 cuft), 12.3 ppg @ 1.97 cuft/sk yield. Tail Cement: 88 bbls, 381 sks, (496 cuft), 13.5 ppg @ 1.3 cuft/sk yield. Displacement: Displace w/ +/- 218 bbl Drilling mud or water.
Total Cement: 196 bbls, 687 sks, (1099 cuft)
STAGE 2: Spacer #1: 20 bbl (112 cuft) Chemwash. Lead Cement: 37 bbls, 106 sks, (206 cuft), 12.3 ppg @ 1.97 cuft/sk yield. Tail Cement: 16 bbls, 78 sks, (90 cuft), 13.5 ppg @ 1.3 cuft/sk yield. Displacement: Displace w/ +/- 65 bbl Drilling mud or water.
Total Cement: 53 bbls, 184 sks, (296 cuft)

3. PROD. LINER: Spacer #1:10 bbl (56.cu-ft) Water Spacer. Spacer #2: 40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III. Spacer #3: 10 bbl Water Spacer. Lead Cement: Extencem™ System. Yield 1.36 cuft/sk 13.3 ppg (835 sx /1135 cuft /202 bbls). Tail Spacer: 20 BBL of MMCR.
Displacement: Displace w/ +/- 140 bbl Fr Water. Total Cement (835 sx /1135bbls).

I.
COMPLETION

A. **CBL**

Run CCL for perforating

A. **PRESSURE TEST**

1. Pressure test 4-1/2" casing to 4500 psi max, hold at 1500 psi for 30 minutes. Increase pressure to Open RSI sleeves.

B. **STIMULATION**

1. Stimulate with approximately 2,805,000# 20/40 mesh sand and 340,000# 16/30 mesh sand in 619,113 gallons water with 42,696 mscf N2 for 17 stages.
2. Isolate stages with flow through frac plug.
3. Drill out frac plugs and flowback lateral.

C. **RUNNING TUBING**

1. Production Tubing: Run 2-7/8", 6.5#, J-55, EUE tubing with a SN on top of bottom joint. Land tubing near Top of Liner.

- Although this horizontal well will be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 B(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 B(2) NMAC, 19.15.16.15 B(2) NMAC, and 19.15.16.15. B(4) NMAC.

NOTE:

Proposed Operations:

A 4-1/2" 11.6# P-110 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# J-55 Intermediate casing with a Liner Hanger and pack-off assembly then cemented to top of liner hanger.

After cementing and TOL clean up operations are complete, the TOL will be tested to 1500 psi (per BLM).

WPX Energy

T23N R8W

W Lybrook 705 Pad

W Lybrook 746H

API: 30-045-35751

Wellbore #1

Plan: Plan #3

Standard Planning Report - Geographic

06 July, 2017



www.scientificdrilling.com



Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Project	T23N R8W		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico West 3003		

Site		W Lybrook 705 Pad			
Site Position:		Northing:	1,905,858.53 usft	Latitude:	36.237905
From:	Lat/Long	Easting:	533,270.53 usft	Longitude:	-107.720515
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.07 °

Well	W Lybrook 746H					
Well Position	+N/-S	0.00 usft	Northing:	1,905,825.71 usft	Latitude:	36.237815
	+E/-W	0.00 usft	Easting:	533,220.43 usft	Longitude:	-107.720685
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,778.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	7/6/2017	9.00	62.88	49,664

Design	Plan #3			
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	134.84

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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,249.97	15.00	282.80	1,241.43	21.63	-95.18	2.00	2.00	0.00	282.80	
4,394.24	15.00	282.80	4,278.57	201.97	-888.71	0.00	0.00	0.00	0.00	
5,539.57	90.41	134.84	5,047.00	-317.23	-522.71	9.00	6.58	-12.92	-147.00	
13,908.19	90.41	134.84	4,987.00	-6,218.36	5,410.84	0.00	0.00	0.00	0.00	WL746H BHL

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
100.00	0.00	0.00	100.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
200.00	0.00	0.00	200.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
300.00	0.00	0.00	300.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
400.00	0.00	0.00	400.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
500.00	0.00	0.00	500.00	0.00	0.00	1,905,825.71	533,220.43	36.237815	-107.720685
Start Build 2.00									
600.00	2.00	282.80	599.98	0.39	-1.70	1,905,826.09	533,218.73	36.237816	-107.720691
700.00	4.00	282.80	699.84	1.55	-6.80	1,905,827.25	533,213.62	36.237819	-107.720708
703.17	4.06	282.80	703.00	1.60	-7.02	1,905,827.30	533,213.41	36.237819	-107.720709
Ojo Alamo									
800.00	6.00	282.80	799.45	3.48	-15.30	1,905,829.17	533,205.12	36.237825	-107.720737
865.99	7.32	282.80	865.00	5.17	-22.77	1,905,830.86	533,197.66	36.237829	-107.720762
Kirtland									
900.00	8.00	282.80	898.70	6.18	-27.19	1,905,831.86	533,193.24	36.237832	-107.720777
1,000.00	10.00	282.80	997.47	9.65	-42.44	1,905,835.30	533,177.98	36.237842	-107.720829
1,100.00	12.00	282.80	1,095.62	13.87	-61.05	1,905,839.51	533,159.37	36.237853	-107.720892
1,200.00	14.00	282.80	1,193.06	18.86	-82.98	1,905,844.47	533,137.43	36.237867	-107.720967
1,249.97	15.00	282.80	1,241.43	21.63	-95.18	1,905,847.23	533,125.23	36.237875	-107.721008
Start 3144.27 hold at 1249.97 MD									
1,300.00	15.00	282.80	1,289.76	24.50	-107.81	1,905,850.08	533,112.60	36.237882	-107.721051
1,400.00	15.00	282.80	1,386.35	30.24	-133.04	1,905,855.79	533,087.35	36.237898	-107.721136
1,448.29	15.00	282.80	1,433.00	33.01	-145.23	1,905,858.55	533,075.16	36.237906	-107.721178
Picture Cliffs									
1,500.00	15.00	282.80	1,482.94	35.97	-158.28	1,905,861.50	533,062.11	36.237914	-107.721222
1,535.26	15.00	282.80	1,517.00	37.99	-167.18	1,905,863.51	533,053.21	36.237919	-107.721252
Lewis									
1,600.00	15.00	282.80	1,579.54	41.71	-183.52	1,905,867.20	533,036.86	36.237930	-107.721308
1,700.00	15.00	282.80	1,676.13	47.44	-208.76	1,905,872.91	533,011.62	36.237945	-107.721393
1,759.91	15.00	282.80	1,734.00	50.88	-223.88	1,905,876.33	532,996.50	36.237955	-107.721444
Chacra									
1,800.00	15.00	282.80	1,772.72	53.18	-233.99	1,905,878.61	532,986.38	36.237961	-107.721479
1,900.00	15.00	282.80	1,869.32	58.91	-259.23	1,905,884.32	532,961.13	36.237977	-107.721564
2,000.00	15.00	282.80	1,965.91	64.65	-284.47	1,905,890.03	532,935.89	36.237993	-107.721650
2,100.00	15.00	282.80	2,062.50	70.38	-309.71	1,905,895.73	532,910.64	36.238008	-107.721735
2,200.00	15.00	282.80	2,159.09	76.12	-334.94	1,905,901.44	532,885.40	36.238024	-107.721821
2,300.00	15.00	282.80	2,255.69	81.85	-360.18	1,905,907.14	532,860.16	36.238040	-107.721907
2,400.00	15.00	282.80	2,352.28	87.59	-385.42	1,905,912.85	532,834.91	36.238056	-107.721992
2,500.00	15.00	282.80	2,448.87	93.33	-410.65	1,905,918.56	532,809.67	36.238071	-107.722078
2,600.00	15.00	282.80	2,545.47	99.06	-435.89	1,905,924.26	532,784.42	36.238087	-107.722163
2,700.00	15.00	282.80	2,642.06	104.80	-461.13	1,905,929.97	532,759.18	36.238103	-107.722249
2,800.00	15.00	282.80	2,738.65	110.53	-486.37	1,905,935.68	532,733.94	36.238119	-107.722335
2,900.00	15.00	282.80	2,835.24	116.27	-511.60	1,905,941.38	532,708.69	36.238134	-107.722420
2,905.96	15.00	282.80	2,841.00	116.61	-513.11	1,905,941.72	532,707.19	36.238135	-107.722425
Cliff House									
2,923.56	15.00	282.80	2,858.00	117.62	-517.55	1,905,942.73	532,702.75	36.238138	-107.722440
Menefee									
3,000.00	15.00	282.80	2,931.84	122.00	-536.84	1,905,947.09	532,683.45	36.238150	-107.722506
3,100.00	15.00	282.80	3,028.43	127.74	-562.08	1,905,952.79	532,658.20	36.238166	-107.722591
3,200.00	15.00	282.80	3,125.02	133.47	-587.32	1,905,958.50	532,632.96	36.238182	-107.722677
3,300.00	15.00	282.80	3,221.62	139.21	-612.55	1,905,964.21	532,607.72	36.238198	-107.722762
3,400.00	15.00	282.80	3,318.21	144.94	-637.79	1,905,969.91	532,582.47	36.238213	-107.722848

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,500.00	15.00	282.80	3,414.80	150.68	-663.03	1,905,975.62	532,557.23	36.238229	-107.722934
3,600.00	15.00	282.80	3,511.39	156.41	-688.26	1,905,981.32	532,531.98	36.238245	-107.723019
3,700.00	15.00	282.80	3,607.99	162.15	-713.50	1,905,987.03	532,506.74	36.238261	-107.723105
3,800.00	15.00	282.80	3,704.58	167.89	-738.74	1,905,992.74	532,481.50	36.238276	-107.723190
3,867.73	15.00	282.80	3,770.00	171.77	-755.83	1,905,996.60	532,464.40	36.238287	-107.723248
Point Lookout									
3,900.00	15.00	282.80	3,801.17	173.62	-763.98	1,905,998.44	532,456.25	36.238292	-107.723276
4,000.00	15.00	282.80	3,897.77	179.36	-789.21	1,906,004.15	532,431.01	36.238308	-107.723361
4,048.90	15.00	282.80	3,945.00	182.16	-801.55	1,906,006.94	532,418.66	36.238315	-107.723403
Mancos									
4,100.00	15.00	282.80	3,994.36	185.09	-814.45	1,906,009.85	532,405.77	36.238324	-107.723447
4,200.00	15.00	282.80	4,090.95	190.83	-839.69	1,906,015.56	532,380.52	36.238339	-107.723533
4,300.00	15.00	282.80	4,187.54	196.56	-864.93	1,906,021.27	532,355.28	36.238355	-107.723618
4,394.24	15.00	282.80	4,278.57	201.97	-888.71	1,906,026.64	532,331.49	36.238370	-107.723699
Start DLS 9.00 TFO -147.00 - KOP									
4,399.85	14.58	281.71	4,284.00	202.27	-890.11	1,906,026.95	532,330.09	36.238371	-107.723704
Gallup									
4,400.00	14.57	281.68	4,284.14	202.28	-890.15	1,906,026.95	532,330.05	36.238371	-107.723704
4,450.00	11.12	268.51	4,332.90	203.43	-901.13	1,906,028.09	532,319.07	36.238374	-107.723741
4,500.00	8.69	246.20	4,382.16	201.78	-909.41	1,906,026.43	532,310.79	36.238369	-107.723769
4,550.00	8.21	215.38	4,431.65	197.34	-914.94	1,906,021.98	532,305.26	36.238357	-107.723788
4,600.00	9.98	188.87	4,481.04	190.14	-917.68	1,906,014.78	532,302.53	36.238337	-107.723797
4,611.14	10.60	184.43	4,492.00	188.16	-917.90	1,906,012.81	532,302.31	36.238332	-107.723798
Gallup Upper									
4,650.00	13.12	172.55	4,530.03	180.22	-917.61	1,906,004.87	532,302.61	36.238310	-107.723797
4,700.00	16.88	162.89	4,578.33	167.65	-914.74	1,905,992.30	532,305.50	36.238276	-107.723787
4,750.00	20.92	156.77	4,625.62	152.51	-909.08	1,905,977.16	532,311.18	36.238234	-107.723768
4,800.00	25.12	152.58	4,671.64	134.88	-900.66	1,905,959.54	532,319.61	36.238186	-107.723739
4,850.00	29.40	149.54	4,716.08	114.87	-889.55	1,905,939.54	532,330.75	36.238131	-107.723702
4,900.00	33.73	147.21	4,758.67	92.61	-875.81	1,905,917.30	532,344.52	36.238069	-107.723655
4,934.69	36.76	145.89	4,787.00	75.91	-864.77	1,905,900.62	532,355.58	36.238024	-107.723618
Mancos Lwr									
4,950.00	38.10	145.36	4,799.16	68.23	-859.51	1,905,892.94	532,360.84	36.238003	-107.723600
5,000.00	42.49	143.84	4,837.29	41.90	-840.77	1,905,866.63	532,379.61	36.237930	-107.723536
5,050.00	46.90	142.56	4,872.82	13.75	-819.70	1,905,838.51	532,400.71	36.237853	-107.723465
5,050.26	46.92	142.55	4,873.00	13.60	-819.59	1,905,838.36	532,400.83	36.237852	-107.723464
El Vado									
5,100.00	51.32	141.45	4,905.55	-16.02	-796.43	1,905,808.77	532,424.02	36.237771	-107.723386
5,118.66	52.97	141.07	4,917.00	-27.51	-787.21	1,905,797.29	532,433.25	36.237739	-107.723355
Frac Barrier									
5,120.33	53.12	141.03	4,918.00	-28.54	-786.37	1,905,796.25	532,434.09	36.237737	-107.723352
Mancos Unc									
5,150.00	55.75	140.46	4,935.26	-47.23	-771.10	1,905,777.58	532,449.38	36.237685	-107.723300
5,200.00	60.19	139.58	4,961.77	-79.70	-743.87	1,905,745.15	532,476.65	36.237596	-107.723208
5,210.67	61.13	139.40	4,967.00	-86.77	-737.83	1,905,738.08	532,482.70	36.237577	-107.723187
PS 3									
5,250.00	64.63	138.77	4,984.93	-113.22	-714.90	1,905,711.66	532,505.66	36.237504	-107.723109
5,262.08	65.70	138.59	4,990.00	-121.45	-707.67	1,905,703.44	532,512.91	36.237481	-107.723085
PS2									
5,300.00	69.08	138.02	5,004.58	-147.58	-684.38	1,905,677.33	532,536.22	36.237410	-107.723006

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,327.98	71.57	137.62	5,014.00	-167.11	-666.69	1,905,657.83	532,553.93	36.237356	-107.722946
PS1									
5,350.00	73.52	137.31	5,020.60	-182.58	-652.50	1,905,642.37	532,568.15	36.237313	-107.722898
5,400.00	77.98	136.64	5,032.91	-218.00	-619.44	1,905,606.99	532,601.25	36.237216	-107.722786
5,400.44	78.02	136.63	5,033.00	-218.32	-619.14	1,905,606.67	532,601.55	36.237215	-107.722785
PSA									
5,450.00	82.43	135.99	5,041.41	-253.62	-585.41	1,905,571.41	532,635.31	36.237118	-107.722670
5,500.00	86.89	135.35	5,046.07	-289.22	-550.63	1,905,535.85	532,670.14	36.237021	-107.722552
5,539.57	90.41	134.84	5,047.00	-317.23	-522.71	1,905,507.87	532,698.09	36.236944	-107.722458
Start 8368.63 hold at 5539.57 MD									
5,600.00	90.41	134.84	5,046.57	-359.85	-479.86	1,905,465.31	532,740.99	36.236827	-107.722312
5,686.98	90.41	134.84	5,045.94	-421.18	-418.19	1,905,404.04	532,802.73	36.236658	-107.722103
7"									
5,700.00	90.41	134.84	5,045.85	-430.36	-408.96	1,905,394.87	532,811.97	36.236633	-107.722072
5,800.00	90.41	134.84	5,045.13	-500.88	-338.06	1,905,324.44	532,882.96	36.236439	-107.721832
5,900.00	90.41	134.84	5,044.42	-571.39	-267.15	1,905,254.01	532,953.94	36.236245	-107.721591
6,000.00	90.41	134.84	5,043.70	-641.90	-196.25	1,905,183.58	533,024.93	36.236052	-107.721351
6,100.00	90.41	134.84	5,042.98	-712.42	-125.35	1,905,113.14	533,095.91	36.235858	-107.721110
6,200.00	90.41	134.84	5,042.27	-782.93	-54.45	1,905,042.71	533,166.89	36.235664	-107.720870
6,300.00	90.41	134.84	5,041.55	-853.45	16.46	1,904,972.28	533,237.88	36.235471	-107.720629
6,400.00	90.41	134.84	5,040.83	-923.96	87.36	1,904,901.85	533,308.86	36.235277	-107.720389
6,500.00	90.41	134.84	5,040.11	-994.48	158.26	1,904,831.41	533,379.85	36.235083	-107.720149
6,600.00	90.41	134.84	5,039.40	-1,064.99	229.16	1,904,760.98	533,450.83	36.234889	-107.719908
6,700.00	90.41	134.84	5,038.68	-1,135.51	300.06	1,904,690.55	533,521.81	36.234696	-107.719668
6,800.00	90.41	134.84	5,037.96	-1,206.02	370.97	1,904,620.12	533,592.80	36.234502	-107.719427
6,900.00	90.41	134.84	5,037.25	-1,276.54	441.87	1,904,549.68	533,663.78	36.234308	-107.719187
7,000.00	90.41	134.84	5,036.53	-1,347.05	512.77	1,904,479.25	533,734.77	36.234115	-107.718947
7,100.00	90.41	134.84	5,035.81	-1,417.57	583.67	1,904,408.82	533,805.75	36.233921	-107.718706
7,200.00	90.41	134.84	5,035.10	-1,488.08	654.58	1,904,338.39	533,876.74	36.233727	-107.718466
7,300.00	90.41	134.84	5,034.38	-1,558.60	725.48	1,904,267.95	533,947.72	36.233533	-107.718225
7,400.00	90.41	134.84	5,033.66	-1,629.11	796.38	1,904,197.52	534,018.70	36.233340	-107.717985
7,500.00	90.41	134.84	5,032.94	-1,699.63	867.28	1,904,127.09	534,089.69	36.233146	-107.717745
7,600.00	90.41	134.84	5,032.23	-1,770.14	938.19	1,904,056.66	534,160.67	36.232952	-107.717504
7,700.00	90.41	134.84	5,031.51	-1,840.66	1,009.09	1,903,986.22	534,231.66	36.232758	-107.717264
7,800.00	90.41	134.84	5,030.79	-1,911.17	1,079.99	1,903,915.79	534,302.64	36.232565	-107.717023
7,900.00	90.41	134.84	5,030.08	-1,981.69	1,150.89	1,903,845.36	534,373.63	36.232371	-107.716783
8,000.00	90.41	134.84	5,029.36	-2,052.20	1,221.79	1,903,774.93	534,444.61	36.232177	-107.716543
8,100.00	90.41	134.84	5,028.64	-2,122.72	1,292.70	1,903,704.49	534,515.59	36.231984	-107.716302
8,200.00	90.41	134.84	5,027.93	-2,193.23	1,363.60	1,903,634.06	534,586.58	36.231790	-107.716062
8,300.00	90.41	134.84	5,027.21	-2,263.75	1,434.50	1,903,563.63	534,657.56	36.231596	-107.715821
8,400.00	90.41	134.84	5,026.49	-2,334.26	1,505.40	1,903,493.20	534,728.55	36.231402	-107.715581
8,500.00	90.41	134.84	5,025.77	-2,404.78	1,576.31	1,903,422.77	534,799.53	36.231209	-107.715341
8,600.00	90.41	134.84	5,025.06	-2,475.29	1,647.21	1,903,352.33	534,870.51	36.231015	-107.715100
8,700.00	90.41	134.84	5,024.34	-2,545.81	1,718.11	1,903,281.90	534,941.50	36.230821	-107.714860
8,800.00	90.41	134.84	5,023.62	-2,616.32	1,789.01	1,903,211.47	535,012.48	36.230628	-107.714619
8,900.00	90.41	134.84	5,022.91	-2,686.84	1,859.91	1,903,141.04	535,083.47	36.230434	-107.714379
9,000.00	90.41	134.84	5,022.19	-2,757.35	1,930.82	1,903,070.60	535,154.45	36.230240	-107.714139
9,100.00	90.41	134.84	5,021.47	-2,827.87	2,001.72	1,903,000.17	535,225.44	36.230046	-107.713898
9,200.00	90.41	134.84	5,020.76	-2,898.38	2,072.62	1,902,929.74	535,296.42	36.229853	-107.713658
9,300.00	90.41	134.84	5,020.04	-2,968.90	2,143.52	1,902,859.31	535,367.40	36.229659	-107.713417
9,400.00	90.41	134.84	5,019.32	-3,039.41	2,214.43	1,902,788.87	535,438.39	36.229465	-107.713177
9,500.00	90.41	134.84	5,018.61	-3,109.93	2,285.33	1,902,718.44	535,509.37	36.229271	-107.712937

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,600.00	90.41	134.84	5,017.89	-3,180.44	2,356.23	1,902,648.01	535,580.36	36.229078	-107.712696
9,700.00	90.41	134.84	5,017.17	-3,250.96	2,427.13	1,902,577.58	535,651.34	36.228884	-107.712456
9,800.00	90.41	134.84	5,016.45	-3,321.47	2,498.04	1,902,507.14	535,722.32	36.228690	-107.712216
9,900.00	90.41	134.84	5,015.74	-3,391.99	2,568.94	1,902,436.71	535,793.31	36.228496	-107.711975
10,000.00	90.41	134.84	5,015.02	-3,462.50	2,639.84	1,902,366.28	535,864.29	36.228303	-107.711735
10,100.00	90.41	134.84	5,014.30	-3,533.02	2,710.74	1,902,295.85	535,935.28	36.228109	-107.711494
10,200.00	90.41	134.84	5,013.59	-3,603.53	2,781.64	1,902,225.41	536,006.26	36.227915	-107.711254
10,300.00	90.41	134.84	5,012.87	-3,674.05	2,852.55	1,902,154.98	536,077.25	36.227722	-107.711014
10,400.00	90.41	134.84	5,012.15	-3,744.56	2,923.45	1,902,084.55	536,148.23	36.227528	-107.710773
10,500.00	90.41	134.84	5,011.44	-3,815.08	2,994.35	1,902,014.12	536,219.21	36.227334	-107.710533
10,600.00	90.41	134.84	5,010.72	-3,885.59	3,065.25	1,901,943.68	536,290.20	36.227140	-107.710293
10,700.00	90.41	134.84	5,010.00	-3,956.11	3,136.16	1,901,873.25	536,361.18	36.226947	-107.710052
10,800.00	90.41	134.84	5,009.28	-4,026.62	3,207.06	1,901,802.82	536,432.17	36.226753	-107.709812
10,900.00	90.41	134.84	5,008.57	-4,097.14	3,277.96	1,901,732.39	536,503.15	36.226559	-107.709572
11,000.00	90.41	134.84	5,007.85	-4,167.65	3,348.86	1,901,661.95	536,574.14	36.226365	-107.709331
11,100.00	90.41	134.84	5,007.13	-4,238.17	3,419.76	1,901,591.52	536,645.12	36.226172	-107.709091
11,200.00	90.41	134.84	5,006.42	-4,308.68	3,490.67	1,901,521.09	536,716.10	36.225978	-107.708850
11,300.00	90.41	134.84	5,005.70	-4,379.20	3,561.57	1,901,450.66	536,787.09	36.225784	-107.708610
11,400.00	90.41	134.84	5,004.98	-4,449.71	3,632.47	1,901,380.22	536,858.07	36.225590	-107.708370
11,500.00	90.41	134.84	5,004.27	-4,520.23	3,703.37	1,901,309.79	536,929.06	36.225397	-107.708129
11,600.00	90.41	134.84	5,003.55	-4,590.74	3,774.28	1,901,239.36	537,000.04	36.225203	-107.707889
11,700.00	90.41	134.84	5,002.83	-4,661.26	3,845.18	1,901,168.93	537,071.02	36.225009	-107.707649
11,800.00	90.41	134.84	5,002.12	-4,731.77	3,916.08	1,901,098.49	537,142.01	36.224815	-107.707408
11,900.00	90.41	134.84	5,001.40	-4,802.28	3,986.98	1,901,028.06	537,212.99	36.224622	-107.707168
12,000.00	90.41	134.84	5,000.68	-4,872.80	4,057.89	1,900,957.63	537,283.98	36.224428	-107.706928
12,100.00	90.41	134.84	4,999.96	-4,943.31	4,128.79	1,900,887.20	537,354.96	36.224234	-107.706687
12,200.00	90.41	134.84	4,999.25	-5,013.83	4,199.69	1,900,816.76	537,425.95	36.224040	-107.706447
12,300.00	90.41	134.84	4,998.53	-5,084.34	4,270.59	1,900,746.33	537,496.93	36.223847	-107.706207
12,400.00	90.41	134.84	4,997.81	-5,154.86	4,341.49	1,900,675.90	537,567.91	36.223653	-107.705966
12,500.00	90.41	134.84	4,997.10	-5,225.37	4,412.40	1,900,605.47	537,638.90	36.223459	-107.705726
12,600.00	90.41	134.84	4,996.38	-5,295.89	4,483.30	1,900,535.03	537,709.88	36.223266	-107.705486
12,700.00	90.41	134.84	4,995.66	-5,366.40	4,554.20	1,900,464.60	537,780.87	36.223072	-107.705245
12,800.00	90.41	134.84	4,994.95	-5,436.92	4,625.10	1,900,394.17	537,851.85	36.222878	-107.705005
12,900.00	90.41	134.84	4,994.23	-5,507.43	4,696.01	1,900,323.74	537,922.83	36.222684	-107.704765
13,000.00	90.41	134.84	4,993.51	-5,577.95	4,766.91	1,900,253.30	537,993.82	36.222491	-107.704524
13,100.00	90.41	134.84	4,992.79	-5,648.46	4,837.81	1,900,182.87	538,064.80	36.222297	-107.704284
13,200.00	90.41	134.84	4,992.08	-5,718.98	4,908.71	1,900,112.44	538,135.79	36.222103	-107.704043
13,300.00	90.41	134.84	4,991.36	-5,789.49	4,979.62	1,900,042.01	538,206.77	36.221909	-107.703803
13,400.00	90.41	134.84	4,990.64	-5,860.01	5,050.52	1,899,971.57	538,277.76	36.221716	-107.703563
13,500.00	90.41	134.84	4,989.93	-5,930.52	5,121.42	1,899,901.14	538,348.74	36.221522	-107.703322
13,600.00	90.41	134.84	4,989.21	-6,001.04	5,192.32	1,899,830.71	538,419.72	36.221328	-107.703082
13,700.00	90.41	134.84	4,988.49	-6,071.55	5,263.22	1,899,760.28	538,490.71	36.221134	-107.702842
13,800.00	90.41	134.84	4,987.78	-6,142.07	5,334.13	1,899,689.84	538,561.69	36.220941	-107.702601
13,908.19	90.41	134.84	4,987.00	-6,218.36	5,410.84	1,899,613.64	538,638.49	36.220731	-107.702341
TD at 13908.19									

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
Company:	WPX Energy	TVD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WL746H BHL - plan hits target center - Point	0.00	0.00	4,987.00	-6,218.36	5,410.84	1,899,613.64	538,638.49	36.220731	-107.702341
WL746H POE orig. - plan misses target center by 2.18usft at 5688.94usft MD (5045.93 TVD, -422.56 N, -416.80 E) - Point	0.00	0.00	5,047.00	-421.22	-415.46	1,905,404.00	532,805.46	36.236658	-107.722094

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
5,686.98	5,045.94	7"	7	8-3/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
703.17	703.00	Ojo Alamo			
865.99	865.00	Kirtland			
1,448.29	1,433.00	Picture Cliffs			
1,535.26	1,517.00	Lewis			
1,759.91	1,734.00	Chacra			
2,905.96	2,841.00	Cliff House			
2,923.56	2,858.00	Menefee			
3,867.73	3,770.00	Point Lookout			
4,048.90	3,945.00	Mancos			
4,399.85	4,284.00	Gallup			
4,611.14	4,492.00	Gallup Upper			
4,934.69	4,787.00	Mancos Lwr			
5,050.26	4,873.00	El Vado			
5,118.66	4,917.00	Frac Barrier			
5,120.33	4,918.00	Mancos Unc			
5,210.67	4,967.00	PS 3			
5,262.08	4,990.00	PS2			
5,327.98	5,014.00	PS1			
5,400.44	5,033.00	PSA			

Scientific Drilling Int.
Planning Report - Geographic

Database:	Grand Junction District	Local Co-ordinate Reference:	Well W Lybrook 746H
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Project:	T23N R8W	MD Reference:	GL 6778 + KB 21 = @ 6799.00usft (Cyclone 32)
Site:	W Lybrook 705 Pad	North Reference:	True
Well:	W Lybrook 746H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,249.97	1,241.43	21.63	-95.18	Start 3144.27 hold at 1249.97 MD
4,394.24	4,278.57	201.97	-888.71	Start DLS 9.00 TFO -147.00
4,394.24	4,278.57	201.97	-888.71	KOP
5,539.57	5,047.00	-317.23	-522.71	Start 8368.63 hold at 5539.57 MD
13,908.19	4,987.00	-6,218.36	5,410.84	TD at 13908.19