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

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: 8-27-14
Well information;
Operator WPX, Well Name and Number Chaco 2308-04P #406H
API# 30-045-35587, Section 4, Township 23 (N)/S, Range 8 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
- o Spacing rule violation. Operator must follow up with change of status notification on other well to be shut in or abandoned
- o 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
- ✓ 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.

Charlie Perrin
NMOCD Approved by Signature

9-16-14
Date

1220 South St. Francis Drive • Santa Fe, New Mexico 87505
Phone (505) 476-3460 • Fax (505) 476-3462 • www.emnrd.state.nm.us/ocd

Form 3160-3
(September 2001)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
AUG 27 2014
Farmington Field Office
Bureau of Land Management

FORM APPROVED
OMB No. 1004-0136
Expires January 31, 2004

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.	NMNM 109398
6. If Indian, Allottee or Tribe Name	
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No.	Chaco 2308-04P #406H
9. API Well No.	30-045-35587
10. Field and Pool, or Exploratory	Basin Mancos
11. Sec., T., R., M., or Blk. and Survey or Area	Surface: T23N, R8W. sec 4 BHL: T23N, R8W, sec 4
12. County or Parish	~~Rio Arriba County~~ San Juan
13. State	NM

1a. Type of Work: ☒ DRILL ☐ REENTER

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

2. Name of Operator
WPX Energy Production, LLC

3a. Address
P.O. Box 640 Aztec, NM 87410

3b. Phone No. *(include area code)*
(505) 333-1808

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface P 1323' FSL & 208' FEL, sec 04, T23N, R8W SESE
At proposed prod. zone M 1063' FSL & 230' FWL, sec 04, T23N, R8W SWSW

14. Distance in miles and direction from nearest town or post office*
approximately 6 miles northwest of Lybrook, New Mexico

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) 208'	16. No. of Acres in lease ~~640.35~~ 639.60	17. Spacing Unit dedicated to this well 320 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30'	19. Proposed Depth 10,562' MD / 5,207' TVD	20. BLM/BIA Bond No. on file UTB000178
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 6876' GR	22. Approximate date work will start* September 15, 2014	23. Estimated duration 1 month

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

RCVD SEP 4 '14

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 shall 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 authorized officer.

OIL CONS. DIV.

25. Signature [signature]	Name *(Printed/Typed)* Heather Riley	Date 8/27/14
Title Regulatory Manager		DIST. 3
Approved by *(Signature)* [signature]	Name *(Printed/Typed)*	Date 9/3/14
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.

*(Instructions on reverse)

WPX Energy Production, LLC, proposes to develop the Basin Mancos formation at the above described location in accordance with the attached drilling and surface use plans.

The well pad surface is under jurisdiction of the BLM. The road and location are on lease.

This location has been archaeologically surveyed by La Plata Archaeological Consultants. Copies of their report have been submitted directly to the BLM.

No new access road is needed. This well is twinned on the Chaco 2308-04P #149H & 150H well pad. Pipeline is on location

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

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

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

NMOCD AV

APD Certification:

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 27th day of Aug, 2014.

Name Heather Riley

Position Title Regulatory Manager

Address P.O. Box 640, Aztec, NM 87410

Telephone (505) 333-1822

Field representative (if not above signatory) _____

E-mail heather.riley@wpxenergy.com

Heather Riley

Date: 8/27/14

Heather Riley
Regulatory Manager
WPX Energy Production, LLC

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

RECEIVED
AUG 27 2014
Farmington Field Office
Bureau of Land Management

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35587	97232	BASIN MANCOS

[4] Property Code	[5] Property Name	[6] Well Number
40275	CHACO 2308-04P	406H

[7] OGRID No.	[8] Operator Name	[9] Elevation
120782	WPX ENERGY PRODUCTION, LLC	6876'

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	4	23N	8W		1323	SOUTH	208	EAST	~~RIO ARRIBA~~ San Juan

[11] Bottom Hole Location If Different From Surface

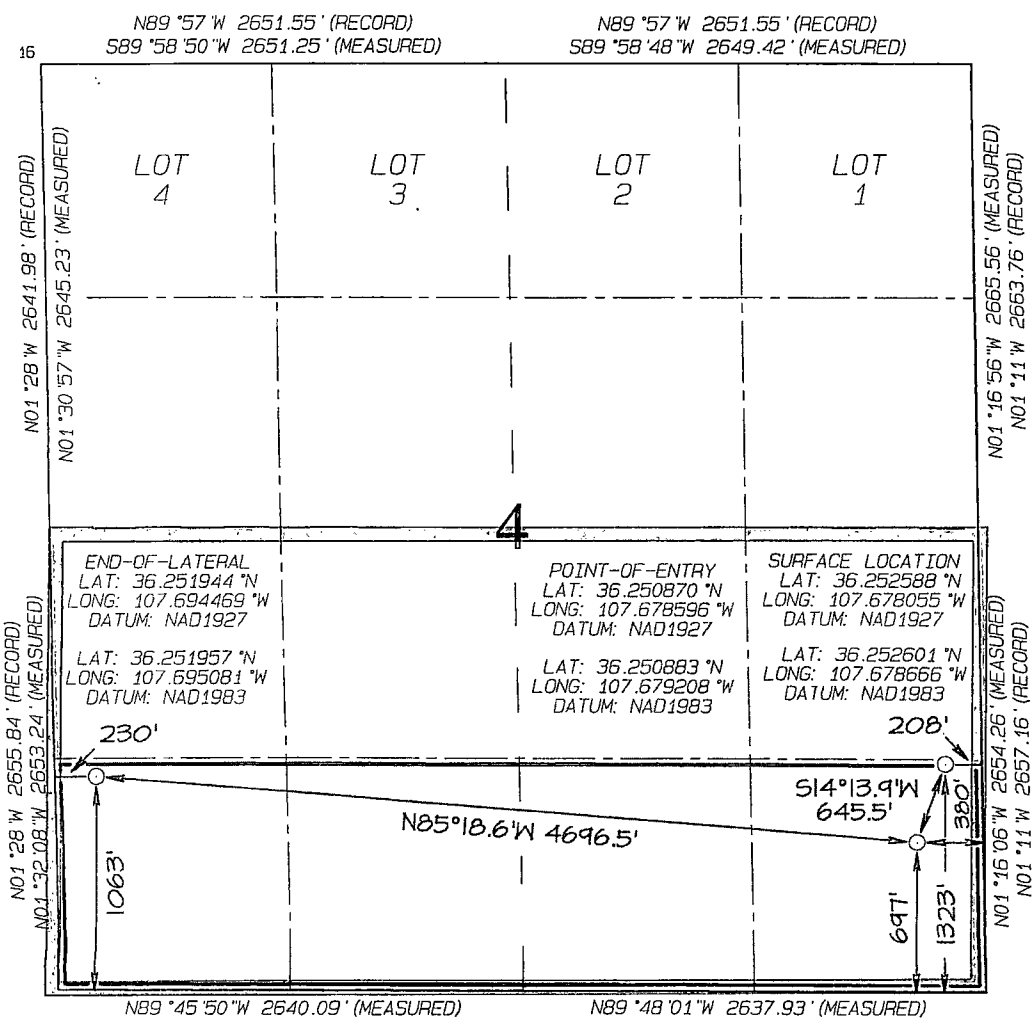
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	4	23N	8W		1063	SOUTH	230	WEST	~~RIO ARRIBA~~ San Juan

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
320.0 Acres - S/2			RCVD SEP 4'14

OIL CONS. DIV.

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

DIST. 3



[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.

Heather Riley 8/27/14
Signature Date

Heather Riley
Printed Name

heather.riley@wpxenergy.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

Date Revised: AUGUST 26, 2014
Survey Date: AUGUST 15, 2014

Signature and Seal of Professional Surveyor

JASON C. EDWARDS
NEW MEXICO
15269
REGISTERED PROFESSIONAL SURVEYOR

JASON C. EDWARDS
Certificate Number 15269

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

in Bloomfield, NM to WPX Energy Production, LLC Chaco 2308-04P #406H

1323' FSL & 208' FEL, Section 4, T23N, R8W, N.M.P.M., San Juan County, NM

Latitude: 36.252601°N Longitude: 107.678666°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 40.2 miles to Mile Marker 111.1;

Go Left (Northerly) for 200' to fork in roadway;

Go Right (North-Easterly) for 0.15 miles to staked WPX Chaco 2308-04P #406H location which overlaps the existing WPX Chaco 2308-04P #149H location.

WPXENERGY

WPX ENERGY

Operations Plan

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

DATE:	8/22/2014	**FIELD:**	Basin Mancos
WELL NAME:	**Chaco 2308-04P #406H**	**SURFACE:**	BLM
SH Location:	SESE Sec 4-23N-08W	**ELEVATION:**	6876' GR
BH Location:	SWSW Sec 4-23N-08W Rio Arriba, NM	**MINERALS:**	BLM
MEASURED DEPTH:	**10,562'**	**LEASE #:**	NMNM 109398

I. GEOLOGY: Surface formation – Nacimiento

A. **FORMATION TOPS:** (KB)

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1099	1095	Point Lookout	4110	4013
Kirtland	1285	1277	Mancos	4329	4228
Picture Cliffs	1658	1638	**Kickoff Point**	**4785**	4682
Lewis	1778	1754	Top Target	5539	5275
Chacra	2072	2039	**Landing Point**	**5864**	5348
Cliff House	3188	3120	Base Target	5864	5348
Menefee	3237	3168			
			TD	10562	5207

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 ¾" 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.**

NOTE: Vertical portion of the well (8-3/4 in.) will be directionally drilled as per attached Directional Plan to +/- 4,785' (MD) / 4,682' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 5,864' (MD) / 5,348' (TVD). 7 in. csg will be set at this point. A 6-1/8" Lateral will be drilled as per the attached Directional Plan to +/- 10,562' (MD) / 5,207' (TVD). Will run 4-1/2 in. Production Liner from +/- 5,714 ft. to TD and cemented. Liner will be tied back to surface w / 4-1/2" Casing for stimulation / testing, then removed from the well.

III. MATERIALS

A. CASING PROGRAM:

CASING TYPE	OH SIZE (IN)	DEPTH (MD) (FT)	CASING SIZE (IN)	WEIGHT(LB)	GRADE
Surface	12.25"	400'+	9.625"	36#	J-55
Intermediate	8.75"	5,864'	7"	23#	K-55
Prod. Liner	6.125"	5,714' - 10,562'	4-1/2"	11.6#	N-80
Tie-Back String	N/A	Surf. - 5,714'	4-1/2"	11.6#	N-80

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 2,700 ft., 2,500 ft., 2,300ft., and 2,000ft. Additionally run 1 turbolizing centralizer on every other joint from 100' below the top of the Kirtland to 100' above the top of the Ojo Alamo, as referenced in Formation Tops in Section I-A.

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 + (2) RSI (Sliding Sleeves) 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.

4. TIE-BACK CASING: None

C. CEMENTING:

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

1. SURFACE: 10 bbl Fr Water Spacer + 190 sx (222.3 cu.ft.) of "Premium Cement" + 2% Calcium Chloride Cement + 0.125# pps of Poly-E-Flake, 15.8 #/gal (1.17 cu ft./sk, Vol 39.58 Bbls.). The 100% excess should circulate cement to the surface. WOC 12 hours. Test csg to 600psi. Total Volume: (222.3 cu-ft/190 sx/39.6 Bbls). TOC at Surface.

2. INTERMEDIATE: 20 bbl (112 cu-ft) Mud Flush III spacer + Lead: 850 sx Foamed 50/50 Poz Cement. 13.0 ppg + 0.1% Halad 766 + 0.2% Versaset + 1.5% Chem-Foamer 760 (Yield :1.43 cu-ft/ sk. / Vol: 1216 cu-ft / 216.5 Bbls.) + TAIL: 100 sx 13.5 #/gal. + 0.2% Versaset + 0.15% HALAD-766 (Yield: 1.28 cu-ft / sk / Vol: 128 cu-ft / 22.8 Bbls.). + Fresh Water Displacement (1,362 cu-ft / +/- 242 Bbls) + 100 sx Top-Out Cement Premium: Yield: (1.17 cu-ft/ sk / (Vol: 117 cu-ft / 20.8 Bbls). Test Casing to 1500 PSI for 30 minutes. Total Cement Volume: (1050 sx / 1461 cu-ft / 260 bbls). Mix with +/- 84,000 SCF Nitrogen. TOC at surface.

3. PRODUCTION LINER: **STAGE 1**:10 bbl (56.cu-ft) Fr Water Spacer. **STAGE 2**:40 bbl 9.5 ppg (224.6 cu-ft) Tuned Spacer III + 0.5 gal/bbl Musol + 38.75 ppb Barite + 0.5 gal/bbl SEM-7. **STAGE 3**: 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement:** 50 / 50 Poz Premium + 0.2% Versaset + 0.2% Halad -766, Yield 1.43 cu ft/sk, 13.0 ppg, (10 sx / 14.3 cu ft. / 2.5 bbls). **STAGE 5:** 200 sx. Foamed Lead Cement: 50 / 50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.97 cu-ft/sk. 13.0 ppg (200 sx / 394 cu-ft. / 70.2 bbls.). **STAGE 6**: Tail Cement : 100 sx. 50/50 Poz Standard + 0.2% Versaset + 0.05% HALAD-766 + .05% SA-1015, Weight: 13.5 ppg (100 sx / Yield 1.28 cu ft/sk. / 128 cu ft. / 22.8 bbls) **STAGE 7**: Displace w/ +/- 137 bbl Fr Water. Total Cement (536.3 cu ft / 95.5 bbls). Mix Foamed Cement w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,414 ft.

IV. COMPLETION

A. CBL

1. Run CCL for perforating.

B. 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.

C. 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.

D. 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 point of curve (~5,700' MD).

- 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:

Installation of RSI sleeves at Toe of Lateral.

Proposed Operations:

A 4-1/2" 11.6# N-80 Liner will be run to TD and landed +/- 150 ft. into the 7" 23# K-55 Intermediate casing (set at 5,864 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 300 ft above the liner hanger. TOL will be +/- 5,714 ft. (MD) +/- 78 degree angle. TOC: +/- 5,414 ft. (MD).

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

A 4-1/2" 11.6# N-80 tie-back string with seal assembly will be run and stung into the PBR of the liner hanger, tested to 1500 PSI and hung off at the surface.

The Drilling Rig will be rigged down at this point and Completion operations will begin. After Stimulation and Testing operations are complete the 4-1/2" tie-back string will be removed from the well.

Note: Changes to formation tops, casing landing points, well TD and Directional Plan.

WPXENERGY

Well Name: Chaco 2308-04P #406H
Surface Location: Chaco 2308-04P
NAD 1927 (NADCON CONUS) , US State Plane 1927 (Exact solution) New Mexico West 3003
Ground Elevation: 6876.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1911220.72	545783.62	36.252588	-107.678055	

WELL @ 6890.0usft (Original Well Elev)

T M

Azimuths to True North
Magnetic North: 9.41°

Magnetic Field
Strength: 50148.5snT
Dip Angle: 62.98°
Date: 8/21/2014
Model: IGRF2010

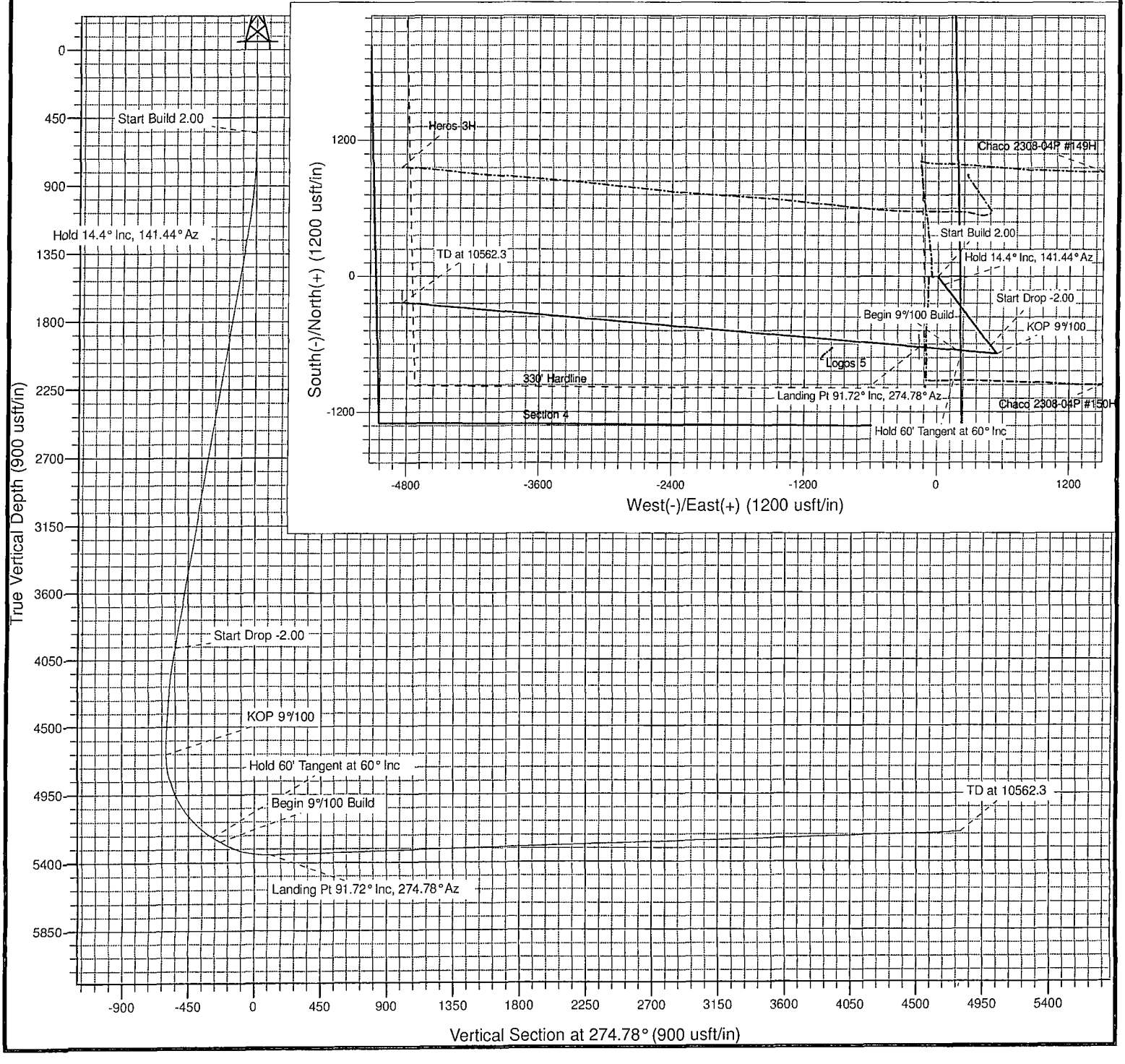
Project: SJ 04-23N-8W
Site: Chaco 2308-04P
Well: Chaco 2308-04P #406H
Design #1 21Aug14 kjs

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
550.0	550.0	0.00	0.00	0.0	0.0	0.0	0.0	Start Build 2.00
1262.6	1270.2	14.40	141.44	-70.4	56.1	-61.8	90.1	Hold 14.4° Inc, 141.44° Az
3969.1	4064.5	14.40	141.44	-614.0	489.4	-538.8	785.1	Start Drop -2.00
4681.7	4784.7	0.00	0.00	-684.4	545.5	-600.6	875.2	KOP 9°/100
5233.0	5451.3	60.00	274.78	-657.9	228.3	-282.3	1193.5	Hold 60° Tangent at 60° Inc
5263.0	5511.3	60.00	274.78	-653.5	176.5	-230.4	1245.5	Begin 9°/100 Build
5348.0	5863.8	91.72	274.78	-625.4	-159.7	107.1	1582.9	Landing Pt 91.72° Inc, 274.78° Az
5207.0	10561.3	91.72	274.78	-234.1	-4838.8	4802.5	6278.3	TD at 10562.3

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
TD / PBHL #406	5207.0	-234.0	-4839.8	1910978.99	540944.17	36.251944	-107.694469	Point
- plan hits target center								
LP #406H	5348.0	-625.4	-159.7	1910595.05	545624.93	36.250870	-107.678596	Point
- plan hits target center								



Database:	COMPASS-SANJUAN	**Local Co-ordinate Reference:**	Well Chaco 2308-04P #406H
Company:	SAN JUAN BASIN	**TVD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Project:	SJ 04-23N-8W	**MD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Site:	Chaco 2308-04P	**North Reference:**	True
Well:	Chaco 2308-04P #406H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 21Aug14 kjs		

Project	SJ 04-23N-8W, San Juan County, NM		
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	Chaco 2308-04P				
Site Position:		**Northing:**	1,911,220.72 usft	**Latitude:**	36.252588
From:	Map	**Easting:**	545,783.62 usft	**Longitude:**	-107.678055
Position Uncertainty:	0.0 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.09 °

Well	Chaco 2308-04P #406H					
Well Position	**+N/-S**	0.0 usft	**Northing:**	1,911,220.72 usft	**Latitude:**	36.252588
	+E/-W	0.0 usft	**Easting:**	545,783.62 usft	**Longitude:**	-107.678055
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	6,876.0 usft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	8/21/2014	9.41	62.98	50,148

Design	Design #1 21Aug14 kjs				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	274.78	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
550.0	0.00	0.00	550.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,270.2	14.40	141.44	1,262.6	-70.4	56.1	2.00	2.00	0.00	141.44	
4,064.5	14.40	141.44	3,969.1	-614.0	489.4	0.00	0.00	0.00	0.00	
4,784.7	0.00	0.00	4,681.7	-684.4	545.5	2.00	-2.00	0.00	180.00	
5,451.3	60.00	274.78	5,233.0	-657.9	228.3	9.00	9.00	0.00	274.78	
5,511.3	60.00	274.78	5,263.0	-653.5	176.5	0.00	0.00	0.00	0.00	
5,863.8	91.72	274.78	5,348.0	-625.4	-159.7	9.00	9.00	0.00	0.00	
10,562.3	91.72	274.78	5,207.0	-234.0	-4,839.8	0.00	0.00	0.00	0.00	TD / PBHL #406

Database:	COMPASS-SANJUAN	**Local Co-ordinate Reference:**	Well Chaco 2308-04P #406H
Company:	SAN JUAN BASIN	**TVD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Project:	SJ 04-23N-8W	**MD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Site:	Chaco 2308-04P	**North Reference:**	True
Well:	Chaco 2308-04P #406H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 21Aug14 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,911,220.72	545,783.62	36.252588	-107.678055
200.0	0.00	0.00	200.0	0.0	0.0	1,911,220.72	545,783.62	36.252588	-107.678055
400.0	0.00	0.00	400.0	0.0	0.0	1,911,220.72	545,783.62	36.252588	-107.678055
550.0	0.00	0.00	550.0	0.0	0.0	1,911,220.72	545,783.62	36.252588	-107.678055
Start Build 2.00									
600.0	1.00	141.44	600.0	-0.3	0.3	1,911,220.38	545,783.90	36.252587	-107.678054
800.0	5.00	141.44	799.7	-8.5	6.8	1,911,212.21	545,790.43	36.252565	-107.678032
1,000.0	9.00	141.44	998.2	-27.6	22.0	1,911,193.18	545,805.65	36.252512	-107.677981
1,200.0	13.00	141.44	1,194.4	-57.4	45.8	1,911,163.38	545,829.48	36.252431	-107.677900
1,270.2	14.40	141.44	1,262.6	-70.4	56.1	1,911,150.39	545,839.86	36.252395	-107.677865
Hold 14.4° Inc, 141.44° Az									
1,400.0	14.40	141.44	1,388.4	-95.7	76.3	1,911,125.18	545,860.03	36.252325	-107.677796
1,600.0	14.40	141.44	1,582.1	-134.6	107.3	1,911,086.32	545,891.10	36.252219	-107.677691
1,800.0	14.40	141.44	1,775.8	-173.5	138.3	1,911,047.46	545,922.17	36.252112	-107.677586
2,000.0	14.40	141.44	1,969.5	-212.4	169.3	1,911,008.61	545,953.25	36.252005	-107.677481
2,200.0	14.40	141.44	2,163.2	-251.3	200.3	1,910,969.75	545,984.32	36.251898	-107.677376
2,400.0	14.40	141.44	2,356.9	-290.2	231.3	1,910,930.90	546,015.39	36.251791	-107.677271
2,600.0	14.40	141.44	2,550.6	-329.1	262.3	1,910,892.04	546,046.46	36.251684	-107.677165
2,800.0	14.40	141.44	2,744.3	-368.0	293.3	1,910,853.19	546,077.53	36.251577	-107.677060
3,000.0	14.40	141.44	2,938.1	-406.9	324.3	1,910,814.33	546,108.60	36.251470	-107.676955
3,200.0	14.40	141.44	3,131.8	-445.8	355.3	1,910,775.48	546,139.68	36.251364	-107.676850
3,400.0	14.40	141.44	3,325.5	-484.7	386.3	1,910,736.62	546,170.75	36.251257	-107.676745
3,600.0	14.40	141.44	3,519.2	-523.6	417.4	1,910,697.76	546,201.82	36.251150	-107.676640
3,800.0	14.40	141.44	3,712.9	-562.5	448.4	1,910,658.91	546,232.89	36.251043	-107.676534
4,000.0	14.40	141.44	3,906.6	-601.4	479.4	1,910,620.05	546,263.96	36.250936	-107.676429
4,064.5	14.40	141.44	3,969.1	-614.0	489.4	1,910,607.53	546,273.98	36.250902	-107.676395
Start Drop -2.00									
4,200.0	11.69	141.44	4,101.1	-637.9	508.4	1,910,583.63	546,293.09	36.250836	-107.676331
4,400.0	7.69	141.44	4,298.2	-664.2	529.4	1,910,557.34	546,314.12	36.250763	-107.676260
4,600.0	3.69	141.44	4,497.2	-679.7	541.8	1,910,541.85	546,326.50	36.250721	-107.676218
4,784.7	0.00	0.00	4,681.7	-684.4	545.5	1,910,537.20	546,330.22	36.250708	-107.676205
KOP 9°/100									
4,800.0	1.38	274.78	4,697.0	-684.4	545.3	1,910,537.21	546,330.04	36.250708	-107.676206
5,000.0	19.38	274.78	4,893.0	-681.4	509.6	1,910,540.15	546,294.27	36.250716	-107.676327
5,200.0	37.38	274.78	5,068.2	-673.5	415.2	1,910,547.89	546,199.91	36.250738	-107.676647
5,400.0	55.38	274.78	5,205.6	-661.5	271.5	1,910,559.67	546,056.20	36.250771	-107.677134
5,451.3	60.00	274.78	5,233.0	-657.9	228.3	1,910,563.22	546,012.97	36.250781	-107.677281
Hold 60' Tangent at 60° Inc									
5,511.3	60.00	274.78	5,263.0	-653.5	176.5	1,910,567.46	545,961.19	36.250793	-107.677456
Begin 9°/100 Build									
5,600.0	67.98	274.78	5,301.9	-646.9	97.2	1,910,573.97	545,881.83	36.250811	-107.677726
5,800.0	85.98	274.78	5,346.8	-630.7	-96.2	1,910,589.83	545,688.42	36.250856	-107.678381
5,863.7	91.72	274.78	5,348.0	-625.4	-159.7	1,910,595.04	545,624.93	36.250870	-107.678597
Landing Pt 91.72° Inc, 274.78° Az - LP #406H									
6,000.0	91.72	274.78	5,343.9	-614.1	-295.4	1,910,606.18	545,489.19	36.250901	-107.679057
6,200.0	91.72	274.78	5,337.9	-597.4	-494.6	1,910,622.52	545,289.95	36.250947	-107.679733
6,400.0	91.72	274.78	5,331.9	-580.7	-693.8	1,910,638.86	545,090.71	36.250993	-107.680408
6,600.0	91.72	274.78	5,325.9	-564.1	-893.1	1,910,655.21	544,891.46	36.251039	-107.681084
6,800.0	91.72	274.78	5,319.9	-547.4	-1,092.3	1,910,671.55	544,692.22	36.251084	-107.681760
7,000.0	91.72	274.78	5,313.9	-530.8	-1,291.5	1,910,687.89	544,492.98	36.251130	-107.682435
7,200.0	91.72	274.78	5,307.9	-514.1	-1,490.7	1,910,704.24	544,293.74	36.251176	-107.683111
7,400.0	91.72	274.78	5,301.9	-497.4	-1,689.9	1,910,720.58	544,094.50	36.251222	-107.683786
7,600.0	91.72	274.78	5,295.9	-480.8	-1,889.1	1,910,736.92	543,895.26	36.251267	-107.684462
7,800.0	91.72	274.78	5,289.9	-464.1	-2,088.3	1,910,753.27	543,696.02	36.251313	-107.685138

Database:	COMPASS-SANJUAN	**Local Co-ordinate Reference:**	Well Chaco 2308-04P #406H
Company:	SAN JUAN BASIN	**TVD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Project:	SJ 04-23N-8W	**MD Reference:**	WELL @ 6890.0usft (Original Well Elev)
Site:	Chaco 2308-04P	**North Reference:**	True
Well:	Chaco 2308-04P #406H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1 21Aug14 kjs		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,000.0	91.72	274.78	5,283.9	-447.4	-2,287.6	1,910,769.61	543,496.78	36.251359	-107.685813
8,200.0	91.72	274.78	5,277.9	-430.8	-2,486.8	1,910,785.95	543,297.54	36.251405	-107.686489
8,400.0	91.72	274.78	5,271.9	-414.1	-2,686.0	1,910,802.30	543,098.30	36.251450	-107.687165
8,600.0	91.72	274.78	5,265.9	-397.5	-2,885.2	1,910,818.64	542,899.06	36.251496	-107.687840
8,800.0	91.72	274.78	5,259.9	-380.8	-3,084.4	1,910,834.98	542,699.82	36.251542	-107.688516
9,000.0	91.72	274.78	5,253.9	-364.1	-3,283.6	1,910,851.33	542,500.58	36.251587	-107.689192
9,200.0	91.72	274.78	5,247.9	-347.5	-3,482.8	1,910,867.67	542,301.34	36.251633	-107.689867
9,400.0	91.72	274.78	5,241.9	-330.8	-3,682.1	1,910,884.01	542,102.09	36.251679	-107.690543
9,600.0	91.72	274.78	5,235.9	-314.1	-3,881.3	1,910,900.36	541,902.85	36.251725	-107.691219
9,800.0	91.72	274.78	5,229.9	-297.5	-4,080.5	1,910,916.70	541,703.61	36.251770	-107.691894
10,000.0	91.72	274.78	5,223.9	-280.8	-4,279.7	1,910,933.04	541,504.37	36.251816	-107.692570
10,200.0	91.72	274.78	5,217.9	-264.2	-4,478.9	1,910,949.39	541,305.13	36.251862	-107.693246
10,400.0	91.72	274.78	5,211.9	-247.5	-4,678.1	1,910,965.73	541,105.89	36.251907	-107.693921
10,562.3	91.72	274.78	5,207.0	-234.0	-4,839.8	1,910,979.00	540,944.17	36.251944	-107.694470
TD at 10562.3 - TD / PBHL #406									

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
TD / PBHL #406 - plan hits target center - Point	0.00	0.00	5,207.0	-234.0	-4,839.8	1,910,979.00	540,944.17	36.251944	-107.694470
LP #406H - plan hits target center - Point	0.00	0.00	5,348.0	-625.4	-159.7	1,910,595.06	545,624.93	36.250870	-107.678597

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
550.0	550.0	0.0	0.0	Start Build 2.00
1,270.2	1,262.6	-70.4	56.1	Hold 14.4° Inc, 141.44° Az
4,064.5	3,969.1	-614.0	489.4	Start Drop -2.00
4,784.7	4,681.7	-684.4	545.5	KOP 9°/100
5,451.3	5,233.0	-657.9	228.3	Hold 60' Tangent at 60° Inc
5,511.3	5,263.0	-653.5	176.5	Begin 9°/100 Build
5,863.8	5,348.0	-625.4	-159.7	Landing Pt 91.72° Inc, 274.78° Az
10,562.3	5,207.0	-234.0	-4,839.8	TD at 10562.3

The water hauler(s) will access the well pad via the roads described in Sections 2 (Project Location and Existing Roads) and 3 (New or Reconstructed Access Roads), above.

7. WELL PAD CONSTRUCTION MATERIAL

Excavated materials from the cuts were used on the fill portions of the location to level the well pad. Up to 32 feet of cut and 10 feet of fill were created to obtain a level well pad. Construction plats are provided in the APD and ROW Grant permit packages.

If needed, surfacing materials would be obtained from an approved sandstone mine.

8. METHODS FOR HANDLING WASTE DISPOSAL

Drilling operations utilized/will utilize a closed-loop system. Drilling of the horizontal lateral may be done with oil- based mud. All oil-based mud cuttings have been/will be hauled to a commercial disposal facility or land farm.

A 30-mil reinforced liner has been/will be placed under the drill rig mats and all drilling machinery, as shown on Figure 4 (Appendix B). This area has been/will be enclosed by a containment berm and ditches, which drains to sump areas for spill prevention and control. The containment berm has been/will be ramped to allow access to the solids control area.

WPX will follow New Mexico Oil Division "Pit Rule" guidelines and Onshore Order No. 1 regarding the placement, operation, and closure of any reserve pits or closed-loop systems. No blow pit was/will be used.

All garbage and trash has been/will be placed in a metal trash basket. The trash and garbage has been/will be hauled off site and dumped in an approved landfill, as needed.

Portable toilets has been/will be provided and maintained during drilling and completion operations.

9. ANCILLARY FACILITIES

One temporary use area (TUA) was used along the access road to assist with the construction of a low-water crossing and passage through rugged topography. This TUA was located between Stations 5+37 and 7+37. Along this 200-foot-long stretch of road, the TUA resulted in 12.5 feet of disturbance on both sides of the road. The TUA (with the exception of portions that overlap the access road) has been/will be fully reclaimed during interim reclamation.

Three staging areas were identified for the project:

- Elm Ridge Exploration Company's (Elm Ridge's) Federal 9 No. 31 well pad: This active well pad is located approximately 0.4 mile southwest of the 149H/150H/406H well pad, on the southern side of U.S. Highway 550. The well pad disturbance area measures approximately 0.7 acre (estimated from an aerial photo).
- WPX's approved Chaco 2308-16I No. 147H tank battery site: This tank battery site is located immediately south of Elm Ridge's Federal 9 No. 31 well pad. The tank battery site is 1.72 acres.

3000 PSI BOP Schematic