

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 3160-4 or 3160-5 form.

Operator Signature Date:

Application Type:

☐ P&A ☒ Drilling/Casing Change ☐ Recomplete/DHC
☐ Location Change ☐ Other: _____

Well information:

API WELL #	Well Name	Well #	Operator Name	Type	Stat	County	Surf_Owner	UL	Sec	Twp	N/S	Rng	W/E
30-039-31190-00-00	CHACO 2306 06L	179H	WPX ENERGY PRODUCTION, LLC	O	N	Rio Arriba	F	L	6	23	N	6	W

Conditions of Approval:

Notify NMOCD 24hrs prior to beginning operations.

HOLD C 104 for directional survey and "as drilled" plat

NMOCD Approved by Signature

OCT 29 2013

Date

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires: March 31, 2007

OCT 17 2013

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.

5. Lease Serial No.
NMSF-078362

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
Chaco 2306-06L #179H9. API Well No.
30-039-3119010. Field and Pool or Exploratory Area
Lybrook Gallup11. Country or Parish, State
Rio Arriba, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other <u>Casing change</u>
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

RCVD OCT 22 '13
OIL CONS. DIV.
DIST. 3

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 recomplate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

WPX plans to change this well as follows: The production casing design has changed per the attached Operations Plan (see bottom of page 3). Also, the total depth of lateral section will be drilled +/- 100ft. past the hardline as noted in Completion Section of the revised Operations Plan to maximize the producing interval as per attached directional plan. The plug back TD of this well will be the float collar which will be one joint up from landing depth. 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.

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

Name (Printed/Typed)

Larry Higgins

Title Permit Supervisor

Signature

Date 10/15/13

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

William Tambekou

Petroleum
Title Engineer

Date 10/18/2013

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 FFD

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

(Instructions on page 2)

CONDITIONS OF APPROVAL

Adhere to previously issued rules in Word (www.formsincword.com). For individual or single-NMOCD
A

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

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 30-039-31190		*Pool Code 42289	*Pool Name LYBROOK GALLUP
*Property Code	*Property Name CHACO 2306-06L		*Well Number 179H
*GRID No. 120782	*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 6933'

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
L	6	23N	6W	6	1680	SOUTH	591	WEST	RIO ARriba

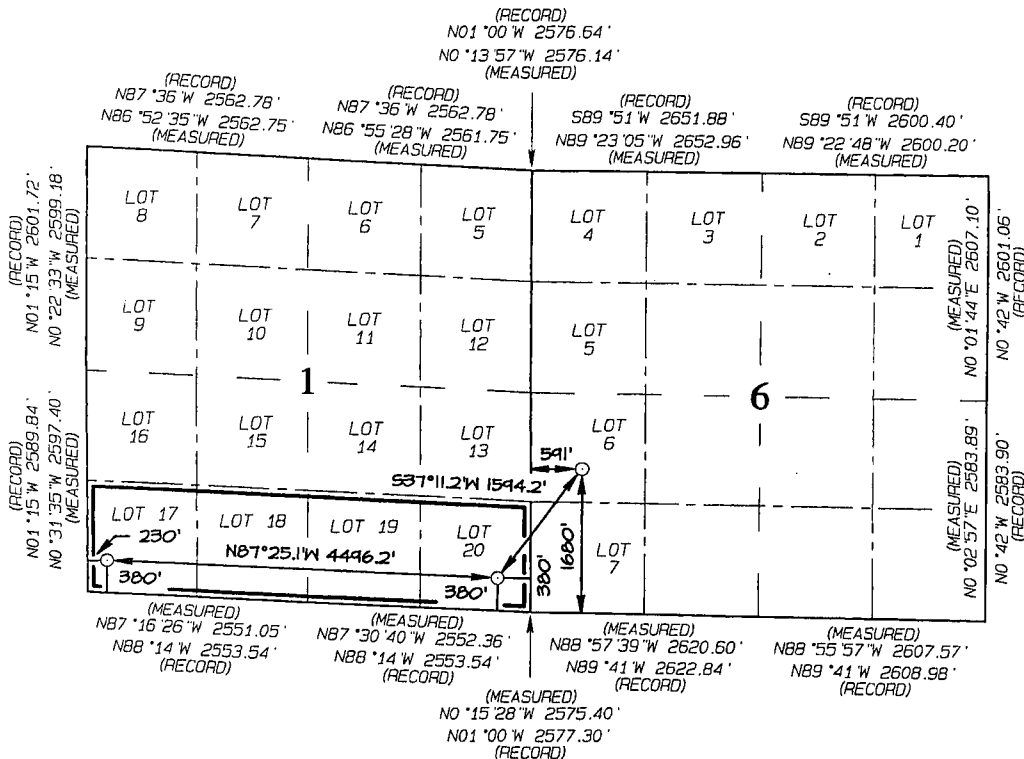
¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	1	23N	7W	17	380	SOUTH	230	WEST	RIO ARriba

¹² Dedicated Acres 151.29 Acres S/2 S/2 - Section 1	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD OCT 22 '13 OIL CONS. DIV.
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DIST. 3

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: *Larry Higgins* Date: 10/17/13

Printed Name: Larry Higgins
larry.higgins@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: OCTOBER 15, 2013
Survey Date: OCTOBER 1, 2012

Signature and Seal of Professional Surveyor



JASON C. EDWARDS

Certificate Number 15269

END-OF-LATERAL
380' FSL 230' FWL
SECTION 1, T23N, R7W
LAT: 36.24796°N
LONG: 107.53502°W
DATUM: NAD1927
LAT: 36.24798°N
LONG: 107.53562°W
DATUM: NAD1983

POINT-OF-ENTRY
380' FSL 380' FEL
SECTION 1, T23N, R7W
LAT: 36.24757°N
LONG: 107.51978°W
DATUM: NAD1927
LAT: 36.24758°N
LONG: 107.52039°W
DATUM: NAD1983

SURFACE LOCATION
1680' FSL 591' FWL
SECTION 6, T23N, R6W
LAT: 36.25109°N
LONG: 107.51657°W
DATUM: NAD1927
LAT: 36.25111°N
LONG: 107.51718°W
DATUM: NAD1983

WPXENERGY

WPX ENERGY

Operations Plan

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

DATE: 10/10/2013 **FIELD:** Lybrook Gallup
WELL NAME: Chaco 2306-06L #179H Rev(1) **SURFACE:** BLM
SH Location: NWSW of Sec 6 T23N R6W **ELEVATION:** 6,933' GR
County: Rio Arriba Co, NM
BH Location: SWSW Sec 1-23N-7W **MINERALS:** BLM
MEASURED DEPTH: 10,660' **LEASE #:** NMSF-078362

I. **GEOLOGY:** Surface formation – San Jose

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

Name	MD	TVD	Name	MD	TVD
Ojo Alamo	1,523	1,514	Point Lookout	4,593	4,330
Kirtland	1,605	1,593	Mancos	4,798	4,533
Pictured Cliffs	2,129	2,088	Kickoff Point	5,187	5,026
Lewis	2,378	2,314	Target Top	5,986	5,568
Chacra	2,599	2,509	Landing Point	6,164	5,601
Cliff House	3,831	3,598	Target Base	6,216	5,609
Menefee	3,896	3,659			
			TD	10,660	5,489

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

C. **LOGGING PROGRAM:** MWD GR for curve and MWD GR / SONIC in lateral.

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) or Air will be used to drill the 12-1/4" Surface hole. LSND mud (WBM) will be used to drill the 8 3/4" Directional Vertical hole, the curve portion of the wellbore and the lateral portion of well. OBM may be used to drill the Lateral. 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 +/- 5,187' (MD) / 5,026' (TVD). Curve portion of wellbore will be drilled and landed at +/- 90 deg. at +/- 6,164' (MD) / 5,601' (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 +/- 10,660' (MD) / 5,489' (TVD). Will run 4-1/2 in. Production Liner from +/- 6,014 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	DEPTH (MD)	CASING SIZE	WEIGHT	GRADE
Surf. Pre-Set	12.25"	+/- 400'	9.625"	40#	P-110
Intermediate	8.75"	6,164'	7"	23#	K-55
Prod. Liner	6.125"	6,014' - 10,660'	4.5"	11.6#	N-80
Tie-Back String	N/A	6,014'	4.5"	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', 2,500', 2,300', 2,000', 1,500', and 1,000'.
3. **PRODUCTION CASING:** Run 4-1/2" casing with cement nose guide Float Shoe + 2jts. of 4-1/2" casing + Float Collar + Landing Collar. Centralizer program will be determined by Wellbore condition and when Lateral is evaluated by Geoscientists and Reservoir Engineers.

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).
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 CASING:** **STAGE 1:** 10 bbl (56 cu-ft) Fr Water Spacer. **STAGE 2:** 20 bbl 10 ppg (112.3 cu-ft) Tuned Spacer III + 0.2 gal/bbl Musol + 59.8 ppb Barite. **STAGE 3:** 10 bbl Fr Water Spacer. **STAGE 4: Lead Cement:** Standard Type V + .4% Halad-766 + .3% Halad R-344, Yield 1.19 cu ft/sk, 15.6 #/gal, (60 sx/71.4 cu ft.) **STAGE 5:** Foamed Lead Cement: 13.0 ppg (63.28 bbl / 355.3 cu-ft) 50/50 Poz Standard + 0.2% Versaset + 0.2% HALAD-766 + 1.5% Chem-Foamer 760. Yield 1.43 cu-ft/sk. **STAGE 6:** Tail Cement : 150 sx 50/50 Poz Standard + 0.2% Versaset + 0.25% HALAD-766, Weight: 13.5 ppg (Yield 1.29 cu ft/sk. / 193.5 cu ft.) **STAGE 7:** Displace w/176.6 bbl Fr Water. Total Cement (620.2 cu ft / 110.4 bbls). Mix w/ +/- 75,000 SCF Nitrogen. Est. TOC +/- 5,814 ft. Total Volume: (620.2 cu-ft/380 sx/110.4 bbls).

IV. COMPLETION

A. CBL

1. Run CCL for perforating.

B. PRESSURE TEST

1. Pressure test 4-1/2" casing to 5000 psi max, hold at 1500 psi for 30 minutes.

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 landing point of curve (~6,000' 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.

The CHACO 2306 – 06L #179H was originally planned to run a full string of 4-1/2" 11.6# N-80 Production Casing from surface to TD:

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 6,164 ft. MD) with a Liner Hanger and pack-off assembly then cemented to +/- 200 ft above the liner hanger. TOL will be +/- 6,014 ft. (MD) +/- 78 degree angle. TOC: +/- 5,814 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.

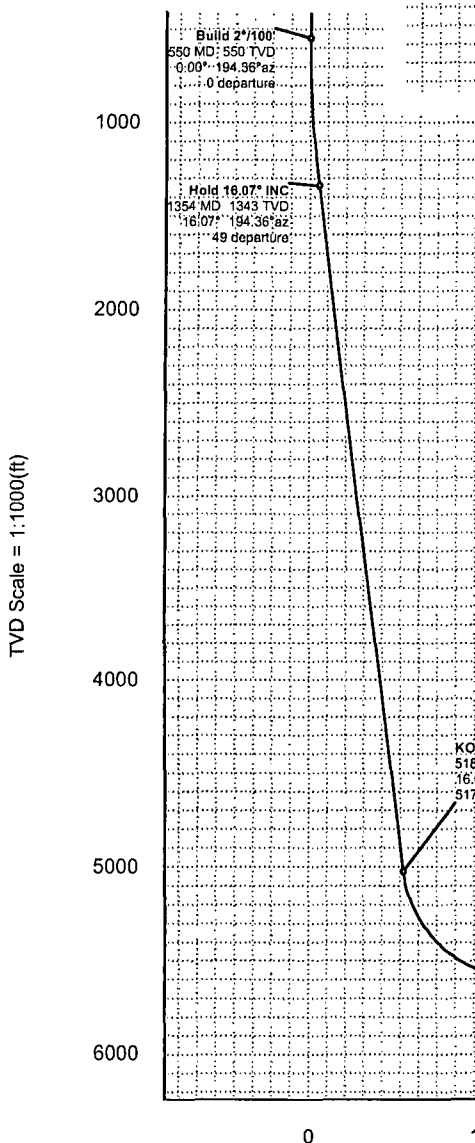
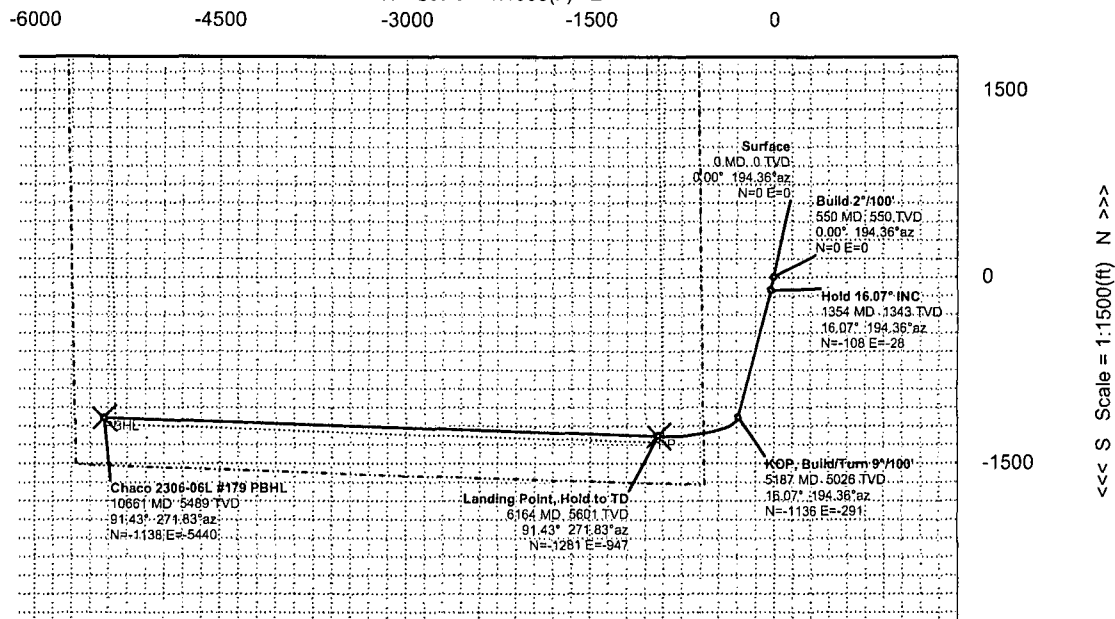
Note: Changes to formation tops, casing landing points, well TD and Directional Plan.

9-5/8" 40# P-110 (R-2) Surface Casing will be set and cemented prior to Drilling Rig moving on the Location.

WELL	Chaco 2306-06L #179H	FIELD	NM Rio Arriba County NAD27	STRUCTURE	Sec 6-23N-6W
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Magnetic Parameters	Dip: 83.022°	Date: April 11, 2013	Surface Location	NAD27 New Mexico State Plane, Central Zone, US Feet	Miscellaneous
Model: GGM 2012	Mag Dec: 8.560°	FS: 50237.8m	Lat: N 36 15 3.924	1913047.82 NUS	Site: Chaco 2306-06L #179H
			Lon: W 107 30 59.652	Grid Conv: -0.749°	Plan: R1 mdv 09Oct13
				Northings: 126543.83 NUS	TVD Ref: RKU(69478 above MSL)
				Scale Fact: 1.00005960	Srvy Date: April 11, 2013

Proposal



Targets						
Name	TVD(ft)	NS(ft)	EW(ft)	Latitude(deg)	Longitude(deg)	Shape
Chaco #179 PP	5601.00	-1281.42	-946.60	N 36 14 51.252	W 107 31 11.208	POINT
Chaco 2306-06L #179 PBHL	5489.00	-1137.63	-5440.26	N 36 14 52.669	W 107 32 6.066	POINT

Critical Points									
Comments	MD(ft)	Inc	Azm	TVD(ft)	SS TVD	VS(ft)	NS(ft)	EW(ft)	DLS
Surface	0.00	0.00	194.36	0.00	-6947.00	0.00	0.00	0.00	
Build 2°/100'	550.00	0.00	194.36	550.00	-6397.00	0.00	0.00	0.00	0.00
Hold 16.07° INC	1353.51	16.07	194.36	1343.02	-5603.98	49.38	-108.45	-27.77	2.00
KOP, Build/Turn 9°/100'	5186.53	16.07	194.36	5026.25	-1920.75	517.40	-1136.33	-290.97	0.00
Landing Point, Hold to TD	6163.53	91.43	271.83	5601.00	-1346.00	1188.90	-1281.37	-946.66	9.00
Chaco 2306-06L #179 PBHL	10660.78	91.43	271.83	5489.00	-1458.00	5557.89	-1137.64	-5440.22	0.00

Vertical Section (ft) Azim = 258.19° Scale = 1:1000(ft) Origin = 0 N-S, 0 E-W



WPX Chaco 2306-06L #179H R1 mdv 09Oct13 Proposal Geodetic Report



(Def Plan)

Report Date: October 09, 2013 - 02:55 PM
Client: WPX Energy
Field: NM Rio Arriba County NAD27
Structure / Slot: WPX Sec 6-23N-6W (Chaco 2306-06L #179H) / Chaco 2306-06L #179H
Well: Chaco 2306-06L #179H
Borehole: Original Hole
UWI / API#: Unknown / Unknown
Survey Name: WPX Chaco 2306-06L #179H R1 mdv 09Oct13
Survey Date: April 11, 2013
Tort / AHD / DDI / ERD Ratio: 104.001' / 6363.291 ft / 6.100' / 1.136
Coordinate Reference System: NAD27 New Mexico State Plane, Central Zone, US Feet
Location Lat / Long: N 36° 15' 3.92400", W 107° 30' 59.65200"
Location Grid N/E Y/X: N 1913047.922 ftUS, E 126543.834 ftUS
CRS Grid Convergence Angle: -0.7490°
Grid Scale Factor: 1.0000596

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 258.189° (True North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 6947.000 ft above MSL
Seabed / Ground Elevation: 6933.000 ft above MSL
Magnetic Declination: 9.560°
Total Gravity Field Strength: 998.4933mgn (9.80665 Based)
Total Magnetic Field Strength: 50237.793 nT
Magnetic Dip Angle: 63.022°
Declination Date: April 11, 2013
Magnetic Declination Model: BGGM 2012
North Reference: True North
Grid Convergence Used: 0.0000°
Total Corr Mag North->True North: 9.5597°
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	194.36	0.00	0.00	0.00	0.00	0.00	N/A	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65
	100.00	0.00	194.36	100.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
	200.00	0.00	194.36	200.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
	300.00	0.00	194.36	300.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
	400.00	0.00	194.36	400.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
	500.00	0.00	194.36	500.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
Build 2"/100'	550.00	0.00	194.36	550.00	0.00	0.00	0.00	0.00	1913047.92	126543.83	N 36 15 3.92 W 107 30 59.65	
	600.00	1.00	194.36	600.00	0.19	-0.42	-0.11	2.00	1913047.50	126543.72	N 36 15 3.92 W 107 30 59.65	
	700.00	3.00	194.36	699.93	1.73	-3.80	-0.97	2.00	1913044.13	126542.81	N 36 15 3.89 W 107 30 59.66	
	800.00	5.00	194.36	799.68	4.81	-10.56	-2.70	2.00	1913037.40	126540.99	N 36 15 3.82 W 107 30 59.69	
	900.00	7.00	194.36	898.15	9.42	-20.69	-5.30	2.00	1913027.31	126538.27	N 36 15 3.72 W 107 30 59.72	
	1000.00	9.00	194.36	898.15	15.56	-34.17	-8.75	2.00	1913013.87	126534.64	N 36 15 3.59 W 107 30 59.76	
	1100.00	11.00	194.36	1096.63	23.22	-50.99	-13.08	2.00	1912997.11	126530.11	N 36 15 3.42 W 107 30 59.81	
	1200.00	13.00	194.36	1194.44	32.39	-71.13	-18.21	2.00	1912977.03	126524.69	N 36 15 3.22 W 107 30 59.87	
Hold 16.07° INC	1300.00	15.00	194.36	1291.46	43.06	-84.56	-24.21	2.00	1912953.68	126518.38	N 36 15 2.99 W 107 30 59.95	
	1353.51	16.07	194.36	1343.02	49.38	-108.45	-27.77	2.00	1912939.84	126514.65	N 36 15 2.85 W 107 30 59.99	
	1400.00	16.07	194.36	1387.69	55.06	-120.91	-30.96	0.00	1912927.42	126511.29	N 36 15 2.73 W 107 31 0.03	
	1500.00	16.07	194.36	1483.78	67.27	-147.73	-37.83	0.00	1912900.69	126504.08	N 36 15 2.46 W 107 31 0.11	
	1600.00	16.07	194.36	1579.87	79.48	-174.55	-44.69	0.00	1912873.96	126496.86	N 36 15 2.20 W 107 31 0.20	
	1700.00	16.07	194.36	1675.97	91.69	-201.36	-51.56	0.00	1912847.24	126489.64	N 36 15 1.93 W 107 31 0.28	
	1800.00	16.07	194.36	1772.06	103.90	-228.18	-58.43	0.00	1912820.51	126482.42	N 36 15 1.67 W 107 31 0.37	
	1900.00	16.07	194.36	1868.15	116.11	-255.00	-65.29	0.00	1912793.79	126475.21	N 36 15 1.40 W 107 31 0.45	
	2000.00	16.07	194.36	1964.24	128.32	-281.81	-72.16	0.00	1912767.06	126467.99	N 36 15 1.14 W 107 31 0.53	
	2100.00	16.07	194.36	2060.34	140.53	-308.63	-79.03	0.00	1912740.33	126460.77	N 36 15 0.87 W 107 31 0.62	
	2200.00	16.07	194.36	2156.43	152.74	-335.45	-85.89	0.00	1912713.61	126453.56	N 36 15 0.61 W 107 31 0.70	
	2300.00	16.07	194.36	2252.52	164.95	-362.26	-92.76	0.00	1912686.88	126446.34	N 36 15 0.34 W 107 31 0.78	
	2400.00	16.07	194.36	2348.61	177.16	-389.08	-99.63	0.00	1912660.16	126439.12	N 36 15 0.08 W 107 31 0.87	
	2500.00	16.07	194.36	2444.70	189.37	-415.90	-106.49	0.00	1912633.43	126431.91	N 36 14 59.81 W 107 31 0.95	
	2600.00	16.07	194.36	2540.80	201.58	-442.71	-113.36	0.00	1912606.70	126424.69	N 36 14 59.55 W 107 31 1.04	
	2700.00	16.07	194.36	2636.89	213.79	-469.53	-120.23	0.00	1912579.98	126417.47	N 36 14 59.28 W 107 31 1.12	
	2800.00	16.07	194.36	2732.98	226.00	-496.35	-127.09	0.00	1912553.25	126410.25	N 36 14 59.02 W 107 31 1.20	
	2900.00	16.07	194.36	2829.07	238.21	-523.16	-133.96	0.00	1912526.53	126403.04	N 36 14 58.75 W 107 31 1.29	
	3000.00	16.07	194.36	2925.17	250.42	-549.98	-140.83	0.00	1912499.80	126395.82	N 36 14 58.49 W 107 31 1.37	
	3100.00	16.07	194.36	3021.26	262.63	-576.79	-147.69	0.00	1912473.07	126388.60	N 36 14 58.22 W 107 31 1.46	
	3200.00	16.07	194.36	3117.35	274.84	-603.61	-154.56	0.00	1912446.35	126381.39	N 36 14 57.95 W 107 31 1.54	
	3300.00	16.07	194.36	3213.44	287.05	-630.43	-161.43	0.00	1912419.62	126374.17	N 36 14 57.69 W 107 31 1.62	
	3400.00	16.07	194.36	3309.54	299.26	-657.24	-168.29	0.00	1912392.90	126366.95	N 36 14 57.42 W 107 31 1.71	
	3500.00	16.07	194.36	3405.63	311.47	-684.06	-175.16	0.00	1912366.17	126359.74	N 36 14 57.16 W 107 31 1.79	
	3600.00	16.07	194.36	3501.72	323.68	-710.88	-182.03	0.00	1912339.45	126352.52	N 36 14 56.89 W 107 31 1.87	
	3700.00	16.07	194.36	3597.81	335.89	-737.69	-188.89	0.00	1912312.72	126345.30	N 36 14 56.63 W 107 31 1.96	
	3800.00	16.07	194.36	3693.90	348.10	-764.51	-195.76	0.00	1912285.99	126338.08	N 36 14 56.36 W 107 31 2.04	
	3900.00	16.07	194.36	3790.00	360.31	-791.33	-202.63	0.00	1912259.27	126330.87	N 36 14 56.10 W 107 31 2.13	
	4000.00	16.07	194.36	3886.09	372.52	-818.14	-209.49	0.00	1912232.54	126323.65	N 36 14 55.83 W 107 31 2.21	
	4100.00	16.07	194.36	3982.18	384.73	-844.96	-216.36	0.00	1912205.82	126316.43	N 36 14 55.57 W 107 31 2.29	
	4200.00	16.07	194.36	4078.27	396.94	-871.78	-223.23	0.00	1912179.09	126309.22	N 36 14 55.30 W 107 31 2.38	
	4300.00	16.07	194.36	4174.37	409.15	-898.59	-230.09	0.00	1912152.36	126302.00	N 36 14 55.04 W 107 31 2.46	
	4400.00	16.07	194.36	4270.46	421.36	-925.41	-236.96	0.00	1912125.64	126294.78	N 36 14 54.77 W 107 31 2.54	
	4500.00	16.07	194.36	4366.55	433.57	-952.22	-243.83	0.00	1912098.91	126287.56	N 36 14 54.51 W 107 31 2.63	
	4600.00	16.07	194.36	4462.64	445.78	-979.04	-250.69	0.00	1912072.19	126280.35	N 36 14 54.24 W 107 31 2.71	
	4700.00	16.07	194.36	4558.73	458.00	-1005.86	-257.56	0.00	1912045.46	126273.13	N 36 14 53.98 W 107 31 2.80	
	4800.00	16.07	194.36	4654.83	470.21	-1032.67	-264.43	0.00	1912018.73	126265.91	N 36 14 53.71 W 107 31 2.88	
	4900.00	16.07	194.36	4750.92	482.42	-1059.49	-271.29	0.00	1911992.01	126258.70	N 36 14 53.45 W 107 31 2.96	
	5000.00	16.07	194.36	4847.01	494.63	-1086.31	-278.16	0.00	1911965.28	126251.48	N 36 14 53.18 W 107 31 3.05	
	5100.00	16.07	194.36	4943.10	506.84	-1113.12	-285.03	0.00	1911938.56	126244.26	N 36 14 52.92 W 107 31 3.13	
KOP_Build/Turn 9°/100'	5186.53	16.07	194.36	5026.25	517.40	-1136.33	-290.97	0.00	1911915.43	126238.02	N 36 14 52.69 W 107 31 3.20	
	5200.00	16.37	198.57	5039.19	519.18	-1139.93	-292.04	9.00	1911911.84	126236.90	N 36 14 52.65 W 107 31 3.22	
	5300.00	20.75	223.61	5134.11	540.94	-1166.18	-308.78	9.00	1911885.82	126219.82	N 36 14 52.39 W 107 31 3.42	
	5400.00	27.40	238.64	5225.44	577.29	-1191.03	-340.72	9.00	1911861.38	126187.56	N 36 14 52.15 W 107 31 3.81	
	5500.00	35.06	247.85	5310.94	627.34	-1213.88	-387.06	9.00	1911839.13	126140.91	N 36 14 51.92 W 107 31 4.38	
	5600.00	43.18	254.02	5388.49	689.84	-1234.17	-446.68	9.00	1911819.62	126081.03	N 36 14 51.72 W 107 31 5.11	
	5700.00	51.55	258.55	5458.18	763.27	-1251.40	-518.10	9.00	1911803.33	126009.39	N 36 14 51.55 W 107 31 5.98	
	5800.00	60.05	262.12	5512.35	845.82	-1265.14	-590.55	9.00	1911790.65	125927.76	N 36 14 51.41 W 107 31 6.97	
	5900.00	68.63	265.13	5555.62	935.45	-1275.06	-689.05	9.00	1911781.91	125838.14	N 36 14 51.32 W 107 31 8.06	
	6000.00	77.27	267.79	5584.92	1029.95	-1280.90	-784.37	9.00	1911777.31	125742.74	N 36 14 51.26 W 107 31 9.23	
	6100.00	85.92	270.28	5599.53	1127.00	-1282.54	-883.18	9.00	1911776.97	125643.91	N 36 14 51.24 W 107 31 10.43	
Landing Point, Hold to TD	6163.53	91.43	271.83	5601.00	1188.90	-1281.37	-946.68	9.00	1911778.97	125580.45	N 36 14 51.25 W 107 31 11.21	
	6200.00	91.43	271.83	5600.09	1224.32	-1280.20	-983.10	0.00	1911780.61	125544.03	N 36 14 51.26 W 107 31 11.65	
	6300.00	91.43	271.83	5597.60	1321.47	-1277.00	-1083.01	0.00	1911785.11	125444.16	N 36 14 51.30 W 107 31 12.87	
	6400.00	91.43	271.83	5595.11	1418.62	-1273.81	-1182.93	0.00	1911789.62	125344.28	N 36 14 51.33 W 107 31 14.09	
	6500.00	91.43	271.83	5592.62	1515.77	-1270.61	-1282.85	0.00	1911794.12	125244.41	N 36 14 51.36 W 107 31 15.31	
	6600.00	91.43	271.83	5590.13	1612.92	-1267.42	-1382.77	0.00	1911798.62	125144.54	N 36 14 51.39 W 107 31 16.53	
	6700.00	91.43	271.83	5587.64	1710.06	-1264.22	-1482.69	0.00	1911803.12	125044.66	N 36 1	

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	7100.00	91.43	271.83	5577.68	2098.66	-1251.44	-1882.36	0.00	1911821.13	124645.17	N 36 14 51.55	W 107 31 22.63
	7200.00	91.43	271.83	5575.18	2195.81	-1248.24	-1982.28	0.00	1911825.63	124545.30	N 36 14 51.58	W 107 31 23.85
	7300.00	91.43	271.83	5572.69	2292.95	-1245.04	-2082.19	0.00	1911830.13	124445.42	N 36 14 51.61	W 107 31 25.07
	7400.00	91.43	271.83	5570.20	2390.10	-1241.85	-2182.11	0.00	1911834.64	124345.55	N 36 14 51.64	W 107 31 26.29
	7500.00	91.43	271.83	5567.71	2487.25	-1238.65	-2282.03	0.00	1911839.14	124245.68	N 36 14 51.67	W 107 31 27.51
	7600.00	91.43	271.83	5565.22	2584.40	-1235.46	-2381.95	0.00	1911843.64	124145.80	N 36 14 51.71	W 107 31 28.73
	7700.00	91.43	271.83	5562.73	2681.55	-1232.26	-2481.86	0.00	1911848.14	124045.93	N 36 14 51.74	W 107 31 29.95
	7800.00	91.43	271.83	5560.24	2778.69	-1229.07	-2581.78	0.00	1911852.64	123946.06	N 36 14 51.77	W 107 31 31.17
	7900.00	91.43	271.83	5557.75	2875.84	-1225.87	-2681.70	0.00	1911857.15	123846.18	N 36 14 51.80	W 107 31 32.39
	8000.00	91.43	271.83	5555.26	2972.99	-1222.67	-2781.62	0.00	1911861.65	123746.31	N 36 14 51.83	W 107 31 33.61
	8100.00	91.43	271.83	5552.77	3070.14	-1219.48	-2881.54	0.00	1911866.15	123646.44	N 36 14 51.86	W 107 31 34.83
	8200.00	91.43	271.83	5550.28	3167.29	-1216.28	-2981.45	0.00	1911870.65	123546.56	N 36 14 51.89	W 107 31 36.05
	8300.00	91.43	271.83	5547.79	3264.44	-1213.09	-3081.37	0.00	1911875.15	123446.69	N 36 14 51.93	W 107 31 37.27
	8400.00	91.43	271.83	5545.30	3361.58	-1209.89	-3181.29	0.00	1911879.66	123346.82	N 36 14 51.96	W 107 31 38.49
	8500.00	91.43	271.83	5542.81	3458.73	-1206.69	-3281.21	0.00	1911884.16	123246.94	N 36 14 51.99	W 107 31 39.71
	8600.00	91.43	271.83	5540.32	3555.88	-1203.50	-3381.13	0.00	1911888.66	123147.07	N 36 14 52.02	W 107 31 40.93
	8700.00	91.43	271.83	5537.83	3653.03	-1200.30	-3481.04	0.00	1911893.16	123047.20	N 36 14 52.05	W 107 31 42.15
	8800.00	91.43	271.83	5535.34	3750.18	-1197.11	-3580.96	0.00	1911897.67	122947.32	N 36 14 52.08	W 107 31 43.37
	8900.00	91.43	271.83	5532.85	3847.32	-1193.91	-3680.88	0.00	1911902.17	122847.45	N 36 14 52.12	W 107 31 44.59
	9000.00	91.43	271.83	5530.36	3944.47	-1190.71	-3780.80	0.00	1911906.67	122747.58	N 36 14 52.15	W 107 31 45.81
	9100.00	91.43	271.83	5527.87	4041.62	-1187.52	-3880.71	0.00	1911911.17	122647.70	N 36 14 52.18	W 107 31 47.03
	9200.00	91.43	271.83	5525.38	4138.77	-1184.32	-3980.63	0.00	1911915.67	122547.83	N 36 14 52.21	W 107 31 48.25
	9300.00	91.43	271.83	5522.89	4235.92	-1181.13	-4080.55	0.00	1911920.18	122447.96	N 36 14 52.24	W 107 31 49.47
	9400.00	91.43	271.83	5520.40	4333.07	-1177.93	-4180.47	0.00	1911924.68	122348.08	N 36 14 52.27	W 107 31 50.69
	9500.00	91.43	271.83	5517.91	4430.21	-1174.73	-4280.39	0.00	1911929.18	122248.21	N 36 14 52.30	W 107 31 51.91
	9600.00	91.43	271.83	5515.42	4527.36	-1171.54	-4380.30	0.00	1911933.68	122148.34	N 36 14 52.34	W 107 31 53.13
	9700.00	91.43	271.83	5512.93	4624.51	-1168.34	-4480.22	0.00	1911938.18	122048.46	N 36 14 52.37	W 107 31 54.35
	9800.00	91.43	271.83	5510.44	4721.66	-1165.15	-4580.14	0.00	1911942.69	121948.59	N 36 14 52.40	W 107 31 55.57
	9900.00	91.43	271.83	5507.95	4818.81	-1161.95	-4680.06	0.00	1911947.19	121848.72	N 36 14 52.43	W 107 31 56.79
	10000.00	91.43	271.83	5505.46	4915.95	-1158.76	-4779.98	0.00	1911951.69	121748.84	N 36 14 52.46	W 107 31 58.01
	10100.00	91.43	271.83	5502.97	5013.10	-1155.56	-4879.89	0.00	1911956.19	121648.97	N 36 14 52.49	W 107 31 59.23
	10200.00	91.43	271.83	5500.48	5110.25	-1152.36	-4979.81	0.00	1911960.69	121549.10	N 36 14 52.52	W 107 32 0.44
	10300.00	91.43	271.83	5497.98	5207.40	-1149.17	-5079.73	0.00	1911965.20	121449.22	N 36 14 52.55	W 107 32 1.66
	10400.00	91.43	271.83	5495.49	5304.55	-1145.97	-5179.65	0.00	1911969.70	121349.35	N 36 14 52.59	W 107 32 2.88
	10500.00	91.43	271.83	5493.00	5401.70	-1142.78	-5279.57	0.00	1911974.20	121249.48	N 36 14 52.62	W 107 32 4.10
	10600.00	91.43	271.83	5490.51	5498.84	-1139.58	-5379.48	0.00	1911978.70	121149.60	N 36 14 52.65	W 107 32 5.32
Chaco 2306-06L #179 PBHL	10660.78	91.43	271.83	5489.00	5557.89	-1137.64	-5440.22	0.00	1911981.44	121088.90	N 36 14 52.67	W 107 32 6.07

Survey Type: Def Plan

Survey Error Model: ISCSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	14.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Hole / WPX Chaco 2306-06L #179H R1 mdv 09Oct13
	14.000	10660.784	1/100.000	30.000	30.000	SLB_MWD-STD	Original Hole / WPX Chaco 2306-06L #179H R1 mdv 09Oct13

$$PBHL \left\{ \begin{aligned} Y &\rightarrow (1680 - 1137.64)_{ft} = 542.362 \text{ } 542 \text{ ft/s} \\ X &\rightarrow (591 + 2552.36 + 2551.05 - 5440.22)_{ft} = 254.19 \approx 254 \text{ ft/w} \end{aligned} \right. \quad \left(Sec: 1, T: 23N, R: 600 \right) \quad \left(Sec: 1, T: 23N, R: 700 \right)$$

* See plat, Form C-102

William Tambekou
10/18/2013