

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

AS-DRILLED

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-043-21189		*Pool Code 42289		*Pool Name LYBROOK GALLUP	
*Property Code 39731		*Property Name CHACO 2306-19M		*Well Number 190H	
*OGRID No. 120782		*Operator Name WPX ENERGY PRODUCTION, LLC		*Elevation 7012'	

CONFIDENTIAL

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
M	19	23N	6W	4	1205	SOUTH	243	WEST	SANDOVAL

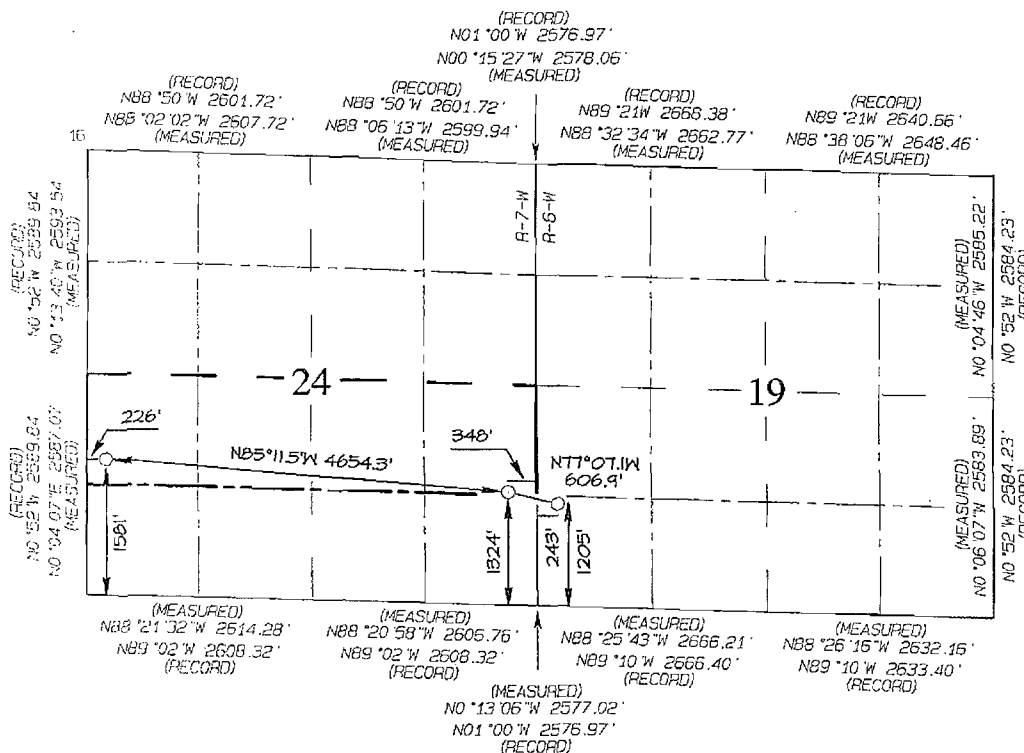
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	24	23N	7W		1581	SOUTH	226	WEST	SANDOVAL

*Dedicated Acres 160.0 Acres N/2 S/2 - Section 24					*Joint or Infill		*Consolidation Code		*Order No. OIL CONS. DIV DIST. 3	
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NC ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

JUN 05 2014



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: 4/1/14
Printed Name: Larry Higgins

E-mail Address: larry.higgins@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: JUNE 4, 2014
Survey Date: FEBRUARY 15, 2013

Signature and Seal of Professional Surveyor:



JASON C. EDWARDS
Certificate Number 15269

END-OF-LATERAL
1581' FSL 226' FWL
SECTION 24, T23N, R6W
LAT: 36.20859°N
LONG: 107.53456°W
DATUM: NAD1927

POINT-OF-ENTRY
1324' FSL 348' FEL
SECTION 19, T23N, R6W
LAT: 36.20768°N
LONG: 107.51883°W
DATUM: NAD1927

SURFACE LOCATION
1205' FSL 243' FWL
SECTION 19, T23N, R6W
LAT: 36.20733°N
LONG: 107.51682°W
DATUM: NAD1927

LAT: 36.20860°N
LONG: 107.53517°W
DATUM: NAD1983

LAT: 36.20770°N
LONG: 107.51943°W
DATUM: NAD1983

LAT: 36.20735°N
LONG: 107.51742°W
DATUM: NAD1983

AV

8

WPXENERGYSM



WPX Energy Rocky Mountain, LLC

Sandoval County, NM NAD27

Chaco 2306-19M

Chaco 2306-19M #190H

OH

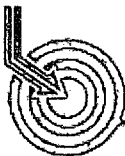
Design: OH

Survey Report - Geographic

05 June, 2014

OIL CONS. DIV DIST. 3

JUN 13 2014



Scientific Drilling

www.scientificdrilling.com



Company Name: WPX Energy Rocky Mountain, LLC
 Project: Sandoval County, NM NAD27
 Site: Chaco 2306-19M
 Well: Chaco 2306-19M #190H

OIL CONS. DIV DIST. 3

JUN 13 2014

WPXENERGY



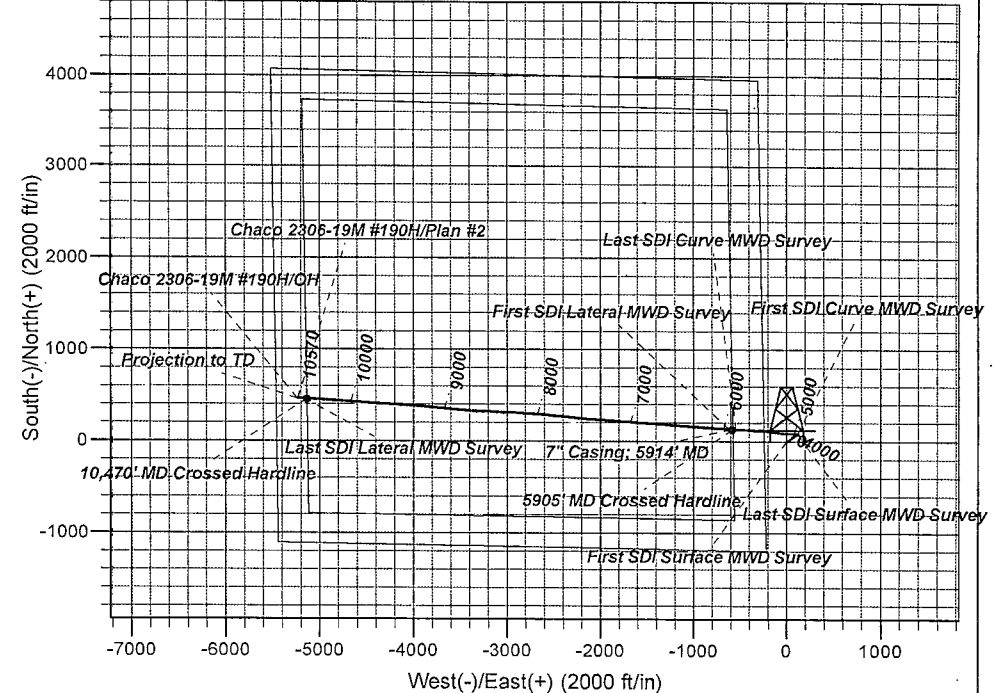
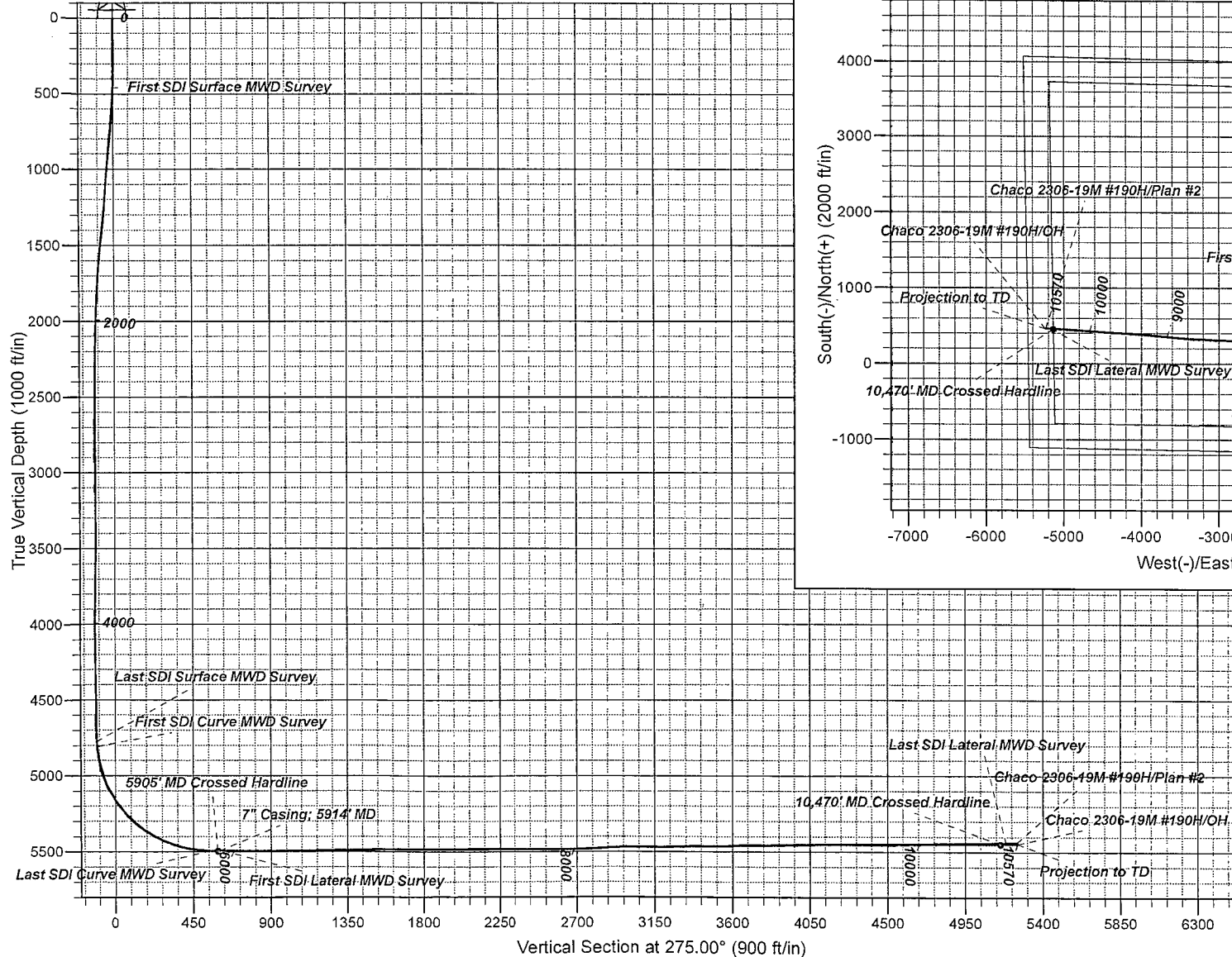
Azimuths to True North
 Magnetic North: 9.42°

Magnetic Field
 Strength: 50103.9snT
 Dip Angle: 62.99°
 Date: 5/6/2014
 Model: BGGM2013

WELL DETAILS: Chaco 2306-19M #190H

GL 7012' & RKB 14' @ 7026.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1897118.78	126261.92	36° 12' 26.388 N	107° 31' 0.552 W



Design: OH (Chaco 2306-19M #190H/OH)
Created By: Janie Collins Date: 15:37, June 05 2014
PROJECT DETAILS: Sandoval County, NM NAD27
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico Central 3002
System Datum: Mean Sea Level
Local North: True



Survey Report - Geographic



Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well Chaco 2306-19M #190H
Project:	Sandoval County, NM NAD27	TVD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Site:	Chaco 2306-19M	MD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Well:	Chaco 2306-19M #190H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Project	Sandoval County, NM NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico Central 3002		

Site	Chaco 2306-19M		
Site Position:		Northing:	1,897,150.97 usft
From:	Lat/Long	Easting:	126,306.60 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in
		Latitude:	36° 12' 26.712 N
		Longitude:	107° 31' 0.012 W
		Grid Convergence:	-0.75 °

Well	Chaco 2306-19M #190H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	0.00 ft
		Latitude:	36° 12' 26.388 N
		Longitude:	107° 31' 0.552 W
		Ground Level:	7,012.00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
			(°)
	BGGM2013	5/6/2014	9.42
			Dip Angle
			(°)
			62.99
			Field Strength
			(nT)
			50,104

Design	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			275.00

Survey Program	Date 5/27/2014		
From	To	Survey (Wellbore)	Tool Name
(ft)	(ft)		
459.00	4,786.00	Survey #1 - Surface MWD (OH)	MWD SDI
4,817.00	5,865.00	Survey #2 - Curve MWD Survey (OH)	MWD SDI
5,936.00	10,570.00	Survey #3 - Lateral MWD Survey (OH)	MWD SDI
			Description
			MWD - Standard ver 1.0.1
			MWD - Standard ver 1.0.1
			MWD - Standard ver 1.0.1

Survey									
Measured			Vertical			Map	Map		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
0.00	0.00	0.00	0.00	0.00	0.00	1,897,118.78	126,261.92	36° 12' 26.388 N	107° 31' 0.552 W
459.00	0.60	133.84	458.99	-1.66	1.73	1,897,117.09	126,263.63	36° 12' 26.372 N	107° 31' 0.531 W
First SDI Surface MWD Survey									
522.00	1.71	74.10	521.98	-1.64	2.88	1,897,117.11	126,264.77	36° 12' 26.372 N	107° 31' 0.517 W
585.00	2.81	72.21	584.93	-0.91	5.25	1,897,117.81	126,267.16	36° 12' 26.379 N	107° 31' 0.488 W
648.00	3.45	69.78	647.84	0.22	8.50	1,897,118.89	126,270.42	36° 12' 26.390 N	107° 31' 0.448 W
711.00	4.79	65.44	710.67	1.97	12.67	1,897,120.58	126,274.61	36° 12' 26.407 N	107° 31' 0.397 W
775.00	5.83	63.79	774.40	4.52	18.02	1,897,123.06	126,279.99	36° 12' 26.433 N	107° 31' 0.332 W
838.00	5.79	64.31	837.07	7.31	23.75	1,897,125.78	126,285.76	36° 12' 26.460 N	107° 31' 0.262 W
901.00	6.35	54.80	899.72	10.69	29.46	1,897,129.09	126,291.52	36° 12' 26.494 N	107° 31' 0.193 W



Survey Report - Geographic



Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well Chaco 2306-19M #190H
Project:	Sandoval County, NM NAD27	TVD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Site:	Chaco 2306-19M	MD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Well:	Chaco 2306-19M #190H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
964.00	6.39	47.65	962.33	15.06	34.90	1,897,133.39	126,297.01	36° 12' 26.537 N	107° 31' 0.126 W
1,027.00	6.46	47.95	1,024.94	19.80	40.12	1,897,138.05	126,302.30	36° 12' 26.584 N	107° 31' 0.062 W
1,090.00	6.14	47.81	1,087.56	24.43	45.25	1,897,142.62	126,307.48	36° 12' 26.630 N	107° 31' 0.000 W
1,153.00	6.01	45.54	1,150.20	29.01	50.10	1,897,147.13	126,312.39	36° 12' 26.675 N	107° 30' 59.941 W
1,216.00	6.15	43.64	1,212.85	33.76	54.78	1,897,151.82	126,317.14	36° 12' 26.722 N	107° 30' 59.884 W
1,279.00	6.25	50.70	1,275.48	38.37	59.77	1,897,156.37	126,322.18	36° 12' 26.767 N	107° 30' 59.823 W
1,342.00	6.18	58.48	1,338.11	42.32	65.31	1,897,160.24	126,327.78	36° 12' 26.806 N	107° 30' 59.755 W
1,405.00	6.18	59.07	1,400.75	45.83	71.11	1,897,163.68	126,333.62	36° 12' 26.841 N	107° 30' 59.684 W
1,468.00	6.60	58.10	1,463.35	49.49	77.09	1,897,167.26	126,339.65	36° 12' 26.877 N	107° 30' 59.611 W
1,529.00	6.53	57.30	1,523.95	53.22	82.99	1,897,170.91	126,345.60	36° 12' 26.914 N	107° 30' 59.539 W
1,590.00	6.26	56.49	1,584.57	56.93	88.68	1,897,174.54	126,351.34	36° 12' 26.951 N	107° 30' 59.470 W
1,652.00	6.31	56.19	1,646.20	60.69	94.33	1,897,178.23	126,357.03	36° 12' 26.988 N	107° 30' 59.401 W
1,712.00	5.13	48.89	1,705.90	64.29	99.09	1,897,181.77	126,361.84	36° 12' 27.024 N	107° 30' 59.343 W
1,768.00	5.17	50.98	1,761.68	67.52	102.94	1,897,184.95	126,365.73	36° 12' 27.056 N	107° 30' 59.296 W
1,797.00	4.57	40.01	1,790.57	69.23	104.70	1,897,186.64	126,367.51	36° 12' 27.073 N	107° 30' 59.275 W
1,858.00	3.33	49.60	1,851.43	72.24	107.61	1,897,189.61	126,370.46	36° 12' 27.102 N	107° 30' 59.239 W
1,917.00	2.90	62.51	1,910.34	74.04	110.24	1,897,191.37	126,373.11	36° 12' 27.120 N	107° 30' 59.207 W
1,979.00	3.42	64.87	1,972.25	75.55	113.30	1,897,192.84	126,376.20	36° 12' 27.135 N	107° 30' 59.170 W
2,040.00	2.02	67.52	2,033.18	76.73	115.94	1,897,193.99	126,378.85	36° 12' 27.147 N	107° 30' 59.137 W
2,103.00	1.21	43.56	2,096.15	77.64	117.43	1,897,194.88	126,380.35	36° 12' 27.156 N	107° 30' 59.119 W
2,163.00	0.72	40.82	2,156.14	78.38	118.11	1,897,195.61	126,381.04	36° 12' 27.163 N	107° 30' 59.111 W
2,224.00	0.55	100.84	2,217.14	78.62	118.65	1,897,195.84	126,381.58	36° 12' 27.165 N	107° 30' 59.104 W
2,285.00	0.76	161.55	2,278.14	78.18	119.06	1,897,195.40	126,381.99	36° 12' 27.161 N	107° 30' 59.099 W
2,346.00	0.73	147.00	2,339.13	77.47	119.40	1,897,194.68	126,382.32	36° 12' 27.154 N	107° 30' 59.095 W
2,407.00	0.69	146.22	2,400.13	76.84	119.82	1,897,194.05	126,382.73	36° 12' 27.148 N	107° 30' 59.090 W
2,468.00	0.72	154.47	2,461.12	76.19	120.19	1,897,193.39	126,383.09	36° 12' 27.141 N	107° 30' 59.086 W
2,530.00	0.81	152.05	2,523.12	75.45	120.56	1,897,192.65	126,383.46	36° 12' 27.134 N	107° 30' 59.081 W
2,590.00	0.72	164.10	2,583.11	74.71	120.86	1,897,191.91	126,383.75	36° 12' 27.127 N	107° 30' 59.077 W
2,651.00	0.94	151.00	2,644.10	73.91	121.21	1,897,191.10	126,384.08	36° 12' 27.119 N	107° 30' 59.073 W
2,712.00	0.28	125.72	2,705.10	73.38	121.57	1,897,190.57	126,384.44	36° 12' 27.114 N	107° 30' 59.069 W
2,773.00	0.58	324.89	2,766.10	73.55	121.52	1,897,190.73	126,384.39	36° 12' 27.115 N	107° 30' 59.069 W
2,835.00	0.63	338.79	2,828.10	74.12	121.21	1,897,191.31	126,384.09	36° 12' 27.121 N	107° 30' 59.073 W
2,897.00	0.34	308.16	2,890.09	74.55	120.95	1,897,191.75	126,383.83	36° 12' 27.125 N	107° 30' 59.076 W
2,959.00	0.48	256.48	2,952.09	74.61	120.55	1,897,191.80	126,383.43	36° 12' 27.126 N	107° 30' 59.081 W
3,022.00	0.60	281.89	3,015.09	74.61	119.97	1,897,191.82	126,382.85	36° 12' 27.126 N	107° 30' 59.088 W
3,085.00	0.65	249.00	3,078.09	74.55	119.31	1,897,191.77	126,382.20	36° 12' 27.125 N	107° 30' 59.096 W
3,148.00	0.68	258.26	3,141.08	74.35	118.61	1,897,191.57	126,381.49	36° 12' 27.123 N	107° 30' 59.105 W
3,211.00	0.85	224.75	3,204.08	73.94	117.92	1,897,191.17	126,380.79	36° 12' 27.119 N	107° 30' 59.113 W
3,274.00	0.56	221.62	3,267.07	73.38	117.39	1,897,190.62	126,380.25	36° 12' 27.114 N	107° 30' 59.120 W
3,337.00	0.82	201.37	3,330.07	72.73	117.02	1,897,189.97	126,379.88	36° 12' 27.107 N	107° 30' 59.124 W
3,399.00	0.48	98.60	3,392.06	72.28	117.11	1,897,189.52	126,379.96	36° 12' 27.103 N	107° 30' 59.123 W
3,462.00	1.11	47.33	3,455.06	72.65	117.82	1,897,189.88	126,380.68	36° 12' 27.106 N	107° 30' 59.114 W
3,525.00	0.64	77.18	3,518.05	73.14	118.61	1,897,190.37	126,381.48	36° 12' 27.111 N	107° 30' 59.105 W
3,589.00	0.64	79.49	3,582.05	73.29	119.31	1,897,190.50	126,382.18	36° 12' 27.113 N	107° 30' 59.096 W
3,653.00	0.72	70.68	3,646.04	73.48	120.04	1,897,190.69	126,382.91	36° 12' 27.115 N	107° 30' 59.087 W
3,716.00	1.20	51.64	3,709.03	74.02	120.94	1,897,191.22	126,383.81	36° 12' 27.120 N	107° 30' 59.076 W
3,778.00	1.13	66.07	3,771.02	74.67	122.00	1,897,191.86	126,384.89	36° 12' 27.126 N	107° 30' 59.063 W
3,842.00	0.73	89.48	3,835.01	74.93	122.99	1,897,192.10	126,385.87	36° 12' 27.129 N	107° 30' 59.051 W
3,905.00	0.91	72.91	3,898.01	75.09	123.87	1,897,192.24	126,386.76	36° 12' 27.130 N	107° 30' 59.041 W
3,968.00	0.41	92.16	3,961.00	75.22	124.57	1,897,192.37	126,387.46	36° 12' 27.132 N	107° 30' 59.032 W
4,031.00	0.44	330.44	4,024.00	75.43	124.68	1,897,192.57	126,387.57	36° 12' 27.134 N	107° 30' 59.031 W
4,093.00	0.71	306.75	4,086.00	75.86	124.25	1,897,193.01	126,387.15	36° 12' 27.138 N	107° 30' 59.036 W
4,156.00	0.76	316.72	4,148.99	76.40	123.65	1,897,193.56	126,386.56	36° 12' 27.143 N	107° 30' 59.043 W
4,219.00	0.66	302.90	4,211.99	76.90	123.06	1,897,194.07	126,385.97	36° 12' 27.148 N	107° 30' 59.051 W
4,282.00	1.13	298.62	4,274.98	77.40	122.21	1,897,194.57	126,385.13	36° 12' 27.153 N	107° 30' 59.061 W

Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well Chaco 2306-19M #190H
Project:	Sandoval County, NM NAD27	TVD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Site:	Chaco 2306-19M	MD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Well:	Chaco 2306-19M #190H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,345.00	1.04	302.22	4,337.97	78.00	121.18	1,897,195.19	126,384.11	36° 12' 27.159 N	107° 30' 59.073 W
4,409.00	0.87	276.63	4,401.96	78.36	120.21	1,897,195.57	126,383.14	36° 12' 27.163 N	107° 30' 59.085 W
4,472.00	0.40	276.05	4,464.96	78.44	119.51	1,897,195.66	126,382.45	36° 12' 27.164 N	107° 30' 59.094 W
4,535.00	0.78	259.00	4,527.95	78.38	118.87	1,897,195.61	126,381.81	36° 12' 27.163 N	107° 30' 59.102 W
4,598.00	0.37	247.31	4,590.95	78.22	118.27	1,897,195.45	126,381.20	36° 12' 27.162 N	107° 30' 59.109 W
4,660.00	0.69	236.47	4,652.95	77.94	117.77	1,897,195.18	126,380.70	36° 12' 27.159 N	107° 30' 59.115 W
4,723.00	0.81	246.83	4,715.94	77.56	117.04	1,897,194.80	126,379.97	36° 12' 27.155 N	107° 30' 59.124 W
4,754.00	0.55	248.44	4,746.94	77.41	116.70	1,897,194.66	126,379.62	36° 12' 27.154 N	107° 30' 59.128 W
4,786.00	2.10	270.54	4,778.93	77.36	115.98	1,897,194.62	126,378.89	36° 12' 27.153 N	107° 30' 59.137 W
Last SDI Surface MWD Survey									
4,817.00	6.01	283.98	4,809.85	77.76	113.83	1,897,195.05	126,376.76	36° 12' 27.157 N	107° 30' 59.163 W
First SDI Curve MWD Survey									
4,849.00	8.69	283.71	4,841.58	78.74	109.86	1,897,196.08	126,372.79	36° 12' 27.167 N	107° 30' 59.212 W
4,880.00	9.40	281.74	4,872.20	79.81	105.10	1,897,197.21	126,368.06	36° 12' 27.177 N	107° 30' 59.270 W
4,912.00	9.23	281.67	4,903.77	80.86	100.03	1,897,198.33	126,363.00	36° 12' 27.188 N	107° 30' 59.332 W
4,943.00	10.75	278.09	4,934.30	81.77	94.73	1,897,199.31	126,357.71	36° 12' 27.197 N	107° 30' 59.396 W
4,975.00	13.60	277.78	4,965.58	82.70	88.05	1,897,200.32	126,351.04	36° 12' 27.206 N	107° 30' 59.478 W
5,006.00	16.49	276.37	4,995.51	83.68	80.06	1,897,201.41	126,343.07	36° 12' 27.215 N	107° 30' 59.575 W
5,038.00	18.84	277.04	5,026.00	84.82	70.42	1,897,202.67	126,333.44	36° 12' 27.227 N	107° 30' 59.693 W
5,070.00	21.45	274.32	5,056.04	85.89	59.46	1,897,203.89	126,322.49	36° 12' 27.237 N	107° 30' 59.827 W
5,101.00	23.43	270.00	5,084.70	86.32	47.64	1,897,204.47	126,310.68	36° 12' 27.242 N	107° 30' 59.971 W
5,133.00	26.32	268.89	5,113.73	86.18	34.18	1,897,204.51	126,297.22	36° 12' 27.240 N	107° 31' 0.135 W
5,164.00	28.75	267.84	5,141.21	85.77	19.86	1,897,204.28	126,282.90	36° 12' 27.236 N	107° 31' 0.310 W
5,196.00	30.37	268.73	5,169.05	85.30	4.08	1,897,204.02	126,267.11	36° 12' 27.231 N	107° 31' 0.502 W
5,227.00	32.05	270.43	5,195.56	85.19	-11.98	1,897,204.12	126,251.05	36° 12' 27.230 N	107° 31' 0.698 W
5,259.00	35.08	272.73	5,222.22	85.69	-29.66	1,897,204.85	126,233.38	36° 12' 27.235 N	107° 31' 0.914 W
5,290.00	38.51	275.73	5,247.04	87.08	-48.17	1,897,206.48	126,214.89	36° 12' 27.249 N	107° 31' 1.140 W
5,323.00	41.20	276.51	5,272.38	89.34	-69.19	1,897,209.01	126,193.90	36° 12' 27.271 N	107° 31' 1.396 W
5,354.00	43.50	277.31	5,295.28	91.85	-89.92	1,897,211.80	126,173.20	36° 12' 27.296 N	107° 31' 1.649 W
5,386.00	45.59	277.58	5,318.09	94.76	-112.18	1,897,215.00	126,150.99	36° 12' 27.325 N	107° 31' 1.921 W
5,418.00	47.63	277.53	5,340.07	97.82	-135.23	1,897,218.36	126,127.98	36° 12' 27.355 N	107° 31' 2.202 W
5,449.00	51.39	276.09	5,360.20	100.60	-158.64	1,897,221.45	126,104.61	36° 12' 27.383 N	107° 31' 2.488 W
5,481.00	55.31	275.59	5,379.29	103.21	-184.17	1,897,224.39	126,079.11	36° 12' 27.409 N	107° 31' 2.799 W
5,513.00	58.88	274.92	5,396.68	105.67	-210.92	1,897,227.20	126,052.40	36° 12' 27.433 N	107° 31' 3.125 W
5,544.00	60.25	274.56	5,412.38	107.88	-237.56	1,897,229.75	126,025.79	36° 12' 27.455 N	107° 31' 3.450 W
5,576.00	61.53	274.81	5,427.95	110.16	-265.42	1,897,232.40	125,997.96	36° 12' 27.477 N	107° 31' 3.790 W
5,609.00	65.15	275.00	5,442.75	112.68	-294.80	1,897,235.31	125,968.62	36° 12' 27.502 N	107° 31' 4.149 W
5,640.00	69.30	275.00	5,454.75	115.17	-323.27	1,897,238.17	125,940.18	36° 12' 27.527 N	107° 31' 4.496 W
5,671.00	73.09	274.13	5,464.74	117.51	-352.51	1,897,240.88	125,910.97	36° 12' 27.550 N	107° 31' 4.853 W
5,703.00	75.80	273.04	5,473.32	119.43	-383.28	1,897,243.21	125,880.23	36° 12' 27.569 N	107° 31' 5.228 W
5,734.00	77.84	272.82	5,480.39	120.98	-413.42	1,897,245.15	125,850.11	36° 12' 27.584 N	107° 31' 5.596 W
5,766.00	81.02	272.46	5,486.26	122.42	-444.84	1,897,247.00	125,818.72	36° 12' 27.599 N	107° 31' 5.979 W
5,797.00	82.55	272.30	5,490.69	123.70	-475.50	1,897,248.68	125,788.08	36° 12' 27.611 N	107° 31' 6.353 W
5,829.00	85.08	272.48	5,494.13	125.02	-507.28	1,897,250.42	125,756.32	36° 12' 27.624 N	107° 31' 6.741 W
5,860.00	87.95	272.68	5,496.02	126.42	-538.19	1,897,252.22	125,725.43	36° 12' 27.638 N	107° 31' 7.118 W
5,865.00	88.49	272.46	5,496.17	126.64	-543.18	1,897,252.51	125,720.44	36° 12' 27.640 N	107° 31' 7.179 W
Last SDI Curve MWD Survey									
5,905.00	89.49	272.75	5,496.88	128.46	-583.13	1,897,254.84	125,680.52	36° 12' 27.658 N	107° 31' 7.667 W
5905' MD Crossed Hardline									
5,914.00	89.72	272.81	5,496.94	128.89	-592.12	1,897,255.40	125,671.53	36° 12' 27.662 N	107° 31' 7.776 W
7" Casing; 5914' MD									
5,936.00	90.27	272.97	5,496.94	130.00	-614.09	1,897,256.79	125,649.58	36° 12' 27.673 N	107° 31' 8.044 W
First SDI Lateral MWD Survey									
5,998.00	90.60	273.01	5,496.47	133.24	-676.01	1,897,260.84	125,587.71	36° 12' 27.705 N	107° 31' 8.800 W



Survey Report - Geographic



Company:	WPX Energy Rocky Mountain, LLC	Local Co-ordinate Reference:	Well Chaco 2306-19M #190H
Project:	Sandoval County, NM NAD27	TVD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Site:	Chaco 2306-19M	MD Reference:	GL 7012' & RKB 14' @ 7026.00ft
Well:	Chaco 2306-19M #190H	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,059.00	90.81	272.70	5,495.72	136.28	-736.93	1,897,264.67	125,526.84	36° 12' 27.735 N	107° 31' 9.543 W
6,119.00	90.84	272.90	5,494.86	139.21	-796.85	1,897,268.38	125,466.96	36° 12' 27.764 N	107° 31' 10.274 W
6,180.00	88.92	273.82	5,494.98	142.78	-857.74	1,897,272.75	125,406.12	36° 12' 27.800 N	107° 31' 11.017 W
6,242.00	89.33	273.88	5,495.93	146.94	-919.59	1,897,277.72	125,344.33	36° 12' 27.841 N	107° 31' 11.772 W
6,303.00	89.90	274.12	5,496.34	151.20	-980.44	1,897,282.77	125,283.54	36° 12' 27.883 N	107° 31' 12.514 W
6,366.00	90.30	274.27	5,496.23	155.81	-1,043.27	1,897,288.20	125,220.77	36° 12' 27.929 N	107° 31' 13.281 W
6,429.00	91.01	274.49	5,495.51	160.62	-1,106.08	1,897,293.83	125,158.03	36° 12' 27.976 N	107° 31' 14.047 W
6,492.00	91.62	274.58	5,494.07	165.60	-1,168.87	1,897,299.63	125,095.31	36° 12' 28.025 N	107° 31' 14.813 W
6,555.00	91.72	274.29	5,492.23	170.47	-1,231.65	1,897,305.32	125,032.60	36° 12' 28.073 N	107° 31' 15.579 W
6,618.00	90.67	274.15	5,490.92	175.10	-1,294.47	1,897,310.78	124,969.85	36° 12' 28.119 N	107° 31' 16.346 W
6,681.00	91.21	273.80	5,489.88	179.47	-1,357.31	1,897,315.96	124,907.07	36° 12' 28.162 N	107° 31' 17.112 W
6,744.00	90.20	273.88	5,489.11	183.69	-1,420.16	1,897,321.00	124,844.28	36° 12' 28.204 N	107° 31' 17.879 W
6,807.00	91.35	273.72	5,488.25	187.86	-1,483.02	1,897,326.00	124,781.49	36° 12' 28.245 N	107° 31' 18.646 W
6,869.00	92.26	273.86	5,486.30	191.96	-1,544.85	1,897,330.90	124,719.71	36° 12' 28.286 N	107° 31' 19.401 W
6,933.00	88.92	274.57	5,485.64	196.66	-1,608.66	1,897,336.44	124,655.96	36° 12' 28.332 N	107° 31' 20.179 W
6,995.00	89.63	274.59	5,486.43	201.61	-1,670.46	1,897,342.20	124,594.24	36° 12' 28.381 N	107° 31' 20.933 W
7,058.00	90.50	274.71	5,486.36	206.72	-1,733.25	1,897,348.12	124,531.52	36° 12' 28.432 N	107° 31' 21.699 W
7,121.00	91.11	274.75	5,485.47	211.91	-1,796.03	1,897,354.14	124,468.81	36° 12' 28.483 N	107° 31' 22.465 W
7,184.00	89.23	273.72	5,485.28	216.57	-1,858.86	1,897,359.61	124,406.05	36° 12' 28.529 N	107° 31' 23.232 W
7,247.00	89.87	273.74	5,485.78	220.66	-1,921.72	1,897,364.53	124,343.25	36° 12' 28.569 N	107° 31' 23.999 W
7,310.00	90.66	273.88	5,485.49	224.85	-1,984.58	1,897,369.54	124,280.45	36° 12' 28.611 N	107° 31' 24.766 W
7,373.00	91.28	274.24	5,484.42	229.31	-2,047.41	1,897,374.82	124,217.68	36° 12' 28.655 N	107° 31' 25.532 W
7,435.00	91.51	274.26	5,482.91	233.90	-2,109.22	1,897,380.22	124,155.94	36° 12' 28.700 N	107° 31' 26.287 W
7,499.00	88.68	275.27	5,482.81	239.22	-2,172.99	1,897,386.36	124,092.24	36° 12' 28.753 N	107° 31' 27.065 W
7,563.00	89.02	275.36	5,484.09	245.15	-2,236.71	1,897,393.12	124,028.61	36° 12' 28.811 N	107° 31' 27.842 W
7,626.00	89.16	275.50	5,485.09	251.11	-2,299.42	1,897,399.90	123,965.98	36° 12' 28.870 N	107° 31' 28.607 W
7,690.00	89.20	275.63	5,486.01	257.31	-2,363.11	1,897,406.94	123,902.38	36° 12' 28.931 N	107° 31' 29.384 W
7,753.00	89.40	275.66	5,486.78	263.51	-2,425.80	1,897,413.96	123,839.78	36° 12' 28.993 N	107° 31' 30.149 W
7,817.00	89.76	275.63	5,487.25	269.81	-2,489.49	1,897,421.08	123,776.18	36° 12' 29.055 N	107° 31' 30.926 W
7,880.00	90.07	275.75	5,487.34	276.05	-2,552.17	1,897,428.15	123,713.57	36° 12' 29.117 N	107° 31' 31.691 W
7,943.00	90.57	274.90	5,486.99	281.90	-2,614.90	1,897,434.81	123,650.93	36° 12' 29.174 N	107° 31' 32.456 W
8,005.00	92.15	273.56	5,485.52	286.47	-2,676.71	1,897,440.19	123,589.18	36° 12' 29.220 N	107° 31' 33.210 W
8,069.00	92.28	273.65	5,483.04	290.49	-2,740.54	1,897,445.04	123,525.42	36° 12' 29.259 N	107° 31' 33.989 W
8,132.00	92.94	274.02	5,480.17	294.70	-2,803.33	1,897,450.07	123,462.68	36° 12' 29.301 N	107° 31' 34.755 W
8,195.00	93.80	274.16	5,476.47	299.19	-2,866.06	1,897,455.38	123,400.02	36° 12' 29.345 N	107° 31' 35.521 W
8,259.00	93.39	273.47	5,472.46	303.44	-2,929.79	1,897,460.46	123,336.35	36° 12' 29.387 N	107° 31' 36.298 W
8,322.00	91.65	271.92	5,469.69	306.39	-2,992.66	1,897,464.24	123,273.52	36° 12' 29.416 N	107° 31' 37.065 W
8,384.00	90.03	271.65	5,468.78	308.33	-3,054.62	1,897,466.98	123,211.59	36° 12' 29.435 N	107° 31' 37.821 W
8,447.00	88.49	272.38	5,469.59	310.54	-3,117.57	1,897,470.02	123,148.68	36° 12' 29.457 N	107° 31' 38.589 W
8,510.00	89.66	272.52	5,470.61	313.23	-3,180.51	1,897,473.53	123,085.78	36° 12' 29.484 N	107° 31' 39.357 W
8,573.00	90.91	272.93	5,470.29	316.23	-3,243.43	1,897,477.35	123,022.90	36° 12' 29.513 N	107° 31' 40.125 W
8,636.00	91.51	272.77	5,468.96	319.36	-3,306.34	1,897,481.30	122,960.04	36° 12' 29.544 N	107° 31' 40.893 W
8,698.00	92.36	272.84	5,468.87	322.39	-3,368.23	1,897,485.14	122,898.19	36° 12' 29.574 N	107° 31' 41.648 W
8,762.00	89.56	274.66	5,465.80	326.58	-3,432.07	1,897,490.16	122,834.41	36° 12' 29.615 N	107° 31' 42.427 W
8,825.00	90.91	275.23	5,465.54	332.01	-3,494.84	1,897,496.41	122,771.72	36° 12' 29.669 N	107° 31' 43.192 W
8,888.00	91.72	275.27	5,464.09	337.77	-3,557.56	1,897,502.99	122,709.09	36° 12' 29.726 N	107° 31' 43.958 W
8,952.00	92.66	275.17	5,461.65	343.59	-3,621.24	1,897,509.64	122,645.48	36° 12' 29.783 N	107° 31' 44.735 W
9,015.00	89.46	275.45	5,460.48	349.42	-3,683.95	1,897,516.29	122,582.85	36° 12' 29.841 N	107° 31' 45.500 W
9,078.00	89.97	275.54	5,460.80	355.45	-3,746.66	1,897,523.14	122,520.23	36° 12' 29.900 N	107° 31' 46.265 W
9,141.00	90.81	275.58	5,460.37	361.55	-3,809.37	1,897,530.06	122,457.61	36° 12' 29.961 N	107° 31' 47.030 W
9,204.00	91.79	275.71	5,458.94	367.75	-3,872.04	1,897,537.08	122,395.02	36° 12' 30.022 N	107° 31' 47.795 W
9,266.00	93.09	275.43	5,456.30	373.76	-3,933.69	1,897,543.89	122,333.45	36° 12' 30.081 N	107° 31' 48.547 W
9,329.00	89.76	273.40	5,454.73	378.61	-3,996.47	1,897,549.56	122,270.74	36° 12' 30.129 N	107° 31' 49.313 W
9,392.00	90.97	273.66	5,454.33	382.49	-4,059.35	1,897,554.26	122,207.92	36° 12' 30.167 N	107° 31' 50.080 W
9,455.00	91.95	273.41	5,452.73	386.37	-4,122.21	1,897,558.96	122,145.11	36° 12' 30.206 N	107° 31' 50.847 W

Company: WPX Energy Rocky Mountain, LLC
Project: Sandoval County, NM NAD27
Site: Chaco 2306-19M
Well: Chaco 2306-19M #190H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Chaco 2306-19M #190H
TVD Reference: GL 7012' & RKB 14' @ 7026.00ft
MD Reference: GL 7012' & RKB 14' @ 7026.00ft
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Grand Junction District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,518.00	88.59	272.93	5,452.43	389.85	-4,185.10	1,897,563.27	122,082.27	36° 12' 30.240 N	107° 31' 51.614 W
9,581.00	89.56	272.81	5,453.45	393.01	-4,248.02	1,897,567.24	122,019.41	36° 12' 30.271 N	107° 31' 52.382 W
9,644.00	90.84	272.95	5,453.23	396.17	-4,310.94	1,897,571.23	121,956.53	36° 12' 30.302 N	107° 31' 53.150 W
9,707.00	91.14	273.27	5,452.14	399.59	-4,373.83	1,897,575.47	121,893.69	36° 12' 30.336 N	107° 31' 53.917 W
9,769.00	89.26	273.79	5,451.92	403.41	-4,435.71	1,897,580.09	121,831.86	36° 12' 30.374 N	107° 31' 54.672 W
9,832.00	90.20	274.26	5,452.22	407.83	-4,498.56	1,897,585.34	121,769.08	36° 12' 30.417 N	107° 31' 55.439 W
9,894.00	90.47	274.53	5,451.86	412.58	-4,560.37	1,897,590.89	121,707.33	36° 12' 30.464 N	107° 31' 56.193 W
9,957.00	89.87	274.87	5,451.67	417.74	-4,623.16	1,897,596.88	121,644.62	36° 12' 30.515 N	107° 31' 56.959 W
10,020.00	90.70	274.68	5,451.36	422.99	-4,685.94	1,897,602.94	121,581.91	36° 12' 30.567 N	107° 31' 57.725 W
10,083.00	91.85	273.98	5,449.95	427.74	-4,748.74	1,897,608.52	121,519.18	36° 12' 30.614 N	107° 31' 58.491 W
10,141.00	90.87	273.81	5,448.58	431.68	-4,806.59	1,897,613.21	121,461.39	36° 12' 30.653 N	107° 31' 59.197 W
10,204.00	88.75	273.31	5,448.79	435.59	-4,869.47	1,897,617.94	121,398.57	36° 12' 30.691 N	107° 31' 59.964 W
10,266.00	88.89	273.44	5,450.06	439.24	-4,931.35	1,897,622.40	121,336.74	36° 12' 30.727 N	107° 32' 0.719 W
10,329.00	89.73	273.51	5,450.82	443.06	-4,994.22	1,897,627.04	121,273.92	36° 12' 30.765 N	107° 32' 1.487 W
10,393.00	90.77	273.31	5,450.54	446.87	-5,058.11	1,897,631.68	121,210.09	36° 12' 30.802 N	107° 32' 2.266 W
10,455.00	91.01	273.97	5,449.58	450.80	-5,119.98	1,897,636.42	121,148.28	36° 12' 30.841 N	107° 32' 3.021 W
10,470.00	91.00	273.90	5,449.32	451.83	-5,134.94	1,897,637.65	121,133.33	36° 12' 30.851 N	107° 32' 3.204 W
10,470' MD Crossed Hardline									
10,502.00	90.98	273.76	5,448.76	453.97	-5,166.86	1,897,640.20	121,101.44	36° 12' 30.872 N	107° 32' 3.593 W
Last SDI Lateral MWD Survey									
10,570.00	90.98	273.76	5,447.60	458.43	-5,234.71	1,897,645.55	121,033.66	36° 12' 30.916 N	107° 32' 4.421 W
Projection to TD									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
459.00	458.99	-1.66	1.73	First SDI Surface MWD Survey
4,786.00	4,778.93	77.36	115.98	Last SDI Surface MWD Survey
4,817.00	4,809.85	77.76	113.83	First SDI Curve MWD Survey
5,865.00	5,496.17	126.64	-543.18	Last SDI Curve MWD Survey
5,905.00	5,496.88	128.46	-583.13	5905' MD Crossed Hardline
5,914.00	5,496.94	128.89	-592.12	7" Casing; 5914' MD
5,936.00	5,496.94	130.00	-614.09	First SDI Lateral MWD Survey
10,470.00	5,449.32	451.83	-5,134.94	10,470' MD Crossed Hardline
10,502.00	5,448.76	453.97	-5,166.86	Last SDI Lateral MWD Survey
10,570.00	5,447.60	458.43	-5,234.71	Projection to TD

Checked By: _____ Approved By: _____ Date: _____