Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia
NM OIL CONSERVATION
ARTESIA DISTRICT

JUL 19 2016

RECEIVED

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

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 reverse side.

5. Lease Serial No.
NMNM54290

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
NORTH BRUSHY DRAW FEDERAL 35 10H

2. Name of Operator
RKI EXPLORATION & PROD LLC
Contact: JOSH WALKER
E-Mail: josh.walker@wpxenergy.com

9. API Well No.
30-015-43638-00-X1

3a. Address
210 PARK AVE SUITE 900
OKLAHOMA CITY, OK 73102

3b. Phone No. (include area code)
Ph: 539-573-0108

10. Field and Pool, or Exploratory
UNDESIGNATED

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 35 T25S R29E SWSE 275FSL 1600FEL

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK 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 Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Changing SHL from 275'FSL and 1600'FEL to 375'FSL and 1550'FEL. Also changing BHL from 230'FNL and 2244'FEL to 230'FNL and 1035'FEL. Please see attached updated geoprog, directional plan, drilling plan, anti-collision report, BOP diagram, and plat.

Accepted For Record
NMOCD

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

OK Per Bob Ballard 7-13-2016

Eng OK 7/1/16 CRW

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

Electronic Submission #343369 verified by the BLM Well Information System
For RKI EXPLORATION & PROD LLC, sent to the Carlsbad
Committed to AFMSS for processing by CHRISTOPHER WALLS on 06/30/2016 (16CRW0062SE)

Name *(Printed/Typed)* JOSH WALKER — Title REGULATORY SPECIALIST

Signature (Electronic Submission) — Date 06/28/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Cody R. Layton — Title FIELD MANAGER — Date 7/13/16

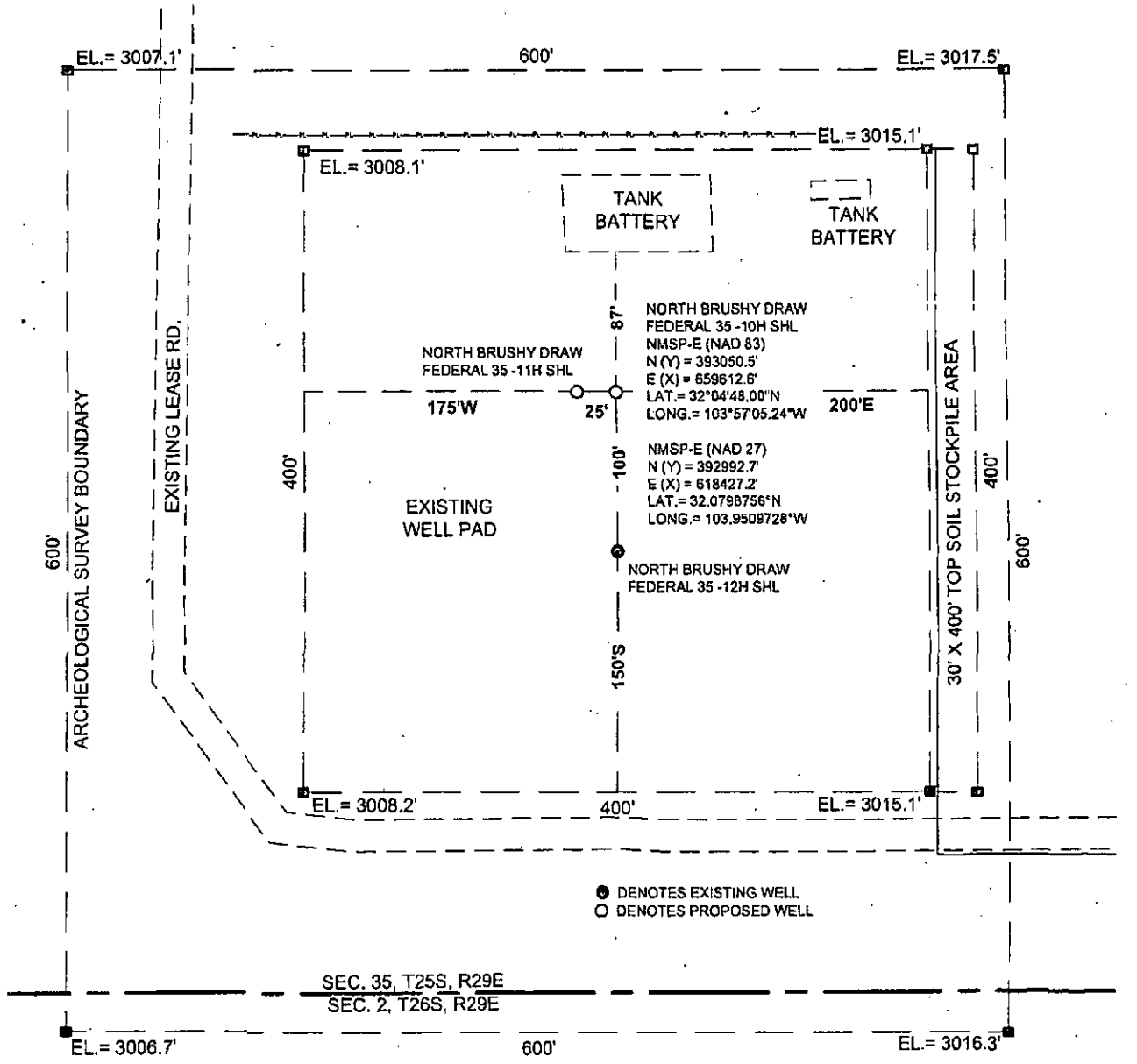
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office CARLSBAD FIELD OFFICE

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

SITE LOCATION



0 50 100 200

GRAPHIC SCALE 1" = 100'

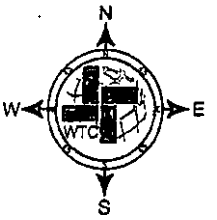
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H



DRIVING DIRECTIONS:

FROM THE INTERSECTION OF STATE HIGHWAY 285 AND LONGHORN COUNTY ROAD 725. GO EAST/ NORTHEAST ON LONGHORN COUNTY ROAD 725 FOR 4.2 MILES TO A LEASE ROAD TURN LEFT. GO EAST ON LEASE ROAD 2.8 MILES TO A LEASE ROAD LEFT. GO 1.3 MILES IN A NORTHERLY DIRECTION TO LEASE ROAD LEFT. GO APPROXIMATELY 0.3 MILE WEST. LOCATION FLAG IS 180 FEET NORTH.

WTC

WTC, INC.
405 S.W. 1st Street
Andrews, TX 79714
(432) 523-2181

RKI Exploration & Production

JOB No.: WTC51206

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

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 19 2016
RECEIVED

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
AMENDED REPORT

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
		UNDESIGNATED WOLFCAMP

Property Code	Property Name	Well Number
	NORTH BRUSHY DRAW FEDERAL 35	10H

OGRID No.	Operator Name	Elevation
246289	RKI EXPLORATION & PRODUCTION	3011

Surface Location

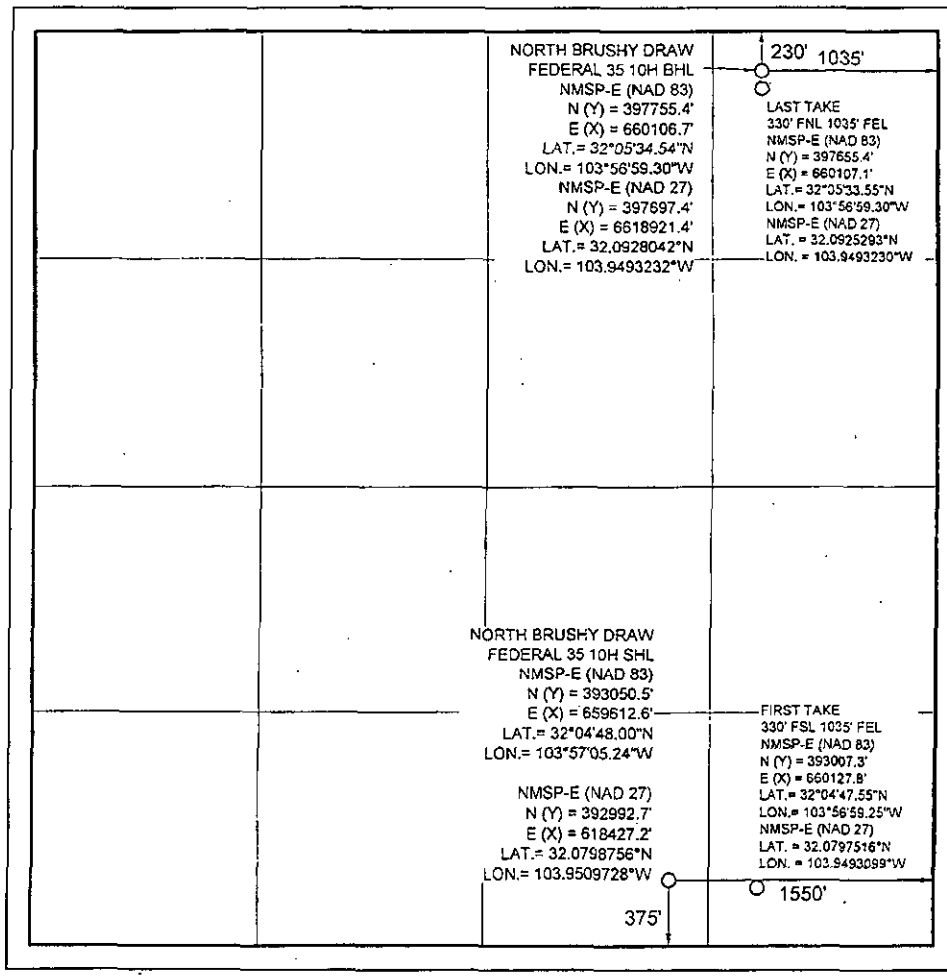
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	35	25S	29E		375	S	1550	E	EDDY

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
A	35	25S	29E		230	N	1035	E	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
320.0			

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.



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 voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 6/22/16

Josh Walker
Print Name

josh.walker@wpxenergy.com
E-mail Address

SURVEYORS 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.

MARCH 10, 2016
Date of Survey

Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL LAND SURVEYOR

Job No.: WTC51206
JAMES E. TOMPKINS 14729
Certificate Number

COORDINATES

NW COR SEC 35 NMSP-E (NAD 83) N (Y) = 397973.1' E (X) = 655832.1' LAT.= 32°05'36.84"N LON.= 103°57'48.98"W NMSP-E (NAD 27) N (Y) = 397915.2' E (X) = 614646.9' LAT.= 32.0934437° N LON.= 103.9631234° W	N 1/4 COR SEC 35 NMSP-E (NAD 83) N (Y) = 397980.9' E (X) = 658486.1' LAT.= 32°05'36.83"N LON.= 103°57'18.13"W NMSP-E (NAD 27) N (Y) = 397922.9' E (X) = 617300.9' LAT.=32.0934397°N LON.=103.9545533°W	NE COR SEC 35 NMSP-E (NAD 83) N (Y) = 397988.3' E (X) = 661140.7' LAT.= 32°05'36.81"N LON.= 103°56'47.27"W NMSP-E (NAD 27) N (Y) = 397930.3' E (X) = 619955.5' LAT.=32.0934342°N LON.=103.9459815°W
W 1/4 COR SEC35 NMSP-E (NAD 83) N (Y) = 395319.9' E (X) = 655839.7' LAT.= 32°05'10.59"N LON.= 103°57'49.00"W NMSP-E (NAD 27) N (Y) = 395261.9' E (X) = 614654.4' LAT.= 32.0861500°N LON.=103.9631285°W		E 1/4 COR SEC 35 NMSP-E (NAD 83) N (Y) = 395334.2' E (X) = 661151.8' LAT.= 32°05'10.54"N LON.= 103°56'47.25"W NMSP-E (NAD 27) N (Y) = 395276.3' E (X) = 619966.5' LAT.=32.0861381°N LON.=103.9459768°W
SW COR SEC 35 NMSP-E (NAD 83) N (Y) = 392663.4' E (X) = 655847.1' LAT.= 32°04'44.30"N LON.= 103°57'49.02"W NMSP-E (NAD 27) N (Y) = 392605.5' E (X) = 614661.8' LAT.=32.0788474°N LON.=103.9631340°W	S 1/4 COR SEC 35 NMSP-E (NAD 83) N (Y) = 392671.8' E (X) = 658512.2' LAT.= 32°04'44.29"N LON.= 103°57'18.05"W NMSP-E (NAD 27) N (Y) = 392613.9' E (X) = 617326.8' LAT.=32.0788451°N LON.=103.9545399°W	SE COR SEC 35 NMSP-E (NAD 83) N (Y) = 392680.8' E (X) = 661164.3' LAT.= 32°04'44.29"N LON.= 103°56'47.22"W NMSP-E (NAD 27) N (Y) = 392623.0' E (X) = 619979.0' LAT.=32.0788440°N LON.=103.9459672°W

0 1000 2000 4000

GRAPHIC SCALE 1" = 2000'

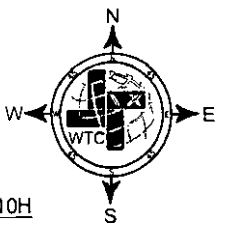
SECTION 35, T25S, R29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H



DRIVING DIRECTIONS:

From the intersection of 285 and Longhorn County Road 725 go on 725 for 4.3 miles to a Lease Road. Go Northeast 3.7 miles to another Lease Road. Go South 0.2 mile to the Fed 35 1H Well location. Turn left and go East 0.3 mile to a point 206' North of location.

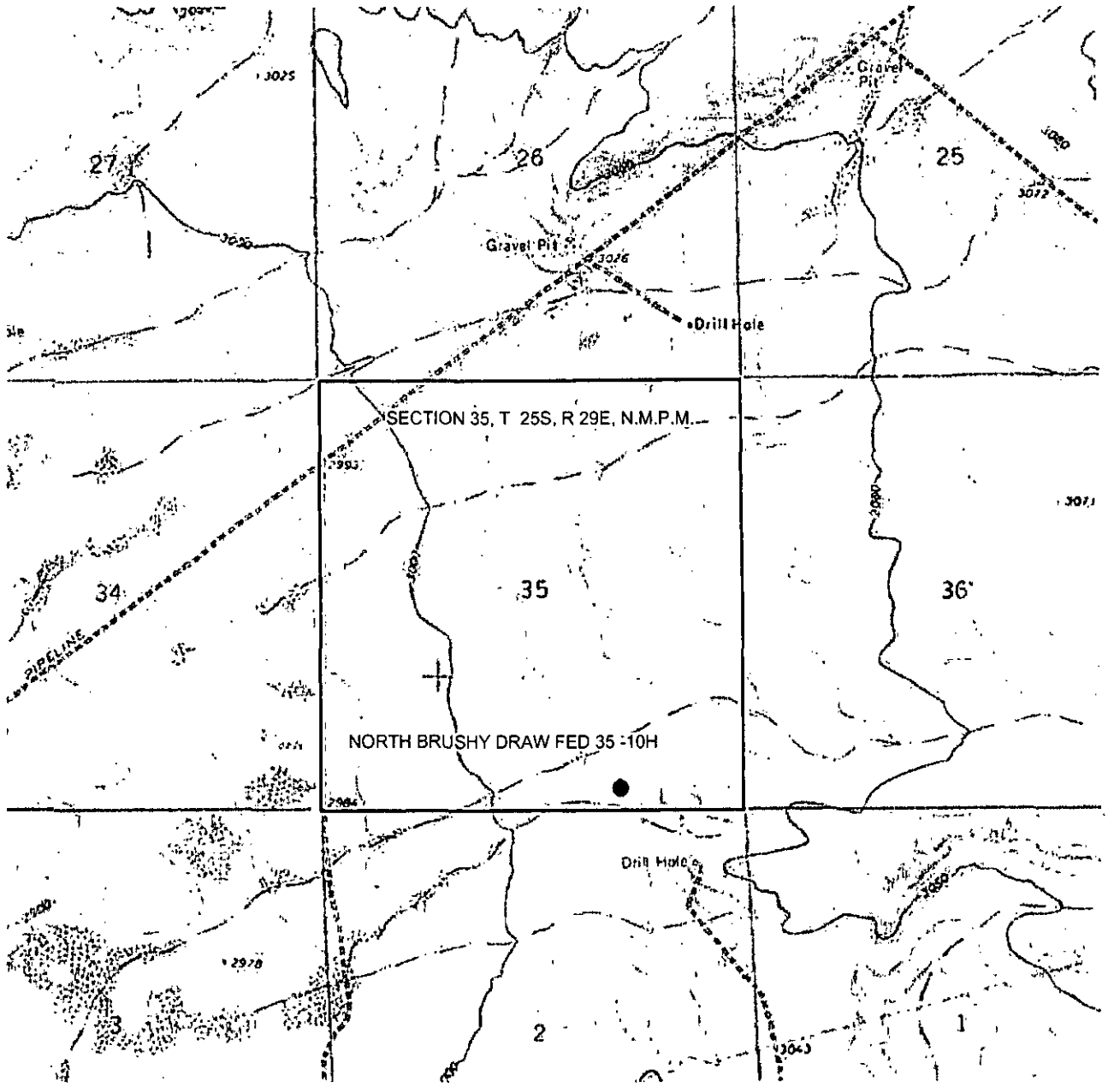
WTC

W T C, INC.
405 S.W. 1st. STREET
ANDREWS, TEXAS
79714
(432) 523-2181

RKI Exploration & Production

JOB No.: 51206

LOCATION VERIFICATION MAP



0 1000 2000 4000

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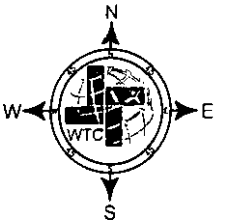

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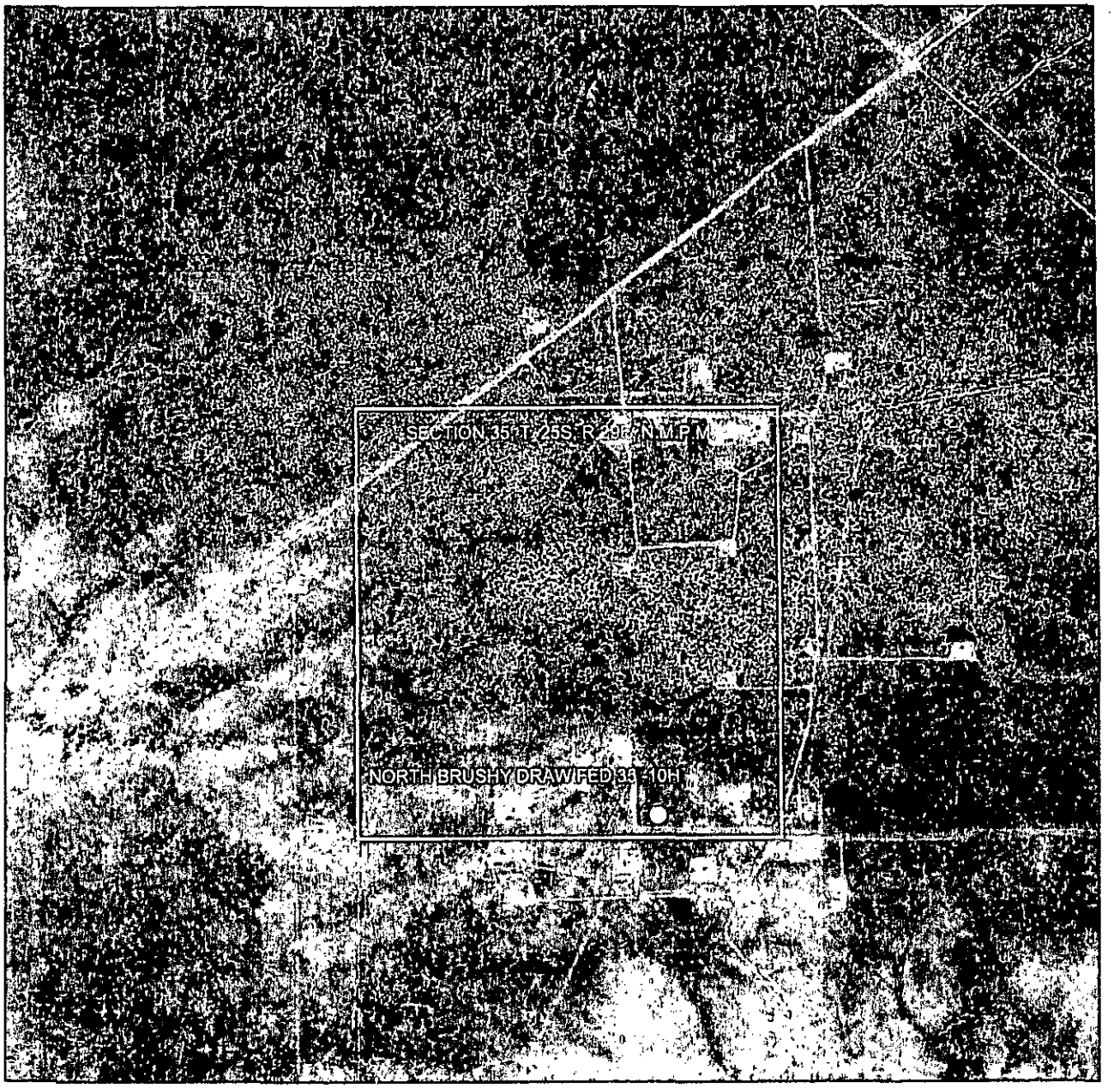
RKI Exploration & Production

JOB No.: WTC51206

AERIAL MAP



0 1000 2000 4000

GRAPHIC SCALE 1" = 2000'

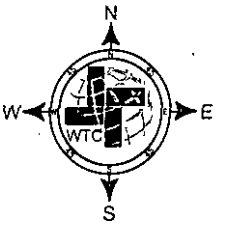
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H



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W T C, INC.
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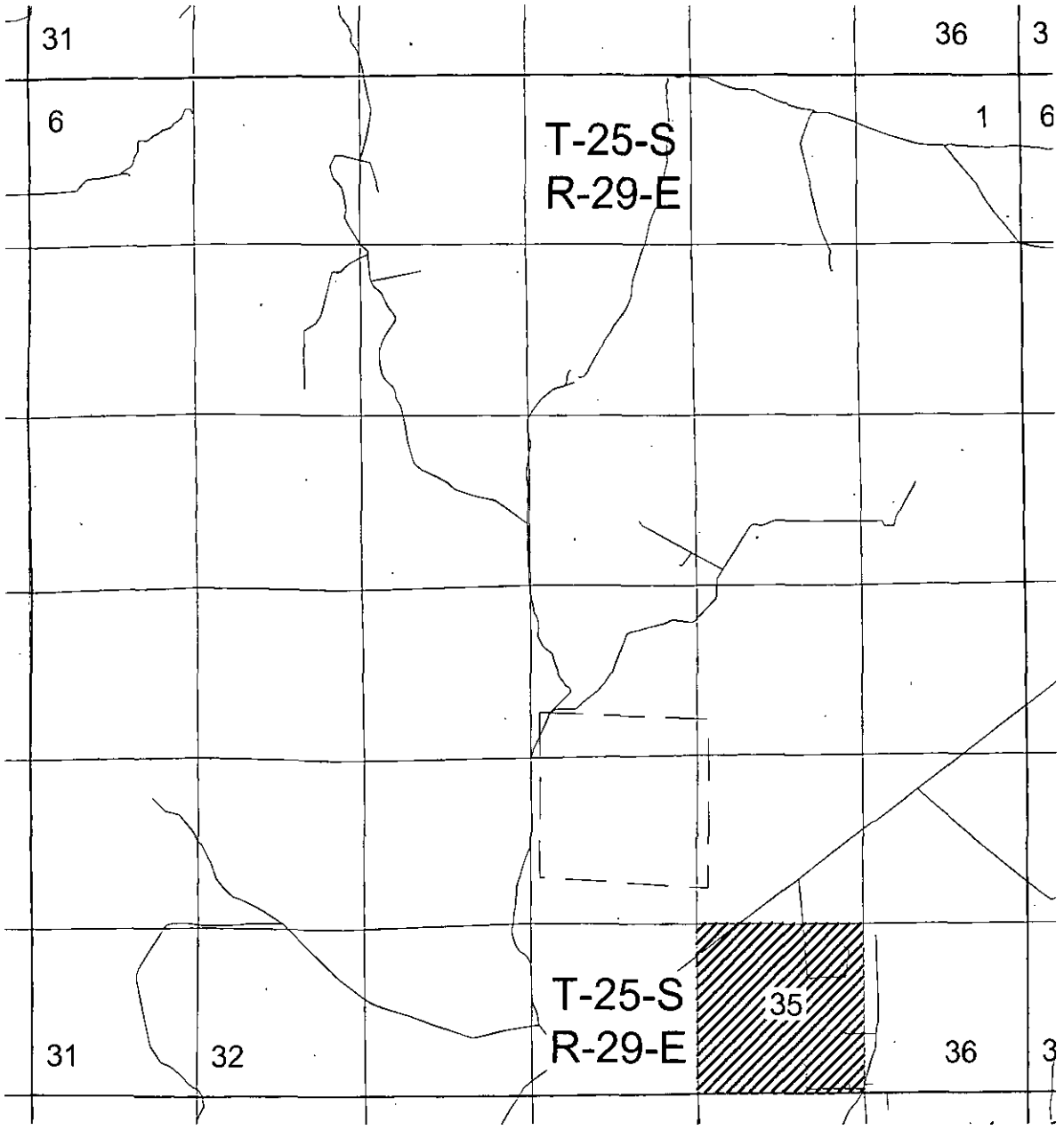
RKI Exploration & Production

JOB No.: WTC51206

VICINITY MAP



0 1 2 3

GRAPHIC SCALE 1" = 1 MILE

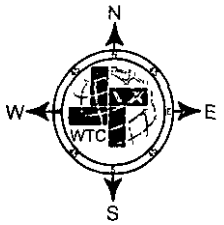
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H



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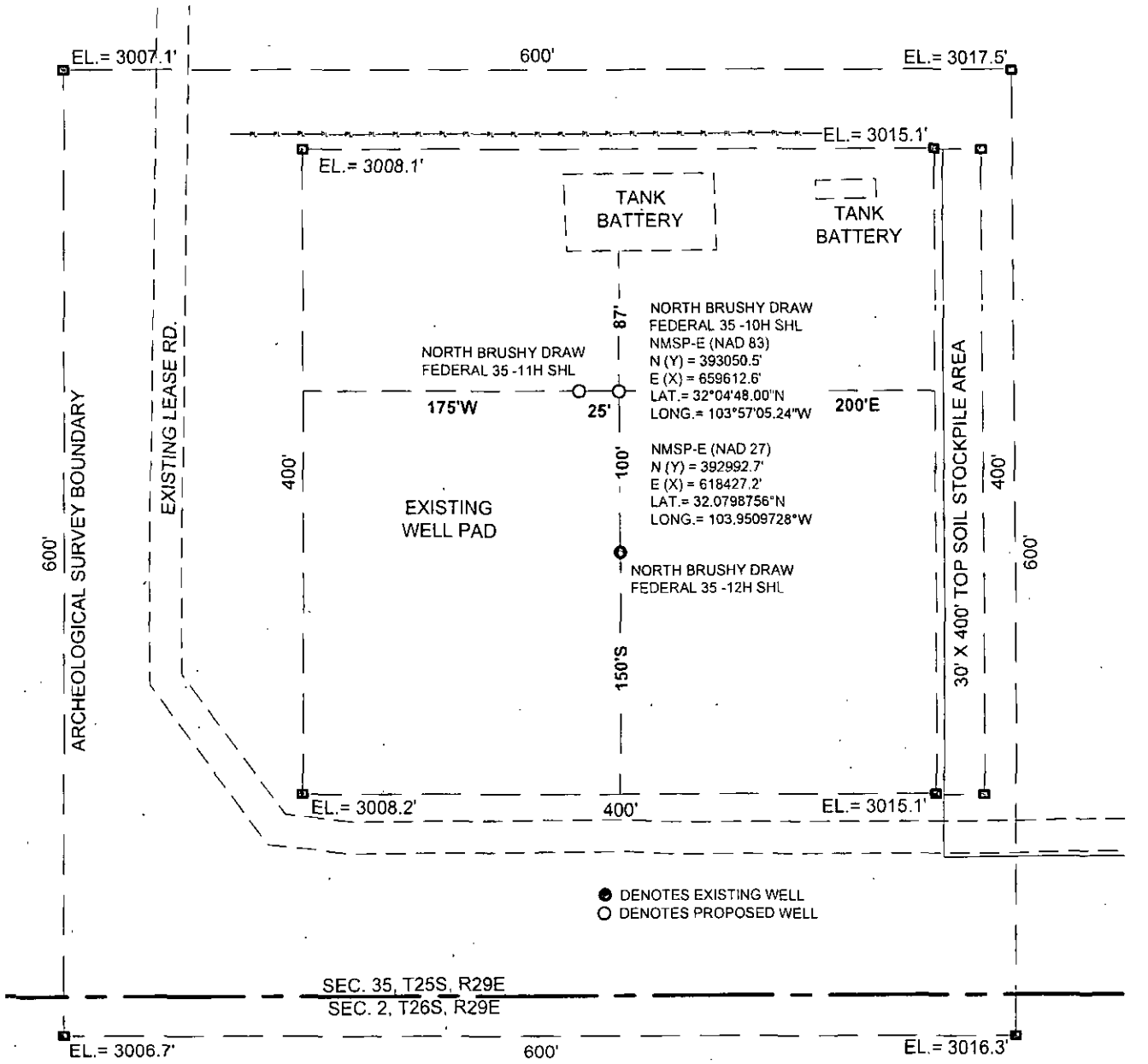
RKI Exploration & Production

JOB No.: WTC51206

SITE LOCATION



0 50 100 200

GRAPHIC SCALE 1" = 100'

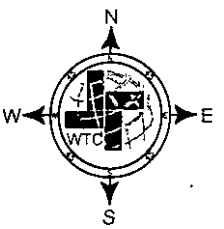
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H



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WTC

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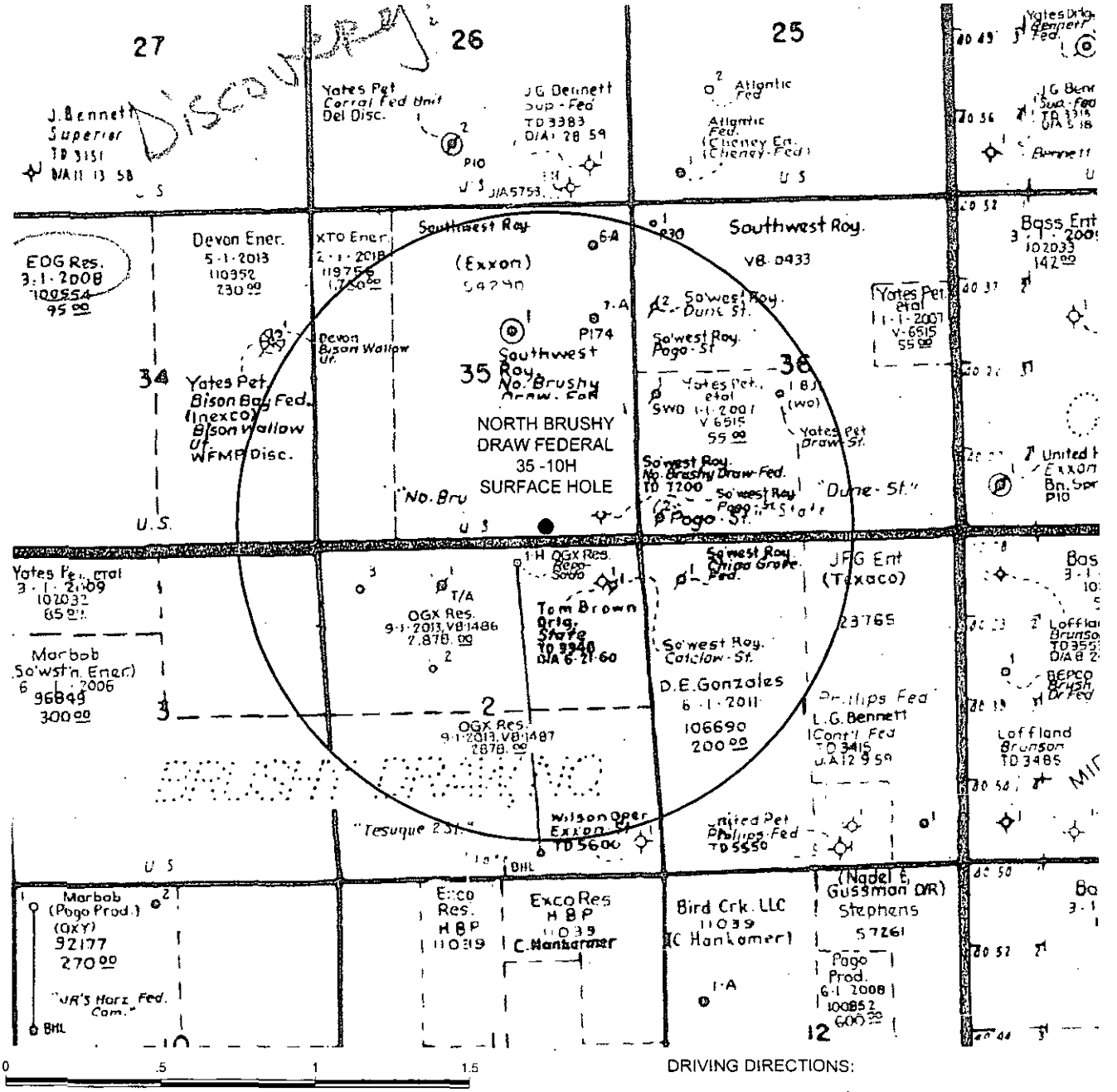
RKI Exploration & Production

JOB No.: WTC51206

SURFACE HOLE LOCATION



GRAPHIC SCALE 1" = 1/2 MILE

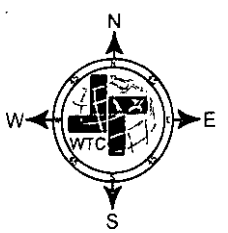
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 375' FSL & 1550' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H SHL



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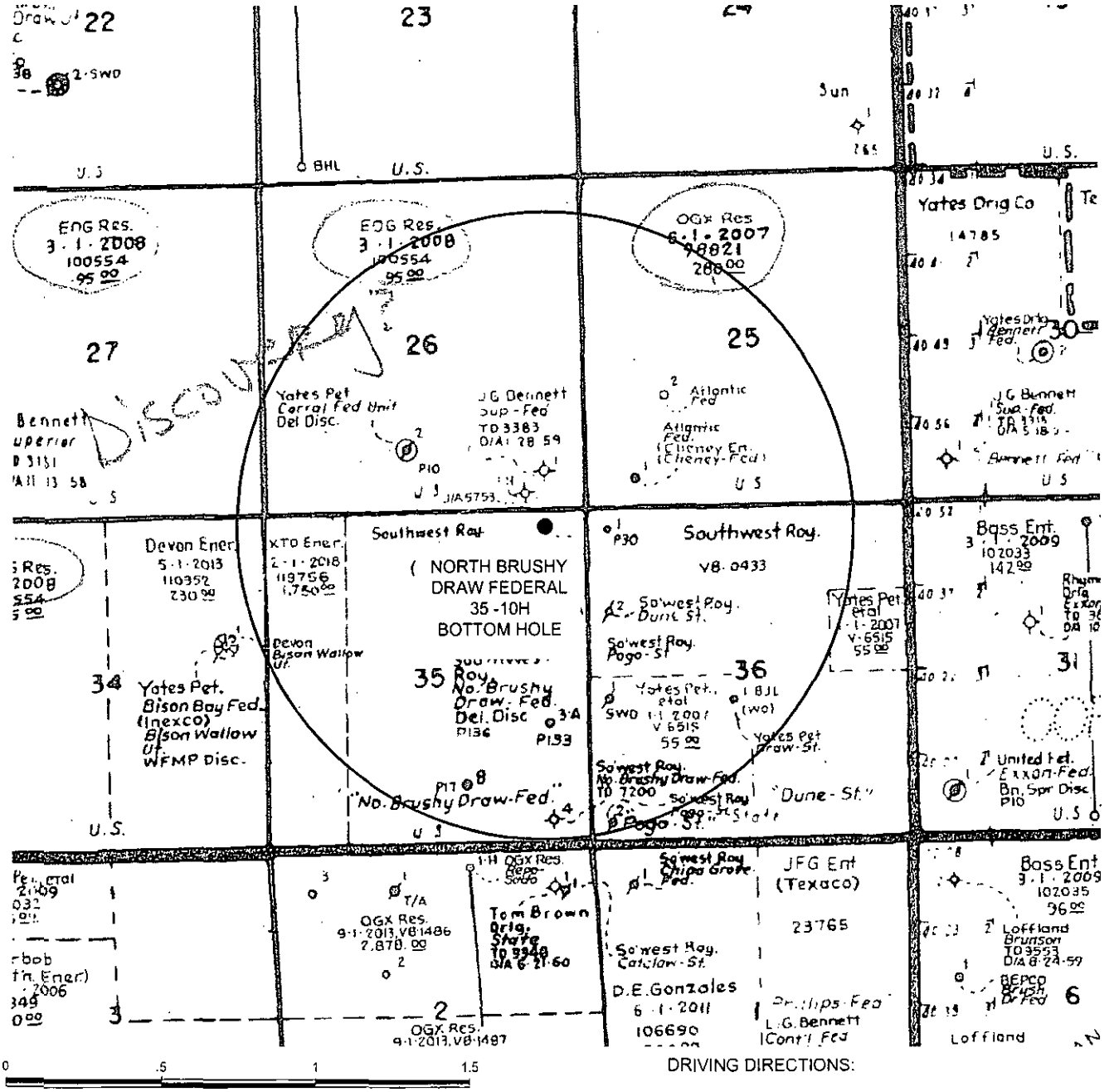
RKI Exploration & Production

JOB No.: WTC51206

BOTTOM HOLE LOCATION



GRAPHIC SCALE 1" = 1/2 MILE

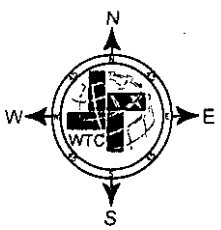
SECTION 35, T 25S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 230' FNL 1035' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: NORTH BRUSHY DRAW FEDERAL 35-10H BHL



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RKI Exploration & Production

JOB No.: WTC51206

WPX Energy

GEOLOGICAL PROGNOSIS - PERMIAN

North Brushy Draw Federal 35-10H

Well Name:	*North Brushy Draw Federal 35-10H*		**Location:**	SHL: 375FSL	1550 FEL
API#:				POE: 330FSL	1035 FEL
Target Formation:	*Wolfcamp*			BHL: 230 FNL	1035 FEL
Field:				Legal:	
Elevation:	GL(ft):	3032		State: NEW MEXICO	
	KB	25		Rig: Orion Pheonix (KB 25')	
Estimated BHT:				KB (ft): 3057	

Projected Tops

FORMATION	DEPTH (TVD)	SUBSEA	Comments
Bell Canyon (Base of Salt)	3184	-152	
Cherry Canyon	4272	-1240	
Brushy Canyon	5313	-2281	
Bone Spring	7011	-3979	
1st Bone Spring	7899	-4867	
2nd Bone Spring	8801	-5769	
3rd Bone Spring	9839	-6807	
Wolfcamp Top	10192	-7160	
Wolfcamp A	10323	-7291	
Wolfcamp B	10661	-7629	
Wolfcamp C	10924	-7892	
Wolfcamp D	11166	-8134	

WPX Energy

Well	North Brushy Draw 35-10H				
Location	Surface:	375 FSL	1,550 FEL	Sec 35-25S-29E	
	Bottom Hole:	230 FSL	1,035 FEL	Sec 35-25S-29E	

County Eddy
State New Mexico

1) The elevation of the unprepared ground is 3,011 feet above sea level.

2) The geologic name of the surface formation is Quaternary - Alluvium.

3) A rotary rig will be utilized to drill the well to 15,197 feet and run casing and cement. This equipment will then be rigged down and the well will be completed with a workover rig.

4) Proposed depth is 15,197 feet MD

5) Estimated tops:

	MD	TVD		BHP = .44 psi/ft x depth
Bell Canyon Sand (Base Salt)	3,188	3,188		
Cherry Canyon Sand	4,280	4,276		1,403 psi
Brushy Canyon Sand	5,327	5,317		1,881 psi
Bone Spring Lime	7,034	7,015	Oil	2,339 psi
1st Bone Spring Sand	7,927	7,903	Oil	3,087 psi
2nd Bone Spring Sand	8,834	8,805	Oil	3,477 psi
KOP	9,867	9,835		3,874 psi
3rd Bone Spring Sand	9,874	9,843	Oil	4,327 psi
Wolfcamp	10,274	10,196		4,331 psi
Wolfcamp A Top	10,481	10,327	Oil	4,486 psi
Landing Point (Wolfcamp)	10,717	10,384		4,544 psi
TD	15,197	10,384		4,569 psi

6) Casing program:

Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0	680	13 3/8"	54.5#/J-55	ST&C	3.78	18.25	13.87
12 1/4"	0	3,188	9 5/8"	40#/J-55	LT&C	1.44	5.63	4.08
8 3/4"	0	10,717	7"	29#/HCP-110	BT&C	1.32	1.99	2.86
6 1/8"	9,867	15,197	4 1/2"	13.5#/HCP-110	CDC-HTC	2.34	1.24	6.16

Collapse	1.125
Burst	1.0
Tension	2.0

7) Cement program:

Surface		17 1/2" hole			
Pipe OD		13 3/8"			
Setting Depth		680 ft			
Annular Volume		0.69462 cf/ft			
Excess		1	100 %		
Lead	540 sx	1.75 cf/sk		9.13 gal/sk	13.5 ppg
Tail	200 sx	1.33 cf/sk		6.32 gal/sk	14.8 ppg

Lead: "C" + 4% PF20 (gel) + 2% PF1 (CC) + .125 pps PF29 (CelloFlake) + .4 pps PF46 (antifoam)
Tail: "C" + 1% PF1 (CC)
Top of cement: Surface

Intermediate		12 1/4" hole			
Pipe OD		9 5/8"			
Setting Depth		3,188 ft			
Annular Volume		0.31318 cf/ft	0.3627 cf/ft		
Excess		0.5	50 %		
Lead	541 sx	2.37 cf/sk		9.95 gal/sk	12.6 ppg
Tail	200 sx	1.33 cf/sk		6.32 gal/sk	14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + 1% PF1 + .125 pps PF29 + .4 pps PF46 + 3 pps PF42
Tail: "C" + .2% PF13 (retarder)
Top of cement: Surface

Intermediate		8 3/4" hole			
Pipe OD		7"			
Setting Depth		10,717 ft			
Annular Volume		0.15033 cf/ft	0.1585 cf/ft	500 ft	
Excess		0.35	35 %		
Lead:	742 sx	1.89 cf/sk		10.06 gal/sk	12.9 ppg
Tail:	175 sx	1.33 cf/sk		6.32 gal/sk	14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + .2% PF13 + .125 ps PF29 + .4 pps PF46
Tail: "C" + .2% PF13
Top of cement: 2,688 ft

Production		6 1/8" hole			
Pipe OD (in OH)		4 1/2"			
Setting Depth		15,197 ft			
Annular Volume		0.0942			
Excess		0.50			
Lead:	403 sx	1.87 cf/sk		9.52 gal/sk	13.0 ppg

Lead: AcidSolid PVL + 5% PF174 + .7% PF606 + .2% PF153 + .5% PF13 + 30% PF151 + .4 pps PF46
Top of cement: 9,867 ft

8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a triple ram type (10,000 psi WP) preventer, a bag-type annular preventer (5,000 psi WP), and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with variable rams on top, blind rams, and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" 5M casing head will be installed on the 13 3/8" casing and utilized until total depth is reached. All BOP and associated equipment will be tested to 5,000 psi and the annular will be tested to 1,500 psi after setting 13-3/8" casing string & 7" casing string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1500 psi whichever is greater, but not to exceed 70% of the minimum yield.
The 9 5/8" casing will be hung in the casing head and the stack will not be nippled down at this point.
The stack will not be isolated and tested after running the 9 5/8" casing, but will be tested along with the 9 5/8" casing. Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole. These function test will be documented on the daily driller's log.
A drilling spool or blowout preventer with 2 side outlets (choke side shall be 3" minimum diameter, kill side shall be at least 2" diameter).
2 kill line valves, one of which will be a check valve.
2 chokes on the manifold along with a pressure gauge.
Upper kelly cock valve with handle available.
Safety valve and subs to fit all drill string connections in use.
All BOP equipment connections subjected to pressure will be flanged, welded, or clamped.
Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss	Type System
0	680	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Water
680	3,188	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
3,188	10,717	8.9 to 9.1	28 to 36	1 - 3	1 - 3	NC	Cut Brine
10,717	15,197	10.5 to 12.5	50 to 55	20-22	8 - 10	8 - 10	OBM

10) Logging, coring, and testing program:

No drill stem test are planned
KOP to intermediate: No logs planned
Intermediate to surface: No logs planned
No coring is planned

11) Potential hazards:

No abnormal pressure or temperature is expected. No H2S is known to exist in the area.
Lost circulation can occur in, lost circulation material will be on location and readily available if needed.

12) Anticipated start date ASAP
Duration 30 days

WPXENERGY

Company: WPX Energy
Site: North Brushy Draw Federal 35
Well: 10H
Project: Eddy County, New Mexico (NAD 27)
Rig Name: Orion Phoenix

MS Energy Services.
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T G M

Azimuths to Grid North
True North: -0.20°
Magnetic North: 7.07°

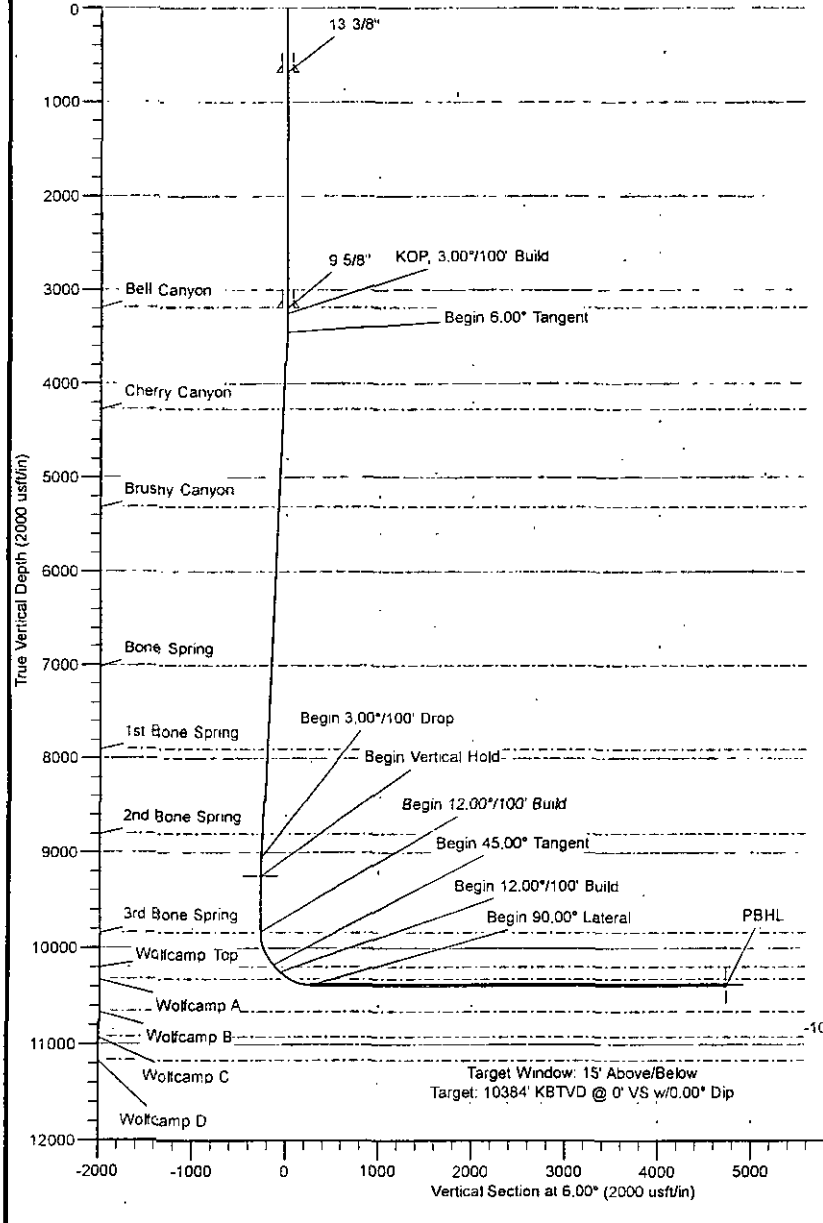
Magnetic Field
Strength: 47971.9snT
Dip Angle: 59.87°
Date: 8/1/2016
Model: BGGM2016

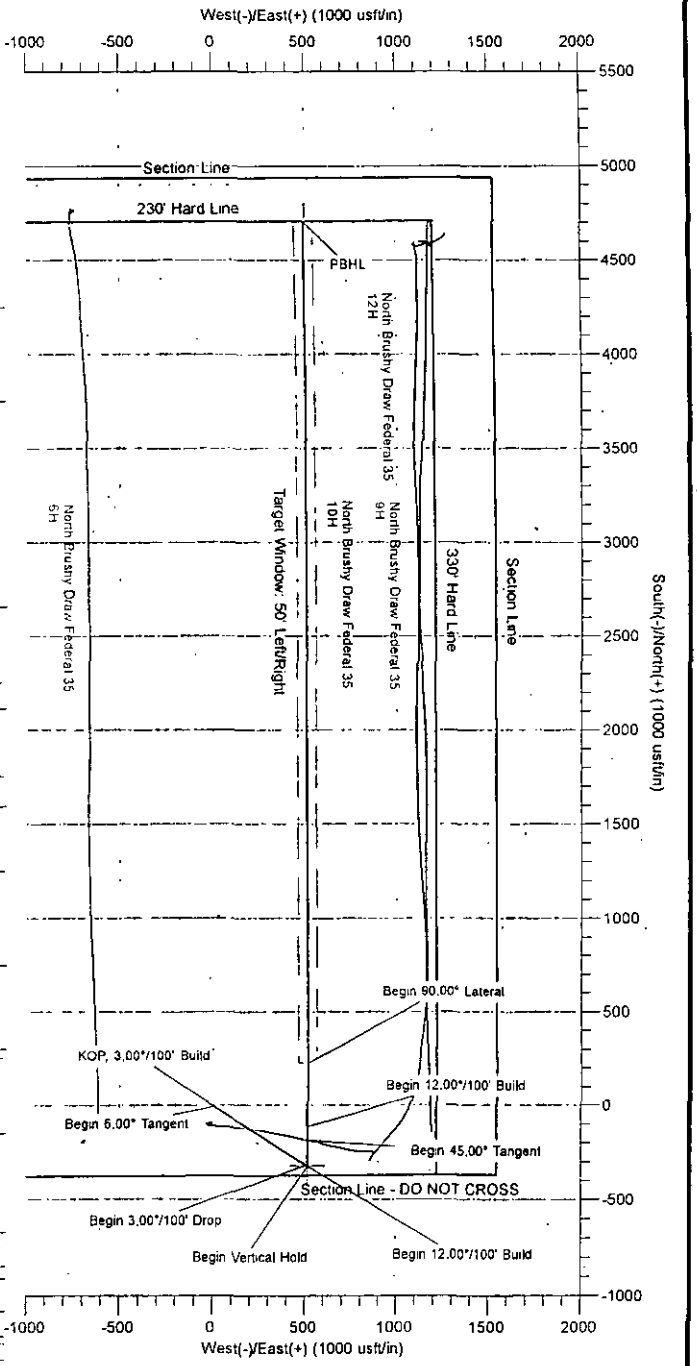
US State Plane 1927 (Exact solution)
New Mexico East 3001

Created By: HLH
Date: 15:18, June 27 2016
Plan: Design #1

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
3250.00	0.00	0.00	3250.00	0.00	0.00	0.00	0.00	KOP, 3.00°/100' Build
3449.93	6.00	122.04	3449.56	-5.55	8.86	-4.59	10.45	Begin 6.00° Tangent
9081.63	6.00	122.04	9050.44	-317.71	507.71	-262.93	598.92	Begin 3.00°/100' Drop
9281.56	0.00	0.00	9250.00	-323.25	516.57	-267.52	609.37	Begin Vertical Hold
9867.38	0.00	0.00	9835.82	-323.25	516.57	-267.52	609.37	Begin 12.00°/100' Build
10242.38	45.00	359.75	10173.44	-183.41	515.95	-128.50	749.22	Begin 45.00° Tangent
10342.38	45.00	359.75	10244.15	-112.70	515.63	-58.21	819.93	Begin 12.00°/100' Build
10717.38	90.00	359.75	10384.00	224.92	514.13	277.40	1157.55	Begin 90.00° Lateral
15197.20	90.00	359.75	10384.00	4704.70	494.20	4730.59	5637.37	PBHL





WPXENERGY

WPX Energy

Eddy County, New Mexico (NAD 27)
North Brushy Draw Federal 35
10H

Wellbore #1

Plan: Design #1

Standard Planning Report

27 June, 2016

MS Energy Services
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Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
Company:	WPX Energy	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Eddy County, New Mexico (NAD 27)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well 10H

Well Position	**+N/-S**	392,992.70 usft	**Northing:**	392,992.70 usft	**Latitude:**	32° 4' 47.552 N
	+E/-W	618,427.20 usft	**Easting:**	618,427.20 usft	**Longitude:**	103° 57' 3.503 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,011.00 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	8/1/2016	7.27	59.87	47,972

Design Design #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	6.00

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,250.00	0.00	0.00	3,250.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,449.93	6.00	122.04	3,449.56	-5.55	8.86	3.00	3.00	0.00	122.04	
9,081.63	6.00	122.04	9,050.44	-317.71	507.71	0.00	0.00	0.00	0.00	
9,281.56	0.00	0.00	9,250.00	-323.25	516.57	3.00	-3.00	0.00	180.00	VP - North Brushy I
9,867.38	0.00	0.00	9,835.82	-323.25	516.57	0.00	0.00	0.00	0.00	
10,242.38	45.00	359.75	10,173.44	-183.41	515.95	12.00	12.00	0.00	359.75	PBHL - North Brust
10,342.38	45.00	359.75	10,244.15	-112.70	515.63	0.00	0.00	0.00	0.00	
10,717.38	90.00	359.75	10,384.00	224.92	514.13	12.00	12.00	0.00	0.00	
15,197.21	90.00	359.75	10,384.00	4,704.70	494.20	0.00	0.00	0.00	0.00	PBHL - North Brust

Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
Company:	WPX Energy	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,250.00	0.00	0.00	3,250.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 3.00°/100' Build									
3,300.00	1.50	122.04	3,299.99	-0.35	0.55	-0.29	3.00	3.00	0.00
3,400.00	4.50	122.04	3,399.85	-3.12	4.99	-2.58	3.00	3.00	0.00
3,449.93	6.00	122.04	3,449.56	-5.55	8.86	-4.59	3.00	3.00	0.00
Begin 6.00° Tangent									
3,500.00	6.00	122.04	3,499.36	-8.32	13.30	-6.89	0.00	0.00	0.00
3,600.00	6.00	122.04	3,598.81	-13.86	22.16	-11.47	0.00	0.00	0.00
3,700.00	6.00	122.04	3,698.27	-19.41	31.01	-16.06	0.00	0.00	0.00
3,800.00	6.00	122.04	3,797.72	-24.95	39.87	-20.65	0.00	0.00	0.00
3,900.00	6.00	122.04	3,897.17	-30.49	48.73	-25.24	0.00	0.00	0.00
4,000.00	6.00	122.04	3,996.62	-36.04	57.59	-29.82	0.00	0.00	0.00
4,100.00	6.00	122.04	4,096.08	-41.58	66.44	-34.41	0.00	0.00	0.00
4,200.00	6.00	122.04	4,195.53	-47.12	75.30	-39.00	0.00	0.00	0.00
4,300.00	6.00	122.04	4,294.98	-52.66	84.16	-43.58	0.00	0.00	0.00
4,400.00	6.00	122.04	4,394.43	-58.21	93.02	-48.17	0.00	0.00	0.00
4,500.00	6.00	122.04	4,493.89	-63.75	101.88	-52.76	0.00	0.00	0.00
4,600.00	6.00	122.04	4,593.34	-69.29	110.73	-57.35	0.00	0.00	0.00
4,700.00	6.00	122.04	4,692.79	-74.84	119.59	-61.93	0.00	0.00	0.00
4,800.00	6.00	122.04	4,792.24	-80.38	128.45	-66.52	0.00	0.00	0.00
4,900.00	6.00	122.04	4,891.70	-85.92	137.31	-71.11	0.00	0.00	0.00

Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
Company:	WPX Energy	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.00	6.00	122.04	4,991.15	-91.46	146.16	-75.69	0.00	0.00	0.00
5,100.00	6.00	122.04	5,090.60	-97.01	155.02	-80.28	0.00	0.00	0.00
5,200.00	6.00	122.04	5,190.05	-102.55	163.88	-84.87	0.00	0.00	0.00
5,300.00	6.00	122.04	5,289.51	-108.09	172.74	-89.46	0.00	0.00	0.00
5,400.00	6.00	122.04	5,388.96	-113.64	181.60	-94.04	0.00	0.00	0.00
5,500.00	6.00	122.04	5,488.41	-119.18	190.45	-98.63	0.00	0.00	0.00
5,600.00	6.00	122.04	5,587.87	-124.72	199.31	-103.22	0.00	0.00	0.00
5,700.00	6.00	122.04	5,687.32	-130.27	208.17	-107.81	0.00	0.00	0.00
5,800.00	6.00	122.04	5,786.77	-135.81	217.03	-112.39	0.00	0.00	0.00
5,900.00	6.00	122.04	5,886.22	-141.35	225.88	-116.98	0.00	0.00	0.00
6,000.00	6.00	122.04	5,985.68	-146.89	234.74	-121.57	0.00	0.00	0.00
6,100.00	6.00	122.04	6,085.13	-152.44	243.60	-126.15	0.00	0.00	0.00
6,200.00	6.00	122.04	6,184.58	-157.98	252.46	-130.74	0.00	0.00	0.00
6,300.00	6.00	122.04	6,284.03	-163.52	261.32	-135.33	0.00	0.00	0.00
6,400.00	6.00	122.04	6,383.49	-169.07	270.17	-139.92	0.00	0.00	0.00
6,500.00	6.00	122.04	6,482.94	-174.61	279.03	-144.50	0.00	0.00	0.00
6,600.00	6.00	122.04	6,582.39	-180.15	287.89	-149.09	0.00	0.00	0.00
6,700.00	6.00	122.04	6,681.84	-185.69	296.75	-153.68	0.00	0.00	0.00
6,800.00	6.00	122.04	6,781.30	-191.24	305.60	-158.26	0.00	0.00	0.00
6,900.00	6.00	122.04	6,880.75	-196.78	314.46	-162.85	0.00	0.00	0.00
7,000.00	6.00	122.04	6,980.20	-202.32	323.32	-167.44	0.00	0.00	0.00
7,100.00	6.00	122.04	7,079.65	-207.87	332.18	-172.03	0.00	0.00	0.00
7,200.00	6.00	122.04	7,179.11	-213.41	341.04	-176.61	0.00	0.00	0.00
7,300.00	6.00	122.04	7,278.56	-218.95	349.89	-181.20	0.00	0.00	0.00
7,400.00	6.00	122.04	7,378.01	-224.49	358.75	-185.79	0.00	0.00	0.00
7,500.00	6.00	122.04	7,477.46	-230.04	367.61	-190.37	0.00	0.00	0.00
7,600.00	6.00	122.04	7,576.92	-235.58	376.47	-194.96	0.00	0.00	0.00
7,700.00	6.00	122.04	7,676.37	-241.12	385.33	-199.55	0.00	0.00	0.00
7,800.00	6.00	122.04	7,775.82	-246.67	394.18	-204.14	0.00	0.00	0.00
7,900.00	6.00	122.04	7,875.27	-252.21	403.04	-208.72	0.00	0.00	0.00
8,000.00	6.00	122.04	7,974.73	-257.75	411.90	-213.31	0.00	0.00	0.00
8,100.00	6.00	122.04	8,074.18	-263.29	420.76	-217.90	0.00	0.00	0.00
8,200.00	6.00	122.04	8,173.63	-268.84	429.61	-222.49	0.00	0.00	0.00
8,300.00	6.00	122.04	8,273.09	-274.38	438.47	-227.07	0.00	0.00	0.00
8,400.00	6.00	122.04	8,372.54	-279.92	447.33	-231.66	0.00	0.00	0.00
8,500.00	6.00	122.04	8,471.99	-285.47	456.19	-236.25	0.00	0.00	0.00
8,600.00	6.00	122.04	8,571.44	-291.01	465.05	-240.83	0.00	0.00	0.00
8,700.00	6.00	122.04	8,670.90	-296.55	473.90	-245.42	0.00	0.00	0.00
8,800.00	6.00	122.04	8,770.35	-302.10	482.76	-250.01	0.00	0.00	0.00
8,900.00	6.00	122.04	8,869.80	-307.64	491.62	-254.60	0.00	0.00	0.00
9,000.00	6.00	122.04	8,969.25	-313.18	500.48	-259.18	0.00	0.00	0.00
9,081.63	6.00	122.04	9,050.44	-317.71	507.71	-262.93	0.00	0.00	0.00
Begin 3.00°/100' Drop									
9,100.00	5.45	122.04	9,068.71	-318.68	509.26	-263.73	3.00	-3.00	0.00
9,200.00	2.45	122.04	9,168.47	-322.33	515.09	-266.75	3.00	-3.00	0.00
9,281.56	0.00	0.00	9,250.00	-323.25	516.57	-267.52	3.00	-3.00	0.00
Begin Vertical Hold									
9,300.00	0.00	0.00	9,268.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,400.00	0.00	0.00	9,368.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,500.00	0.00	0.00	9,468.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,600.00	0.00	0.00	9,568.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,700.00	0.00	0.00	9,668.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,800.00	0.00	0.00	9,768.44	-323.25	516.57	-267.52	0.00	0.00	0.00
9,867.38	0.00	0.00	9,835.82	-323.25	516.57	-267.52	0.00	0.00	0.00

Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
Company:	WPX Energy	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Begin 12.00°/100' Build									
9,875.00	0.91	359.75	9,843.44	-323.19	516.57	-267.46	12.00	12.00	0.00
9,900.00	3.91	359.75	9,868.42	-322.14	516.56	-266.41	12.00	12.00	0.00
9,925.00	6.91	359.75	9,893.30	-319.78	516.55	-264.07	12.00	12.00	0.00
9,950.00	9.91	359.75	9,918.03	-316.12	516.54	-260.43	12.00	12.00	0.00
9,975.00	12.91	359.75	9,942.53	-311.17	516.52	-255.51	12.00	12.00	0.00
10,000.00	15.91	359.75	9,966.74	-304.95	516.49	-249.33	12.00	12.00	0.00
10,025.00	18.91	359.75	9,990.59	-297.47	516.46	-241.89	12.00	12.00	0.00
10,050.00	21.91	359.75	10,014.02	-288.75	516.42	-233.22	12.00	12.00	0.00
10,075.00	24.91	359.75	10,036.96	-278.82	516.37	-223.35	12.00	12.00	0.00
10,100.00	27.91	359.75	10,059.35	-267.70	516.32	-212.29	12.00	12.00	0.00
10,125.00	30.91	359.75	10,081.12	-255.42	516.27	-200.09	12.00	12.00	0.00
10,150.00	33.91	359.75	10,102.22	-242.02	516.21	-186.77	12.00	12.00	0.00
10,175.00	36.91	359.75	10,122.60	-227.54	516.14	-172.37	12.00	12.00	0.00
10,200.00	39.91	359.75	10,142.18	-212.00	516.07	-156.93	12.00	12.00	0.00
10,225.00	42.91	359.75	10,160.93	-195.47	516.00	-140.49	12.00	12.00	0.00
10,242.38	45.00	359.75	10,173.44	-183.41	515.95	-128.50	12.00	12.00	0.00
Begin 45.00° Tangent									
10,300.00	45.00	359.75	10,214.18	-142.66	515.77	-88.00	0.00	0.00	0.00
10,342.38	45.00	359.75	10,244.15	-112.70	515.63	-58.21	0.00	0.00	0.00
Begin 12.00°/100' Build									
10,350.00	45.91	359.75	10,249.50	-107.27	515.61	-52.81	12.00	12.00	0.00
10,375.00	48.91	359.75	10,266.41	-88.86	515.53	-34.52	12.00	12.00	0.00
10,400.00	51.91	359.75	10,282.34	-69.60	515.44	-15.37	12.00	12.00	0.00
10,425.00	54.91	359.75	10,297.24	-49.52	515.35	4.58	12.00	12.00	0.00
10,450.00	57.91	359.75	10,311.07	-28.70	515.26	25.29	12.00	12.00	0.00
10,475.00	60.91	359.75	10,323.79	-7.18	515.16	46.68	12.00	12.00	0.00
10,500.00	63.91	359.75	10,335.36	14.97	515.06	68.70	12.00	12.00	0.00
10,525.00	66.91	359.75	10,345.76	37.70	514.96	91.30	12.00	12.00	0.00
10,550.00	69.91	359.75	10,354.96	60.95	514.86	114.40	12.00	12.00	0.00
10,575.00	72.91	359.75	10,362.92	84.64	514.75	137.95	12.00	12.00	0.00
10,600.00	75.91	359.75	10,369.64	108.72	514.65	161.89	12.00	12.00	0.00
10,625.00	78.91	359.75	10,375.09	133.12	514.54	186.14	12.00	12.00	0.00
10,650.00	81.91	359.75	10,379.25	157.76	514.43	210.64	12.00	12.00	0.00
10,675.00	84.91	359.75	10,382.12	182.60	514.32	235.33	12.00	12.00	0.00
10,700.00	87.91	359.75	10,383.68	207.54	514.21	260.13	12.00	12.00	0.00
10,717.38	90.00	359.75	10,384.00	224.92	514.13	277.40	12.00	12.00	0.00
Begin 90.00° Lateral									
10,800.00	90.00	359.75	10,384.00	307.54	513.76	359.53	0.00	0.00	0.00
10,900.00	90.00	359.75	10,384.00	407.54	513.32	458.93	0.00	0.00	0.00
11,000.00	90.00	359.75	10,384.00	507.54	512.87	558.34	0.00	0.00	0.00
11,100.00	90.00	359.75	10,384.00	607.54	512.43	657.74	0.00	0.00	0.00
11,200.00	90.00	359.75	10,384.00	707.53	511.98	757.15	0.00	0.00	0.00
11,300.00	90.00	359.75	10,384.00	807.53	511.54	856.55	0.00	0.00	0.00
11,400.00	90.00	359.75	10,384.00	907.53	511.09	955.96	0.00	0.00	0.00
11,500.00	90.00	359.75	10,384.00	1,007.53	510.65	1,055.37	0.00	0.00	0.00
11,600.00	90.00	359.75	10,384.00	1,107.53	510.20	1,154.77	0.00	0.00	0.00
11,700.00	90.00	359.75	10,384.00	1,207.53	509.76	1,254.18	0.00	0.00	0.00
11,800.00	90.00	359.75	10,384.00	1,307.53	509.31	1,353.58	0.00	0.00	0.00
11,900.00	90.00	359.75	10,384.00	1,407.53	508.87	1,452.99	0.00	0.00	0.00
12,000.00	90.00	359.75	10,384.00	1,507.53	508.42	1,552.39	0.00	0.00	0.00
12,100.00	90.00	359.75	10,384.00	1,607.53	507.98	1,651.80	0.00	0.00	0.00
12,200.00	90.00	359.75	10,384.00	1,707.52	507.53	1,751.20	0.00	0.00	0.00

Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
Company:	WPX Energy	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,300.00	90.00	359.75	10,384.00	1,807.52	507.09	1,850.61	0.00	0.00	0.00
12,400.00	90.00	359.75	10,384.00	1,907.52	506.64	1,950.01	0.00	0.00	0.00
12,500.00	90.00	359.75	10,384.00	2,007.52	506.20	2,049.42	0.00	0.00	0.00
12,600.00	90.00	359.75	10,384.00	2,107.52	505.76	2,148.82	0.00	0.00	0.00
12,700.00	90.00	359.75	10,384.00	2,207.52	505.31	2,248.23	0.00	0.00	0.00
12,800.00	90.00	359.75	10,384.00	2,307.52	504.87	2,347.64	0.00	0.00	0.00
12,900.00	90.00	359.75	10,384.00	2,407.52	504.42	2,447.04	0.00	0.00	0.00
13,000.00	90.00	359.75	10,384.00	2,507.52	503.98	2,546.45	0.00	0.00	0.00
13,100.00	90.00	359.75	10,384.00	2,607.52	503.53	2,645.85	0.00	0.00	0.00
13,200.00	90.00	359.75	10,384.00	2,707.51	503.09	2,745.26	0.00	0.00	0.00
13,300.00	90.00	359.75	10,384.00	2,807.51	502.64	2,844.66	0.00	0.00	0.00
13,400.00	90.00	359.75	10,384.00	2,907.51	502.20	2,944.07	0.00	0.00	0.00
13,500.00	90.00	359.75	10,384.00	3,007.51	501.75	3,043.47	0.00	0.00	0.00
13,600.00	90.00	359.75	10,384.00	3,107.51	501.31	3,142.88	0.00	0.00	0.00
13,700.00	90.00	359.75	10,384.00	3,207.51	500.86	3,242.28	0.00	0.00	0.00
13,800.00	90.00	359.75	10,384.00	3,307.51	500.42	3,341.69	0.00	0.00	0.00
13,900.00	90.00	359.75	10,384.00	3,407.51	499.97	3,441.09	0.00	0.00	0.00
14,000.00	90.00	359.75	10,384.00	3,507.51	499.53	3,540.50	0.00	0.00	0.00
14,100.00	90.00	359.75	10,384.00	3,607.51	499.08	3,639.90	0.00	0.00	0.00
14,200.00	90.00	359.75	10,384.00	3,707.51	498.64	3,739.31	0.00	0.00	0.00
14,300.00	90.00	359.75	10,384.00	3,807.50	498.19	3,838.72	0.00	0.00	0.00
14,400.00	90.00	359.75	10,384.00	3,907.50	497.75	3,938.12	0.00	0.00	0.00
14,500.00	90.00	359.75	10,384.00	4,007.50	497.30	4,037.53	0.00	0.00	0.00
14,600.00	90.00	359.75	10,384.00	4,107.50	496.86	4,136.93	0.00	0.00	0.00
14,700.00	90.00	359.75	10,384.00	4,207.50	496.41	4,236.34	0.00	0.00	0.00
14,800.00	90.00	359.75	10,384.00	4,307.50	495.97	4,335.74	0.00	0.00	0.00
14,900.00	90.00	359.75	10,384.00	4,407.50	495.52	4,435.15	0.00	0.00	0.00
15,000.00	90.00	359.75	10,384.00	4,507.50	495.08	4,534.55	0.00	0.00	0.00
15,100.00	90.00	359.75	10,384.00	4,607.50	494.63	4,633.96	0.00	0.00	0.00
15,197.21	90.00	359.75	10,384.00	4,704.70	494.20	4,730.59	0.00	0.00	0.00
PBHL									

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
VP - North Brushy Dr - plan hits target center - Point	0.00	0.00	9,250.00	-323.25	516.57	392,669.45	618,943.77	32° 4' 44.335 N	103° 56' 57.512 W
PBHL - North Brushy - plan hits target center - Rectangle (sides W100.00 H4,479.83 D30.00)	0.00	359.75	10,384.00	4,704.70	494.20	397,697.40	618,921.40	32° 5' 34.095 N	103° 56' 57.564 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
680.00	680.00	13 3/8"	13-3/8	17-1/2
3,188.00	3,188.00	9 5/8"	9-5/8	12-1/4

Database:	EDM 5000.1 Conroe DB	**Local Co-ordinate Reference:**	Well 10H
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Project:	Eddy County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site:	North Brushy Draw Federal 35	**North Reference:**	Grid
Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,188.00	3,188.00	Bell Canyon		0.00	359.82
4,280.91	4,276.00	Cherry Canyon		0.00	359.82
5,327.64	5,317.00	Brushy Canyon		0.00	359.82
7,034.99	7,015.00	Bone Spring		0.00	359.82
7,927.88	7,903.00	1st Bone Spring		0.00	359.82
8,834.84	8,805.00	2nd Bone Spring		0.00	359.82
9,874.56	9,843.00	3rd Bone Spring		0.00	359.82
10,274.29	10,196.00	Wolfcamp Top		0.00	359.82
10,481.70	10,327.00	Wolfcamp A		0.00	359.82

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
3,250.00	3,250.00	0.00	0.00	KOP, 3.00°/100' Build
3,449.93	3,449.56	-5.55	8.86	Begin 6.00° Tangent
9,081.63	9,050.44	-317.71	507.71	Begin 3.00°/100' Drop
9,281.56	9,250.00	-323.25	516.57	Begin Vertical Hold
9,867.38	9,835.82	-323.25	516.57	Begin 12.00°/100' Build
10,242.38	10,173.44	-183.41	515.95	Begin 45.00° Tangent
10,342.38	10,244.15	-112.70	515.63	Begin 12.00°/100' Build
10,717.38	10,384.00	224.92	514.13	Begin 90.00° Lateral
15,197.21	10,384.00	4,704.70	494.20	PBHL

WPXENERGY

WPX Energy

Eddy County, New Mexico (NAD 27)
North Brushy Draw Federal 35
10H

Wellbore #1
Design #1

Anticollision Report

27 June, 2016

MS Energy Services
WWW.MSENERGYSERVICES.COM

Company:	WPX Energy	Local Co-ordinate Reference:	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	TVD Reference:	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	MD Reference:	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	10H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Conroe DB
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference Design #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 u	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program Date 6/27/2016

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	15,196.39	Design #1 (Wellbore #1)	MWD	OWSG MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
North Brushy Draw Federal 35						
12H - Wellbore #1 - Surveys	1,228.49	1,225.55	95.37	87.25	11.753	CC
12H - Wellbore #1 - Surveys	3,800.00	3,795.05	101.13	75.00	3.870	ES
12H - Wellbore #1 - Surveys	3,900.00	3,894.48	102.50	75.72	3.827	SF
6H - Wellbore #1 - Surveys	10,475.00	14,940.02	1,141.77	1,018.02	9.227	SF
6H - Wellbore #1 - Surveys	10,550.00	14,865.00	1,139.68	1,016.52	9.254	ES
6H - Wellbore #1 - Surveys	10,595.13	14,819.31	1,139.39	1,016.68	9.286	CC
9H - Wellbore #1 - Surveys	9,060.87	13,520.00	711.44	596.30	6.179	CC, ES, SF

Offset Design North Brushy Draw Federal 35 - 12H - Wellbore #1 - Surveys

Offset Site Error: 0.00 usft
Survey Program: 178-MWD
Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.71	-99.80	0.50	99.85				
100.00	100.00	96.90	96.90	0.13	0.15	179.73	-99.85	0.46	99.85	99.56	0.29	348.247	
200.00	200.00	196.81	196.81	0.49	0.35	179.80	-100.00	0.35	100.00	99.16	0.84	119.103	
300.00	300.00	296.78	296.78	0.85	0.70	179.84	-100.20	0.29	100.20	98.65	1.55	64.480	
400.00	400.00	396.84	396.84	1.21	1.06	179.81	-100.43	0.34	100.43	98.17	2.27	44.300	
500.00	500.00	497.37	497.36	1.57	1.41	179.41	-100.33	1.03	100.33	97.36	2.97	33.736	
600.00	600.00	598.06	598.05	1.93	1.75	178.74	-99.62	2.20	99.65	95.97	3.68	27.092	
700.00	700.00	698.30	698.28	2.29	2.10	178.38	-98.32	2.78	98.36	93.98	4.38	22.454	
800.00	800.00	798.19	798.16	2.64	2.44	178.28	-97.07	2.92	97.12	92.04	5.08	19.105	
900.00	900.00	897.74	897.70	3.00	2.79	178.45	-96.12	2.60	96.15	90.36	5.79	16.611	
1,000.00	1,000.00	997.29	997.25	3.36	3.13	178.94	-95.65	1.78	95.67	89.18	6.49	14.733	
1,100.00	1,100.00	1,097.19	1,097.14	3.72	3.48	179.62	-95.46	0.63	95.47	88.26	7.20	13.255	
1,200.00	1,200.00	1,197.09	1,197.03	4.08	3.83	-179.59	-95.37	-0.59	95.37	87.46	7.91	12.055	
1,228.49	1,228.49	1,225.55	1,225.49	4.18	3.93	-179.34	-95.36	-1.09	95.37	87.25	8.11	11.753	CC
1,300.00	1,300.00	1,296.98	1,296.91	4.44	4.19	-178.70	-95.38	-2.17	95.40	86.78	8.62	11.064	
1,400.00	1,400.00	1,396.88	1,396.80	4.79	4.54	-177.71	-95.48	-3.82	95.56	86.22	9.33	10.237	
1,500.00	1,500.00	1,496.82	1,496.72	5.15	4.89	-176.49	-95.62	-5.86	95.80	85.75	10.05	9.535	
1,600.00	1,600.00	1,596.65	1,596.51	5.51	5.25	-175.02	-95.80	-8.35	96.17	85.41	10.76	8.937	
1,700.00	1,700.00	1,696.28	1,696.11	5.87	5.60	-173.53	-96.26	-10.92	96.88	85.41	11.47	8.444	
1,800.00	1,800.00	1,796.10	1,795.89	6.23	5.96	-172.10	-97.03	-13.47	97.96	85.78	12.19	8.038	
1,900.00	1,900.00	1,896.18	1,895.94	6.59	6.32	-170.70	-97.75	-16.01	99.06	86.16	12.90	7.678	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design — North Brushy Draw Federal 35 - 12H - Wellbore #1 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 178-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,000.00	2,000.00	1,996.23	1,995.96	6.95	6.68	-169.33	-98.37	-18.53	100.11	86.49	13.62	7.351	
2,100.00	2,100.00	2,096.27	2,095.96	7.30	7.03	-168.05	-98.94	-20.94	101.14	86.81	14.33	7.056	
2,200.00	2,200.00	2,196.32	2,195.99	7.66	7.39	-166.86	-99.47	-23.22	102.15	87.10	15.05	6.787	
2,300.00	2,300.00	2,296.40	2,296.05	8.02	7.75	-165.81	-99.96	-25.27	103.11	87.34	15.77	6.540	
2,400.00	2,400.00	2,396.49	2,396.12	8.38	8.11	-164.95	-100.43	-26.99	104.00	87.51	16.48	6.310	
2,500.00	2,500.00	2,496.60	2,496.23	8.74	8.46	-164.44	-100.94	-28.11	104.79	87.59	17.20	6.093	
2,600.00	2,600.00	2,596.59	2,596.21	9.10	8.81	-164.28	-101.57	-28.59	105.52	87.62	17.90	5.893	
2,700.00	2,700.00	2,696.55	2,696.17	9.45	9.16	-164.52	-102.43	-28.36	106.29	87.68	18.61	5.711	
2,800.00	2,800.00	2,796.52	2,796.12	9.81	9.50	-165.20	-103.53	-27.35	107.09	87.78	19.31	5.546	
2,900.00	2,900.00	2,896.46	2,896.03	10.17	9.84	-166.36	-104.89	-25.45	107.94	87.94	20.01	5.395	
3,000.00	3,000.00	2,996.52	2,996.06	10.53	10.18	-167.76	-106.34	-23.08	108.82	88.12	20.71	5.256	
3,100.00	3,100.00	3,096.57	3,096.07	10.89	10.52	-169.16	-107.71	-20.63	109.68	88.27	21.40	5.124	
3,200.00	3,200.00	3,196.62	3,196.09	11.25	10.86	-170.37	-108.95	-18.50	110.52	88.41	22.11	5.000	
3,250.00	3,250.00	3,246.62	3,246.04	11.43	11.03	-171.44	-109.69	-16.52	110.93	88.48	22.46	4.940	
3,300.00	3,299.99	3,296.76	3,296.07	11.60	11.20	65.11	-110.59	-13.28	111.11	88.31	22.80	4.873	
3,400.00	3,399.85	3,397.30	3,395.91	11.93	11.55	61.55	-112.45	-1.79	109.54	86.07	23.47	4.667	
3,449.93	3,449.56	3,447.39	3,445.30	12.10	11.72	59.27	-113.28	6.55	107.77	83.96	23.81	4.526	
3,500.00	3,499.36	3,497.22	3,494.15	12.27	11.89	56.39	-114.03	16.28	105.77	81.62	24.15	4.380	
3,600.00	3,598.81	3,596.44	3,591.17	12.61	12.24	49.58	-115.47	37.03	102.79	77.97	24.82	4.142	
3,700.00	3,698.27	3,695.79	3,688.30	12.95	12.60	42.40	-116.73	57.89	101.20	75.72	25.48	3.971	
3,754.12	3,752.09	3,749.50	3,740.83	13.13	12.80	38.53	-117.40	69.04	100.98	75.14	25.84	3.908	
3,800.00	3,797.72	3,795.05	3,785.40	13.29	12.97	35.28	-117.98	78.42	101.13	75.00	26.13	3.870 ES	
3,900.00	3,897.17	3,894.48	3,882.73	13.64	13.34	28.38	-119.24	98.72	102.50	75.72	26.78	3.827 SF	
4,000.00	3,996.62	3,994.15	3,980.31	13.99	13.72	21.65	-120.16	119.03	105.02	77.59	27.43	3.828	
4,100.00	4,096.08	4,094.09	4,078.25	14.34	14.11	15.37	-120.79	138.91	108.37	80.28	28.09	3.858	
4,200.00	4,195.53	4,191.53	4,173.81	14.70	14.50	10.00	-121.92	157.92	113.01	84.34	28.67	3.942	
4,300.00	4,294.98	4,289.68	4,269.82	15.06	14.89	5.43	-124.83	178.06	120.48	91.20	29.28	4.115	
4,400.00	4,394.43	4,388.94	4,366.88	15.41	15.30	1.36	-127.90	198.63	128.90	98.96	29.93	4.306	
4,500.00	4,493.89	4,488.47	4,464.20	15.78	15.71	-2.31	-130.71	219.29	137.78	107.16	30.61	4.501	
4,600.00	4,593.34	4,588.77	4,562.35	16.14	16.13	-5.61	-133.19	239.80	146.71	115.39	31.32	4.684	
4,700.00	4,692.79	4,688.34	4,659.87	16.50	16.55	-8.56	-135.35	259.74	155.56	123.55	32.01	4.859	
4,800.00	4,792.24	4,786.39	4,755.89	16.87	16.96	-10.84	-138.39	279.35	165.07	132.41	32.66	5.054	
4,900.00	4,891.70	4,885.79	4,853.20	17.23	17.38	-12.54	-142.62	299.23	175.20	141.84	33.36	5.251	
5,000.00	4,991.15	4,986.26	4,951.61	17.60	17.82	-14.01	-146.97	318.96	185.13	151.03	34.10	5.429	
5,100.00	5,090.60	5,086.46	5,049.86	17.97	18.25	-15.35	-151.12	338.21	194.70	159.87	34.83	5.590	
5,200.00	5,190.05	5,187.11	5,148.64	18.34	18.68	-16.63	-154.93	357.11	203.86	168.28	35.58	5.730	
5,300.00	5,289.51	5,287.69	5,247.46	18.71	19.11	-17.86	-158.38	375.54	212.56	176.25	36.32	5.853	
5,400.00	5,388.96	5,388.19	5,346.28	19.09	19.54	-19.05	-161.53	393.56	220.90	183.85	37.06	5.961	
5,500.00	5,488.41	5,488.43	5,444.92	19.46	19.97	-20.22	-164.28	411.19	228.91	191.12	37.79	6.057	
5,600.00	5,587.87	5,588.34	5,543.26	19.83	20.40	-21.09	-167.87	428.48	236.88	198.36	38.52	6.149	
5,700.00	5,687.32	5,685.26	5,638.64	20.21	20.81	-21.77	-171.84	445.20	244.94	205.76	39.19	6.251	
5,800.00	5,786.77	5,781.10	5,732.59	20.58	21.24	-22.47	-175.81	463.74	255.12	215.29	39.83	6.406	
5,900.00	5,886.22	5,882.20	5,831.69	20.96	21.69	-23.21	-179.71	483.39	265.39	224.80	40.60	6.537	
6,000.00	5,985.68	5,982.86	5,930.49	21.34	22.13	-23.95	-183.22	502.30	275.01	233.66	41.35	6.650	
6,100.00	6,085.13	6,079.66	6,025.47	21.72	22.56	-24.56	-186.88	520.59	284.81	242.79	42.03	6.777	
6,200.00	6,184.58	6,176.84	6,120.57	22.10	23.00	-24.94	-191.67	540.03	295.90	253.19	42.71	6.928	
6,300.00	6,284.03	6,276.85	6,218.40	22.47	23.46	-25.27	-196.79	560.13	307.11	263.65	43.46	7.067	
6,400.00	6,383.49	6,377.42	6,316.87	22.85	23.92	-25.64	-201.57	580.04	317.99	273.77	44.22	7.191	
6,500.00	6,482.94	6,478.23	6,415.65	23.24	24.37	-26.01	-206.20	599.62	328.49	283.50	44.99	7.302	
6,600.00	6,582.39	6,577.24	6,512.71	23.62	24.82	-26.38	-210.53	618.66	338.79	293.07	45.72	7.410	
6,700.00	6,681.84	6,679.51	6,613.02	24.00	25.29	-26.78	-214.78	638.15	348.91	302.39	46.51	7.501	
6,800.00	6,781.30	6,780.94	6,712.66	24.38	25.74	-27.19	-218.67	656.73	358.26	310.97	47.29	7.576	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 12H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 178-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,900.00	6,880.75	6,884.05	6,814.08	24.76	26.20	-27.59	-222.50	674.89	366.91	318.82	48.09	7.629	
7,000.00	6,980.20	6,976.25	6,904.67	25.14	26.61	-27.97	-225.79	691.69	376.17	327.46	48.71	7.723	
7,100.00	7,079.65	7,074.85	7,001.38	25.53	27.06	-28.35	-229.35	710.61	386.44	337.00	49.44	7.816	
7,200.00	7,179.11	7,172.19	7,096.74	25.91	27.51	-28.68	-233.10	729.74	397.21	347.06	50.15	7.920	
7,300.00	7,278.56	7,281.08	7,203.61	26.30	28.00	-29.04	-237.17	750.25	407.17	356.12	51.06	7.975	
7,400.00	7,378.01	7,391.73	7,312.83	26.68	28.49	-29.48	-240.54	767.67	413.93	361.97	51.96	7.967	
7,500.00	7,477.46	7,490.12	7,410.06	27.06	28.91	-29.93	-242.93	782.48	420.04	367.35	52.69	7.972	
7,600.00	7,576.92	7,595.49	7,514.21	27.45	29.35	-30.60	-244.02	798.42	426.24	372.73	53.51	7.966	
7,700.00	7,676.37	7,700.94	7,618.77	27.83	29.78	-31.36	-244.20	812.07	430.23	375.91	54.32	7.921	
7,800.00	7,775.82	7,800.51	7,717.53	28.22	30.19	-31.96	-245.24	824.73	434.08	379.01	55.07	7.883	
7,900.00	7,875.27	7,914.98	7,831.23	28.61	30.65	-32.63	-246.50	837.85	436.78	380.85	55.93	7.810	
8,000.00	7,974.73	8,022.25	7,938.12	28.99	31.05	-33.39	-246.65	846.96	436.49	379.78	56.72	7.696	
8,100.00	8,074.18	8,123.51	8,039.09	29.38	31.43	-34.17	-246.37	854.60	435.36	377.88	57.48	7.575	
8,200.00	8,173.63	8,224.70	8,140.01	29.77	31.80	-34.93	-246.26	861.96	434.01	375.78	58.24	7.453	
8,300.00	8,273.09	8,330.78	8,245.86	30.15	32.18	-35.73	-246.22	868.87	432.00	372.99	59.01	7.321	
8,400.00	8,372.54	8,441.61	8,356.57	30.54	32.57	-36.39	-247.76	873.70	427.78	368.03	59.75	7.160	
8,500.00	8,471.99	8,550.56	8,465.40	30.93	32.93	-36.69	-252.20	876.16	421.30	360.86	60.45	6.970	
8,600.00	8,571.44	8,656.49	8,571.22	31.32	33.27	-36.95	-256.90	876.54	412.91	351.78	61.13	6.754	
8,700.00	8,670.90	8,760.38	8,675.02	31.70	33.59	-37.29	-261.14	875.61	403.33	341.51	61.82	6.524	
8,800.00	8,770.35	8,862.44	8,776.96	32.09	33.90	-37.61	-265.57	873.83	392.89	330.37	62.52	6.285	
8,900.00	8,869.80	8,963.70	8,878.10	32.48	34.20	-37.95	-270.05	871.51	381.92	318.70	63.22	6.041	
9,000.00	8,969.25	9,063.41	8,977.68	32.87	34.50	-38.30	-274.46	868.93	370.66	306.73	63.93	5.798	
9,081.63	9,050.44	9,145.05	9,059.22	33.19	34.75	-38.64	-277.87	866.70	361.39	296.87	64.52	5.601	
9,100.00	9,068.71	9,163.43	9,077.57	33.26	34.80	-38.69	-278.58	866.17	359.35	294.71	64.65	5.559	
9,200.00	9,168.47	9,262.56	9,176.61	33.63	35.10	-38.73	-281.91	863.35	350.77	285.41	65.36	5.367	
9,281.56	9,250.00	9,344.45	9,258.42	33.91	35.34	83.60	-284.63	861.00	346.77	280.88	65.90	5.262	
9,300.00	9,268.44	9,361.69	9,275.84	33.97	35.40	83.69	-285.25	860.51	345.19	280.16	66.03	5.243	
9,400.00	9,368.44	9,457.28	9,371.16	34.30	35.69	84.20	-288.48	858.73	343.97	277.23	66.74	5.154	
9,500.00	9,468.44	9,556.87	9,470.69	34.64	36.00	84.68	-291.50	857.40	342.35	274.95	67.40	5.080	
9,600.00	9,568.44	9,656.48	9,570.26	34.97	36.31	85.08	-294.04	856.22	340.94	272.88	68.06	5.009	
9,700.00	9,668.44	9,754.33	9,668.09	35.30	36.61	85.38	-295.90	855.01	339.56	270.81	68.74	4.939	
9,732.94	9,701.38	9,784.63	9,698.38	35.41	36.71	85.37	-295.87	854.89	339.43	270.44	68.99	4.920	
9,800.00	9,768.44	9,838.77	9,752.50	35.64	36.88	85.16	-294.55	855.39	340.28	270.76	69.52	4.895	
9,867.38	9,835.82	9,883.28	9,796.73	35.86	37.04	84.53	-290.56	858.23	345.12	275.21	69.90	4.937	
9,875.00	9,843.44	9,888.38	9,801.76	35.89	37.06	84.60	-289.90	858.72	345.94	276.00	69.93	4.947	
9,900.00	9,868.42	9,905.04	9,818.15	35.97	37.11	83.98	-287.46	860.53	348.93	278.93	70.00	4.985	
9,925.00	9,893.30	9,921.98	9,834.68	36.05	37.18	83.39	-284.54	862.71	352.36	282.34	70.02	5.032	
9,950.00	9,918.03	9,939.23	9,851.39	36.12	37.24	82.82	-281.09	865.22	356.17	286.15	70.02	5.087	
9,975.00	9,942.53	9,960.00	9,871.31	36.20	37.32	82.29	-276.29	868.65	360.37	290.29	70.08	5.142	
10,000.00	9,966.74	9,973.05	9,883.71	36.27	37.37	81.79	-272.98	871.03	364.87	294.95	69.91	5.219	
10,025.00	9,990.59	9,989.49	9,899.21	36.33	37.43	81.35	-268.59	874.32	369.75	299.93	69.81	5.296	
10,050.00	10,014.02	10,009.00	9,917.41	36.40	37.50	81.02	-263.07	878.63	374.99	305.19	69.80	5.372	
10,075.00	10,036.96	10,021.74	9,929.19	36.45	37.55	80.62	-259.29	881.69	380.54	310.99	69.55	5.471	
10,100.00	10,059.35	10,037.44	9,943.58	36.51	37.62	80.32	-254.50	885.74	386.47	317.06	69.41	5.568	
10,125.00	10,081.12	10,054.00	9,958.61	36.56	37.68	80.11	-249.28	890.33	392.74	323.44	69.30	5.667	
10,150.00	10,102.22	10,069.53	9,972.56	36.61	37.75	79.90	-244.22	894.90	399.32	330.14	69.18	5.772	
10,175.00	10,122.60	10,086.02	9,987.24	36.65	37.82	79.78	-238.68	899.99	406.17	337.05	69.12	5.876	
10,200.00	10,142.18	10,103.00	10,002.19	36.68	37.89	79.72	-232.79	905.46	413.30	344.19	69.11	5.980	
10,225.00	10,160.93	10,120.53	10,017.48	36.72	37.97	79.73	-226.51	911.30	420.66	351.50	69.16	6.083	
10,242.38	10,173.44	10,133.19	10,028.43	36.74	38.02	79.79	-221.84	915.60	425.87	356.64	69.23	6.151	
10,300.00	10,214.18	10,173.72	10,062.93	36.80	38.20	81.92	-206.05	929.86	444.37	374.90	69.47	6.396	
10,342.38	10,244.15	10,203.21	10,087.28	36.84	38.33	83.24	-193.50	940.78	459.30	389.65	69.65	6.594	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 12H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 178-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,350.00	10,249.50	10,208.51	10,091.59	36.85	38.36	83.11	-191.17	942.79	462.09	392.40	69.69	6.631	
10,375.00	10,266.41	10,225.71	10,105.46	36.88	38.44	82.69	-183.48	949.43	471.35	401.53	69.82	6.751	
10,400.00	10,282.34	10,242.63	10,118.94	36.90	38.51	82.29	-175.73	956.12	480.82	410.84	69.98	6.871	
10,425.00	10,297.24	10,258.48	10,131.40	36.92	38.59	81.87	-168.31	962.52	490.50	420.35	70.14	6.993	
10,450.00	10,311.07	10,273.37	10,142.94	36.93	38.66	81.41	-161.22	968.70	500.44	430.12	70.32	7.117	
10,475.00	10,323.79	10,287.91	10,154.06	36.95	38.73	80.94	-154.20	974.90	510.65	440.13	70.52	7.241	
10,500.00	10,335.36	10,304.01	10,166.22	36.95	38.80	80.57	-146.32	981.90	521.11	450.31	70.80	7.360	
10,525.00	10,345.76	10,321.03	10,179.01	36.96	38.89	80.30	-137.94	989.38	531.73	460.59	71.14	7.475	
10,550.00	10,354.96	10,337.48	10,191.32	36.96	38.97	80.02	-129.81	996.68	542.53	471.04	71.49	7.589	
10,575.00	10,362.92	10,358.09	10,206.66	36.95	39.07	80.06	-119.54	1,005.83	553.47	481.52	71.95	7.692	
10,600.00	10,369.64	10,380.81	10,223.51	36.95	39.19	80.29	-107.97	1,015.77	564.41	491.98	72.43	7.792	
10,625.00	10,375.09	10,447.29	10,271.63	36.94	39.50	83.62	-70.81	1,042.53	574.85	501.42	73.43	7.829	
10,650.00	10,379.25	10,650.00	10,289.43	36.93	40.56	84.06	-54.23	1,051.71	584.08	509.25	74.82	7.806	
10,675.00	10,382.12	10,524.79	10,323.40	36.92	39.84	86.14	-19.67	1,069.03	593.06	518.88	74.18	7.995	
10,700.00	10,383.68	10,551.12	10,339.66	36.94	39.95	86.61	-0.72	1,077.38	601.85	527.46	74.39	8.091	
10,717.38	10,384.00	10,568.53	10,349.99	36.98	40.02	86.87	12.19	1,082.84	607.99	533.48	74.51	8.160	
10,800.00	10,384.00	10,819.85	10,468.72	37.23	40.86	98.13	226.89	1,128.12	625.80	552.20	73.60	8.503	
10,900.00	10,384.00	10,917.57	10,489.45	37.59	41.16	99.88	321.89	1,136.44	638.26	564.38	73.88	8.639	
11,000.00	10,384.00	11,028.02	10,497.74	38.01	41.59	100.37	430.99	1,151.20	653.42	578.89	74.53	8.767	
11,100.00	10,384.00	11,169.27	10,500.01	38.49	42.20	100.39	571.77	1,162.02	661.38	586.08	75.30	8.784	
11,200.00	10,384.00	11,289.44	10,501.32	39.03	42.77	100.41	691.82	1,167.22	666.38	590.15	76.23	8.741	
11,300.00	10,384.00	11,418.56	10,499.99	39.63	43.46	100.28	820.88	1,167.49	666.79	589.52	77.27	8.629	
11,400.00	10,384.00	11,535.53	10,498.10	40.28	44.13	100.18	937.70	1,162.99	663.02	584.56	78.46	8.450	
11,500.00	10,384.00	11,613.24	10,496.66	40.98	44.62	100.08	1,015.37	1,161.07	660.67	580.68	79.99	8.259	
11,560.07	10,384.00	11,668.39	10,495.17	41.44	45.00	99.95	1,070.49	1,160.88	660.45	579.49	80.95	8.158	
11,600.00	10,384.00	11,706.32	10,494.56	41.74	45.26	99.90	1,108.43	1,160.91	660.54	578.96	81.58	8.097	
11,700.00	10,384.00	11,817.00	10,496.16	42.55	46.08	100.06	1,219.06	1,159.01	659.49	576.45	83.04	7.942	
11,752.01	10,384.00	11,860.38	10,497.41	43.00	46.42	100.17	1,262.42	1,158.31	659.15	575.21	83.93	7.853	
11,800.00	10,384.00	11,901.68	10,498.48	43.41	46.75	100.26	1,303.70	1,158.18	659.43	574.66	84.76	7.780	
11,900.00	10,384.00	11,995.37	10,499.98	44.31	47.53	100.37	1,397.38	1,158.99	661.00	574.45	86.55	7.638	
12,000.00	10,384.00	12,098.99	10,500.71	45.25	48.45	100.41	1,500.98	1,160.28	662.79	574.43	88.36	7.501	
12,100.00	10,384.00	12,206.78	10,500.85	46.23	49.44	100.41	1,608.77	1,160.57	663.50	573.27	90.23	7.353	
12,200.00	10,384.00	12,306.94	10,498.72	47.24	50.40	100.22	1,708.90	1,160.64	663.63	571.32	92.31	7.189	
12,300.00	10,384.00	12,408.45	10,496.30	48.30	51.42	100.00	1,810.39	1,160.95	663.96	569.50	94.46	7.029	
12,400.00	10,384.00	12,519.69	10,496.85	49.38	52.56	100.06	1,921.61	1,159.52	663.23	566.76	96.47	6.875	
12,500.00	10,384.00	12,657.70	10,499.61	50.50	54.00	100.41	2,059.35	1,151.85	658.50	560.43	98.06	6.715	
12,600.00	10,384.00	12,739.00	10,501.83	51.64	54.87	100.68	2,140.42	1,146.29	652.66	552.19	100.47	6.496	
12,700.00	10,384.00	12,827.99	10,501.28	52.81	55.87	100.68	2,229.32	1,142.79	649.09	546.16	102.93	6.306	
12,800.00	10,384.00	12,936.64	10,499.69	54.01	57.11	100.60	2,337.87	1,138.77	645.63	540.42	105.21	6.136	
12,900.00	10,384.00	13,049.92	10,502.99	55.23	58.42	101.01	2,450.83	1,131.09	639.90	532.64	107.25	5.966	
13,000.00	10,384.00	13,139.77	10,507.93	56.47	59.48	101.56	2,540.29	1,124.39	634.11	524.47	109.64	5.783	
13,100.00	10,384.00	13,218.76	10,511.23	57.73	60.44	101.91	2,619.12	1,120.88	631.04	518.75	112.29	5.620	
13,140.60	10,384.00	13,250.50	10,511.75	58.25	60.83	101.96	2,650.86	1,120.40	630.75	517.36	113.40	5.562	
13,200.00	*10,384.00*	*13,296.95*	*10,511.33*	*59.01*	*61.41*	*101.92*	*2,697.30*	*1,120.77*	*631.36*	*516.30*	*115.06*	*5.487*	
13,300.00	10,384.00	13,394.92	10,508.77	60.31	62.66	101.63	2,795.21	1,123.25	633.74	515.96	117.78	5.381	
13,400.00	10,384.00	13,500.66	10,507.61	61.63	64.01	101.49	2,900.92	1,125.11	635.69	515.30	120.39	5.280	
13,500.00	10,384.00	13,604.93	10,506.85	62.96	65.37	101.40	3,005.19	1,125.96	636.78	513.76	123.02	5.176	
13,600.00	10,384.00	13,705.88	10,505.91	64.31	66.70	101.30	3,106.13	1,126.50	637.55	511.83	125.72	5.071	
13,700.00	10,384.00	13,804.46	10,508.14	65.67	68.01	101.49	3,204.67	1,126.11	638.05	509.71	128.33	4.972	
13,800.00	10,384.00	13,887.16	10,511.14	67.04	69.12	101.74	3,287.32	1,126.73	640.01	508.91	131.09	4.882	
13,900.00	10,384.00	13,954.00	10,512.63	68.43	70.03	101.80	3,354.03	1,130.32	646.16	512.24	133.92	4.825	
14,000.00	10,384.00	14,083.80	10,509.71	69.83	71.81	101.38	3,483.44	1,139.37	653.11	516.32	136.79	4.775	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 12H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 178-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,100.00	10,384.00	14,192.98	10,506.54	71.24	73.33	101.03	3,592.51	1,142.97	656.19	516.52	139.67	4.698	
14,200.00	10,384.00	14,290.46	10,500.83	72.66	74.69	100.48	3,689.76	1,146.53	659.13	516.35	142.78	4.617	
14,300.00	10,384.00	14,386.77	10,497.15	74.09	76.05	100.10	3,785.93	1,150.04	662.46	516.65	145.81	4.543	
14,400.00	10,384.00	14,479.29	10,494.15	75.53	77.36	99.78	3,878.31	1,154.08	666.66	517.80	148.86	4.479	
14,500.00	10,384.00	14,583.20	10,490.38	76.97	78.84	99.38	3,982.00	1,159.62	671.77	519.88	151.89	4.423	
14,600.00	10,384.00	14,703.86	10,486.89	78.43	80.57	99.03	4,102.55	1,162.88	674.40	519.64	154.77	4.358	
14,700.00	10,384.00	14,791.97	10,486.95	79.89	81.83	99.02	4,190.66	1,163.97	676.12	518.34	157.78	4.285	
14,800.00	10,384.00	14,874.45	10,488.73	81.36	83.02	99.13	4,273.06	1,166.83	680.33	519.60	160.74	4.233	
14,900.00	10,384.00	14,990.93	10,495.94	82.84	84.72	99.65	4,389.22	1,171.30	685.72	522.40	163.32	4.199	
15,000.00	10,384.00	15,090.66	10,500.50	84.32	86.17	100.00	4,488.83	1,172.93	688.56	522.48	166.09	4.146	
15,100.00	10,384.00	15,179.24	10,502.46	85.82	87.47	100.11	4,577.34	1,175.73	692.50	523.47	169.03	4.097	
15,197.21	10,384.00	15,274.01	10,503.90	87.27	88.86	100.16	4,672.00	1,179.94	697.43	525.55	171.88	4.058	

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 6H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 100-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-9.09	4,756.10	-761.30	4,816.65				
100.00	100.00	90.27	90.27	0.13	0.13	-9.09	4,756.14	-761.36	4,816.69	4,816.42	0.27	N/A	
200.00	200.00	194.72	194.72	0.49	0.49	-9.10	4,756.19	-761.45	4,816.75	4,815.78	0.98	4,923.260	
300.00	300.00	281.39	281.39	0.85	0.79	-9.10	4,756.30	-761.46	4,816.89	4,815.24	1.65	2,926.985	
400.00	400.00	378.21	378.21	1.21	1.14	-9.10	4,756.63	-761.49	4,817.23	4,814.88	2.35	2,049.597	
500.00	500.00	462.44	462.44	1.57	1.44	-9.10	4,757.02	-761.55	4,817.71	4,814.69	3.01	1,600.195	
600.00	600.00	537.49	537.48	1.93	1.71	-9.10	4,757.69	-761.66	4,818.62	4,814.98	3.64	1,324.383	
700.00	700.00	610.85	610.83	2.29	1.97	-9.09	4,758.80	-761.72	4,820.11	4,815.85	4.26	1,131.501	
800.00	800.00	703.95	703.92	2.64	2.31	-9.10	4,760.42	-762.29	4,821.93	4,816.98	4.95	973.848	
900.00	900.00	788.65	788.60	3.00	2.61	-9.11	4,762.01	-763.30	4,823.97	4,818.35	5.61	859.428	
1,000.00	1,000.00	886.47	886.39	3.36	2.96	-9.11	4,764.08	-764.31	4,826.22	4,819.90	6.32	763.423	
1,100.00	1,100.00	986.15	986.05	3.72	3.32	-9.12	4,766.28	-764.73	4,828.47	4,821.44	7.04	686.128	
1,200.00	1,200.00	1,088.16	1,088.03	4.08	3.68	-9.11	4,768.60	-764.73	4,830.71	4,822.95	7.76	622.458	
1,300.00	1,300.00	1,198.16	1,198.00	4.44	4.08	-9.10	4,771.04	-764.42	4,832.87	4,824.35	8.51	567.748	
1,400.00	1,400.00	1,360.89	1,360.71	4.79	4.66	-9.10	4,773.46	-764.46	4,834.41	4,824.95	9.45	511.458	
1,500.00	1,500.00	1,536.60	1,536.42	5.15	5.26	-9.11	4,772.70	-765.71	4,833.91	4,823.50	10.41	464.517	
1,600.00	1,600.00	1,629.41	1,629.22	5.51	5.57	-9.12	4,771.86	-766.35	4,833.13	4,822.05	11.08	436.348	
1,700.00	1,700.00	1,723.55	1,723.36	5.87	5.88	-9.13	4,771.18	-766.77	4,832.48	4,820.73	11.75	411.209	
1,800.00	1,800.00	1,820.29	1,820.09	6.23	6.21	-9.13	4,770.62	-766.86	4,831.93	4,819.49	12.44	388.563	
1,900.00	1,900.00	1,911.49	1,911.29	6.59	6.51	-9.13	4,770.25	-766.76	4,831.50	4,818.40	13.10	368.801	
2,000.00	2,000.00	2,019.06	2,018.86	6.95	6.88	-9.13	4,769.82	-766.54	4,831.08	4,817.26	13.82	349.506	
2,100.00	2,100.00	2,119.06	2,118.86	7.30	7.22	-9.13	4,769.36	-766.29	4,830.58	4,816.06	14.52	332.660	
2,200.00	2,200.00	2,217.45	2,217.25	7.66	7.56	-9.13	4,768.90	-766.06	4,830.09	4,814.88	15.22	317.435	
2,300.00	2,300.00	2,310.01	2,309.81	8.02	7.87	-9.13	4,768.55	-766.04	4,829.71	4,813.82	15.89	303.886	
2,400.00	2,400.00	2,409.07	2,408.87	8.38	8.22	-9.13	4,768.27	-766.20	4,829.45	4,812.86	16.59	291.020	
2,500.00	2,500.00	2,529.89	2,529.68	8.74	8.64	-9.12	4,767.76	-765.65	4,828.98	4,811.60	17.37	277.994	
2,600.00	2,600.00	2,624.48	2,624.27	9.10	8.96	-9.11	4,767.17	-764.64	4,828.19	4,810.14	18.06	267.392	
2,700.00	2,700.00	2,711.43	2,711.21	9.45	9.26	-9.10	4,766.96	-763.76	4,827.78	4,809.07	18.72	257.934	
2,800.00	2,800.00	2,819.13	2,818.90	9.81	9.64	-9.08	4,766.86	-761.77	4,827.40	4,807.95	19.45	248.191	
2,900.00	2,900.00	2,957.21	2,956.92	10.17	10.12	-9.04	4,766.30	-758.05	4,826.60	4,806.31	20.29	237.891	
3,000.00	3,000.00	3,049.80	3,049.46	10.53	10.44	-9.00	4,765.63	-755.23	4,825.41	4,804.43	20.97	230.090	
3,100.00	3,100.00	3,138.45	3,138.09	10.89	10.75	-8.98	4,765.07	-753.04	4,824.40	4,802.75	21.64	222.923	
3,200.00	3,200.00	3,223.76	3,223.38	11.25	11.05	-8.96	4,764.65	-751.62	4,823.65	4,801.35	22.30	216.310	
3,250.00	3,250.00	3,265.69	3,265.32	11.43	11.20	-8.96	4,764.51	-751.13	4,823.40	4,800.77	22.63	213.175	
3,261.14	3,261.14	3,274.96	3,274.59	11.46	11.23	-131.00	4,764.49	-751.03	4,823.38	4,800.68	22.70	212.508	
3,300.00	3,299.99	3,307.32	3,306.94	11.60	11.35	-130.99	4,764.44	-750.70	4,823.66	4,800.72	22.95	210.226	
3,400.00	3,399.85	3,394.66	3,394.28	11.93	11.66	-130.95	4,764.47	-749.94	4,826.99	4,803.41	23.58	204.665	
3,449.93	3,449.56	3,439.58	3,439.20	12.10	11.81	-130.91	4,764.56	-749.56	4,830.02	4,806.11	23.91	202.007	
3,500.00	3,499.36	3,486.03	3,485.64	12.27	11.98	-130.95	4,764.68	-749.21	4,833.54	4,809.29	24.24	199.390	
3,600.00	3,598.81	3,587.48	3,587.09	12.61	12.33	-131.04	4,764.97	-748.68	4,840.61	4,815.67	24.94	194.123	
3,700.00	3,698.27	3,697.22	3,696.83	12.95	12.72	-131.14	4,765.00	-748.73	4,847.54	4,821.88	25.66	188.926	
3,800.00	3,797.72	3,814.79	3,814.40	13.29	13.12	-131.26	4,764.63	-749.16	4,854.19	4,827.78	26.41	183.827	
3,900.00	3,897.17	3,907.18	3,906.79	13.64	13.44	-131.34	4,764.28	-749.33	4,860.76	4,833.69	27.07	179.561	
4,000.00	3,996.62	4,012.68	4,012.29	13.99	13.81	-131.44	4,763.84	-749.28	4,867.27	4,839.49	27.78	175.186	
4,100.00	4,096.08	4,091.06	4,090.67	14.34	14.09	-131.51	4,763.71	-749.07	4,874.00	4,845.60	28.41	171.588	
4,200.00	4,195.53	4,182.77	4,182.38	14.70	14.41	-131.60	4,763.82	-748.93	4,881.04	4,851.97	29.07	167.879	
4,300.00	4,294.98	4,298.60	4,298.20	15.06	14.81	-131.70	4,763.81	-749.04	4,888.02	4,858.19	29.83	163.873	
4,400.00	4,394.43	4,396.71	4,396.32	15.41	15.15	-131.79	4,763.68	-748.99	4,894.86	4,864.34	30.52	160.369	
4,500.00	4,493.89	4,490.79	4,490.39	15.78	15.48	-131.88	4,763.61	-748.86	4,901.75	4,870.54	31.21	157.080	
4,600.00	4,593.34	4,581.67	4,581.27	16.14	15.80	-131.96	4,763.69	-748.82	4,908.83	4,876.96	31.88	153.993	
4,700.00	4,692.79	4,688.03	4,687.64	16.50	16.17	-132.06	4,763.73	-748.95	4,915.90	4,883.30	32.60	150.786	
4,800.00	4,792.24	4,786.43	4,786.04	16.87	16.51	-132.15	4,763.73	-749.00	4,922.94	4,889.64	33.30	147.834	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 6H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 100-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,900.00	4,891.70	4,888.55	4,888.16	17.23	16.87	-132.24	4,763.74	-749.12	4,930.01	4,896.00	34.01	144.945	
5,000.00	4,991.15	4,991.09	4,990.69	17.60	17.23	-132.33	4,763.62	-749.13	4,936.95	4,902.22	34.73	142.156	
5,100.00	5,090.60	5,082.69	5,082.30	17.97	17.55	-132.41	4,763.63	-749.00	4,944.00	4,908.59	35.41	139.628	
5,200.00	5,190.05	5,179.90	5,179.51	18.34	17.89	-132.50	4,763.76	-748.96	4,951.19	4,915.09	36.11	137.123	
5,300.00	5,289.51	5,283.47	5,283.07	18.71	18.25	-132.59	4,763.81	-749.08	4,958.35	4,921.52	36.83	134.630	
5,400.00	5,388.96	5,384.35	5,383.96	19.09	18.60	-132.68	4,763.81	-749.12	4,965.45	4,927.91	37.54	132.262	
5,500.00	5,488.41	5,491.22	5,490.82	19.46	18.97	-132.78	4,763.77	-749.14	4,972.53	4,934.26	38.28	129.904	
5,600.00	5,587.87	14,766.18	10,486.17	19.83	85.60	170.30	119.02	-619.19	4,977.13	4,931.17	45.95	108.308	
5,700.00	5,687.32	14,773.46	10,486.59	20.21	85.71	170.02	111.75	-618.90	4,880.94	4,834.58	46.36	105.282	
5,800.00	5,786.77	14,780.84	10,487.01	20.58	85.82	169.73	104.39	-618.61	4,784.90	4,738.11	46.78	102.276	
5,900.00	5,886.22	14,794.00	10,487.78	20.96	86.02	169.22	91.26	-618.10	4,689.01	4,641.75	47.26	99.213	
6,000.00	5,985.68	14,796.66	10,487.94	21.34	86.06	169.11	88.60	-618.00	4,593.26	4,545.57	47.69	96.314	
6,100.00	6,085.13	14,807.37	10,488.58	21.72	86.22	168.69	77.92	-617.58	4,497.68	4,449.49	48.19	93.333	
6,200.00	6,184.58	14,818.16	10,489.22	22.10	86.38	168.27	67.16	-617.15	4,402.27	4,353.56	48.71	90.378	
6,300.00	6,284.03	14,829.04	10,489.88	22.47	86.55	167.84	56.31	-616.71	4,307.03	4,257.78	49.25	87.449	
6,400.00	6,383.49	14,840.00	10,490.55	22.85	86.72	167.40	45.38	-616.26	4,211.98	4,162.17	49.82	84.548	
6,500.00	6,482.94	14,851.05	10,491.22	23.24	86.88	166.95	34.36	-615.79	4,117.14	4,066.73	50.41	81.675	
6,600.00	6,582.39	14,862.19	10,491.91	23.62	87.05	166.50	23.26	-615.32	4,022.51	3,971.49	51.03	78.831	
6,700.00	6,681.84	14,873.41	10,492.61	24.00	87.22	166.05	12.06	-614.83	3,928.12	3,876.44	51.67	76.016	
6,800.00	6,781.30	14,884.72	10,493.31	24.38	87.39	165.59	0.78	-614.32	3,833.97	3,781.62	52.35	73.232	
6,900.00	6,880.75	14,898.32	10,494.16	24.76	87.60	165.03	-12.77	-613.70	3,740.09	3,687.01	53.08	70.460	
7,000.00	6,980.20	14,913.23	10,495.10	25.14	87.83	164.41	-27.64	-613.00	3,646.49	3,592.63	53.85	67.712	
7,100.00	7,079.65	14,928.10	10,496.02	25.53	88.06	163.79	-42.46	-612.27	3,553.18	3,498.52	54.66	65.001	
7,200.00	7,179.11	14,942.94	10,496.94	25.91	88.28	163.17	-57.25	-611.51	3,460.19	3,404.68	55.52	62.327	
7,300.00	7,278.56	14,957.75	10,497.85	26.30	88.51	162.54	-72.01	-610.73	3,367.56	3,311.14	56.42	59.692	
7,400.00	7,378.01	14,972.51	10,498.75	26.68	88.73	161.92	-86.72	-609.92	3,275.30	3,217.93	57.36	57.097	
7,500.00	7,477.46	14,987.25	10,499.65	27.06	88.96	161.29	-101.41	-609.09	3,183.45	3,125.08	58.37	54.542	
7,600.00	7,576.92	14,997.14	10,500.26	27.45	89.11	160.86	-111.27	-608.55	3,092.07	3,032.67	59.40	52.056	
7,700.00	7,676.37	15,009.23	10,501.00	27.83	89.30	160.34	-123.31	-607.88	3,001.19	2,940.68	60.51	49.598	
7,800.00	7,775.82	15,021.32	10,501.73	28.22	89.48	159.82	-135.36	-607.21	2,910.85	2,849.16	61.69	47.183	
7,900.00	7,875.27	15,027.00	10,502.08	28.61	89.57	159.57	-141.03	-606.89	2,821.12	2,758.21	62.91	44.844	
8,000.00	7,974.73	15,027.00	10,502.08	28.99	89.57	159.57	-141.03	-606.89	2,732.10	2,667.93	64.17	42.574	
8,100.00	8,074.18	15,027.00	10,502.08	29.38	89.57	159.57	-141.03	-606.89	2,643.86	2,578.34	65.53	40.348	
8,200.00	8,173.63	15,027.00	10,502.08	29.77	89.57	159.57	-141.03	-606.89	2,556.49	2,489.51	66.98	38.168	
8,300.00	8,273.09	15,027.00	10,502.08	30.15	89.57	159.57	-141.03	-606.89	2,470.08	2,401.54	68.54	36.039	
8,400.00	8,372.54	15,027.00	10,502.08	30.54	89.57	159.57	-141.03	-606.89	2,384.73	2,314.51	70.22	33.963	
8,500.00	8,471.99	15,027.00	10,502.08	30.93	89.57	159.57	-141.03	-606.89	2,300.56	2,228.54	72.02	31.944	
8,600.00	8,571.44	15,027.00	10,502.08	31.32	89.57	159.57	-141.03	-606.89	2,217.71	2,143.75	73.96	29.987	
8,700.00	8,670.90	15,027.00	10,502.08	31.70	89.57	159.57	-141.03	-606.89	2,136.32	2,060.28	76.04	28.095	
8,800.00	8,770.35	15,027.00	10,502.08	32.09	89.57	159.57	-141.03	-606.89	2,056.58	1,978.30	78.28	26.274	
8,900.00	8,869.80	15,027.00	10,502.08	32.48	89.57	159.57	-141.03	-606.89	1,978.68	1,898.00	80.67	24.527	
9,000.00	8,969.25	15,027.00	10,502.08	32.87	89.57	159.57	-141.03	-606.89	1,902.84	1,819.60	83.24	22.859	
9,081.63	9,050.44	15,027.00	10,502.08	33.19	89.57	159.57	-141.03	-606.89	1,842.65	1,757.18	85.46	21.560	
9,100.00	9,068.71	15,027.00	10,502.08	33.26	89.57	159.36	-141.03	-606.89	1,829.27	1,743.29	85.98	21.276	
9,200.00	9,168.47	15,027.00	10,502.08	33.63	89.57	158.19	-141.03	-606.89	1,756.02	1,667.21	88.81	19.774	
9,281.56	9,250.00	15,027.00	10,502.08	33.91	89.57	-80.79	-141.03	-606.89	1,695.76	1,604.62	91.14	18.606	
9,300.00	9,268.44	15,027.00	10,502.08	33.97	89.57	-80.79	-141.03	-606.89	1,682.14	1,590.46	91.67	18.349	
9,400.00	9,368.44	15,027.00	10,502.08	34.30	89.57	-80.79	-141.03	-606.89	1,609.93	1,515.26	94.66	17.007	
9,500.00	9,468.44	15,027.00	10,502.08	34.64	89.57	-80.79	-141.03	-606.89	1,540.82	1,443.01	97.82	15.752	
9,600.00	9,568.44	15,027.00	10,502.08	34.97	89.57	-80.79	-141.03	-606.89	1,475.27	1,374.15	101.11	14.591	
9,700.00	9,668.44	15,027.00	10,502.08	35.30	89.57	-80.79	-141.03	-606.89	1,413.75	1,309.23	104.51	13.527	
9,800.00	9,768.44	15,027.00	10,502.08	35.64	89.57	-80.79	-141.03	-606.89	1,356.82	1,248.85	107.97	12.566	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 6H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 100-MWD — *Offset Well Error: 0.00 usft*

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,867.38	9,835.82	15,027.00	10,502.08	35.86	89.57	-80.79	-141.03	-606.89	1,321.35	1,211.05	110.30	11.980	
9,875.00	9,843.44	15,027.00	10,502.08	35.89	89.57	-81.06	-141.03	-606.89	1,317.48	1,206.92	110.56	11.917	
9,900.00	9,868.42	15,027.00	10,502.08	35.97	89.57	-82.79	-141.03	-606.89	1,304.93	1,193.51	111.42	11.712	
9,925.00	9,893.30	15,027.00	10,502.08	36.05	89.57	-84.48	-141.03	-606.89	1,292.59	1,180.32	112.27	11.513	
9,950.00	9,918.03	15,027.00	10,502.08	36.12	89.57	-86.13	-141.03	-606.89	1,280.52	1,167.39	113.13	11.319	
9,975.00	9,942.53	15,027.00	10,502.08	36.20	89.57	-87.73	-141.03	-606.89	1,268.74	1,154.77	113.97	11.132	
10,000.00	9,966.74	15,027.00	10,502.08	36.27	89.57	-89.27	-141.03	-606.89	1,257.30	1,142.50	114.81	10.951	
10,025.00	9,990.59	15,027.00	10,502.08	36.33	89.57	-90.75	-141.03	-606.89	1,246.25	1,130.62	115.63	10.778	
10,050.00	10,014.02	15,027.00	10,502.08	36.40	89.57	-92.16	-141.03	-606.89	1,235.61	1,119.18	116.43	10.613	
10,075.00	10,036.96	15,027.00	10,502.08	36.45	89.57	-93.49	-141.03	-606.89	1,225.44	1,108.23	117.21	10.455	
10,100.00	10,059.35	15,027.00	10,502.08	36.51	89.57	-94.75	-141.03	-606.89	1,215.78	1,097.81	117.97	10.306	
10,125.00	10,081.12	15,027.00	10,502.08	36.56	89.57	-95.92	-141.03	-606.89	1,206.65	1,087.96	118.69	10.166	
10,150.00	10,102.22	15,027.00	10,502.08	36.61	89.57	-97.00	-141.03	-606.89	1,198.10	1,078.72	119.39	10.035	
10,175.00	10,122.60	15,027.00	10,502.08	36.65	89.57	-98.00	-141.03	-606.89	1,190.17	1,070.13	120.05	9.914	
10,200.00	10,142.18	15,027.00	10,502.08	36.68	89.57	-98.90	-141.03	-606.89	1,182.89	1,062.23	120.67	9.803	
10,225.00	10,160.93	15,027.00	10,502.08	36.72	89.57	-99.71	-141.03	-606.89	1,176.29	1,055.05	121.24	9.702	
10,242.38	10,173.44	15,027.00	10,502.08	36.74	89.57	-100.22	-141.03	-606.89	1,172.12	1,050.51	121.62	9.638	
10,300.00	10,214.18	15,027.00	10,502.08	36.80	89.57	-100.22	-141.03	-606.89	1,160.23	1,037.50	122.74	9.453	
10,342.38	10,244.15	15,027.00	10,502.08	36.84	89.57	-100.22	-141.03	-606.89	1,153.25	1,029.80	123.45	9.342	
10,350.00	10,249.50	15,027.00	10,502.08	36.85	89.57	-100.35	-141.03	-606.89	1,152.17	1,028.60	123.57	9.324	
10,375.00	10,266.41	15,022.86	10,501.83	36.88	89.50	-100.57	-136.90	-607.12	1,149.11	1,025.24	123.86	9.277	
10,400.00	10,282.34	15,004.63	10,500.71	36.90	89.22	-100.24	-118.73	-608.14	1,146.62	1,022.70	123.92	9.253	
10,425.00	10,297.24	14,987.26	10,499.65	36.92	88.96	-99.92	-101.42	-609.09	1,144.59	1,020.64	123.95	9.234	
10,450.00	10,311.07	14,964.08	10,498.24	36.93	88.60	-99.41	-78.32	-610.39	1,143.01	1,019.14	123.87	9.227	
10,475.00	10,323.79	14,940.02	10,496.76	36.95	88.24	-98.88	-54.34	-611.66	1,141.77	1,018.02	123.74	9.227 SF	
10,500.00	10,335.36	14,915.15	10,495.22	36.95	87.86	-98.34	-29.55	-612.90	1,140.82	1,017.25	123.57	9.232	
10,525.00	10,345.76	14,889.54	10,493.61	36.96	87.47	-97.82	-4.02	-614.10	1,140.13	1,016.76	123.37	9.242	
10,550.00	10,354.96	14,865.00	10,492.08	36.96	87.10	-97.34	20.45	-615.19	1,139.68	1,016.52	123.16	9.254 ES	
10,575.00	10,362.92	14,839.90	10,490.54	36.95	86.71	-96.90	45.48	-616.26	1,139.44	1,016.52	122.92	9.270	
10,595.13	10,368.43	14,819.31	10,489.29	36.95	86.40	-96.56	66.01	-617.11	1,139.39	1,016.68	122.70	9.286 CC	
10,600.00	10,369.64	14,814.28	10,488.99	36.95	86.33	-96.48	71.03	-617.31	1,139.39	1,016.74	122.65	9.290	
10,625.00	10,375.09	14,789.05	10,487.49	36.94	85.94	-96.11	96.20	-618.29	1,139.49	1,017.12	122.37	9.312	
10,650.00	10,379.25	14,766.39	10,486.19	36.93	85.60	-95.82	118.80	-619.18	1,139.79	1,017.66	122.13	9.333	
10,675.00	10,382.12	14,743.48	10,484.93	36.92	85.25	-95.57	141.66	-620.11	1,140.27	1,018.41	121.86	9.357	
10,700.00	10,383.68	14,720.38	10,483.71	36.94	84.90	-95.35	164.71	-621.07	1,140.93	1,019.35	121.58	9.384	
10,717.38	10,384.00	14,705.17	10,482.95	36.98	84.67	-95.23	179.89	-621.72	1,141.48	1,020.09	121.40	9.403	
10,800.00	10,384.00	14,614.94	10,479.19	37.23	83.32	-95.03	269.97	-625.33	1,144.11	1,023.83	120.27	9.513	
10,900.00	10,384.00	14,521.91	10,475.88	37.59	81.92	-94.85	362.87	-628.89	1,147.18	1,027.98	119.20	9.624	
11,000.00	10,384.00	14,417.56	10,472.46	38.01	80.36	-94.66	467.07	-633.12	1,150.51	1,032.46	118.05	9.746	
11,100.00	10,384.00	14,307.08	10,470.76	38.49	78.73	-94.57	577.49	-636.35	1,152.83	1,035.94	116.89	9.863	
11,200.00	10,384.00	14,240.76	10,469.46	39.03	77.75	-94.49	643.74	-638.87	1,156.16	1,039.79	116.37	9.935	
11,300.00	10,384.00	14,126.76	10,465.65	39.63	76.07	-94.28	757.53	-644.71	1,160.57	1,045.25	115.32	10.064	
11,400.00	10,384.00	14,047.27	10,462.59	40.28	74.91	-94.12	836.84	-649.07	1,165.31	1,050.58	114.74	10.157	
11,500.00	10,384.00	13,911.28	10,459.09	40.98	72.93	-93.93	972.62	-655.50	1,169.42	1,055.85	113.56	10.298	
11,600.00	10,384.00	13,805.59	10,459.31	41.74	71.41	-93.93	1,078.27	-658.30	1,171.63	1,058.82	112.81	10.386	
11,700.00	10,384.00	13,712.57	10,457.86	42.55	70.09	-93.85	1,171.24	-660.83	1,173.80	1,061.53	112.27	10.455	
11,800.00	10,384.00	13,612.04	10,454.45	43.41	68.66	-93.68	1,271.64	-664.65	1,176.94	1,065.23	111.70	10.536	
11,900.00	10,384.00	13,501.45	10,454.71	44.31	67.11	-93.68	1,382.19	-667.03	1,178.61	1,067.53	111.07	10.611	
12,000.00	10,384.00	13,398.04	10,459.17	45.25	65.67	-93.90	1,485.49	-669.01	1,180.36	1,069.80	110.57	10.675	
12,100.00	10,384.00	13,267.19	10,464.07	46.23	63.88	-94.13	1,616.23	-669.63	1,180.71	1,070.91	109.79	10.754	
12,200.00	10,384.00	13,134.67	10,471.05	47.24	62.10	-94.49	1,748.52	-666.08	1,177.93	1,068.90	109.03	10.804	
12,300.00	10,384.00	13,049.31	10,476.67	48.30	60.96	-94.77	1,833.62	-662.59	1,174.05	1,065.12	108.93	10.778	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design: North Brushy Draw Federal 35 - 6H - Wellbore #1 - Surveys — *Offset Site Error:* 0.00 usft

Survey Program: 100-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,376.28	10,384.00	13,002.29	10,479.29	49.12	60.34	-94.90	1,880.56	-661.92	1,172.97	1,063.88	109.08	10.753	
12,400.00	10,384.00	12,986.14	10,480.07	49.38	60.13	-94.94	1,896.69	-661.96	1,173.02	1,063.91	109.11	10.751	
12,500.00	10,384.00	12,887.02	10,485.10	50.50	58.83	-95.19	1,995.68	-662.39	1,173.46	1,064.55	108.90	10.775	
12,600.00	10,384.00	12,812.26	10,486.87	51.64	57.85	-95.27	2,070.40	-663.56	1,174.87	1,065.88	108.99	10.780	
12,700.00	10,384.00	12,671.56	10,485.98	52.81	56.06	-95.22	2,211.08	-665.50	1,175.69	1,067.20	108.49	10.837	
12,800.00	10,384.00	12,547.69	10,486.65	54.01	54.53	-95.26	2,334.93	-663.74	1,173.87	1,065.68	108.19	10.850	
12,900.00	10,384.00	12,472.30	10,488.55	55.23	53.61	-95.37	2,410.28	-662.08	1,171.63	1,063.19	108.44	10.804	
12,919.51	10,384.00	12,460.73	10,488.63	55.47	53.47	-95.37	2,421.84	-662.08	1,171.57	1,063.04	108.53	10.795	
13,000.00	10,384.00	12,408.39	10,488.06	56.47	52.83	-95.34	2,474.17	-663.13	1,172.67	1,063.86	108.80	10.778	
13,100.00	10,384.00	12,311.92	10,485.00	57.73	51.68	-95.18	2,570.52	-666.41	1,175.31	1,066.40	108.91	10.792	
13,200.00	10,384.00	12,190.15	10,477.15	59.01	50.25	-94.78	2,691.99	-670.02	1,177.31	1,068.44	108.88	10.813	
13,300.00	10,384.00	12,069.17	10,470.47	60.31	48.87	-94.46	2,812.77	-670.81	1,177.02	1,068.13	108.89	10.809	
13,400.00	10,384.00	11,971.47	10,467.77	61.63	47.80	-94.33	2,910.43	-670.55	1,176.10	1,066.96	109.14	10.776	
13,500.00	10,384.00	11,870.59	10,468.12	62.96	46.74	-94.35	3,011.30	-670.31	1,175.45	1,066.04	109.41	10.743	
13,600.00	10,384.00	11,772.75	10,467.51	64.31	45.74	-94.32	3,109.14	-670.09	1,174.74	1,064.98	109.76	10.703	
13,637.29	10,384.00	11,742.31	10,467.17	64.82	45.43	-94.30	3,139.58	-670.12	1,174.59	1,064.64	109.94	10.683	
13,700.00	10,384.00	11,698.39	10,466.90	65.67	45.00	-94.29	3,183.50	-670.69	1,175.09	1,064.79	110.30	10.654	
13,800.00	10,384.00	11,601.30	10,467.03	67.04	44.07	-94.29	3,280.55	-673.37	1,177.39	1,066.66	110.73	10.633	
13,900.00	10,384.00	11,505.36	10,467.36	68.43	43.19	-94.30	3,376.46	-675.39	1,179.09	1,067.87	111.22	10.601	
14,000.00	10,384.00	11,402.42	10,468.94	69.83	42.29	-94.37	3,479.35	-678.15	1,181.44	1,069.71	111.73	10.574	
14,100.00	10,384.00	11,294.58	10,470.06	71.24	41.40	-94.42	3,587.17	-680.18	1,182.95	1,070.68	112.27	10.536	
14,200.00	10,384.00	11,187.51	10,473.12	72.66	40.58	-94.56	3,694.18	-681.21	1,183.67	1,070.77	112.89	10.485	
14,300.00	10,384.00	11,124.88	10,473.65	74.09	40.13	-94.58	3,756.80	-682.45	1,185.51	1,071.83	113.68	10.428	
14,400.00	10,384.00	11,068.62	10,472.96	75.53	39.73	-94.54	3,812.92	-686.22	1,191.45	1,077.01	114.43	10.412	
14,500.00	10,384.00	10,948.40	10,467.36	76.97	38.95	-94.24	3,932.65	-695.35	1,198.26	1,083.00	115.26	10.396	
14,600.00	10,384.00	10,827.06	10,455.78	78.43	38.23	-93.66	4,053.18	-702.75	1,203.29	1,087.12	116.17	10.358	
14,700.00	10,384.00	10,732.28	10,437.81	79.89	37.71	-92.79	4,146.01	-708.49	1,207.90	1,090.79	117.11	10.314	
14,800.00	10,384.00	10,596.25	10,394.46	81.36	37.03	-90.73	4,274.72	-713.64	1,210.15	1,092.07	118.08	10.248	
14,900.00	10,384.00	10,539.00	10,370.31	82.84	36.76	-89.59	4,326.55	-716.13	1,214.38	1,095.43	118.95	10.209	
15,000.00	10,384.00	10,475.00	10,339.07	84.32	36.47	-88.12	4,382.25	-720.06	1,222.23	1,102.57	119.67	10.214	
15,100.00	10,384.00	10,420.68	10,308.72	85.82	36.24	-86.70	4,427.08	-724.30	1,234.21	1,114.04	120.17	10.270	
15,197.21	10,384.00	10,371.22	10,278.02	87.27	36.04	-85.28	4,465.60	-728.66	1,250.10	1,129.66	120.44	10.380	

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 9H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 665-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	16.81	16.81	0.00	0.03	15.31	4,636.89	1,269.50	4,807.54				
100.00	100.00	146.14	146.14	0.13	0.26	15.31	4,636.42	1,269.34	4,807.15	4,806.76	0.39	N/A	
200.00	200.00	275.45	275.44	0.49	0.49	15.31	4,635.20	1,268.93	4,806.16	4,805.18	0.98	4,913.422	
300.00	300.00	404.74	404.72	0.85	0.72	15.31	4,633.23	1,268.27	4,804.56	4,802.99	1.56	3,073.806	
400.00	400.00	534.01	533.95	1.21	0.95	15.31	4,630.51	1,267.36	4,802.34	4,800.19	2.15	2,235.987	
500.00	500.00	663.23	663.12	1.57	1.17	15.30	4,627.05	1,266.20	4,799.52	4,796.79	2.73	1,756.570	
600.00	600.00	807.87	807.65	1.93	1.70	15.29	4,622.15	1,263.62	4,795.72	4,792.11	3.61	1,329.403	
700.00	700.00	700.00	981.29	2.29	1.30	15.21	4,615.65	1,254.83	4,790.70	4,787.12	3.57	1,340.903	
800.00	800.00	1,234.93	1,232.67	2.64	3.31	14.95	4,602.96	1,228.96	4,782.65	4,776.76	5.89	811.962	
900.00	900.00	1,305.54	1,302.78	3.00	3.59	14.88	4,598.65	1,221.79	4,774.13	4,767.62	6.51	733.540	
1,000.00	1,000.00	1,368.00	1,364.90	3.36	3.83	14.83	4,595.08	1,216.41	4,766.37	4,759.27	7.10	671.449	
1,100.00	1,100.00	1,441.63	1,438.20	3.72	4.12	14.77	4,591.23	1,210.56	4,759.27	4,751.54	7.73	615.699	
1,200.00	1,200.00	1,501.96	1,498.27	4.08	4.35	14.72	4,588.49	1,205.63	4,752.81	4,744.49	8.31	571.736	
1,300.00	1,300.00	1,558.00	1,554.07	4.44	4.56	14.67	4,586.54	1,200.90	4,747.28	4,738.40	8.88	534.561	
1,400.00	1,400.00	1,558.00	1,554.07	4.79	4.56	14.67	4,586.54	1,200.90	4,743.25	4,734.01	9.24	513.352	
1,500.00	1,500.00	1,611.41	1,607.30	5.15	4.76	14.62	4,585.74	1,196.56	4,740.22	4,730.43	9.79	483.984	
1,600.00	1,600.00	1,653.00	1,648.77	5.51	4.91	14.59	4,586.19	1,193.52	4,739.08	4,728.78	10.30	459.929	
1,635.70	1,635.70	1,653.00	1,648.77	5.64	4.91	14.59	4,586.19	1,193.52	4,738.95	4,728.52	10.43	454.334	
1,700.00	1,700.00	1,680.31	1,676.01	5.87	5.01	14.56	4,586.86	1,191.59	4,739.25	4,728.49	10.76	440.529	
1,800.00	1,800.00	1,747.00	1,742.48	6.23	5.25	14.50	4,588.99	1,186.72	4,740.47	4,729.12	11.36	417.454	
1,900.00	1,900.00	1,900.00	1,899.03	6.59	5.79	14.34	4,593.77	1,174.18	4,741.48	4,729.19	12.28	386.095	
2,000.00	2,000.00	2,079.27	2,073.55	6.95	6.46	14.16	4,595.83	1,159.67	4,740.27	4,726.96	13.31	356.086	
2,100.00	2,100.00	2,186.50	2,180.39	7.30	6.86	14.05	4,596.78	1,150.56	4,739.07	4,724.99	14.07	336.739	
2,200.00	2,200.00	2,339.84	2,333.42	7.66	7.43	13.94	4,595.90	1,140.94	4,736.94	4,721.94	15.00	315.828	
2,300.00	2,300.00	2,405.00	2,398.49	8.02	7.67	13.90	4,595.12	1,137.46	4,734.58	4,718.98	15.60	303.572	
2,400.00	2,400.00	2,470.75	2,464.18	8.38	7.90	13.87	4,594.62	1,134.75	4,732.95	4,716.76	16.19	292.320	
2,500.00	2,500.00	2,533.83	2,527.24	8.74	8.13	13.86	4,594.61	1,133.23	4,732.32	4,715.55	16.77	282.143	
2,560.29	2,560.29	2,579.90	2,573.29	8.95	8.29	13.84	4,594.77	1,132.31	4,732.23	4,715.08	17.15	275.920	
2,600.00	2,600.00	2,609.14	2,602.54	9.10	8.39	13.84	4,594.93	1,131.79	4,732.27	4,714.88	17.39	272.073	
2,700.00	2,700.00	2,686.00	2,679.39	9.45	8.65	13.83	4,595.49	1,131.24	4,732.80	4,714.79	18.01	262.769	
2,800.00	2,800.00	2,763.01	2,756.39	9.81	8.89	13.83	4,596.23	1,131.53	4,733.81	4,715.19	18.62	254.264	
2,900.00	2,900.00	2,858.06	2,851.43	10.17	9.19	13.84	4,597.19	1,132.72	4,735.08	4,715.80	19.28	245.594	
3,000.00	3,000.00	2,963.09	2,956.40	10.53	9.52	13.88	4,597.70	1,136.18	4,736.34	4,716.37	19.97	237.170	
3,100.00	3,100.00	3,084.72	3,077.74	10.89	9.89	13.98	4,596.84	1,144.40	4,737.28	4,716.57	20.71	228.765	
3,200.00	3,200.00	3,174.32	3,166.87	11.25	10.17	14.09	4,595.33	1,153.42	4,738.10	4,716.75	21.34	222.011	
3,250.00	3,250.00	3,215.83	3,208.09	11.43	10.29	14.15	4,594.57	1,158.25	4,738.63	4,716.98	21.65	218.895	
3,300.00	3,299.99	3,427.04	3,417.88	11.60	10.96	-107.63	4,587.51	1,181.37	4,738.54	4,716.04	22.50	210.647	
3,400.00	3,399.85	3,596.91	3,587.20	11.93	11.52	-107.62	4,579.23	1,191.74	4,736.75	4,713.36	23.39	202.526	
3,449.93	3,449.56	3,634.00	3,624.23	12.10	11.64	-107.65	4,577.47	1,193.14	4,736.32	4,712.63	23.68	199.992	
3,497.32	3,496.70	3,669.80	3,659.98	12.26	11.77	-107.68	4,575.90	1,194.34	4,736.22	4,712.25	23.97	197.627	
3,500.00	3,499.36	3,671.45	3,661.62	12.27	11.77	-107.68	4,575.84	1,194.39	4,736.22	4,712.24	23.98	197.505	
3,600.00	3,598.81	3,730.00	3,720.11	12.61	11.97	-107.73	4,573.78	1,195.89	4,736.65	4,712.13	24.52	193.156	
3,700.00	3,698.27	3,781.04	3,771.13	12.95	12.14	-107.77	4,572.57	1,196.84	4,738.04	4,713.00	25.04	189.214	
3,800.00	3,797.72	3,834.08	3,824.16	13.29	12.33	-107.83	4,572.01	1,197.56	4,740.51	4,714.95	25.57	185.420	
3,900.00	3,897.17	3,920.18	3,910.25	13.64	12.62	-107.94	4,572.13	1,196.57	4,743.59	4,717.38	26.21	180.967	
4,000.00	3,996.62	3,998.24	3,988.27	13.99	12.90	-108.07	4,572.90	1,194.19	4,747.07	4,720.23	26.84	176.888	
4,100.00	4,096.08	4,097.01	4,086.99	14.34	13.25	-108.22	4,574.14	1,191.23	4,750.84	4,723.30	27.54	172.522	
4,200.00	4,195.53	4,195.50	4,185.43	14.70	13.60	-108.38	4,575.32	1,188.29	4,754.60	4,726.36	28.24	168.364	
4,300.00	4,294.98	4,298.47	4,288.35	15.06	13.96	-108.54	4,576.56	1,185.11	4,758.38	4,729.42	28.96	164.302	
4,400.00	4,394.43	13,393.44	8,989.89	15.41	83.22	-55.27	-20.46	1,189.02	4,711.85	4,666.48	45.37	103.852	
4,500.00	4,493.89	13,396.17	8,989.88	15.78	83.26	-55.07	-23.19	1,189.16	4,613.14	4,567.51	45.63	101.101	
4,600.00	4,593.34	13,398.97	8,989.87	16.14	83.31	-54.87	-25.98	1,189.30	4,514.48	4,468.58	45.90	98.355	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 9H - Wellbore #1 - Surveys — **Offset Site Error:** 0.00 usft

Survey Program: 665-MWD — **Offset Well Error:** 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
4,700.00	4,692.79	13,401.83	8,989.86	16.50	83.35	-54.66	-28.84	1,189.44	4,415.88	4,369.69	46.18	95.615	
4,800.00	4,792.24	13,423.00	8,989.88	16.87	83.68	-53.12	-49.99	1,190.48	4,317.41	4,270.78	46.63	92.583	
4,900.00	4,891.70	13,423.00	8,989.88	17.23	83.68	-53.12	-49.99	1,190.48	4,218.91	4,171.99	46.92	89.915	
5,000.00	4,991.15	13,423.00	8,989.88	17.60	83.68	-53.12	-49.99	1,190.48	4,120.48	4,073.26	47.22	87.253	
5,100.00	5,090.60	13,423.00	8,989.88	17.97	83.68	-53.12	-49.99	1,190.48	4,022.14	3,974.59	47.54	84.600	
5,200.00	5,190.05	13,423.00	8,989.88	18.34	83.68	-53.12	-49.99	1,190.48	3,923.87	3,875.99	47.88	81.955	
5,300.00	5,289.51	13,423.00	8,989.88	18.71	83.68	-53.12	-49.99	1,190.48	3,825.69	3,777.46	48.23	79.320	
5,400.00	5,388.96	13,423.00	8,989.88	19.09	83.68	-53.12	-49.99	1,190.48	3,727.61	3,679.01	48.60	76.695	
5,500.00	5,488.41	13,423.00	8,989.88	19.46	83.68	-53.12	-49.99	1,190.48	3,629.64	3,580.64	48.99	74.082	
5,600.00	5,587.87	13,432.11	8,989.92	19.83	83.82	-52.44	-59.09	1,190.92	3,531.76	3,482.28	49.48	71.372	
5,700.00	5,687.32	13,436.27	8,989.95	20.21	83.89	-52.13	-63.24	1,191.12	3,434.00	3,384.04	49.95	68.742	
5,800.00	5,786.77	13,440.54	8,989.98	20.58	83.95	-51.82	-67.51	1,191.32	3,336.36	3,285.91	50.45	66.130	
5,900.00	5,886.22	13,444.92	8,990.01	20.96	84.02	-51.49	-71.88	1,191.52	3,238.87	3,187.89	50.98	63.535	
6,000.00	5,985.68	13,449.41	8,990.05	21.34	84.09	-51.15	-76.36	1,191.73	3,141.51	3,089.98	51.53	60.961	
6,100.00	6,085.13	13,454.02	8,990.09	21.72	84.16	-50.80	-80.97	1,191.94	3,044.32	2,992.20	52.12	58.406	
6,200.00	6,184.58	13,458.75	8,990.14	22.10	84.23	-50.45	-85.70	1,192.15	2,947.31	2,894.56	52.75	55.873	
6,300.00	6,284.03	13,467.00	8,990.19	22.47	84.36	-50.13	-89.94	1,192.34	2,850.49	2,797.05	53.45	53.334	
6,400.00	6,383.49	13,470.13	8,990.28	22.85	84.41	-49.58	-97.07	1,192.65	2,753.89	2,699.75	54.14	50.865	
6,500.00	6,482.94	13,477.27	8,990.36	23.24	84.52	-49.04	-104.20	1,192.96	2,657.51	2,602.59	54.92	48.390	
6,600.00	6,582.39	13,484.41	8,990.45	23.62	84.63	-48.49	-111.33	1,193.27	2,561.40	2,505.65	55.75	45.943	
6,700.00	6,681.84	13,491.55	8,990.54	24.00	84.74	-47.94	-118.46	1,193.58	2,465.57	2,408.93	56.64	43.528	
6,800.00	6,781.30	13,498.69	8,990.62	24.38	84.85	-47.38	-125.59	1,193.90	2,370.07	2,312.47	57.60	41.144	
6,900.00	6,880.75	13,505.83	8,990.71	24.76	84.96	-46.83	-132.72	1,194.21	2,274.93	2,216.29	58.64	38.795	
7,000.00	6,980.20	13,512.97	8,990.80	25.14	85.08	-46.27	-139.86	1,194.52	2,180.20	2,120.44	59.76	36.482	
7,100.00	7,079.65	13,520.10	8,990.89	25.53	85.19	-45.71	-146.99	1,194.83	2,085.94	2,024.96	60.98	34.207	
7,200.00	7,179.11	13,520.00	8,990.89	25.91	85.18	-45.71	-146.88	1,194.82	1,992.23	1,929.99	62.24	32.008	
7,300.00	7,278.56	13,520.00	8,990.89	26.30	85.18	-45.71	-146.88	1,194.82	1,899.16	1,835.53	63.63	29.848	
7,400.00	7,378.01	13,520.00	8,990.89	26.68	85.18	-45.71	-146.88	1,194.82	1,806.83	1,741.68	65.15	27.732	
7,500.00	7,477.46	13,520.00	8,990.89	27.06	85.18	-45.71	-146.88	1,194.82	1,715.36	1,648.52	66.84	25.664	
7,600.00	7,576.92	13,520.00	8,990.89	27.45	85.18	-45.71	-146.88	1,194.82	1,624.90	1,556.19	68.71	23.649	
7,700.00	7,676.37	13,520.00	8,990.89	27.83	85.18	-45.71	-146.88	1,194.82	1,535.62	1,464.83	70.79	21.694	
7,800.00	7,775.82	13,520.00	8,990.89	28.22	85.18	-45.71	-146.88	1,194.82	1,447.74	1,374.63	73.10	19.804	
7,900.00	7,875.27	13,520.00	8,990.89	28.61	85.18	-45.71	-146.88	1,194.82	1,361.53	1,285.84	75.69	17.989	
8,000.00	7,974.73	13,520.00	8,990.89	28.99	85.18	-45.71	-146.88	1,194.82	1,277.34	1,198.76	78.57	16.256	
8,100.00	8,074.18	13,520.00	8,990.89	29.38	85.18	-45.71	-146.88	1,194.82	1,195.58	1,113.79	81.79	14.617	
8,200.00	8,173.63	13,520.00	8,990.89	29.77	85.18	-45.71	-146.88	1,194.82	1,116.80	1,031.43	85.37	13.082	
8,300.00	8,273.09	13,520.00	8,990.89	30.15	85.18	-45.71	-146.88	1,194.82	1,041.67	952.36	89.31	11.664	
8,400.00	8,372.54	13,520.00	8,990.89	30.54	85.18	-45.71	-146.88	1,194.82	971.03	877.44	93.59	10.376	
8,500.00	8,471.99	13,520.00	8,990.89	30.93	85.18	-45.71	-146.88	1,194.82	905.94	807.81	98.13	9.232	
8,600.00	8,571.44	13,520.00	8,990.89	31.32	85.18	-45.71	-146.88	1,194.82	847.67	744.91	102.76	8.249	
8,700.00	8,670.90	13,520.00	8,990.89	31.70	85.18	-45.71	-146.88	1,194.82	797.73	690.51	107.22	7.440	
8,800.00	8,770.35	13,520.00	8,990.89	32.09	85.18	-45.71	-146.88	1,194.82	757.76	646.65	111.10	6.820	
8,900.00	8,869.80	13,520.00	8,990.89	32.48	85.18	-45.71	-146.88	1,194.82	729.40	615.47	113.93	6.402	
9,000.00	8,969.25	13,520.00	8,990.89	32.87	85.18	-45.71	-146.88	1,194.82	714.04	598.81	115.22	6.197	
9,060.87	9,029.79	13,520.00	8,990.89	33.10	85.18	-45.71	-146.88	1,194.82	711.44	596.30	115.13	6.179	CC, ES, SF
9,081.63	9,050.44	13,520.00	8,990.89	33.19	85.18	-45.71	-146.88	1,194.82	711.74	596.79	114.95	6.192	
9,100.00	9,068.71	13,520.00	8,990.89	33.26	85.18	-45.73	-146.88	1,194.82	712.57	597.86	114.72	6.212	
9,200.00	9,168.47	13,520.00	8,990.89	33.63	85.18	-46.06	-146.88	1,194.82	727.42	614.93	112.49	6.466	
9,281.56	9,250.00	13,520.00	8,990.89	33.91	85.18	75.42	-146.88	1,194.82	751.79	642.09	109.70	6.853	
9,300.00	9,268.44	13,520.00	8,990.89	33.97	85.18	75.42	-146.88	1,194.82	758.66	649.68	108.98	6.961	
9,400.00	9,368.44	13,520.00	8,990.89	34.30	85.18	75.42	-146.88	1,194.82	802.29	697.61	104.68	7.664	
9,500.00	9,468.44	13,520.00	8,990.89	34.64	85.18	75.42	-146.88	1,194.82	855.44	755.40	100.04	8.551	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Offset Design North Brushy Draw Federal 35 - 9H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 665-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,600.00	9,568.44	13,520.00	8,990.89	34.97	85.18	75.42	-146.88	1,194.82	916.46	821.02	95.43	9.603	
9,700.00	9,668.44	13,520.00	8,990.89	35.30	85.18	75.42	-146.88	1,194.82	983.87	892.78	91.09	10.801	
9,800.00	9,768.44	13,520.00	8,990.89	35.64	85.18	75.42	-146.88	1,194.82	1,056.46	969.33	87.13	12.125	
9,867.38	9,835.82	13,520.00	8,990.89	35.86	85.18	75.42	-146.88	1,194.82	1,107.79	1,023.08	84.70	13.079	
9,875.00	9,843.44	13,520.00	8,990.89	35.89	85.18	74.60	-146.88	1,194.82	1,113.69	1,029.25	84.44	13.189	
9,900.00	9,868.42	13,520.00	8,990.89	35.97	85.18	71.09	-146.88	1,194.82	1,133.05	1,049.45	83.60	13.554	
9,925.00	9,893.30	13,520.00	8,990.89	36.05	85.18	67.67	-146.88	1,194.82	1,152.36	1,069.57	82.79	13.919	
9,950.00	9,918.03	13,520.00	8,990.89	36.12	85.18	64.38	-146.88	1,194.82	1,171.57	1,089.56	82.01	14.285	
9,975.00	9,942.53	13,520.00	8,990.89	36.20	85.18	61.23	-146.88	1,194.82	1,190.65	1,109.38	81.27	14.651	
10,000.00	9,966.74	13,520.00	8,990.89	36.27	85.18	58.25	-146.88	1,194.82	1,209.53	1,128.97	80.56	15.014	
10,025.00	9,990.59	13,520.00	8,990.89	36.33	85.18	55.43	-146.88	1,194.82	1,228.19	1,148.30	79.88	15.375	
10,050.00	10,014.02	13,520.00	8,990.89	36.40	85.18	52.79	-146.88	1,194.82	1,246.57	1,167.33	79.24	15.731	
10,075.00	10,036.96	13,520.00	8,990.89	36.45	85.18	50.33	-146.88	1,194.82	1,264.65	1,186.02	78.63	16.083	
10,100.00	10,059.35	13,520.00	8,990.89	36.51	85.18	48.05	-146.88	1,194.82	1,282.39	1,204.33	78.06	16.428	
10,125.00	10,081.12	13,520.00	8,990.89	36.56	85.18	45.93	-146.88	1,194.82	1,299.75	1,222.23	77.52	16.767	
10,150.00	10,102.22	13,520.00	8,990.89	36.61	85.18	43.97	-146.88	1,194.82	1,316.70	1,239.69	77.01	17.098	
10,175.00	10,122.60	13,520.00	8,990.89	36.65	85.18	42.17	-146.88	1,194.82	1,333.22	1,256.68	76.54	17.419	
10,200.00	10,142.18	13,520.00	8,990.89	36.68	85.18	40.51	-146.88	1,194.82	1,349.27	1,273.17	76.10	17.730	
10,225.00	10,160.93	13,520.00	8,990.89	36.72	85.18	38.99	-146.88	1,194.82	1,364.83	1,289.13	75.69	18.031	
10,242.38	10,173.44	13,520.00	8,990.89	36.74	85.18	38.00	-146.88	1,194.82	1,375.34	1,299.91	75.43	18.233	
10,300.00	10,214.18	13,501.27	8,990.66	36.80	84.89	37.55	-128.17	1,194.01	1,410.40	1,336.02	74.38	18.963	
10,342.38	10,244.15	13,471.70	8,990.30	36.84	84.43	36.85	-98.63	1,192.72	1,436.51	1,363.08	73.43	19.562	
10,350.00	10,249.50	13,467.05	8,990.24	36.85	84.36	36.32	-93.98	1,192.52	1,441.19	1,367.91	73.28	19.667	
10,375.00	10,266.41	13,438.99	8,989.97	36.88	83.93	34.46	-65.96	1,191.25	1,455.95	1,383.33	72.62	20.049	
10,400.00	10,282.34	13,409.54	8,989.86	36.90	83.47	32.81	-36.54	1,189.82	1,469.75	1,397.78	71.97	20.421	
10,425.00	10,297.24	13,378.82	8,989.97	36.92	83.00	31.38	-5.86	1,188.29	1,482.52	1,411.17	71.35	20.779	
10,450.00	10,311.07	13,346.63	8,990.33	36.93	82.50	30.12	26.29	1,186.64	1,494.20	1,423.46	70.74	21.122	
10,475.00	10,323.79	13,315.65	8,990.91	36.95	82.02	29.06	57.21	1,185.03	1,504.74	1,434.56	70.18	21.440	
10,500.00	10,335.36	13,286.24	8,991.61	36.95	81.56	28.17	86.58	1,183.47	1,514.15	1,444.47	69.68	21.731	
10,525.00	10,345.76	13,255.98	8,992.49	36.96	81.10	27.41	116.78	1,181.86	1,522.40	1,453.20	69.19	22.002	
10,550.00	10,354.96	13,225.13	8,993.54	36.96	80.62	26.77	147.57	1,180.19	1,529.44	1,460.70	68.73	22.252	
10,575.00	10,362.92	13,193.93	8,994.76	36.95	80.14	26.25	178.69	1,178.47	1,535.25	1,466.95	68.30	22.479	
10,600.00	10,369.64	13,162.23	8,996.14	36.95	79.65	25.83	210.31	1,176.69	1,539.81	1,471.93	67.88	22.683	
10,625.00	10,375.09	13,143.00	8,997.05	36.94	79.35	25.56	229.49	1,175.59	1,543.13	1,475.49	67.64	22.814	
10,650.00	10,379.25	13,122.36	8,997.96	36.93	79.04	25.36	250.08	1,174.42	1,545.36	1,477.96	67.40	22.927	
10,675.00	10,382.12	13,107.53	8,998.50	36.92	78.81	25.26	264.87	1,173.60	1,546.60	1,479.34	67.26	22.994	
10,700.00	10,383.68	13,092.67	8,998.94	36.94	78.58	25.21	279.71	1,172.79	1,546.81	1,479.67	67.14	23.039	
10,717.38	10,384.00	13,082.34	8,999.19	36.98	78.42	25.22	290.02	1,172.24	1,546.36	1,479.29	67.07	23.056	
10,800.00	10,384.00	13,029.43	8,999.74	37.23	77.61	25.15	342.86	1,169.55	1,543.89	1,477.16	66.74	23.134	
10,900.00	10,384.00	12,956.93	8,999.33	37.59	76.50	25.04	415.29	1,166.26	1,542.68	1,476.40	66.28	23.275	
11,000.00	10,384.00	12,849.07	8,998.87	38.01	74.87	24.95	523.09	1,163.21	1,542.06	1,476.57	65.48	23.549	
11,100.00	10,384.00	12,753.36	8,999.00	38.49	73.42	24.91	618.79	1,161.56	1,541.39	1,476.46	64.93	23.739	
11,200.00	10,384.00	12,646.01	8,999.61	39.03	71.81	24.91	726.14	1,160.89	1,540.81	1,476.48	64.33	23.952	
11,300.00	10,384.00	12,499.14	9,003.51	39.63	69.62	24.97	872.94	1,160.15	1,538.43	1,475.08	63.36	24.282	
11,400.00	10,384.00	12,374.71	9,007.60	40.28	67.76	24.83	997.12	1,159.61	1,533.39	1,470.92	62.47	24.545	
11,500.00	10,384.00	12,275.45	9,010.20	40.98	66.29	24.60	1,095.99	1,145.24	1,527.65	1,465.83	61.82	24.710	
11,600.00	10,384.00	12,192.00	9,012.00	41.74	65.06	24.41	1,179.13	1,138.31	1,522.45	1,461.02	61.43	24.782	
11,700.00	10,384.00	12,126.95	9,012.44	42.55	64.10	24.26	1,244.01	1,133.68	1,519.08	1,457.71	61.37	24.753	
11,800.00	10,384.00	12,004.18	9,012.81	43.41	62.32	24.01	1,366.51	1,125.53	1,516.30	1,455.79	60.52	25.056	
11,900.00	10,384.00	11,912.32	9,014.02	44.31	60.99	23.85	1,458.19	1,119.96	1,512.82	1,452.64	60.18	25.140	
12,000.00	10,384.00	11,834.00	9,014.56	45.25	59.87	23.72	1,536.39	1,115.67	1,510.20	1,450.13	60.07	25.141	
12,091.46	10,384.00	11,768.64	9,014.16	46.14	58.94	23.62	1,601.68	1,112.69	1,509.27	1,449.16	60.11	25.110	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

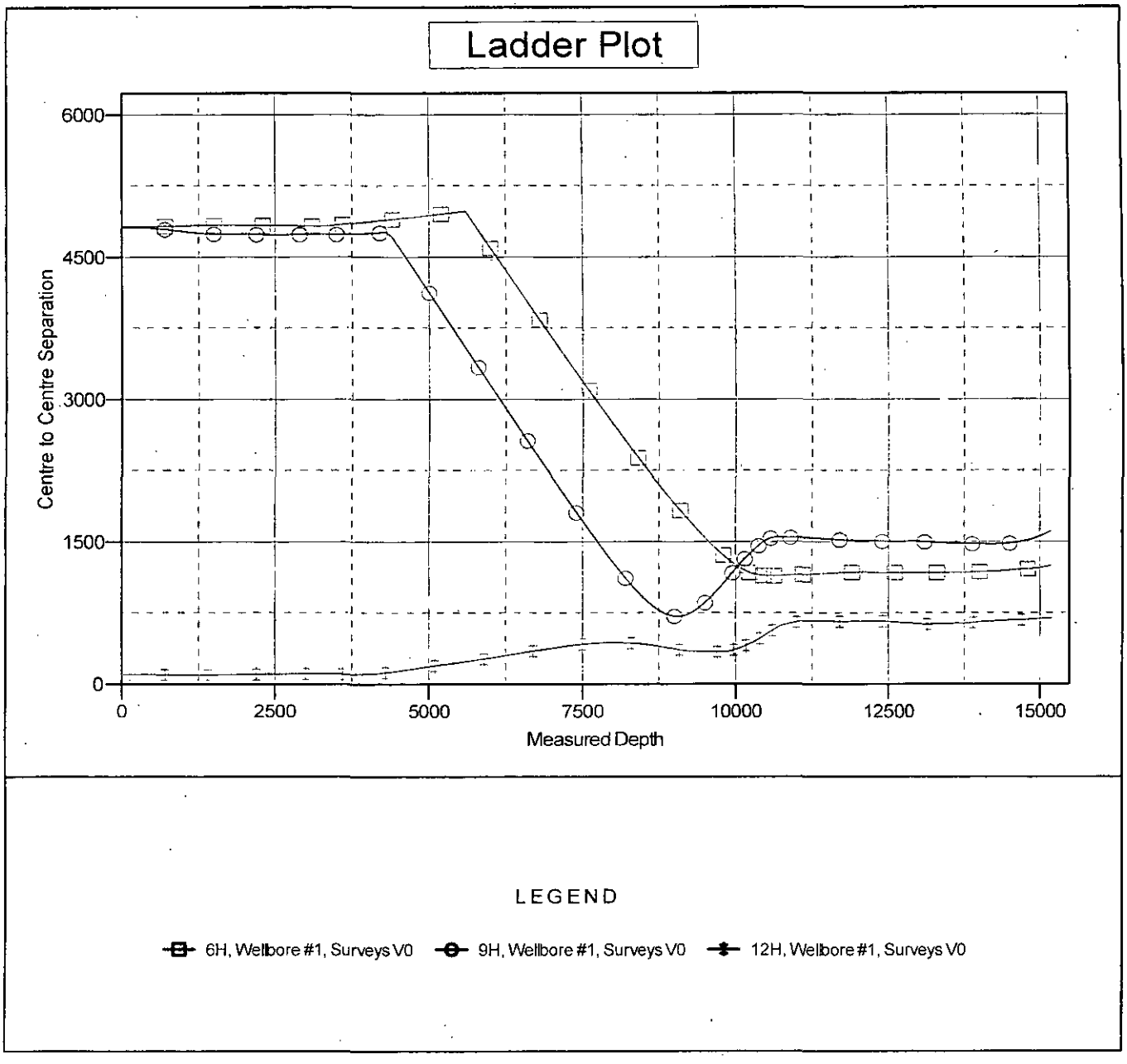
Offset Design North Brushy Draw Federal 35 - 9H - Wellbore #1 - Surveys — Offset Site Error: 0.00 usft

Survey Program: 665-MWD — Offset Well Error: 0.00 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,100.00	10,384.00	11,762.94	9,014.07	46.23	58.86	23.61	1,607.38	1,112.49	1,509.28	1,449.16	60.12	25.106	
12,200.00	10,384.00	11,659.49	9,012.78	47.24	57.40	23.52	1,710.79	1,110.03	1,509.66	1,449.87	59.79	25.251	
12,300.00	10,384.00	11,499.88	9,016.16	48.30	55.18	23.51	1,870.33	1,107.63	1,507.08	1,448.23	58.85	25.611	
12,400.00	10,384.00	11,409.42	9,019.36	49.38	53.94	23.50	1,960.70	1,105.40	1,503.07	1,444.27	58.81	25.560	
12,500.00	10,384.00	11,330.47	9,021.25	50.50	52.87	23.50	2,039.63	1,104.28	1,500.47	1,441.51	58.96	25.450	
12,600.00	10,384.00	11,253.13	9,022.54	51.64	51.83	23.53	2,116.95	1,104.24	1,499.13	1,439.95	59.19	25.329	
12,619.15	10,384.00	11,240.64	9,022.68	51.86	51.66	23.54	2,129.43	1,104.42	1,499.09	1,439.82	59.27	25.293	
12,700.00	10,384.00	11,193.13	9,022.94	52.81	51.03	23.60	2,176.93	1,105.72	1,499.82	1,440.12	59.71	25.119	
12,800.00	10,384.00	11,085.57	9,022.83	54.01	49.63	23.77	2,284.39	1,110.27	1,501.80	1,442.07	59.73	25.144	
12,900.00	10,384.00	10,950.05	9,024.29	55.23	47.89	23.96	2,419.84	1,114.31	1,502.14	1,442.72	59.42	25.281	
13,000.00	10,384.00	10,827.63	9,027.26	56.47	46.35	24.09	2,542.21	1,116.37	1,500.81	1,441.54	59.27	25.324	
13,100.00	10,384.00	10,682.33	9,033.45	57.73	44.57	24.21	2,687.36	1,116.22	1,497.01	1,438.17	58.85	25.440	
13,200.00	10,384.00	10,592.51	9,038.65	59.01	43.49	24.29	2,777.04	1,115.83	1,491.77	1,432.67	59.11	25.239	
13,300.00	10,384.00	10,536.87	9,040.71	60.31	42.83	24.32	2,832.63	1,115.62	1,488.59	1,428.83	59.76	24.938	
13,400.00	*10,384.00*	*10,421.86*	*9,043.30*	*61.63*	*41.52*	*24.36*	*2,947.61*	*1,114.91*	*1,486.45*	*1,426.73*	*59.72*	*24.890*	
13,500.00	10,384.00	10,337.62	9,044.82	62.96	40.59	24.36	3,031.83	1,113.91	1,484.49	1,424.44	60.05	24.720	
13,600.00	10,384.00	10,213.18	9,046.71	64.31	39.27	24.23	3,156.15	1,108.84	1,481.46	1,421.66	59.81	24.770	
13,700.00	10,384.00	10,134.48	9,047.09	65.67	38.46	24.12	3,234.75	1,105.06	1,479.21	1,419.06	60.15	24.593	
13,800.00	10,384.00	10,041.11	9,047.07	67.04	37.55	23.99	3,328.03	1,100.96	1,477.63	1,417.30	60.33	24.491	
13,883.46	10,384.00	9,985.22	9,046.69	68.20	37.01	23.92	3,383.88	1,098.86	1,477.15	1,416.36	60.80	24.296	
13,900.00	10,384.00	9,964.83	9,046.34	68.43	36.83	23.89	3,404.26	1,098.27	1,477.24	1,416.46	60.78	24.305	
14,000.00	10,384.00	9,842.14	9,045.53	69.83	35.74	23.77	3,526.90	1,094.73	1,476.86	1,416.14	60.72	24.322	
14,100.00	10,384.00	9,746.62	9,045.98	71.24	34.96	23.69	3,622.37	1,091.90	1,475.43	1,414.38	61.05	24.168	
14,138.14	10,384.00	9,720.70	9,046.10	71.78	34.75	23.70	3,648.29	1,091.78	1,475.28	1,413.95	61.33	24.056	
14,200.00	10,384.00	9,675.47	9,046.22	72.66	34.40	23.73	3,693.50	1,092.63	1,475.68	1,413.89	61.79	23.883	
14,300.00	10,384.00	9,571.70	9,047.33	74.09	33.65	23.94	3,797.16	1,097.36	1,476.72	1,414.33	62.39	23.668	
14,400.00	10,384.00	9,477.43	9,048.94	75.53	33.02	24.15	3,891.30	1,102.16	1,477.44	1,414.29	63.15	23.395	
14,500.00	10,384.00	9,405.00	9,048.40	76.97	32.58	24.27	3,963.64	1,105.55	1,480.07	1,415.99	64.07	23.100	
14,600.00	10,384.00	9,374.00	9,046.78	78.43	32.40	24.30	3,994.56	1,107.03	1,485.99	1,420.66	65.33	22.747	
14,700.00	10,384.00	9,353.87	9,044.76	79.89	32.28	24.31	4,014.56	1,108.00	1,496.60	1,429.91	66.69	22.441	
14,800.00	10,384.00	9,311.00	9,038.24	81.36	32.04	24.27	4,056.89	1,109.83	1,511.91	1,444.12	67.79	22.302	
14,900.00	10,384.00	9,280.00	9,032.24	82.84	31.87	24.24	4,087.26	1,111.40	1,531.15	1,462.14	69.01	22.189	
15,000.00	10,384.00	9,249.00	9,025.06	84.32	31.71	24.19	4,117.36	1,113.15	1,554.49	1,484.31	70.18	22.149	
15,100.00	10,384.00	9,218.00	9,016.41	85.82	31.55	24.12	4,147.08	1,114.77	1,581.95	1,510.66	71.30	22.188	
15,197.21	10,384.00	9,186.00	9,005.92	87.27	31.38	24.00	4,177.28	1,116.04	1,612.44	1,540.16	72.28	22.309	

Company:	WPX Energy	**Local Co-ordinate Reference:**	Well 10H
Project:	Eddy County, New Mexico (NAD 27)	**TVD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
Site Error:	0.00 usft	**North Reference:**	Grid
Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1 Conroe DB
Reference Design:	Design #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 3036.00usft (Orion Phoenix) Coordinates are relative to: 10H
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Central Meridian is 104° 20' 0.000 W Grid Convergence at Surface is: 0.20°



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Reference Site:	North Brushy Draw Federal 35	**MD Reference:**	WELL @ 3036.00usft (Orion Phoenix)
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Reference Well:	10H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 usft	**Output errors are at**	2.00 sigma
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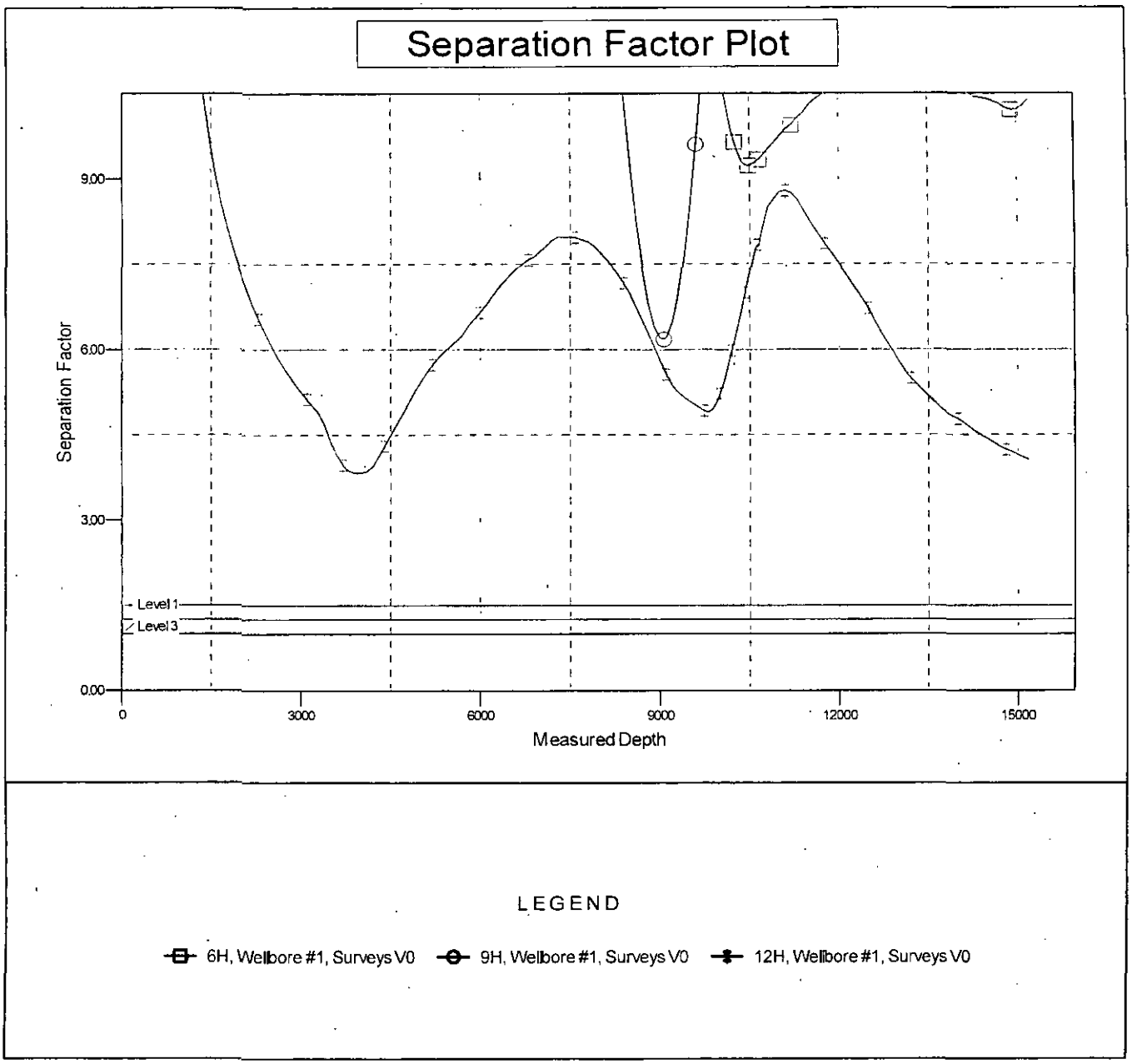
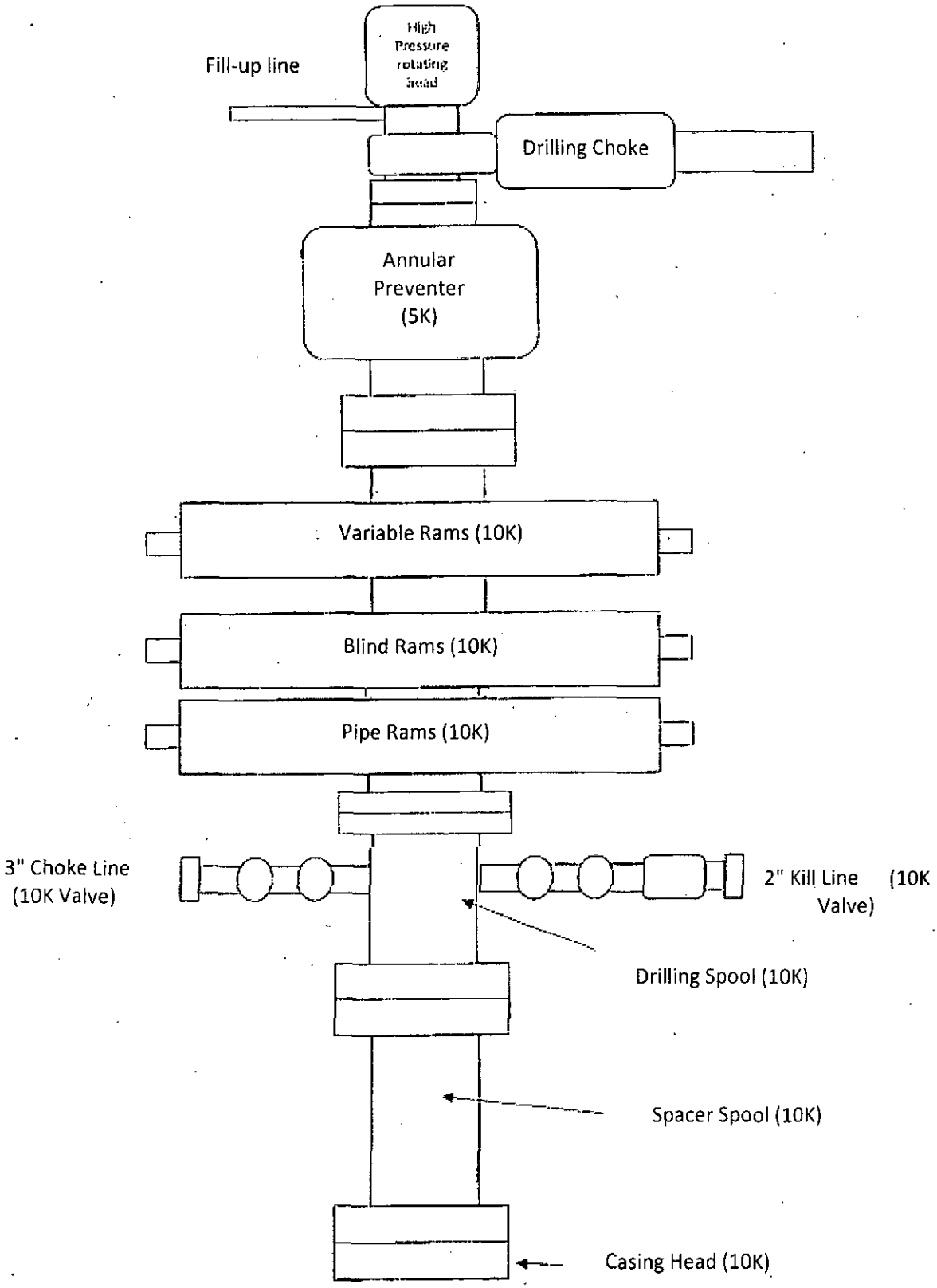


13" 10K psi BOP



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Exploration & Production, LLC.
LEASE NO.:	NMNM054290
WELL NAME & NO.:	North Brushy Draw Federal 35 10H
SURFACE HOLE FOOTAGE:	375'/S & 1550'/E
BOTTOM HOLE FOOTAGE	230'/N & 1035'/E
LOCATION:	Section 35, T.25 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Abnormal pressures may be encountered upon penetrating the 3rd Bone Spring Sandstone and all subsequent formations.
Medium Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **680** feet **(in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall

be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 13-3/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Medium Cave/Karst: If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the 7 inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the 4-1/2 inch production liner is:

☒ Cement should tie-back to the top of the liner. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. **Operator has proposed a multi-bowl wellhead assembly that has a weld on head with no o-ring seals. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**

    a. **Wellhead manufacturer is supplying the test plug/retrieval tool for the operator's third party tester to use during the BOP/BOPE test. Operator shall use the supplied test plug/retrieval tool.**
    b. **Operator shall install the wear bushing required by the wellhead manufacturer. This wear bushing shall be installed by using the test plug/retrieval tool.**
    c. **Wellhead manufacturer representative shall be on location when the intermediate casing mandrel is landed. Operator shall submit copy of manufacturer's wellsite report with subsequent report.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after

installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW070116