Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Carlsbad Field Office
OCD Artesia

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.
NMNM21767

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.
EAST PECOS FEDERAL COM 22 14H

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

9. API Well No.
30-015-43586-00-X1

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

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

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 06 2016
RECEIVED

10. Field and Pool, or Exploratory
UNDESIGNATED

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 22 T26S R29E SESE 310FSL 1285FEL

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 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 well to deeper formation. Please see attached geo prog, directional plan, drilling plan, and plat.

BHL location will not change, just changing BHL TVD from 10,040' to 10,926'

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

Electronic Submission #340057 verified by the BLM Well Information System
For RKI EXPLORATION & PROD LLC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 05/24/2016 (16PP1251SE)

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

Signature (Electronic Submission) — Date 05/24/2016

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By (BLM Approver Not Specified) Mustafa Haque — Title **PETROLEUM ENGINEER** — Date 06/03/2016

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

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 ****

Accepted for record - NMOCD

6/13/16

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

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

NM OIL CONSERVATION
ARTESIA DISTRICT
JUN 06 2016
RECEIVED

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-43586	72897	Brushy Draw ~~UNDESIGNATED~~ WOLFCAMP (GAS

Property Code	Property Name	Well Number
39386	EAST PECOS FEDERAL COM 22	14H

OGRID No	Operator Name	Elevation
246289	RKI EXPLORATION & PRODUCTION	2882

Surface Location

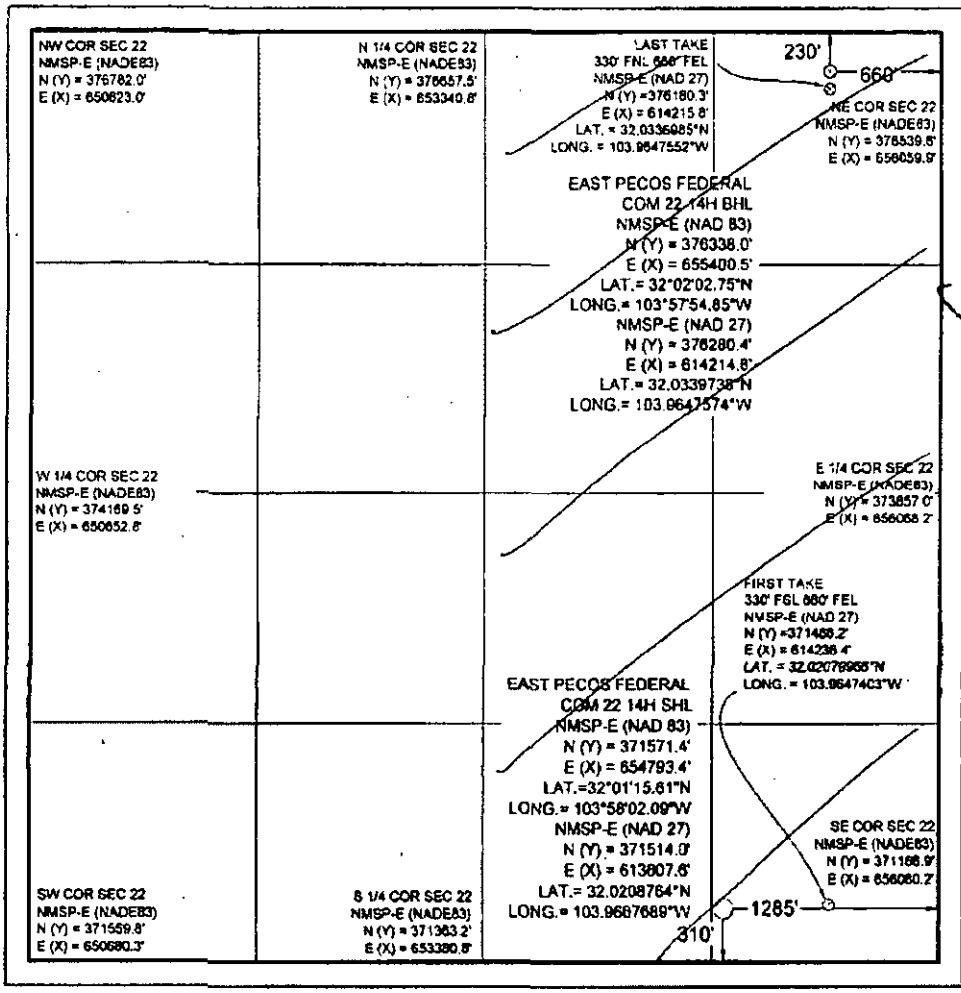
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	22	26S	29E		310	S	1285	E	EDDY

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	22	26S	29E		230	N	660	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.

Barry W. Hunt 5/19/15
Signature Date

Barry W. Hunt
Print Name

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.

AUGUST 13, 2014
Date of Survey

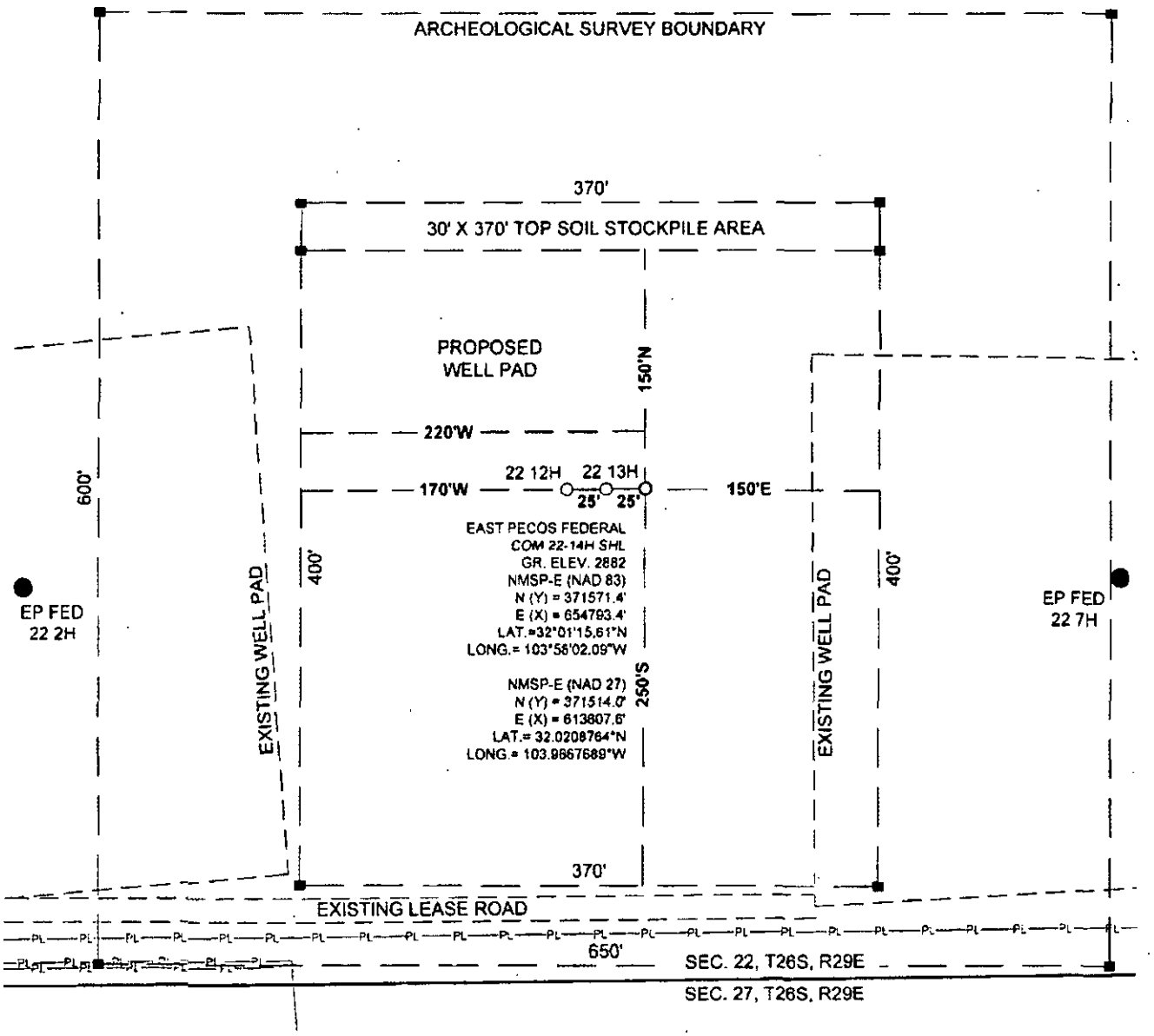
Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL SURVEYOR

James E. Tompkins

Job No.: WTC50084
JAMES E. TOMPKINS 14729
Certificate Number

SITE LOCATION



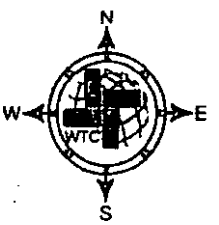
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1285' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H



DRIVING DIRECTIONS:

FROM THE INTERSECTION OF STATE HIGHWAY 285 AND LONGHORN COUNTY ROAD 725. GO EAST/ NORTHEAST ON LONGHORN COUNTY ROAD 725 FOR 6.7 MILES TO A "Y", STAY RIGHT. GO 0.3 MILE IN SOUTHEASTERLY DIRECTON TO A LEASE ROAD LEFT. GO EAST ON LEASE ROAD 0.3 MILE. LOCATION FLAG IS 264 FEET NORTH.

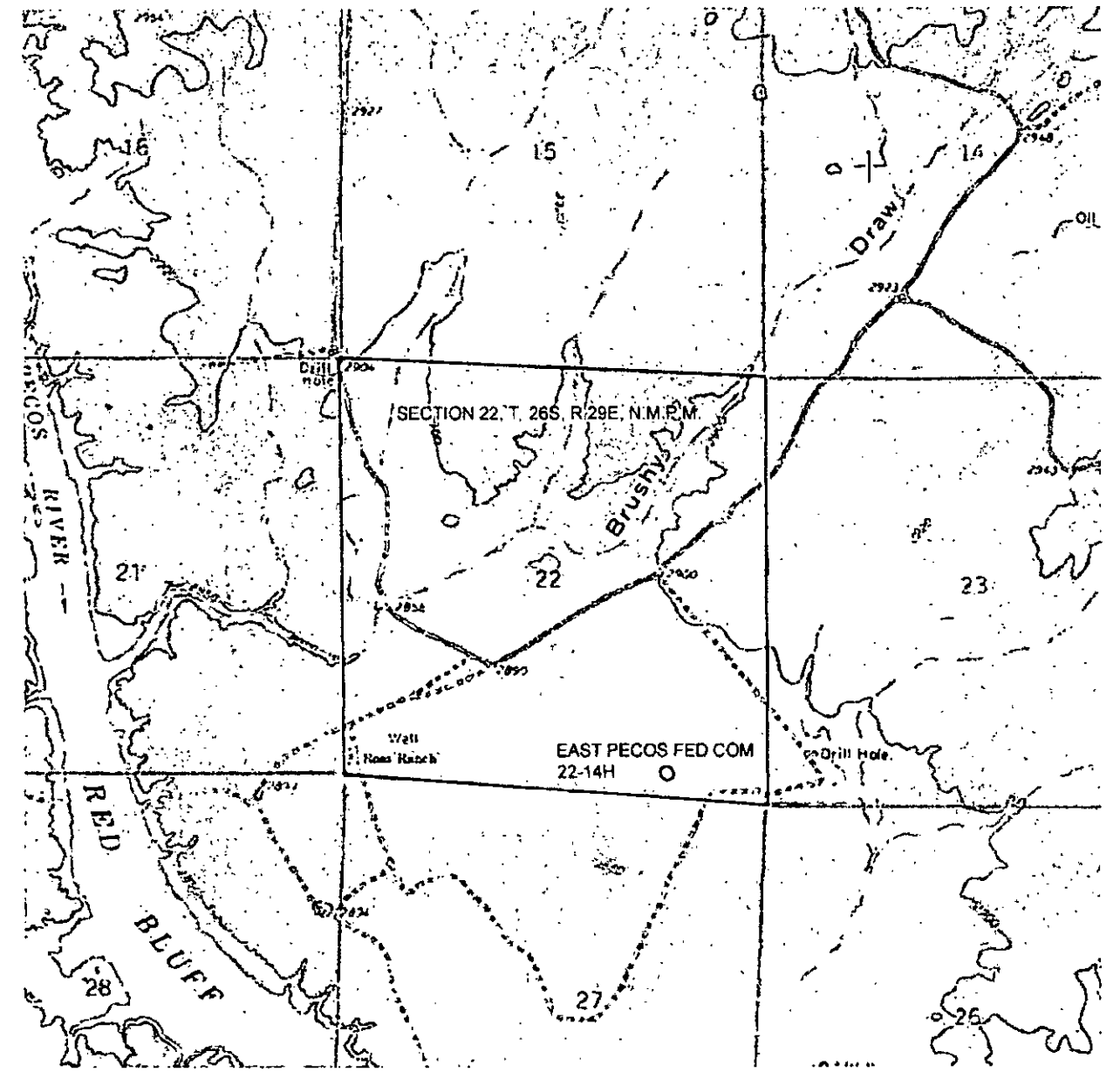
WTC

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

RKI Exploration & Production

JOB No.: WTC50084

LOCATION VERIFICATION MAP



GRAPHIC SCALE 1" = 2000'

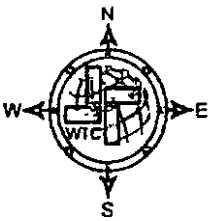
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1285' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H



DRIVING DIRECTIONS:

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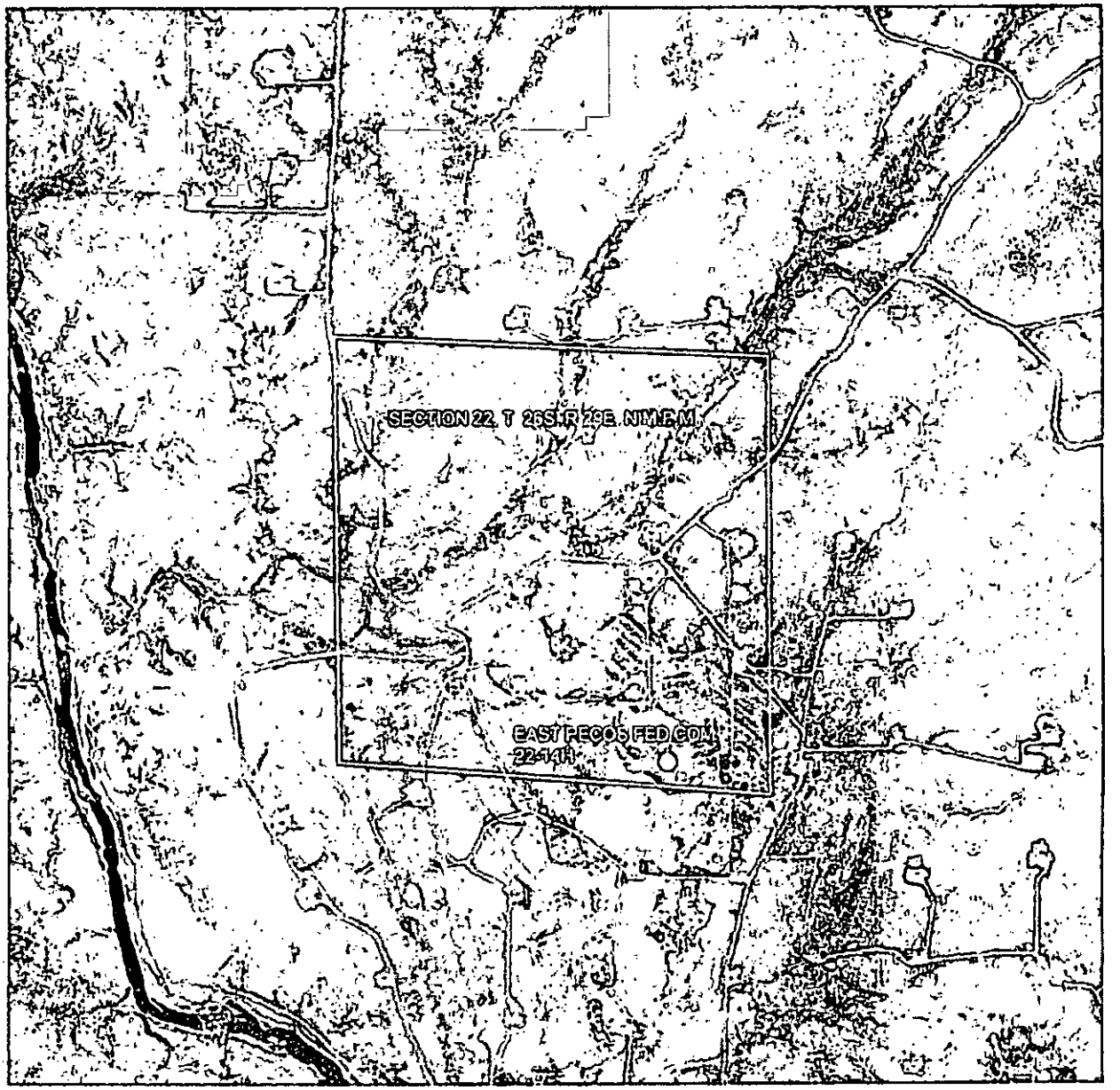
Andrews, TX 79714
(432) 523-2181

RKI Exploration & Production

JOB No.: WTC50084

AERIAL MAP



0 1000 2000 4000

GRAPHIC SCALE 1" = 2000'

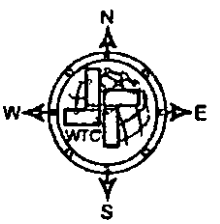
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1285' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H



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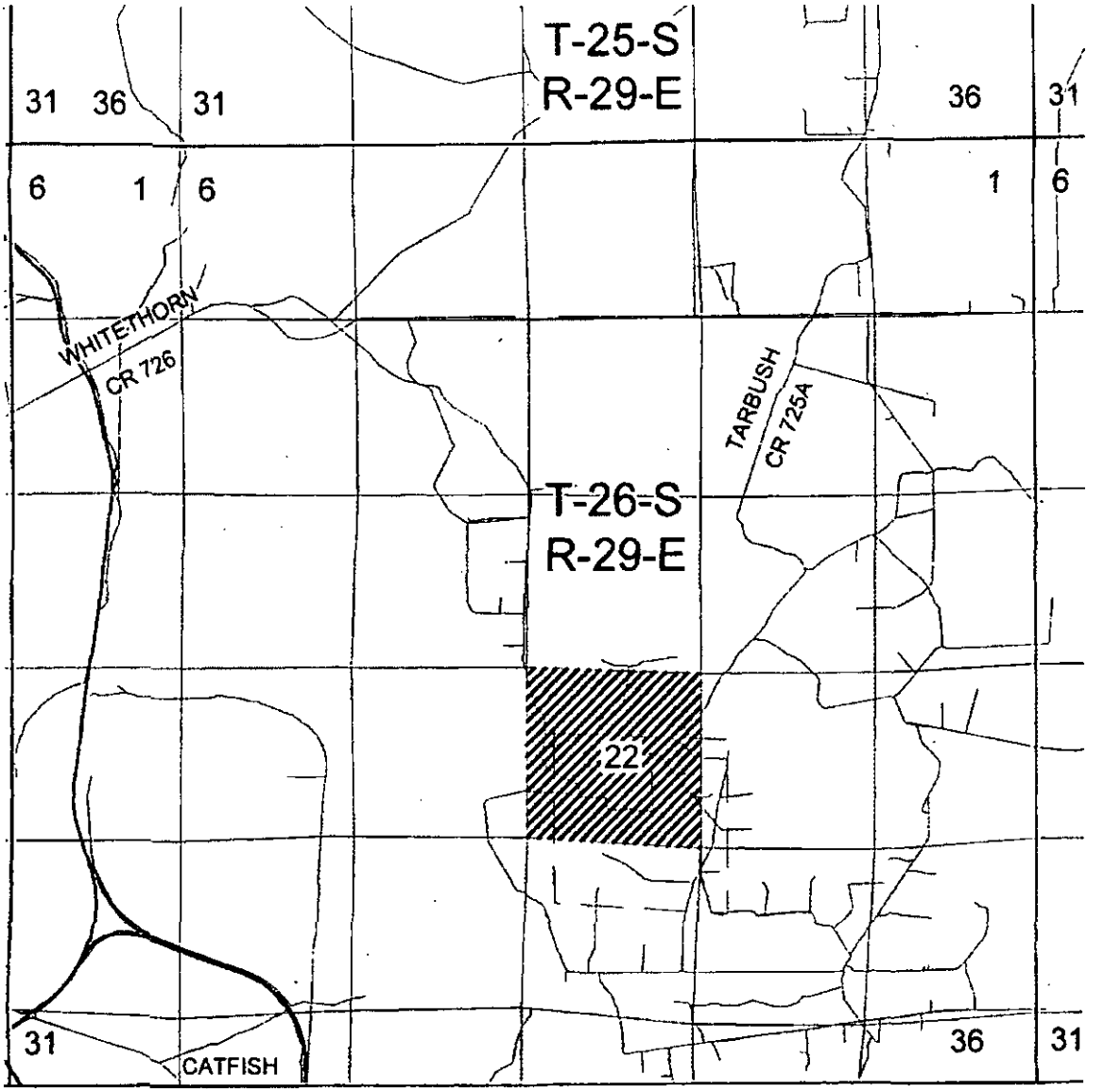
405 S.W. 1st Street
Andrews, TX 79714
(432) 523-2181

RKI Exploration & Production

JOB No.: WTC50084

VICINITY MAP



0 1 2 3

GRAPHIC SCALE 1" = 1 MILE

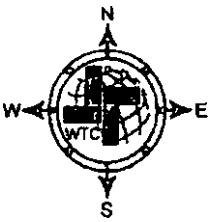
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1285' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H



DRIVING DIRECTIONS:

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WTC

W T C, INC.
405 S.W. 1st Street
Andrews, TX 79714
(432) 523-2191

RKI Exploration & Production

JOB No.: WTC50084

Exhibit A

Access

2.2" = 1 mile

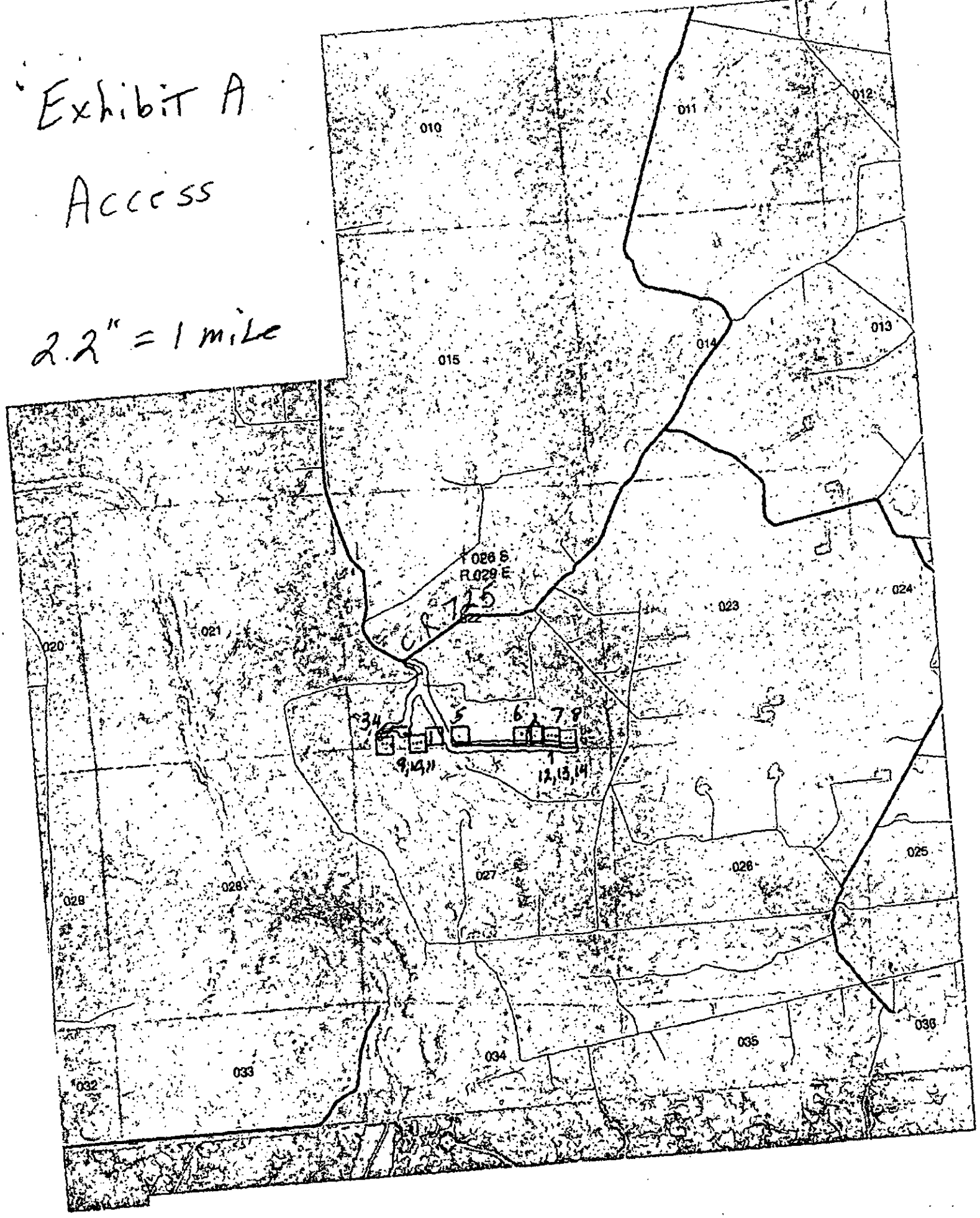
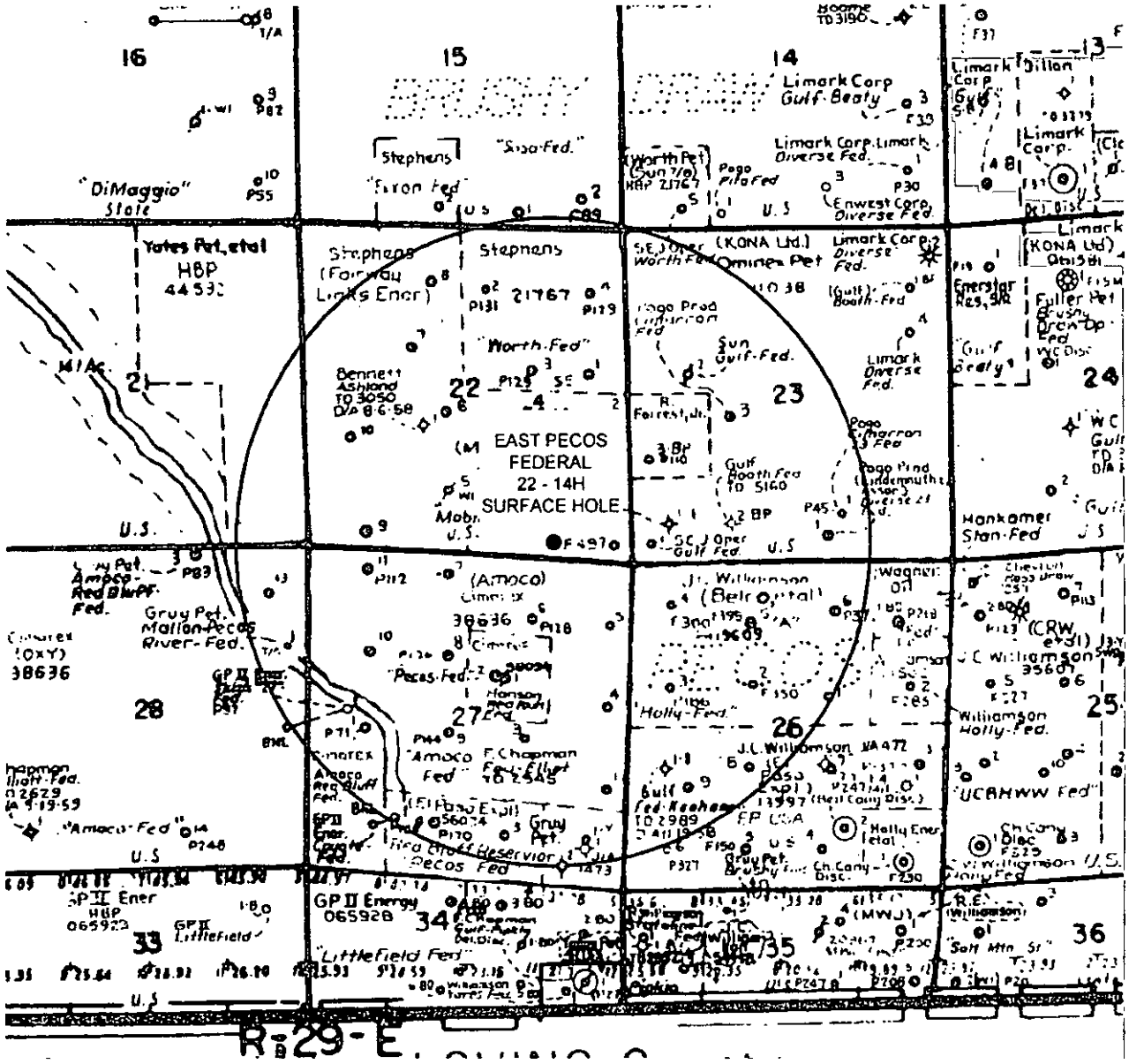


Exhibit B

SURFACE HOLE LOCATION



0 .5 1 1.5

GRAPHIC SCALE 1" = 1/2 MILE

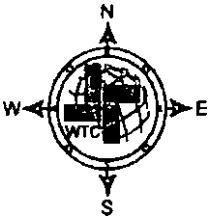
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1285' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H SHL



DRIVING DIRECTIONS:

FROM THE INTERSECTION OF STATE HIGHWAY 285 AND LONGHORN COUNTY ROAD 725. GO EAST/ NORTHEAST ON LONGHORN COUNTY ROAD 725 FOR 6.7 MILES TO A "Y", STAY RIGHT. GO 0.3 MILE IN SOUTHEASTERLY DIRECTON TO A LEASE ROAD LEFT. GO EAST ON LEASE ROAD 0.3 MILE. LOCATION FLAG IS 264 FEET NORTH.

WTC

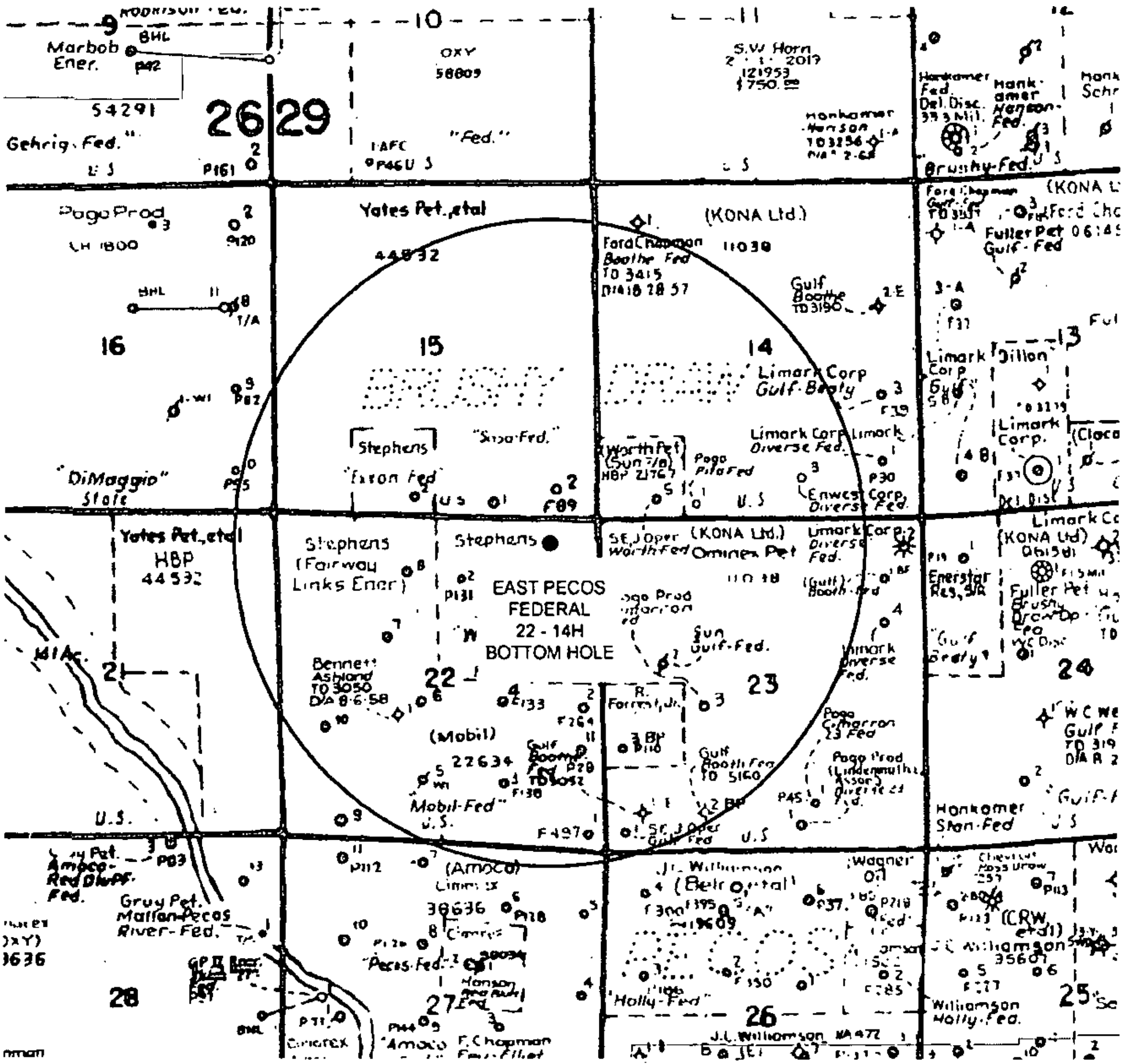
W T C, INC.
405 S.W. 1st Street
Andrews, TX 79714
(432) 523-2181

RKI Exploration & Production

JOB No.: WTC50084

'B'

BOTTOM HOLE LOCATION



0 .5 1 1.5

GRAPHIC SCALE 1" = 1/2 MILE

SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 230' FSL & 660' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-14H BHL

N
W E
S

DRIVING DIRECTIONS:

FROM THE INTERSECTION OF STATE HIGHWAY 285 AND LONGHORN COUNTY ROAD 725. GO EAST/ NORTHEAST ON LONGHORN COUNTY ROAD 725 FOR 6.7 MILES TO A "Y", STAY RIGHT. GO 0.3 MILE IN SOUTHEASTERLY DIRECTON TO A LEASE ROAD LEFT. GO EAST ON LEASE ROAD 0.3 MILE. LOCATION FLAG IS 264 FEET NORTH.

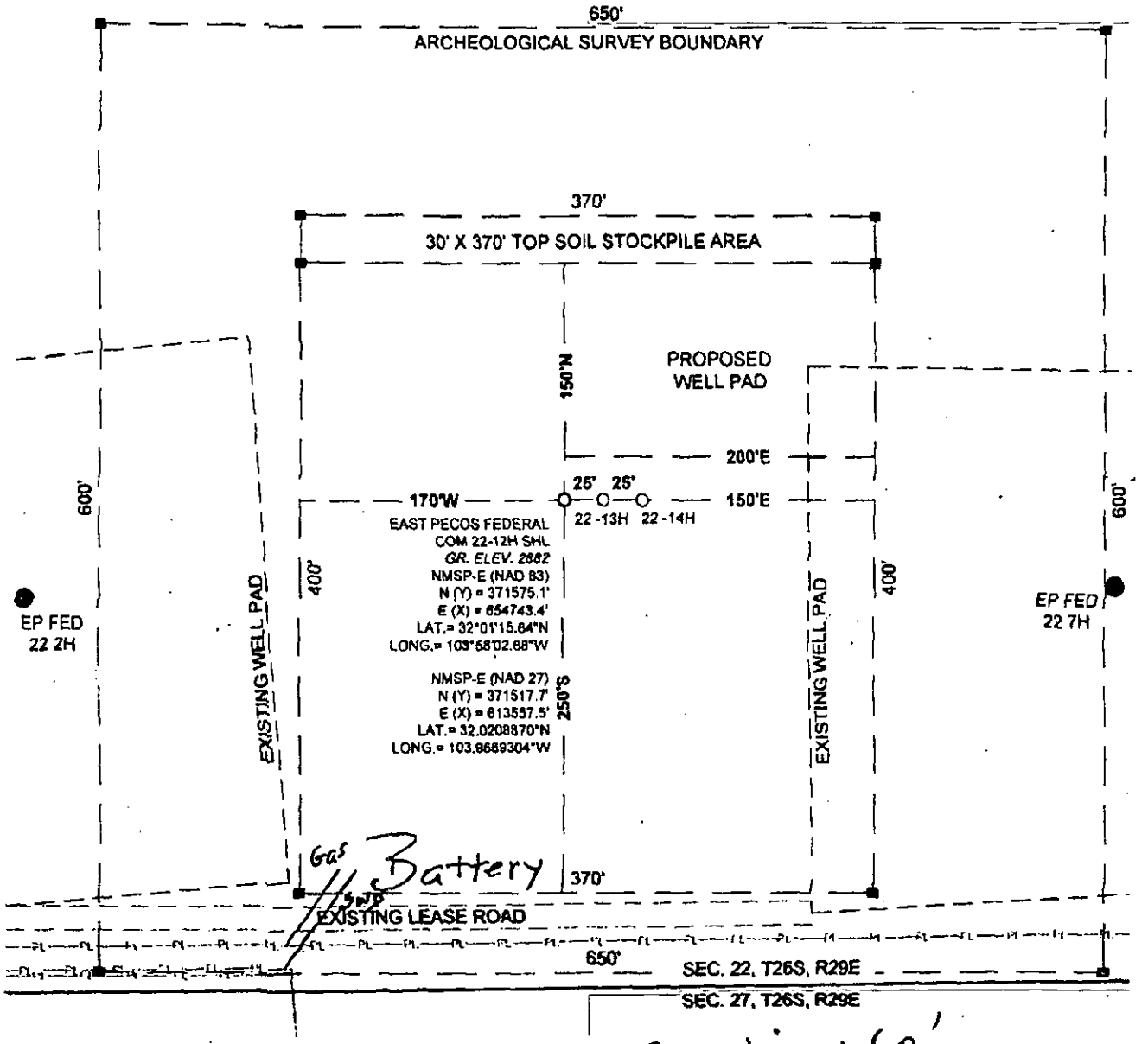
W T C, INC.
405 S.W. 1st Street
Andrews, TX 79714
(432) 523-2181

RKI
Exploration
& Production

JOB No.: WTC50064

Exhibit E

SITE LOCATION



Gas Line: 60'
SWD Line: 80

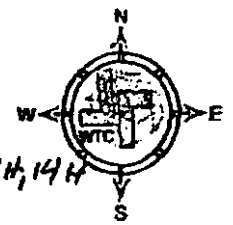
SECTION 22, T 26S, R 29E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 310' FSL & 1335' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: EAST PECOS FEDERAL COM 22-12H, 13H, 14H



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WTC

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

RKI Exploration & Production

JOB No.: WTC50084

WPX Energy

Well	East Pecos Federal Com 22-14H				
Location	Surface:	310 FSL	1,285 FEL	Sec 22-26S-29E	
	Bottom Hole:	230 FSL	660 FEL	Sec 22-26S-29E	

County Eddy
State New Mexico

1) The elevation of the unprepared ground is 2,882 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 15,982 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 15,982 feet MD

5) Estimated tops:

	MD	TVD		BHP = .44 psi/ft x depth
Rustler	350	350		
Bell Canyon Sand (Base Salt)	3,181	3,181		1,400 psi
Cherry Canyon Sand	4,242	4,235		1,863 psi
Brushy Canyon Sand	5,310	5,297		2,331 psi
Bone Spring Lime	6,967	6,944	Oil	3,055 psi
1st Bone Spring Sand	7,906	7,878	Oil	3,466 psi
2nd Bone Spring Sand	8,727	8,694	Oil	3,825 psi
3rd Bone Spring Sand	9,789	9,752		4,291 psi
Wolfcamp	9,894	9,857	Oil	4,337 psi
Wolfcamp A	10,269	10,232		4,502 psi
KOP	10,546	10,509	Oil	4,624 psi
Wolfcamp B	10,622	10,624		4,675
Wolfcamp C	10,896	11,116		4,891
Wolfcamp D	11,340	~~11,143~~		4,903
EOC	11,576	11,152		4,907
TD	15,982	~~10,926~~		

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	350	13 3/8"	54.5#/J-55	ST&C	7.34	35.45	26.95
12 1/4"	0	3,181	9 5/8"	40#/J-55	LT&C	1.44	5.64	4.09
8 3/4"	0	11,576	7"	29#/HCP-110	BT&C	1.22	1.99	2.65
6 1/8"	10,646	15,982	4 1/2"	13.5#/HCP-110	CDC-HTC	2.28	1.24	6.15

Collapse	1.125
Burst	1.0
Tension	2.0

7) Cement program:

Surface	17 1/2" hole				
Pipe OD	13 3/8"				
Setting Depth	~~1,000 ft~~ 350ft				
Annular Volume	0.69462 cf/ft				
Excess	1		100 %		
Lead	794 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	3,181 ft				
Annular Volume	0.31318 cf/ft		0.3627 cf/ft		
Excess	0.5		50 %		
Lead	550 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	11,576 ft				
Annular Volume	0.15033 cf/ft		0.1585 cf/ft	500 ft	
Excess	0.35		35 %		
Stage 2					
Lead:	835 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: 2,681 ft

Production	6 1/8" hole				
Pipe OD (in OH)	4 1/2"				
Setting Depth	15,982 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: 10,646 ft

8) Pressure control equipment: →SEE COA

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a ~~double~~ triple ram type (5,000 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 blind rams on top and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" ~~5M~~ 10M 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	350	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Water
350	3,181	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
3,181	11,576	8.9 to 9.1	28 to 36	1 - 3	1 - 3	NC	Cut Brine
11,576	15,982	10.5 to 12.5	50 to 55	20-22	8 - 10	8 - 10	OBM

10) Logging, coring, and testing program: →SEE COA

~~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: →SEE COA

~~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

WPX Energy

GEOLOGICAL PROGNOSIS - PERMIAN

East Pecos Federal Com 22-14H

Well Name:	*East Pecos Federal Com 22-14H*	**Location:**	SHL: 310' FSL & 1285' FEL
API#:	*300154358600*		POP: 660' FNL & 660' FEL
Target Formation:	*Wolfcamp D*		BHL: 530' FNL & 660' FEL
Field:	Brushy Draw		Legal: Sec 22, T26S-R29E,
Elevation: GL(ft):	2882		CO, State: Eddy Co, NM
KB	*2907*		Rig: Orion Pheonix (KB 25')
Estimated BHT:			KB (ft): 25

Projected Tops

FORMATION	DEPTH (TVD)	SUBSEA	Comments
Bell Canyon (Base of Salt)	3181	-274	
Cherry Canyon	4235	-1328	
Brushy Canyon	5297	-2390	**Offset Depletion**
Bone Spring	6944	-4037	
1st Bone Spring	7878	-4971	
2nd Bone Spring	8694	-5787	
3rd Bone Spring	9752	-6845	
Wolfcamp Top	9857	-6950	
WC_X	10127	-7220	
WC_Y	10207	-7300	
Wolfcamp A	10232	-7325	
Wolfcamp B	10624	-7717	
Wolfcamp C	10838	-7931	
Wolfcamp D	11116	-8209	
Top Target	11143	-8236	
Landing Point	11152	-8245	
Base Target	11161	-8254	
Target Top @BHL	10926	-8019	

Wellsite Geology & Mudlogging Program

Mudlogging Start Depth: 325' above the Bell Canyon
Wellsite Geologist Start Depth: 325' above the Bell Canyon
Sample interval: 10'
Mudlog report schedule: Twice daily (7AM and 7PM)
Wellsite Geologist report schedule: Daily report — **Well Site Geologist:**
MWD Gamma: 325' above the Bell Canyon — **Mudloggers:**

Open-Hole Logging Program

Open-hole logging depth:

Report Distribution List - Send All Reports To The Following:

cody.buller@wpxenergy.com, greg.flournoy@wpxenergy.com, carterdw49@gmail.com
zackary.williams@wpxenergy.com, preston.wray@wpxenergy.com, james.jackson@wpxenergy.com
richard.rondeau@wpxenergy.com, samuel.shiverick@wpxenergy.com, data@Tdgeosteering.com
mark.allen@wpxenergy.com

Geologist:	**Sam Shiverick**	**Greg Flournoy**
	O:(539) 573-6256	O:(539) 573-7541
	C:(914)-643-6124	C:(405) 401-0545
Engineer:	**Jim Jackson (Pegasus)**	**Preston Wray (Pheonix)**
	C:(724) 249-5723	O: (539) 573-7604
		C:(405) 435-0089
Rig:	**Orion - Pegasus**	
	Sat Ph: (832) 400-2871	
	Orion - Pheonix	
	Sat Ph: (281) 436-6380	

WPX

Eddy County, NM (Nad83NME)
East Pecos Federal Com 22-14H
22-14H

Lateral

Plan: Design #3

QES Curve Report

20 May, 2016

QES
Curve Report

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

Project Eddy County, NM (Nad83NME)

Map System:	*US State Plane 1983*	***System Datum:***	*Mean Sea Level*
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site East Pecos Federal Com 22-14H

Site Position:		**Northing:**	371,571.40 usft	**Latitude:**	32° 1' 15.605 N
From:	Map	**Easting:**	654,793.40 usft	**Longitude:**	103° 58' 2.100 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.19 °

Well 22-14H

Well Position	**+N/-S**	0.0 usft	**Northing:**	371,571.40 usft	**Latitude:**	32° 1' 15.605 N
	+E/-W	0.0 usft	**Easting:**	654,793.40 usft	**Longitude:**	103° 58' 2.100 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	2,882.0 usft

Wellbore Lateral

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/15/2016	7.23	59.82	47,882

Design Design #3

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	7.26

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,107.2	6.22	116.06	3,106.8	-4.9	10.1	3.00	3.00	0.00	116.06	
9,339.4	6.22	116.06	9,302.3	-301.4	616.3	0.00	0.00	0.00	0.00	
9,546.6	0.00	0.00	9,509.1	-306.3	626.4	3.00	-3.00	0.00	180.00	
10,546.6	0.00	0.00	10,509.1	-306.3	626.4	0.00	0.00	0.00	0.00	VP East Pecos Fed
10,996.6	45.00	359.78	10,914.2	-138.5	625.7	10.00	10.00	0.00	359.78	
11,096.6	45.00	359.78	10,985.0	-67.8	625.4	0.00	0.00	0.00	0.00	
11,576.0	92.94	359.78	11,152.0	366.7	623.8	10.00	10.00	0.00	0.00	
15,981.7	92.94	359.78	10,926.0	4,766.6	607.1	0.00	0.00	0.00	0.00	PBHL East Pecos F

QES

Curve Report

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
Start Build 10.00									
10,546.6	0.00	0.00	10,509.1	-306.3	626.4	-224.7	0.00	0.00	0.00
10,560.0	1.34	359.78	10,522.5	-306.2	626.4	-224.6	10.00	10.00	0.00
10,590.0	4.34	359.78	10,552.5	-304.7	626.3	-223.1	10.00	10.00	0.00
10,620.0	7.34	359.78	10,582.3	-301.6	626.3	-220.1	10.00	10.00	0.00
10,650.0	10.34	359.78	10,612.0	-297.0	626.3	-215.5	10.00	10.00	0.00
Wolfcamp B									
10,662.2	11.57	359.78	10,624.0	-294.7	626.3	-213.2	10.00	10.00	0.00
10,680.0	13.34	359.78	10,641.3	-290.9	626.3	-209.4	10.00	10.00	0.00
10,710.0	16.34	359.78	10,670.3	-283.2	626.3	-201.8	10.00	10.00	0.00
10,740.0	19.34	359.78	10,698.9	-274.0	626.2	-192.7	10.00	10.00	0.00
10,770.0	22.34	359.78	10,726.9	-263.3	626.2	-182.1	10.00	10.00	0.00
10,800.0	25.34	359.78	10,754.4	-251.2	626.1	-170.1	10.00	10.00	0.00
10,830.0	28.34	359.78	10,781.1	-237.6	626.1	-156.6	10.00	10.00	0.00
10,860.0	31.34	359.78	10,807.1	-222.7	626.0	-141.8	10.00	10.00	0.00
10,890.0	34.34	359.78	10,832.3	-206.5	626.0	-125.7	10.00	10.00	0.00
Wolfcamp C									
10,896.9	35.03	359.78	10,838.0	-202.5	626.0	-121.8	10.00	10.00	0.00
10,920.0	37.34	359.78	10,856.7	-188.9	625.9	-108.3	10.00	10.00	0.00
10,950.0	40.34	359.78	10,880.0	-170.1	625.8	-89.6	10.00	10.00	0.00
10,980.0	43.34	359.78	10,902.4	-150.1	625.8	-69.8	10.00	10.00	0.00
Start 100.0 hold at 10996.6 MD									
10,996.6	45.00	359.78	10,914.2	-138.5	625.7	-58.3	10.00	10.00	0.00
11,010.0	45.00	359.78	10,923.8	-129.0	625.7	-48.9	0.00	0.00	0.00
11,040.0	45.00	359.78	10,945.0	-107.8	625.6	-27.9	0.00	0.00	0.00
11,070.0	45.00	359.78	10,966.2	-86.6	625.5	-6.9	0.00	0.00	0.00
Start DLS 10.00 TFO 0.00									
11,096.6	45.00	359.78	10,985.0	-67.8	625.4	11.8	0.00	0.00	0.00
11,100.0	45.34	359.78	10,987.4	-65.4	625.4	14.2	10.00	10.00	0.00
11,130.0	48.34	359.78	11,007.9	-43.5	625.3	35.9	10.00	10.00	0.00
11,160.0	51.34	359.78	11,027.2	-20.6	625.3	58.6	10.00	10.00	0.00
11,190.0	54.34	359.78	11,045.4	3.3	625.2	82.3	10.00	10.00	0.00
11,220.0	57.34	359.78	11,062.2	28.2	625.1	106.9	10.00	10.00	0.00
11,250.0	60.34	359.78	11,077.7	53.8	625.0	132.4	10.00	10.00	0.00
11,280.0	63.34	359.78	11,091.9	80.3	624.9	158.6	10.00	10.00	0.00
11,310.0	66.34	359.78	11,104.6	107.4	624.8	185.5	10.00	10.00	0.00
11,340.0	69.34	359.78	11,115.9	135.2	624.7	213.1	10.00	10.00	0.00
Wolfcamp D									
11,340.2	69.36	359.78	11,116.0	135.4	624.7	213.2	10.00	10.00	0.00
11,370.0	72.34	359.78	11,125.8	163.6	624.6	241.2	10.00	10.00	0.00
11,400.0	75.34	359.78	11,134.1	192.4	624.4	269.7	10.00	10.00	0.00
11,430.0	78.34	359.78	11,141.0	221.6	624.3	298.7	10.00	10.00	0.00
Top Target									
11,440.6	79.40	359.78	11,143.0	232.0	624.3	309.0	10.00	10.00	0.00
11,460.0	81.34	359.78	11,146.2	251.1	624.2	328.0	10.00	10.00	0.00
11,490.0	84.34	359.78	11,150.0	280.9	624.1	357.5	10.00	10.00	0.00
11,520.0	87.34	359.78	11,152.2	310.8	624.0	387.1	10.00	10.00	0.00
11,550.0	90.34	359.78	11,152.8	340.8	623.9	416.9	10.00	10.00	0.00
Start 4405.7 hold at 11576.0 MD									
11,576.0	92.94	359.78	11,152.0	366.7	623.8	442.6	10.00	10.00	0.00

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
VP East Pecos Feder. - plan hits target center - Point	0.00	0.00	10,509.1	-306.3	626.4	371,265.06	655,419.76	32° 1' 12.553 N	103° 57' 54.837 W
PBHL East Pecos Fe(- plan misses target center by 4405.7usft at 11576.0usft MD (11152.0 TVD, 366.7 N, 623.8 E) - Rectangle (sides W100.0 H4,447.4 D30.0)	-2.94	359.78	10,926.0	4,766.6	607.1	376,338.00	655,400.50	32° 2' 2.756 N	103° 57' 54.860 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.0	1,000.0	13 3/8"	13-3/8	17-1/2
2,856.0	2,856.0	9 5/8"	9-5/8	12-1/4

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,181.8	3,181.0	Bell Canyon (Base of Salt)		0.00	
4,242.1	4,235.0	Cherry Canyon		0.00	
5,310.4	5,297.0	Brushy Canyon		0.00	
6,967.1	6,944.0	Bone Spring		0.00	
7,906.6	7,878.0	1st Bone Spring		0.00	
8,727.4	8,694.0	2nd Bone Spring		0.00	
9,789.5	9,752.0	3rd Bone Spring		0.00	
9,894.5	9,857.0	Wolfcamp Top		0.00	
10,164.5	10,127.0	WC_X		0.00	
10,244.5	10,207.0	WC_Y		0.00	
10,269.5	10,232.0	Wolfcamp A		0.00	
10,662.2	10,624.0	Wolfcamp B		0.00	
10,896.9	10,838.0	Wolfcamp C		0.00	
11,340.2	11,116.0	Wolfcamp D		0.00	
11,440.6	11,143.0	Top Target		0.00	

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,900.0	2,900.0	0.0	0.0	Start Build 3.00
3,107.2	3,106.8	-4.9	10.1	Start 6232.2 hold at 3107.2 MD
9,339.4	9,302.3	-301.4	616.3	Start Drop -3.00
9,546.6	9,509.1	-306.3	626.4	Start 1000.0 hold at 9546.6 MD
10,546.6	10,509.1	-306.3	626.4	Start Build 10.00
10,996.6	10,914.2	-138.5	625.7	Start 100.0 hold at 10996.6 MD
11,096.6	10,985.0	-67.8	625.4	Start DLS 10.00 TFO 0.00
11,576.0	11,152.0	366.7	623.8	Start 4405.7 hold at 11576.0 MD
15,981.7	10,926.0	4,766.6	607.1	TD at 15981.7

WPX

Eddy County, NM (Nad83NME)
East Pecos Federal Com 22-14H
22-14H

Lateral

Plan: Design #3

QES Well Planning Report

20 May, 2016

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

Project Eddy County, NM (Nad83NME)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site East Pecos Federal Com 22-14H

Site Position:		**Northing:**	371,571.40 usft	**Latitude:**	32° 1' 15.605 N
From:	Map	**Easting:**	654,793.40 usft	**Longitude:**	103° 58' 2.100 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.19 °

Well 22-14H

Well Position	**+N/-S**	0.0 usft	**Northing:**	371,571.40 usft	**Latitude:**	32° 1' 15.605 N
	+E/-W	0.0 usft	**Easting:**	654,793.40 usft	**Longitude:**	103° 58' 2.100 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	2,882.0 usft

Wellbore Lateral

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/15/2016	7.23	59.82	47,882

Design Design #3

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	7.26

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,107.2	6.22	116.06	3,106.8	-4.9	10.1	3.00	3.00	0.00	116.06	
9,339.4	6.22	116.06	9,302.3	-301.4	616.3	0.00	0.00	0.00	0.00	
9,546.6	0.00	0.00	9,509.1	-306.3	626.4	3.00	-3.00	0.00	180.00	
10,546.6	0.00	0.00	10,509.1	-306.3	626.4	0.00	0.00	0.00	0.00	VP East Pecos Fed
10,996.6	45.00	359.78	10,914.2	-138.5	625.7	10.00	10.00	0.00	359.78	
11,096.6	45.00	359.78	10,985.0	-67.8	625.4	0.00	0.00	0.00	0.00	
11,576.0	92.94	359.78	11,152.0	366.7	623.8	10.00	10.00	0.00	0.00	
15,981.7	92.94	359.78	10,926.0	4,766.6	607.1	0.00	0.00	0.00	0.00	PBHL East Pecos F

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	***North Reference:***	*Grid*
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8"									
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	*0.00*	*0.00*	*1,400.0*	*0.0*	*0.0*	*0.0*	*0.00*	*0.00*	*0.00*
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
2,856.0	0.00	0.00	2,856.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 3.00									
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	3.00	116.06	3,000.0	-1.1	2.4	-0.8	3.00	3.00	0.00
Start 6232.2 hold at 3107.2 MD									
3,107.2	6.22	116.06	3,106.8	-4.9	10.1	-3.6	3.00	3.00	0.00
Bell Canyon (Base of Salt)									
3,181.8	6.22	116.06	3,181.0	-8.5	17.3	-6.2	0.00	0.00	0.00
3,200.0	6.22	116.06	3,199.0	-9.3	19.1	-6.9	0.00	0.00	0.00
3,300.0	6.22	116.06	3,298.5	-14.1	28.8	-10.3	0.00	0.00	0.00
3,400.0	6.22	116.06	3,397.9	-18.9	38.6	-13.8	0.00	0.00	0.00
3,500.0	6.22	116.06	3,497.3	-23.6	48.3	-17.3	0.00	0.00	0.00
3,600.0	6.22	116.06	3,596.7	-28.4	58.0	-20.8	0.00	0.00	0.00
3,700.0	6.22	116.06	3,696.1	-33.1	67.7	-24.3	0.00	0.00	0.00
3,800.0	6.22	116.06	3,795.5	-37.9	77.5	-27.8	0.00	0.00	0.00
3,900.0	6.22	116.06	3,894.9	-42.6	87.2	-31.3	0.00	0.00	0.00
4,000.0	6.22	116.06	3,994.3	-47.4	96.9	-34.8	0.00	0.00	0.00
4,100.0	6.22	116.06	4,093.8	-52.2	106.7	-38.3	0.00	0.00	0.00
4,200.0	6.22	116.06	4,193.2	-56.9	116.4	-41.8	0.00	0.00	0.00
Cherry Canyon									

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
4,242.1	6.22	116.06	4,235.0	-58.9	120.5	-43.2	0.00	0.00	0.00
4,300.0	6.22	116.06	4,292.6	-61.7	126.1	-45.2	0.00	0.00	0.00
4,400.0	6.22	116.06	4,392.0	-66.4	135.8	-48.7	0.00	0.00	0.00
4,500.0	6.22	116.06	4,491.4	-71.2	145.6	-52.2	0.00	0.00	0.00
4,600.0	6.22	116.06	4,590.8	-75.9	155.3	-55.7	0.00	0.00	0.00
4,700.0	6.22	116.06	4,690.2	-80.7	165.0	-59.2	0.00	0.00	0.00
4,800.0	6.22	116.06	4,789.6	-85.5	174.7	-62.7	0.00	0.00	0.00
4,900.0	6.22	116.06	4,889.1	-90.2	184.5	-66.2	0.00	0.00	0.00
5,000.0	6.22	116.06	4,988.5	-95.0	194.2	-69.7	0.00	0.00	0.00
5,100.0	6.22	116.06	5,087.9	-99.7	203.9	-73.2	0.00	0.00	0.00
5,200.0	6.22	116.06	5,187.3	-104.5	213.6	-76.7	0.00	0.00	0.00
5,300.0	6.22	116.06	5,286.7	-109.2	223.4	-80.1	0.00	0.00	0.00
Brushy Canyon									
5,310.4	6.22	116.06	5,297.0	-109.7	224.4	-80.5	0.00	0.00	0.00
5,400.0	6.22	116.06	5,386.1	-114.0	233.1	-83.6	0.00	0.00	0.00
5,500.0	6.22	116.06	5,485.5	-118.8	242.8	-87.1	0.00	0.00	0.00
5,600.0	6.22	116.06	5,584.9	-123.5	252.6	-90.6	0.00	0.00	0.00
5,700.0	6.22	116.06	5,684.4	-128.3	262.3	-94.1	0.00	0.00	0.00
5,800.0	6.22	116.06	5,783.8	-133.0	272.0	-97.6	0.00	0.00	0.00
5,900.0	6.22	116.06	5,883.2	-137.8	281.7	-101.1	0.00	0.00	0.00
6,000.0	6.22	116.06	5,982.6	-142.5	291.5	-104.6	0.00	0.00	0.00
6,100.0	6.22	116.06	6,082.0	-147.3	301.2	-108.1	0.00	0.00	0.00
6,200.0	6.22	116.06	6,181.4	-152.1	310.9	-111.6	0.00	0.00	0.00
6,300.0	6.22	116.06	6,280.8	-156.8	320.6	-115.0	0.00	0.00	0.00
6,400.0	6.22	116.06	6,380.2	-161.6	330.4	-118.5	0.00	0.00	0.00
6,500.0	6.22	116.06	6,479.6	-166.3	340.1	-122.0	0.00	0.00	0.00
6,600.0	6.22	116.06	6,579.1	-171.1	349.8	-125.5	0.00	0.00	0.00
6,700.0	6.22	116.06	6,678.5	-175.8	359.5	-129.0	0.00	0.00	0.00
6,800.0	6.22	116.06	6,777.9	-180.6	369.3	-132.5	0.00	0.00	0.00
6,900.0	6.22	116.06	6,877.3	-185.4	379.0	-136.0	0.00	0.00	0.00
Bone Spring									
6,967.1	6.22	116.06	6,944.0	-188.6	385.5	-138.3	0.00	0.00	0.00
7,000.0	6.22	116.06	6,976.7	-190.1	388.7	-139.5	0.00	0.00	0.00
7,100.0	6.22	116.06	7,076.1	-194.9	398.5	-143.0	0.00	0.00	0.00
7,200.0	6.22	116.06	7,175.5	-199.6	408.2	-146.5	0.00	0.00	0.00
7,300.0	6.22	116.06	7,274.9	-204.4	417.9	-149.9	0.00	0.00	0.00
7,400.0	6.22	116.06	7,374.4	-209.1	427.6	-153.4	0.00	0.00	0.00
7,500.0	6.22	116.06	7,473.8	-213.9	437.4	-156.9	0.00	0.00	0.00
7,600.0	6.22	116.06	7,573.2	-218.7	447.1	-160.4	0.00	0.00	0.00
7,700.0	6.22	116.06	7,672.6	-223.4	456.8	-163.9	0.00	0.00	0.00
7,800.0	6.22	116.06	7,772.0	-228.2	466.5	-167.4	0.00	0.00	0.00
7,900.0	6.22	116.06	7,871.4	-232.9	476.3	-170.9	0.00	0.00	0.00
1st Bone Spring									
7,906.6	6.22	116.06	7,878.0	-233.2	476.9	-171.1	0.00	0.00	0.00
8,000.0	6.22	116.06	7,970.8	-237.7	486.0	-174.4	0.00	0.00	0.00
8,100.0	6.22	116.06	8,070.2	-242.4	495.7	-177.9	0.00	0.00	0.00
8,200.0	6.22	116.06	8,169.7	-247.2	505.4	-181.3	0.00	0.00	0.00
8,300.0	6.22	116.06	8,269.1	-252.0	515.2	-184.8	0.00	0.00	0.00
8,400.0	6.22	116.06	8,368.5	-256.7	524.9	-188.3	0.00	0.00	0.00
8,500.0	6.22	116.06	8,467.9	-261.5	534.6	-191.8	0.00	0.00	0.00
8,600.0	6.22	116.06	8,567.3	-266.2	544.4	-195.3	0.00	0.00	0.00
8,700.0	6.22	116.06	8,666.7	-271.0	554.1	-198.8	0.00	0.00	0.00

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
2nd Bone Spring									
8,727.4	6.22	116.06	8,694.0	-272.3	556.8	-199.8	0.00	0.00	0.00
8,800.0	6.22	116.06	8,766.1	-275.7	563.8	-202.3	0.00	0.00	0.00
8,900.0	6.22	116.06	8,865.5	-280.5	573.5	-205.8	0.00	0.00	0.00
9,000.0	6.22	116.06	8,964.9	-285.3	583.3	-209.3	0.00	0.00	0.00
9,100.0	6.22	116.06	9,064.4	-290.0	593.0	-212.8	0.00	0.00	0.00
9,200.0	6.22	116.06	9,163.8	-294.8	602.7	-216.2	0.00	0.00	0.00
9,300.0	6.22	116.06	9,263.2	-299.5	612.4	-219.7	0.00	0.00	0.00
Start Drop -3.00									
9,339.4	6.22	116.06	9,302.3	-301.4	616.3	-221.1	0.00	0.00	0.00
9,400.0	4.40	116.06	9,362.7	-303.9	621.3	-222.9	3.00	-3.00	0.00
9,500.0	1.40	116.06	9,462.6	-306.1	625.8	-224.5	3.00	-3.00	0.00
Start 1000.0 hold at 9546.6 MD									
9,546.6	0.00	0.00	9,509.1	-306.3	626.4	-224.7	3.00	-3.00	0.00
9,600.0	0.00	0.00	9,562.5	-306.3	626.4	-224.7	0.00	0.00	0.00
9,700.0	0.00	0.00	9,662.5	-306.3	626.4	-224.7	0.00	0.00	0.00
3rd Bone Spring									
9,789.5	0.00	0.00	9,752.0	-306.3	626.4	-224.7	0.00	0.00	0.00
9,800.0	0.00	0.00	9,762.5	-306.3	626.4	-224.7	0.00	0.00	0.00
Wolfcamp Top									
9,894.5	0.00	0.00	9,857.0	-306.3	626.4	-224.7	0.00	0.00	0.00
9,900.0	0.00	0.00	9,862.5	-306.3	626.4	-224.7	0.00	0.00	0.00
10,000.0	0.00	0.00	9,962.5	-306.3	626.4	-224.7	0.00	0.00	0.00
10,100.0	0.00	0.00	10,062.5	-306.3	626.4	-224.7	0.00	0.00	0.00
WC_X									
10,164.5	0.00	0.00	10,127.0	-306.3	626.4	-224.7	0.00	0.00	0.00
10,200.0	0.00	0.00	10,162.5	-306.3	626.4	-224.7	0.00	0.00	0.00
WC_Y									
10,244.5	0.00	0.00	10,207.0	-306.3	626.4	-224.7	0.00	0.00	0.00
Wolfcamp A									
10,269.5	0.00	0.00	10,232.0	-306.3	626.4	-224.7	0.00	0.00	0.00
10,300.0	0.00	0.00	10,262.5	-306.3	626.4	-224.7	0.00	0.00	0.00
10,400.0	0.00	0.00	10,362.5	-306.3	626.4	-224.7	0.00	0.00	0.00
10,500.0	0.00	0.00	10,462.5	-306.3	626.4	-224.7	0.00	0.00	0.00
Start Build 10.00									
10,546.6	0.00	0.00	10,509.1	-306.3	626.4	-224.7	0.00	0.00	0.00
10,550.0	0.34	359.78	10,512.5	-306.3	626.4	-224.7	10.00	10.00	0.00
10,600.0	5.34	359.78	10,562.5	-303.8	626.3	-222.3	10.00	10.00	0.00
10,650.0	10.34	359.78	10,612.0	-297.0	626.3	-215.5	10.00	10.00	0.00
Wolfcamp B									
10,662.2	11.57	359.78	10,624.0	-294.7	626.3	-213.2	10.00	10.00	0.00
10,700.0	15.34	359.78	10,660.7	-285.9	626.3	-204.5	10.00	10.00	0.00
10,750.0	20.34	359.78	10,708.3	-270.6	626.2	-189.3	10.00	10.00	0.00
10,800.0	25.34	359.78	10,754.4	-251.2	626.1	-170.1	10.00	10.00	0.00
10,850.0	30.34	359.78	10,798.6	-227.8	626.1	-146.9	10.00	10.00	0.00
Wolfcamp C									
10,896.9	35.03	359.78	10,838.0	-202.5	626.0	-121.8	10.00	10.00	0.00
10,900.0	35.34	359.78	10,840.6	-200.7	626.0	-120.0	10.00	10.00	0.00
10,950.0	40.34	359.78	10,880.0	-170.1	625.8	-89.6	10.00	10.00	0.00
Start 100.0 hold at 10996.6 MD									

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
10,996.6	45.00	359.78	10,914.2	-138.5	625.7	-58.3	10.00	10.00	0.00
11,000.0	45.00	359.78	10,916.7	-136.1	625.7	-55.9	0.00	0.00	0.00
Start DLS 10.00 TFO 0.00									
11,096.6	45.00	359.78	10,985.0	-67.8	625.4	11.8	0.00	0.00	0.00
11,100.0	45.34	359.78	10,987.4	-65.4	625.4	14.2	10.00	10.00	0.00
11,150.0	50.34	359.78	11,020.9	-28.3	625.3	50.9	10.00	10.00	0.00
11,200.0	55.34	359.78	11,051.1	11.5	625.1	90.4	10.00	10.00	0.00
11,250.0	60.34	359.78	11,077.7	53.8	625.0	132.4	10.00	10.00	0.00
11,300.0	65.34	359.78	11,100.5	98.3	624.8	176.5	10.00	10.00	0.00
Wolfcamp D									
11,340.2	69.36	359.78	11,116.0	135.4	624.7	213.2	10.00	10.00	0.00
11,350.0	70.34	359.78	11,119.4	144.6	624.6	222.4	10.00	10.00	0.00
11,400.0	75.34	359.78	11,134.1	192.4	624.4	269.7	10.00	10.00	0.00
Top Target									
11,440.6	79.40	359.78	11,143.0	232.0	624.3	309.0	10.00	10.00	0.00
11,450.0	80.34	359.78	11,144.7	241.2	624.3	318.2	10.00	10.00	0.00
11,500.0	85.34	359.78	11,150.9	290.8	624.1	367.4	10.00	10.00	0.00
11,550.0	90.34	359.78	11,152.8	340.8	623.9	416.9	10.00	10.00	0.00
Start 4405.7 hold at 11576.0 MD									
11,576.0	92.94	359.78	11,152.0	366.7	623.8	442.6	10.00	10.00	0.00
11,600.0	92.94	359.78	11,150.8	390.7	623.7	466.4	0.00	0.00	0.00
11,700.0	92.94	359.78	11,145.7	490.6	623.3	565.4	0.00	0.00	0.00
11,800.0	92.94	359.78	11,140.5	590.5	622.9	664.4	0.00	0.00	0.00
11,900.0	92.94	359.78	11,135.4	690.3	622.6	763.5	0.00	0.00	0.00
12,000.0	92.94	359.78	11,130.3	790.2	622.2	862.5	0.00	0.00	0.00
12,100.0	92.94	359.78	11,125.1	890.1	621.8	961.5	0.00	0.00	0.00
12,200.0	92.94	359.78	11,120.0	989.9	621.4	1,060.5	0.00	0.00	0.00
12,300.0	92.94	359.78	11,114.9	1,089.8	621.0	1,159.5	0.00	0.00	0.00
12,400.0	92.94	359.78	11,109.7	1,189.7	620.7	1,258.6	0.00	0.00	0.00
12,500.0	92.94	359.78	11,104.6	1,289.5	620.3	1,357.6	0.00	0.00	0.00
12,600.0	92.94	359.78	11,099.5	1,389.4	619.9	1,456.6	0.00	0.00	0.00
12,700.0	92.94	359.78	11,094.4	1,489.3	619.5	1,555.6	0.00	0.00	0.00
12,800.0	92.94	359.78	11,089.2	1,589.1	619.1	1,654.6	0.00	0.00	0.00
12,900.0	92.94	359.78	11,084.1	1,689.0	618.8	1,753.7	0.00	0.00	0.00
13,000.0	92.94	359.78	11,079.0	1,788.9	618.4	1,852.7	0.00	0.00	0.00
13,100.0	92.94	359.78	11,073.8	1,888.7	618.0	1,951.7	0.00	0.00	0.00
13,200.0	92.94	359.78	11,068.7	1,988.6	617.6	2,050.7	0.00	0.00	0.00
13,300.0	92.94	359.78	11,063.6	2,088.5	617.3	2,149.7	0.00	0.00	0.00
13,400.0	92.94	359.78	11,058.4	2,188.3	616.9	2,248.8	0.00	0.00	0.00
13,500.0	92.94	359.78	11,053.3	2,288.2	616.5	2,347.8	0.00	0.00	0.00
13,600.0	92.94	359.78	11,048.2	2,388.1	616.1	2,446.8	0.00	0.00	0.00
13,700.0	92.94	359.78	11,043.1	2,487.9	615.7	2,545.8	0.00	0.00	0.00
13,800.0	92.94	359.78	11,037.9	2,587.8	615.4	2,644.8	0.00	0.00	0.00
13,900.0	92.94	359.78	11,032.8	2,687.7	615.0	2,743.8	0.00	0.00	0.00
14,000.0	92.94	359.78	11,027.7	2,787.5	614.6	2,842.9	0.00	0.00	0.00
14,100.0	92.94	359.78	11,022.5	2,887.4	614.2	2,941.9	0.00	0.00	0.00
14,200.0	92.94	359.78	11,017.4	2,987.3	613.8	3,040.9	0.00	0.00	0.00
14,300.0	92.94	359.78	11,012.3	3,087.2	613.5	3,139.9	0.00	0.00	0.00
14,400.0	92.94	359.78	11,007.1	3,187.0	613.1	3,238.9	0.00	0.00	0.00
14,500.0	92.94	359.78	11,002.0	3,286.9	612.7	3,338.0	0.00	0.00	0.00
14,600.0	92.94	359.78	10,996.9	3,386.8	612.3	3,437.0	0.00	0.00	0.00
14,700.0	92.94	359.78	10,991.8	3,486.6	612.0	3,536.0	0.00	0.00	0.00

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

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)
14,800.0	92.94	359.78	10,986.6	3,586.5	611.6	3,635.0	0.00	0.00	0.00
14,900.0	92.94	359.78	10,981.5	3,686.4	611.2	3,734.0	0.00	0.00	0.00
15,000.0	92.94	359.78	10,976.4	3,786.2	610.8	3,833.1	0.00	0.00	0.00
15,100.0	92.94	359.78	10,971.2	3,886.1	610.4	3,932.1	0.00	0.00	0.00
15,200.0	92.94	359.78	10,966.1	3,986.0	610.1	4,031.1	0.00	0.00	0.00
15,300.0	92.94	359.78	10,961.0	4,085.8	609.7	4,130.1	0.00	0.00	0.00
15,400.0	92.94	359.78	10,955.8	4,185.7	609.3	4,229.1	0.00	0.00	0.00
15,500.0	92.94	359.78	10,950.7	4,285.6	608.9	4,328.2	0.00	0.00	0.00
15,600.0	92.94	359.78	10,945.6	4,385.4	608.5	4,427.2	0.00	0.00	0.00
15,700.0	92.94	359.78	10,940.4	4,485.3	608.2	4,526.2	0.00	0.00	0.00
15,800.0	92.94	359.78	10,935.3	4,585.2	607.8	4,625.2	0.00	0.00	0.00
15,900.0	92.94	359.78	10,930.2	4,685.0	607.4	4,724.2	0.00	0.00	0.00
TD at 15981.7									
15,981.7	92.94	359.78	10,926.0	4,766.6	607.1	4,805.1	0.00	0.00	0.00

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 East Pecos Feder - plan hits target center - Point	0.00	0.00	10,509.1	-306.3	626.4	371,265.06	655,419.76	32° 1' 12.553 N	103° 57' 54.837 W
PBHL East Pecos Fe - plan hits target center - Rectangle (sides W100.0 H4,447.4 D30.0)	-2.94	359.78	10,926.0	4,766.6	607.1	376,338.00	655,400.50	32° 2' 2.756 N	103° 57' 54.860 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.0	1,000.0	13 3/8"	13-3/8	17-1/2
2,856.0	2,856.0	9 5/8"	9-5/8	12-1/4

Database:	EDM5002	**Local Co-ordinate Reference:**	Well 22-14H
Company:	WPX	**TVD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Project:	Eddy County, NM (Nad83NME)	**MD Reference:**	2882' GL + 25' RKB @ 2907.0usft (Orion Phoenix)
Site:	East Pecos Federal Com 22-14H	**North Reference:**	Grid
Well:	22-14H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Design #3		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,181.8	3,181.0	Bell Canyon (Base of Salt)		0.00	
4,242.1	4,235.0	Cherry Canyon		0.00	
5,310.4	5,297.0	Brushy Canyon		0.00	
6,967.1	6,944.0	Bone Spring		0.00	
7,906.6	7,878.0	1st Bone Spring		0.00	
8,727.4	8,694.0	2nd Bone Spring		0.00	
9,789.5	9,752.0	3rd Bone Spring		0.00	
9,894.5	9,857.0	Wolfcamp Top		0.00	
10,164.5	10,127.0	WC_X		0.00	
10,244.5	10,207.0	WC_Y		0.00	
10,269.5	10,232.0	Wolfcamp A		0.00	
10,662.2	10,624.0	Wolfcamp B		0.00	
10,896.9	10,838.0	Wolfcamp C		0.00	
11,340.2	11,116.0	Wolfcamp D		0.00	
11,440.6	11,143.0	Top Target		0.00	

Plan Annotations

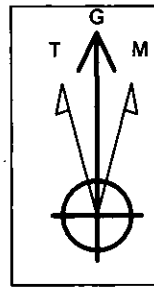
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,900.0	2,900.0	0.0	0.0	Start Build 3.00
3,107.2	3,106.8	-4.9	10.1	Start 6232.2 hold at 3107.2 MD
9,339.4	9,302.3	-301.4	616.3	Start Drop -3.00
9,546.6	9,509.1	-306.3	626.4	Start 1000.0 hold at 9546.6 MD
10,546.6	10,509.1	-306.3	626.4	Start Build 10.00
10,996.6	10,914.2	-138.5	625.7	Start 100.0 hold at 10996.6 MD
11,096.6	10,985.0	-67.8	625.4	Start DLS 10.00 TFO 0.00
11,576.0	11,152.0	366.7	623.8	Start 4405.7 hold at 11576.0 MD
15,981.7	10,926.0	4,766.6	607.1	TD at 15981.7

Company Name: WPX
22-14H
Eddy County, NM (Nad83NME)
Rig: Orion Phoenix
Created By: Keith Noack
Date: 05/20/2016

22-14H
Eddy County, NM (Nad83NME)
Q160266 & WT-160***
Design #3

WPXENERGY

QES
DIRECTIONAL DRILLING



Azimuths to Grid North
Correction: 7.03°

Magnetic Field
Strength: 47881.5snT
Dip Angle: 59.82°
Date: 6/15/2016
Model: IGRF2015

PROJECT DETAILS:	Eddy County, NM (Nad83NME)
Geodetic System:	US State Plane 1983
Datum:	North American Datum 1983
Ellipsoid:	GRS 1980
Zone:	New Mexico Eastern Zone
System Datum:	Mean Sea Level

WELL DETAILS: 22-14H
Ground Level: 2882.0

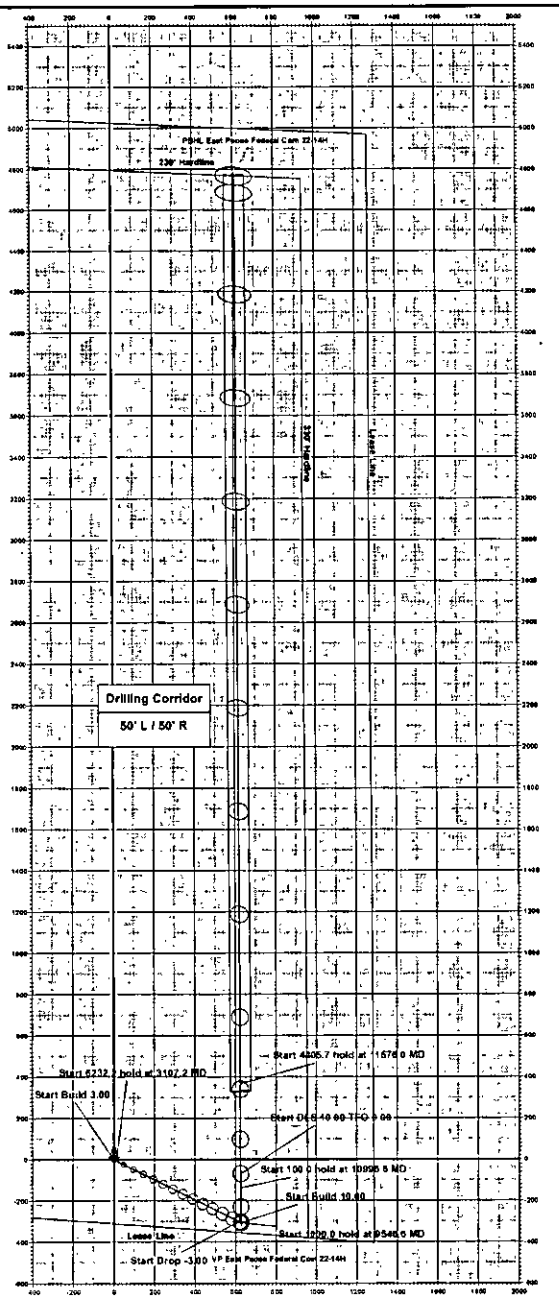
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	371571.40	654793.40	32° 1' 15.608 N	103° 58' 2.160 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
VP East Pecos Federal Com 22-14H	10580.0	-306.3	625.4	371265.06	655418.76	32° 1' 12.553 N	103° 57' 54.837 W
PBHL East Pecos Federal Com 22-14H	10926.0	4786.6	607.1	376330.90	655400.50	32° 2' 2.796 N	103° 57' 54.888 W

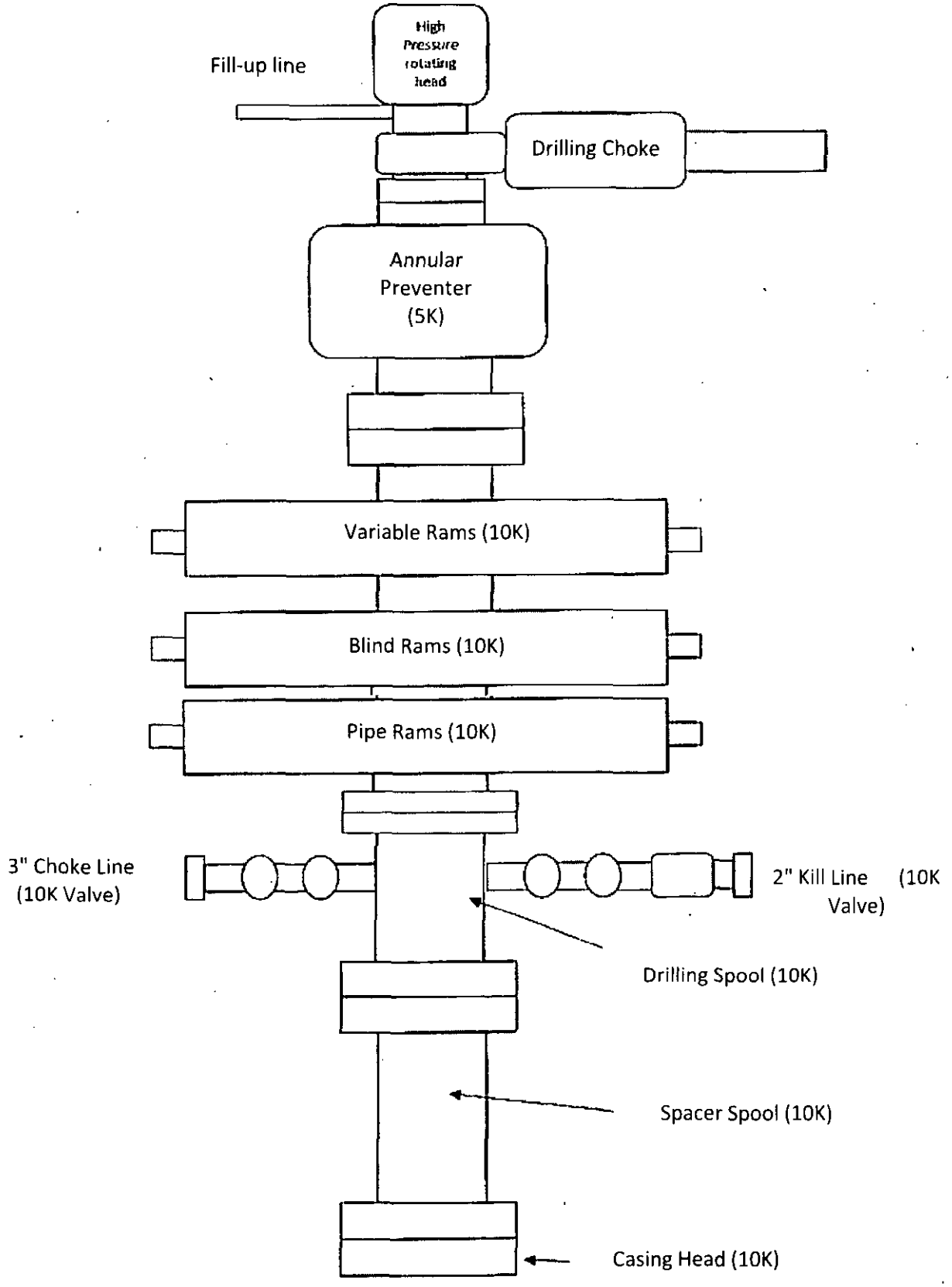
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
2900.0	0.00	0.00	2900.0	0.0	0.0	0.0	0.0	Start Build 3.00
3107.2	6.22	115.06	3106.8	-4.9	10.1	-3.6	11.2	Start 6232.2 hold at 3107.2 MD
9238.4	6.22	115.06	9202.3	-201.4	416.3	-221.1	458.0	Start Drop -3.00
9548.6	0.00	0.00	9509.1	-206.3	625.4	-224.2	687.3	Start 1000.0 hold at 9548.6 MD
10548.6	0.00	0.00	10589.1	-306.3	625.4	-224.7	687.3	Start Build 10.00
10996.8	45.00	359.78	10814.2	-136.5	625.7	-56.3	685.1	Start 100.2 hold at 10996.6 MD
11096.8	45.00	359.78	10945.8	-67.8	625.4	11.8	935.8	Start DLS 10.00 TFO 0.00
11576.6	92.94	359.78	11152.0	366.7	623.5	442.8	1370.3	Start 4405.7 hold at 11576.6 MD
15981.7	92.94	359.78	10926.0	4786.6	607.1	4885.1	5778.2	TD at 15981.7



Vertical Section at 7.26° (200 usft/in)

11" 10K psi BOP



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Explor & Prod
LEASE NO.:	NM21767
WELL NAME & NO.:	14H-East Pecos Federal Com 22
SURFACE HOLE FOOTAGE:	310'/S & 1285'/E
BOTTOM HOLE FOOTAGE	230'/N & 660'/E
LOCATION:	Section 22, T. 26 S., R. 29 E., NMPM
COUNTY:	Eddy County, New Mexico

A. CASING

All previous COAs still apply except the following:

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.

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

1. The **13 3/8** inch surface casing shall be set at approximately **350 (above the salt, 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.

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.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

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.

Formation below the 7" 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.

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

   ☒ Cement as proposed by operator. 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.

B. 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 53.

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/10M 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 **Third Bone Spring Sandstone** 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.