

District I1625 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 Road, 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 and Natural Resources****Oil Conservation Division**

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-101
Revised October 25, 2012☐ AMENDED REPORT**RECEIVED**

JUL 31 2013

NMOCD ARTESIA**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

1. Operator Name and Address RKI Exploration & Production, LLC 210 Park Avenue, Suite 900 Oklahoma City, OK 73102		2. OGRID Number 246289
3. Property Code 39546		4. API Number 30-015-41587
5. Property Name Pinnacle State 36		6. Well No. 32H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
C	36	22S	28E		150	NORTH	1700	WEST	EDDY

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
N	36	22S	28E		330	SOUTH	1715	WEST	EDDY

9. Pool Information

Culebra Bluff; Bone Spring, South (15011)	15011
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Additional Well Information

11. Work Type N	12. Well Type O	13. Cable/Rotary R	14. Lease Type S	15. Ground Level Elevation 3,143 feet
16. Multiple No	17. Proposed Depth 12,967 feet	18. Formation Bone Spring	19. Contractor	20. Spud Date ASAP
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
SURFACE	17 1/2 in.	13 3/8 in.	54.5#/I-55	950 feet	804 SKS	SURFACE
INTERMEDIATE	12-1/4 in.	9 5/8 in.	40#/I-55	4,000 feet	1008 SKS	SURFACE
PRODUCTION	8 3/4 in.	5 1/2 in.	17#/HCP-110	12,967 feet	1,596 SKS	3,700 feet

Casing/Cement Program: Additional Comments

REFER TO ATTACHED DRILLING PLAN FOR DETAILED DATA. PLEASE ALSO BE ADVISED THAT A CLOSED LOOP SYSTEM WILL BE USED FOR THE SUBJECT WELL.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
REFER TO ATTACHED DRILLING PLAN FOR DETAIL	3,000 PSI	3,000 PSI	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒, if applicable.

Signature:

Charles K. Ahn

Printed name: Charles K. Ahn

Title: EH&S/Regulatory Manager

E-mail Address: cahn@rkixp.com

Date: 7/31/2013

Phone: 405-996-5771

OIL CONSERVATION DIVISION

Approved By:

T.C. Shepard

Title:

Approved Date:

8/1/2013

Expiration Date:

8/1/2015

Conditions of Approval Attached

DISTRICT I
1625 N. Peach Dr., El Paso, NM 88240
Phone: (505) 334-6161 Fax: (505) 334-6170

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-0720

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DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3400 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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41587	Pool Code 15011	Pool Name Culebra Bluff, Bone Spring, South (15011)
Property Code 39546	Property Name PINNACLE STATE 36	Well Number 32H
OGRID No. 246289	Operator Name RKI EXPLORATION & PRODUCTION	Elevation 3142.5'

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	36	22 S	28 E		150	NORTH	1700	WEST	EDDY

Bottom Hole Location If Different From Surface

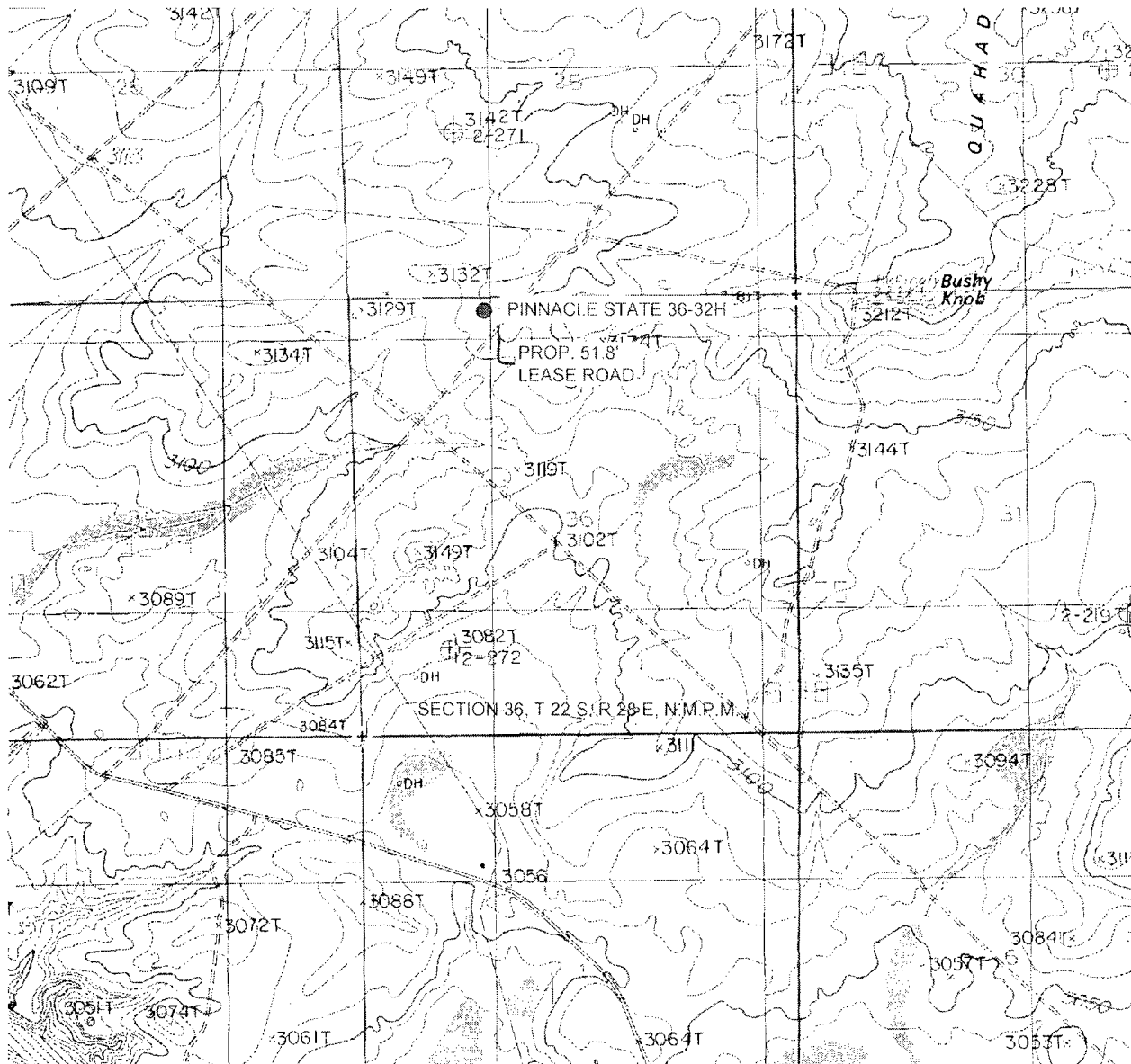
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	36	22 S	28 E		330	SOUTH	1715	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
160			

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.

<p>NW COR SEC 36 NMSP-E (NAD 83) Y = 493552.8' N X = 628838.2' E LAT. = N32° 21' 23.50" LONG. = W104° 02' 59.86"</p> <p>1st Take Point 330' FNL 1700' FWL</p>	<p>PINNACLE STATE 36-32H SHL ELEV. = 3142.5' NMSP-E (NAD 83) Y = 493416.9' N X = 630544.9' E LAT. = N32° 21' 22.11" LONG. = W104° 02' 39.96"</p>	<p>NE COR SEC 36 NMSP-E (NAD 83) Y = 493601.4' N X = 634425.0' E LAT. = N32° 21' 23.83" LONG. = W104° 01' 54.72"</p>	<p>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.</p> <p><i>Charles K. Ahn</i> 7/31/2013 Signature Date</p> <p>Charles K. Ahn Print Name</p> <p>cahn@rkixp.com E-mail Address</p>
<p>SW COR SEC 36 NMSP-E (NAD 83) Y = 488269.4' N X = 629074.8' E LAT. = N32° 20' 31.21" LONG. = W104° 02' 57.26"</p>	<p>PINNACLE STATE 36-32H BHL NMSP-E (NAD 83) Y = 488615.7' N X = 630776.1' E LAT. = N32° 20' 34.60" LONG. = W104° 02' 37.42"</p>	<p>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.</p> <p>Nov. 5, 2012 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p>	<p>JAMES E. TOMPKINS NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR 14729</p> <p><i>James E. Tompkins</i></p> <p>Job No. WTC48742 JAMES E. TOMPKINS 14729 Certificate Number</p>

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

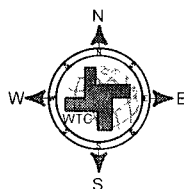
SECTION 36, T 22 S, R 28 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 150' FNL & 1700' FWL

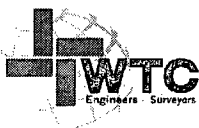
OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: Pinnacle State 36-32H



DRIVING DIRECTIONS:

From the intersection of New Mexico State Highway 31 & County Road 605 (US Refinery Road). Go North on County Road 605 for 2.3 miles to lease road right. Go right for 1.3 miles and the location is on the left.

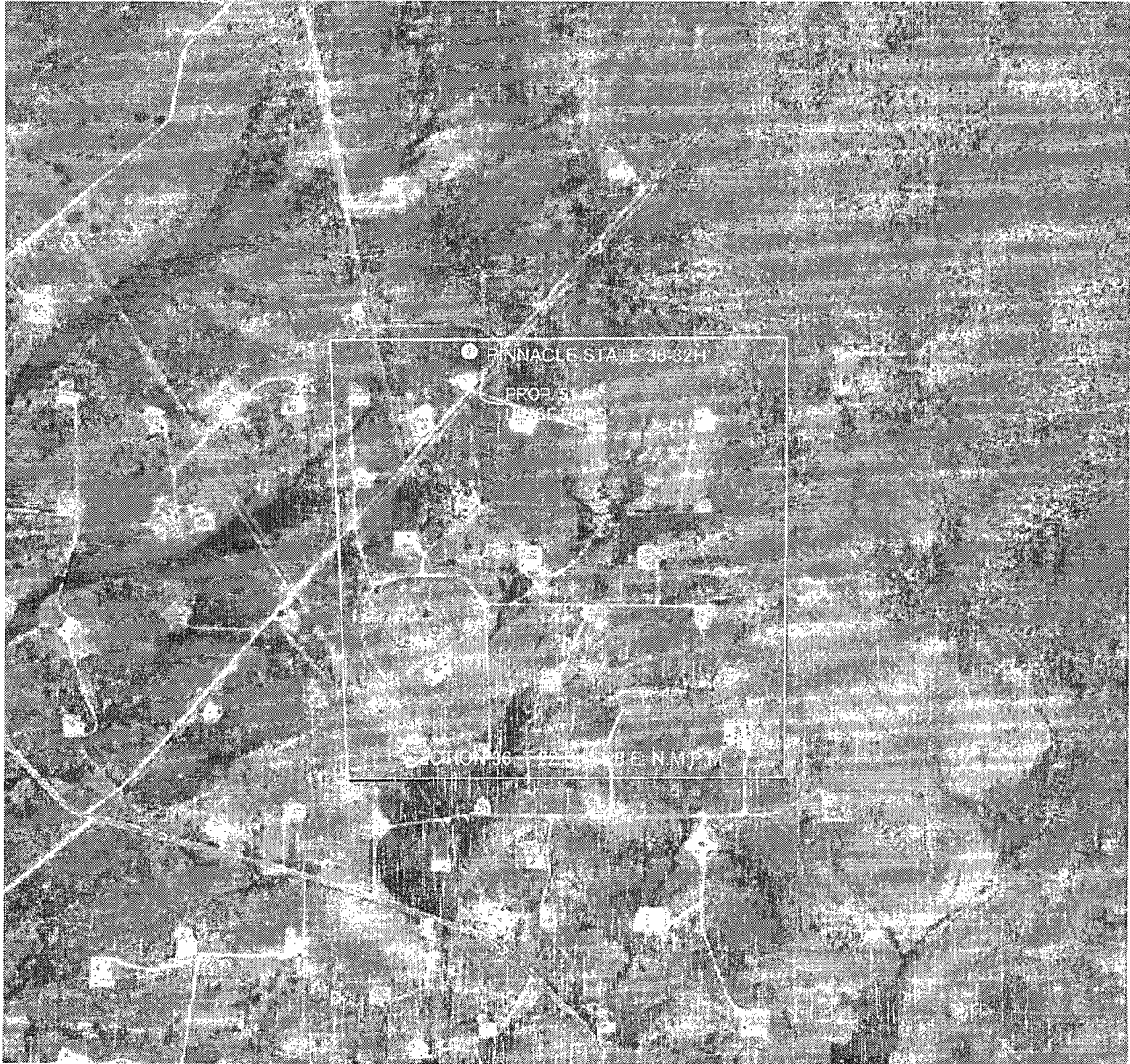


WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S.W. 1st STREET
ANDREWS, TEXAS 79714
(432) 523-2181

RKI EXPLORATION & PRODUCTION

JOB No.: WTC48742

AERIAL MAP



SCALE: 1" = 2000'

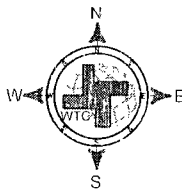
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DESCRIPTION: 150' FNL & 1700' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

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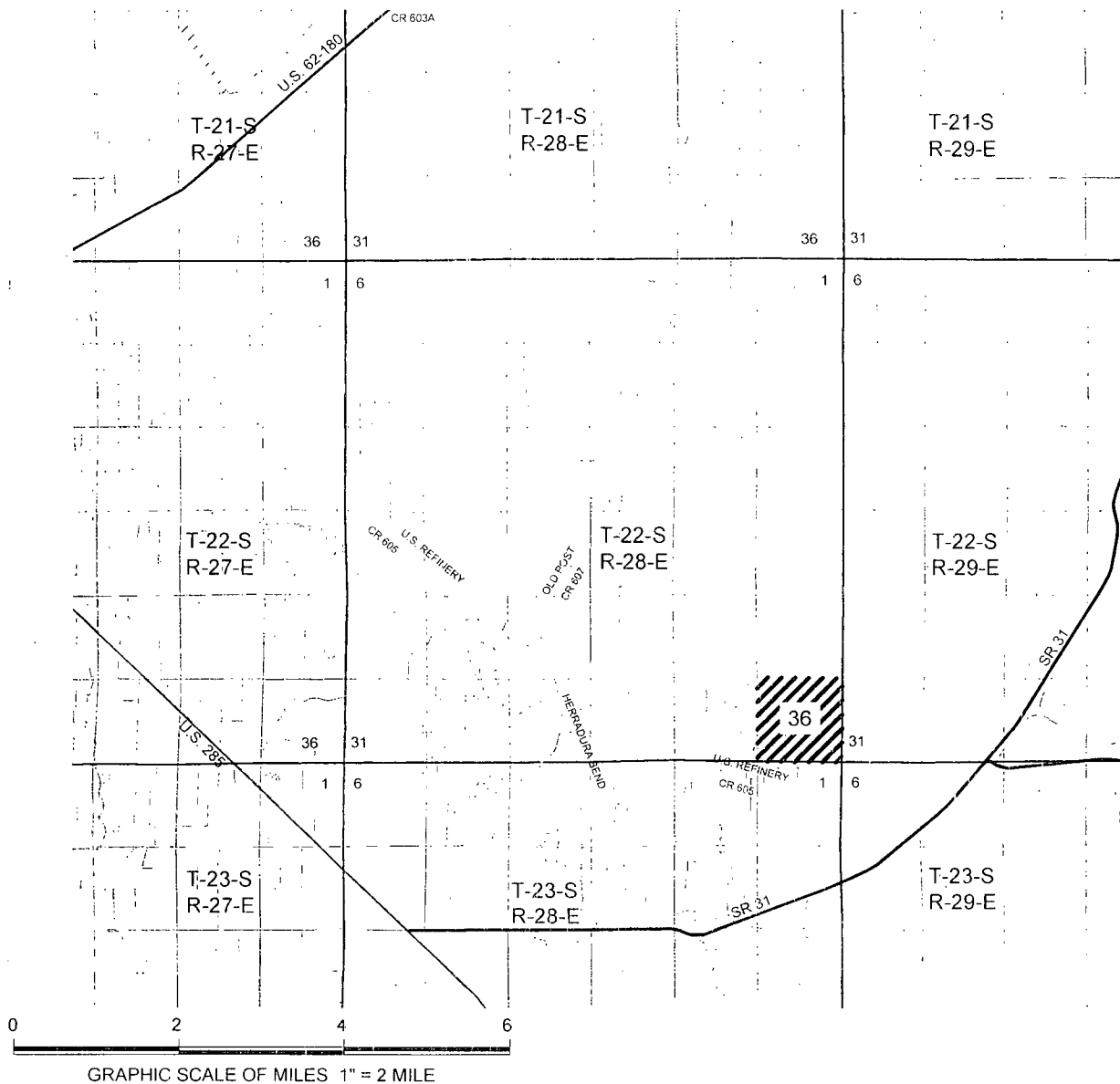


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VICINITY MAP



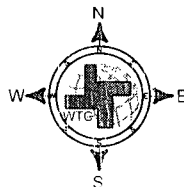
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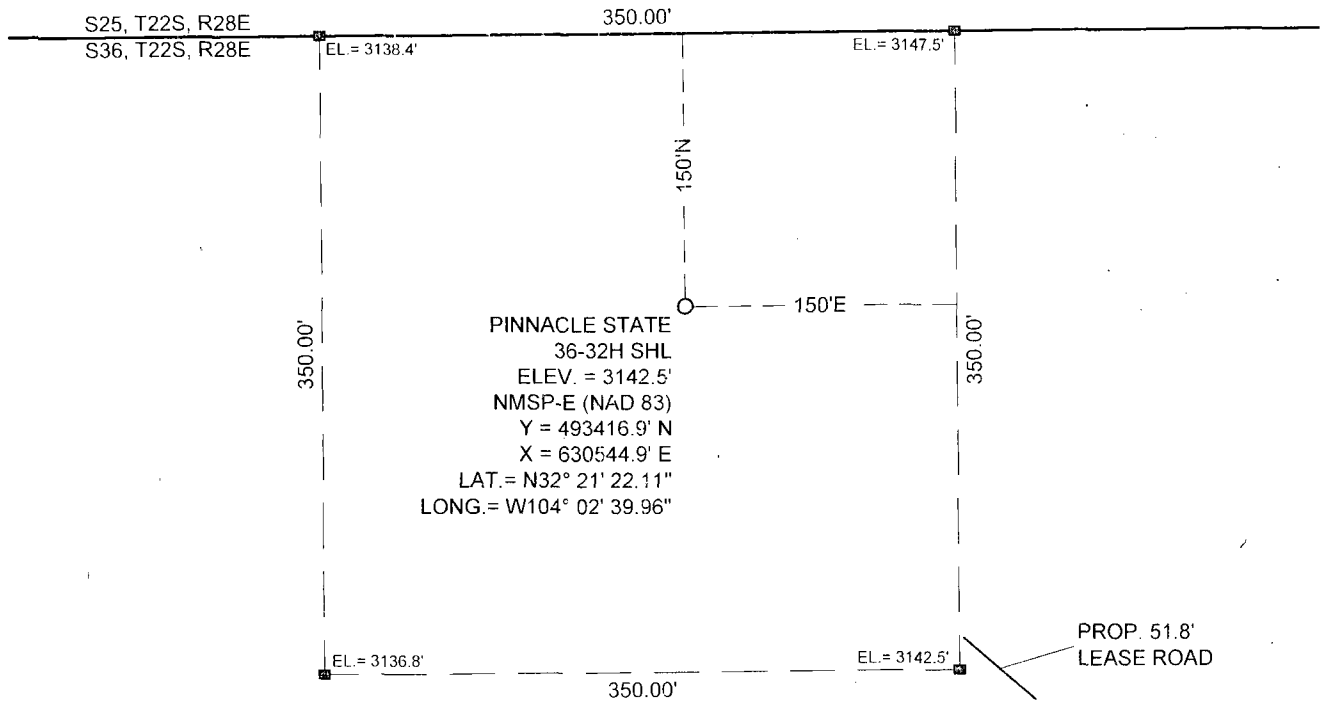


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RKI EXPLORATION & PRODUCTION

JOB No.: WTC48742

SITE LOCATION



SCALE: 1" = 100'

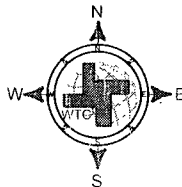
SECTION 36, T 22 S, R 28 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 150' FNL & 1700' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: PINNACLE STATE 36-32H



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RKI EXPLORATION & PRODUCTION

JOB No.: WTC48742

RKI Exploration & Production, LLC

Well Pinnacle State 36-32H

Location Surface: 150 FNL 1,700 FWL Sec. 36-22S-28E
Bottom Hole: 330 FSL 1,715 FWL Sec. 36-22S-28E

County Eddy
State New Mexico

- 1) The elevation of the unprepared ground is 3,143 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 12,967 feet and run casing & cement.
This equipment will then be rigged down and the well will be completed with a workover rig.
- 4) Proposed depth is 12,967 feet

5) Estimated tops:

	MD	TVD		
Lamar Lime	2,774	2,774		
Base of Lime	2,814	2,814		
Delaware Top	2,900	2,900		
Bell Canyon Sand	2,900	2,900		
Cherry Canyon Sand	3,681	3,681		
Brushy Canyon Sand	5,905	5,905		
Bone Spring Lime	6,071	6,071	Oil	2,671 psi
Avalon Sand	6,175	6,175	Oil	2,717 psi
Bone Spring 1st Sand	7,332	7,332	Oil	3,226 psi
KOP	7,833	7,833	Oil	3,447 psi
Bone Spring 2nd Sand	8,097	8,088	Oil	3,563 psi
Landing Point	8,740	8,406	Oil	3,699 psi
TD	12,967	8,356	Oil	3,677 psi

BHP = .44 psi/ft x depth

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	950	13 3/8"	54.5#/J-55	ST&C	2.70	13.06	9.93
12 1/4"	0	4,000	9 5/8"	40#/J-55	LT&C	1.15	4.49	3.25
8 3/4"	0	12,967	5 1/2"	17#/HCP-110	LT&C	2.23	1.55	5.48
Collapse	1.125							
Burst	1.0							
Tension	2.0							

7) Cement program:

Surface	17 1/2" hole				
Pipe OD	13 3/8"				
Setting Depth	950 ft				
Annular Volume	0.69462 cf/ft				
Excess	1			100 %	
Lead	604 sx	1.74	cf/sk	13.5 ppg	
Tail	200 sx	1.34	cf/sk	14.8 ppg	
Lead: "C" + 4% PF20 + 2% PF1 + .125 pps PF29 + .25 ps PF46					
Tail: "C" + 1% PF1					
Top of cement: Surface					
Intermediate	12 1/4" hole				
Pipe OD	9 5/8"				
Setting Depth	4,000 ft				
Annular Volume	0.31318 cf/ft			0.3627 cf/ft	
Excess	0.5			50 %	
Lead	808 sx	1.92 cf/sk	12.9 ppg		

Tail

200 sx

1.33 cf/sk

14.8 ppg

Lead: 35/65 Poz/C + 5% PF44 + 6% PF20 + 3 pps PF42 + .125 pps PF29 + 0.4 pps PF46 + 1% PF1

Tail: "C" + .2% PF13

Top of cement: Surface

Production	8 3/4" hole		
Pipe OD	5 1/2"		
Setting Depth	12,967 ft		
Annular Volume	0.2526 cf/ft	0.26074 cf/ft	300 ft
Excess	0.28	28 %	
DV Tool Depth	5500. ft		

Stage 1

Lead:	503 sx	2.08 cf/sk	11.5 ppg
Tail:	732 sx	1.87 cf/sk	13.0 ppg
Lead:	PVL + .5% CC + .3% PF79 (extender) + .25 pps PF46 (defoamer) + 3 pps PF42 (Kolite) + .125 pps + .125 pps PF29 (Cellophane) + .2% PF13 (retarder)		
Tail:	PVL + 30% PF151 (calcium carbonate) + .5% PF174 (expanding agent) + .7% PF606 + .7% PF606 (gel suppressing agent) + .2% PF153 (antisettling agent) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)		
Top of cement:	DV tool		

Stage 2

Lead:	186 sx	1.89 cf/sk	12.9 ppg
Tail:	175 sx	1.33 cf/sk	14.8 ppg
Lead:	35/65 Poz "C" + 5% PF44 (salt) + 6% PF20 (gel) + .125 pps PF29 (cellophane) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)		
Tail:	"C" + .2% PF13 (retarder)		
Top of cement:	3,700 ft		

8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (3,000 psi WP) preventer, a bag-type annular preventer (3,000 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" 3M 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 3,000 psi and the annular will be tested to 1,500 psi after setting each casing string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1,500 psi whichever is greater, but not to exceed 70% of the minimum yield.

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	Fluid Loss	Type System
	0	950	8.5 to 8.9	32 to 36	Fresh Water
	950	4,000	9.8 to 10.0	28 to 30	Brine
	4,000	12,967	8.9 to 9.1	28 to 36	Fresh Water

10) Logging, coring, and testing program:

No drill stem test are planned

Total depth to intermediate: CNL, Caliper, GR, DLL,

Intermediate to surface: CNL, GR

No coring is planned

11) Potential hazards:

No abnormal pressures or temperatures are expected. There is no known presences of H2S in this area, although some form a of H2S detection equipment will be utilized. Gas and pit level monitoring equipment will be utilized below the 9 5/8" casing as deemed necessary. Lost circulation and weighting material will be available.

12) Anticipated start date

ASAP

Duration

25 days

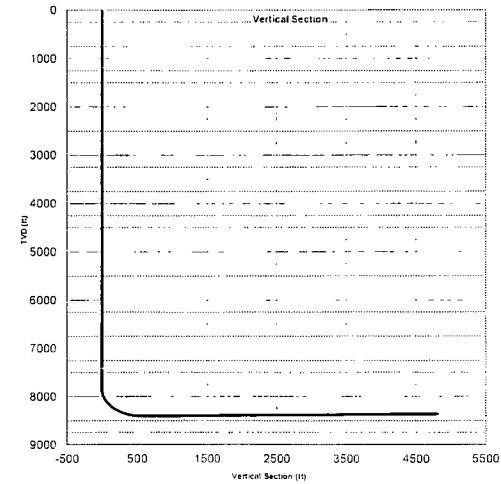
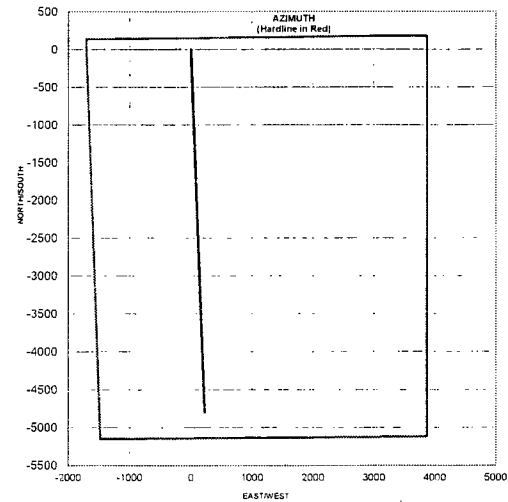
RKI EXPLORATION

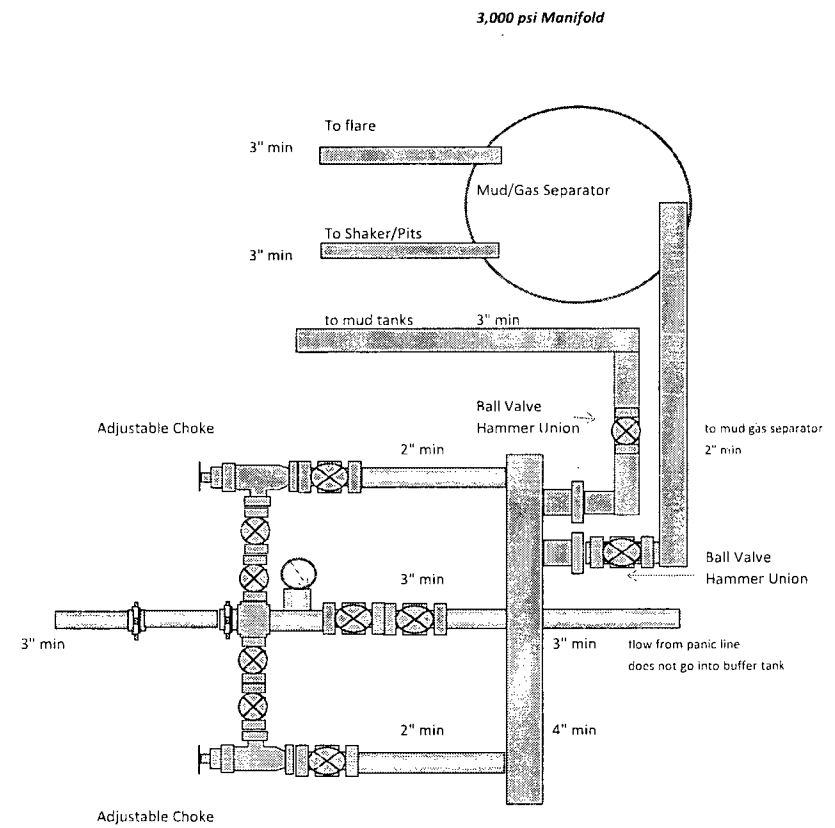
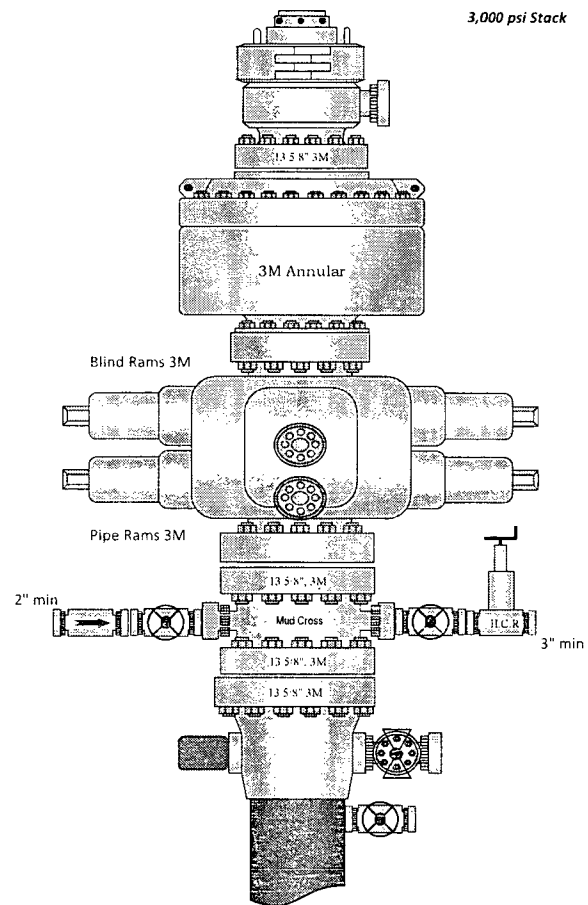
RIG:

WELL: Pinnacle State 36-32H (Eddy County, NM)
LOCATION: 150' FNL & 1700' FWL 36-22S-28E
BHL: 330' FSL & 1715' FWL 36-22S-28E

Target Direction: 177.24 deg
North/South Hard Line: 330
East/West Hard Line: 1.715

STATION NUMBER	SURVEY DEPTH	INC	AZMTH	TVD	N-S	E-W	VERT. SECTION	DLS/100
Tie-In								
1								
2	1000.0			1000				
3	2000.0			2000				
4	3000.0			3000				
5	4000.0			4000				
6	5000.0			5000				
7	6000.0			6000				
8	7000.0			7000				
KOP	7833.0			7833				
10	7933.0	10.00	177.24	7932	-9	0	9	10.0
11	8033.0	20.00	177.24	8029	-35	2	35	10.0
12	8097.0	26.40	177.24	8088	-60	3	60	10.0
13	8133.0	30.00	177.24	8119	-77	4	77	10.0
14	8233.0	40.00	177.24	8201	-134	6	134	10.0
15	8333.0	50.00	177.24	8272	-204	10	205	10.0
16	8433.0	60.00	177.24	8329	-286	14	286	10.0
17	8533.0	70.00	177.24	8371	-377	18	377	10.0
18	8633.0	80.00	177.24	8397	-473	23	473	10.0
EOC	8740.0	90.68	177.24	8405	-579	28	580	10.0
20	8833.0	90.68	177.24	8405	-672	32	673	
21	8933.0	90.68	177.24	8404	-772	37	773	
22	8745.0	90.68	177.24	8406	-584	28	585	
23	8845.0	90.68	177.24	8405	-684	33	685	
24	8945.0	90.68	177.24	8404	-784	38	785	
25	9000.0	90.68	177.24	8403	-839	40	840	
26	9250.0	90.68	177.24	8400	-1089	52	1090	
27	9500.0	90.68	177.24	8397	-1338	65	1340	
28	9750.0	90.68	177.24	8394	-1588	77	1590	
29	10000.0	90.68	177.24	8391	-1838	89	1840	
30	10250.0	90.68	177.24	8388	-2087	101	2090	
31	10500.0	90.68	177.24	8385	-2337	113	2340	
32	10750.0	90.68	177.24	8382	-2587	125	2590	
33	11000.0	90.68	177.24	8379	-2837	137	2840	
34	11250.0	90.68	177.24	8376	-3086	149	3090	
35	11500.0	90.68	177.24	8373	-3336	161	3340	
36	11750.0	90.68	177.24	8370	-3586	173	3590	
37	12000.0	90.68	177.24	8367	-3835	185	3840	
38	12250.0	90.68	177.24	8365	-4085	197	4090	
39	12500.0	90.68	177.24	8362	-4335	209	4340	
40	12750.0	90.68	177.24	8359	-4584	221	4590	
TD	12967.0	90.68	177.24	8356	-4801	231	4897	





Permit Conditions of Approval

API: 30-015-41587

OCD Reviewer	Condition
CSHAPARD	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.