Carlsbad Field Office
OCD Artesia
OCT 19 2015
NM OIL CONSERVATION
ARTESIA, NM

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM-555443, NM-011042, NM-554774

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
ROSS DRAW UNIT (NMNM-71027X)

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
ROSS DRAW UNIT #67H

2. Name of Operator RKI EXPLORATION & PRODUCTION, LLC.

9. API Well No.
30-015-43424

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

3b. Phone No. *(include area code)*
(405) 987-2226 (SAM McCURDY)

10. Field and Pool, or Exploratory
UNDESIGNATED WOLFCAMP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 330 FNL & 2060 FEL
At proposed prod. zone 500 FSL & 1980 FEL

11. Sec., T. R. M. or Blk. and Survey or Area
SHL: SECTION 27, T. 26 S., R. 30 E.
BHL: SECTION 34, T. 26 S., R. 30 E.

14. Distance in miles and direction from nearest town or post office*
15 MILES SOUTHEAST OF MALAGA, NM

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
SHL: 330'
BHL: 500'

16. No. of acres in lease
SHL: 320
BHL: 194.62

17. Spacing Unit dedicated to this well
449.91

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
SHL: 25'
BHL: 650'

19. Proposed Depth
TVD: 10,905'
MD: 16,955'

20. BLM/BIA Bond No. on file
NLM-NMB-000460

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3025' GL

22. Approximate date work will start*
ASAP

23. Estimated duration
35 DAYS

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature
Name *(Printed/Typed)* BARRY W. HUNT
Date 11/6/14

Title
PERMIT AGENT FOR RKI EXPLORATION & PRODUCTION, LLC.

Approved by *(Signature)* Steve Caffey
Name *(Printed/Typed)*
Date OCT - 7 2015

Title FIELD MANAGER
Office CARLSBAD FIELD OFFICE

Application approval 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.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

10/29/15

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

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

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
30-015-43424	84330	~~ROSS DRAW~~ ~~UNDESIGNATED~~ WOLFCAMP (GAS)

Property Code	Property Name	Well Number
312431	ROSS DRAW UNIT	67H

OGRID No.	Operator Name	Elevation
246289	RKI EXPLORATION & PRODUCTION	3025'

Surface Location

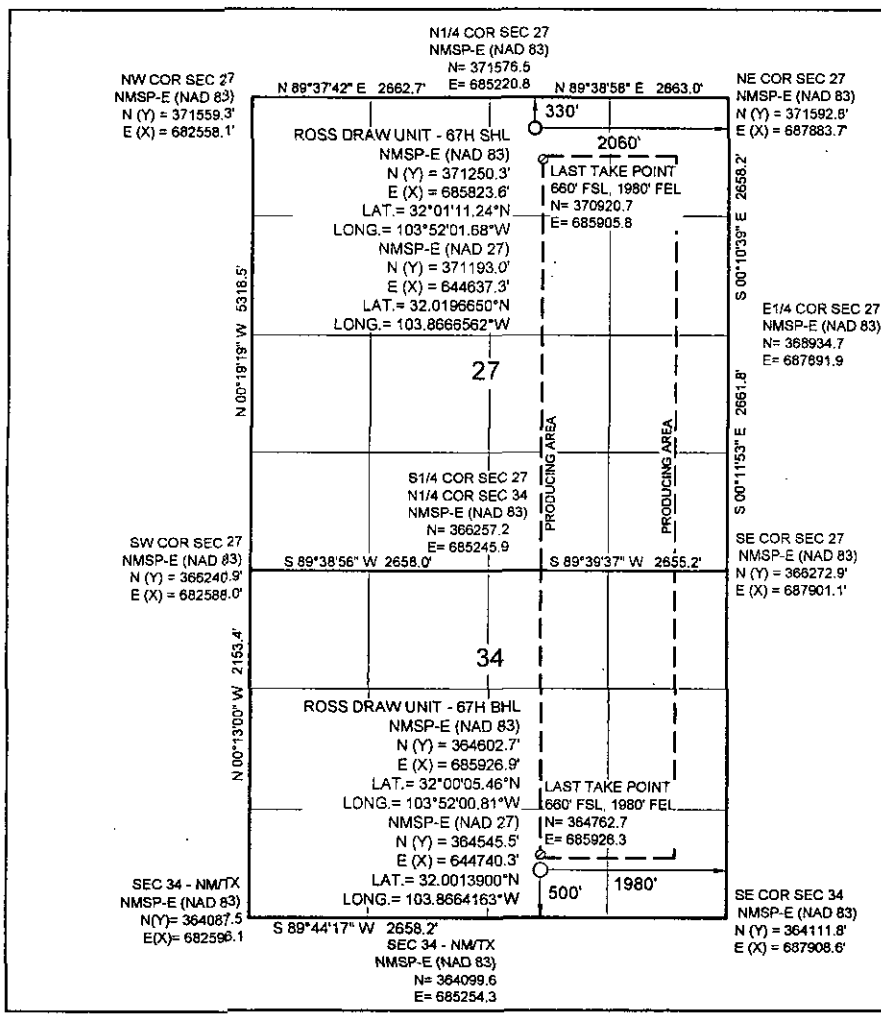
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	27	26 S	30 E		330	NORTH	2060	EAST	EDDY

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
2/G	34	26 S	30 E		500	SOUTH	1980	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
449.91			

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 11/5/14
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.

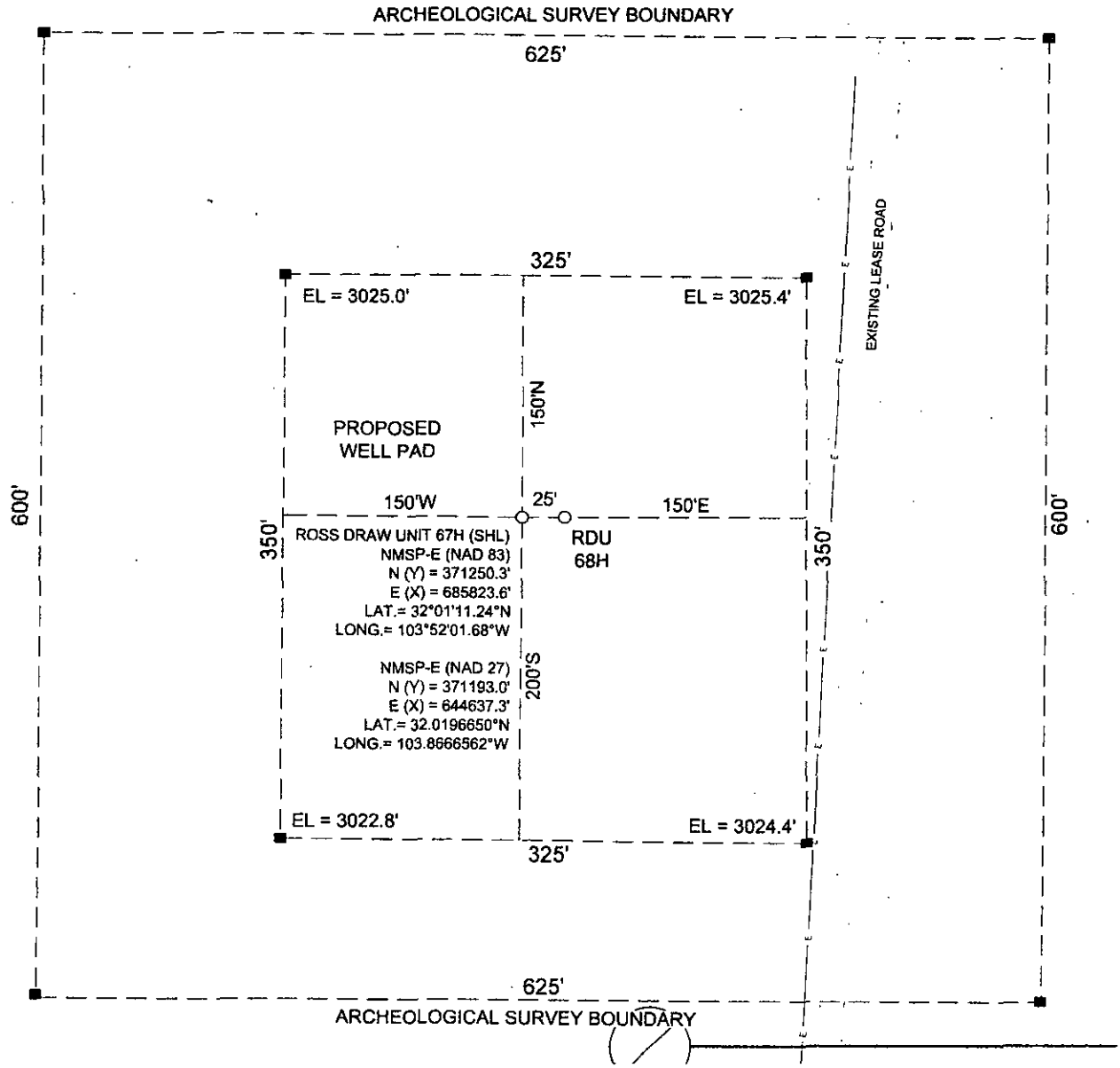
SEPTEMBER 10, 2014
Date of Survey

Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS NEW MEXICO 14729 REGISTERED PROFESSIONAL LAND SURVEYOR

Job No.: WTC49642
JAMES E. TOMPKINS 14729
Certificate Number

SITE LOCATION



0 50 100 200

GRAPHIC SCALE 1" = 100'

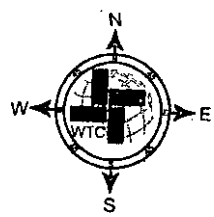
SECTION 27 T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 330' FNL & 2060' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: ROSS DRAW UNIT 67H



DRIVING DIRECTIONS:

FROM THE INTERSECTION OF HWY 285 AND TX RD 652 (ORLA, TEXAS) GO NORTHEAST 18.0 MILES ON TX RD 652 TO INTERSECTION OF NM J-1 (TX RD. 652) & STATE LINE ROAD GO WEST 9.2 MILES TO LEASE ROAD RIGHT. THEN GO NORTH 0.6 MILES ON LEASE ROAD TO LEASE ROAD RIGHT. GO EAST 0.2 MILES TO LEASE ROAD LEFT. GO NORTH 0.3 MILES.THE LOCATION IS APPROXIMATELY 200 FEET TO THE LEFT.

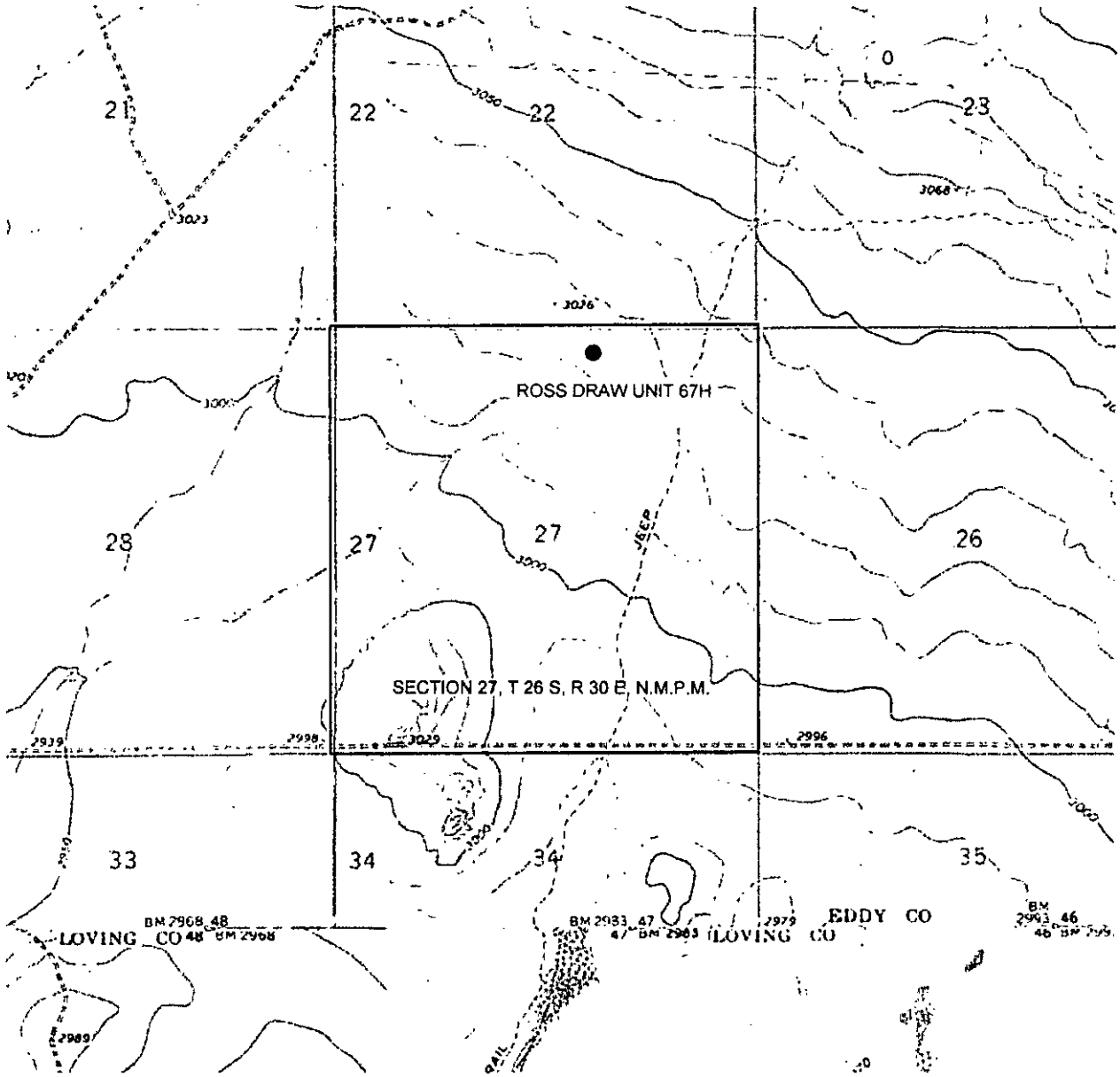
WTC

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

RKI EXPLORATION & PRODUCTION

JOB No.: WTC49642

LOCATION VERIFICATION MAP



GRAPHIC SCALE 1" = 2000'

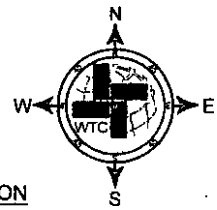
SECTION 27 T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 330' FNL & 2060' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: ROSS DRAW UNIT 67H



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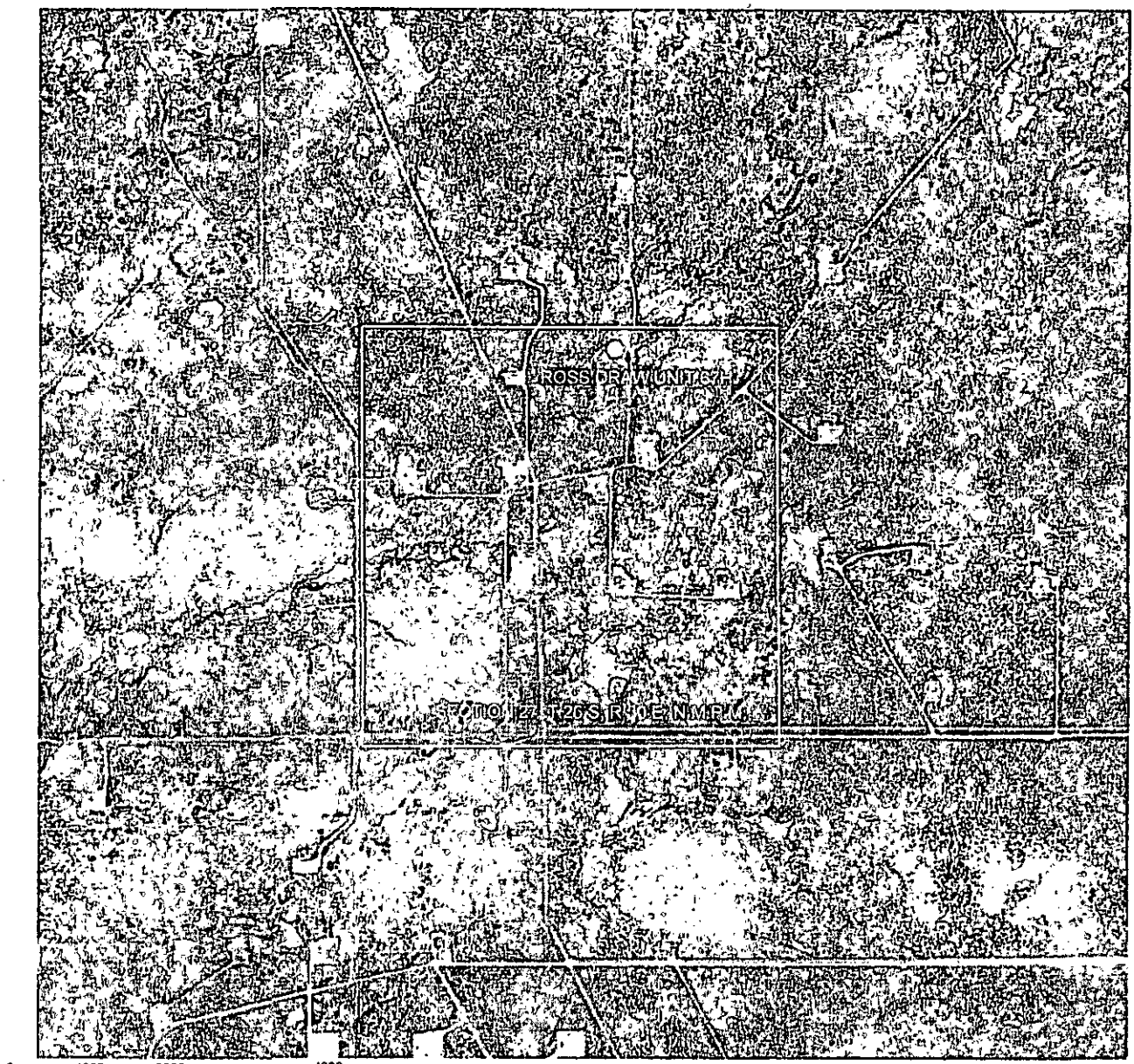
RKI EXPLORATION & PRODUCTION

JOB No.: WTC49642

AERIAL MAP



0 1000 2000 4000

GRAPHIC SCALE 1" = 2000'

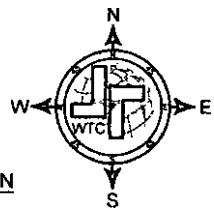
SECTION 27 T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 330' FNL & 2060' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: ROSS DRAW UNIT 67H



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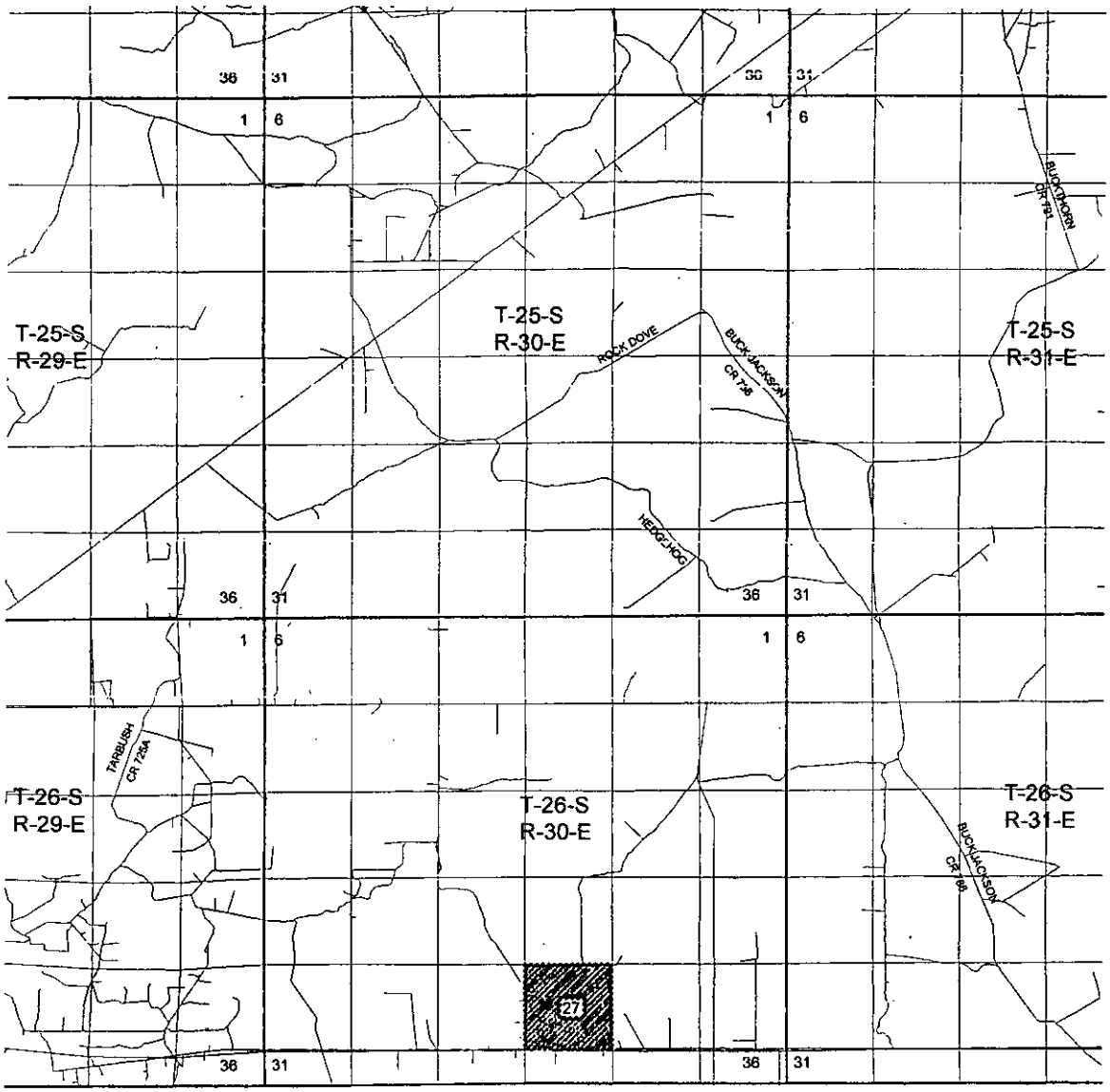
RKI EXPLORATION & PRODUCTION

JOB No.: WTC49642

VICINITY MAP



0 2 4 6

GRAPHIC SCALE 1" = 2 MILE

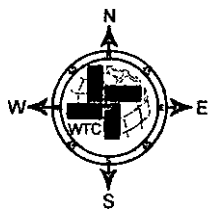
SECTION 27 T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 330' FNL & 2060' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: ROSS DRAW UNIT 67H



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RKI EXPLORATION & PRODUCTION

JOB No.: WTC49642

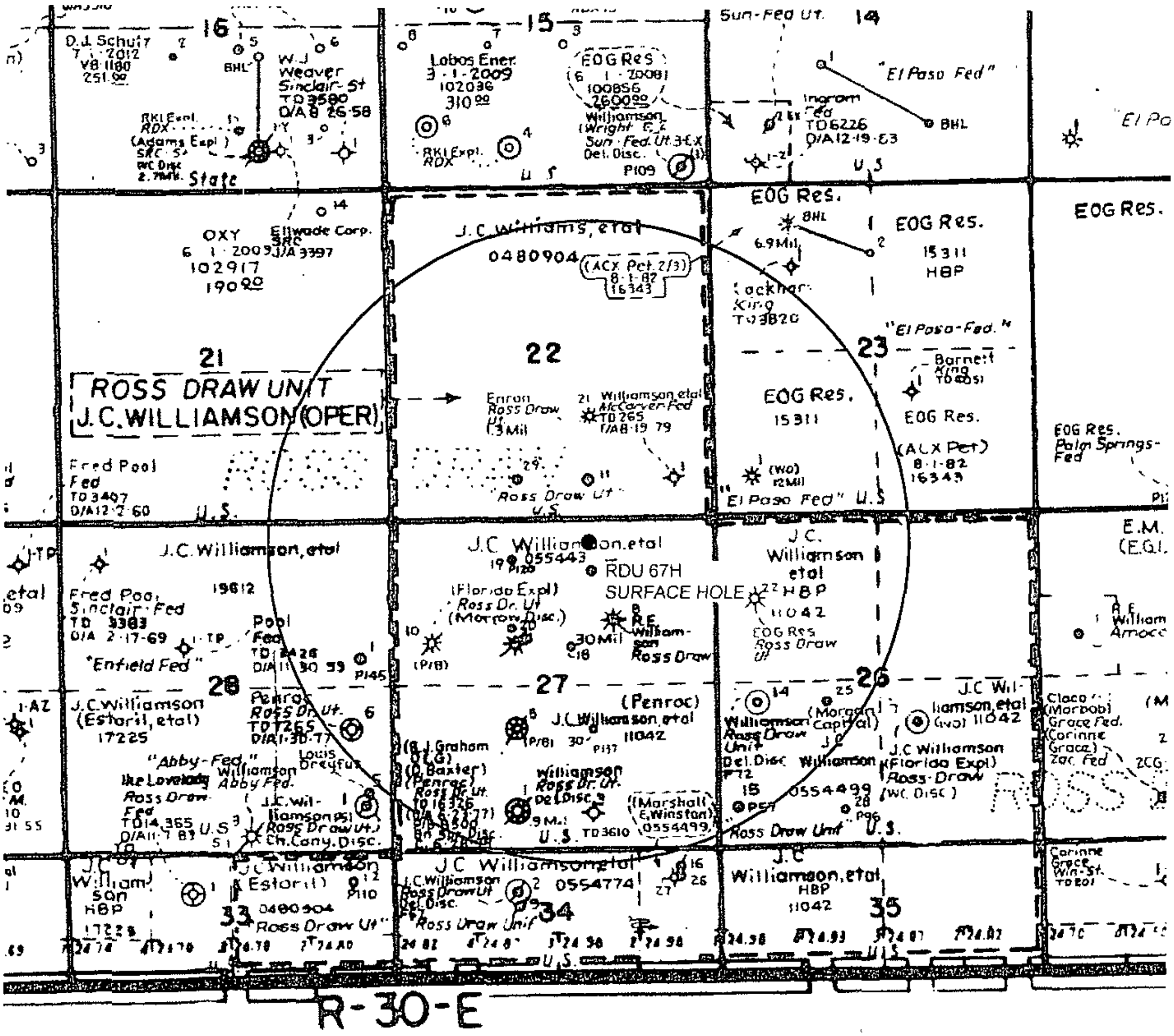
Exhibit A

Access

2.0" = 1 mile

Ex. B

SURFACE HOLE LOCATION



0 .5 1 1.5

GRAPHIC SCALE 1" = 1/2 MILE

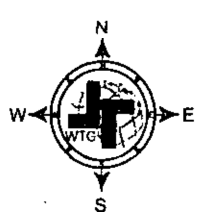
SECTION 27, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 330' FNL & 2060' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDU 67H SHL



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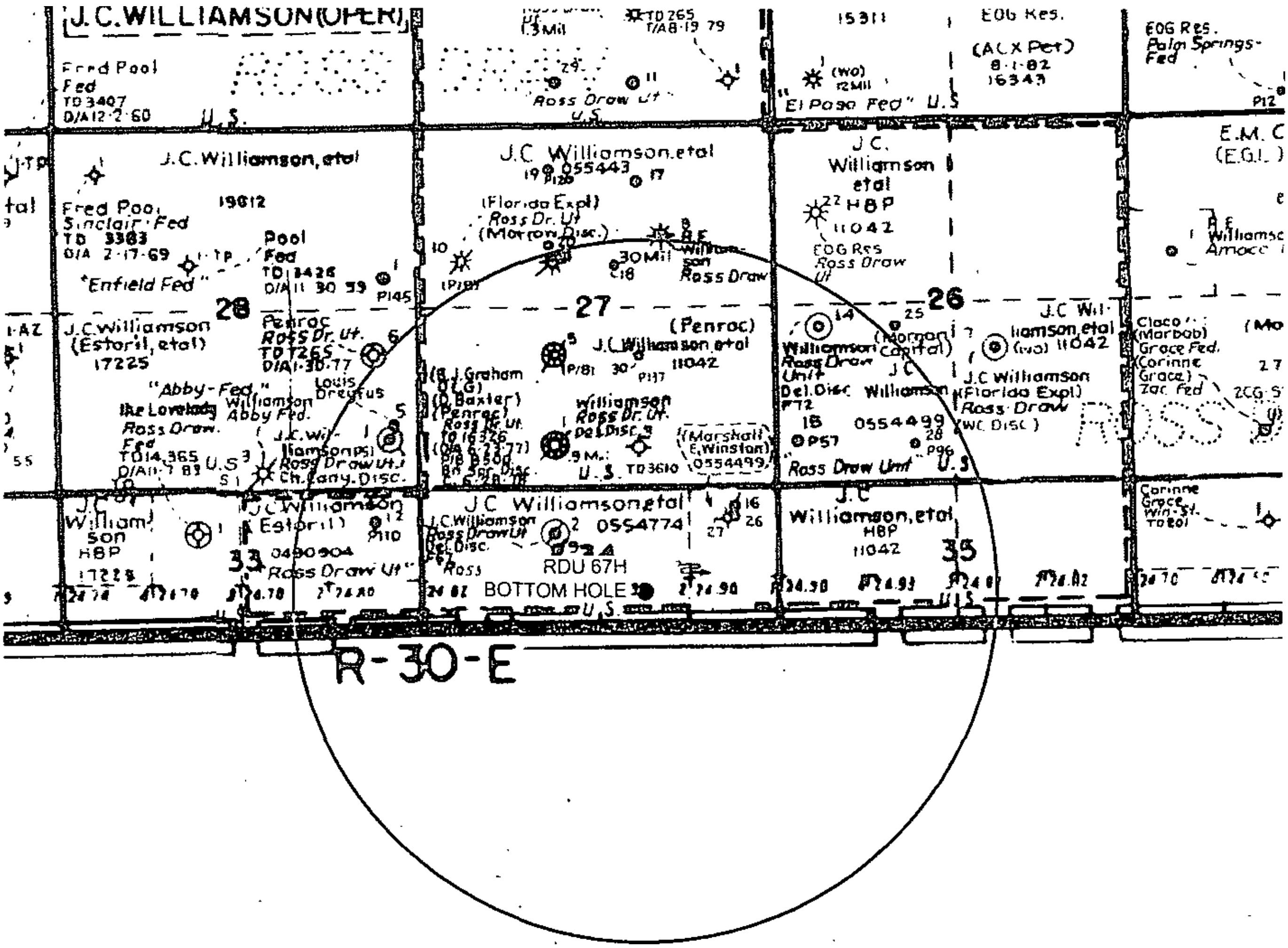
RKI EXPLORATION & PRODUCTION

JOB No.: 49642

'B'

BOTTOM HOLE LOCATION



GRAPHIC SCALE 1" = 1/2 MILE

SECTION 34, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 500' FSL & 1980' FEL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDU 67H BHL

DRIVING DIRECTIONS:

FROM THE INTERSECTION OF HWY 285 AND TX RD 652 (ORLA, TEXAS) GO NORTHEAST 18.0 MILES ON TX RD *652 TO INTERSECTION OF NM J-1 (TX RD. 652)* & STATE LINE ROAD GO WEST 9.2 MILES TO LEASE ROAD RIGHT. THEN GO NORTH 0.6 MILES ON LEASE ROAD TO LEASE ROAD RIGHT. GO EAST 0.2 MILES TO LEASE ROAD LEFT. GO NORTH 0.3 MILES.THE LOCATION IS APPROXIMATELY 200 FEET TO THE LEFT.

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

RKI EXPLORATION & PRODUCTION

JOB No.: 49642

RKI Exploration & Production, LLC
Drilling Program

Well	Ross Draw Unit 67H			
Location	Surface:	330 FNL	2,060 FEL	Sec. 27-26S-30E
	Bottom Hole:	500 FSL	1,980 FEL	Sec. 34-26S-30E

County Loving
State Texas

1) The elevation of the unprepared ground is 3,025 feet above sea level.
18 KB 3,043

2) A rotary rig will be utilized to drill the well to 16,995 feet and run casing.
This equipment will then be rigged down and the well will be completed with a workover rig

3) Proposed depth is 16,995 feet measured depth

4) Estimated tops:

	MD	TVD	Thickness	Fluid		
Rustler	800	800		Freshwater		
Salado	1,100	1,100				
Base Lamar Lime	3,500	3,500				
Delaware Top				Oil	BHP	
Cherry Canyon Sand	4,580	4,596		Oil	2,022	psi
Topper Green		-		Oil		
Kingrea		-		Oil		
Bone Spring Lime	7,334	7,352		Oil	3,235	psi
Bone Spring 1st SS	8,302	8,320		Oil		
Bone Spring 2nd SS	8,929	8,947		Oil	3,937	psi
Bone Spring 3rd SS	10,182	10,200		Oil	4,488	psi
KOP	10,261	10,279		Oil	4,523	psi
Wolfcamp	10,585	10,624		Oil	4,675	psi
Wolfcamp Target Top	10,905	11,279		Oil	4,963	psi
Landing Point	10,905	11,279			4,963	psi
					-	psi
Total Depth	16,955	11,279			230	Degrees F
Lateral Length	6,050 MD					

*Note: All mineral resources encountered will be protected by running casing and raising cement across all encountered resources

5) Casing program: See COA

Hole Size	Top	Bottom	OD Csg	Weight	Grade	Connection	Burst	Pressure Max	Burst SF
17 1/2"	0	~~1,000~~ 920	13 3/8"	54.5	J-55	STC	2730	468	5.83
12 1/4"	0	7,334	9 5/8"	40	HCL-80	LTC	5750	3814	1.51
8 3/4"	0	16,955	5 1/2"	20	P-110	BTC	12630	10000	1.26

*Burst SF = Burst / Pmax

Hole Size	Top	Bottom	OD Csg	Weight	Grade	Connection	Collapse	Mud Weight	Collapse SF
17 1/2"	0	~~1,000~~	13 3/8"	54.5	J-55	STC	1580	9.0	3.38
12 1/4"	0	7,334	9 5/8"	40	HCL-80	LTC	4230	10.0	1.11
8 3/4"	0	16,955	5 1/2"	20	P-110	BTC	12100	11.5	1.19

*Collapse SF = [Collapse/(mw x 0.052 x Depth)]

Hole Size	Top	Bottom	OD Csg	Weight	Grade	Connection	Tension	Tension Load	Tension SF
17 1/2"	0	~~1,000~~	13 3/8"	54.5	J-55	STC	420000	54500	7.71
12 1/4"	0	7,334	9 5/8"	40	HCL-80	LTC	936000	293360	3.19
8 3/4"	0	16,955	5 1/2"	20	P-110	BTC	641000	339100	1.89

*All casing load assumptions are based on Air Wt. Burst design assumes Max Frac Pressure (10K), & Collapse design assumes evacuated & max Mud Weight during interval.

Minimum Design Standards

Collapse	1.1	All casing will be new
Burst	1	Casing design subject to revision based on geologic conditions encountered
Tension	1.9	

Cement program:

6) **Surface** 17 1/2" hole

Pipe OD	13 3/8"				
Setting Depth	1,000 ft				
Annular Volume	0.6947 cf/ft				
Tail	200				
Shoe Joint	36.5				
Excess	1			100 %	
				383 ft	
Lead	642 sx	1.75 cf/sk	13.5 ppg		9.13 gal/sk
Tail	200 sx	1.33 cf/sk	14.8 ppg		6.32 gal/sk

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

3 centralizers on bottom 3 jts 1 per jt, then 1 every other jt

Intermediate 12 1/4" hole

Pipe OD	9 5/8"				
Setting Depth	7,334 ft				
Annular Volume	0.3132 cf/ft	0.323 cf/ft			
DV Tool	5,500 ft				
Excess 1st Stage	0.6			60 %	
2nd Stage	1.6			160 %	

Stage 1:

Lead	621 sx	1.48 cf/sk	13 ppg	7.609 gal/sk

Lead: PVL + 1.3% PF44 + 5% PF174 + .5% PF606 + .4% PF13 + .1% PF153 + .4 pps PF45

Top of cement: 5,500 ft DV tool: 5,500 ft

1 per joint bottom 3 joints, then 1 every 3th jt

Stage 2:

Lead	1308 sx	2.87 cf/sk	11.6 ppg	16.793 gal/sk
Tail	175 sx	1.33 cf/sk	14.8 ppg	6.331 gal/sk

Lead: 35/65 Poz "C" + 5% PF44 + 6% PF20 + .2% PF13 + .125 ps PF29 + .4 pps PF46

Tail: "C" + .2% PF13

Top of cement: SURFACE - ft

1 per joint bottom 3 joints, then 1 every 3th jt

Production 8 3/4" hole

Pipe OD (in OH)	5 1/2"				
Setting Depth	16,955 ft				
Annular Volume	0.2526 cf/ft	0.2526 cf/ft			
Excess	0.35			35 %	
Lead	699 sx	1.47 cf/sk	13 ppg		gal/sk
Tail	1208 sx	1.89 cf/sk	13 ppg		9.632 gal/sk

Lead: PVL +1.3% PF44 + 5% PF174 + .5% PF606 + .3% PF 813 + .1% PF153 +.4pps PF45

Tail: AcidSolid PVL + 5% PF174 + .7% PF606 + .2% PF153 + .5% PF13 + 30% PF151 + .4 pps PF47

Top of cement: 7,034 ft

1 per joint bottom 3 joints, then every 3rd joint to top of cement

*NOTE: A cement bond log will be ran across 9 5/8" Intermediate casing

7) Pressure control equipment:

The blowout preventer equipment will be 5,000 psi rated as shown in the attached BOP diagram and consist of the following
Annular preventer
Pipe rams
Blind rams
Pipe rams
Drilling spool or blowout preventer with 2 side outlets (choke side shall be a 3" minimum diameter, kill side shall be at least 2" diamete
Choke line shall be 3" minimum diameter
2 choke line valves, 3" minimum diameter
2 chokes with 1 remotely controlled from the rig floor
Kill line, 2" minimum diameter
2 kill line valves and a check valve, 2" minimum diameter
Upper and lower kelly cock valves with handles readily available
Safety valves and subs to fit all drill string connections in use shall be readily available
Inside BOP or float available
Pressure gauge on choke manifold
All BOPE subjected to pressure shall be flanged, welded, or clamped
Fill-up line above uppermost preventer

See COA

A 13 3/8" SOW x 13 5/8" 5M multi-bowl casing head will be installed and utilized until Total Depth is reached.
The 9 5/8" casing will be landed in the head on a casing mandrel, and the stack will not be broker
until total depth has been reached. Before drilling out the 9 5/8" casing will be tested to .22 psi/ft of casing setting
depth or 1,500 psi whichever is greater, but not exceeding 70% of the burst rating of the pipe.
After drilling approximately 10 feet of new formation an EMW test of11.0 ppg will be performed.
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.

8) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss	Type System
920 0	~~1,000~~	8.3 to 8.5	28 to 30	1 - 6	1 - 6	NC	Fresh Water ND
~~1,000~~	7,334	9.8 to 10	28 to 30	1 - 10	1 - 12	NC	Brine
7,334	10,261	8.8 to 9.3	35 to 40	8 - 10	10 - 12	NC	Cut Brine
10,261	16,995	9.3 to 10.5	45 to 55	8 - 12	6 - 10	10 to 15	Cut Brine

*Enough Barite will be stored on location to weight up mud system to an 11.5 ppg mud weight if needed (2751 sx from 9.3 ppg to 11.5 ppg - 2000 bbl system). Formula: Barite Required (lbs) = [(35.05 x (Wf-Wi))/(35.05-Wf)] x Mud Volume (gals).
*Pason PVT equipment will monitor all pit levels at all times, in the event an influx occurred

9) Logging, coring, and testing program:

No drill stem test or cores are planned
Neutron/Density, Resistivity, Gamma Ray, Caliper will be run at Pilot Hole Total Depth
Neutron, Gamma Ray, Caliper will be run from TD to surface

10) Potential hazards:

No H2S is known to exist in the area.
Lost circulation can occur, lost circulation material will be readily available if needed

11) Anticipated start date ASAP
Duration 35 days

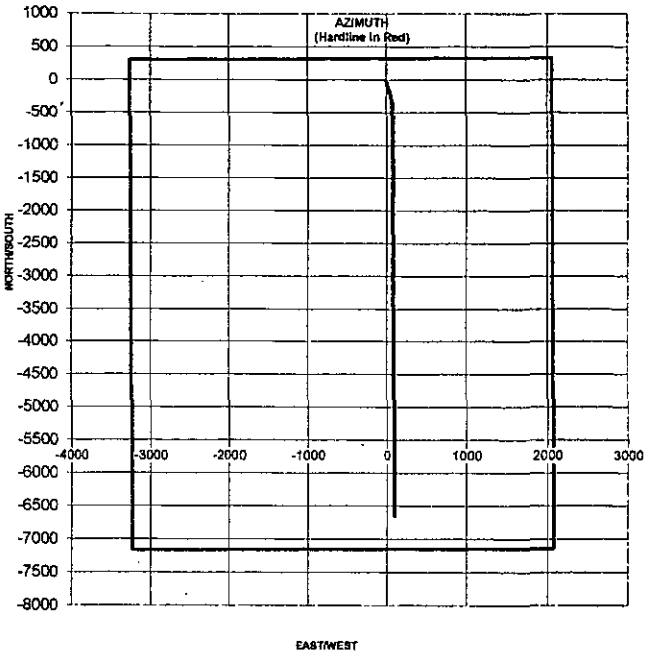
RKI EXPLORATION

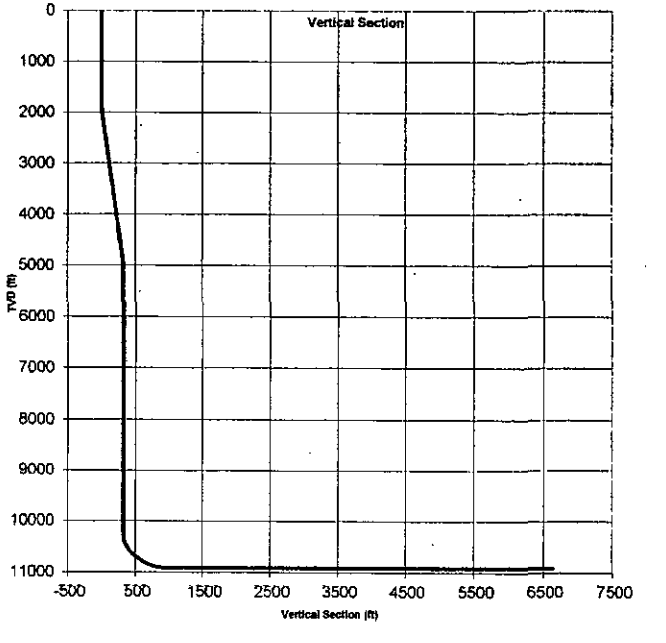
RIG:

WELL:	RDU 67H Eddy, NM
LOCATION:	330' FNL & 2060' FEL 27-26S-30E
BHL:	500' FSL & 1980' FEL 34-26S-30E

Target Direction:	179.11 deg
North/South Hard Line:	330
East/West Hard Line:	2,310

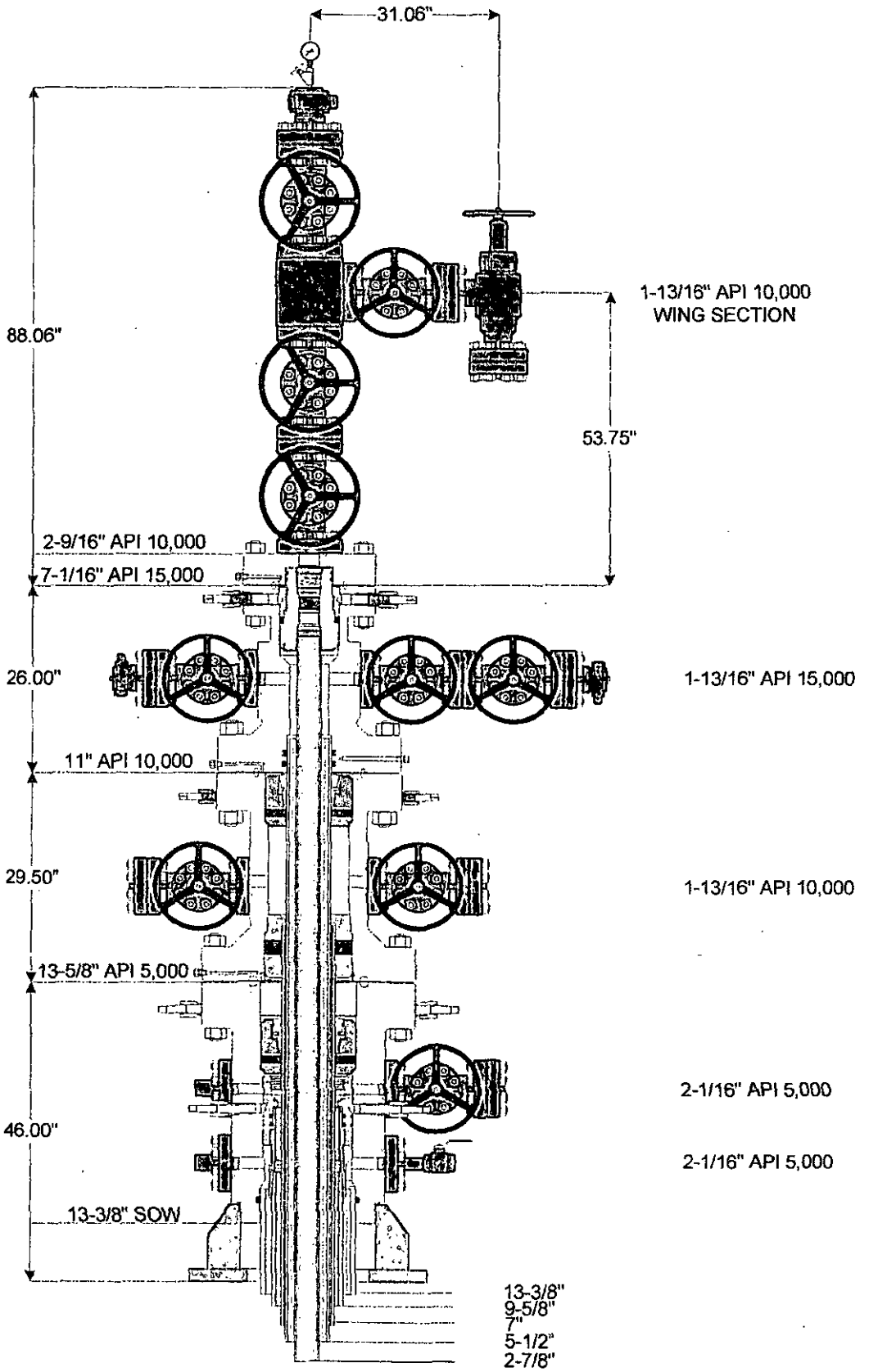
STATION NUMBER	SURVEY DEPTH	INC	AZMTH	TVD	N-S	E-W	VERT. SECTION	DLS/100
Tie-In								
	1800.0		166.00	1800				
	1900.0	3.0	166.00	1900	-3	1	3	3.0
	2000.0	6.0	166.00	2000	-10	3	10	3.0
	2100.0	6.3	166.00	2099	-21	5	21	0.3
	2200.0	6.3	166.00	2198	-31	8	31	
	2300.0	6.3	166.00	2298	-42	10	42	
Lamar Base	3509.5	6.3	166.00	3500	-171	43	171	
Cherry Cnyn	4596.0	6.3	166.00	4580	-286	71	287	
	4600.0	6.3	166.00	4584	-287	72	288	
	4700.0	6.3	166.00	4683	-297	74	298	
	4800.0	6.3	166.00	4783	-308	77	309	
	4900.0	6.0	166.00	4882	-318	79	320	0.3
	5000.0	3.0	166.00	4982	-326	81	327	3.0
	5100.0		166.00	5082	-329	82	330	3.0
BS Lime	7352.2			7334	-329	82	330	
BSpg 1 SS	8320.2			8302	-329	82	330	
BSpg 2 SS	8947.2			8929	-329	82	330	
BSpg 3 SS	10200.2			10182	-329	82	330	
KOP	10279.2		179.80	10261	-329	82	330	
	10379.2	10.00	179.80	10361	-337	82	339	10.0
	10479.2	20.00	179.80	10457	-363	82	364	10.0
	10579.2	30.00	179.80	10547	-405	82	407	10.0
Wolfcamp	10624.0	34.50	179.80	10585	-429	82	430	10.0
	10679.2	40.00	179.80	10629	-463	82	464	10.0
	10729.2	45.00	179.80	10666	-496	83	498	10.0
	10829.2	45.00	179.80	10737	-567	83	568	
	10879.2	50.00	179.80	10771	-604	83	605	10.0
	10979.2	60.00	179.80	10828	-686	83	687	10.0
	11079.2	70.00	179.80	10870	-776	84	777	10.0
	11179.2	80.00	179.80	10896	-873	84	874	10.0
Wolfcamp TT	11279.2	90.00	179.80	10905	-972	84	973	10.0
	11300.0	90.00	179.80	10905	-993	84	994	
	11325.3	90.00	179.80	10905	-1018	84	1020	
	11557.8	90.00	179.80	10905	-1251	85	1252	
	11657.8	90.00	179.80	10905	-1351	86	1352	
	11757.8	90.00	179.80	10905	-1451	86	1452	
	11857.8	90.00	179.80	10905	-1551	86	1552	
	11957.8	90.00	179.80	10905	-1651	87	1652	
	12057.8	90.00	179.80	10905	-1751	87	1752	
	12157.8	90.00	179.80	10905	-1851	87	1852	
	12257.8	90.00	179.80	10905	-1951	88	1952	
	12357.8	90.00	179.80	10905	-2051	88	2052	
	12457.8	90.00	179.80	10905	-2151	88	2152	
	12557.8	90.00	179.80	10905	-2251	89	2252	
	12657.8	90.00	179.80	10905	-2351	89	2352	
	12757.8	90.00	179.80	10905	-2451	89	2452	
	12857.8	90.00	179.80	10905	-2551	90	2552	
	12957.8	90.00	179.80	10905	-2651	90	2652	
	13057.8	90.00	179.80	10905	-2751	90	2752	
	13157.8	90.00	179.80	10905	-2851	91	2852	
	13257.8	90.00	179.80	10905	-2951	91	2952	
TD	16955.2	90.00	179.80	10905	-6648	104	6649	





multi-bowl wellhead

NOTE: THIS DRAWING IS NOT TO SCALE. THE DIMENSIONS REFLECTED ON THIS DRAWING ARE ESTIMATED DIMENSIONS AND ARE FOR REFERENCE ONLY.



Weatherford

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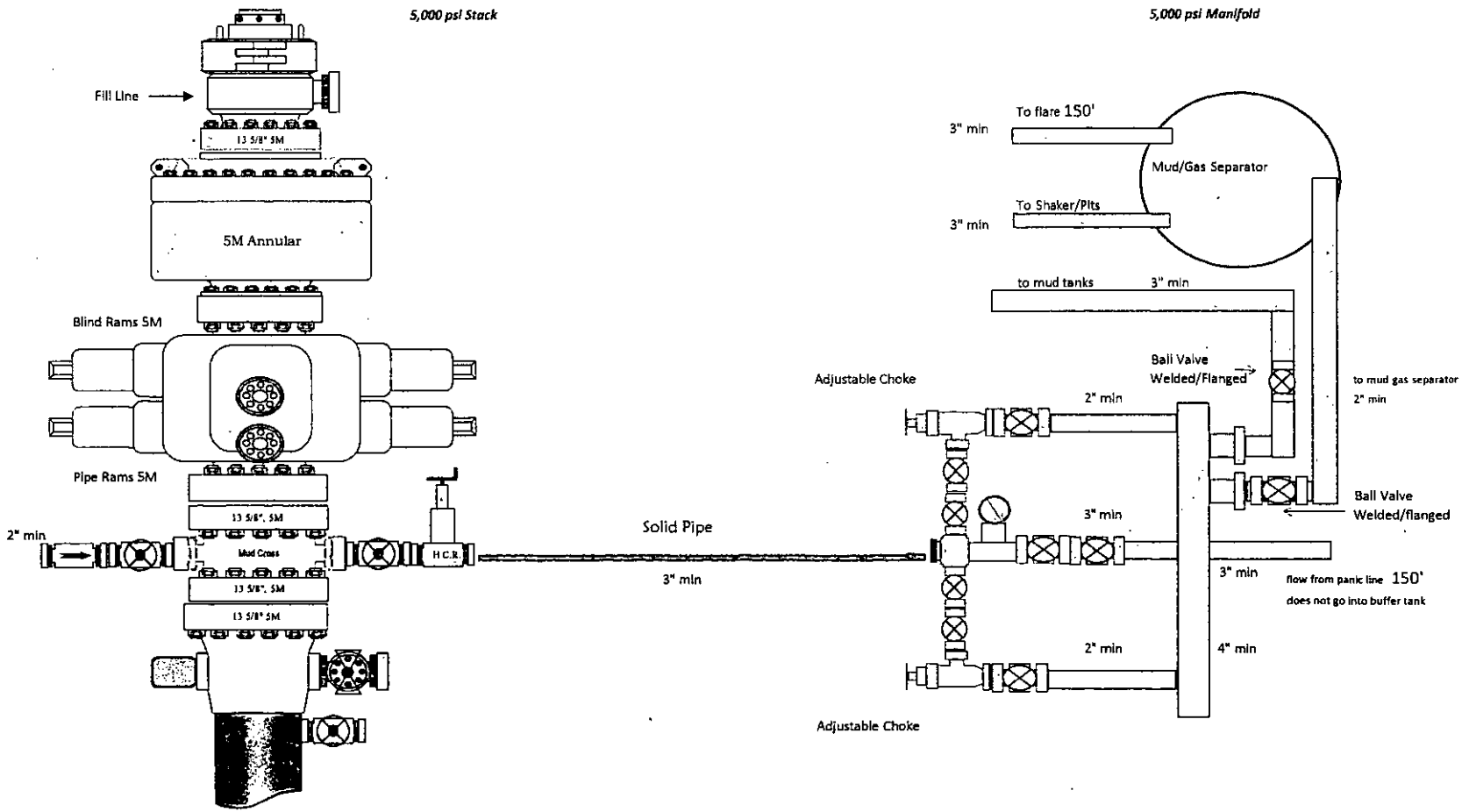
Customer:	RKI EXPLORATION & PRODUCTION LLC	Project No.:	103983	Quote No.:	220542
Project Name:	PERMIAN BASIN-LOVING COUNTY-WFT-MBU SYSTEM	Date:	06-04-2014	Drawn By:	RL


5,000 psi Stack
5,000 psi Manifold
Fill Line
13 5/8" 5M
5M Annular
Blind Rams 5M
Pipe Rams 5M
13 5/8", 5M
Mud Cross
H.C.R.
2" min
Solid Pipe
3" min
To flare 150'
3" min
Mud/Gas Separator
To Shaker/Pits
3" min
to mud tanks
3" min
Adjustable Choke
Ball Valve
Welded/Flanged
to mud gas separator
2" min
2" min
Ball Valve
Welded/flanged
3" min
3" min
flow from panic line 150'
does not go into buffer tank
2" min
4" min
Adjustable Choke

RKI Exploration and Production
3817 N. W. Expressway, Suite 950
Oklahoma City, OK. 73112

Closed Loop System

Design Plan

Equipment List

2 – 414 Swaco Centrifuges
2 – 4 screen Mongoose shale shakers
2 – 250 bbl. tanks to hold fluid
2 – CRI Bins with track system
2 – 500 bbl. frac tanks for fresh water
2 – 500 bbl. frac tanks for brine water

Operation and Maintenance

- Closed Loop equipment will be inspected daily by each tour and any necessary maintenance performed
- Any leak in system will be repaired and/or contained immediately
- OCD notified within 48 hours
- Remediation process started

Closure Plan

During drilling operations, all liquids, drilling fluids and cuttings will be hauled off via CRI (Controlled Recovery Incorporated). Permit #: R-9166.

Plat for Closed Loop System

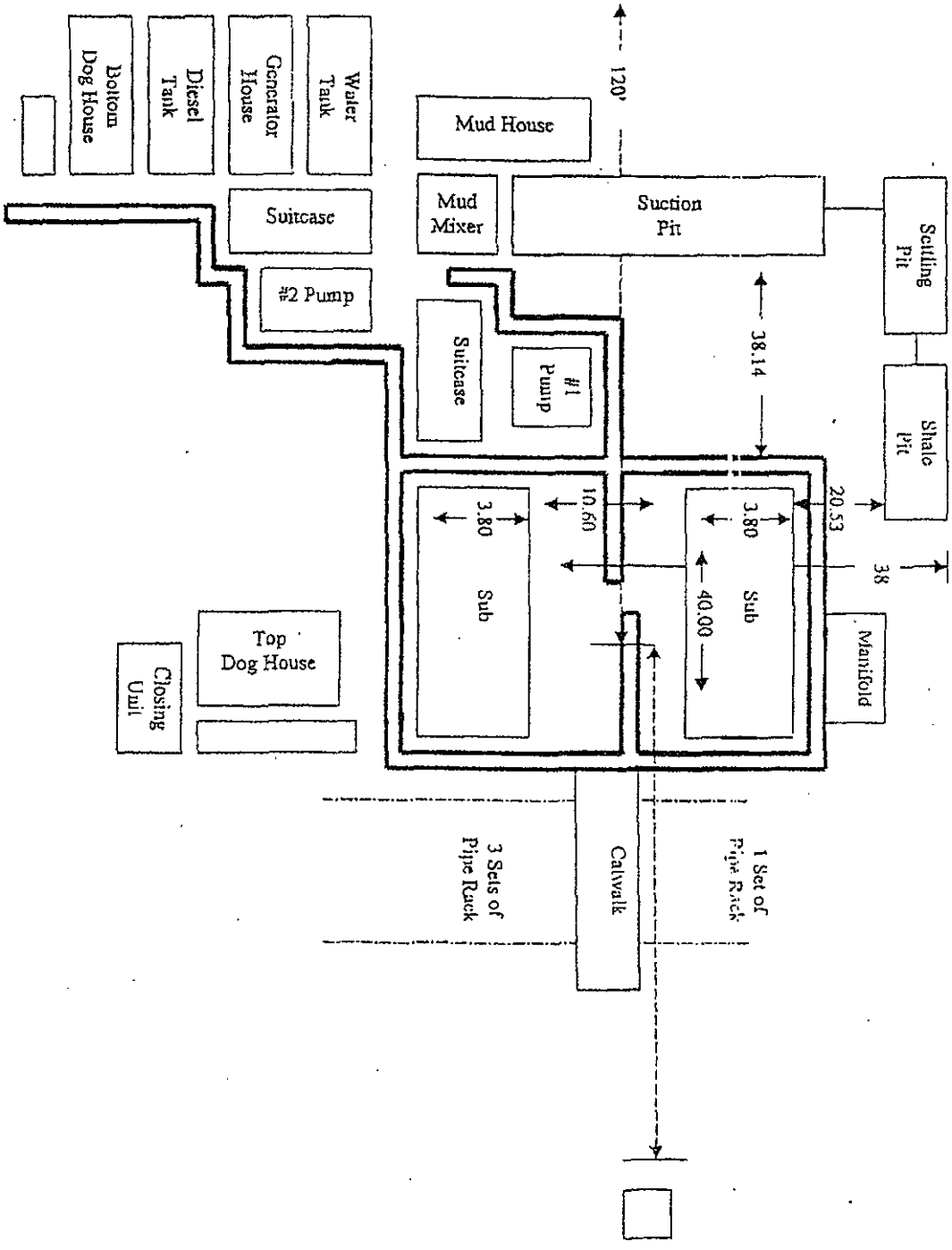


EXHIBIT D

Rig Plat Only
ROSS DRAW UNIT #67H & #68H
V-DOOR EAST

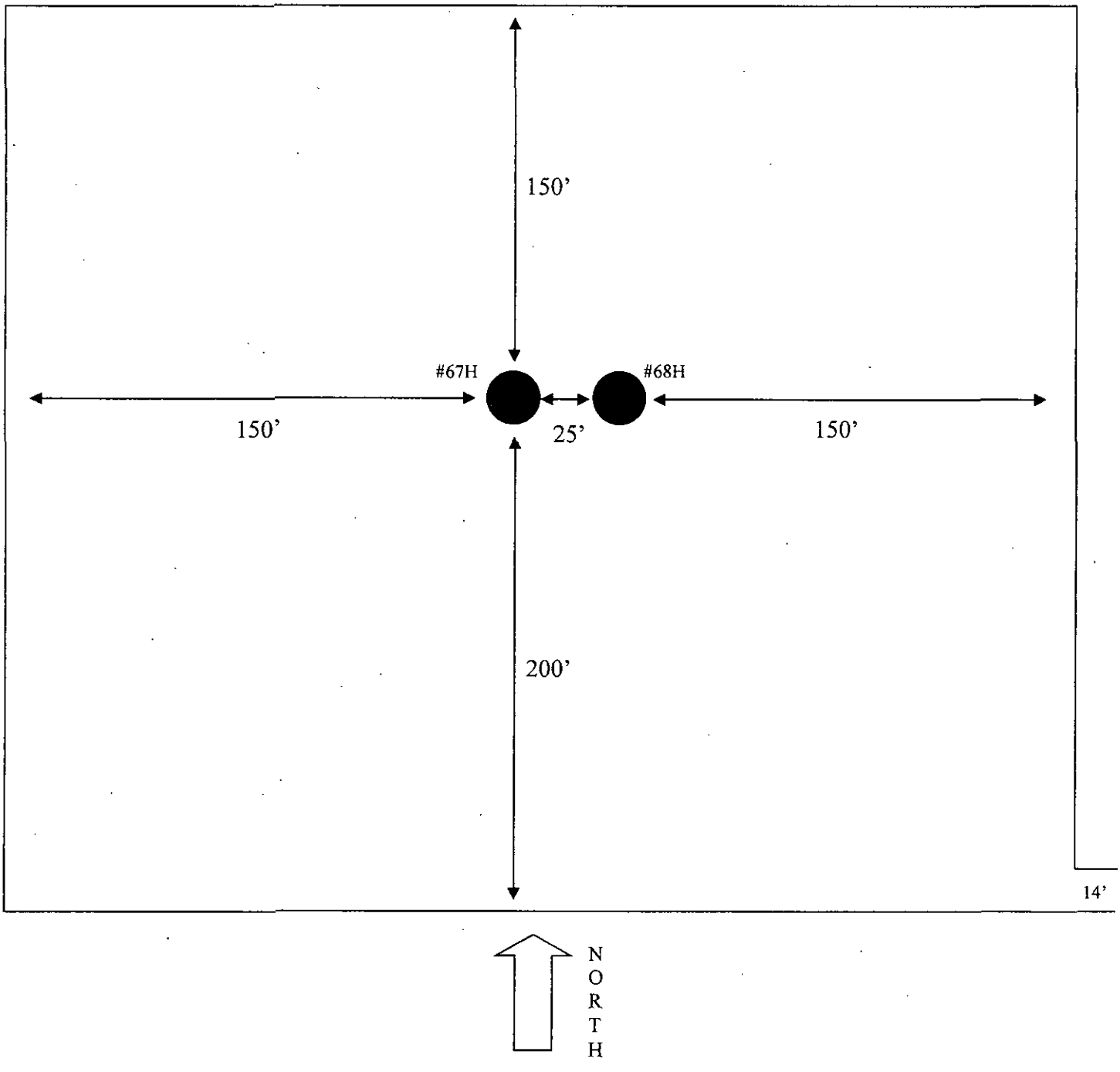
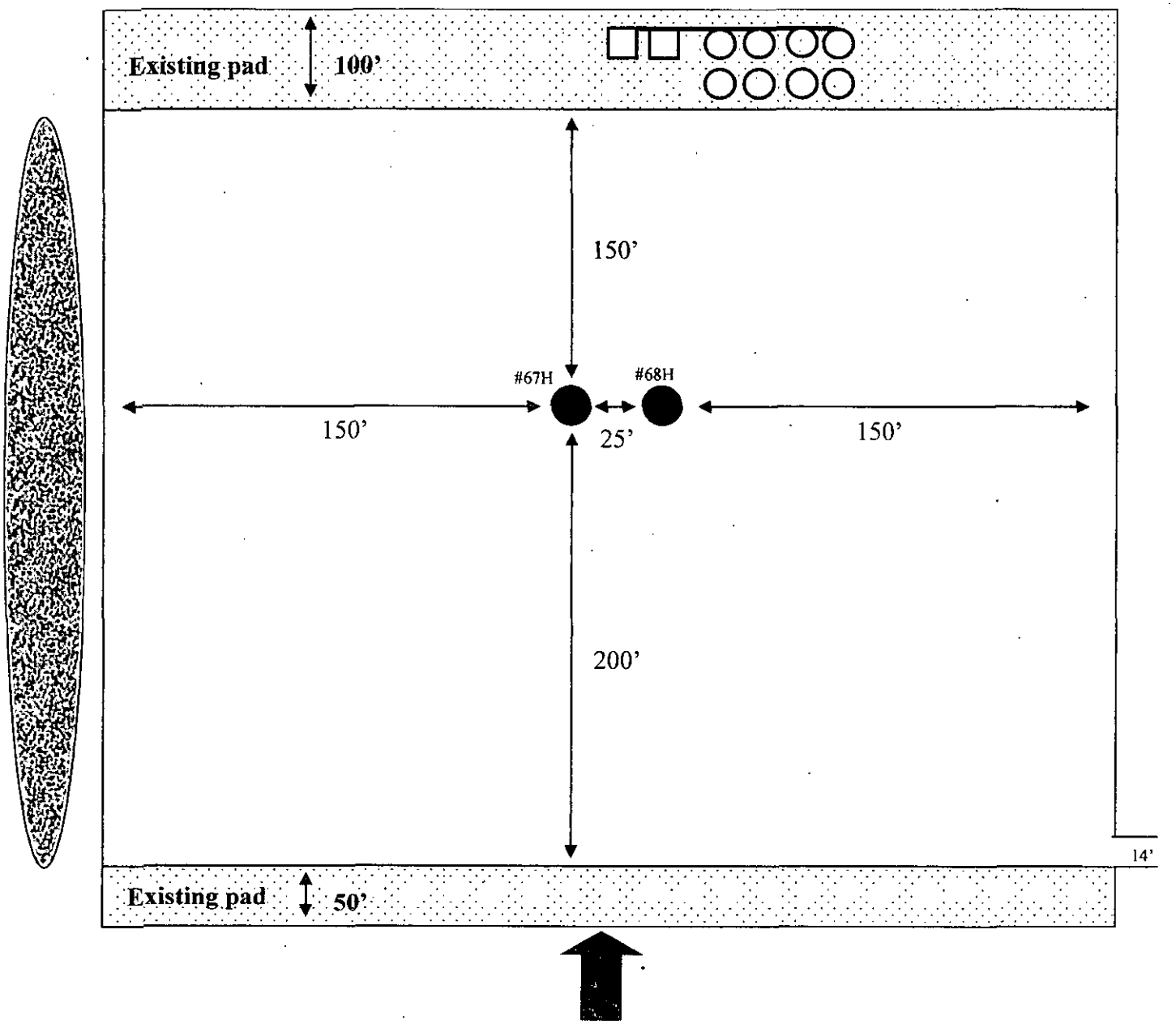


EXHIBIT C

Interim Reclamation & Production Facilities
ROSS DRAW UNIT #67H & 68H
V-DOOR EAST



LEGEND

- Well Bore
- Topsoil
- Interim Reclamation
- Berm
- Production Facilities
- NORTH

SURFACE USE PLAN
RKI Exploration & Production, LLC
ROSS DRAW UNIT #67H
SHL: 330' FNL & 2060' FEL
Section 27, T. 26 S., R. 30 E
BHL: 500 FSL & 1980 FEL
Section 34, T. 26 S., R. 30 E.
Eddy County, New Mexico

This plan is submitted with form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

A. DIRECTIONS: Go south of Carlsbad, NM, on Highway 285, for 25 miles. Turn east onto the Longhorn road for 3.7 miles. Continue south on County Road 725 for 8.4 miles. Turn east on stateline road for 2.5 miles. Turn north on lease road for 0.6 miles. Turn east for 0.2 miles. Turn north for 0.2 miles to existing pad. All existing roads are either paved or a caliche lease road.

B. See attached plats and maps provided by WTC Surveys.

C. The access routes from Eddy County Road 725 to the well location is depicted on **Exhibit A.** The route highlighted in red has been authorized under a ROW permit.

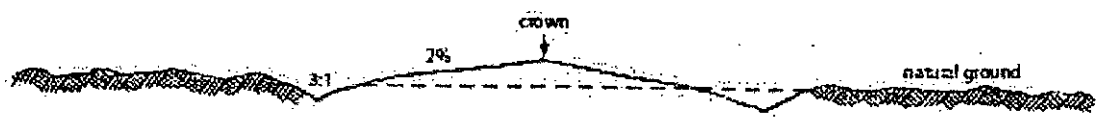
D. Existing roads on the access route will be improved and maintained to the standard set forth in Section 2 of this Surface Use Plan of Operations.

E. A right-of-way (ROW) was obtained in September of 2010 to access this well and other leases within the RDX and RDU field.

2. NEW OR RECONSTRUCTED ACCESS ROADS:

A. There will be no access required. Existing RDU 27-1H pad that was built and never drilled. The #67 APD will replace this expired well.

B. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.



Level Ground Section

C. Surface material will be native caliche. The average grade of the entire road will be approximately 3%.
D. Fence Cuts: No
E. Cattle guards: No
F. Turnouts: No

G. Culverts: No
H. Cuts and Fills: Not significant
I. Approximately 6 inches of topsoil (root zone) will be stripped from the proposed access road prior to any further construction activity. The topsoil that was stripped will be spread along the edge of the road and within the ditch. The topsoil will be seeded with the proper seed mix designated by the BLM.
J. The access road will be constructed and maintained as necessary to prevent soil erosion and accommodate all-weather traffic. The road will be crowned and ditched with water turnouts installed as necessary to provide for proper drainage along the access road route.
K. The access road and associated drainage structures will be constructed and maintained in accordance with road guidelines contained in the joint BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, The Gold Book, Fourth Edition and/or BLM Manual Section 9113 concerning road construction standards on projects subject to federal jurisdiction.

3. LOCATION OF EXISTING WELLS:

See attached map **(Exhibit B)** showing all wells within a one-mile radius.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:

A. In the event the well is found productive, a tank battery will be placed on the north side of pad, and all utilities are in place. A gas and SWD pipeline to lateral E is in place as well as power on location. **(EXHIBIT C).**
B. All permanent (on site six months or longer) aboveground structures constructed or installed on location and not subject to safety requirements will be painted to BLM specifications.
C. Containment berms will be constructed completely around production facilities designed to hold fluids. The containment berns will be constructed or compacted subsoil, be sufficiently impervious, hold 1 ½ times the capacity of the largest tank and away from cut or fill areas.

5. LOCATION AND TYPE OF WATER SUPPLY:

The well will be drilled using a combination of water mud systems as outlined in the Drilling Program. The water will be obtained from commercial water stations in the area and hauled to the location by transport truck using the existing and proposed roads shown in the attached survey plats. If a commercial water well is nearby, a temporary, surface poly line, will be laid along existing roads or other ROW easements and the water pumped to the well. No water well will be drilled on the location.

6. SOURCE OF CONSTRUCTION MATERIALS:

Any construction material that may be required for surfacing of the drill pad and access road will be from a contractor having a permitted source of materials within the general area. All roads will be constructed of 6" rolled and compacted caliche.

7. METHODS OF HANDLING WASTE DISPOSAL:

A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
B. Drilling fluids will be contained in steel mud pits.
C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.

D. Oil produced during operations will be stored in tanks until sold.
E. Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved sewage disposal facility. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Immediately after drilling all debris and other waste materials on and around the well location, not contained in the trash cage will be cleaned up and removed from the location. No potentially adverse materials or substances will be left on the location.

8. ANCILLARY FACILITIES:

No campsite, airstrip, or other facilities will be built as a result of the operation of this well. No staging areas are needed.

9. WELL SITE LAYOUT:

A. **Exhibit D** shows the dimensions of the proposed well pad.
NOTE! This is an existing pad that was built but never drilled for the RDU 27-1H. The APD expired and the #67 replaces this well. The pad was expanded by sundry notice for a battery site (expanding south side for the section 27 vertical wells and the north side of pad for the battery of the RDU #67 & #68 wells).
B. The proposed 2 well (Ross Draw Unit #67 & #68 at 25' apart) pad size will be a 325' x 350' **(See Exhibit D).** There will be no reserve pit due to the well being drilled utilizing a closed loop mud system. The closed loop system will meet the NMOCD requirements 19.15.17 .
C. The **Exhibit D**, shows how the well will be turned to a V-Door East.
D. A 600' x 600' area has been staked and flagged.
E. All equipment and vehicles will be confined to the approved disturbed areas of this APD (i.e., access road, well pad, and topsoil storage areas)

10. PLANS FOR SURFACE RECLAMATION:

A. After concluding the drilling and/or completion operations, if the well is found non-commercial, all the equipment will be removed, the surface material, caliche, will be removed from the well pad and road and transported to the original caliche pit or used for other roads. The original stock piled top soil will be returned to the pad and contoured, as close as possible, to the original topography. The access road will have the caliche removed and the road ripped, barricaded and seeded as directed by the BLM.
B. If the well is a producer, the portions of the location not essential to production facilities or space required for workover operations, will be reclaimed and seeded as per BLM requirements. **(NO INTERIM RECLAMATION FOR THIS WELL PAD DUE TO BATTERY)**
C. Reclamation Performance Standards
The following reclamation performance standards will be met:

Interim Reclamation – Includes disturbed areas that may be redisturbed during operations and will be redisturbed at final reclamation to achieve restoration of the original landform and a natural vegetative community.

- Disturbed areas not needed for active, long-term production operations

or vehicle travel will be recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or as otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious, invasive, and non-native weeds.

Final Reclamation – Includes disturbed areas where the original landform and a natural vegetative community will be restored and it is anticipated the site will not be redisturbed for future development.

- The original landform will be restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.
- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community will be established on the site, with a density sufficient to control erosion and invasion by non-native plants and to re-establish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation.
- Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rills (greater than 3 inches) are not observed.
- The site will be free of State- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. Invasive and non-native weeds are controlled.

D. Reclamation Actions

Earthwork for interim and final reclamation will be completed within 6 months of well completion or plugging unless a delay is approved in writing by the BLM authorized officer.

The following minimum reclamation actions will be taken to ensure that the reclamation objectives and standards are met. It may be necessary to take additional reclamation actions beyond the minimum in order to achieve the Reclamation Standards.

<u>Reclamation – General</u>

Notification:
- The BLM will be notified at least 3 days prior to commencement of any reclamation operations.

Housekeeping:
- Within 30 days of well completion, the well location and surrounding areas(s) will be cleared of, and maintained free of, all debris, materials, trash, and equipment not required for production.
- No hazardous substances, trash, or litter will be buried or placed in pits.

Topsoil Management:
- Operations will disturb the minimum amount of surface area necessary to conduct safe and efficient operations.
- Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the topsoil will be stripped and stockpiled

around the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil will include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.

- Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment or so dry that dust clouds greater than 30 feet tall are created. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
- No major depressions will be left that would trap water and cause ponding unless the intended purpose is to trap runoff and sediment.

Seeding:

- Seedbed Preparation. Initial seedbed preparation will consist of recontouring to the appropriate interim or final reclamation standard. All compacted areas to be seeded will be ripped to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified to a depth of no less than 4 – 6 inches. If the site is to be broadcast seeded, the surface will be left rough enough to trap seed and snow, control erosion, and increase water infiltration.
- If broadcast seeding is to be used and is delayed, final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- Seed Application. Seeding will be conducted no more than two weeks following completion of final seedbed preparation. A certified weed-free seed mix designed by the BLM to meet reclamation standards will be used.
- If the site is harrowed or dragged, seed will be covered by no more than 0.25 inch of soil.

11. SURFACE OWNERSHIP:

A. The surface is owned by the U. S. Government and is administered by the Bureau of Land Management. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas.

12. OTHER INFORMATION:

A. The area surrounding the well site is in a gentle sloped, shallow sandy loam, rolling hills type area. The vegetation consists of Mesquite, Creosote, White-Thorn Acacia with three-awns and some dropseed species.
B. There is no permanent or live water in the immediate area.
C. There are no dwellings within 2 miles of this location.
D. A class III Cultural Resources Examination had been completed by Boone Archaeological Services and the results forwarded to the BLM office (Under the RDU Federal 27-1H).

13. BOND COVERAGE:

Bond Coverage is Nationwide; Bond Number NMB-000460.

OPERATORS REPRESENTATIVE:

The RKI Exploration and Production, LLC representatvies responsible for ensuring compliance of the surface use plan are listed below:

Surface:
Barry W. Hunt – Permitting Agent
1403 Springs Farm Place
Carlsbad, NM 88220
(575) 885-1417 (Home)
(575) 361-4078 (Cell)

Drilling & Production:
Ken Fairchild – RKI Exploration and Production, LLC.
210 Park Avenue, Suite 900
Oklahoma City, Ok.73102
(405) 996-5764 (Office)
(469) 693-6051 (Cell)

ON-SITE PERFORMED ON 1/21/14 RESULTED IN PROPOSED LOCATION BEING OK WHERE STAKED. IT WAS AGREED TO LEAVE THE DIRECTION OF THE EXISTING PAD AT IT'S CURRENT POSITION OF A V-DOOR EAST, EXISTING TOP SOIL TO THE WEST. IT WAS FURTHER AGREED TO PLACE THE BATTERY TO THE NORTH AND NO INTERIM RECLAMATION DUE TO THE LOCATION BEING A MULTIPLE WELL BATTERY FACILITY.

PRESENT AT ON-SITE:
BARRY HUNT – PERMITTING AGENT FOR RKI EXPLORATION & PRODUCTION
INDRA DAHAL – BLM
BECKIE HILL - BOONE ARCHAEOLOGICAL SERVICES
WTC SURVEYORS

CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct, and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or RKI Exploration and Production, LLC am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U. S. C. 1001 for the filing of false statements. Executed this 5th day of November 2014.

Signed: Barry W. Hunt

Printed Name: Barry Hunt
Position: Agent for RKI Exploration & Production, LLC.
Address: 1403 Springs Farm Place, Carlsbad, NM 88220
Telephone: (575) 361-4078
E-mail: specialtpermitting@gmail.com

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI Exploration & Production, LLC
LEASE NO.:	NMNM0554774
WELL NAME & NO.:	Ross Draw Unit 67H
SURFACE HOLE FOOTAGE:	330'/N & 2060'/E
BOTTOM HOLE FOOTAGE	500'/S & 1980'/E, Sec 34
LOCATION:	Section 27, T.26 S., R.30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Unit Wells
The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Phantom Banks Heronry Stipulations
Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both.

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.

- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

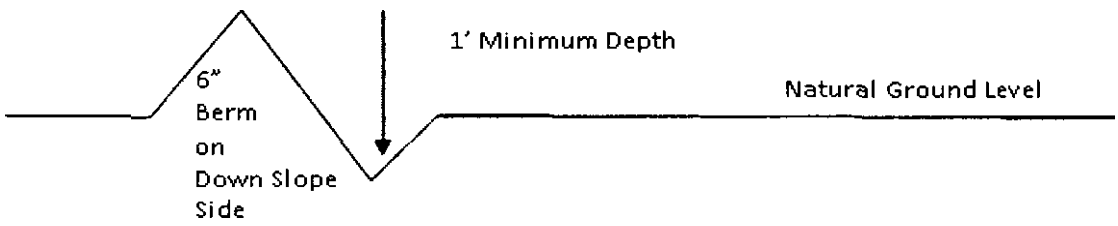
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattleguards
An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical

use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

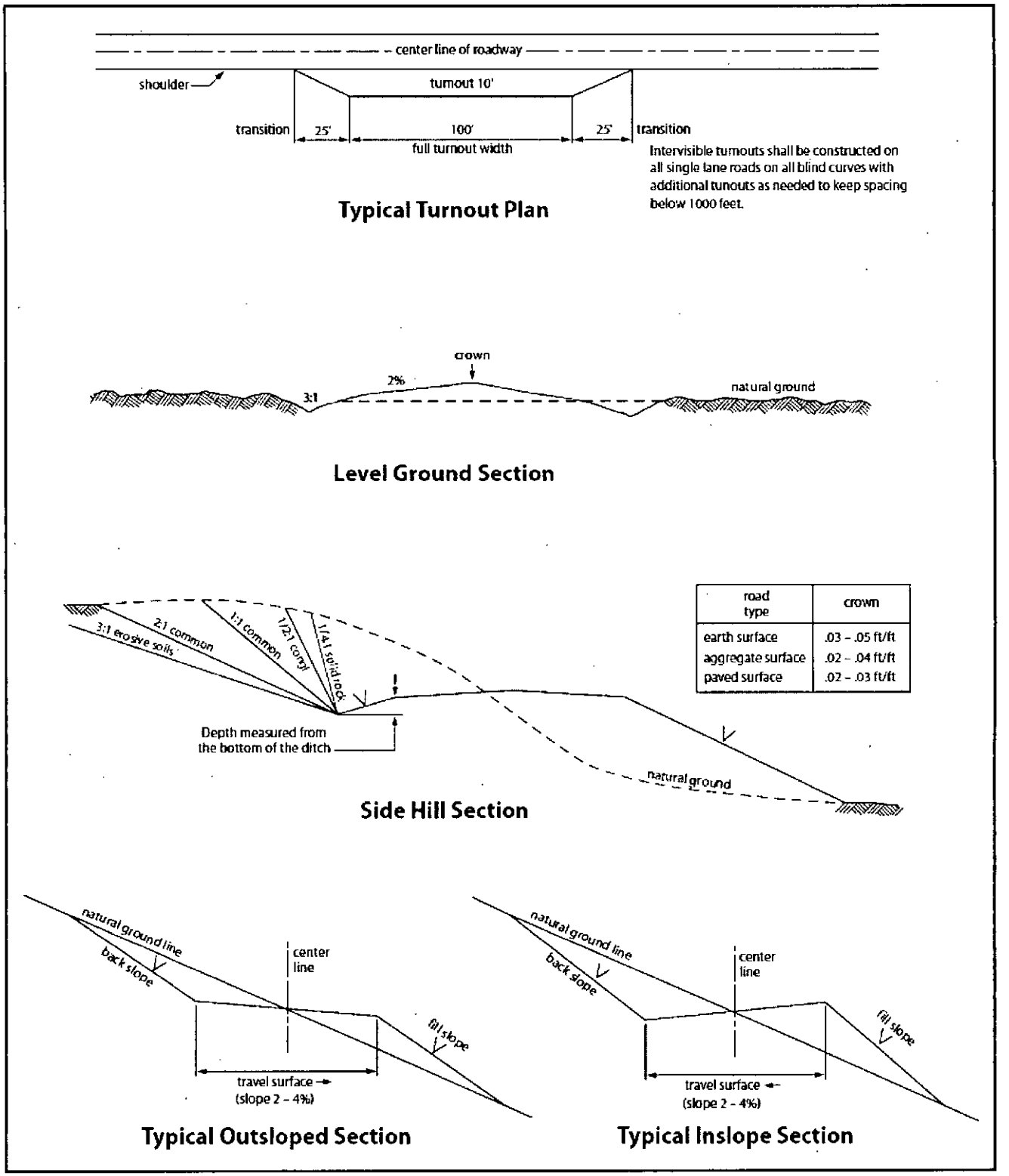


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. 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. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts 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. 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.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

High Cave/Karst A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

Possibility of water flows in the Salado and Delaware.
Possibility of lost circulation in the Rustler and Delaware.
Possible high pressure in the 3rd Bone Spring sand and Wolfcamp

1. The **13-3/8** inch surface casing shall be set at approximately **715** 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 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:

   Operator has proposed DV tool at depth of 5500'. Operator is to submit sundry if DV tool depth varies by more than 100' from approved depth.

   a. First stage to DV tool:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve approved top of cement on the next stage.

   b. Second stage above DV tool:

   ☒ 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.**

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.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. 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.**
    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 with a corresponding chart (i.e. two hour clock-two hour chart, one hour clock-one hour chart).

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.

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IX. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VRM Facility Requirement
Low-profile tanks not greater than eight-feet-high shall be used.

B. PIPELINES

C. ELECTRIC LINES

X. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

(Insert Seed Mixture Here)