FORM APPROVED Form 3160 3 OMB No. 1004-0137 Expires October 31, 2014 (March 2012) JAN **15** 2013 **OCD Artesia** NITED STATES Lease Serial No. MENT OF THE INTERIOR NM-20965 OF LAND MANAGEMENT 6. If Indian, Allotee or Tribe Name TO DRILL OR REENTER APPLICATION FOR PERMIT 7. If Unit or CA Agreement, Name and No **V** DRILL la. Type of work: REENTER 8. Lease Name and Well No. ✓ Oil Well Gas Well Other ✓ Single Zone | Multiple Zone lb. Type of Well: RDX FEDERAL 17-17 Name of Operator RKI EXPLORATION & PRODUCTION, LLC. 3a. Address 10. Field and Pool, or Exploratory 210 PARK AVENUE, SUITE 900 405-996-5748 (BRENT UMBERHAM) OKLAHOMA CITY, OK. 73102 BRUSHY DRAW DELAWARE EAST 11. Sec., T. R. M. or Blk. and Survey or Area Location of Well (Report location clearly and in accordance with any State requirements.*) SECTION 17, T. 26 S., R. 30 E. At surface 1650 FNL & 330 FWL At proposed prod. zone SAME 12. County or Parish 13. State 14. Distance in miles and direction from nearest town or post office* **EDDY** NM 14 MILES SOUTHEAST OF MALAGA, NM Distance from proposed* 17. Spacing Unit dedicated to this well 16. No. of acres in lease location to nearest property or lease line, ft 520 (Also to nearest drig. unit line, if any) 20. BLM/BIA Bond No. on file 18. Distance from proposed location* to nearest well, drilling, completed, 19. Proposed Depth 7200' NLM-NMB-000460 applied for, on this lease, ft. 23. Estimated duration 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 22. Approximate date work will start* 25-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. 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the Operator certification SUPO must be filed with the appropriate Forest Service Office). Such other site specific information and/or plans as may be required by the 25. Signature Name (Printed/Typed) 10/11/12 BARRY W. HUNT Title **PERMIT AGE** FOR RKI EXPLORATION & PRODUCTION, LLC. Approved by (Signature) Name (Printed/Typed) Is/ James A. Amos Title Office CARLSBAD FIELD OFFICE FIELD MANAGER 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. APPROVAL FOR TWO YEARS Conditions of approval, if any, are attached. 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) Approval Subject to General Requirements Carlsbad Controlled Water Basin

SEE ATTACHED FOR CONDITIONS OF APPROVAL

& Special Stipulations Attached

DISTRICT I 1625 N. French Dr., Hobbs, NM 88240 DISTRICT II

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102 Revised October 12, 2005

Submit to Appropriate District Office

BASIN SURVEYS

State Lease - 4 Copies Fee Lease - 3 Copies

1301 W. Grand Avenue, Artesia, NM 88210 DISTRICT III 1000 Rio Brazos Rd., Aztec. NM 87410

OIL CONSERVATION DIVISION
1220 South St. Francis Dr. Santa Fe, New Mexico 87505

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

C AMENDED REPORT

	r., Santa Fe,	NM 87505	WELL LO	CATIO	ON AND ACR	EAGE DEDICATI	ON PLAT	☐ AMENDED	REPORT
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3 Property Code				Property RDX " F	Well Number				
OGRID No	°.				Operator		***	Elevat	
462	89_	<u> </u>	R	KI EX	PLORATION	& PRODUCTION		3075'	
					Surface I	ocation			
L or lot No.	Section	Township	Range	Lot Id		1 ' .	Feet from the	East/West line	County
E	17	26 S	30 E	<u> </u>	1650	NORTH	330	WEST	EDD
			Bottom	Hole	Location If D	ifferent From Sui	rface		
L or lot No.	Section	Township	Range	Lot Id	n Feet from th	ne North/South line	Feet from the	East/West line	County
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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 10th day of October 2012.

Signed

Printed Name: Barry Hunt

Position: Agent for RKI Exploration & Production, LLC. Address: 1403 Springs Farm Place, Carlsbad, NM 88220

any w. His

Telephone: (575) 361-4078

E-mail: specialtpermitting@gmail.com

RKI Exploration & Production, LLC

DRILLING PLAN

Well

RDX Federal 17-17

Location

1,650 FNL

330 FWL

Section 17-26S-30E

County

Eddy

-State New Mexico

- 1) The elevation of the unprepared ground is 3,075 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 7,200 feet and run casing. This equipment will then be rigged down and the well will be completed with a workover rig.
- 4) Proposed depth is 7,200 feet.
- -5)-Estimated tops:

Alluvium	*		
Ruslter	937		
Salado	1,286		
Castile	1,766		
Lamar Lime	3,307		
Base of Lime	3,507		
Delaware Top	3,540		
Bell Canyon Sand	3,540 Oil	1,533	psi
Cherry Canyon Sand	4,606 Oil	1,994	psi
Brushy Canyon Sand	5,664 Oil	2,453	psi
TD .	7,200	140	degree F

^{*} Fresh water anticipated at about 200 ft.

6) Pressure control equipment: Sec COF

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 the 13 3/8" 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.

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.

7) Casing program:

Hole Size	Тор	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	2.75	5.58	9.93
12 1/2"	0	3,450	9 5/8"	40#/J-55	LŢ&C	1.35	5.38	3.77
~7·7/8"	~ 0	7,200	5 1/2"	17#/N-80	LT&C	⁻ 2:01	1.55	2.84

13.5 ppg

14.8 ppg

All new casing

8) 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
 601 sx
 1.75 cf/sk

 Tail
 200 sx
 1.34 cf/sk

Lead: "C" + 4% PF20 (gel) + 2% PF1 (CC) + .125 pps PF29 (CelloFlake) + .2% PF46 (antifoam)

Tail: "C" + 1% PF1 (CC)

Top of cement: Surface

 Intermediate
 12 1/2" hole

 Pipe OD
 9 5/8"

 Setting Depth
 3,450 ft

 Appular Values
 0.31318 ef/ft

Total Annular Volume 1128 cf With Excess 2255 cf

 Lead
 961 sx
 2.07 cf/sk
 12.6 ppg

 Tail
 200 sx
 1.33 cf/sk
 14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 (salt) + 6% PF20 (gel) + 3 pps PF42 (KoalSeal) + .125 pps PF29 (CelloFlake) + .2% PF46 (antifoam) + 1% PF1 (CC)

Tail: "C" + .2% PF13 (retarder)

Top of cement: Surface

 Production
 7 7/8" hole

 Pipe OD
 5 1/2"

 Setting Depth
 7,200 ft

 Annular Volume
 0.1733 cf/ft

Annular Volume 0.1733 cf/ft 0.26074 cf/ft 300 ft

Excess 0.35 35 %

Total Annular Volume 728 cf
With Excess 983 cf
DV Tool Depth 5,000 ft

Stage 1

Lead: 350 sx 1.47 cf/sk 13.0 ppg

Lead: PVL + 2% PF174 (expanding agent) + .3% PF167 (Uniflac) + .1% PF65 (dispersant) + .2% PF13 (retarder) + .25 pps PF46 (antifoam)

Top of cement: DV tool

Stage 2

 Lead:
 157 sx
 2.04 cf/sk
 12.6 ppg

 Tail:
 100 sx
 1.47 cf/sk
 13.0 ppg

Lead: 35/65 Poz "C" + 5% PF44 (salt) + 6% PF20 (gel) + .125 pps PF29 (CelloFlake) +

.2% PF13 (retarder) + .25 pps PF46 (antifoam)

Tail: PVL + 1.3% PF44 (salt) + 5% PF174 (expander) + .5% FP606 (gel suppressing agent) +

.25 pps PF46 (antifoam) + .2% PF13 (retarder)

Top of cement: 3,150 ft

9) Mud program:

Тор	Bottom	Mud Wt.	Vis	PV	ΥP	Fluid Loss	Type System
0	950	8.5 to 8.9	32 to 36	6 - 12	2 - 8	NC	Fresh Water
950	3,450	9.8 to 10.0	28 to 30	1 - 6	1 - 6	NC	Brine
3,450	7,200	8.9 to 9.1	28 to 36	1 - 6	1 - 6	NC	Fresh Water

10) Logging, coring, and testing program: See COA

No drillstem test are planned

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

Intermediate to surface: CNL, GR

No coring is planned

11) Potential hazards:

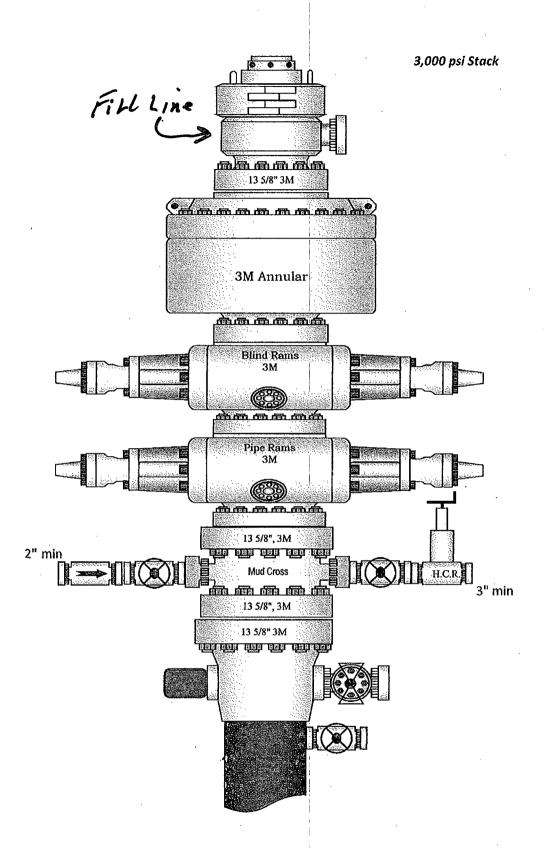
-No-abnormal-pressure or temperature is expected. No H2S is known to exist in the area. Lost circulation is not anticipated, but lost circulation equipment will be on location and readily available if needed.

12) Anticipated Start Date

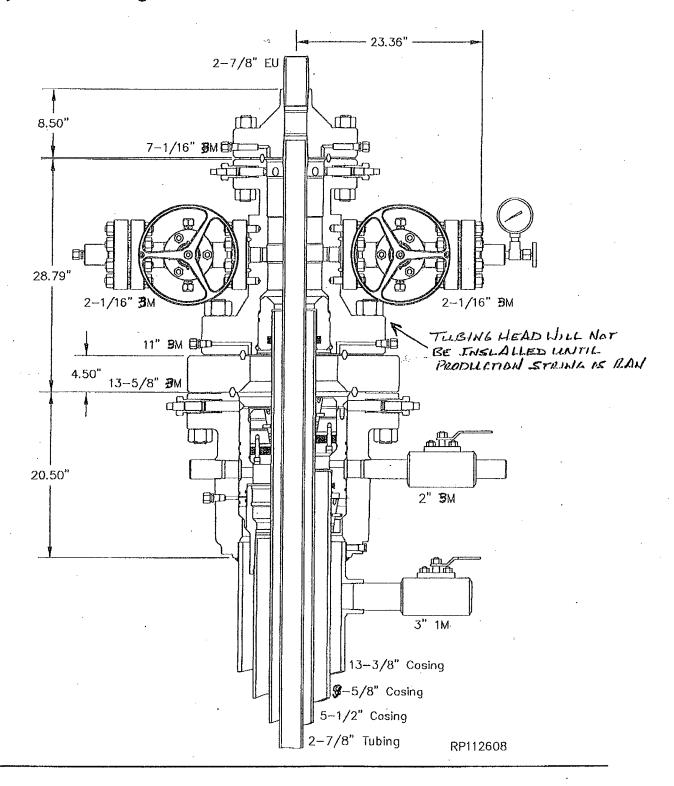
Dec '12

Duration

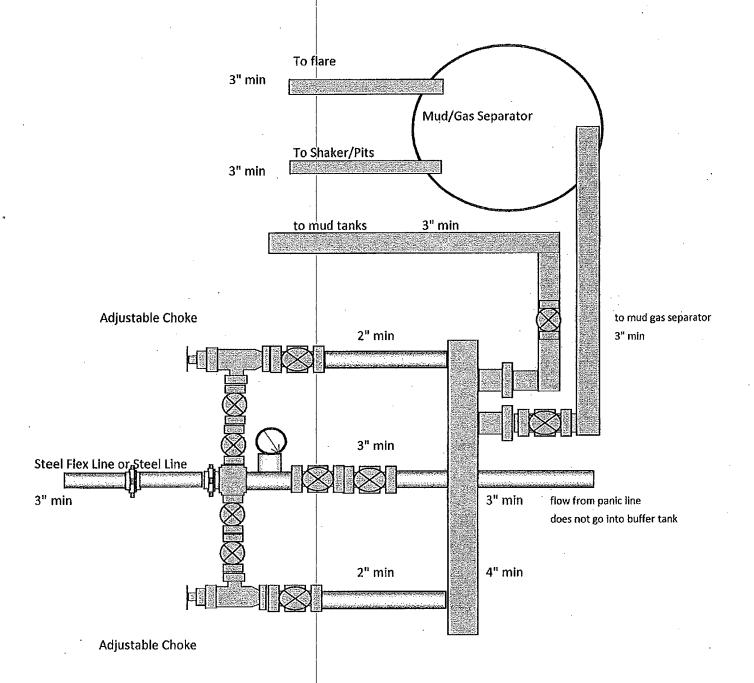
25 days



System Drawing



3,000 psi Manifold



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

Closed Loop System

Design Plan

Equipment List

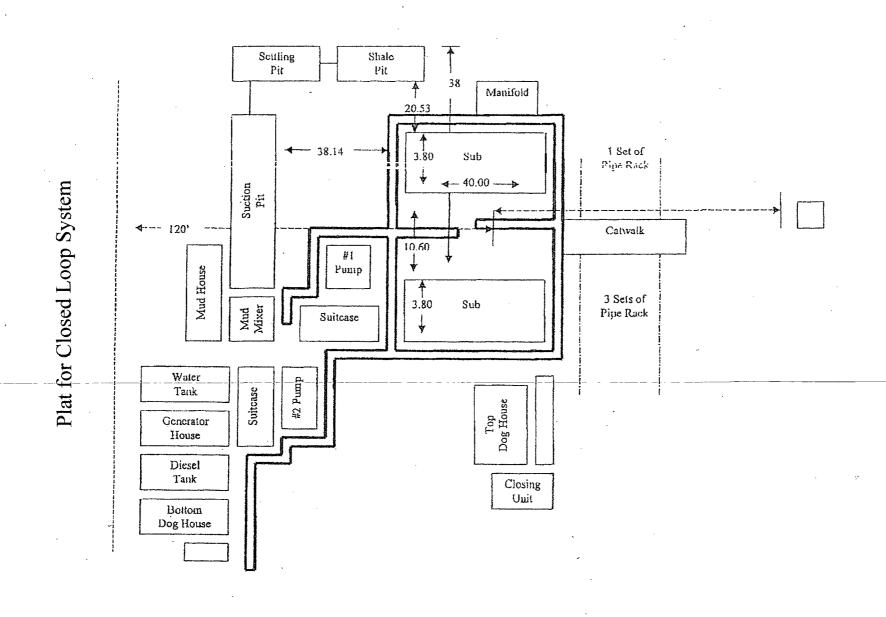
- 2-414 Swaco Centrifuges
- 2 4 screen Mongoose shale shakers
- 2-250 bbl. tanks to hold fluid
- 2 CRI Bins with track system
- 2-500 bbl. frac tanks for fresh water
- 2-500 bbl. frac tanks for brine water

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.



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI EXPLORATION
LEASE NO.:	NM20965
WELL NAME & NO.:	17-RDX FEDERAL 17
SURFACE HOLE FOOTAGE:	1650'/N. & 330'/W.
LOCATION	Section 17, 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.

<u>- </u>	
General Provisions	
Permit Expiration	
Archaeology, Paleontology	and Historical Si
Noxious Weeds	
Special Requirements	
Phantom Bank Heronrie	3
Construction	
Notification	
Topsoil	
Closed Loop System	
Federal Mineral Materia	l Pits
. Well Pads	
Roads	
☐ Road Section Diagram	
$\overline{igwedge}$ Drilling	
Logging Requirements	
Medium Cave/Karst	
Waste Material and Flui	ds
Production (Post Drilling)	
Well Structures & Facili	ties
Pipelines	
Electric Lines	
	
Interim Reclamation	
Final Abandanment & Dec	damation