

EA-12-1035

Form 3160-3  
(March 2012)

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No.	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. RDX FEDERAL 21-32 <i>39072</i>	
2. Name of Operator RKI EXPLORATION & PRODUCTION, LLC. <i>246289</i>		9. API Well No. <i>30-015-40642</i>	
3a. Address 3817 NW EXPRESSWAY, SUITE 950 OKLAHOMA CITY, OK. 73112	3b. Phone No. (include area code) 405-996-5750 (BILL AUBREY)	10. Field and Pool, or Exploratory BRUSHY DRAW DELAWARE EAST <i>8090</i>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1880 FSL & 1650 FWL At proposed prod. zone SAME		11. Sec., T. R. M. or Blk. and Survey or Area SECTION 21, 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) 1650'	16. No. of acres in lease 640	17. Spacing Unit dedicated to this well 40	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 990' North of proposed RDX Fed 21-42	19. Proposed Depth 7400'	20. BLM/BIA Bond No. on file NLM-NMB-000460	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3009' GL	22. Approximate date work will start*	23. Estimated duration 30 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.   | 5. Operator certification   |
| 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) | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature <i>Barry W. Hunt</i>	Name (Printed/Typed) BARRY W. HUNT	Date 5/17/12
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Title  
PERMIT AGENT FOR RKI EXPLORATION & PRODUCTION, LLC.

Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed)	Date AUG 20 2012
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Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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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)  
**Approval Subject to General Requirements & Special Stipulations Attached**

Carlsbad Controlled Water Basin

(Instructions on page 2)  
**SEE ATTACHED FOR CONDITIONS OF APPROVAL**

## 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 17th day of May 2012.

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

Field Representative: Gene Simer

Address: P. O. Box 370, Carlsbad, NM 88221

Telephone: Office: (575) 885-1313, Cell: (575) 706-3225

# **RKI Exploration & Production LLC**

P.O. Box 370, Carlsbad, NM 88221  
Office 505-885-1313 Fax 505-885-3509

July 17, 2009

To Whom It May Concern:

Mr. Barry Hunt is employed by RKI Exploration & Production to sign as their agent for APD's and Right of Ways in the states of New Mexico and Texas.

If you have any questions, please contact me at my office at 575-885-1313.

Sincerely,

RKI Exploration & Production, LLC

A handwritten signature in black ink, appearing to read "Gene Simer". The signature is fluid and cursive, with a large initial "G" and a long, sweeping underline.

Gene Simer  
Production Superintendent

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

				<p><b>OPERATOR CERTIFICATION</b></p> <p><i>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.</i></p> <p>Signature: <u>Barry W. Hunt</u> Date: <u>5/17/12</u></p> <p>Print Name: <u>Barry W. Hunt</u></p> <p>E-mail Address: _____</p>
		<p>RDX FEDERAL 21-32 NMSP-E (NAD 83) Y = 373416.9' N X = 678871.6' E N LAT. = 32° 01' 32.98" W LONG. = -103° 53' 22.33"</p>		<p><b>SURVEYORS CERTIFICATION</b></p> <p><i>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</i></p> <p>February 22, 2012 Date of Survey</p> <p>Signature and Seal of Professional Surveyor</p>
<p>1650'</p>	<p>1880'</p>	<p>NMSP-E (NAD 27) Y = 373359.5' N X = 637685.4' E N LAT. = 32.0257014° W LONG. = -103.8890572°</p>		<p>James E. Tompkins Professional Surveyor New Mexico 14729</p> <p>Job No. WTC48364 JAMES E TOMPKINS 14729 Certificate Number</p>

RKI Exploration & Production, LLC

DRILLING PLAN

Well RDX Fed 21-32  
Location 1,880 FSL 1,650 FWL  
Section 21-26S-30E  
County Eddy  
State New Mexico

- 1) The elevation of the unprepared ground is 3,009 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 7,400 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 7,400 feet.
- 5) Estimated tops:

Rustler	861		
Salado	1,200		
Castile	1,700		
Lamar Lime	3,418		
Base of Lime	3,432		
Delaware Top	3,457		
Bell Canyon Sand	3,457	Oil	1,497 psi
Cherry Canyon Sand	4,523	Oil	1,958 psi
Brushy Canyon Sand	5,589	Oil	2,420 psi
Bone Spring	7,253		
TD	7,400		144 degree F

The Bone Spring will be penetrated as rathole to enable the entire Brushy Canyon to be logged.  
Fresh water anticipated at 200 feet.

- 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	725 875	13 3/8"	54.5#/J-55	ST&C	2.98	6.06	10.78
12 1/2"	0	3,425	9 5/8"	40#/J-55	LT&C	1.36	5.41	3.80
7 7/8"	0	7,400	5 1/2"	17#/N-80	LT&C	1.96	1.55	2.77

All new casing

7) Cement program:

**Surface** 17 1/2" hole  
 Pipe OD 13 3/8"  
 Setting Depth 875 ft  
 Annular Volume 0.69462 cf/ft  
 Excess 1 100 %

Lead 541 sx 1.75 cf/sk 13.5 ppg  
 Tail 200 sx 1.34 cf/sk 14.8 ppg  
 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 3,425 ft  
 Annular Volume 0.31318 cf/ft 0.3627 cf/ft  
 Excess 1 100 %  
 Total Annular Volume 1116 cf  
 With Excess 2232 cf

Lead 950 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 7,400 ft  
 Annular Volume 0.1733 cf/ft 0.26074 cf/ft 300 ft  
 Excess 0.35 35 %  
 Total Annular Volume 767 cf  
 With Excess 1,036 cf  
 DV Tool Depth 5000 ft

Stage 1

Lead: 382 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: 160 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: 3,125 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 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 nipped down at this point.

The stack will not be isolated and tested after running the 9 5/8" casing, but will be tested along with the 9 5/8" casing. Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole. These function test will be documented on the daily driller's log.

A drilling spool or blowout preventer with 2 side outlets (choke side shall be 3" minimum diameter, kill side shall be at least 2" diameter).

2 kill line valves, one of which will be a check valve.

2 chokes on the manifold along with a pressure gauge.

Upper kelly cock valve with handle available.

Safety valve and subs to fit all drill string connections in use.

All BOP equipment connections subjected to pressure will be flanged, welded, or clamped.

Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	PV	YP	Fluid Loss	Type System
0	875	8.5 to 8.9	32 to 36	6 - 12	2 - 8	NC	Fresh Water
875	3,425	9.8 to 10.0	28 to 30	1 - 6	1 - 6	NC	Brine
3,425	7,400	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.

Though lost circulation is not anticipated, lost circulation material will be available on location.

12) Anticipated Start Date      June '12  
Duration                              15 days

The diagram illustrates a wellhead assembly with the following components and connections:

- ROTATING HEAD (OPTIONAL)**: Located at the top center.
- 2" FILL-UP LINE**: A line entering from the left into the rotating head area.
- FLOW LINE TO PITS**: A line exiting to the right from the rotating head area.
- ANNULAR 13 5/8" 3M**: A large rectangular component below the rotating head.
- 13 5/8" 3M PIPE RAMS**: A rectangular component below the annular.
- 13 5/8" 3M BLIND RAMS**: A rectangular component below the pipe rams.
- LET'S IN RAM BODY BLIND RAMS**: Text on the left side, partially cut off.
- 3M MGVS**: Text on the right side, partially cut off.
- DRILLING SPOOL**: A central vertical component.
- 3M MGVS (SEQUENCE OPTIONAL IF HCR)**: Text on the right side, partially cut off.
- 3M MGVS (OR HCR)**: Text on the right side, partially cut off.
- MIN 3" NOM 3M CHOKE LINE**: A line entering from the right into the drilling spool.
- 3M MGVS**: Text on the right side, partially cut off.
- 3M MGVS**: Text on the right side, partially cut off.

**COMPONENT PRESSURE RATINGS  
MAY EXCEED 3M (E.G. 5M)**












**(SEQUENCE OPTIONAL)**

	<b>X</b>	
<b>MIN 2" NOM 3M KILL LINE</b>		

(SEQUENCE OPTIONAL IF HCR)  
3M MGV 3M MGV (OR HCR)

X	X	
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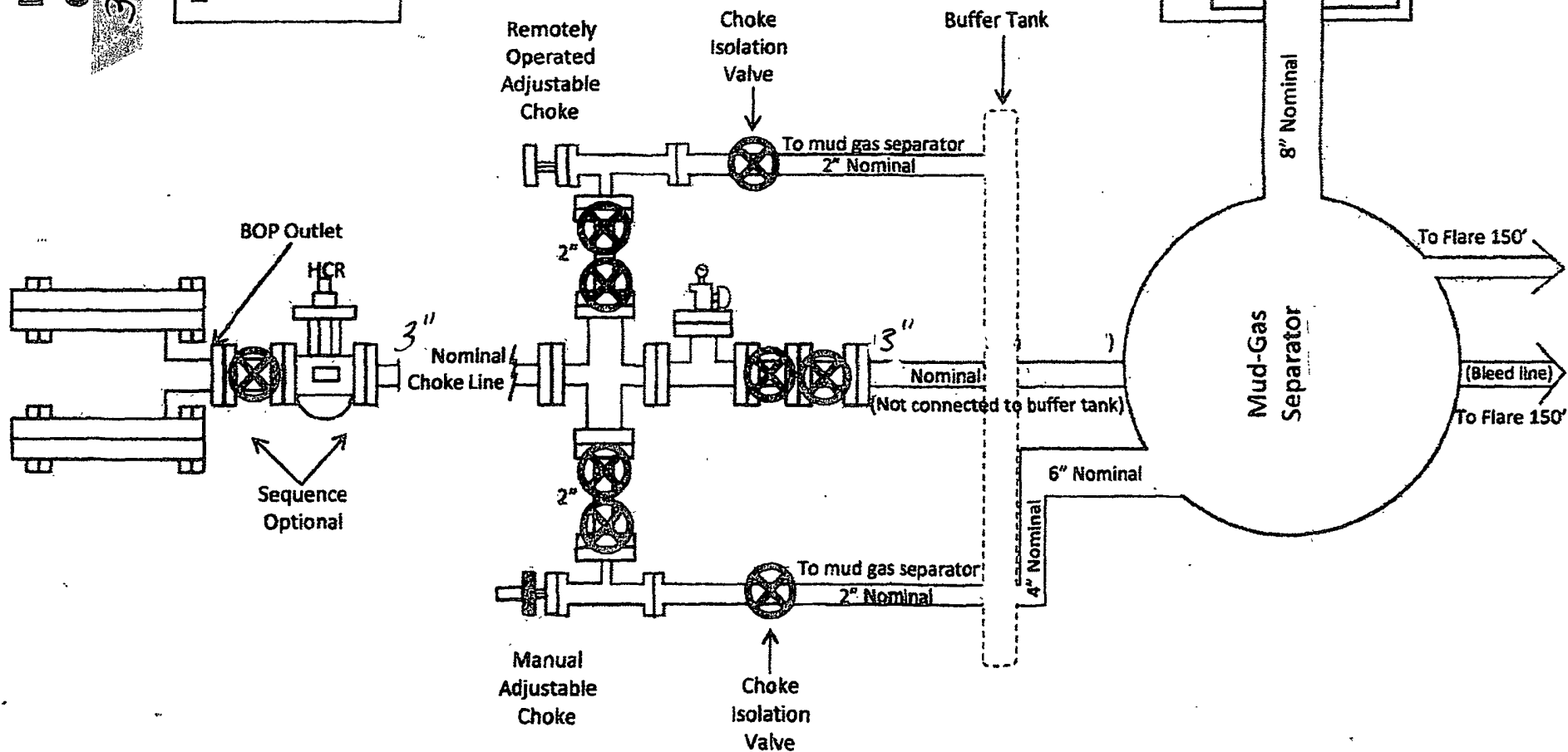
MIN 3" NOM 3M CHOKE LINE

3M ADJUSTABLE CHOKE				(1)
		NOM 2" LINE		
3M MGV		2ND MGV OPTIONAL		
	NOM 2" LINE			
3M MGV (L IF HCR) (R HCR)				
		3M MGV	3M MGV	(2)
				NOM 3" LINE
KE LINE		3M MGV W/ PRES GAUGE ON TOP OF BLOCK		
3M MGV				
	NOM 2" LINE			
3M MGV		2ND MGV OPTIONAL		
		(1)		
		NOM 2" LINE		
3M ADJUSTABLE CHOKE (REMOTE OPERATED CHOKE OPTIONAL FOR ONE SIDE ONLY)				

- MGV - Manual Gate Valve**  
**CKV - Check Valve**  
**HCR - Hydraulically Controlled Remote Valve**

# Drilling Operations Choke Manifold 3M Service

Exhibit E-1 - Choke Manifold Diagram



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

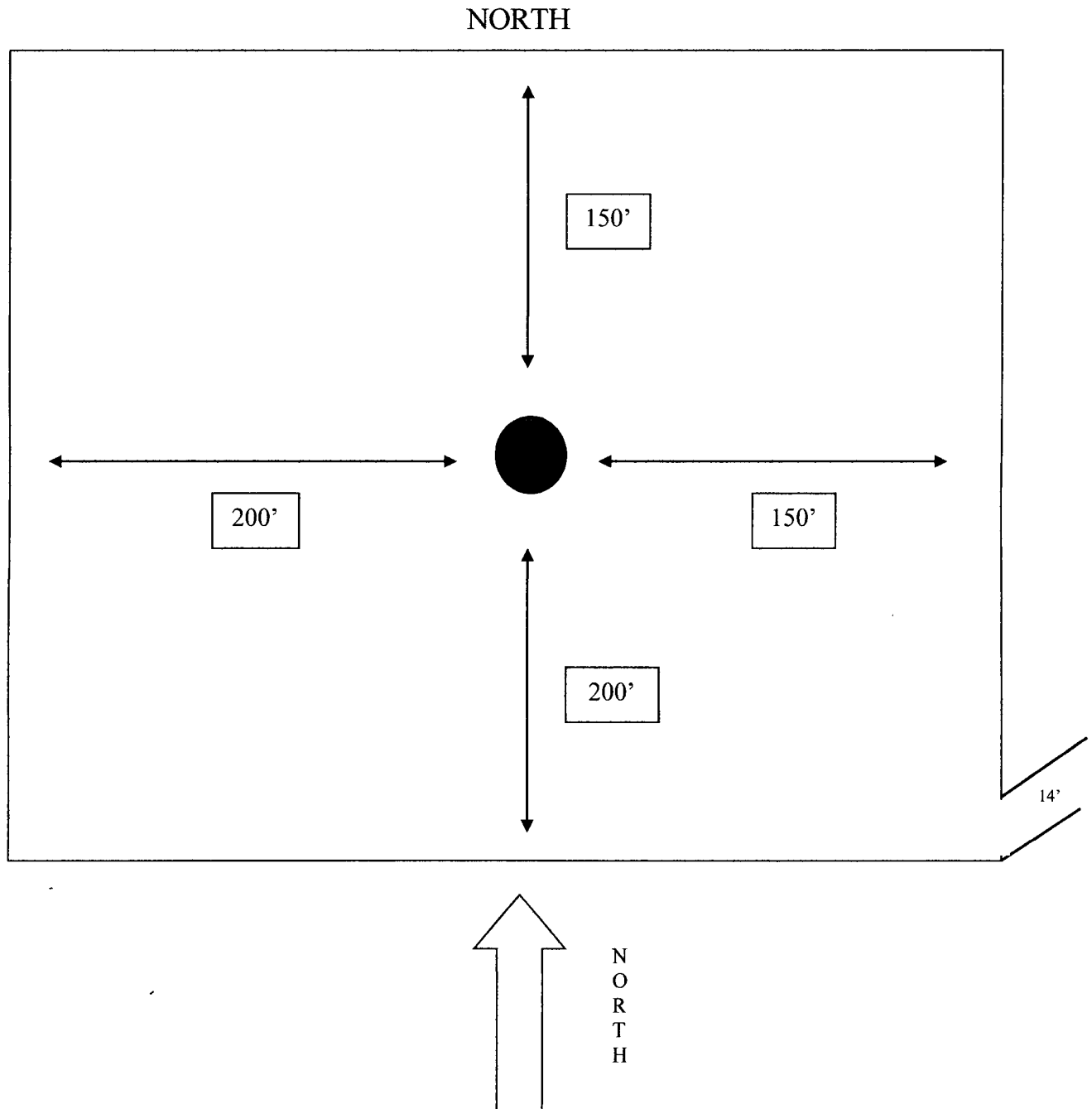
- Closed Loop equipment will be inspected daily by each tour and any necessary maintenance performed
- Any leak in system will be repaired and/or contained immediately
- OCD notified within 48 hours
- Remediation process started

### Closure Plan

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

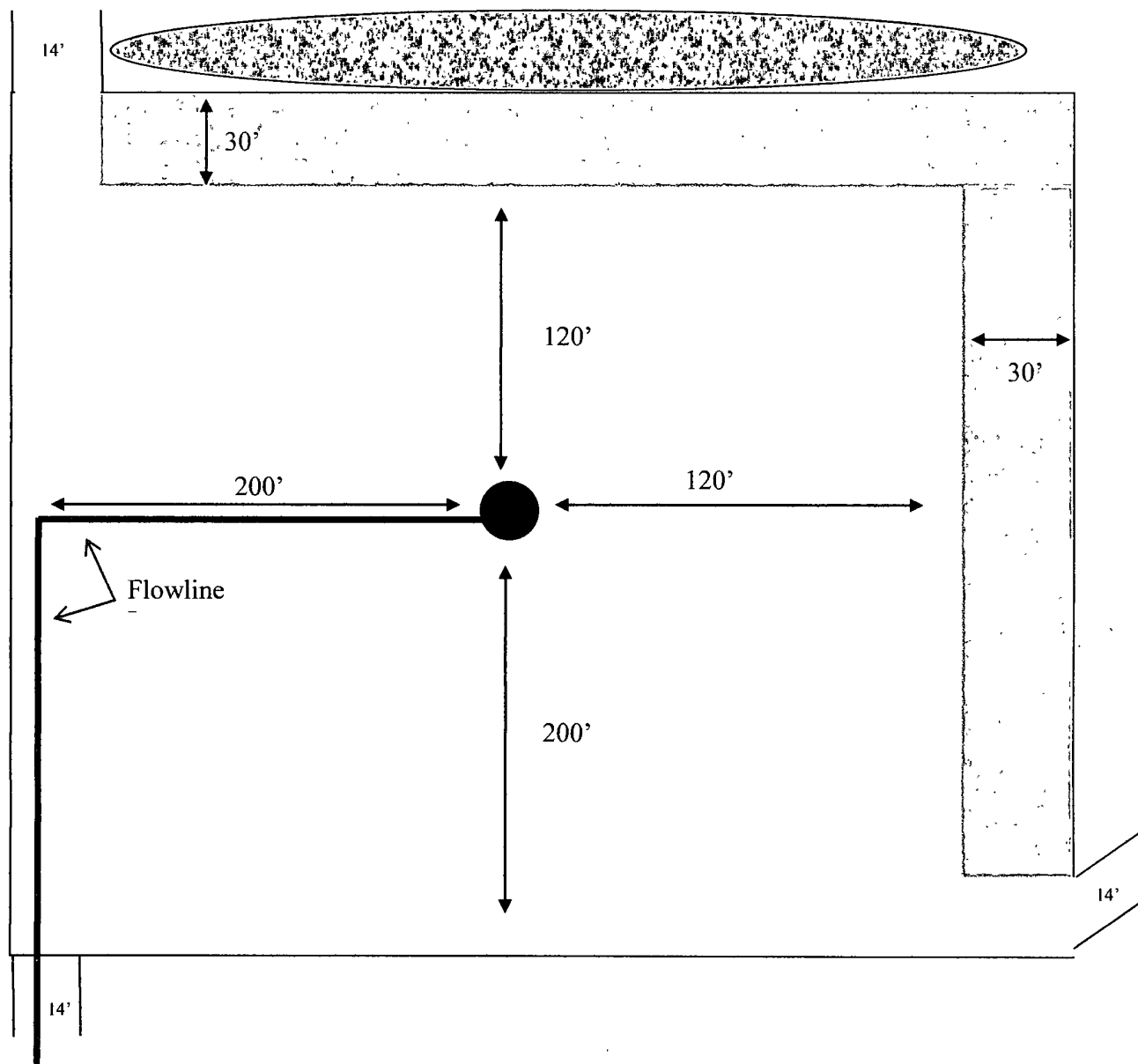
**EXHIBIT D**

**Rig Plat Only  
RDX FEDERAL 21-32  
V-DOOR EAST**



# EXHIBIT C

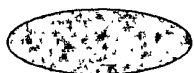
## Interim Reclamation & Production Facilities RDX FEDERAL COM 21-32 V-DOOR EAST



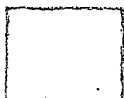
### LEGEND



Well Bore



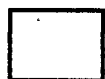
Topsoil



Interim Reclamation



Production Facilities



NORTH

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	RKI EXPLORATION
LEASE NO.:	NM102917
WELL NAME & NO.:	32-RDX FEDERAL 21
SURFACE HOLE FOOTAGE:	1880'/S. & 1650'/W.
BOTTOM HOLE FOOTAGE:	
LOCATION:	Section 21, T. 26 S., R. 30 E., NMPM
COUNTY:	Eddy County, New Mexico

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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.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
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- ☒ **Special Requirements**
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- ☒ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
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  - Roads
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- ☒ **Drilling**
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  - Waste Material and Fluids
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  - Well Structures & Facilities
  - Pipelines
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