

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) 748-9120

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3461

State of New Mexico

Form C-101
Revised November 14, 2012



Energy Minerals and Natural Resources

Oil Conservation Division

AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

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

Operator Name and Address RKI Exploration & Production, LLC 210 Park Avenue, Suite 900 Oklahoma City, OK 73102		OGRID Number 246289
Property Code		API Number
Property Name RDX 16		Well No. 18H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
D	16	26S	30E		250	NORTH	700	WEST	EDDY

* Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
M	16	26S	30E		330	SOUTH	925	WEST	EDDY

9. Pool Information

Pool Name WILDCAT G-03 S263016K: BONE SPRING	Pool Code
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Additional Well Information

11. Work Type N	12. Well Type O	13. Cable/Rotary R	14. Lease Type S	15. Ground Level Elevation 3,088 FEET
16. Multiple No	17. Proposed Depth 12,207 feet	18. Formation Bone Spring	19. Contractor	20. Spud Date ASAP
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surface	17-1/2 in.	13-3/8 in.	54.5#/ft	850 feet	553	surface
Intermediate	12-1/2 in.	9-5/8 in.	40#/ft	3,480 feet	828	surface
Production	8-3/4 in.	5-1/2 in.	17#/ft	12,207 feet	941	3,180 feet

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

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

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify that I have complied with 19.15.14.9 (A) NMAC and/or 19.15.14.9 (B) NMAC , if applicable.

Signature: *Charles K. Ahn*
Printed name: Charles K. Ahn
Title: EH&S/Regulatory Manager
E-mail Address: cahn@rkixp.com

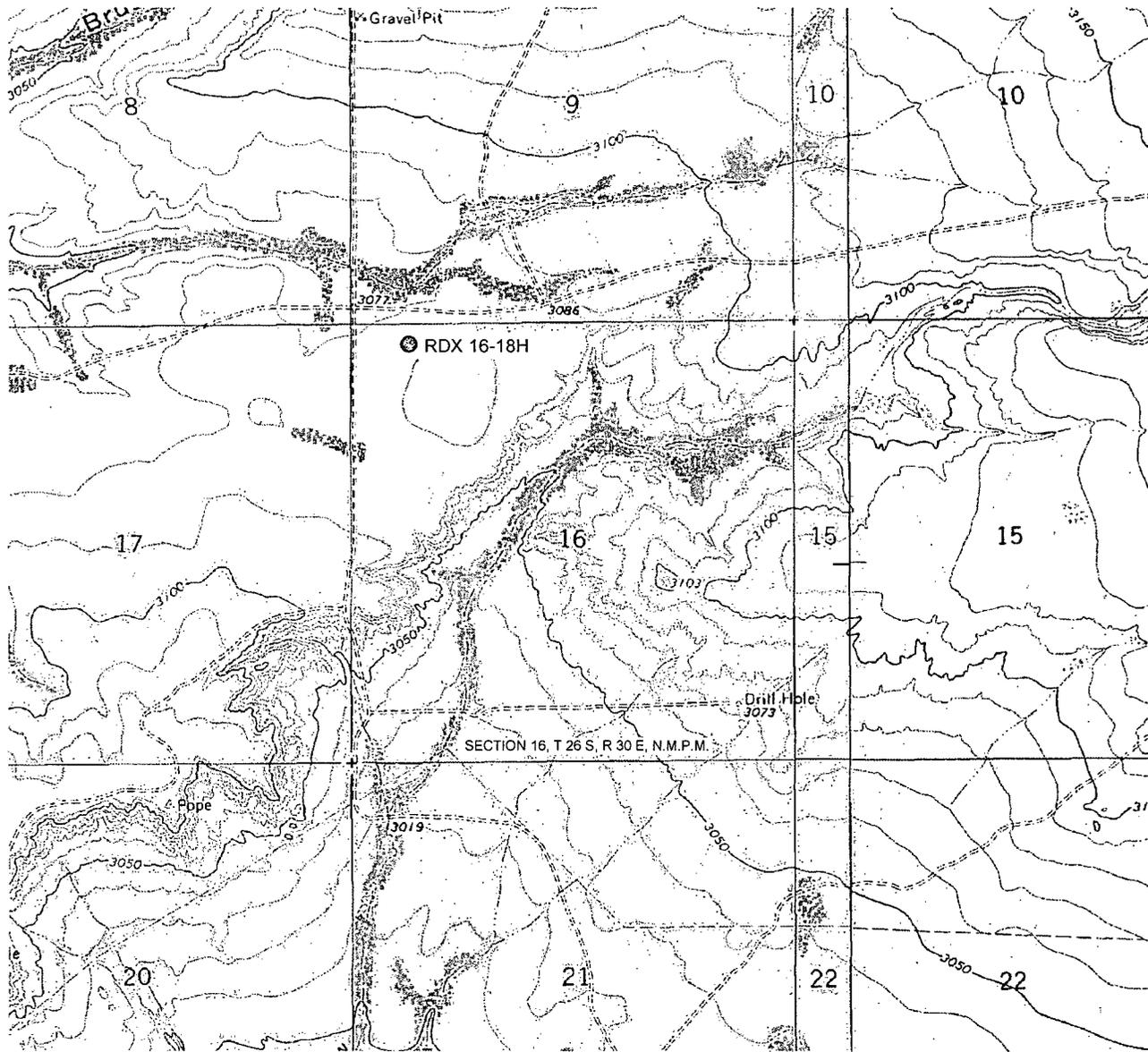
Date: 5/01/2013 Phone: 405-996-5771

OIL CONSERVATION DIVISION

Approved By: *[Signature]*
Title: *Dist. II Supervisor*
Approved Date: *May 6 - 2013* Expiration Date:

Conditions of Approval Attached

LOCATION VERIFICATION MAP



GRAPHIC SCALE 1" = 2000'

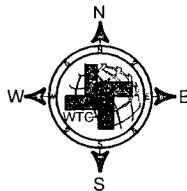
SECTION 16, T 26 S, R 30 E, N.M.P.M.

COUNTY: EDDY STATE: NM

DESCRIPTION: 250' FNL & 700' FWL

OPERATOR: RKI EXPLORATION & PRODUCTION

WELL NAME: RDX 16-18H



DRIVING DIRECTIONS:

Beginning at US 285 at the Texas-New Mexico State line go northerly 3.7 miles to CR 725 (Longhorn Road). On CR 725 go northeasterly around a bend, and across Pecos River for approx. 4.2 miles to a "Y". Take left fork going northeasterly (Pipeline Rd.) for approx. 6.2 miles to a lease road 4-way. Turn right and go south on lease road for approx. 0.1 mile from which the location flag is ± 715 feet east.



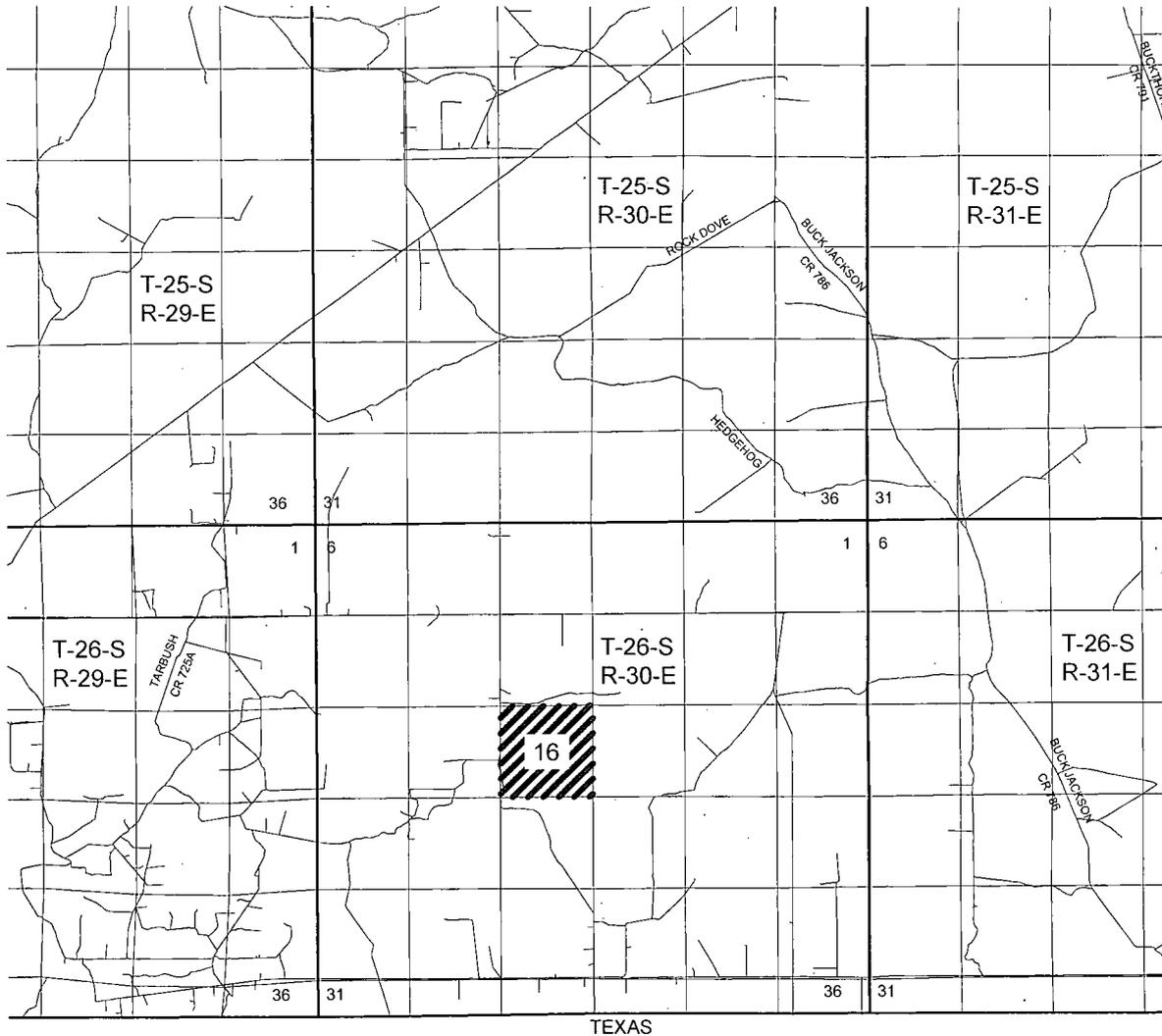
WEST TEXAS CONSULTANTS, INC.
ENGINEERS PLANNERS SURVEYORS
405 S.W. 1st STREET
ANDREWS, TEXAS 79714
(432) 523-2181

RKI EXPLORATION & PRODUCTION

JOB No.: WTC48731

Z:\Projects\01 & 005 Survey\04 Exploration & Production\08731-RKI Exploration - State & Pat B RDX 16-18H Eddy Co\Wetmap\08731-RDX 16-18H.dwg

VICINITY MAP



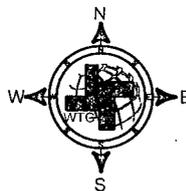
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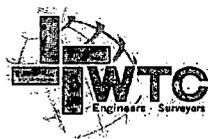
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RKI EXPLORATION & PRODUCTION

JOB No.: WTC48731

Z:\Projects\181 & 200 Survey\180 Exploration & Production\48731\181 Exploration, State of Nat. of Box 18 West, East, Oklahoma\48731_RDX_16-18H.dwg

RKI Exploration & Production, LLC

Well RDX 16-18H
 Location Surface: 250 FNL 700 FWL 16-26S-30E
 Bottom Hole: 330 FSL 925 FWL 16-26S-30E
 County Eddy
 State New Mexico

- 1) The elevation for the unprepared ground is 3,088 feet above sea level.
- 2) The geologic name of the surface formation is Quaternary - Alluvium.
- 3) A rotary rig will be utilized to drill the well to 12,207 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 12,207 feet

5) Estimated tops:

	MD	TVD		
Rustler	800			
Salado	1,100			
Castile	1,650			
Lamar Lime	3,467			
Base of Lime	3,492			
Delaware Top	3,517			
Bell Canyon Sand	3,517		Oil	BHP = .44 psi/ft x depth 1,547 psi
Cherry Canyon Sand	4,611		Oil	2,029 psi
Brushy Canyon Sand	5,678		Oil	2,498 psi
KOP	7,139	7,139	Oil	3,141 psi
Bone Spring Lime	7,362	7,357	Oil	3,239 psi
Landing Point (Avalon Shale)	8,039	7,712	Oil	3,393 psi
TD	12,207	7,712		3,393 psi

6) Casing program:

Hole Size	Top	Bottom	OD Csg	Wt/Grade	Connection	Connection	Collapse Collapse Design Factor	Burst Design Factor	Tension Design Factor
17 1/2"	0	850	13 3/8"	54.5#/J-55	ST&C		3.02	14.60	11.10
12 1/2"	0	3,480	9 5/8"	40#/J-55	LT&C		1.32	5.16	3.74
8 3/4"	0	12,207	5 1/2"	17#/HCP-110	LT&C		1.60	1.55	5.82
Collapse		1.125							
Burst		1.0							
Tension		2.0							

7) Cement program:

Surface 17 1/2" hole
 Pipe OD 13 3/8"
 Setting Depth 850 ft
 Annular Volume 0.69462 cf/ft
 Excess 0.5 50 %

Lead 353 sx 1.75 cf/sk 13.5 ppg
 Tail 200 sx 1.34 cf/sk 14.8 ppg

Lead: "C" + 4% PF20 + 2% PF1 + .125 pps PF29 + .2% PF46

Tail: "C" + 1% PF1

Top of cement: Surface

Intermediate 12 1/2" hole
 Pipe OD 9 5/8"
 Setting Depth 3,480 ft
 Annular Volume 0.31318 cf/ft 0.3627 cf/ft
 Excess 0.5 50 %

Lead 628 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 + 6% PF20 + 3 pps PF42 + .125 pps PF29 + .2% PF46 + 1% PF1

Tail: "C" + .2% PF13

Top of cement: Surface

Production 8 3/4" hole
 Pipe OD 5 1/2"
 Setting Depth 12,207 ft
 Annular Volume 0.2526 cf/ft 0.26074 cf/ft 300 ft
 Excess 0.25 25 %
 DV Tool Depth 5500 ft

Stage 1

Lead: 419 sx 2.08 cf/sk 11.5 ppg
 Tail: 101 sx 1.8 cf/sk 13.0 ppg

Lead: PVL + .5% CC + .3% PF79 (extender) + .25 pps PF46 (defoamer) + 3 pps PF42 (Kolite) + .125 pps + .125 pps PF29 (Cellophane) + .2% PF13 (retarder)

Tail: PVL + 30% PF151 (calcium carbonate) + .5% PF174 (expanding agent) + .7% PF606 + .7% PF606 (gel suppressing agent) + .2% PF153 (antissettling agent) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)

Top of cement: DV tool

Stage 2

Lead: 246 sx 2.04 cf/sk 12.6 ppg
 Tail: 175 sx 1.33 cf/sk 14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 (salt) + 6% PF20 (gel) + .125 pps PF29 (cellophane) + .25 pps PF46 (antifoam) + .2% PF13 (retarder)

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

Top of cement: 3,180 ft

8) Pressure control equipment:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram type (3,000 psi WP) preventer, a bag-type annular preventer (3,000 psi WP), and rotating head. Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and pipe rams (sized to accommodate the drill pipe size being utilized) on bottom. A 13 3/8" SOW x 13 5/8" 3M casing head will be installed on the 13 3/8" casing and utilized until total depth is reached. All BOP and associated equipment will be tested to 3,000 psi and the annular will be tested to 1,500 psi after setting each casing string. The 13 3/8" and 9 5/8" casing will be tested to .22 psi per ft of casing string length or 1,500 psi whichever is greater, but not to exceed 70% of the minimum yield.

Pipe rams will be operated and checked each 24 hour period and each time the drill string is out of the hole. These function test will be documented on the daily driller's log.

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

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

2 chokes on the manifold along with a pressure gauge.

Upper kelly cock valve with handle available.

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

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

Fill up line above the upper most preventer.

9) Mud program:

Top	Bottom	Mud Wt.	Vis	Fluid Loss	Type System
	0	850	8.5 to 8.9	32 to 36	Fresh Water
	850	3,480	9.8 to 10.0	28 to 30	Brine
	3,480	12,207	8.9 to 9.1	28 to 36	Fresh Water
					NC

10) Logging, coring, and testing program:

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

12) Anticipated start date

ASAP

Duration

25 days

RKI Exploration & Production

Eddy County (NM83E)

Sec 16-T26S-R30E

RDX 16-18H

Wellbore #1

Plan: Prelim Plan

Standard Planning Report

10 April, 2013

Wolverine Directional, LLC

Planning Report

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well RDX 16-18H
Company:	RKI Exploration & Production	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project:	Eddy County (NM83E)	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec 16-T26S-R30E	North Reference:	True
Well:	RDX 16-18H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim Plan		

Project:	Eddy County (NM83E)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Sec 16-T26S-R30E				
Site Position:	Map	Northing:	381,848.41ft	Latitude:	32° 2' 56.352 N
From:		Easting:	680,403.16ft	Longitude:	103° 53' 4.129 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.24 °

Well:	RDX 16-18H					
Well Position	+N/-S	74.4 ft	Northing:	381,912.50 ft	Latitude:	32° 2' 57.089 N
	+E/-W	-2,523.8 ft	Easting:	677,879.10 ft	Longitude:	103° 53' 33.454 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	0.0ft

Wellbore:	Wellbore #1				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/10/13	7.50	59.92	48,319

Design:	Prelim Plan				
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Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	177.41	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,139.0	0.00	0.00	7,139.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,039.0	90.00	177.41	7,712.0	-572.4	25.9	10.00	10.00	0.00	177.41	
12,207.6	90.00	177.41	7,712.0	-4,736.6	214.7	0.00	0.00	0.00	0.00	RDX 16-18H PBHL

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,139.0	0.00	0.00	7,139.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - 10/100										
8,039.0	90.00	177.41	7,712.0	-572.4	25.9	573.0	10.00	10.00	0.00	
EOC - Hold to TD										
12,207.6	90.00	177.41	7,712.0	-4,736.6	214.7	4,741.5	0.00	0.00	0.00	
TD at 12207.6 - RDX 16-18H PBHL										

Wolverine Directional, LLC

Planning Report

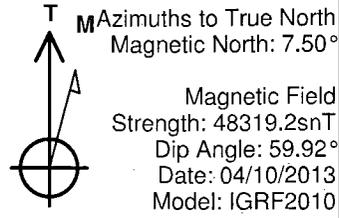
Database:	EDM:2003.21 Single User Db	Local Co-ordinate Reference:	Well:RDX:16-18H
Company:	RKI Exploration & Production	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project:	Eddy County, (NM83E)	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Sec:16-T26S-R30E	North Reference:	True
Well:	RDX 16-18H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Prelim Plan		

Targets									
Target Name	Dip Angle	Dip Dir	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
RDX 16-18H PBHL	0.00	0.00	7,712.0	-4,736.6	214.7	377,176.80	678,113.10	32° 2' 10.215 N	103° 53' 30.960 W
- plan hits target									
- Point									

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
7,139.0	7,139.0	0.0	0.0	KOP - 10/100	
8,039.0	7,712.0	-572.4	25.9	EOC - Hold to TD	
12,207.6	7,712.0	-4,736.6	214.7	TD at 12207.6	

RKI Exploration & Production

Project: Eddy County (NM83E)
 Site: Sec 16-T26S-R30E
 Well: RDX 16-18H
 Wellbore: Wellbore #1
 Design: Prelim Plan



WELL DETAILS: RDX 16-18H

		Ground Level: 0.0	
+N/-S	+E/-W	Northing	Easting
0.0	0.0	381912.50	677879.10
		Latitude	Longitude
		32° 2' 57.089 N	103° 53' 33.454 W
SHL: 250' FNL / 700' FWL			
BHL: 330' FSL / 925' FWL			

SECTION DETAILS

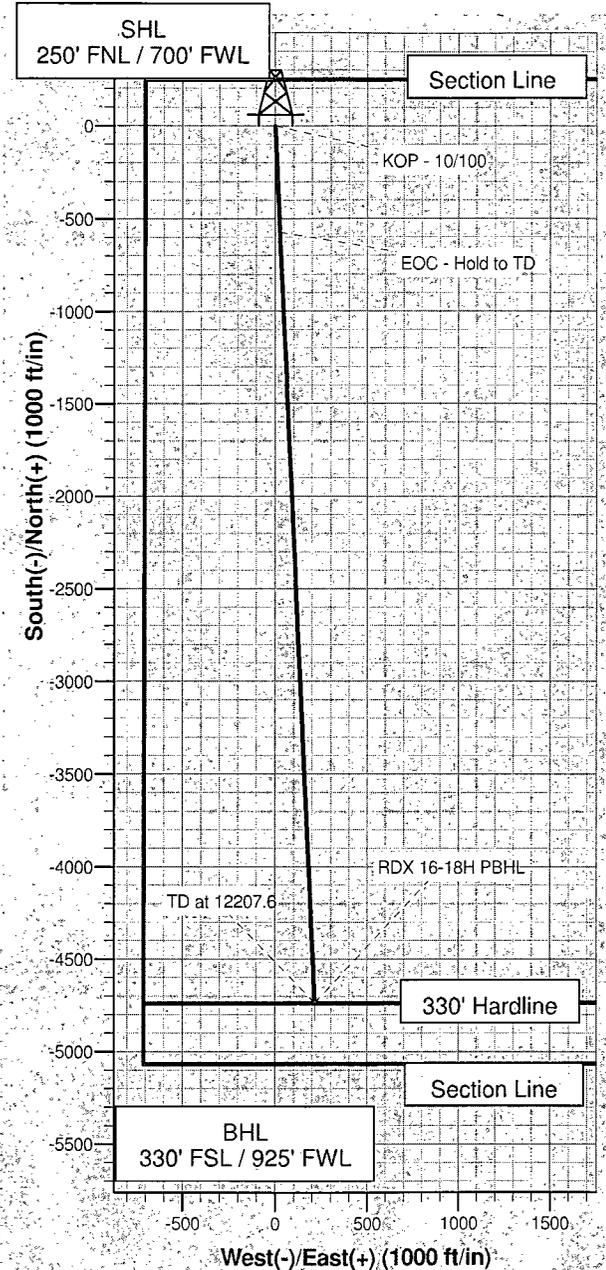
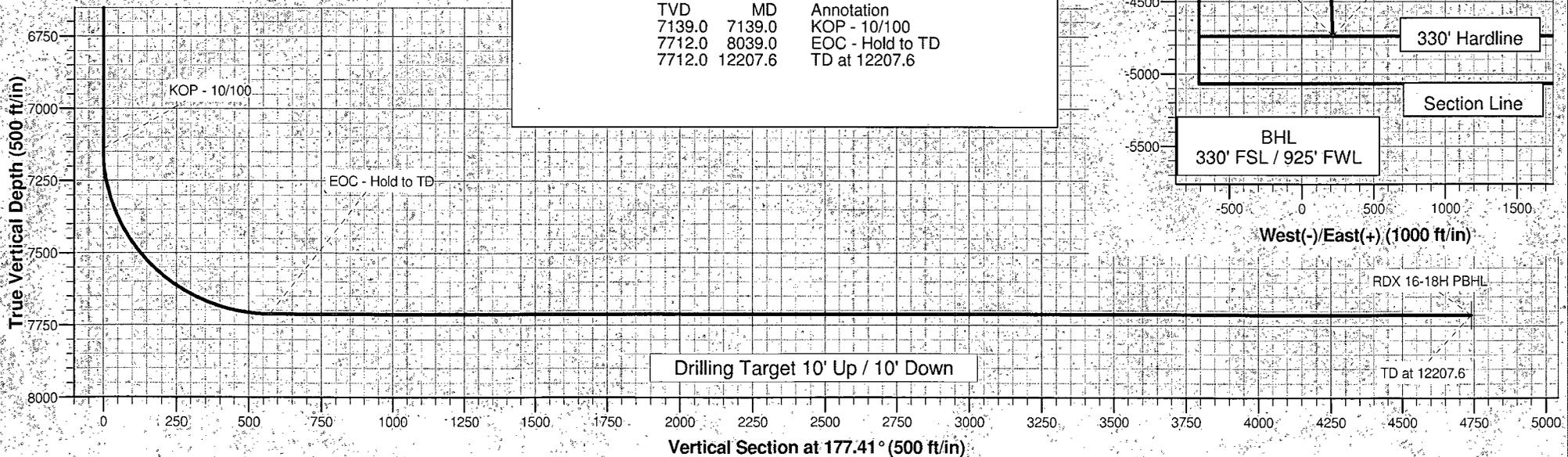
Sec	MD	Inc.	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	7139.0	0.00	0.00	7139.0	0.0	0.0	0.00	0.00	0.0	
3	8039.0	90.00	177.41	7712.0	-572.4	25.9	10.00	177.41	573.0	
4	12207.6	90.00	177.41	7712.0	-4736.6	214.7	0.00	0.00	4741.5	RDX 16-18H PBHL

PROJECT TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
RDX 16-18H PBHL	7712.0	-4736.6	214.7	377176.80	678113.10	Point

Annotations

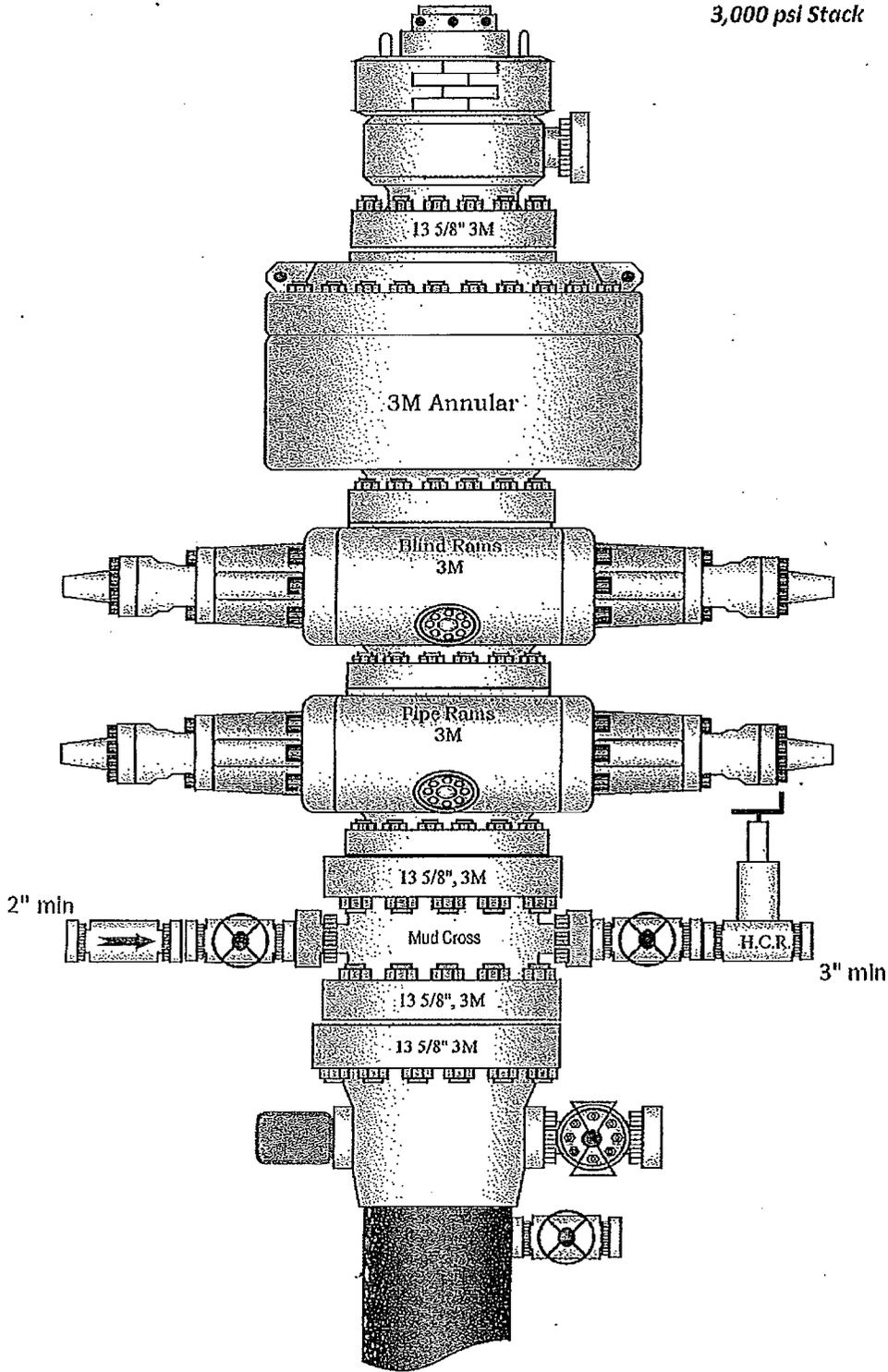
TVD	MD	Annotation
7139.0	7139.0	KOP - 10/100
7712.0	8039.0	EOC - Hold to TD
7712.0	12207.6	TD at 12207.6



RDX 16-18H PBHL

TD at 12207.6

3,000 psi Stack



3,000 psi Manifold

