

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMNM61349
2. Name of Operator RKI EXPLORATION & PROD LLC		6. If Indian, Allottee or Tribe Name
Contact: JODY NOERDLINGER E-Mail: JNOERDLINGER@RKIXP.COM		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 210 PARK AVE SUITE 900 OKLAHOMA CITY, OK 73102	3b. Phone No. (include area code) Ph: 405-996-0577	8. Well Name and No. LONGVIEW FEDERAL 31 3H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 31 T22S R29E SESW 370FSL 2080FWL 32.203428 N Lat, 104.013882 W Lon		9. API Well No. 30-015-42050-00-X1
		10. Field and Pool, or Exploratory UNDESIGNATED
		11. County or Parish, and State EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

RKI Exploration and Production seeks approval to change the permitted casing program on the subject well, scheduled to spud on August 21, 2014.

Proposed change:

New--drill 8 3/4 inch lateral hole and run 5 1/2 inch production longstring, circulating cement to surface.

Original--set 7 inch intermediate casing, drill a 6 1/8 inch production hole and run a 4 1/2 inch liner.

Please see the attached, revised drilling program.

Accepted for record
NMOCDD 10/9/14

NM OIL CONSERVATION
ARTESIA DISTRICT

SEP 08 2014

RECEIVED

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #260014 verified by the BLM Well Information System For RKI EXPLORATION & PROD LLC, sent to the Carlsbad Committed to AFMSS for processing by WESLEY INGRAM on 09/02/2014 (14WWWI0322SE)	
Name (Printed/Typed) JODY NOERDLINGER	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 09/02/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>WESLEY INGRAM</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>09/02/2014</u>
Conditions of approval, if any, are attached. Approval of this notice 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.		Office <u>Carlsbad</u>

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

RKI Exploration & Production, LLC

Well: Longview Federal 3113H
 Location: Surface: 370 FSL 2,080 FWL Section 31-225-29E
 Bottom Hole: 330 FNL 1,715 FWL Section 31-225-29E

County: Eddy
 State: New Mexico

- 1) The elevation of the unprepared ground is 3,097 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 12,317 feet and run casing and cement. This equipment will then be rigged down and the well will be completed with a workover rig.
- 4) Proposed depth is 12,317 feet MD

5) Estimated tops:

	TVD	MD	
Rustler	203	203	
Salado	245	245	
Top of Salt	512	512	
Base of Salt	2,555	2,555	BHP = .44 psi/ft x depth
Lamar Lime			- psi
Base of Lime	2,900	2,870	1,276 psi
Delaware Top			- psi
Bell Canyon Sand			- psi
Cherry Canyon Sand	3,725	3,671	1,639 psi
Brushy Canyon Sand	6,191	6,146	2,724 psi
Bone Spring	6,458	6,503	2,842 psi
KOP	6,981	7,025	3,072 psi
Bone Spring 1st Sand	7,682	7,332	3,380 psi
			- psi
Landing Point	7,625	8,035	3,355 psi
TD	7,555	12,317	3,324 psi

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	250	13 3/8"	54.5#/J-55	ST&C	10.27	49.64	37.72
12 1/4"	0	4,000	9 5/8"	40#/J-55	LT&C	1.15	4.49	3.25
8 3/4"	0	12,317	5.5"	17#/HCP-110	LT&C	1.58	2.13	2.71

Collapse	1.125
Burst	1.0
Tension	2.0

7) Cement program:

Surface 17 1/2" hole
 Pipe OD 13 3/8"
 Setting Depth 250 ft
 Annular Volume 0.69462 cf/ft
 Excess 100 %
 Lead 198 sx 1.75 cf/sk 13.5 ppg
 Tail 250 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 1/4" hole
 Pipe OD 9 5/8"
 Setting Depth 4,000 ft
 Annular Volume 0.31318 cf/ft 0.3627 cf/ft
 Excess 50 %
 Lead 850 sx 1.92 cf/sk 12.9 ppg
 Tail 200 sx 1.33 cf/sk 14.8 ppg

Lead: 35/65 Poz "C" + 5% PF44 (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 8 3/4" hole
 Pipe OD 5-1/2"
 Setting Depth 12,317 ft
 Annular Volume 0.2526 cf/ft 0.26074 cf/ft 4000 ft
 Excess 0.35 35 %
 DV Tool Depth 5500 ft
 Stage 1

Lead: 1,571 sx 1.48 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: 937 sx 1.89 cf/sk 12.9 ppg

Tail: 100 sx 1.48 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: ft

Surface

8) Pressure control equipment:

Multi-bowl not listed

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" 5M 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 initial installation. 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	PV	YP	Fluid Loss	Type System
0	250	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Water
250	4,000	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
4,000	12,317	8.9 to 9.1	28 to 36	1 - 3	1 - 3	NC	Fresh Water

10) Logging, coring, and testing program:

No drill stem test are planned

KOP 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.

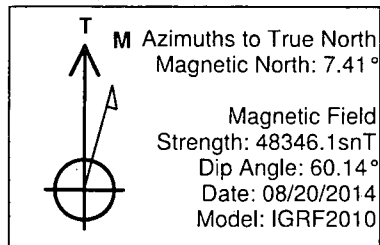
Lost circulation can occur in, lost circulation will be on location and readily available if needed.

12) Anticipated start date

Duration ASAP 25 days

RKI Exploration & Production

Project: Eddy County (NM83E)
 Site: Sec 31-T22S-R29E
 Well: Longview Fed 31-3H
 Wellbore: Wellbore #1
 Design: 08-20-14



WOLVERINE DIRECTIONAL

WELL DETAILS: Longview Fed 31-3H

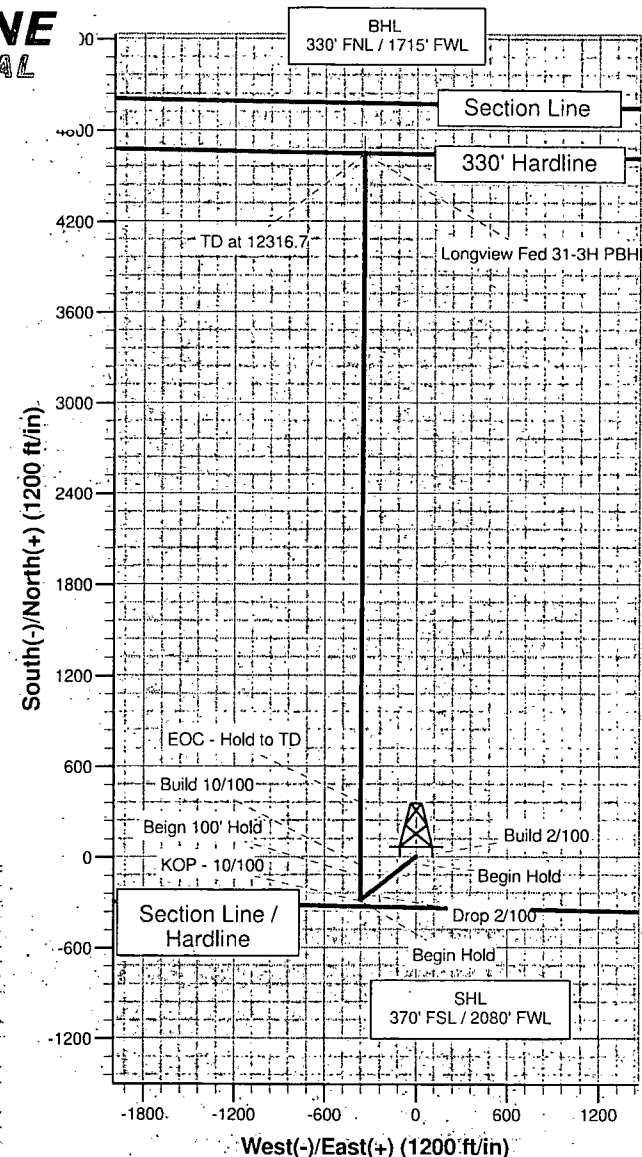
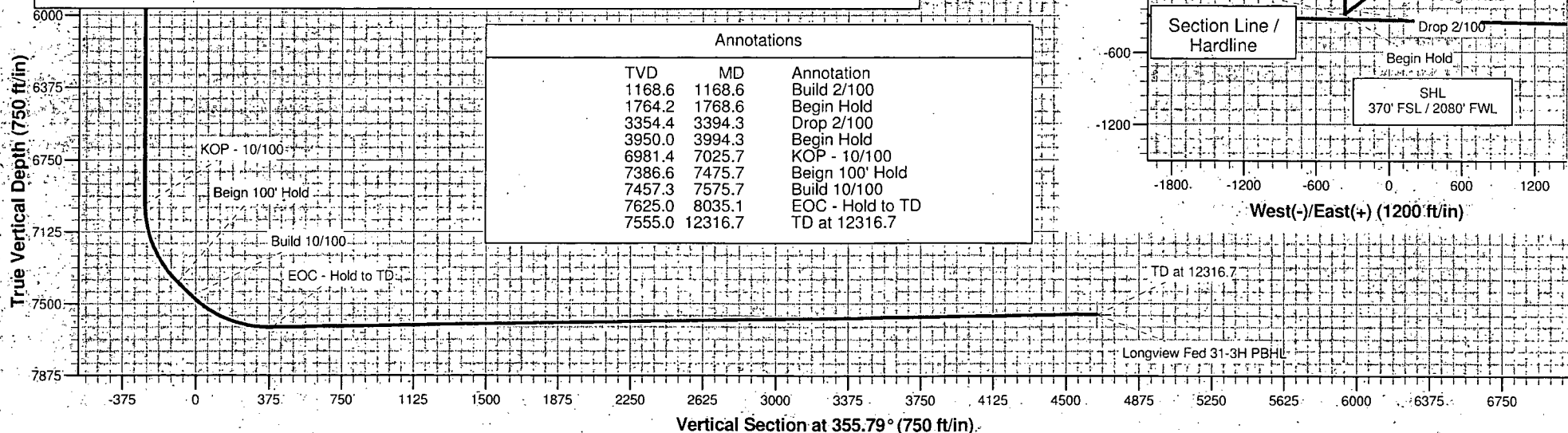
Ground Level: 0.0
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.0 488600.10 636494.40 32° 20' 34.284 N 104° 1' 30.764 W
 SHL: 370' FSL / 2080' FWL of Sec 06
 BHL: 330' FNL / 1715' FWL of Sec 31

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	1168.6	0.00	0.00	1168.6	0.0	0.0	0.00	0.00	0.0	
3	1768.6	12.00	231.70	1764.2	-38.8	-49.1	2.00	231.70	-35.1	
4	3394.3	12.00	231.70	3354.4	-248.3	-314.4	0.00	0.00	-224.5	
5	3994.3	0.00	0.00	3950.0	-287.1	-363.5	2.00	180.00	-259.6	
6	7025.7	0.00	0.00	6981.4	-287.1	-363.5	0.00	0.00	-259.6	
7	7475.7	45.00	0.00	7386.6	-119.3	-363.5	10.00	0.00	-92.2	
8	7575.7	45.00	0.00	7457.3	-48.6	-363.5	0.00	0.00	-21.7	
9	8035.1	90.94	0.27	7625.0	366.0	-362.4	10.00	0.38	391.6	
10	12316.7	90.93	0.27	7555.0	4646.9	-342.3	0.00	148.61	4659.5	Longview Fed 31-3H PBHL

PROJECT TARGET DETAILS (MAP CO-ORDINATES)

Name TVD +N/-S +E/-W Northing Easting Shape
 Longview Fed 31-3H PBHL 7555.0 4646.9 -342.3 493246.00 636138.70 Point



RKI Exploration & Production

Eddy County (NM83E)

Sec 31-T22S-R29E

Longview Fed 31-3H

Wellbore #1

Plan: 08-20-14

Standard Planning Report

20 August, 2014

Wolverine Directinal, LLC

Planning Report

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Longview Fed 31-3H
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 31-T22S-R29E	North Reference:	True
Well:	Longview Fed 31-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	08-20-14		

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 31-T22S-R29E			
Site Position:		Northing:	488,600.10ft	Latitude:	32° 20' 34.284 N
From:	Map	Easting:	636,494.40ft	Longitude:	104° 1' 30.764 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.16 °

Well:	Longview Fed 31-3H					
Well Position	+N-S	0.0 ft	Northing:	488,600.10 ft	Latitude:	32° 20' 34.284 N
	+E-W	0.0 ft	Easting:	636,494.40 ft	Longitude:	104° 1' 30.764 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	0.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/20/14	7.41	60.14	48,346

Design:	08-20-14			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	355.79

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,168.6	0.00	0.00	1,168.6	0.0	0.0	0.00	0.00	0.00	0.00	
1,768.6	12.00	231.70	1,764.2	-38.8	-49.1	2.00	2.00	0.00	231.70	
3,394.3	12.00	231.70	3,354.4	-248.3	-314.4	0.00	0.00	0.00	0.00	
3,994.3	0.00	0.00	3,950.0	-287.1	-363.5	2.00	-2.00	0.00	180.00	
7,025.7	0.00	0.00	6,981.4	-287.1	-363.5	0.00	0.00	0.00	0.00	
7,475.7	45.00	0.00	7,386.6	-119.3	-363.5	10.00	10.00	0.00	0.00	
7,575.7	45.00	0.00	7,457.3	-48.6	-363.5	0.00	0.00	0.00	0.00	
8,035.1	90.94	0.27	7,625.0	366.0	-362.4	10.00	10.00	0.06	0.38	
12,316.7	90.93	0.27	7,555.0	4,646.9	-342.3	0.00	0.00	0.00	-148.61	Longview Fed 31-3I

Wolverine Directinal, LLC

Planning Report

Database	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Longview Fed 31-3H
Company	RKI Exploration & Production	IVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project	Eddy County (NM83E)	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site	Sec 31-T22S-R29E	North Reference:	True
Well	Longview Fed 31-3H	Survey Calculation Method:	Minimum Curvature
Wellbore	Wellbore #1		
Design	08-20-14		

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	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,168.6	0.00	0.00	1,168.6	0.0	0.0	0.0	0.00	0.00	0.00	
Build 2/100										
1,200.0	0.63	231.70	1,200.0	-0.1	-0.1	-0.1	2.00	2.00	0.00	
1,300.0	2.63	231.70	1,300.0	-1.9	-2.4	-1.7	2.00	2.00	0.00	
1,400.0	4.63	231.70	1,399.7	-5.8	-7.3	-5.2	2.00	2.00	0.00	
1,500.0	6.63	231.70	1,499.3	-11.9	-15.0	-10.7	2.00	2.00	0.00	
1,600.0	8.63	231.70	1,598.4	-20.1	-25.4	-18.2	2.00	2.00	0.00	
1,700.0	10.63	231.70	1,697.0	-30.5	-38.6	-27.5	2.00	2.00	0.00	
1,768.6	12.00	231.70	1,764.2	-38.8	-49.1	-35.1	2.00	2.00	0.00	
Begin Hold										
1,800.0	12.00	231.70	1,794.9	-42.8	-54.3	-38.7	0.00	0.00	0.00	
1,900.0	12.00	231.70	1,892.8	-55.7	-70.6	-50.4	0.00	0.00	0.00	
2,000.0	12.00	231.70	1,990.6	-68.6	-86.9	-62.0	0.00	0.00	0.00	
2,100.0	12.00	231.70	2,088.4	-81.5	-103.2	-73.7	0.00	0.00	0.00	
2,200.0	12.00	231.70	2,186.2	-94.4	-119.5	-85.4	0.00	0.00	0.00	
2,300.0	12.00	231.70	2,284.0	-107.3	-135.8	-97.0	0.00	0.00	0.00	
2,400.0	12.00	231.70	2,381.8	-120.2	-152.2	-108.7	0.00	0.00	0.00	
2,500.0	12.00	231.70	2,479.6	-133.0	-168.5	-120.3	0.00	0.00	0.00	
2,600.0	12.00	231.70	2,577.5	-145.9	-184.8	-132.0	0.00	0.00	0.00	
2,700.0	12.00	231.70	2,675.3	-158.8	-201.1	-143.6	0.00	0.00	0.00	
2,800.0	12.00	231.70	2,773.1	-171.7	-217.4	-155.3	0.00	0.00	0.00	
2,900.0	12.00	231.70	2,870.9	-184.6	-233.7	-166.9	0.00	0.00	0.00	
3,000.0	12.00	231.70	2,968.7	-197.5	-250.0	-178.6	0.00	0.00	0.00	
3,100.0	12.00	231.70	3,066.5	-210.4	-266.4	-190.2	0.00	0.00	0.00	
3,200.0	12.00	231.70	3,164.3	-223.2	-282.7	-201.9	0.00	0.00	0.00	
3,300.0	12.00	231.70	3,262.2	-236.1	-299.0	-213.5	0.00	0.00	0.00	
3,394.3	12.00	231.70	3,354.4	-248.3	-314.4	-224.5	0.00	0.00	0.00	
Drop 2/100										
3,400.0	11.89	231.70	3,360.0	-249.0	-315.3	-225.2	2.00	-2.00	0.00	
3,500.0	9.89	231.70	3,458.2	-260.7	-330.1	-235.8	2.00	-2.00	0.00	
3,600.0	7.89	231.70	3,557.0	-270.3	-342.3	-244.4	2.00	-2.00	0.00	
3,700.0	5.89	231.70	3,656.2	-277.7	-351.7	-251.1	2.00	-2.00	0.00	
3,800.0	3.89	231.70	3,755.9	-283.0	-358.3	-255.9	2.00	-2.00	0.00	
3,900.0	1.89	231.70	3,855.7	-286.1	-362.3	-258.7	2.00	-2.00	0.00	
3,994.3	0.00	0.00	3,950.0	-287.1	-363.5	-259.6	2.00	-2.00	136.06	
Begin Hold										
4,000.0	0.00	0.00	3,955.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,055.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,155.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,255.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,355.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,455.7	-287.1	-363.5	-259.6	0.00	0.00	0.00	

Wolverine Directinal, LLC
Planning Report

Database	EDM 2003.21 Single User Db	Local Co-ordinate Reference	Well Longview Fed 31-3H
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 31-T22S-R29E	North Reference	True
Well	Longview Fed 31-3H	Survey Calculation Method	Minimum Curvature
Wellbore	Wellbore #1		
Design	08-20-14		

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)
4,600.0	0.00	0.00	4,555.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
4,700.0	0.00	0.00	4,655.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
4,800.0	0.00	0.00	4,755.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
4,900.0	0.00	0.00	4,855.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,000.0	0.00	0.00	4,955.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,100.0	0.00	0.00	5,055.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,200.0	0.00	0.00	5,155.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,300.0	0.00	0.00	5,255.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,400.0	0.00	0.00	5,355.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,500.0	0.00	0.00	5,455.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,600.0	0.00	0.00	5,555.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,655.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,755.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,855.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,955.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,100.0	0.00	0.00	6,055.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,155.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,300.0	0.00	0.00	6,255.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,355.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,500.0	0.00	0.00	6,455.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,555.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,700.0	0.00	0.00	6,655.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,755.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
6,900.0	0.00	0.00	6,855.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,955.7	-287.1	-363.5	-259.6	0.00	0.00	0.00
7,025.7	0.00	0.00	6,981.4	-287.1	-363.5	-259.6	0.00	0.00	0.00
KOP - 10/100									
7,050.0	2.43	0.00	7,005.7	-286.6	-363.5	-259.1	10.00	10.00	0.00
7,100.0	7.43	0.00	7,055.5	-282.3	-363.5	-254.8	10.00	10.00	0.00
7,150.0	12.43	0.00	7,104.7	-273.7	-363.5	-246.2	10.00	10.00	0.00
7,200.0	17.43	0.00	7,153.0	-260.8	-363.5	-233.4	10.00	10.00	0.00
7,250.0	22.43	0.00	7,200.0	-243.7	-363.5	-216.4	10.00	10.00	0.00
7,300.0	27.43	0.00	7,245.4	-222.7	-363.5	-195.4	10.00	10.00	0.00
7,350.0	32.43	0.00	7,288.7	-197.7	-363.5	-170.5	10.00	10.00	0.00
7,400.0	37.43	0.00	7,329.7	-169.1	-363.5	-141.9	10.00	10.00	0.00
7,450.0	42.43	0.00	7,368.0	-137.0	-363.5	-110.0	10.00	10.00	0.00
7,475.7	45.00	0.00	7,386.6	-119.3	-363.5	-92.2	10.00	10.00	0.00
Beign 100' Hold									
7,500.0	45.00	0.00	7,403.7	-102.1	-363.5	-75.1	0.00	0.00	0.00
7,575.7	45.00	0.00	7,457.3	-48.6	-363.5	-21.7	0.00	0.00	0.00
Build 10/100									
7,600.0	47.43	0.02	7,474.1	-31.0	-363.5	-4.2	10.00	10.00	0.09
7,650.0	52.43	0.06	7,506.3	7.2	-363.5	33.9	10.00	10.00	0.08
7,700.0	57.43	0.10	7,535.0	48.1	-363.4	74.7	10.00	10.00	0.07
7,750.0	62.43	0.13	7,560.0	91.4	-363.3	117.8	10.00	10.00	0.06
7,800.0	67.43	0.16	7,581.2	136.7	-363.2	163.0	10.00	10.00	0.06
7,850.0	72.43	0.18	7,598.4	183.6	-363.1	209.8	10.00	10.00	0.05
7,900.0	77.43	0.21	7,611.4	231.9	-362.9	257.9	10.00	10.00	0.05
7,950.0	82.43	0.23	7,620.1	281.1	-362.7	307.0	10.00	10.00	0.05
8,000.0	87.43	0.25	7,624.5	330.9	-362.5	356.6	10.00	10.00	0.05
8,035.1	90.94	0.27	7,625.0	366.0	-362.4	391.6	10.00	10.00	0.05
EOC - Hold to TD									
8,100.0	90.94	0.27	7,624.0	430.9	-362.1	456.3	0.00	0.00	0.00

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Project	Eddy County (NM83E)	MD Reference	WELL @ 0.0ft (Original Well Elev)
Site	Sec 31-T22S-R29E	North Reference	True
Well	Longview Fed 31-3H	Survey Calculation Method	Minimum Curvature
Wellbore	Wellbore #1		
Design	08-20-14		

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)
8,200.0	90.94	0.27	7,622.3	530.9	-361.6	556.0	0.00	0.00	0.00
8,300.0	90.94	0.27	7,620.7	630.8	-361.1	655.7	0.00	0.00	0.00
8,400.0	90.94	0.27	7,619.0	730.8	-360.7	755.3	0.00	0.00	0.00
8,500.0	90.94	0.27	7,617.4	830.8	-360.2	855.0	0.00	0.00	0.00
8,600.0	90.94	0.27	7,615.8	930.8	-359.7	954.7	0.00	0.00	0.00
8,700.0	90.94	0.27	7,614.1	1,030.8	-359.2	1,054.4	0.00	0.00	0.00
8,800.0	90.94	0.27	7,612.5	1,130.8	-358.8	1,154.1	0.00	0.00	0.00
8,900.0	90.94	0.27	7,610.8	1,230.8	-358.3	1,253.7	0.00	0.00	0.00
9,000.0	90.94	0.27	7,609.2	1,330.7	-357.8	1,353.4	0.00	0.00	0.00
9,100.0	90.94	0.27	7,607.6	1,430.7	-357.4	1,453.1	0.00	0.00	0.00
9,200.0	90.94	0.27	7,605.9	1,530.7	-356.9	1,552.8	0.00	0.00	0.00
9,300.0	90.94	0.27	7,604.3	1,630.7	-356.4	1,652.5	0.00	0.00	0.00
9,400.0	90.94	0.27	7,602.6	1,730.7	-356.0	1,752.2	0.00	0.00	0.00
9,500.0	90.94	0.27	7,601.0	1,830.7	-355.5	1,851.8	0.00	0.00	0.00
9,600.0	90.94	0.27	7,599.4	1,930.6	-355.0	1,951.5	0.00	0.00	0.00
9,700.0	90.94	0.27	7,597.7	2,030.6	-354.5	2,051.2	0.00	0.00	0.00
9,800.0	90.94	0.27	7,596.1	2,130.6	-354.1	2,150.9	0.00	0.00	0.00
9,900.0	90.94	0.27	7,594.5	2,230.6	-353.6	2,250.6	0.00	0.00	0.00
10,000.0	90.94	0.27	7,592.8	2,330.6	-353.1	2,350.2	0.00	0.00	0.00
10,100.0	90.94	0.27	7,591.2	2,430.6	-352.7	2,449.9	0.00	0.00	0.00
10,200.0	90.94	0.27	7,589.6	2,530.6	-352.2	2,549.6	0.00	0.00	0.00
10,300.0	90.94	0.27	7,587.9	2,630.5	-351.7	2,649.3	0.00	0.00	0.00
10,400.0	90.94	0.27	7,586.3	2,730.5	-351.3	2,749.0	0.00	0.00	0.00
10,500.0	90.94	0.27	7,584.7	2,830.5	-350.8	2,848.6	0.00	0.00	0.00
10,600.0	90.94	0.27	7,583.0	2,930.5	-350.3	2,948.3	0.00	0.00	0.00
10,700.0	90.94	0.27	7,581.4	3,030.5	-349.9	3,048.0	0.00	0.00	0.00
10,800.0	90.94	0.27	7,579.8	3,130.5	-349.4	3,147.7	0.00	0.00	0.00
10,900.0	90.94	0.27	7,578.1	3,230.5	-348.9	3,247.4	0.00	0.00	0.00
11,000.0	90.94	0.27	7,576.5	3,330.4	-348.5	3,347.0	0.00	0.00	0.00
11,100.0	90.94	0.27	7,574.9	3,430.4	-348.0	3,446.7	0.00	0.00	0.00
11,200.0	90.94	0.27	7,573.2	3,530.4	-347.5	3,546.4	0.00	0.00	0.00
11,300.0	90.94	0.27	7,571.6	3,630.4	-347.1	3,646.1	0.00	0.00	0.00
11,400.0	90.94	0.27	7,570.0	3,730.4	-346.6	3,745.8	0.00	0.00	0.00
11,500.0	90.94	0.27	7,568.3	3,830.4	-346.1	3,845.5	0.00	0.00	0.00
11,600.0	90.94	0.27	7,566.7	3,930.4	-345.7	3,945.1	0.00	0.00	0.00
11,700.0	90.93	0.27	7,565.1	4,030.3	-345.2	4,044.8	0.00	0.00	0.00
11,800.0	90.93	0.27	7,563.4	4,130.3	-344.7	4,144.5	0.00	0.00	0.00
11,900.0	90.93	0.27	7,561.8	4,230.3	-344.3	4,244.2	0.00	0.00	0.00
12,000.0	90.93	0.27	7,560.2	4,330.3	-343.8	4,343.9	0.00	0.00	0.00
12,100.0	90.93	0.27	7,558.5	4,430.3	-343.3	4,443.5	0.00	0.00	0.00
12,200.0	90.93	0.27	7,556.9	4,530.3	-342.9	4,543.2	0.00	0.00	0.00
12,300.0	90.93	0.27	7,555.3	4,630.3	-342.4	4,642.9	0.00	0.00	0.00
12,316.7	90.93	0.27	7,555.0	4,646.9	-342.3	4,659.5	0.00	0.00	0.00
TD at 12316.7									

Wolverine Directinal, LLC

Planning Report

Database:	EDM,2003.21 Single User Db	Local Co-ordinate Reference:	Well Longview Fed 31-3H
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 31-T22S-R29E	North Reference:	True
Well:	Longview Fed 31-3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	08-20-14		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		N/S (ft)	E/W (ft)		Comment
1,168.6	1,168.6	0.0	0.0		Build 2/100
1,768.6	1,764.2	-38.8	-49.1		Begin Hold
3,394.3	3,354.4	-248.3	-314.4		Drop 2/100
3,994.3	3,950.0	-287.1	-363.5		Begin Hold
7,025.7	6,981.4	-287.1	-363.5		KOP - 10/100
7,475.7	7,386.6	-119.3	-363.5		Begin 100' Hold
7,575.7	7,457.3	-48.6	-363.5		Build 10/100
8,035.1	7,625.0	366.0	-362.4		EOC - Hold to TD
12,316.7	7,555.0	4,646.9	-342.3		TD at 12316.7

magnetic.txt
Magnetic Calculator Results: Longview Fed 13-3H

Geomagnetic Model	:	IGRF2010
Latitude	:	32° 20' 34.284 N
Longitude	:	104° 1' 30.764 W
Sample Date	:	2014/08/20
Vertical Depth	:	0.0
Azimuth of Magnetic North:		7.415° True
Magnetic Declination	:	7.415°E from True North
Dip Angle from Horizontal:		60.141°
Magnetic Field Strength	:	48346 nT
Magnetic Field X value	:	23869 nT
Magnetic Field Y value	:	3106 nT
Magnetic Field Z value	:	41928 nT
Magnetic Field Horizontal:		24070 nT
Magnetic Azimuth Apply	:	7.41 to convert to True North
Gyroscope Azimuth Apply	:	0.00 to convert to True North