DRDS

OCD Artesia

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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.

5. Lease Serial No.
NMNM91078

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
LONGVIEW DEEP FEDERAL 1 21

2. Name of Operator
RKI EXPLORATION & PRODUCTION
Contact: CHARLES K AHN
E-Mail: cahn@rkixp.com

9. API Well No.
30-015-40651

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

3b. Phone No. (include area code)
Ph: 405-996-5771
Fx: 405-949-2223

10. Field and Pool, or Exploratory
CULEBRA BLUFF-B.S.,SOUTH *

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 1 T23S R28E NWNW 1215FNL 1260FWL

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 Drilling Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ 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 recomplete 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 recompletion 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 & Production, LLC requests permission to convert the subject well into a horizontal well as shown on the attached plat (C-102). Consequently, the subject well's name will need to change from Longview Deep Federal 1-21 to Longview Federal 1-21H (40097)

Please refer to the attached drilling plan and horizontal plans for specific details pertaining to the proposed changes.

Accepted for record
NMOCD 8/27/2013

RECEIVED
AUG 26 2013
NMOCD ARTESIA

SEE ATTACHED FOR CONDITIONS OF APPROVAL

* Pool chng from Morrow

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #215048 verified by the BLM Well Information System
For RKI EXPLORATION & PRODUCTION, sent to the Carlsbad
Committed to AFMSS for processing by KURT SIMMONS on 08/07/2013 ()

Name *(Printed/Typed)* CHARLES K AHN — Title EH&S/REGULATORY MANAGER

Signature (Electronic Submission) — Date 07/26/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
AUG 20 2013
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By — Title

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. RGL CRW 8/20/13 — Office

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

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
30-015-40651	15011	CULEBRA BLUFF; BONE SPRING SOUTH

Property Code	Property Name	Well Number
38684	LONGVIEW FEDERAL 1	21H

OGRID No.	Operator Name	Elevation
246289	RKI EXPLORATION & PRODUCTION	3057.37'

Surface Location

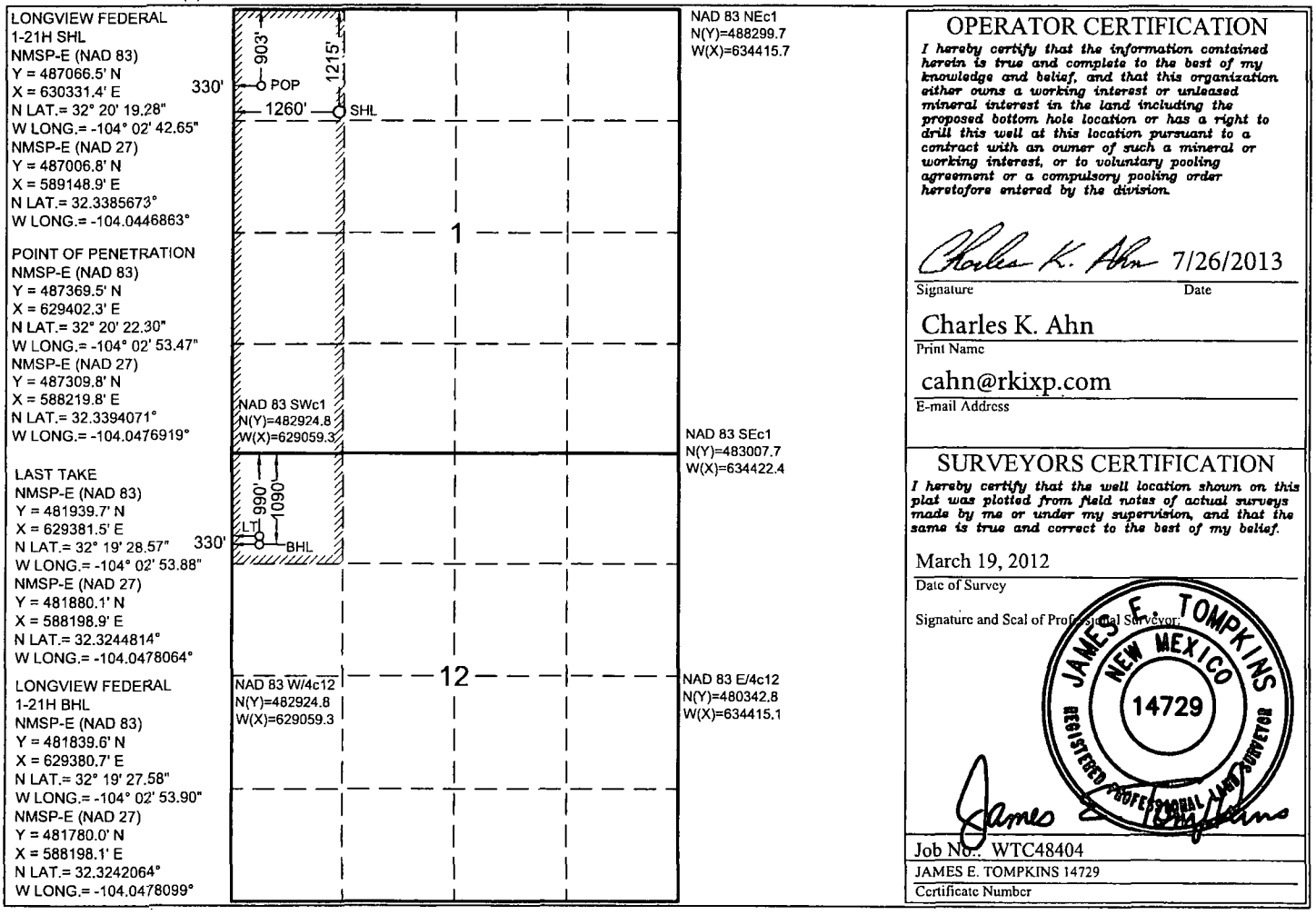
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
4	1	23 S	28 E		1215	NORTH	1260	WEST	EDDY

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
D	12	23 S	28 E		1090	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
199.51			

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.

Charles K. Ahn 7/26/2013
Signature Date

Charles K. Ahn
Print Name

cahn@rkixp.com
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.

March 19, 2012
Date of Survey

Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS
NEW MEXICO
14729
REGISTERED PROFESSIONAL LAND SURVEYOR

Job No.: WTC48404
JAMES E. TOMPKINS 14729
Certificate Number

RKI Exploration & Production, LLC

Well	Longview Federal 1-21H				
Location	Surface:	1,215 FNL	1,260 FWL	Section 1-23S-28E	
	Bottom Hole:	1,090 FNL	330 FWL	Section 12-23S-28E	
County	Eddy				
State	New Mexico				

1) The elevation of the unprepared ground is 3,057 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 13,994 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 13,994 feet MD

5) Estimated tops:

	TVD	MD	BHP = .44 psi/ft x depth
Rustler	203	203	
Salado	245	245	
Top of Salt	512	512	
Base of Salt	2,555	2,555	
Lamar Lime	2,735	2,735	1,203 psi
Base of Lime	2,775	2,775	1,221 psi
Delaware Top	2,820	2,820	1,241 psi
Bell Canyon Sand	2,820	2,820	1,241 psi
Cherry Canyon Sand	3,830	3,830	1,685 psi
KOP	4,000	4,000	1,760 psi
Brushy Canyon Sand	4,795	4,815	2,110 psi
Bone Spring	6,355	6,402	2,796 psi
Bone Spring 1st Sand	7,465	7,555	3,285 psi
Bone Spring 2nd Sand	8,230	8,352	3,621 psi
Landing Point	8,386	8,796	3,690 psi
TD	8,336	13,994	3,668 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	235	13 3/8"	54.5#/J-55	ST&C	10.93	52.80	40.13
12 1/4"	0	4,000	9 5/8"	40#/J-55	LT&C	1.15	4.49	3.25
8 3/4"	0	8,796	7"	26#/P-110	LT&C	1.60	1.99	3.48
6 1/8"	7,890	13,994	4 1/2"	11.6#/HCP-110	Buttress	1.40	2.14	11.26

Collapse	1.125
Burst	1.0
Tension	2.0

7) Cement program:

Surface	17 1/2" hole		
Pipe OD	13 3/8"		
Setting Depth	235 ft		
Annular Volume	0.69462 cf/ft		
Excess	1	100 %	

Lead	0 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	0.5	50 %	

Lead	849 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

Intermediate	8 3/4" hole			
Pipe OD	7"			
Setting Depth	8,796 ft			
Annular Volume	0.15033 cf/ft		0.1585 cf/ft	300 ft
Excess	0.35		35 %	
DV Tool Depth	5500 ft			

Stage 1

Lead:	452 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:	117 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: ~~3500~~ 3,780 ft

500' fieback for Secretary Potash Areas

Liner	6 1/8" hole	
Pipe OD	4 1/2"	
Setting Depth	13,994 ft	
Baker Frac Point System		

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" 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 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	PV	YP	Fluid Loss	Type System
0	235	8.5 to 8.9	32 to 36	1 - 6	1 - 6	NC	Fresh Water
235	4,000	9.8 to 10.0	28 to 30	1 - 3	1 - 3	NC	Brine
4,000	13,994	8.9 to 9.1	28 to 36	1 - 3	1 - 3	NC	Fresh Water

10) Logging, coring, and testing program:

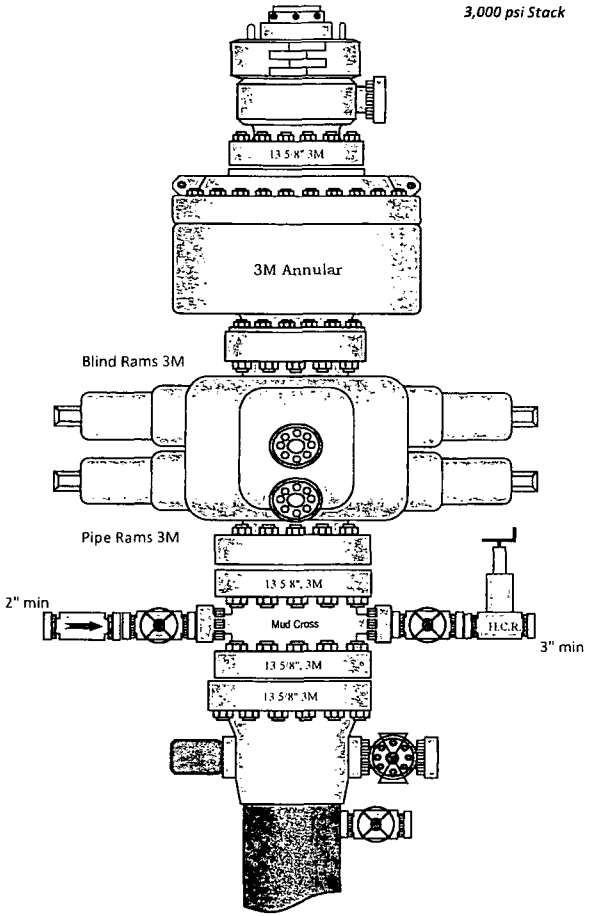
No drill stem test are planned
KOP to intermediate: CNL, Caliper, GR, DLL,
Intermediate to surface: CNL, GR
No coring is planned

11) Potential hazards:

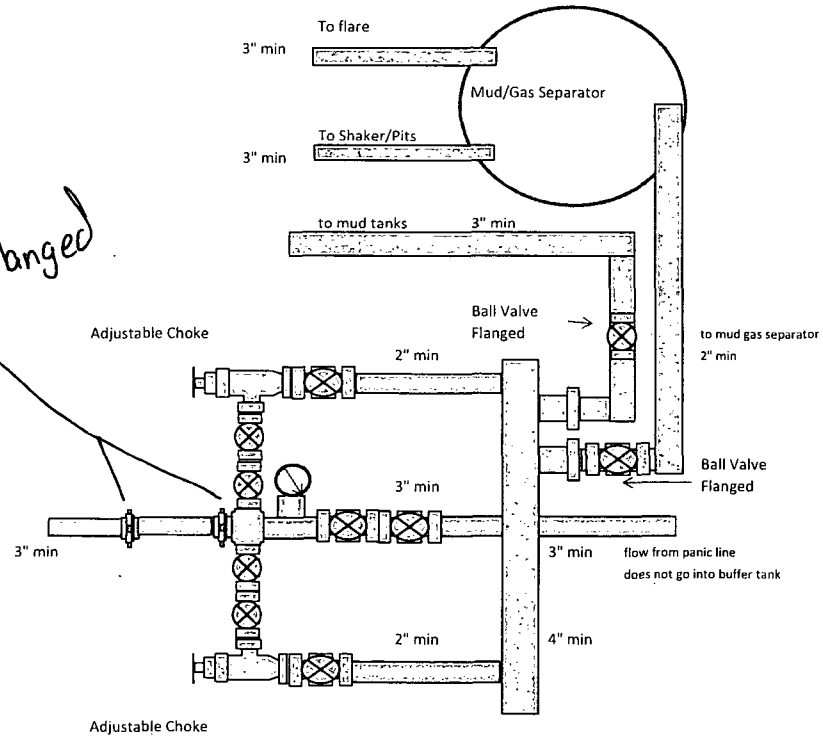
No abnormal pressure or temperature is expected. No H2S is known to exist in the area.
Lost circulation can occur in, lost circulation will be on location and readily available if needed.

12) Anticipated start date ASAP
Duration 25 days

3,000 psi Stack



3,000 psi Manifold



RKI Exploration & Production

Eddy County (NM83E)
Sec 1-T23S-R28E
Longview Deep Fed 1-21H

Wellbore #1

Plan: 07-25-13

Standard Planning Report

25 July, 2013

RKI Exploration & Production

Project: Eddy County (NM83E)
Site: Sec 1-T23S-R28E
Well: Longview Deep Fed 1-21H
Wellbore: Wellbore #1
Design: 07-25-13

T G M

Azimuths to Grid North
True North: -0.15°
Magnetic North: 7.40°

Magnetic Field
Strength: 48448.0snT
Dip Angle: 60.16°
Date: 2013/07/25
Model: IGRF2010

Wolverine Directiona

WELL DETAILS: Longview Deep Fed 1-21H

Ground Level: 0.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	487066.50	630331.40	32° 20' 19.278 N	104° 2' 42.653 W

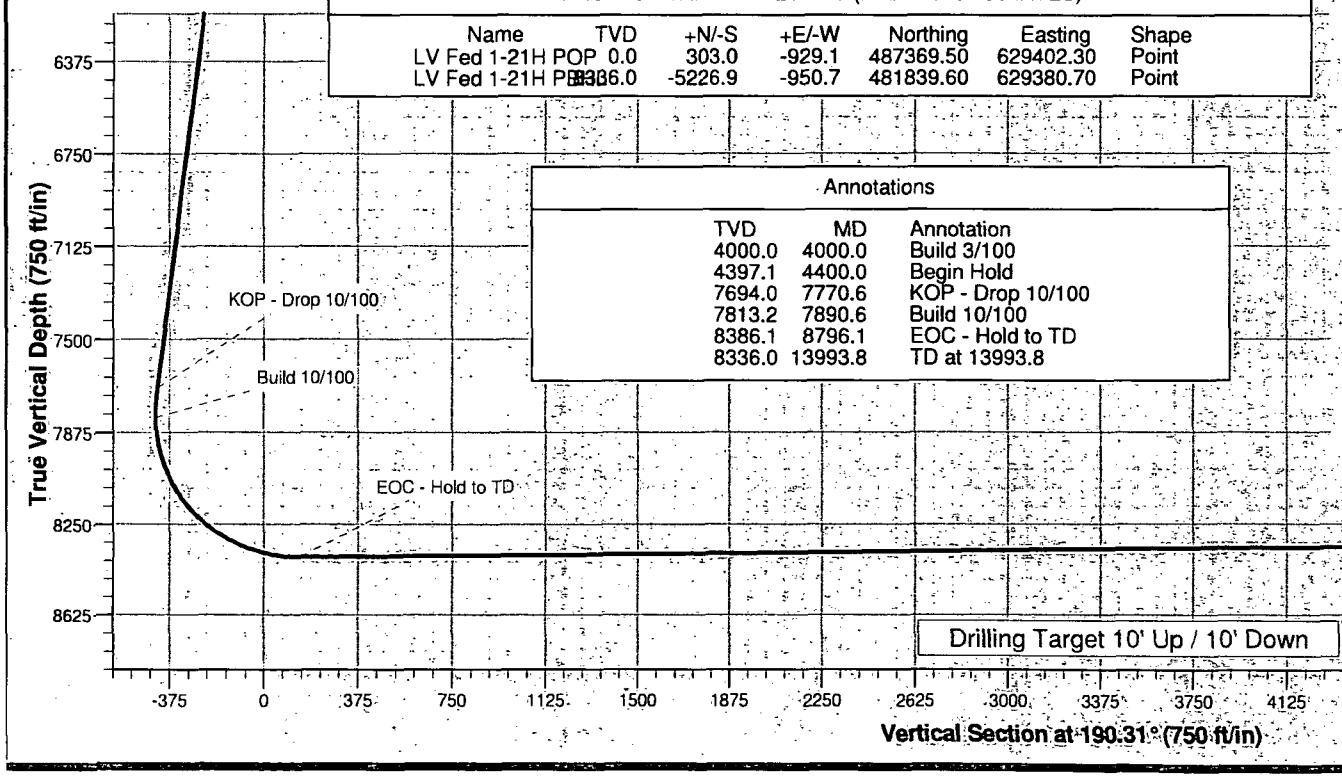
SHL: 1215' FNL / 1260' FWL of Sec 1
BHL: 1090' FNL / 330' FWL of Sec 12

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	4000.0	0.00	0.00	4000.0	0.0	0.0	0.00	0.00	0.0	
3	4400.0	12.00	315.00	4397.1	29.5	-29.5	3.00	315.00	-23.8	
4	7770.6	12.00	315.00	7694.0	525.0	-525.0	0.00	0.00	-422.6	
5	7890.6	0.00	0.00	7813.2	533.9	-533.9	10.00	180.00	-429.7	
6	8796.1	90.55	184.14	8386.1	-43.1	-575.7	10.00	184.14	145.4	
7	13993.8	90.55	184.14	8336.0	-5226.9	-950.7	0.00	-42.56	5312.7	LV Fed 1-21H PBHL

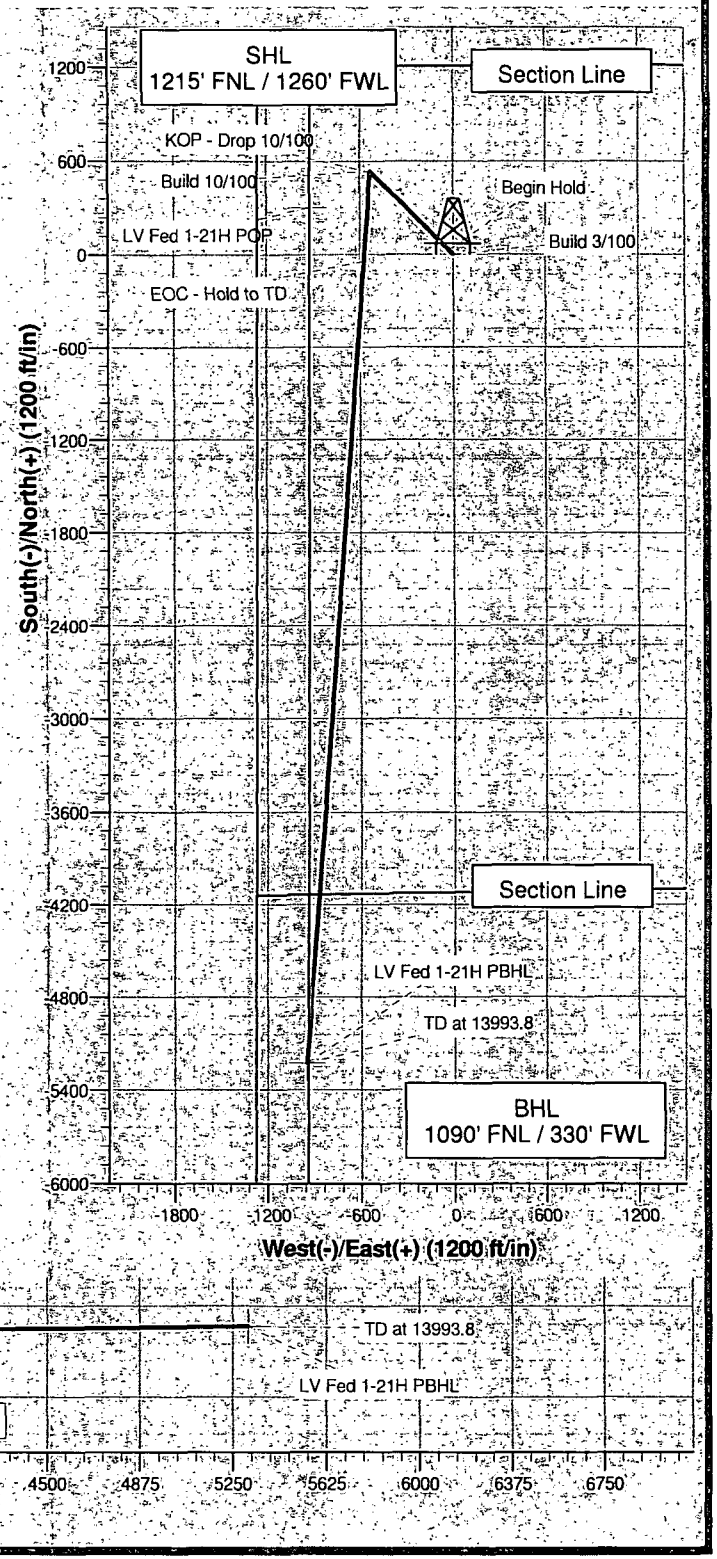
PROJECT TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
LV Fed 1-21H POP	0.0	303.0	-929.1	487369.50	629402.30	Point
LV Fed 1-21H PBHL	8336.0	-5226.9	-950.7	481839.60	629380.70	Point



Annotations

TVD	MD	Annotation
4000.0	4000.0	Build 3/100
4397.1	4400.0	Begin Hold
7694.0	7770.6	KOP - Drop 10/100
7813.2	7890.6	Build 10/100
8386.1	8796.1	EOC - Hold to TD
8336.0	13993.8	TD at 13993.8



Wolverine Directional, LLC
Planning Report

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Longview Deep Fed 1-21H
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 1-T23S-R28E	**North Reference:**	Grid
Well:	Longview Deep Fed 1-21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	07-25-13		

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 1-T23S-R28E

Site Position:		**Northing:**	486,470.90ft	**Latitude:**	32° 20' 13.278 N
From:	Map	**Easting:**	634,207.60ft	**Longitude:**	104° 1' 57.491 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.16 °

Well Longview Deep Fed 1-21H

Well Position	**+N/-S**	595.6 ft	**Northing:**	487,066.50 ft	**Latitude:**	32° 20' 19.278 N
	+E/-W	-3,876.2 ft	**Easting:**	630,331.40 ft	**Longitude:**	104° 2' 42.653 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	0.0ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2013/07/25	7.56	60.16	48,448

Design 07-25-13

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	190.31

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	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,400.0	12.00	315.00	4,397.1	29.5	-29.5	3.00	3.00	0.00	315.00	
7,770.6	12.00	315.00	7,694.0	525.0	-525.0	0.00	0.00	0.00	0.00	
7,890.6	0.00	0.00	7,813.2	533.9	-533.9	10.00	-10.00	0.00	180.00	
8,796.1	90.55	184.14	8,386.1	-43.1	-575.7	10.00	10.00	0.00	184.14	
13,993.8	90.55	184.14	8,336.0	-5,226.9	-950.7	0.00	0.00	0.00	-42.56	LV Fed 1-21H PBH

Wolverine Directional, LLC

Planning Report

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Longview Deep Fed 1-21H
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 1-T23S-R28E	**North Reference:**	Grid
Well:	Longview Deep Fed 1-21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	07-25-13		

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
LV Fed 1-21H POP									
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
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 3/100									
4,100.0	3.00	315.00	4,100.0	1.9	-1.9	-1.5	3.00	3.00	0.00
4,200.0	6.00	315.00	4,199.6	7.4	-7.4	-6.0	3.00	3.00	0.00
4,300.0	9.00	315.00	4,298.8	16.6	-16.6	-13.4	3.00	3.00	0.00
4,400.0	12.00	315.00	4,397.1	29.5	-29.5	-23.8	3.00	3.00	0.00
Begin Hold									
4,500.0	12.00	315.00	4,494.9	44.2	-44.2	-35.6	0.00	0.00	0.00
4,600.0	12.00	315.00	4,592.7	58.9	-58.9	-47.4	0.00	0.00	0.00
4,700.0	12.00	315.00	4,690.5	73.6	-73.6	-59.3	0.00	0.00	0.00
4,800.0	12.00	315.00	4,788.3	88.3	-88.3	-71.1	0.00	0.00	0.00
4,900.0	12.00	315.00	4,886.2	103.0	-103.0	-82.9	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Longview Deep Fed 1-21H
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 1-T23S-R28E	**North Reference:**	Grid
Well:	Longview Deep Fed 1-21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	07-25-13		

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)
5,000.0	12.00	315.00	4,984.0	117.7	-117.7	-94.8	0.00	0.00	0.00
5,100.0	12.00	315.00	5,081.8	132.4	-132.4	-106.6	0.00	0.00	0.00
5,200.0	12.00	315.00	5,179.6	147.1	-147.1	-118.4	0.00	0.00	0.00
5,300.0	12.00	315.00	5,277.4	161.8	-161.8	-130.3	0.00	0.00	0.00
5,400.0	12.00	315.00	5,375.2	176.5	-176.5	-142.1	0.00	0.00	0.00
5,500.0	12.00	315.00	5,473.0	191.2	-191.2	-153.9	0.00	0.00	0.00
5,600.0	12.00	315.00	5,570.9	205.9	-205.9	-165.8	0.00	0.00	0.00
5,700.0	12.00	315.00	5,668.7	220.6	-220.6	-177.6	0.00	0.00	0.00
5,800.0	12.00	315.00	5,766.5	235.3	-235.3	-189.4	0.00	0.00	0.00
5,900.0	12.00	315.00	5,864.3	250.0	-250.0	-201.3	0.00	0.00	0.00
6,000.0	12.00	315.00	5,962.1	264.7	-264.7	-213.1	0.00	0.00	0.00
6,100.0	12.00	315.00	6,059.9	279.4	-279.4	-224.9	0.00	0.00	0.00
6,200.0	12.00	315.00	6,157.7	294.1	-294.1	-236.8	0.00	0.00	0.00
6,300.0	12.00	315.00	6,255.6	308.8	-308.8	-248.6	0.00	0.00	0.00
6,400.0	12.00	315.00	6,353.4	323.5	-323.5	-260.4	0.00	0.00	0.00
6,500.0	12.00	315.00	6,451.2	338.2	-338.2	-272.3	0.00	0.00	0.00
6,600.0	12.00	315.00	6,549.0	352.9	-352.9	-284.1	0.00	0.00	0.00
6,700.0	12.00	315.00	6,646.8	367.6	-367.6	-295.9	0.00	0.00	0.00
6,800.0	12.00	315.00	6,744.6	382.3	-382.3	-307.8	0.00	0.00	0.00
6,900.0	12.00	315.00	6,842.5	397.1	-397.1	-319.6	0.00	0.00	0.00
7,000.0	12.00	315.00	6,940.3	411.8	-411.8	-331.4	0.00	0.00	0.00
7,100.0	12.00	315.00	7,038.1	426.5	-426.5	-343.3	0.00	0.00	0.00
7,200.0	12.00	315.00	7,135.9	441.2	-441.2	-355.1	0.00	0.00	0.00
7,300.0	12.00	315.00	7,233.7	455.9	-455.9	-366.9	0.00	0.00	0.00
7,400.0	12.00	315.00	7,331.5	470.6	-470.6	-378.8	0.00	0.00	0.00
7,500.0	12.00	315.00	7,429.3	485.3	-485.3	-390.6	0.00	0.00	0.00
7,600.0	12.00	315.00	7,527.2	500.0	-500.0	-402.4	0.00	0.00	0.00
7,700.0	12.00	315.00	7,625.0	514.7	-514.7	-414.3	0.00	0.00	0.00
7,770.6	12.00	315.00	7,694.0	525.0	-525.0	-422.6	0.00	0.00	0.00
KOP - Drop 10/100									
7,800.0	9.06	315.00	7,722.9	528.8	-528.8	-425.7	10.00	-10.00	0.00
7,850.0	4.06	315.00	7,772.6	532.9	-532.9	-428.9	10.00	-10.00	0.00
7,890.6	0.00	0.00	7,813.2	533.9	-533.9	-429.7	10.00	-10.00	0.00
Build 10/100									
7,900.0	0.94	184.14	7,822.6	533.8	-533.9	-429.7	10.00	10.00	0.00
7,950.0	5.94	184.14	7,872.4	530.8	-534.1	-426.7	10.00	10.00	0.00
8,000.0	10.94	184.14	7,921.9	523.5	-534.6	-419.4	10.00	10.00	0.00
8,050.0	15.94	184.14	7,970.5	511.9	-535.5	-407.8	10.00	10.00	0.00
8,100.0	20.94	184.14	8,017.9	496.2	-536.6	-392.1	10.00	10.00	0.00
8,150.0	25.94	184.14	8,063.8	476.3	-538.1	-372.4	10.00	10.00	0.00
8,200.0	30.94	184.14	8,107.7	452.6	-539.8	-348.7	10.00	10.00	0.00
8,250.0	35.94	184.14	8,149.4	425.1	-541.8	-321.3	10.00	10.00	0.00
8,300.0	40.94	184.14	8,188.6	394.1	-544.0	-290.4	10.00	10.00	0.00
8,350.0	45.94	184.14	8,224.9	359.8	-546.5	-256.2	10.00	10.00	0.00
8,400.0	50.94	184.14	8,258.0	322.5	-549.2	-219.1	10.00	10.00	0.00
8,450.0	55.94	184.14	8,287.8	282.5	-552.1	-179.1	10.00	10.00	0.00
8,500.0	60.94	184.14	8,314.0	240.0	-555.2	-136.8	10.00	10.00	0.00
8,550.0	65.94	184.14	8,336.3	195.4	-558.4	-92.3	10.00	10.00	0.00
8,600.0	70.94	184.14	8,354.7	149.1	-561.8	-46.1	10.00	10.00	0.00
8,650.0	75.94	184.14	8,368.9	101.3	-565.2	1.5	10.00	10.00	0.00
8,700.0	80.94	184.14	8,379.0	52.4	-568.7	50.2	10.00	10.00	0.00
8,750.0	85.94	184.14	8,384.7	2.9	-572.3	99.6	10.00	10.00	0.00
8,796.1	90.55	184.14	8,386.1	-43.1	-575.7	145.4	10.00	10.00	0.00

Wolverine Directional, LLC

Planning Report

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Longview Deep Fed 1-21H
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 1-T23S-R28E	**North Reference:**	Grid
Well:	Longview Deep Fed 1-21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	07-25-13		

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)
EOC - Hold to TD									
8,800.0	90.55	184.14	8,386.0	-46.9	-575.9	149.2	0.00	0.00	0.00
8,900.0	90.55	184.14	8,385.1	-146.7	-583.2	248.7	0.00	0.00	0.00
9,000.0	90.55	184.14	8,384.1	-246.4	-590.4	348.1	0.00	0.00	0.00
9,100.0	90.55	184.14	8,383.2	-346.1	-597.6	447.5	0.00	0.00	0.00
9,200.0	90.55	184.14	8,382.2	-445.9	-604.8	546.9	0.00	0.00	0.00
9,300.0	90.55	184.14	8,381.2	-545.6	-612.0	646.3	0.00	0.00	0.00
9,400.0	90.55	184.14	8,380.3	-645.3	-619.3	745.7	0.00	0.00	0.00
9,500.0	90.55	184.14	8,379.3	-745.1	-626.5	845.2	0.00	0.00	0.00
9,600.0	90.55	184.14	8,378.4	-844.8	-633.7	944.6	0.00	0.00	0.00
9,700.0	90.55	184.14	8,377.4	-944.6	-640.9	1,044.0	0.00	0.00	0.00
9,800.0	90.55	184.14	8,376.4	-1,044.3	-648.1	1,143.4	0.00	0.00	0.00
9,900.0	90.55	184.14	8,375.5	-1,144.0	-655.3	1,242.8	0.00	0.00	0.00
10,000.0	90.55	184.14	8,374.5	-1,243.8	-662.6	1,342.2	0.00	0.00	0.00
10,100.0	90.55	184.14	8,373.6	-1,343.5	-669.8	1,441.7	0.00	0.00	0.00
10,200.0	90.55	184.14	8,372.6	-1,443.2	-677.0	1,541.1	0.00	0.00	0.00
10,300.0	90.55	184.14	8,371.6	-1,543.0	-684.2	1,640.5	0.00	0.00	0.00
10,400.0	90.55	184.14	8,370.7	-1,642.7	-691.4	1,739.9	0.00	0.00	0.00
10,500.0	90.55	184.14	8,369.7	-1,742.4	-698.6	1,839.3	0.00	0.00	0.00
10,600.0	90.55	184.14	8,368.7	-1,842.2	-705.9	1,938.7	0.00	0.00	0.00
10,700.0	90.55	184.14	8,367.8	-1,941.9	-713.1	2,038.2	0.00	0.00	0.00
10,800.0	90.55	184.14	8,366.8	-2,041.6	-720.3	2,137.6	0.00	0.00	0.00
10,900.0	90.55	184.14	8,365.9	-2,141.4	-727.5	2,237.0	0.00	0.00	0.00
11,000.0	90.55	184.14	8,364.9	-2,241.1	-734.7	2,336.4	0.00	0.00	0.00
11,100.0	90.55	184.14	8,363.9	-2,340.8	-741.9	2,435.8	0.00	0.00	0.00
11,200.0	90.55	184.14	8,363.0	-2,440.6	-749.2	2,535.2	0.00	0.00	0.00
11,300.0	90.55	184.14	8,362.0	-2,540.3	-756.4	2,634.7	0.00	0.00	0.00
11,400.0	90.55	184.14	8,361.0	-2,640.0	-763.6	2,734.1	0.00	0.00	0.00
11,500.0	90.55	184.14	8,360.1	-2,739.8	-770.8	2,833.5	0.00	0.00	0.00
11,600.0	90.55	184.14	8,359.1	-2,839.5	-778.0	2,932.9	0.00	0.00	0.00
11,700.0	90.55	184.14	8,358.1	-2,939.2	-785.2	3,032.3	0.00	0.00	0.00
11,800.0	90.55	184.14	8,357.2	-3,039.0	-792.5	3,131.7	0.00	0.00	0.00
11,900.0	90.55	184.14	8,356.2	-3,138.7	-799.7	3,231.1	0.00	0.00	0.00
12,000.0	90.55	184.14	8,355.3	-3,238.4	-806.9	3,330.6	0.00	0.00	0.00
12,100.0	90.55	184.14	8,354.3	-3,338.2	-814.1	3,430.0	0.00	0.00	0.00
12,200.0	90.55	184.14	8,353.3	-3,437.9	-821.3	3,529.4	0.00	0.00	0.00
12,300.0	90.55	184.14	8,352.4	-3,537.7	-828.5	3,628.8	0.00	0.00	0.00
12,400.0	90.55	184.14	8,351.4	-3,637.4	-835.7	3,728.2	0.00	0.00	0.00
12,500.0	90.55	184.14	8,350.4	-3,737.1	-843.0	3,827.6	0.00	0.00	0.00
12,600.0	90.55	184.14	8,349.5	-3,836.9	-850.2	3,927.1	0.00	0.00	0.00
12,700.0	90.55	184.14	8,348.5	-3,936.6	-857.4	4,026.5	0.00	0.00	0.00
12,800.0	90.55	184.14	8,347.5	-4,036.3	-864.6	4,125.9	0.00	0.00	0.00
12,900.0	90.55	184.14	8,346.6	-4,136.1	-871.8	4,225.3	0.00	0.00	0.00
13,000.0	90.55	184.14	8,345.6	-4,235.8	-879.0	4,324.7	0.00	0.00	0.00
13,100.0	90.55	184.14	8,344.6	-4,335.5	-886.2	4,424.1	0.00	0.00	0.00
13,200.0	90.55	184.14	8,343.7	-4,435.3	-893.5	4,523.6	0.00	0.00	0.00
13,300.0	90.55	184.14	8,342.7	-4,535.0	-900.7	4,623.0	0.00	0.00	0.00
13,400.0	90.55	184.14	8,341.7	-4,634.7	-907.9	4,722.4	0.00	0.00	0.00
13,500.0	90.55	184.14	8,340.8	-4,734.5	-915.1	4,821.8	0.00	0.00	0.00
13,600.0	90.55	184.14	8,339.8	-4,834.2	-922.3	4,921.2	0.00	0.00	0.00
13,700.0	90.55	184.14	8,338.8	-4,933.9	-929.5	5,020.6	0.00	0.00	0.00
13,800.0	90.55	184.14	8,337.9	-5,033.7	-936.7	5,120.0	0.00	0.00	0.00
13,900.0	90.55	184.14	8,336.9	-5,133.4	-943.9	5,219.5	0.00	0.00	0.00
13,993.8	90.55	184.14	8,336.0	-5,226.9	-950.7	5,312.7	0.00	0.00	0.00

Wolverine Directional, LLC
Planning Report

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	Well Longview Deep Fed 1-21H
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 1-T23S-R28E	**North Reference:**	Grid
Well:	Longview Deep Fed 1-21H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	07-25-13		

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)
TD at 13993.8 - LV Fed 1-21H PBHL									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
LV Fed 1-21H POP - plan misses by 977.3ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Point	0.00	0.00	0.0	303.0	-929.1	487,369.50	629,402.30	32° 20' 22.301 N	104° 2' 53.474 W
LV Fed 1-21H PBHL - plan hits target - Point	0.00	0.00	8,336.0	-5,226.9	-950.7	481,839.60	629,380.70	32° 19' 27.579 N	104° 2' 53.897 W

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,000.0	4,000.0	0.0	0.0	Build 3/100
4,400.0	4,397.1	29.5	-29.5	Begin Hold
7,770.6	7,694.0	525.0	-525.0	KOP - Drop 10/100
7,890.6	7,813.2	533.9	-533.9	Build 10/100
8,796.1	8,386.1	-43.1	-575.7	EOC - Hold to TD
13,993.8	8,336.0	-5,226.9	-950.7	TD at 13993.8

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**RKI EXPLORATION**
LEASE NO.:	**NMNM-91078**
WELL NAME & NO.:	**LONGVIEW FEDERAL 1-21H**
SURFACE HOL FOOTAGE:	**1215 FNL & 1260 FWL**
BOTTOM HOLE FOOTAGE	**1090 FNL & 0330 FWL**
LOCATION:	**Section 1, T. 23 S., R. 28 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours 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. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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.

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.

Secretary's Potash
Medium Cave/Karst
Possible lost circulation in the Delaware Formation.
High pressures are possible in the Wolfcamp formation and the Pennsylvanian section.

1. The **13-3/8** inch surface casing shall be set at **approximately 235 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated, set casing shoe 25 feet above the salt.**

    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.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ 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 and potash.**

3. The minimum required fill of cement behind the **7** inch production 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 shall:

    ☒ 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 circulation on the next stage.

    b. Second stage above DV tool, cement shall:

    ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash. Additional cement may be required – excess calculates to 21%.**

4. Cement not required on the **4-1/2"** casing. **Packer system being used.**

5. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

    a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    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.

    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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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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