

Well Name: MULVA FED COM	Well Location: T24S / R35E / SEC 27 / SWSE / 32.1829009 / -103.3535768	County or Parish/State: LEA / NM
Well Number: 137H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM138890	Unit or CA Name:	Unit or CA Number:
US Well Number: 300254783100X1	Well Status: Approved Application for Permit to Drill	Operator: TAP ROCK OPERATING LLC

Notice of Intent

Sundry ID: 2647967

Type of Submission: Notice of Intent	Type of Action: Other
Date Sundry Submitted: 12/08/2021	Time Sundry Submitted: 05:02
Date proposed operation will begin: 01/28/2022	

Procedure Description: Request to move SHL from 604 feet FSL and 2085 feet FEL to 604 FSL and 1980 FEL, move BHL from 2638 feet FSL and 2640 feet FEL to 2639 feet FSL and 1980 feet FEL, and depth to 12770 TVD and 20578 MD. No change to pad or infrastructure is required therefore no new disturbance will occur as a result of this change. New Plats, Directional Plan, and Drill Plan with Casing and Cement details are attached.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Mulva_Fed_Com_137H_BLM_Sundry_SHL__BHL__Depth_Attachments_20211208_20211208170213.pdf

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Well Number: 137H	Type of Well: CONVENTIONAL GAS WELL	Allottee or Tribe Name:
Lease Number: NMNM138890	Unit or CA Name:	Unit or CA Number:
US Well Number: 300254783100X1	Well Status: Approved Application for Permit to Drill	Operator: TAP ROCK OPERATING LLC

Conditions of Approval

Additional Reviews

Sec_27_24S_35E_NMP_Mulva_137H_Eddy_NMNM138893_Taprock_COAs____Updated_for_Sundry_20220401140327.pdf

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: CHRISTIAN COMBS	Signed on: DEC 08, 2021 05:02 PM
Name: TAP ROCK OPERATING LLC	
Title: Regulatory Manager	
Street Address: 602 Park Point Drive, Suite 200	
City: Golden	State: CO
Phone: (720) 360-4028	
Email address: ccombs@taprk.com	

Field Representative

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 04/04/2022
Signature: Chris Walls	

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 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) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources
Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-47831	² Pool Code 98098	³ Pool Name WC025G09S243532M/WOLFBONE
⁴ Property Code 32830	⁵ Property Name MULVA FED COM	⁶ Well Number 137H
⁷ OGRID No. #372043	⁸ Operator Name TAP ROCK OPERATING, LLC.	⁹ Elevation 3287'

¹⁰Surface Location

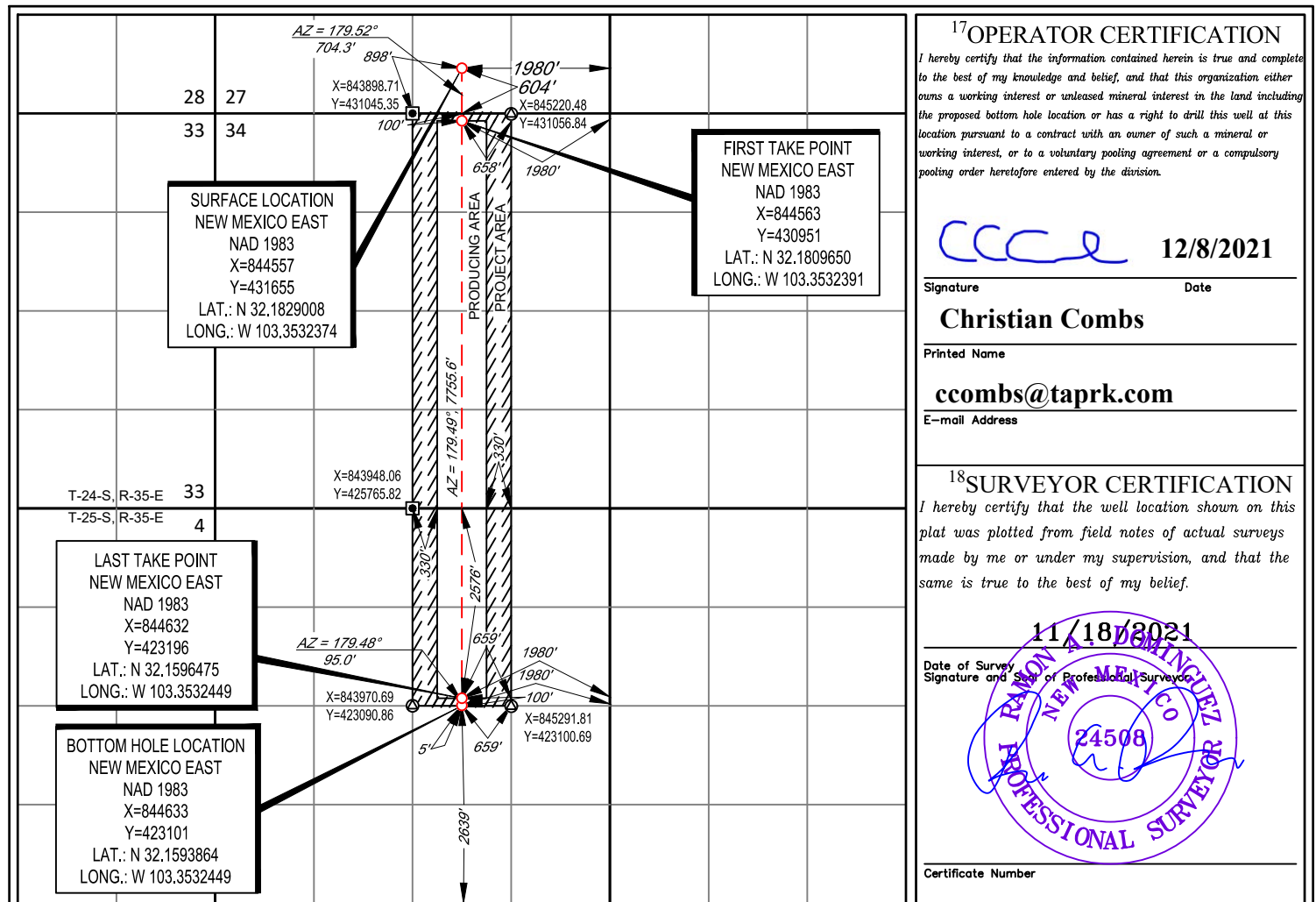
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	27	24-S	35-E	-	604'	SOUTH	1980'	EAST	LEA

¹¹Bottom Hole Location If Different From Surface

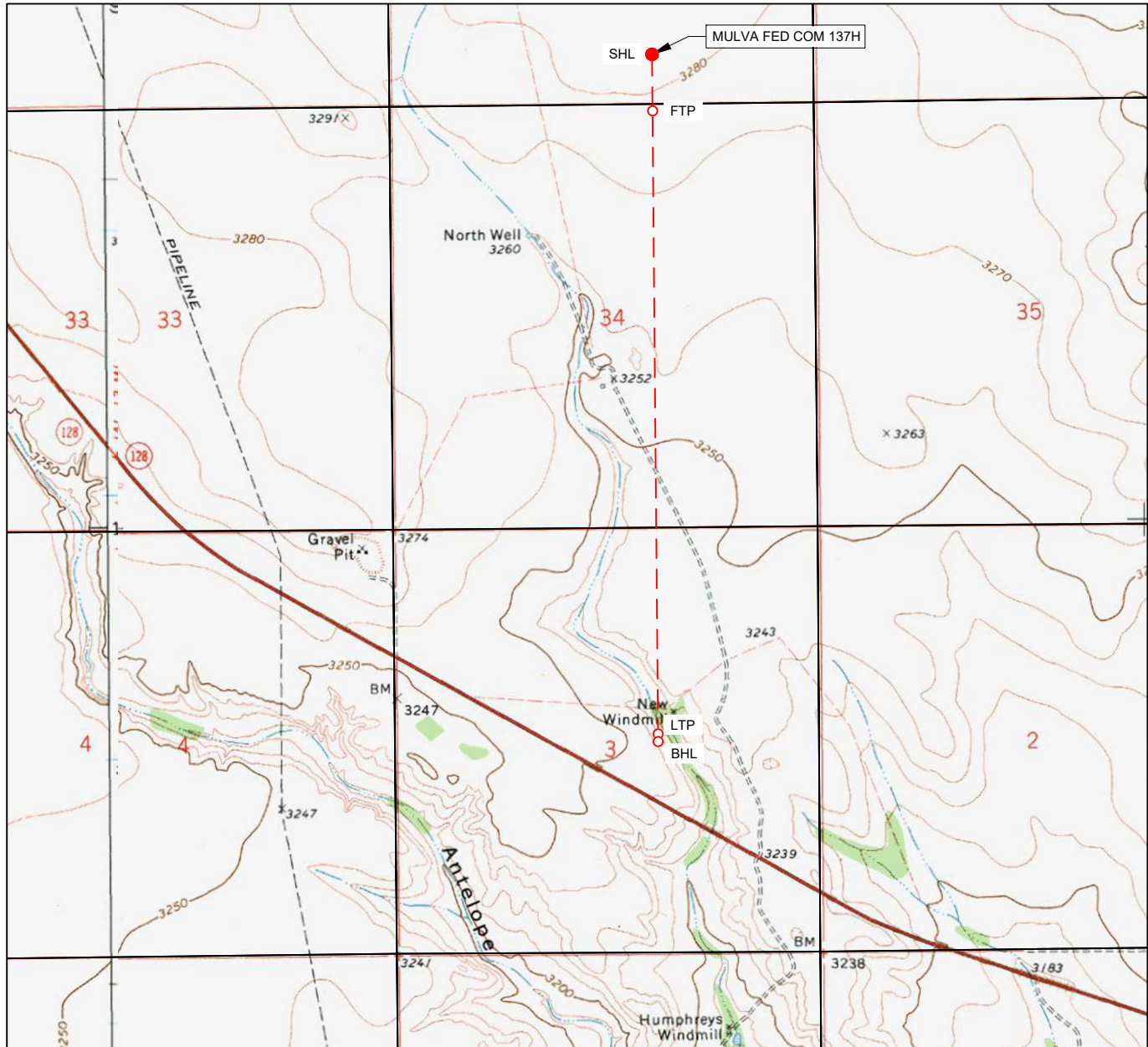
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	3	25-S	35-E	-	2639'	SOUTH	1980'	EAST	LEA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

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.



LOCATION & ELEVATION VERIFICATION MAP

LEASE NAME & WELL NO.: MULVA FED COM 137H

SECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.
 COUNTY LEA STATE NM ELEVATION 3287'
 DESCRIPTION 604' FSL & 1980' FEL

LATITUDE N 32.1829008 LONGITUDE W 103.3532374

SCALE: 1" = 2000'
 0' 1000' 2000'

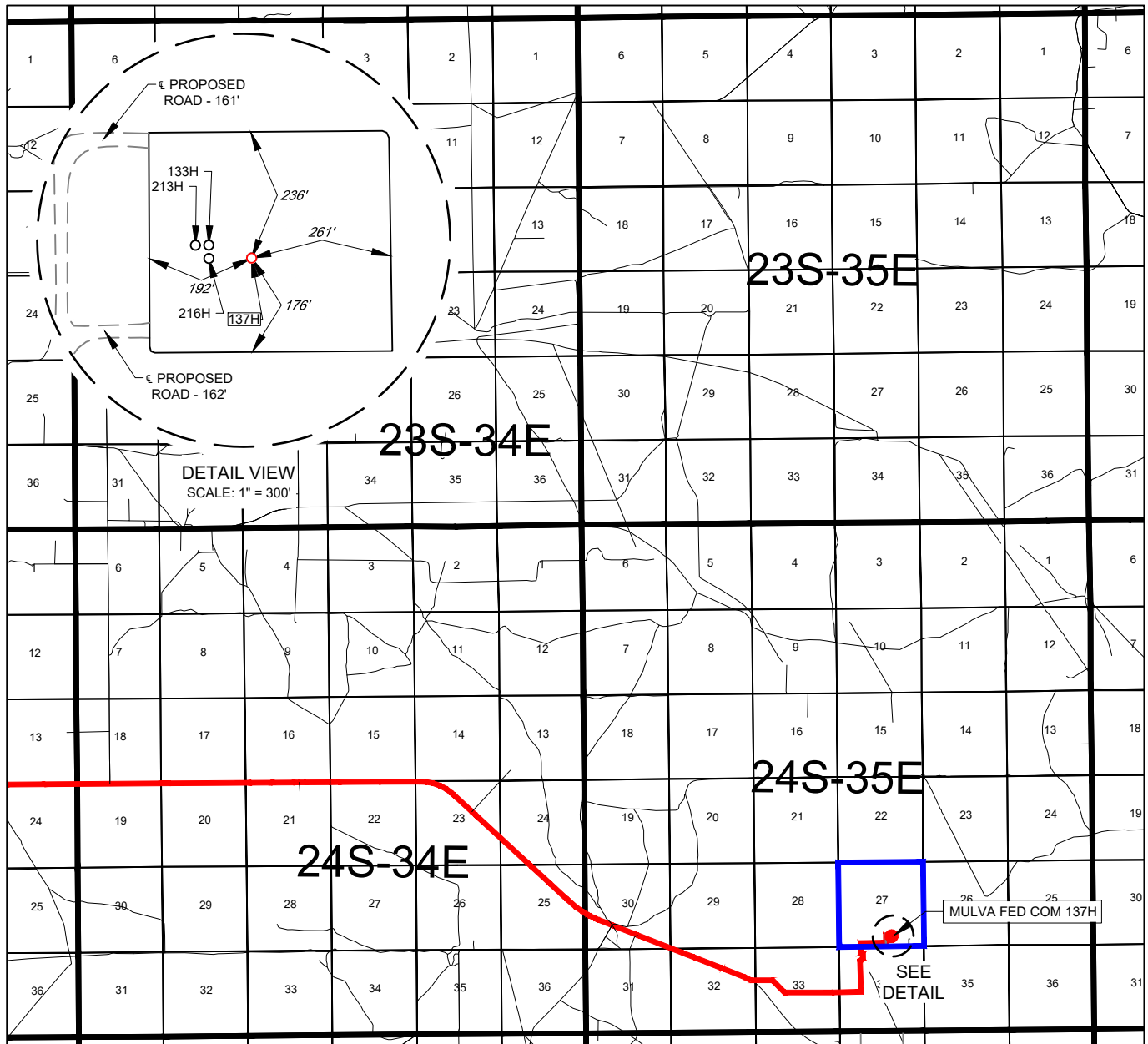
THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.



TOPOGRAPHIC
 LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
 TELEPHONE: (817) 744-7512 • FAX (817) 744-7554
 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
 WWW.TOPOGRAPHIC.COM

EXHIBIT 2
VICINITY MAPLEASE NAME & WELL NO.: MULVA FED COM 137HSECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.COUNTY LEA STATE NMDESCRIPTION 604' FSL & 1980' FEL

DISTANCE & DIRECTION

FROM INT. OF NM-128 & DELAWARE BASIN RD., GO EAST ON NM-128
 ±9.7 MILES, THENCE NORTHEAST (LEFT) ON A LEASE RD. ±3.1 MILES,
 THENCE NORTH (LEFT) ON A PROPOSED RD. ±162 FEET TO A POINT
 ±234 FEET SOUTHWEST OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY
 SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA
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SCALE: 1" = 10000'

0' 5000' 10000'



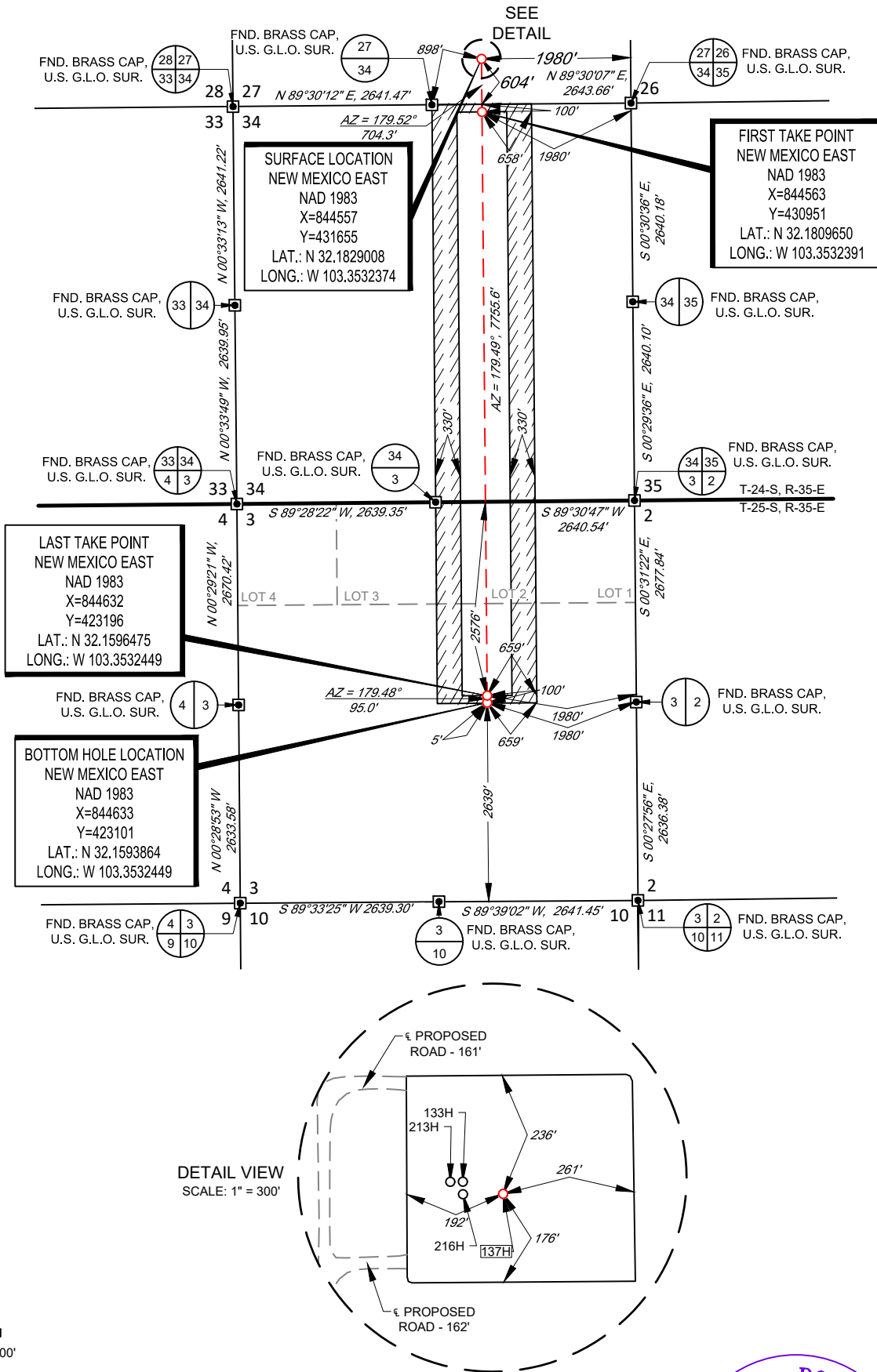
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EXHIBIT 2A

SECTION 27, TOWNSHIP 24-S, RANGE 35-E, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: _____ MULVA FED COM 137H

SECTION 27 TWP 24-S RGE 35-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 604' FSL & 1980' FEL

DISTANCE & DIRECTION
FROM INT. OF NM-128 & DELAWARE BASIN RD., GO EAST ON NM-128
±9.7 MILES, THENCE NORTHEAST (LEFT) ON A LEASE RD. ±3.1 MILES,
THENCE NORTH (LEFT) ON A PROPOSED RD. ±162 FEET TO A POINT
±234 FEET SOUTHWEST OF THE LOCATION.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID
BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY
FEET.
THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND
UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF
SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC THIS CERTIFICATION IS MADE AND
LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS
NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.



Ramon A. Dominguez, P.S. No. 24508
November 18, 2021

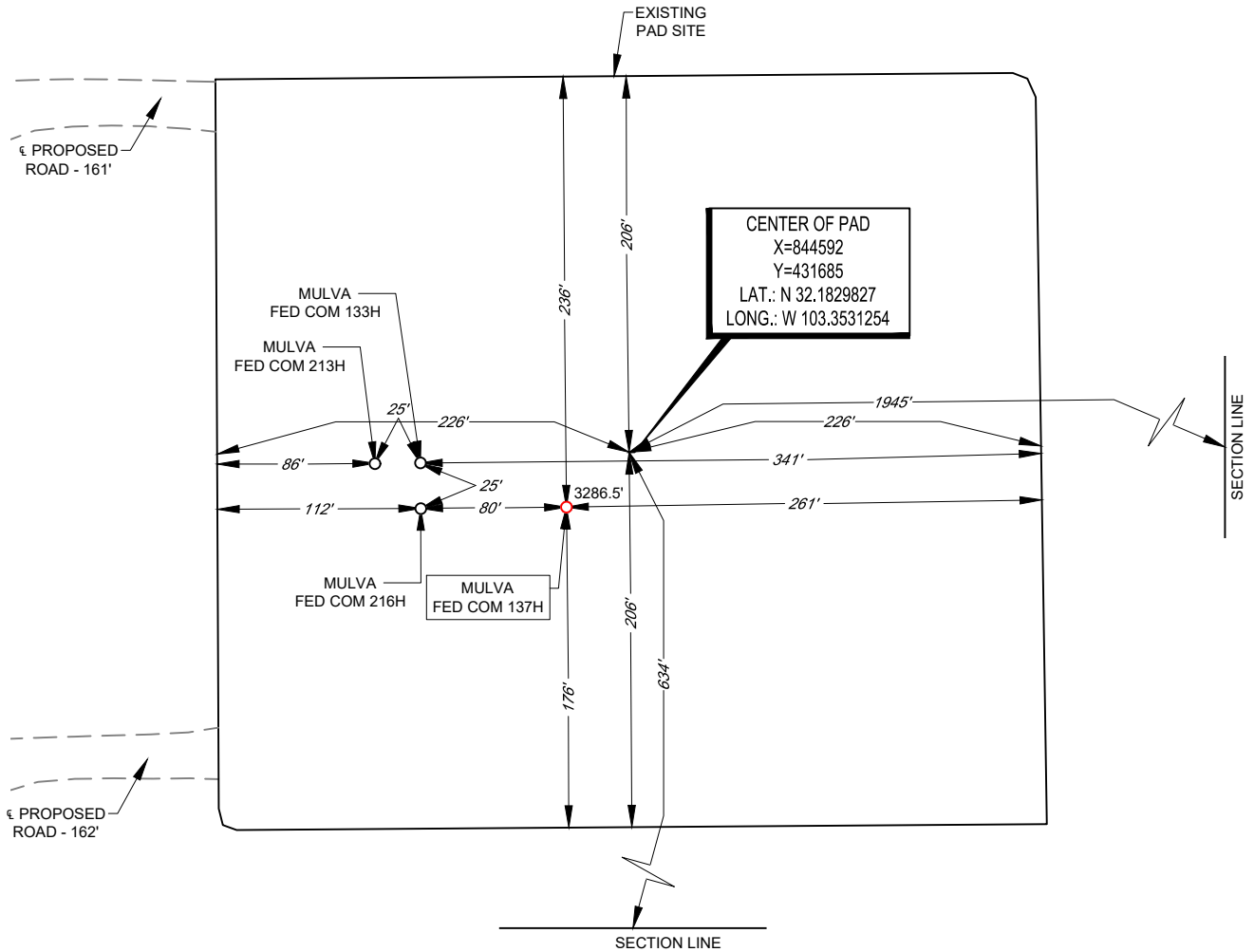
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LOYALTY INNOVATION LEGACY
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EXHIBIT 2B



SECTION 27, TOWNSHIP 24-S, RANGE 35-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

DETAIL VIEW
SCALE: 1" = 100'



LEASE NAME & WELL NO.: _____ MULVA FED COM 137H
137H LATITUDE _____ N 32.1829008 137H LONGITUDE _____ W 103.3532374

CENTER OF PAD IS 634' FSL & 1945' FEL

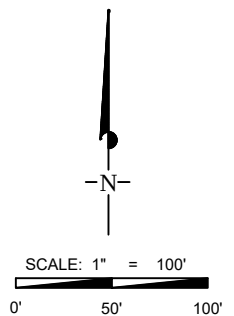


Ramon A. Dominguez, P.S. No. 24508

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET. ELEVATIONS USED ARE NAVD88, OBTAINED THROUGH AN OPUS SOLUTION.

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY TAP ROCK OPERATING, LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 11"



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Drilling Operations Plan
 Mulva Fed Com #137H
 Tap Rock Operating, LLC
 SHL 604' FSL & 1980' FEL, Sec. 27
 T. 24S., R. 35E Lea County, NM
 BHL 2639' FSL & 1980' FEL, Sec. 3
 T. 25S., R. 35E Lea County, NM

Elevation above Sea Level: 3287'

DRILLING PROGRAM

1. Estimated Tops

Formation	TVD	MD	Lithologies	Bearing
Quaternary Deposits	0	0	Surface	None
Rustler Anhydrite	985	985		Salt
Salado	1206	1206	Salt	Salt
Base Salt	4886	4909	Salt	Salt
Bell Canyon	5122	5147	Sandstone	None
Lamar	5122	5147	Sandstone	Hydrocarbons
Cherry Canyon	6065	6093	Sandstone	Hydrocarbons
Brushy Canyon	7507	7535	Sandstone	Hydrocarbons
Bone Spring	8850	8878	Limestone	Hydrocarbons
1st Bone Spring	10101	10129	Sandstone	Hydrocarbons
2nd Bone Spring	10419	10447	Limestone	Hydrocarbons
3rd Bone Spring	11740	11768	Sandstone	Hydrocarbons
Wolfcamp	12045	12073	Shale	Hydrocarbons
KOP	12132	12159	Sandstone	Hydrocarbons
TD	12770	20578	Shale	Hydrocarbons

2. Notable Zones

Wolfcamp B is the formation target.

3. Pressure Control

Pressure Control Equipment (See Schematics):

A 15,000', 10,000 psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A top drive check valve and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. The wellhead will be a multi-bowl speed head.

BOP Test procedure will be as follows:

After surface casing is set and the BOP is nipped up, the BOP pressure tests will be made with a third party tester to 250 psi low, 5000 psi high, and the annular preventer will be tested to 2,500 psi. The BOP will be tested in this manner after nipple-up if any break of the stack occurs. Before drilling out from



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7.625" casing shoe, the BOP pressure tests will be made with a third party tester to 250 psi low, 10,000 psi high, and the annular preventer will be tested to 5,000 psi. The BOP will be tested in this manner if passage of allotted time occurs.

Variance Requests:

Tap Rock requests a variance to run a multi-bowl speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Tap Rock requests a variance to drill this well using a co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Tap Rock requests a variance to have the option of batch drilling this well with other wells on the same pad. In the event that this well is batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Tap Rock requests a variance to run 7-5/8" BTC casing inside 9-5/8" BTC casing will be less than the 0.422" stand off regulation. Through conversations with BLM representatives, Tap Rock has received approval for this design as long as the 7-5/8" flush casing was run throughout the entire 300' cement tie back section between 9-5/8" and 7-5/8" casing. Tap Rock requests a variance to use a 5000 psi annular BOP on a 10M BOP stack. The annular will be tested to 250 psi low and 5000 psi high.

4. Casing & Cement

All Casing will be new.

Primary Casing Design:

Section	Drilled Interval			Casing Size	Standard	Tapered	Casing Set Depths				Casing Details					
	Hole Size	Top	Btm				Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17 1/2	0	1070	13 3/8	API	No	0	1060	0	1060	J-55	54.5	BUTT	1.13	1.15	1.6
Intermediate	9 7/8	1070	8500	7 5/8	API	No	0	8200	0	8172	P-110	29.7	BUTT	1.13	1.15	1.6
	8 3/4	8500	12069	7 5/8	NON API	Yes	8200	12059	8172	12032	P-110	29.7	W-441	1.13	1.15	1.6
Production	6 3/4	12069	20578	5 1/2	NON API	No	0	11859	0	11832	P-110	20	TXP	1.13	1.15	1.6
Production	6 3/4			5 1/2	NON API	No	11859	20578	11832	12770	P-110	20	W-441	1.13	1.15	1.6

Alternative Casing Design:

Section	Hole Size	Casing Size	Standard	Tapered	Top MD	Bottom MD	Top TVD	BTM TVD	Grade	Weight	Thread	Collapse	Burst	Tension
Surface	17 1/2	13 3/8	API	No	0	1060	0	1060	J-55	54.5	BUTT	1.13	1.15	1.6
1st Intermediate	12 1/4	9 5/8	API	No	0	5197	0	5172	J-55	40	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	API	No	0	4897	0	4872	P-110	29.7	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	NON API	Yes	4897	12059	4872	12032	P-110	29.7	W-441	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	No	0	11859	0	11832	P-110	20	TXP	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	No	11859	20578	11832	12770	P-110	20	W-441	1.13	1.15	1.6



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Primary Cement Volumes:

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Lead	0	556	1.65	917	13.5	100%	C	5% NCI + LCM
	Tail	660	422	1.35	570	14.8	100%	C	5% NCI + LCM
Intermediate	Stage 1 Lead	0	1088	3.35	3645	10.5	75%	C	Fluid Loss + Dispersant + Retarder + LCM
	Stage 1 Tail	11059	113	1.56	176	13.2	75%	C	Fluid Loss + Dispersant + Retarder + LCM
	Stage 2 Primary	0	795	2.4	1907	11.5	75%	C	Bentonite + 1% CaCL ₂ + 8% NaCl + LCM
	DVT	5147							
Production	Primary	11559	551	1.71	941	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

Alternative Cement Volumes:

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Lead	0	556	1.65	917	13.5	100%	C	5% NCI + LCM
	Tail	660	412	1.35	556	14.8	100%	C	5% NCI + LCM
1st Intermediate	Lead	0	985	2.18	2148	12.7	65%	C	Bentonite + 1% CaCL ₂ + 8% NaCl + LCM
	Tail	4157	404	1.33	537	14.8	65%	C	5% NaCl + LCM
2nd Intermediate	Lead	4897	291	2.87	836	11.5	35%	TXI	Fluid Loss + Dispersant + Retarder + LCM
	Tail	11059	87	1.56	136	13.2	35%	H	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	11559	551	1.71	941	14.2	25%	H	Fluid Loss + Dispersant + Retarder + LCM

If a DV tool is ran, the depth will be adjusted depending on current hole conditions. Cement volumes will be adjusted proportionally. The DV tool will be set a minimum of 50' below the previous casing shoe and a maximum of 200' above the current casing shoe. If cement is not circulated to surface on the 1st cement job, the 2nd stage will be pumped as planned. If cement does not return to surface on the 2nd stage the BLM will be notified immediately.

5. Mud Program

Primary Mud Design:

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	1060	FW Gel	8.30	28	NC
Intermediate	1060	12069	DBE	9.00	30-32	NC
Production	12069	20578	Oil Base Mud	11.50	50-70	<10

Alternative Design:

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	1060	FW Spud Mud	8.30	28	NC
Intermediate	1060	5197	Brine Water	10.00	30-32	NC
Intermediate 2	5197	12059	FW/Cut Brine	9.00	30-32	NC
Production	12059	20578	Oil Base Mud	11.50	50-70	<10

Electronic Pason mud monitor system complying with Onshore Order 1 will be used. All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions. A closed loop system will be used.



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6. Cores, Tests, & Logs

- Electric Logging Program: No open-hole logs are planned at this time for the pilot hole.
- GR will be collected while drilling through the MWD tools from 9.625" casing shoe to TD.
- A 2-person mud logging program will be used from 9.625" casing shoe to TD.
- No DSTs or cores are planned at this time.
- CBL w/ CCL from as far as gravity will let it fall to TOC.

7. Down Hole Conditions

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is $\approx 7,637$ psi. Expected bottom hole temperature is $\approx 170^{\circ}$ F.

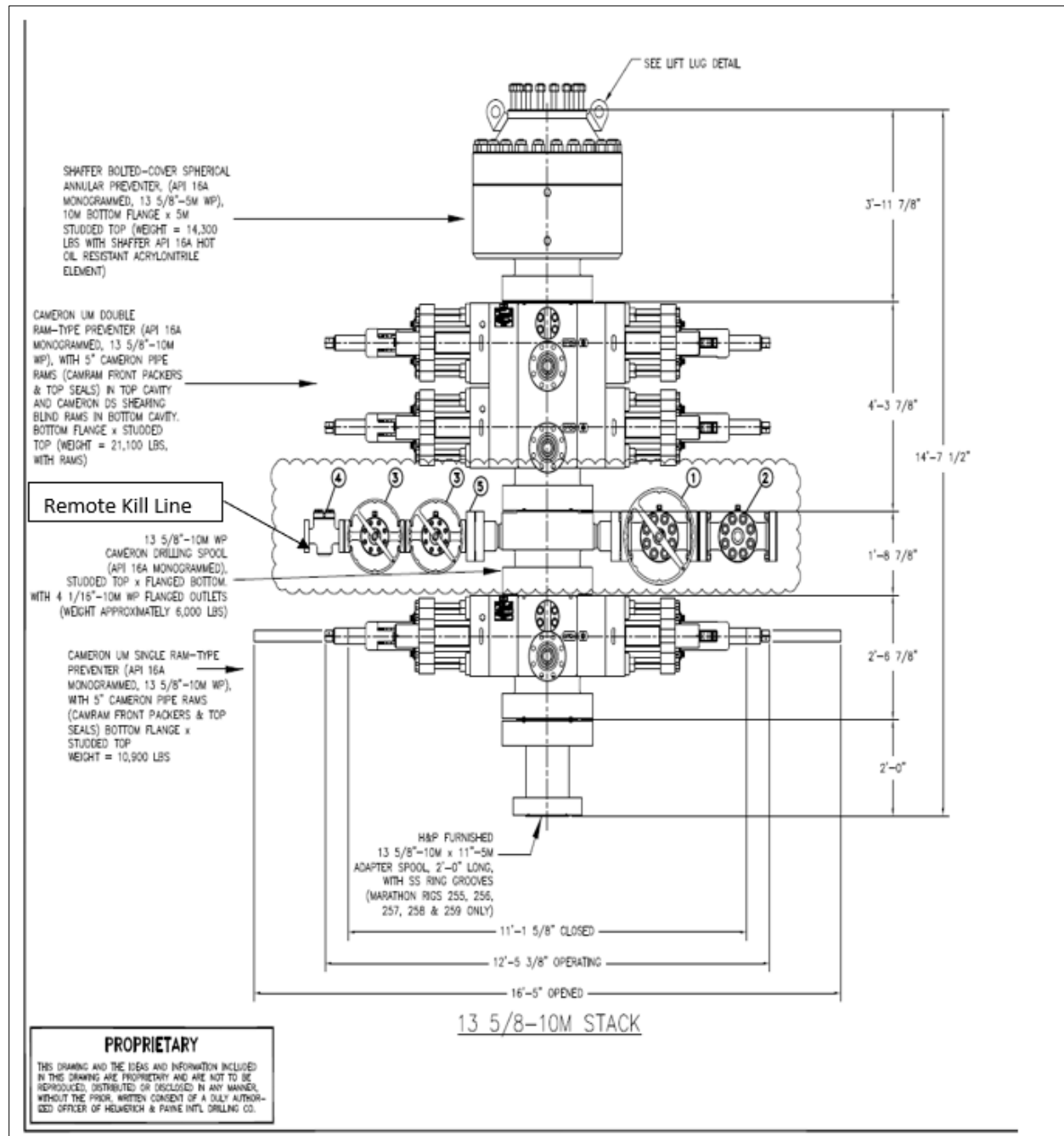
Tap Rock does not anticipate that there will be enough H₂S from the surface to the Wolfcamp formations to meet the BLM's Onshore Order 6 requirements for the submission of an "H₂S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H₂S safety package on all wells and an "H₂S Drilling Operations Plan" is attached. Adequate flare lines will be installed off the mud/gas separator where gas may be safely flared. All personnel will be familiar with all aspects of safe operation of equipment being used.

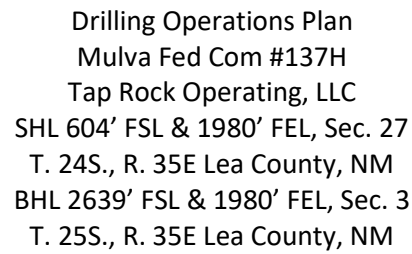
8. Other Information

Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.



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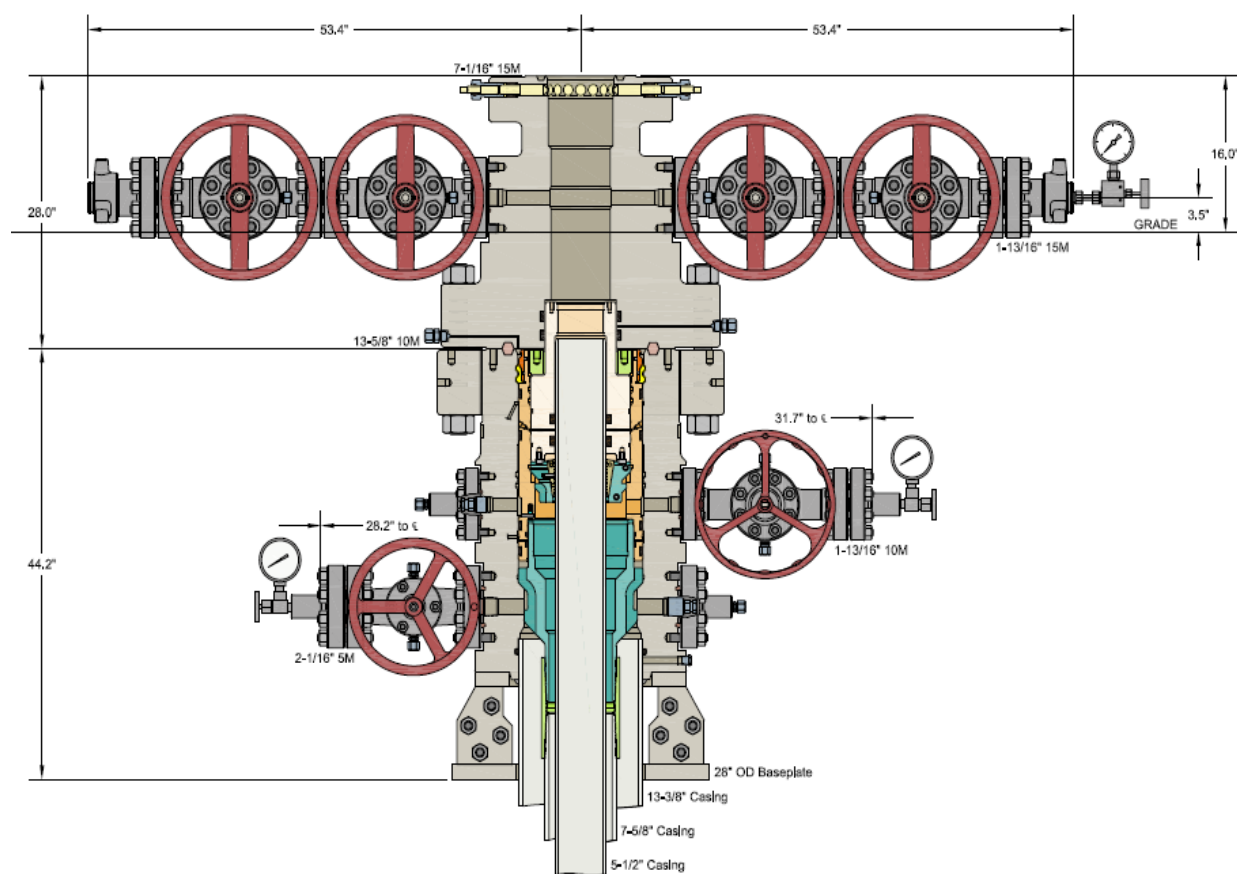






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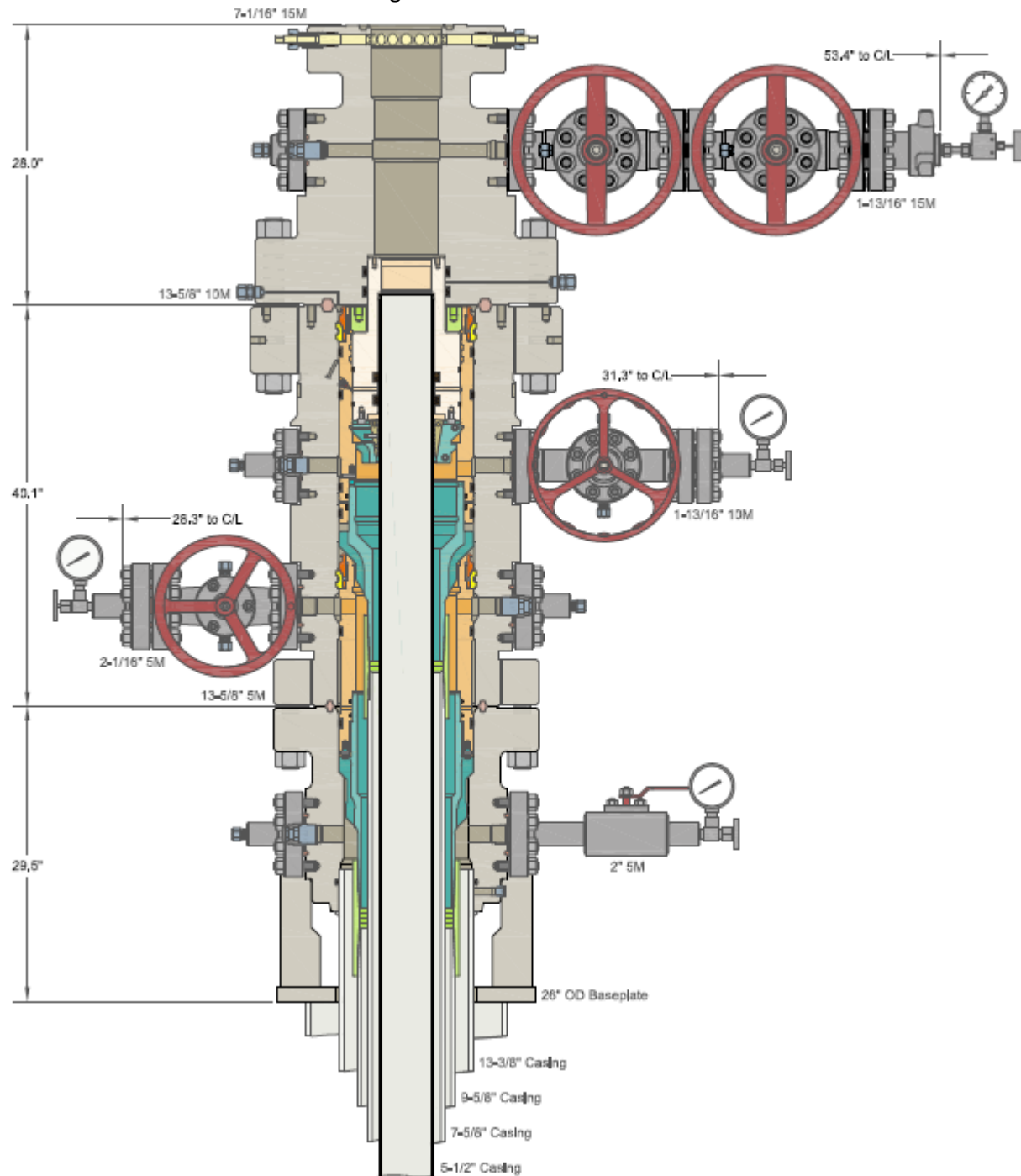
Multi-bowl Wellhead- Primary Design





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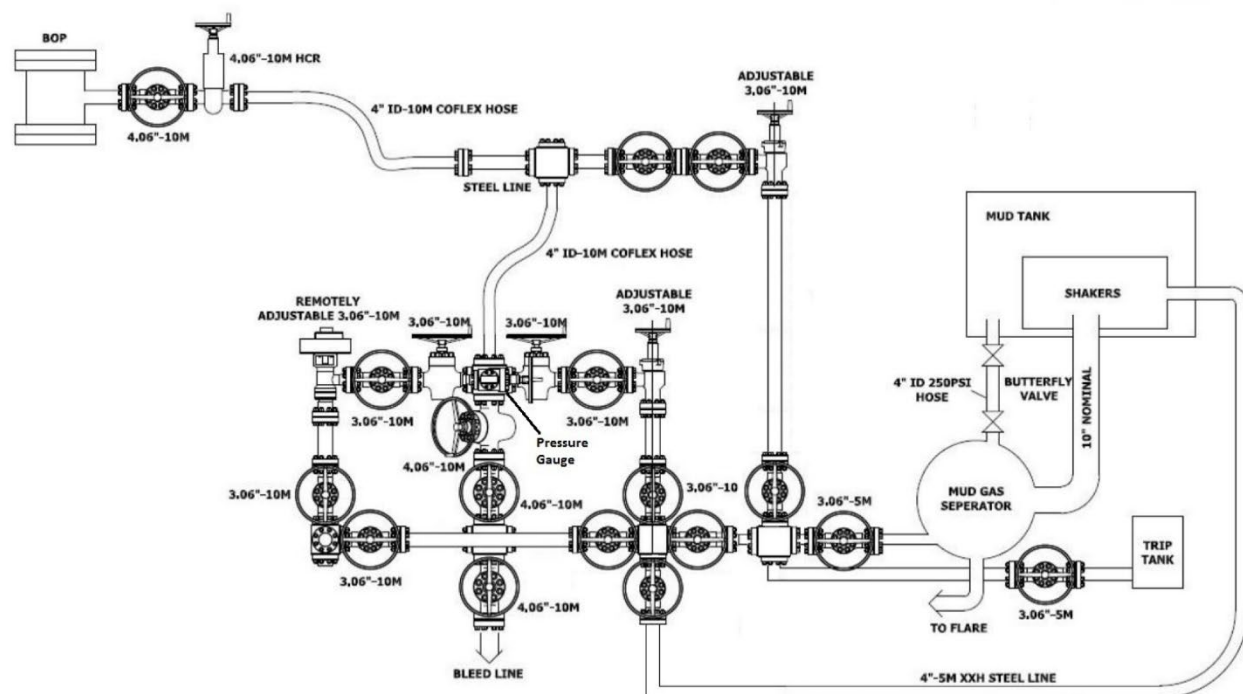
Multi-bowl Wellhead- Alternative Design





Drilling Operations Plan
 Mulva Fed Com #137H
 Tap Rock Operating, LLC
 SHL 604' FSL & 1980' FEL, Sec. 27
 T. 24S., R. 35E Lea County, NM
 BHL 2639' FSL & 1980' FEL, Sec. 3
 T. 25S., R. 35E Lea County, NM

10M Choke Layout





Tap Rock Resources, LLC

**Lea County, NM (NAD 83 NME)
(Mulva Fed) Sec-27_T-24-S_R-35-E
Mulva Fed Com #137H**

OWB

Plan: Plan #4

Standard Planning Report

08 December, 2021





Intrepid Planning Report



Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well Mulva Fed Com #137H
Company:	Tap Rock Resources, LLC	TVD Reference:	KB @ 3313.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3313.0usft
Site:	(Mulva Fed) Sec-27_T-24-S_R-35-E	North Reference:	Grid
Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #4		

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Mulva Fed) Sec-27_T-24-S_R-35-E		
Site Position:		Northing:	431,446.00 usft
From:	Map	Easting:	841,909.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 10' 56.609 N
		Longitude:	103° 21' 42.490 W
		Grid Convergence:	0.52 °

Well	Mulva Fed Com #137H		
Well Position	+N/-S	209.0 usft	Northing: 431,655.00 usft
	+E/-W	2,648.0 usft	Easting: 844,557.00 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 10' 58.439 N
			Longitude: 103° 21' 11.659 W
			Ground Level: 3,287.0 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	01/08/20	6.57	60.02	47,673.81991472

Design	Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.49

Plan Survey Tool Program	Date	12/08/21		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	20,578.4	Plan #4 (OWB)	MWD
				OWSG MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,100.3	7.00	165.68	2,098.6	-41.4	10.6	1.00	1.00	0.00	165.68	
5,377.6	7.00	165.68	5,351.4	-428.6	109.4	0.00	0.00	0.00	0.00	
6,077.9	0.00	0.01	6,050.0	-470.0	120.0	1.00	-1.00	0.00	180.00	
12,159.9	0.00	0.01	12,132.0	-470.0	120.0	0.00	0.00	0.00	0.01	
13,054.9	89.50	188.00	12,704.9	-1,032.4	41.0	10.00	10.00	0.00	188.00	
13,480.3	89.50	179.49	12,708.7	-1,456.5	13.2	2.00	0.00	-2.00	-90.04	
20,578.4	89.50	179.49	12,770.7	-8,554.0	76.0	0.00	0.00	0.00	0.00	PBHL (Mulva Fed C



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Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
1,200.0	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	1.00	165.68	1,500.0	-0.8	0.2	0.8	1.00	1.00	0.00
1,600.0	2.00	165.68	1,600.0	-3.4	0.9	3.4	1.00	1.00	0.00
1,700.0	3.00	165.68	1,699.9	-7.6	1.9	7.6	1.00	1.00	0.00
1,800.0	4.00	165.68	1,799.7	-13.5	3.5	13.6	1.00	1.00	0.00
1,900.0	5.00	165.68	1,899.4	-21.1	5.4	21.2	1.00	1.00	0.00
2,000.0	6.00	165.68	1,998.9	-30.4	7.8	30.5	1.00	1.00	0.00
2,100.3	7.00	165.68	2,098.6	-41.4	10.6	41.5	1.00	1.00	0.00
2,200.0	7.00	165.68	2,197.5	-53.2	13.6	53.3	0.00	0.00	0.00
2,300.0	7.00	165.68	2,296.8	-65.0	16.6	65.2	0.00	0.00	0.00
2,400.0	7.00	165.68	2,396.0	-76.8	19.6	77.0	0.00	0.00	0.00
2,500.0	7.00	165.68	2,495.3	-88.6	22.6	88.8	0.00	0.00	0.00
2,600.0	7.00	165.68	2,594.5	-100.4	25.6	100.7	0.00	0.00	0.00
2,700.0	7.00	165.68	2,693.8	-112.3	28.7	112.5	0.00	0.00	0.00
2,800.0	7.00	165.68	2,793.0	-124.1	31.7	124.4	0.00	0.00	0.00
2,900.0	7.00	165.68	2,892.3	-135.9	34.7	136.2	0.00	0.00	0.00
3,000.0	7.00	165.68	2,991.5	-147.7	37.7	148.0	0.00	0.00	0.00
3,100.0	7.00	165.68	3,090.8	-159.5	40.7	159.9	0.00	0.00	0.00
3,200.0	7.00	165.68	3,190.1	-171.3	43.7	171.7	0.00	0.00	0.00
3,300.0	7.00	165.68	3,289.3	-183.1	46.8	183.6	0.00	0.00	0.00
3,400.0	7.00	165.68	3,388.6	-195.0	49.8	195.4	0.00	0.00	0.00
3,500.0	7.00	165.68	3,487.8	-206.8	52.8	207.2	0.00	0.00	0.00
3,600.0	7.00	165.68	3,587.1	-218.6	55.8	219.1	0.00	0.00	0.00
3,700.0	7.00	165.68	3,686.3	-230.4	58.8	230.9	0.00	0.00	0.00
3,800.0	7.00	165.68	3,785.6	-242.2	61.8	242.8	0.00	0.00	0.00
3,900.0	7.00	165.68	3,884.8	-254.0	64.9	254.6	0.00	0.00	0.00
4,000.0	7.00	165.68	3,984.1	-265.8	67.9	266.4	0.00	0.00	0.00
4,100.0	7.00	165.68	4,083.3	-277.7	70.9	278.3	0.00	0.00	0.00
4,200.0	7.00	165.68	4,182.6	-289.5	73.9	290.1	0.00	0.00	0.00
4,300.0	7.00	165.68	4,281.8	-301.3	76.9	302.0	0.00	0.00	0.00
4,400.0	7.00	165.68	4,381.1	-313.1	79.9	313.8	0.00	0.00	0.00
4,500.0	7.00	165.68	4,480.4	-324.9	83.0	325.6	0.00	0.00	0.00
4,600.0	7.00	165.68	4,579.6	-336.7	86.0	337.5	0.00	0.00	0.00
4,700.0	7.00	165.68	4,678.9	-348.5	89.0	349.3	0.00	0.00	0.00
4,800.0	7.00	165.68	4,778.1	-360.3	92.0	361.2	0.00	0.00	0.00
4,900.0	7.00	165.68	4,877.4	-372.2	95.0	373.0	0.00	0.00	0.00
5,000.0	7.00	165.68	4,976.6	-384.0	98.0	384.8	0.00	0.00	0.00
5,100.0	7.00	165.68	5,075.9	-395.8	101.1	396.7	0.00	0.00	0.00
5,200.0	7.00	165.68	5,175.1	-407.6	104.1	408.5	0.00	0.00	0.00
5,300.0	7.00	165.68	5,274.4	-419.4	107.1	420.3	0.00	0.00	0.00



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Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,377.6	7.00	165.68	5,351.4	-428.6	109.4	429.5	0.00	0.00	0.00
5,400.0	6.78	165.68	5,373.6	-431.2	110.1	432.1	1.00	-1.00	0.00
5,500.0	5.78	165.68	5,473.0	-441.8	112.8	442.8	1.00	-1.00	0.00
5,600.0	4.78	165.68	5,572.6	-450.7	115.1	451.7	1.00	-1.00	0.00
5,700.0	3.78	165.68	5,672.3	-457.9	116.9	458.9	1.00	-1.00	0.00
5,800.0	2.78	165.68	5,772.2	-463.5	118.3	464.5	1.00	-1.00	0.00
5,900.0	1.78	165.68	5,872.1	-467.3	119.3	468.4	1.00	-1.00	0.00
6,000.0	0.78	165.68	5,972.1	-469.5	119.9	470.5	1.00	-1.00	0.00
6,077.9	0.00	0.01	6,050.0	-470.0	120.0	471.0	1.00	-1.00	0.00
6,100.0	0.00	0.00	6,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,472.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,472.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,472.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,000.0	0.00	0.00	8,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,472.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,000.0	0.00	0.00	9,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,300.0	0.00	0.00	10,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,400.0	0.00	0.00	10,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,500.0	0.00	0.00	10,472.1	-470.0	120.0	471.0	0.00	0.00	0.00



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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.0	0.00	0.00	10,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,700.0	0.00	0.00	10,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,800.0	0.00	0.00	10,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
10,900.0	0.00	0.00	10,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,000.0	0.00	0.00	10,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,100.0	0.00	0.00	11,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,200.0	0.00	0.00	11,172.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,300.0	0.00	0.00	11,272.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,400.0	0.00	0.00	11,372.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,500.0	0.00	0.00	11,472.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,600.0	0.00	0.00	11,572.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,700.0	0.00	0.00	11,672.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,800.0	0.00	0.00	11,772.1	-470.0	120.0	471.0	0.00	0.00	0.00
11,900.0	0.00	0.00	11,872.1	-470.0	120.0	471.0	0.00	0.00	0.00
12,000.0	0.00	0.00	11,972.1	-470.0	120.0	471.0	0.00	0.00	0.00
12,100.0	0.00	0.00	12,072.1	-470.0	120.0	471.0	0.00	0.00	0.00
12,159.9	0.00	0.01	12,132.0	-470.0	120.0	471.0	0.00	0.00	0.00
12,200.0	4.01	188.00	12,172.0	-471.4	119.8	472.4	10.00	10.00	0.00
12,250.0	9.01	188.00	12,221.7	-477.0	119.0	478.0	10.00	10.00	0.00
12,300.0	14.01	188.00	12,270.7	-486.9	117.6	487.9	10.00	10.00	0.00
12,350.0	19.01	188.00	12,318.6	-500.9	115.7	501.9	10.00	10.00	0.00
12,400.0	24.01	188.00	12,365.1	-519.1	113.1	520.1	10.00	10.00	0.00
12,450.0	29.01	188.00	12,409.8	-541.2	110.0	542.1	10.00	10.00	0.00
12,500.0	34.01	188.00	12,452.4	-567.0	106.4	568.0	10.00	10.00	0.00
12,550.0	39.01	188.00	12,492.6	-596.5	102.2	597.4	10.00	10.00	0.00
12,600.0	44.01	188.00	12,530.1	-629.3	97.6	630.1	10.00	10.00	0.00
12,650.0	49.01	188.00	12,564.5	-665.2	92.6	666.0	10.00	10.00	0.00
12,700.0	54.01	188.00	12,595.6	-703.9	87.1	704.7	10.00	10.00	0.00
12,750.0	59.01	188.00	12,623.2	-745.2	81.3	745.9	10.00	10.00	0.00
12,800.0	64.01	188.00	12,647.0	-788.7	75.2	789.4	10.00	10.00	0.00
12,850.0	69.01	188.00	12,666.9	-834.1	68.8	834.7	10.00	10.00	0.00
12,900.0	74.01	188.00	12,682.8	-881.1	62.2	881.6	10.00	10.00	0.00
12,950.0	79.01	188.00	12,694.4	-929.2	55.5	929.6	10.00	10.00	0.00
13,000.0	84.01	188.00	12,701.8	-978.1	48.6	978.5	10.00	10.00	0.00
13,054.9	89.50	188.00	12,704.9	-1,032.4	41.0	1,032.8	10.00	10.00	0.00
13,100.0	89.50	187.10	12,705.3	-1,077.1	35.0	1,077.4	2.00	0.00	-2.00
13,200.0	89.50	185.10	12,706.2	-1,176.5	24.4	1,176.7	2.00	0.00	-2.00
13,300.0	89.50	183.10	12,707.1	-1,276.3	17.3	1,276.4	2.00	0.00	-2.00
13,400.0	89.50	181.10	12,708.0	-1,376.2	13.6	1,376.3	2.00	0.00	-2.00
13,480.3	89.50	179.49	12,708.7	-1,456.5	13.2	1,456.5	2.00	0.00	-2.00
13,500.0	89.50	179.49	12,708.8	-1,476.2	13.4	1,476.2	0.00	0.00	0.00
13,600.0	89.50	179.49	12,709.7	-1,576.2	14.2	1,576.2	0.00	0.00	0.00
13,700.0	89.50	179.49	12,710.6	-1,676.2	15.1	1,676.2	0.00	0.00	0.00
13,800.0	89.50	179.49	12,711.4	-1,776.2	16.0	1,776.2	0.00	0.00	0.00
13,900.0	89.50	179.49	12,712.3	-1,876.1	16.9	1,876.2	0.00	0.00	0.00
14,000.0	89.50	179.49	12,713.2	-1,976.1	17.8	1,976.2	0.00	0.00	0.00
14,100.0	89.50	179.49	12,714.1	-2,076.1	18.7	2,076.2	0.00	0.00	0.00
14,200.0	89.50	179.49	12,714.9	-2,176.1	19.6	2,176.2	0.00	0.00	0.00
14,300.0	89.50	179.49	12,715.8	-2,276.1	20.4	2,276.2	0.00	0.00	0.00
14,400.0	89.50	179.49	12,716.7	-2,376.1	21.3	2,376.2	0.00	0.00	0.00
14,500.0	89.50	179.49	12,717.6	-2,476.1	22.2	2,476.2	0.00	0.00	0.00
14,600.0	89.50	179.49	12,718.4	-2,576.1	23.1	2,576.2	0.00	0.00	0.00
14,700.0	89.50	179.49	12,719.3	-2,676.1	24.0	2,676.2	0.00	0.00	0.00
14,800.0	89.50	179.49	12,720.2	-2,776.1	24.9	2,776.2	0.00	0.00	0.00



Intrepid Planning Report



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Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3313.0usft
Site:	(Mulva Fed) Sec-27_T-24-S_R-35-E	North Reference:	Grid
Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.0	89.50	179.49	12,721.1	-2,876.1	25.8	2,876.2	0.00	0.00	0.00
15,000.0	89.50	179.49	12,721.9	-2,976.1	26.6	2,976.2	0.00	0.00	0.00
15,100.0	89.50	179.49	12,722.8	-3,076.1	27.5	3,076.2	0.00	0.00	0.00
15,200.0	89.50	179.49	12,723.7	-3,176.0	28.4	3,176.2	0.00	0.00	0.00
15,300.0	89.50	179.49	12,724.5	-3,276.0	29.3	3,276.2	0.00	0.00	0.00
15,400.0	89.50	179.49	12,725.4	-3,376.0	30.2	3,376.2	0.00	0.00	0.00
15,500.0	89.50	179.49	12,726.3	-3,476.0	31.1	3,476.2	0.00	0.00	0.00
15,600.0	89.50	179.49	12,727.2	-3,576.0	31.9	3,576.2	0.00	0.00	0.00
15,700.0	89.50	179.49	12,728.0	-3,676.0	32.8	3,676.2	0.00	0.00	0.00
15,800.0	89.50	179.49	12,728.9	-3,776.0	33.7	3,776.2	0.00	0.00	0.00
15,900.0	89.50	179.49	12,729.8	-3,876.0	34.6	3,876.1	0.00	0.00	0.00
16,000.0	89.50	179.49	12,730.7	-3,976.0	35.5	3,976.1	0.00	0.00	0.00
16,100.0	89.50	179.49	12,731.5	-4,076.0	36.4	4,076.1	0.00	0.00	0.00
16,200.0	89.50	179.49	12,732.4	-4,176.0	37.3	4,176.1	0.00	0.00	0.00
16,300.0	89.50	179.49	12,733.3	-4,276.0	38.1	4,276.1	0.00	0.00	0.00
16,400.0	89.50	179.49	12,734.2	-4,376.0	39.0	4,376.1	0.00	0.00	0.00
16,500.0	89.50	179.49	12,735.0	-4,475.9	39.9	4,476.1	0.00	0.00	0.00
16,600.0	89.50	179.49	12,735.9	-4,575.9	40.8	4,576.1	0.00	0.00	0.00
16,700.0	89.50	179.49	12,736.8	-4,675.9	41.7	4,676.1	0.00	0.00	0.00
16,800.0	89.50	179.49	12,737.7	-4,775.9	42.6	4,776.1	0.00	0.00	0.00
16,900.0	89.50	179.49	12,738.5	-4,875.9	43.5	4,876.1	0.00	0.00	0.00
17,000.0	89.50	179.49	12,739.4	-4,975.9	44.3	4,976.1	0.00	0.00	0.00
17,100.0	89.50	179.49	12,740.3	-5,075.9	45.2	5,076.1	0.00	0.00	0.00
17,200.0	89.50	179.49	12,741.1	-5,175.9	46.1	5,176.1	0.00	0.00	0.00
17,300.0	89.50	179.49	12,742.0	-5,275.9	47.0	5,276.1	0.00	0.00	0.00
17,400.0	89.50	179.49	12,742.9	-5,375.9	47.9	5,376.1	0.00	0.00	0.00
17,500.0	89.50	179.49	12,743.8	-5,475.9	48.8	5,476.1	0.00	0.00	0.00
17,600.0	89.50	179.49	12,744.6	-5,575.9	49.6	5,576.1	0.00	0.00	0.00
17,700.0	89.50	179.49	12,745.5	-5,675.9	50.5	5,676.1	0.00	0.00	0.00
17,800.0	89.50	179.49	12,746.4	-5,775.8	51.4	5,776.1	0.00	0.00	0.00
17,900.0	89.50	179.49	12,747.3	-5,875.8	52.3	5,876.1	0.00	0.00	0.00
18,000.0	89.50	179.49	12,748.1	-5,975.8	53.2	5,976.1	0.00	0.00	0.00
18,100.0	89.50	179.49	12,749.0	-6,075.8	54.1	6,076.1	0.00	0.00	0.00
18,200.0	89.50	179.49	12,749.9	-6,175.8	55.0	6,176.1	0.00	0.00	0.00
18,300.0	89.50	179.49	12,750.8	-6,275.8	55.8	6,276.1	0.00	0.00	0.00
18,400.0	89.50	179.49	12,751.6	-6,375.8	56.7	6,376.1	0.00	0.00	0.00
18,500.0	89.50	179.49	12,752.5	-6,475.8	57.6	6,476.0	0.00	0.00	0.00
18,600.0	89.50	179.49	12,753.4	-6,575.8	58.5	6,576.0	0.00	0.00	0.00
18,700.0	89.50	179.49	12,754.2	-6,675.8	59.4	6,676.0	0.00	0.00	0.00
18,800.0	89.50	179.49	12,755.1	-6,775.8	60.3	6,776.0	0.00	0.00	0.00
18,900.0	89.50	179.49	12,756.0	-6,875.8	61.1	6,876.0	0.00	0.00	0.00
19,000.0	89.50	179.49	12,756.9	-6,975.8	62.0	6,976.0	0.00	0.00	0.00
19,100.0	89.50	179.49	12,757.7	-7,075.7	62.9	7,076.0	0.00	0.00	0.00
19,200.0	89.50	179.49	12,758.6	-7,175.7	63.8	7,176.0	0.00	0.00	0.00
19,300.0	89.50	179.49	12,759.5	-7,275.7	64.7	7,276.0	0.00	0.00	0.00
19,400.0	89.50	179.49	12,760.4	-7,375.7	65.6	7,376.0	0.00	0.00	0.00
19,500.0	89.50	179.49	12,761.2	-7,475.7	66.5	7,476.0	0.00	0.00	0.00
19,600.0	89.50	179.49	12,762.1	-7,575.7	67.3	7,576.0	0.00	0.00	0.00
19,700.0	89.50	179.49	12,763.0	-7,675.7	68.2	7,676.0	0.00	0.00	0.00
19,800.0	89.50	179.49	12,763.9	-7,775.7	69.1	7,776.0	0.00	0.00	0.00
19,900.0	89.50	179.49	12,764.7	-7,875.7	70.0	7,876.0	0.00	0.00	0.00
20,000.0	89.50	179.49	12,765.6	-7,975.7	70.9	7,976.0	0.00	0.00	0.00
20,100.0	89.50	179.49	12,766.5	-8,075.7	71.8	8,076.0	0.00	0.00	0.00
20,200.0	89.50	179.49	12,767.3	-8,175.7	72.7	8,176.0	0.00	0.00	0.00



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Site:	(Mulva Fed) Sec-27_T-24-S_R-35-E	North Reference:	Grid
Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
20,300.0	89.50	179.49	12,768.2	-8,275.7	73.5	8,276.0	0.00	0.00	0.00
20,400.0	89.50	179.49	12,769.1	-8,375.6	74.4	8,376.0	0.00	0.00	0.00
20,500.0	89.50	179.49	12,770.0	-8,475.6	75.3	8,476.0	0.00	0.00	0.00
20,578.4	89.50	179.49	12,770.7	-8,554.0	76.0	8,554.3	0.00	0.00	0.00

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Mulva Fed Com - plan misses target center by 112.1usft at 12758.1usft MD (12627.3 TVD, -752.1 N, 80.4 E) - Point	0.00	0.01	12,696.0	-704.0	6.0	430,951.00	844,563.00	32° 10' 51.473 N	103° 21' 11.663 W
LTP (Mulva Fed Com - plan misses target center by 0.8usft at 20483.4usft MD (12769.8 TVD, -8459.0 N, 75.2 E) - Point	0.00	0.00	12,770.7	-8,459.0	75.0	423,196.00	844,632.00	32° 9' 34.733 N	103° 21' 11.682 W
PBHL (Mulva Fed Cor - plan hits target center - Rectangle (sides W100.0 H7,851.0 D30.0)	0.50	179.49	12,770.7	-8,554.0	76.0	423,101.00	844,633.00	32° 9' 33.793 N	103° 21' 11.681 W



Intrepid Planning Report



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Site:	(Mulva Fed) Sec-27_T-24-S_R-35-E	North Reference:	Grid
Well:	Mulva Fed Com #137H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan #4		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
985.0	985.0	Rustler Anhydrite			
1,206.0	1,206.0	Top Salt			
4,908.7	4,886.0	Base Salt			
5,100.1	5,076.0	Delaware Mountain Gp			
5,105.2	5,081.0	Lamar			
5,126.3	5,102.0	Bell Canyon			
5,146.5	5,122.0	Ramsey Sand			
6,092.9	6,065.0	Cherry Canyon			
7,534.9	7,507.0	Brushy Canyon			
8,877.9	8,850.0	Bone Spring Lime			
8,915.6	8,887.7	Upper Avalon			
9,116.9	9,089.0	Middle Avalon			
9,779.9	9,752.0	Lower Avalon			
10,128.6	10,100.7	1st Bone Spring Sand			
10,447.2	10,419.3	2nd Bone Spring Carb			
10,729.2	10,701.3	2nd Bone Spring Sand			
11,202.9	11,175.0	3rd Bone Spring Carb			
11,767.6	11,739.7	3rd Bone Spring Sand			
12,026.6	11,998.7	3rd BS W Sand			
12,072.6	12,044.7	Wolfcamp A X Sand			
12,113.2	12,085.3	Wolfcamp A Y Sand			
12,182.2	12,154.3	Wolfcamp A Lower			
12,485.1	12,440.0	Wolfcamp B			
12,705.4	12,598.7	Wolfcamp B1			
17,870.4	12,747.0	Wolfcamp C			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,400.0	1,400.0	0.0	0.0	NUDGE - Build 1.00
2,100.3	2,098.6	-41.4	10.6	HOLD - 3277.3 at 2100.3 MD
5,377.6	5,351.4	-428.6	109.4	DROP - -1.00
6,077.9	6,050.0	-470.0	120.0	HOLD - 6082.0 at 6077.9 MD
12,159.9	12,132.0	-470.0	120.0	KOP - Build 10.00
13,054.9	12,704.9	-1,032.4	41.0	EOC/TRN - DLS 2.00 TFO -90.04
13,480.3	12,708.7	-1,456.5	13.2	Start 7098.1 hold at 13480.3 MD
20,578.4	12,770.7	-8,554.0	76.0	TD at 20578.4

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) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 95788

CONDITIONS

Operator: TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401	OGRID: 372043
	Action Number: 95788
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	5/23/2022