

Form 3160-3  
(June 2015)

FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator <b>[372043]</b>		8. Lease Name and Well No. <b>[328302]</b>
3a. Address	3b. Phone No. (include area code)	9. API Well No. <b>30-025-50895</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory <b>[98098]</b>
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- |  |   |
|--|---|
| 1. Well plat certified by a registered surveyor.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

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.

**NGMP Rec 12/14/2022**

SL



**KZ**  
12/23/2022

(Continued on page 2)

\*(Instructions on page 2)

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

<sup>1</sup> API Number <b>30-025-50895</b>		<sup>2</sup> Pool Code <b>98098</b>		<sup>3</sup> Pool Name <b>WC-025 G-09 S243532M; WOLFBONE</b>	
<sup>4</sup> Property Code <b>328302</b>		<sup>5</sup> Property Name <b>MULVA FED COM</b>			<sup>6</sup> Well Number <b>224H</b>
<sup>7</sup> OGRID No. <b>#372043</b>		<sup>8</sup> Operator Name <b>TAP ROCK OPERATING, LLC.</b>			<sup>9</sup> Elevation <b>3277'</b>

<sup>10</sup>Surface Location

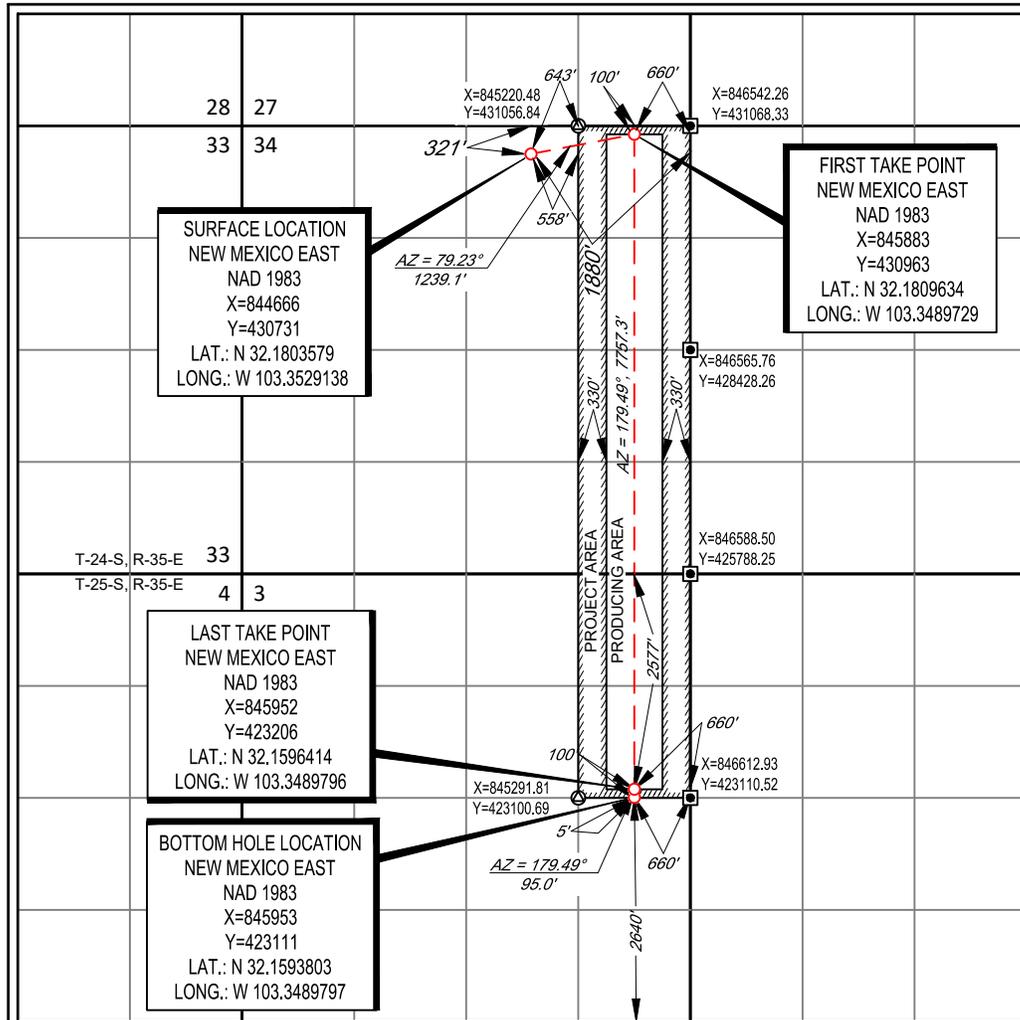
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	34	24-S	35-E	-	321'	NORTH	1880'	EAST	LEA

<sup>11</sup>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
H	3	25-S	35-E	-	2640'	SOUTH	660'	EAST	LEA

<sup>12</sup> Dedicated Acres <b>240.91</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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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.



<sup>17</sup>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 a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Cory Walk* **12-2-2021**  
Signature Date

**Cory Walk**  
Printed Name

**cory@permitswest.com**  
E-mail Address

<sup>18</sup>SURVEYOR 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 to the best of my belief.

**10/25/2019**  
Date of Survey

*[Signature]*  
Signature and Seal of Professional Surveyor

**24508**  
Certificate Number

State of New Mexico  
 Energy, Minerals and Natural Resources Department

Submit Electronically  
 Via E-permitting

Oil Conservation Division  
 1220 South St. Francis Dr.  
 Santa Fe, NM 87505

## NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** \_\_\_\_\_ Tap Rock Operating LLC \_\_\_\_\_ **OGRID:** \_\_\_\_\_ 372043 \_\_\_\_\_ **Date:** \_12/12/22

**II. Type:**  Original  Amendment due to  19.15.27.9.D(6)(a) NMAC  19.15.27.9.D(6)(b) NMAC  Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water
Mulva Fed Com 224H		Sec 34 T24S R35E	321 FNL, 1880 FEL	937	1094	12157
<b>30-025-50895</b>						

**IV. Central Delivery Point Name:** \_\_\_ Mulva Fed Com CDP \_\_\_ [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Mulva Federal Com 224H		3/08/23	6/3/23	6/17/23	8/2/23	8/2/23
<b>30-025-50895</b>						

**VI. Separation Equipment:**  Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:**  Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:**  Attach a complete description of Operator’s best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan**

**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.**  Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system  will  will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator  does  does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

Attach Operator’s plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

### Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.**  Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.**  Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

### Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Jeff Trlica
Title: Regulatory Analyst
E-mail Address: <a href="mailto:jtrlica@taprk.com">jtrlica@taprk.com</a>
Date: 12/12/2022
Phone: 720-772-5910
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

**VI. Separation Equipment:** Attach a complete description of how Operator will size separation equipment to optimize gas capture:

Each surface facility design includes the following process equipment: 3-phase separators (1 separator per well), a sales gas scrubber, one or two 3-phase heater treaters, a vapor recovery tower (VRT), a VRU compressor, multiple water and oil tanks, as well as flare knockouts (HP & LP), and flares (HP & LP). All process vessels will be sized to separate oil, water, gas based upon typical/historical & predicted well performance. Each process vessel will be fitted with an appropriately sized PSV as per ASME code requirements to mitigate vessel rupture and loss of containment. Additionally, the process vessels will be fitted with pressure transmitters tied to the facility control system which will allow operations to monitor pressures and when necessary, shut-in the facility to avoid vessel over-pressure and the potential vent of natural gas. Natural gas will preferentially be sold to pipeline, and only during upset/emergency conditions will gas be directed to the HP flare system. Flash gas from both the 3-phase heater treater and the VRT will be recompressed using a VRU compressor and this gas will also preferentially be directed to the gas sales pipeline. Oil tanks & water tanks will be fitted with 16 oz thief hatches as well as PVRVs to protect the tanks from rupture/collapse. Additionally, the tank vapor outlets and tank vapor capture system will be sized to keep tank pressures below 12 oz. The tank vapor capture system will include a tank vapor blower & knockout as well as a low-pressure flare and knockout. Tank vapors will preferentially be directed to the VRU and the sales gas pipeline. Only during process upsets/emergency conditions will tank vapors be directed to the LP flare system.

**VII. Operational Practices:** Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. ← See attached reg for requirements.

- During drilling operations- Gas meters will be installed at the shakers and Volume Totalizers will be installed on the pits. In the event that elevated gas levels, or a pit gain are observed, returns will be diverted to a gas buster. Gas coming off the gas buster will be combusted at the flare stack. A 10' or taller flare will be located at least 100' from the SHL.
- During completions operations, including stimulation and frac plug drill out operations, hydrocarbon production to surface is minimized. When gas production does occur, gas will be combusted at a flare stack. A 10' or taller flare will be located at least 100' from the SHL.
- During production operations, all process vessels (separators, heater treaters, VRTs, Tanks) will recompress (where necessary) and route gas outlets into the natural gas gathering pipeline. Gas will preferentially be routed to natural gas gathering pipeline and the flare system will be used only during emergency, malfunction, or if the gas does not meet pipeline specifications. In the event of flaring off-specification gas, operations will pull gas samples twice a week and will also route gas back to pipeline as soon as the gas meets specification. Exceptions to this will include only those qualified exceptions per the regulation 19.15.27.8 Subsection D.

- To comply with state performance standards, separation and storage equipment will be designed to handle the maximum anticipated throughput and pressure to minimize waste and reduce the likelihood of venting gas to atmosphere. Additionally, each storage atmospheric tank (Oil & Water) will be fitted with a level transmitter to facilitate gauging of the tank without opening of the thief hatch. Any gas collected through the tank vent system is expected to be recompressed and routed to sales. However, in the event of an emergency, the tank vapor capture system will be designed to combust the gas using a flare stack fitted with a continuous or automatic ignitor. The flare stack will be properly anchored and will be located a minimum of 100 feet from the well and storage tanks. Operators will conduct weekly AVO inspections. These AVO inspection records will be stored for the required 5-year period and will be made available upon Division request.

VIII. **Best Management Practices:** Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

- When performing routine or preventive maintenance on a vessel or tank, initially all inlet valves are closed, and the vessel or tank is allowed to depressurize through the normal outlet connections to gas sales and/or liquid tanks. Once the vessel or tank is depressurized to lowest acceptable sales outlet pressure, usually around 20 psig, a temporary low-pressure flowline is connected from the vessel or tank to the Vapor Recovery Unit (VRU) for further pressure reduction. Once depressurized to less than 1-2 psig, the remaining natural gas in the vessel or tank is vented to atmosphere through a controlled pressure relief valve. Once the vessel or tank is depressurized to atmospheric pressure, the vessel or tank can be safely opened, and maintenance performed.



Drilling Operations Plan  
 Mulva Fed Com #224H  
 Tap Rock Operating, LLC  
 SHL 321' FNL & 1880' FEL, Sec. 34  
 T. 24S., R. 35E Lea County, NM  
 BHL 2640' FSL & 660' FEL, Sec. 3  
 T. 25S., R. 35E Lea County, NM

Elevation above Sea Level: 3277'

## **DRILLING PROGRAM**

### **1. Estimated Tops**

<b>Formation</b>	<b>TVD</b>	<b>MD</b>	<b>Lithologies</b>	<b>Bearing</b>
Quaternary Deposits	0	0	Surface	None
Rustler Anhydrite	975	975		Salt
Salado	1196	1196	Salt	Salt
Base Salt	4876	4918	Salt	Salt
Bell Canyon	5112	5158	Sandstone	None
Lamar	5112	5158	Sandstone	Hydrocarbons
Cherry Canyon	6055	6115	Sandstone	Hydrocarbons
Brushy Canyon	7497	7579	Sandstone	Hydrocarbons
Bone Spring	8840	8943	Limestone	Hydrocarbons
1st Bone Spring	10091	10206	Sandstone	Hydrocarbons
2nd Bone Spring	10409	10524	Limestone	Hydrocarbons
3rd Bone Spring	11730	11845	Sandstone	Hydrocarbons
Wolfcamp	12035	12150	Shale	Hydrocarbons
KOP	12110	12224	Sandstone	Hydrocarbons
TD	12752	21109	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 is requesting permission to run one of the two options listed in the attached drill plan - A three or four string design. Tap Rock would also like to have the option of running a DV tool during cementing operations. If no DV tool is ran, we would like to cement the intermediate section in a single stage. 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, 1<sup>st</sup> intermediate, and 2<sup>nd</sup> intermediate hole sections and cementing 2<sup>nd</sup> 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	1060	13 3/8	API	No	0	1050	0	1050	J-55	54.5	BUTT	1.13	1.15	1.6
Intermediate	9 7/8	1060	8500	7 5/8	API	No	0	8200	0	8118	P-110	29.7	BUTT	1.13	1.15	1.6
	8 3/4	8500	12134	7 5/8	NON API	Yes	8200	12124	8118	12010	P-110	29.7	W-441	1.13	1.15	1.6
Production	6 3/4	12134	21109	5 1/2	NON API	No	0	11924	0	11810	P-110	20	TXP	1.13	1.15	1.6
Production	6 3/4			5 1/2	NON API	No	11924	21109	11810	12752	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	1050	0	1050	J-55	54.5	BUTT	1.13	1.15	1.6
1st Intermediate	12 1/4	9 5/8	API	No	0	5208	0	5162	J-55	40	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	API	No	0	4908	0	4862	P-110	29.7	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	NON API	Yes	4908	12124	4862	12010	P-110	29.7	W-441	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	No	0	11924	0	11810	P-110	20	TXP	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	No	11924	21109	11810	12752	P-110	20	W-441	1.13	1.15	1.6



Drilling Operations Plan  
Mulva Fed Com #224H  
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**Primary Cement Volumes:**

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives	
Surface	Lead	0	547	1.65	903	13.5	100%	C	5% NCI + LCM	
	Tail	650	422	1.35	570	14.8	100%	C	5% NCI + LCM	
Intermediate	Stage 1	Lead	0	1091	3.35	3656	10.5	75%	C	Fluid Loss + Dispersant + Retarder + LCM
		Tail	11124	113	1.56	176	13.2	75%	C	Fluid Loss + Dispersant + Retarder + LCM
	Stage 2	Primary	0	796	2.4	1911	11.5	75%	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
		DVT	5158							
Production	Primary	11624	579	1.71	990	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	547	1.65	903	13.5	100%	C	5% NCI + LCM
	Tail	650	412	1.35	556	14.8	100%	C	5% NCI + LCM
1st Intermediate	Lead	0	987	2.18	2153	12.7	65%	C	Bentonite + 1% CaCL2 + 8% NaCl + LCM
	Tail	4166	405	1.33	538	14.8	65%	C	5% NaCl + LCM
2nd Intermediate	Lead	4908	294	2.87	843	11.5	35%	TXI	Fluid Loss + Dispersant + Retarder + LCM
	Tail	11124	87	1.56	136	13.2	35%	H	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	11624	579	1.71	990	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	1050	FW Gel	8.30	28	NC
Intermediate	1050	12134	DBE	9.00	30-32	NC
Production	12134	21109	Oil Base Mud	11.50	50-70	<10

**Alternative Design:**

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	1050	FW Spud Mud	8.30	28	NC
Intermediate	1050	5208	Brine Water	10.00	30-32	NC
Intermediate 2	5208	12124	FW/Cut Brine	9.00	30-32	NC
Production	12124	21109	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.



Drilling Operations Plan  
Mulva Fed Com #224H  
Tap Rock Operating, LLC  
SHL 321' FNL & 1880' FEL, Sec. 34  
T. 24S., R. 35E Lea County, NM  
BHL 2640' FSL & 660' FEL, Sec. 3  
T. 25S., R. 35E Lea County, NM

## 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  $\approx 7,626$  psi. Expected bottom hole temperature is  $\approx 170^\circ$  F.

Tap Rock does not anticipate that there will be enough H<sub>2</sub>S from the surface to the Wolfcamp formations to meet the BLM's Onshore Order 6 requirements for the submission of an "H<sub>2</sub>S Drilling Operation Plan" or "Public Protection Plan" for drilling and completing this well. Tap Rock has an H<sub>2</sub>S safety package on all wells and an "H<sub>2</sub>S 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.

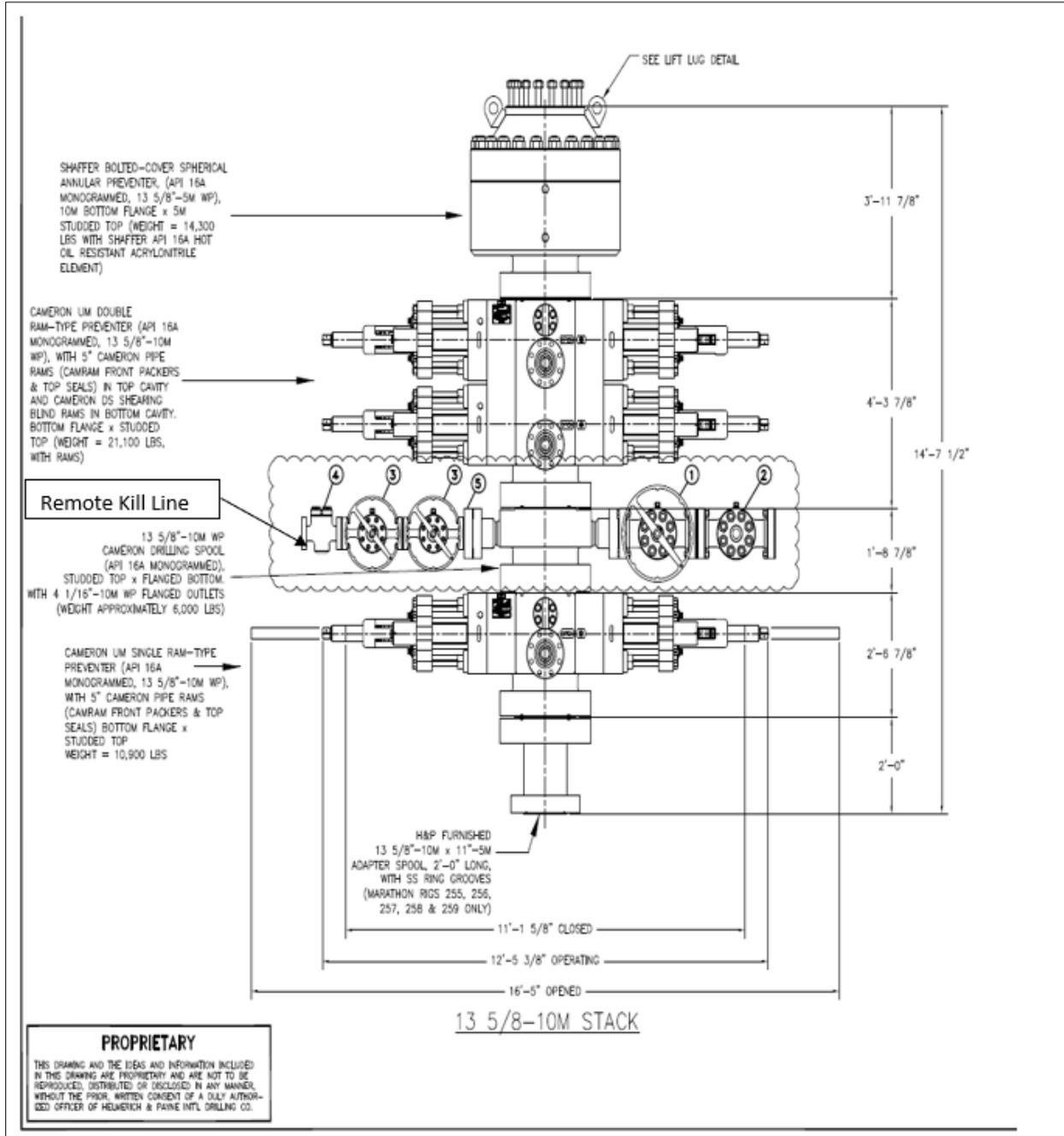
## 8. Other Information

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.



Drilling Operations Plan  
 Mulva Fed Com #224H  
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 T. 25S., R. 35E Lea County, NM

10,000 psi BOP Stack with a 5M Annular Preventer



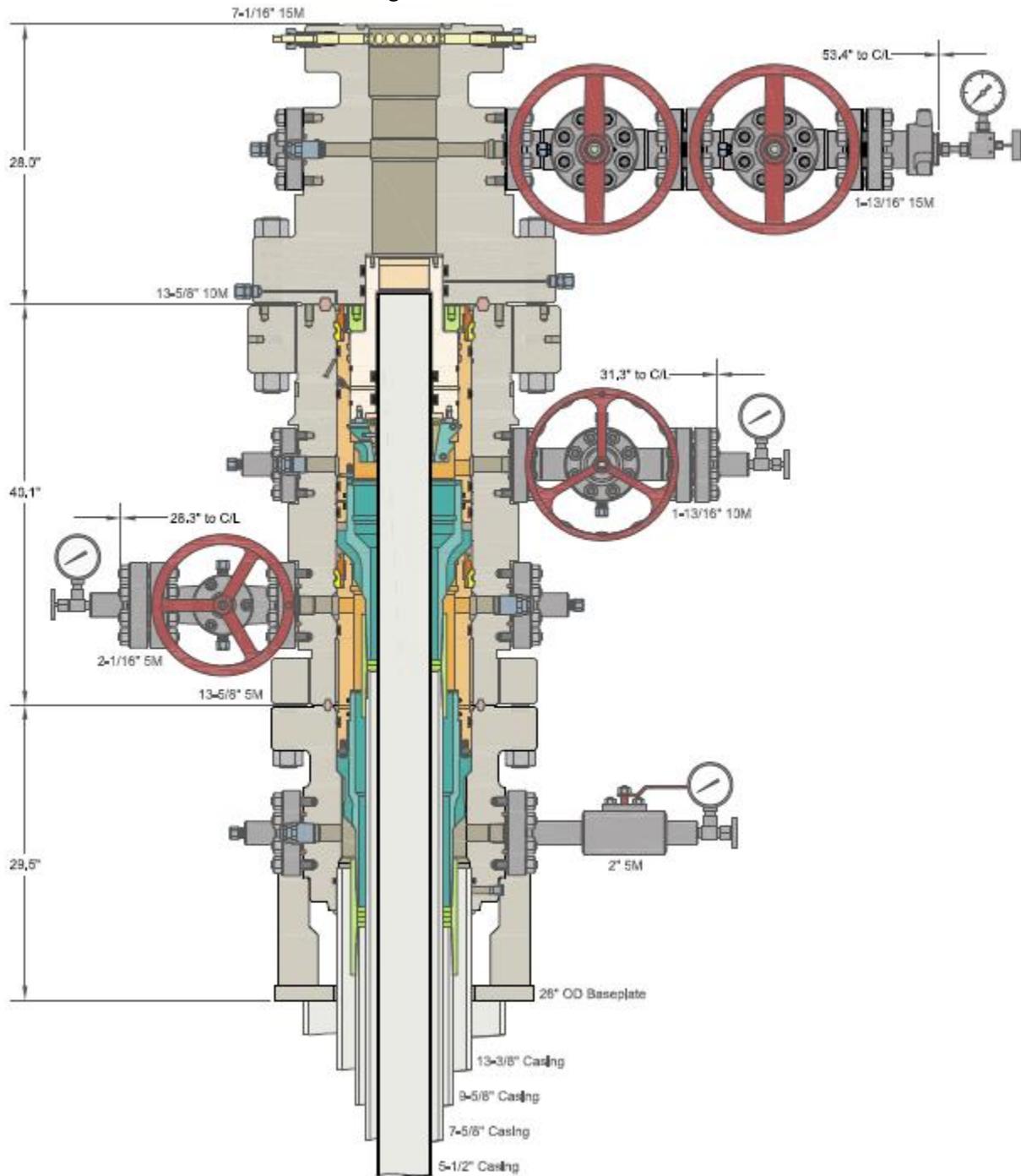






Drilling Operations Plan  
Mulva Fed Com #224H  
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T. 25S., R. 35E Lea County, NM

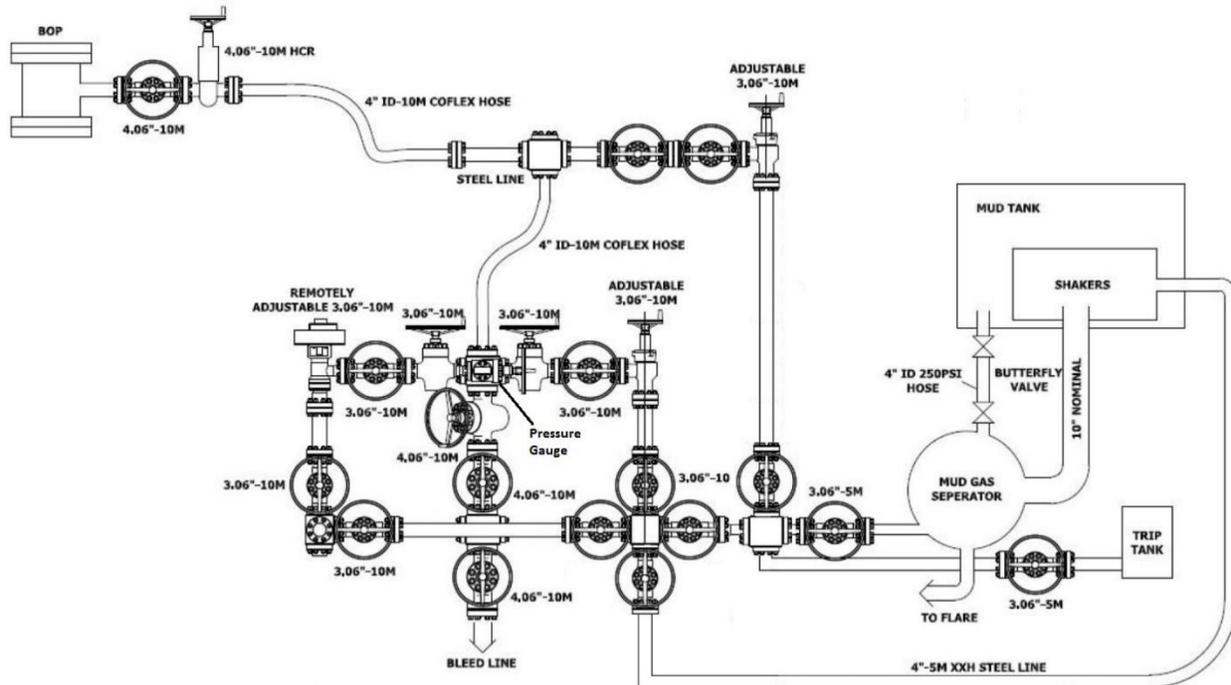
Multi-bowl Wellhead- Alternative Design





Drilling Operations Plan  
Mulva Fed Com #224H  
Tap Rock Operating, LLC  
SHL 321' FNL & 1880' FEL, Sec. 34  
T. 24S., R. 35E Lea County, NM  
BHL 2640' FSL & 660' 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 #224H

OWB

Plan: Plan #3

## Standard Planning Report

25 October, 2021





**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
<b>Company:</b>	Tap Rock Resources, LLC	<b>TVD Reference:</b>	KB @ 3300.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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

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

<b>Well</b>	Mulva Fed Com #224H					
<b>Well Position</b>	<b>+N/-S</b>	-715.0 usft	<b>Northing:</b>	430,731.00 usft	<b>Latitude:</b>	32° 10' 49.287 N
	<b>+E/-W</b>	2,757.0 usft	<b>Easting:</b>	844,666.00 usft	<b>Longitude:</b>	103° 21' 10.488 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	3,277.0 usft

<b>Wellbore</b>	OWB			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	08/27/21	6.39	60.00	47,504.42830861

<b>Design</b>	Plan #3			
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<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	179.49

Plan Survey Tool Program	Date			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	21,109.4 Plan #3 (OWB)	MWD OWSG MWD - Standard	



**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
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<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.2	10.00	47.81	2,495.2	58.5	64.5	1.00	1.00	0.00	47.81	
9,384.5	10.00	47.81	9,274.8	861.5	950.5	0.00	0.00	0.00	0.00	
10,384.8	0.00	0.00	10,270.0	920.0	1,015.0	1.00	-1.00	0.00	180.00	
12,224.8	0.00	0.00	12,110.0	920.0	1,015.0	0.00	0.00	0.00	0.00	
13,119.8	89.50	170.00	12,682.9	360.7	1,113.6	10.00	10.00	0.00	170.00	
13,499.8	89.50	170.00	12,686.3	-13.5	1,179.6	0.00	0.00	0.00	0.00	
13,974.1	89.50	179.49	12,690.4	-485.3	1,223.0	2.00	0.00	2.00	90.04	
21,109.4	89.50	179.49	12,752.6	-7,620.0	1,287.0	0.00	0.00	0.00	0.00	PBHL (Mulva Fed C



**Intrepid**  
Planning Report



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<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	1.00	47.81	1,600.0	0.6	0.6	-0.6	1.00	1.00	0.00
1,700.0	2.00	47.81	1,700.0	2.3	2.6	-2.3	1.00	1.00	0.00
1,800.0	3.00	47.81	1,799.9	5.3	5.8	-5.2	1.00	1.00	0.00
1,900.0	4.00	47.81	1,899.7	9.4	10.3	-9.3	1.00	1.00	0.00
2,000.0	5.00	47.81	1,999.4	14.6	16.2	-14.5	1.00	1.00	0.00
2,100.0	6.00	47.81	2,098.9	21.1	23.3	-20.9	1.00	1.00	0.00
2,200.0	7.00	47.81	2,198.3	28.7	31.6	-28.4	1.00	1.00	0.00
2,300.0	8.00	47.81	2,297.4	37.4	41.3	-37.1	1.00	1.00	0.00
2,400.0	9.00	47.81	2,396.3	47.4	52.3	-46.9	1.00	1.00	0.00
2,500.2	10.00	47.81	2,495.2	58.5	64.5	-57.9	1.00	1.00	0.00
2,600.0	10.00	47.81	2,593.4	70.1	77.4	-69.4	0.00	0.00	0.00
2,700.0	10.00	47.81	2,691.9	81.8	90.2	-81.0	0.00	0.00	0.00
2,800.0	10.00	47.81	2,790.4	93.5	103.1	-92.5	0.00	0.00	0.00
2,900.0	10.00	47.81	2,888.9	105.1	116.0	-104.1	0.00	0.00	0.00
3,000.0	10.00	47.81	2,987.3	116.8	128.8	-115.6	0.00	0.00	0.00
3,100.0	10.00	47.81	3,085.8	128.4	141.7	-127.2	0.00	0.00	0.00
3,200.0	10.00	47.81	3,184.3	140.1	154.6	-138.7	0.00	0.00	0.00
3,300.0	10.00	47.81	3,282.8	151.8	167.4	-150.3	0.00	0.00	0.00
3,400.0	10.00	47.81	3,381.3	163.4	180.3	-161.8	0.00	0.00	0.00
3,500.0	10.00	47.81	3,479.7	175.1	193.2	-173.4	0.00	0.00	0.00
3,600.0	10.00	47.81	3,578.2	186.8	206.1	-184.9	0.00	0.00	0.00
3,700.0	10.00	47.81	3,676.7	198.4	218.9	-196.5	0.00	0.00	0.00
3,800.0	10.00	47.81	3,775.2	210.1	231.8	-208.0	0.00	0.00	0.00
3,900.0	10.00	47.81	3,873.7	221.8	244.7	-219.6	0.00	0.00	0.00
4,000.0	10.00	47.81	3,972.1	233.4	257.5	-231.1	0.00	0.00	0.00
4,100.0	10.00	47.81	4,070.6	245.1	270.4	-242.7	0.00	0.00	0.00
4,200.0	10.00	47.81	4,169.1	256.8	283.3	-254.2	0.00	0.00	0.00
4,300.0	10.00	47.81	4,267.6	268.4	296.1	-265.8	0.00	0.00	0.00
4,400.0	10.00	47.81	4,366.1	280.1	309.0	-277.3	0.00	0.00	0.00
4,500.0	10.00	47.81	4,464.5	291.8	321.9	-288.9	0.00	0.00	0.00
4,600.0	10.00	47.81	4,563.0	303.4	334.7	-300.4	0.00	0.00	0.00
4,700.0	10.00	47.81	4,661.5	315.1	347.6	-312.0	0.00	0.00	0.00
4,800.0	10.00	47.81	4,760.0	326.7	360.5	-323.5	0.00	0.00	0.00
4,900.0	10.00	47.81	4,858.5	338.4	373.4	-335.1	0.00	0.00	0.00
5,000.0	10.00	47.81	4,956.9	350.1	386.2	-346.6	0.00	0.00	0.00
5,100.0	10.00	47.81	5,055.4	361.7	399.1	-358.2	0.00	0.00	0.00
5,200.0	10.00	47.81	5,153.9	373.4	412.0	-369.7	0.00	0.00	0.00
5,300.0	10.00	47.81	5,252.4	385.1	424.8	-381.3	0.00	0.00	0.00



**Intrepid**  
Planning Report



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<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
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<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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)	
5,400.0	10.00	47.81	5,350.9	396.7	437.7	-392.8	0.00	0.00	0.00	
5,500.0	10.00	47.81	5,449.3	408.4	450.6	-404.4	0.00	0.00	0.00	
5,600.0	10.00	47.81	5,547.8	420.1	463.4	-415.9	0.00	0.00	0.00	
5,700.0	10.00	47.81	5,646.3	431.7	476.3	-427.5	0.00	0.00	0.00	
5,800.0	10.00	47.81	5,744.8	443.4	489.2	-439.0	0.00	0.00	0.00	
5,900.0	10.00	47.81	5,843.3	455.1	502.0	-450.6	0.00	0.00	0.00	
6,000.0	10.00	47.81	5,941.7	466.7	514.9	-462.1	0.00	0.00	0.00	
6,100.0	10.00	47.81	6,040.2	478.4	527.8	-473.7	0.00	0.00	0.00	
6,200.0	10.00	47.81	6,138.7	490.0	540.7	-485.2	0.00	0.00	0.00	
6,300.0	10.00	47.81	6,237.2	501.7	553.5	-496.8	0.00	0.00	0.00	
6,400.0	10.00	47.81	6,335.7	513.4	566.4	-508.3	0.00	0.00	0.00	
6,500.0	10.00	47.81	6,434.1	525.0	579.3	-519.9	0.00	0.00	0.00	
6,600.0	10.00	47.81	6,532.6	536.7	592.1	-531.4	0.00	0.00	0.00	
6,700.0	10.00	47.81	6,631.1	548.4	605.0	-543.0	0.00	0.00	0.00	
6,800.0	10.00	47.81	6,729.6	560.0	617.9	-554.5	0.00	0.00	0.00	
6,900.0	10.00	47.81	6,828.1	571.7	630.7	-566.1	0.00	0.00	0.00	
7,000.0	10.00	47.81	6,926.5	583.4	643.6	-577.6	0.00	0.00	0.00	
7,100.0	10.00	47.81	7,025.0	595.0	656.5	-589.2	0.00	0.00	0.00	
7,200.0	10.00	47.81	7,123.5	606.7	669.3	-600.7	0.00	0.00	0.00	
7,300.0	10.00	47.81	7,222.0	618.4	682.2	-612.3	0.00	0.00	0.00	
7,400.0	10.00	47.81	7,320.5	630.0	695.1	-623.8	0.00	0.00	0.00	
7,500.0	10.00	47.81	7,418.9	641.7	708.0	-635.4	0.00	0.00	0.00	
7,600.0	10.00	47.81	7,517.4	653.4	720.8	-646.9	0.00	0.00	0.00	
7,700.0	10.00	47.81	7,615.9	665.0	733.7	-658.5	0.00	0.00	0.00	
7,800.0	10.00	47.81	7,714.4	676.7	746.6	-670.0	0.00	0.00	0.00	
7,900.0	10.00	47.81	7,812.9	688.3	759.4	-681.6	0.00	0.00	0.00	
8,000.0	10.00	47.81	7,911.3	700.0	772.3	-693.1	0.00	0.00	0.00	
8,100.0	10.00	47.81	8,009.8	711.7	785.2	-704.7	0.00	0.00	0.00	
8,200.0	10.00	47.81	8,108.3	723.3	798.0	-716.2	0.00	0.00	0.00	
8,300.0	10.00	47.81	8,206.8	735.0	810.9	-727.8	0.00	0.00	0.00	
8,400.0	10.00	47.81	8,305.3	746.7	823.8	-739.3	0.00	0.00	0.00	
8,500.0	10.00	47.81	8,403.7	758.3	836.6	-750.9	0.00	0.00	0.00	
8,600.0	10.00	47.81	8,502.2	770.0	849.5	-762.4	0.00	0.00	0.00	
8,700.0	10.00	47.81	8,600.7	781.7	862.4	-774.0	0.00	0.00	0.00	
8,800.0	10.00	47.81	8,699.2	793.3	875.2	-785.5	0.00	0.00	0.00	
8,900.0	10.00	47.81	8,797.7	805.0	888.1	-797.1	0.00	0.00	0.00	
9,000.0	10.00	47.81	8,896.1	816.7	901.0	-808.6	0.00	0.00	0.00	
9,100.0	10.00	47.81	8,994.6	828.3	913.9	-820.2	0.00	0.00	0.00	
9,200.0	10.00	47.81	9,093.1	840.0	926.7	-831.7	0.00	0.00	0.00	
9,300.0	10.00	47.81	9,191.6	851.7	939.6	-843.3	0.00	0.00	0.00	
9,384.5	10.00	47.81	9,274.8	861.5	950.5	-853.0	0.00	0.00	0.00	
9,400.0	9.85	47.81	9,290.1	863.3	952.4	-854.8	1.00	-1.00	0.00	
9,500.0	8.85	47.81	9,388.7	874.2	964.5	-865.6	1.00	-1.00	0.00	
9,600.0	7.85	47.81	9,487.7	884.0	975.2	-875.2	1.00	-1.00	0.00	
9,700.0	6.85	47.81	9,586.8	892.6	984.7	-883.8	1.00	-1.00	0.00	
9,800.0	5.85	47.81	9,686.2	900.0	992.9	-891.1	1.00	-1.00	0.00	
9,900.0	4.85	47.81	9,785.8	906.2	999.8	-897.3	1.00	-1.00	0.00	
10,000.0	3.85	47.81	9,885.5	911.3	1,005.4	-902.3	1.00	-1.00	0.00	
10,100.0	2.85	47.81	9,985.3	915.2	1,009.8	-906.2	1.00	-1.00	0.00	
10,200.0	1.85	47.81	10,085.2	918.0	1,012.8	-908.9	1.00	-1.00	0.00	
10,300.0	0.85	47.81	10,185.2	919.6	1,014.5	-910.5	1.00	-1.00	0.00	
10,384.8	0.00	0.00	10,270.0	920.0	1,015.0	-910.9	1.00	-1.00	0.00	
10,400.0	0.00	0.00	10,285.2	920.0	1,015.0	-910.9	0.00	0.00	0.00	
10,500.0	0.00	0.00	10,385.2	920.0	1,015.0	-910.9	0.00	0.00	0.00	



**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
<b>Company:</b>	Tap Rock Resources, LLC	<b>TVD Reference:</b>	KB @ 3300.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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	10,485.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
10,700.0	0.00	0.00	10,585.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
10,800.0	0.00	0.00	10,685.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
10,900.0	0.00	0.00	10,785.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,000.0	0.00	0.00	10,885.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,100.0	0.00	0.00	10,985.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,200.0	0.00	0.00	11,085.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,300.0	0.00	0.00	11,185.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,400.0	0.00	0.00	11,285.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,500.0	0.00	0.00	11,385.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,600.0	0.00	0.00	11,485.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,700.0	0.00	0.00	11,585.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,800.0	0.00	0.00	11,685.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
11,900.0	0.00	0.00	11,785.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
12,000.0	0.00	0.00	11,885.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
12,100.0	0.00	0.00	11,985.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
12,200.0	0.00	0.00	12,085.2	920.0	1,015.0	-910.9	0.00	0.00	0.00
12,224.8	0.00	0.00	12,110.0	920.0	1,015.0	-910.9	0.00	0.00	0.00
12,250.0	2.52	170.00	12,135.2	919.5	1,015.1	-910.4	10.00	10.00	0.00
12,300.0	7.52	170.00	12,185.0	915.1	1,015.9	-906.1	10.00	10.00	0.00
12,350.0	12.52	170.00	12,234.2	906.6	1,017.4	-897.5	10.00	10.00	0.00
12,400.0	17.52	170.00	12,282.5	893.8	1,019.6	-884.7	10.00	10.00	0.00
12,450.0	22.52	170.00	12,329.5	877.0	1,022.6	-867.8	10.00	10.00	0.00
12,500.0	27.52	170.00	12,374.8	856.1	1,026.3	-847.0	10.00	10.00	0.00
12,550.0	32.52	170.00	12,418.0	831.5	1,030.6	-822.3	10.00	10.00	0.00
12,600.0	37.52	170.00	12,459.0	803.3	1,035.6	-794.0	10.00	10.00	0.00
12,650.0	42.52	170.00	12,497.2	771.6	1,041.2	-762.3	10.00	10.00	0.00
12,700.0	47.52	170.00	12,532.6	736.8	1,047.3	-727.4	10.00	10.00	0.00
12,750.0	52.52	170.00	12,564.7	699.1	1,054.0	-689.7	10.00	10.00	0.00
12,800.0	57.52	170.00	12,593.3	658.7	1,061.1	-649.3	10.00	10.00	0.00
12,850.0	62.52	170.00	12,618.3	616.1	1,068.6	-606.6	10.00	10.00	0.00
12,900.0	67.52	170.00	12,639.4	571.5	1,076.5	-561.9	10.00	10.00	0.00
12,950.0	72.52	170.00	12,656.5	525.2	1,084.6	-515.5	10.00	10.00	0.00
13,000.0	77.52	170.00	12,669.4	477.7	1,093.0	-467.9	10.00	10.00	0.00
13,050.0	82.52	170.00	12,678.1	429.2	1,101.5	-419.4	10.00	10.00	0.00
13,100.0	87.52	170.00	12,682.4	380.1	1,110.2	-370.2	10.00	10.00	0.00
13,119.8	89.50	170.00	12,682.9	360.7	1,113.6	-350.7	10.00	10.00	0.00
13,200.0	89.50	170.00	12,683.6	281.7	1,127.6	-271.6	0.00	0.00	0.00
13,300.0	89.50	170.00	12,684.5	183.2	1,144.9	-173.0	0.00	0.00	0.00
13,400.0	89.50	170.00	12,685.4	84.7	1,162.3	-74.4	0.00	0.00	0.00
13,499.8	89.50	170.00	12,686.3	-13.5	1,179.6	24.0	0.00	0.00	0.00
13,600.0	89.50	172.00	12,687.1	-112.5	1,195.3	123.2	2.00	0.00	2.00
13,700.0	89.50	174.00	12,688.0	-211.8	1,207.5	222.5	2.00	0.00	2.00
13,800.0	89.50	176.00	12,688.9	-311.4	1,216.2	322.2	2.00	0.00	2.00
13,900.0	89.50	178.00	12,689.8	-411.2	1,221.4	422.1	2.00	0.00	2.00
13,974.1	89.50	179.49	12,690.4	-485.3	1,223.0	496.1	2.00	0.00	2.00
14,000.0	89.50	179.49	12,690.6	-511.2	1,223.2	522.1	0.00	0.00	0.00
14,100.0	89.50	179.49	12,691.5	-611.2	1,224.1	622.1	0.00	0.00	0.00
14,200.0	89.50	179.49	12,692.4	-711.2	1,225.0	722.1	0.00	0.00	0.00
14,300.0	89.50	179.49	12,693.2	-811.2	1,225.9	822.1	0.00	0.00	0.00
14,400.0	89.50	179.49	12,694.1	-911.2	1,226.8	922.1	0.00	0.00	0.00
14,500.0	89.50	179.49	12,695.0	-1,011.2	1,227.7	1,022.1	0.00	0.00	0.00
14,600.0	89.50	179.49	12,695.9	-1,111.2	1,228.6	1,122.0	0.00	0.00	0.00
14,700.0	89.50	179.49	12,696.7	-1,211.1	1,229.5	1,222.0	0.00	0.00	0.00



**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
<b>Company:</b>	Tap Rock Resources, LLC	<b>TVD Reference:</b>	KB @ 3300.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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)	
14,800.0	89.50	179.49	12,697.6	-1,311.1	1,230.4	1,322.0	0.00	0.00	0.00	
14,900.0	89.50	179.49	12,698.5	-1,411.1	1,231.3	1,422.0	0.00	0.00	0.00	
15,000.0	89.50	179.49	12,699.3	-1,511.1	1,232.2	1,522.0	0.00	0.00	0.00	
15,100.0	89.50	179.49	12,700.2	-1,611.1	1,233.1	1,622.0	0.00	0.00	0.00	
15,200.0	89.50	179.49	12,701.1	-1,711.1	1,234.0	1,722.0	0.00	0.00	0.00	
15,300.0	89.50	179.49	12,702.0	-1,811.1	1,234.9	1,822.0	0.00	0.00	0.00	
15,400.0	89.50	179.49	12,702.8	-1,911.1	1,235.8	1,922.0	0.00	0.00	0.00	
15,500.0	89.50	179.49	12,703.7	-2,011.1	1,236.7	2,022.0	0.00	0.00	0.00	
15,600.0	89.50	179.49	12,704.6	-2,111.1	1,237.6	2,122.0	0.00	0.00	0.00	
15,700.0	89.50	179.49	12,705.4	-2,211.1	1,238.5	2,222.0	0.00	0.00	0.00	
15,800.0	89.50	179.49	12,706.3	-2,311.1	1,239.4	2,322.0	0.00	0.00	0.00	
15,900.0	89.50	179.49	12,707.2	-2,411.1	1,240.3	2,422.0	0.00	0.00	0.00	
16,000.0	89.50	179.49	12,708.1	-2,511.0	1,241.2	2,522.0	0.00	0.00	0.00	
16,100.0	89.50	179.49	12,708.9	-2,611.0	1,242.1	2,622.0	0.00	0.00	0.00	
16,200.0	89.50	179.49	12,709.8	-2,711.0	1,243.0	2,722.0	0.00	0.00	0.00	
16,300.0	89.50	179.49	12,710.7	-2,811.0	1,243.9	2,822.0	0.00	0.00	0.00	
16,400.0	89.50	179.49	12,711.5	-2,911.0	1,244.8	2,922.0	0.00	0.00	0.00	
16,500.0	89.50	179.49	12,712.4	-3,011.0	1,245.7	3,022.0	0.00	0.00	0.00	
16,600.0	89.50	179.49	12,713.3	-3,111.0	1,246.6	3,122.0	0.00	0.00	0.00	
16,700.0	89.50	179.49	12,714.2	-3,211.0	1,247.5	3,222.0	0.00	0.00	0.00	
16,800.0	89.50	179.49	12,715.0	-3,311.0	1,248.4	3,322.0	0.00	0.00	0.00	
16,900.0	89.50	179.49	12,715.9	-3,411.0	1,249.3	3,422.0	0.00	0.00	0.00	
17,000.0	89.50	179.49	12,716.8	-3,511.0	1,250.1	3,522.0	0.00	0.00	0.00	
17,100.0	89.50	179.49	12,717.6	-3,611.0	1,251.0	3,622.0	0.00	0.00	0.00	
17,200.0	89.50	179.49	12,718.5	-3,711.0	1,251.9	3,722.0	0.00	0.00	0.00	
17,300.0	89.50	179.49	12,719.4	-3,810.9	1,252.8	3,821.9	0.00	0.00	0.00	
17,400.0	89.50	179.49	12,720.3	-3,910.9	1,253.7	3,921.9	0.00	0.00	0.00	
17,500.0	89.50	179.49	12,721.1	-4,010.9	1,254.6	4,021.9	0.00	0.00	0.00	
17,600.0	89.50	179.49	12,722.0	-4,110.9	1,255.5	4,121.9	0.00	0.00	0.00	
17,700.0	89.50	179.49	12,722.9	-4,210.9	1,256.4	4,221.9	0.00	0.00	0.00	
17,800.0	89.50	179.49	12,723.7	-4,310.9	1,257.3	4,321.9	0.00	0.00	0.00	
17,900.0	89.50	179.49	12,724.6	-4,410.9	1,258.2	4,421.9	0.00	0.00	0.00	
18,000.0	89.50	179.49	12,725.5	-4,510.9	1,259.1	4,521.9	0.00	0.00	0.00	
18,100.0	89.50	179.49	12,726.4	-4,610.9	1,260.0	4,621.9	0.00	0.00	0.00	
18,200.0	89.50	179.49	12,727.2	-4,710.9	1,260.9	4,721.9	0.00	0.00	0.00	
18,300.0	89.50	179.49	12,728.1	-4,810.9	1,261.8	4,821.9	0.00	0.00	0.00	
18,400.0	89.50	179.49	12,729.0	-4,910.9	1,262.7	4,921.9	0.00	0.00	0.00	
18,500.0	89.50	179.49	12,729.9	-5,010.9	1,263.6	5,021.9	0.00	0.00	0.00	
18,600.0	89.50	179.49	12,730.7	-5,110.8	1,264.5	5,121.9	0.00	0.00	0.00	
18,700.0	89.50	179.49	12,731.6	-5,210.8	1,265.4	5,221.9	0.00	0.00	0.00	
18,800.0	89.50	179.49	12,732.5	-5,310.8	1,266.3	5,321.9	0.00	0.00	0.00	
18,900.0	89.50	179.49	12,733.3	-5,410.8	1,267.2	5,421.9	0.00	0.00	0.00	
19,000.0	89.50	179.49	12,734.2	-5,510.8	1,268.1	5,521.9	0.00	0.00	0.00	
19,100.0	89.50	179.49	12,735.1	-5,610.8	1,269.0	5,621.9	0.00	0.00	0.00	
19,200.0	89.50	179.49	12,736.0	-5,710.8	1,269.9	5,721.9	0.00	0.00	0.00	
19,300.0	89.50	179.49	12,736.8	-5,810.8	1,270.8	5,821.9	0.00	0.00	0.00	
19,400.0	89.50	179.49	12,737.7	-5,910.8	1,271.7	5,921.9	0.00	0.00	0.00	
19,500.0	89.50	179.49	12,738.6	-6,010.8	1,272.6	6,021.9	0.00	0.00	0.00	
19,600.0	89.50	179.49	12,739.4	-6,110.8	1,273.5	6,121.9	0.00	0.00	0.00	
19,700.0	89.50	179.49	12,740.3	-6,210.8	1,274.4	6,221.9	0.00	0.00	0.00	
19,800.0	89.50	179.49	12,741.2	-6,310.8	1,275.3	6,321.9	0.00	0.00	0.00	
19,900.0	89.50	179.49	12,742.1	-6,410.7	1,276.2	6,421.8	0.00	0.00	0.00	
20,000.0	89.50	179.49	12,742.9	-6,510.7	1,277.1	6,521.8	0.00	0.00	0.00	
20,100.0	89.50	179.49	12,743.8	-6,610.7	1,277.9	6,621.8	0.00	0.00	0.00	



**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
<b>Company:</b>	Tap Rock Resources, LLC	<b>TVD Reference:</b>	KB @ 3300.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

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)	
20,200.0	89.50	179.49	12,744.7	-6,710.7	1,278.8	6,721.8	0.00	0.00	0.00	
20,300.0	89.50	179.49	12,745.5	-6,810.7	1,279.7	6,821.8	0.00	0.00	0.00	
20,400.0	89.50	179.49	12,746.4	-6,910.7	1,280.6	6,921.8	0.00	0.00	0.00	
20,500.0	89.50	179.49	12,747.3	-7,010.7	1,281.5	7,021.8	0.00	0.00	0.00	
20,600.0	89.50	179.49	12,748.2	-7,110.7	1,282.4	7,121.8	0.00	0.00	0.00	
20,700.0	89.50	179.49	12,749.0	-7,210.7	1,283.3	7,221.8	0.00	0.00	0.00	
20,800.0	89.50	179.49	12,749.9	-7,310.7	1,284.2	7,321.8	0.00	0.00	0.00	
20,900.0	89.50	179.49	12,750.8	-7,410.7	1,285.1	7,421.8	0.00	0.00	0.00	
21,000.0	89.50	179.49	12,751.6	-7,510.7	1,286.0	7,521.8	0.00	0.00	0.00	
21,109.4	89.50	179.49	12,752.6	-7,620.0	1,287.0	7,631.2	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP (Mulva Fed Com - hit/miss target - Shape - Point)	0.00	0.00	12,686.0	232.0	1,217.0	430,963.00	845,883.00	32° 10' 51.472 N	103° 20' 56.305 W	- plan misses target center by 79.5usft at 13264.5usft MD (12684.2 TVD, 218.2 N, 1138.7 E)
PBHL (Mulva Fed Cor - plan hits target center - Rectangle (sides W100.0 H7,848.0 D30.0))	0.50	179.49	12,752.6	-7,620.0	1,287.0	423,111.00	845,953.00	32° 9' 33.773 N	103° 20' 56.326 W	
LTP (Mulva Fed Com - plan misses target center by 14.4usft at 21000.0usft MD (12751.6 TVD, -7510.7 N, 1286.0 E) - Point)	0.00	0.00	12,752.6	-7,525.0	1,286.0	423,206.00	845,952.00	32° 9' 34.713 N	103° 20' 56.327 W	



**Intrepid**  
Planning Report



<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Mulva Fed Com #224H
<b>Company:</b>	Tap Rock Resources, LLC	<b>TVD Reference:</b>	KB @ 3300.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3300.0usft
<b>Site:</b>	(Mulva Fed) Sec-27_T-24-S_R-35-E	<b>North Reference:</b>	Grid
<b>Well:</b>	Mulva Fed Com #224H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	Plan #3		

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
975.0	975.0	Rustler Anhydrite			
1,196.0	1,196.0	Top Salt			
4,917.8	4,876.0	Base Salt			
5,110.8	5,066.0	Delaware Mountain Gp			
5,115.8	5,071.0	Lamar			
5,137.2	5,092.0	Bell Canyon			
5,157.5	5,112.0	Ramsey Sand			
6,115.0	6,055.0	Cherry Canyon			
7,579.3	7,497.0	Brushy Canyon			
8,943.0	8,840.0	Bone Spring Lime			
8,981.3	8,877.7	Upper Avalon			
9,185.7	9,079.0	Middle Avalon			
9,856.0	9,742.0	Lower Avalon			
10,205.5	10,090.7	1st Bone Spring Sand			
10,524.1	10,409.3	2nd Bone Spring Carb			
10,806.1	10,691.3	2nd Bone Spring Sand			
11,279.8	11,165.0	3rd Bone Spring Carb			
11,844.5	11,729.7	3rd Bone Spring Sand			
12,103.5	11,988.7	3rd BS W Sand			
12,149.5	12,034.7	Wolfcamp A X Sand			
12,190.1	12,075.3	Wolfcamp A Y Sand			
12,259.1	12,144.3	Wolfcamp A Lower			
12,564.3	12,430.0	Wolfcamp B			
12,791.5	12,588.7	Wolfcamp B1			
19,320.2	12,737.0	Wolfcamp C			

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.0	1,500.0	0.0	0.0	NUDGE - Build 1.00
2,500.2	2,495.2	58.5	64.5	HOLD - 6884.3 at 2500.2 MD
9,384.5	9,274.8	861.5	950.5	DROP - -1.00
10,384.8	10,270.0	920.0	1,015.0	HOLD - 1840.0 at 10384.8 MD
12,224.8	12,110.0	920.0	1,015.0	KOP - Build 10.00
13,119.8	12,682.9	360.7	1,113.6	EOC - 380.0 hold at 13119.8 MD
13,499.8	12,686.3	-13.5	1,179.6	Start DLS 2.00 TFO 90.04
13,974.1	12,690.4	-485.3	1,223.0	Start 7135.3 hold at 13974.1 MD
21,109.4	12,752.6	-7,620.0	1,287.0	TD at 21109.4

PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL

**Mulva and Man Hands Additional Wells**

**Tap Rock Operating LLC  
Lease Number NMNM138893 and NMNM 138890**

**Mulva Fed Com 221H-224H**

**Man Hands Fed Com 221H-224H**

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See information below discussing NAGPRA.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

#### **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

#### **SPECIAL REQUIREMENT(S)**

##### **Watershed:**

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The topsoil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

##### **TANK BATTERY:**

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

##### **BURIED/SURFACE LINE(S):**

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, siting valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

**TEMPORARY USE FRESH WATER FRAC LINE(S):**

Once the temporary use exceeds the timeline of 180 days and/or with a 90 day extension status; further analysis will be required if the applicant pursues to turn the temporary ROW into a permanent ROW.

**Range:****Cattleguards**

Where a permanent cattlegaurd is approved, an appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s). Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations. A gate shall be constructed on one side of the cattleguard and fastened securely to H-braces.

**Fence Requirement**

Where entry granted across a fence line, the fence must be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Livestock Watering Requirement**

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

**VRM IV:**

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

**V. CONSTRUCTION****A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

**B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

**C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

**D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

**E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

**F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS**

**Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### Ditching

Ditching shall be required on both sides of the road.

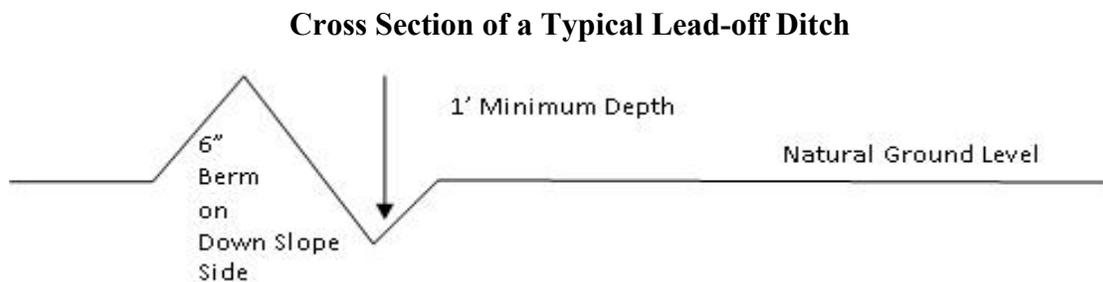
### Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outcropping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

**Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

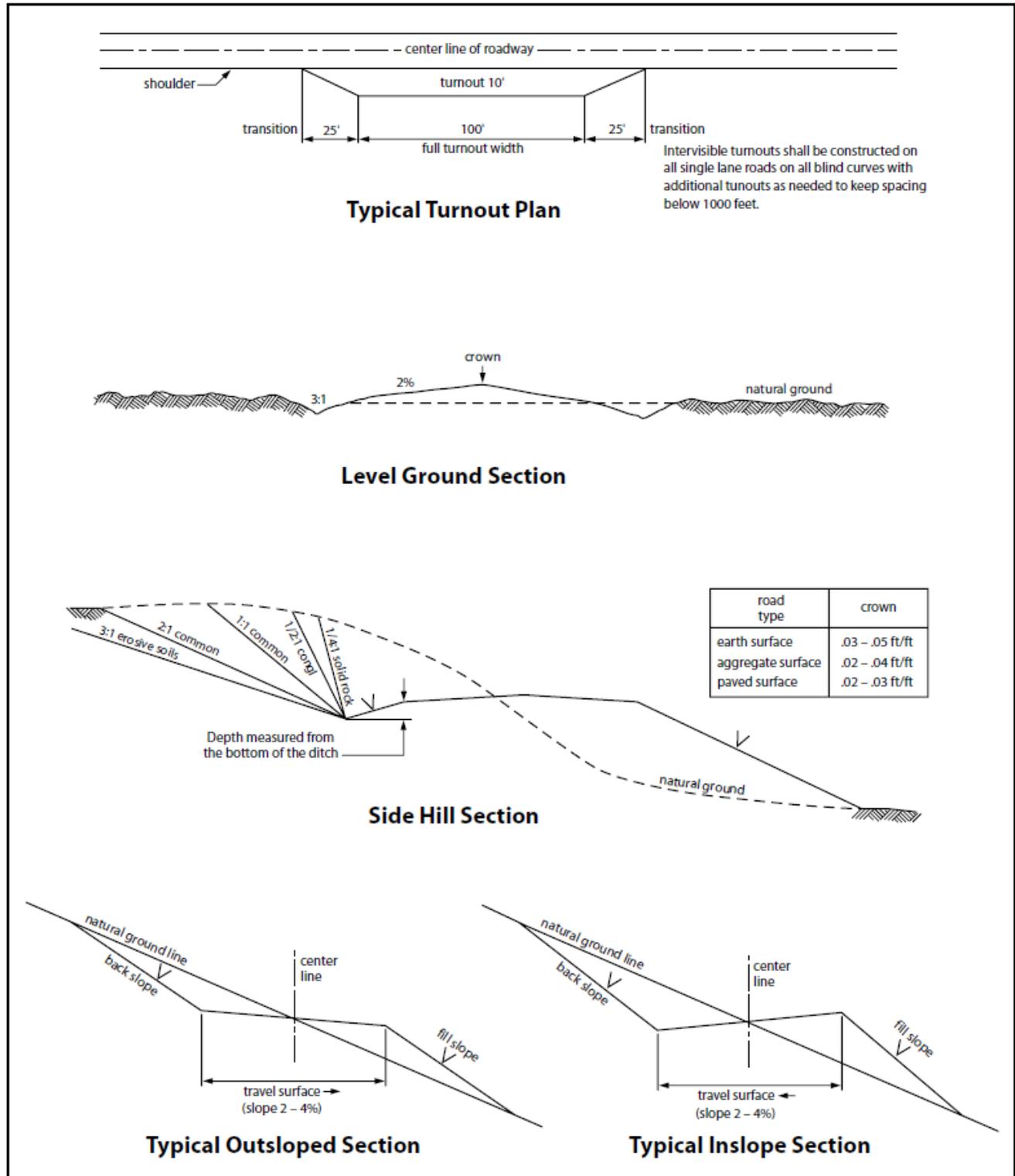


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VI. PRODUCTION (POST DRILLING)

### A. WELL STRUCTURES & FACILITIES

#### Placement of Production Facilities

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### Exclosure Netting (Open-top Tanks)

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### Chemical and Fuel Secondary Containment and Exclosure Screening

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### Open-Vent Exhaust Stack Exclosures

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### Painting Requirement

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### B. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- A leak detection plan **will be submitted to the BLM Carlsbad Field Office for approval** prior to pipeline installation. The method could incorporate gauges to detect pressure drops, siting values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

#### CONDITIONS OF APPROVAL FOR TEMPORARY FRESHWATER PIPELINES

Subject to the terms and conditions which are shown below, is hereby approved:

- Surface pipelines 6.5 inch to 16 inch OD may be in place for no more than 180 days not including installation. In accordance with your request, this 180 day period is requested to begin 9/22/2020.
- Surface pipeline will be in operation for no more than 180 days; a maximum of seven (7) days authorized for installation of the lay flat poly line prior to operation.
- Surface pipelines larger than 6.5 inch to-16-inch OD may be in place for no more than 180 days from date of authorization; 5/1/2018, unless a SF-299 is submitted within 30 days of this decision expiring requesting a long term buried fresh water pipeline, and processing of the SF-299 is not yet complete at the end of 30 days, in which case the line(s) may be left in place until a decision is made on the SF-299.
- All lines will be removed when no longer in use.
- Width of authorized use is 15-feet.
- No blading and/or earthwork will be allowed in order to place the pipeline except burying the line under crossings.
- The pipeline will be buried under all intersecting routes, including BLM-designated trails and access roads into caliche pits, rancher watering stations, etc. All such buried crossings will be removed when the pipeline is removed, unless otherwise approved by the Authorized Officer. Pipelines larger than 6.5-inch OD may utilize other crossing methodologies (but any fill placed over pipeline must be brought in from off-site).
- Pipeline crossings of fences should be avoided where possible. If a crossing is necessary, contact fence owner [usually the grazing permittee] prior to installation, and install by threading pipeline under the lowest wire of the fence; pipeline should never cross on top of any fence wires.
- The pipeline shall stay within 10 feet maximum of existing disturbance (e.g. lease road, pipeline right-of-way etc.); placement should be within 5 feet whenever possible.

- Placement of pumps or other high-maintenance equipment shall be installed along maintained lease roads.
- Gas or diesel pumps, generators, or compressors shall be placed on visquen matting [or 20 mil plastic] and in a containment structure capable of containing all potentially released fuels. Containments must be protected against wildlife deaths in accordance with oilfield best management practices.
- Due to potential damage to natural resources, no work is allowed during inclement weather.
- Pipeline will be marked with your company's name and contact number, at beginning and ending points, at all public-road crossings, and at intervals not exceeding every 0.6 mile, unless otherwise approved by the Authorized Officer.
- Should unforeseen damage occur to resources, BLM will require reclamation of the impacted land.
- No water may be released into the environment without BLM consent.
- Placement of surface pipelines along or under public roadways may require permits from the road authority.
- This authorization is limited to lands under BLM jurisdiction. If your proposed pipeline crosses lands under private ownership or under other agency jurisdiction, you are responsible for obtaining all necessary permits and approvals from those parties.

#### BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless

the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- seed mixture 1
- seed mixture 2
- seed mixture 2/LPC
- seed mixture 3
- seed mixture 4
- Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 17 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

17. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

18. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

19. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

20. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

## STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

**A copy of the Grant and attachments, including stipulations, survey plat(s) and/or map(s), shall be on location during construction. BLM personnel may request to review a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, Holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC § 2601 *et seq.* (1982) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant (see 40 CFR, Part 702-799 and in particular, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. Holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. § 9601, *et seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way Holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way Holder on the Right-of-Way. This provision applies without regard to whether a release is caused by Holder, its agent, or unrelated third parties.

4. Holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. Holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of Holder including, but not limited to: construction, operation, maintenance, and termination of the facility;

b. Activities of other parties including, but not limited to:

- (1) Land clearing
- (2) Earth-disturbing and earth-moving work
- (3) Blasting
- (4) Vandalism and sabotage;

c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system,

impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of Holder, regardless of fault. Upon failure of Holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he/she deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of Holder. Such action by the Authorized Officer shall not relieve Holder of any responsibility as provided herein.

6. All construction and maintenance activity shall be confined to the authorized right-of-way width of 30 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline shall be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline shall be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity shall be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation shall be allowed unless approved in writing by the Authorized Officer.

8. Holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline shall be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 6 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any

person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 16 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

16. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

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18. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

19. Surface pipelines shall be less than or equal to 4 inches and a working pressure below 125 psi.

## VII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

#### **VIII. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

#### **Seed Mixture 2, for Sandy Sites**

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

Species

	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Tap Rock Operating LLC
<b>WELL NAME &amp; NO.:</b>	Mulva Fed Com 224H
<b>LOCATION:</b>	Sec 34-24S-35E-NMP
<b>COUNTY:</b>	Lea County, New Mexico

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

### B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 1050 feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - 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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - 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 *alternate 9-5/8* inch intermediate casing is:
    - Cement to surface. If cement does not circulate see B.1.a, c-d above.
  3. The minimum required fill of cement behind the *7-5/8* inch intermediate casing is:

**FOR THE PRIMARY THREE-STRING CASING PLAN:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

**FOR THE ALTERNATE FOUR-STRING CASING PLAN:**

- Cement should tie-back at least **300 feet** into previous casing string. If cement does not circulate see B.1.a, c-d above.
- *Casing must be kept fluid filled to meet BLM's minimum collapse requirement on the 2<sup>nd</sup> intermediate 7-5/8" alternate casing.*

4. The minimum required fill of cement behind the *5-1/2* inch production casing is:
  - Cement should tie-back at least **300 feet** into previous casing string. Operator shall provide method of verification.

**C. PRESSURE CONTROL**

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

- a. Wellhead shall be installed by manufacturer’s representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer’s representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

**D. SPECIAL REQUIREMENT (S)**

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**GENERAL REQUIREMENTS**

The BLM is to be notified 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

Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 689-5981

1. 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.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.
3. 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.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24

hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

#### B. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, 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. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
  - c. 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 (8 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).

- d. 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. 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.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. 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.



## Hydrogen Sulfide Drilling

### Operations Plan

#### Tap Rock Resources

##### 1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

##### 2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

##### 3 Windssocks and / Wind Streamers:

- Windssocks at mud pit area should be high enough to be visible
- Windssock on the rig floor and / top of doghouse should be high enough to be visible

##### 4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
  - Green Flag – Normal Safe Operation Condition
  - Yellow Flag – Potential Pressure and Danger
  - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

##### 5 Well Control Equipment:

- See Drilling Operations Plan Schematics

##### 6 Communication:

- While working under masks chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.



7 Drilling Stem Testing:

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubulars good and other mechanical equipment

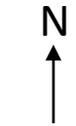
9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary

11 Emergency Contacts

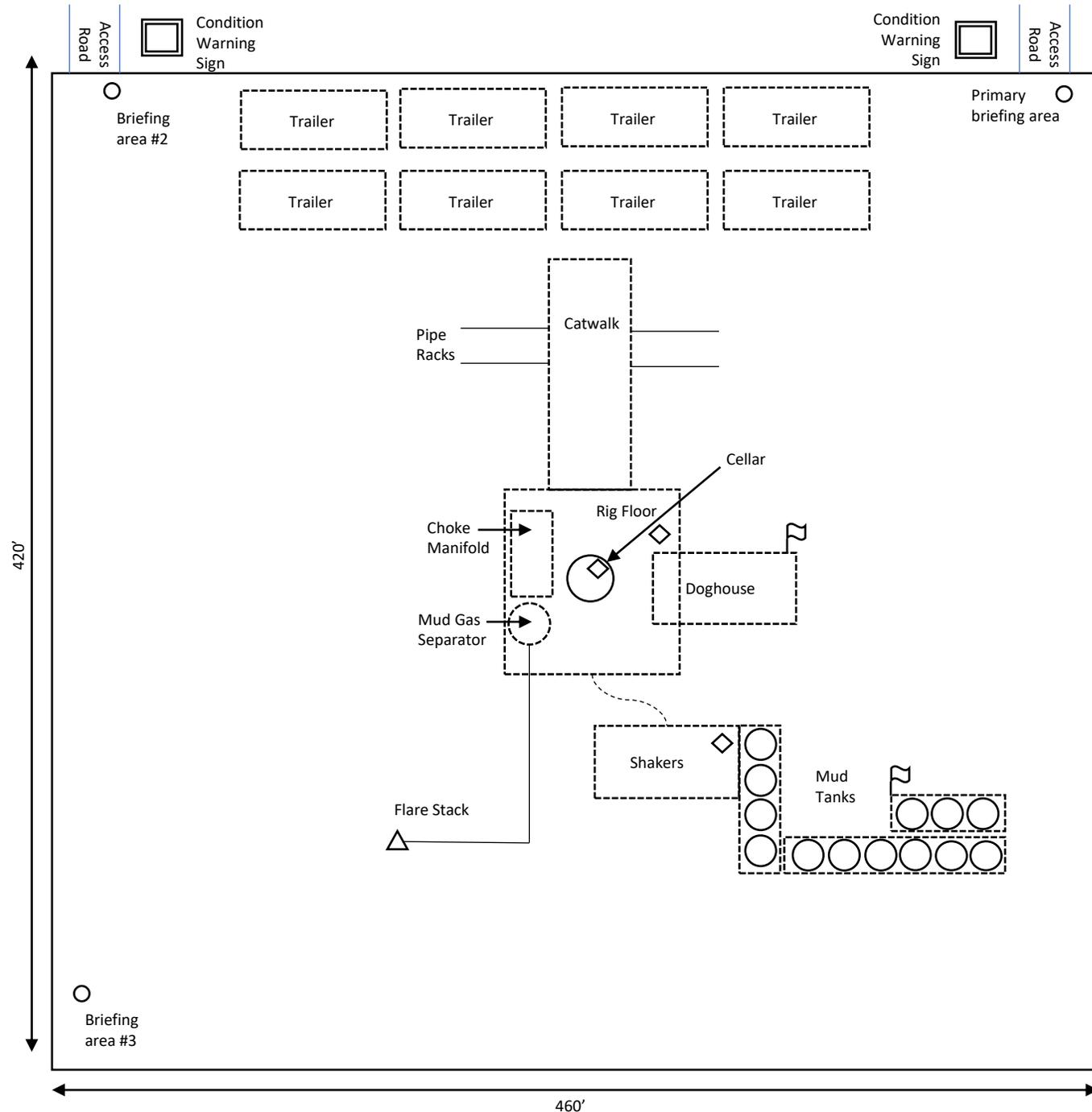
<b>Emergency Contacts</b>		
Carlsbad Police Department	575.887.7551	911
Carlsbad Medical Center	575.887.4100	911
Eddy County Fire Service	575.628.5450	911
Eddy County Sherriff	575.887.7551	911
Lea County Fire Service	575.391.2983	911
Lea County Sherriff	575.396.3611	911
Jal Police Department	575.395.2121	911
Jal Fire Department	575.395.2221	911
Tap Rock Resources	720.772.5090	



Rig Diagram  
Man Hands W2E2 Pad  
Tap Rock Operating, LLC  
27-24S-35E  
Eddy County, NM



-  Briefing Area
-  Current Well
-  Flare Stack
-  H2S Monitor
-  Wind Indicator
-  Mud Gas Separator

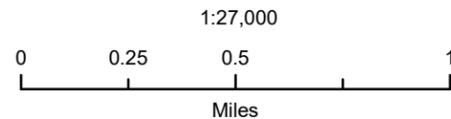


# Tap Rock Operating, LLC

## Man Hands W2E2 Pad H2S Contingency Plan: Radius Map

Section 34, Township 24S, Range 35E  
Lea County, New Mexico

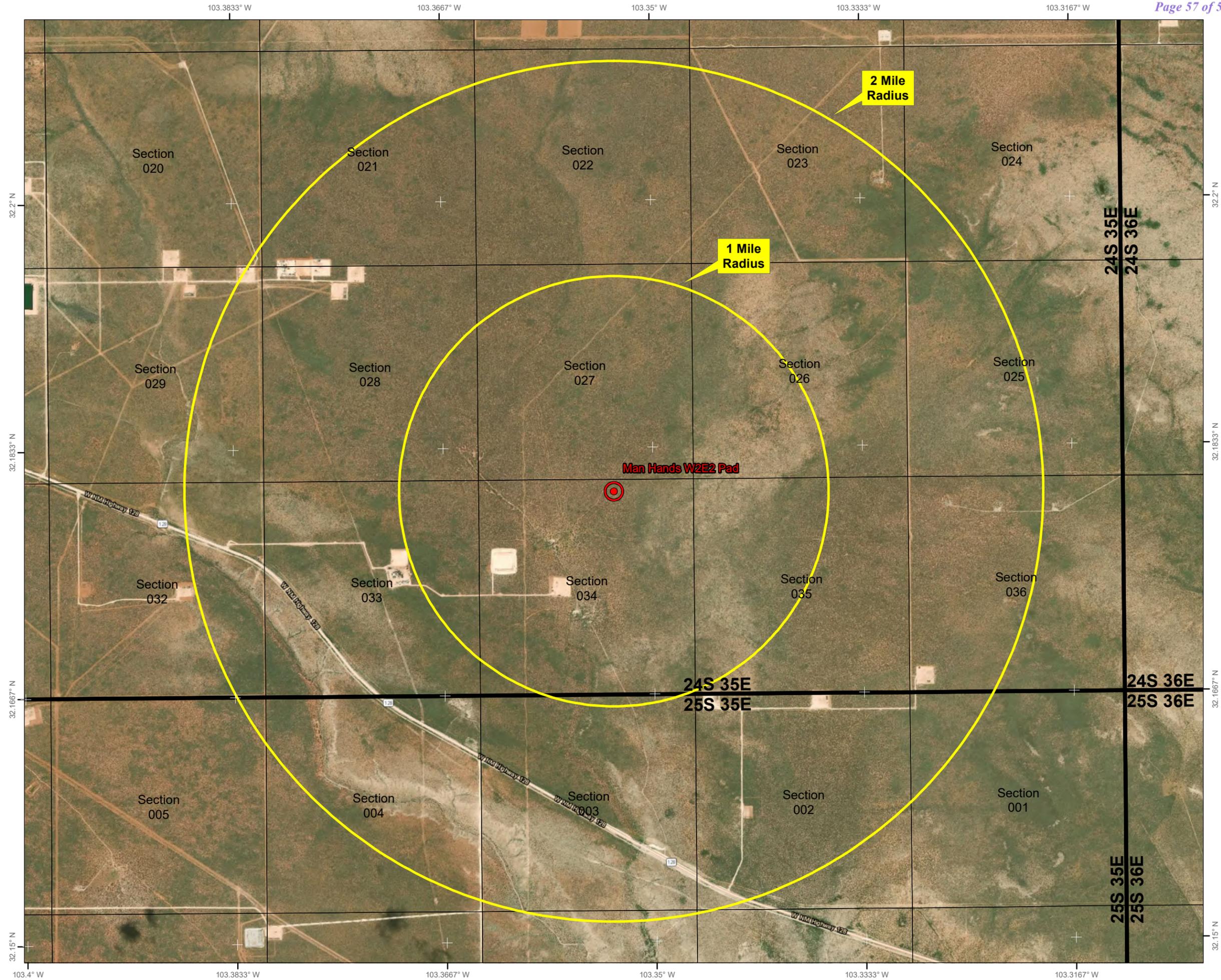
 Pad Center Point



NAD 1983 New Mexico State Plane East  
FIPS 3001 Feet



Prepared by Permits West, Inc., February 7, 2020  
for Tap Rock Operating, LLC



**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 166115

**CONDITIONS**

Operator: TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401	OGRID: 372043
	Action Number: 166115
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

**CONDITIONS**

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/23/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	12/23/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	12/23/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	12/23/2022