

Well Name: BLACK MARLIN FED COM	Well Location: T25S / R36E / SEC 18 / NWNE /	County or Parish/State:
Well Number: 213H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM127449	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548782	Well Status: Approved Application for Permit to Drill	Operator: TAP ROCK OPERATING LLC

Notice of Intent

Type of Submission: Notice of Intent	Type of Action Other
Date Sundry Submitted: 07/07/2021	Time Sundry Submitted: 04:46
Date proposed operation will begin: 07/07/2021	

Procedure Description: Tap Rock would like to alter the casing plan for the Black Marlin Fed Com 213H. Tap Rock is requesting permission to: Alter the second intermediate string from 7.625 inch 29.7 lb P-110 W-513 to 7.625 inch 29.7 P-110 W-441 casing. Casing spec has been attached. Alter the production casing string from 5.5 inch 23 lb P-110 Blue by 5.0 inch 18 lb P-110 W-521 to 5.5 inch 23 lb P-110 Blue by 5.5 inch 23 lb P-110 W-441. Casing spec has been attached.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

- Tap_Rock_Operating__Black_Marlin_Fed_Com_213H__Plan_2_RPT_20210707163439.pdf
- 5.5_23_P110_CY_W441_20210707163429.pdf
- 7.625_29.7_P110_IC_W441_20210707163429.pdf
- Drilling_APD__Black_Marlin_Fed_Com_213H_6.21.21_20210707163421.pdf

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Operator Certification

I certify that the foregoing is true and correct. Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: BILL RAMSEY	Signed on: JUL 07, 2021 04:46 PM
Name: TAP ROCK OPERATING LLC	
Title: Regulatory Analyst	
Street Address: 523 PARK POINT DRIVE SUITE 200	
City: GOLDEN	State: CO
Phone: (720) 360-4028	
Email address: BRAMSEY@TAPRK.COM	

Field Representative

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

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5752342234	BLM POC Email Address: cwalls@blm.gov
Disposition: Approved	Disposition Date: 07/29/2021
Signature: Chris Walls	



Drilling Operations Plan
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 SHL 185' FNL & 1456' FEL, Sec. 18
 BHL 5' FSL & 2090' FEL, Sec. 19
 T. 25S, R. 36E Lea County, NM

Elevation above Sea Level: 3180'

DRILLING PROGRAM

1. Estimated Tops

Formation	TVD	MD	Lithologies	Bearing
Quaternary Deposits	0	0	Surface	None
Rustler Anhydrite	1200	1200		Salt
Salado	1730	1730	Salt	Salt
Base Salt	3380	3388		Salt
Lamar	5165	5183	Limestone	None
Bell Canyon	5180	5198	Sandstone	Hydrocarbons
Cherry Canyon	6110	6133	Sandstone	Hydrocarbons
Brushy Canyon	7165	7194	Sandstone	Hydrocarbons
Bone Spring	8420	8454	Limestone	Hydrocarbons
1st Bone Spring	9670	9704	Sandstone	Hydrocarbons
2nd Bone Spring	9740	9774	Sandstone	Hydrocarbons
3rd Bone Spring	10850	10884	Sandstone	Hydrocarbons
KOP	11241	11274	Sandstone	Hydrocarbons
Wolfcamp A	11655	11737	Shale	Hydrocarbons
TD	11903	22134	Shale	Hydrocarbons

2. Notable Zones

Wolfcamp 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:



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

Variance Requests:

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

Tap Rock requests approval to possibly utilize a spudder rig to drill and set casing for the surface interval on this well. The spudder rig will be possibly utilized in order to reduce cost and save time. The wellhead will be installed and tested as soon as the surface casing is cut off per the existing COAs. A blind flange with the same pressure rating as the wellhead will be installed on the well. Once the spudder rig is removed, Tap Rock will secure the wellhead area by placing a guard rail around the cellar. Pressure will be monitored and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operations are expected to take 2-3 days per well. Three wells on the pad will have surface casing set by the spudder rig as a part of this operation. The BLM will be notified 24 hours prior to commencing spudder rig operations. Within 90 days of the departure of the spudder rig, drilling operations will recommence on these wells. This rig will have a BOP stack equal or greater to the pressure rating required in the COAs. The BLM will be notified 24 hours before the larger rig moves on the pre-set wells. Tap Rock will have supervision on the spudder rig to ensure compliance with all BLM and NMOCD regulations.



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4. Casing & Cement

All Casing will be new.

Name	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	1275	0	1275	J-55	54.5	BUTT	1.13	1.15	1.6
1st Intermediate	12 1/4	9 5/8	API	No	0	5203	0	5185	J-55	40	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	API	No	0	4903	0	4885	P-110	29.7	BUTT	1.13	1.15	1.6
2nd Intermediate	8 3/4	7 5/8	NON API	Yes	4903	11174	4885	11141	P-110	29.7	W-441	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	No	0	10974	0	10941	P-110 S	23	Blue	1.13	1.15	1.6
Production	6 3/4	5 1/2	NON API	Yes	10974	22134	10941	11903	P-110	23	W-441	1.13	1.15	1.6

Name	Type	Top MD	Sacks	Yield	Cu. Ft	Weight	Excess	Cement	Additives
Surface	Tail	0	1312	1.35	1771	14.8	100%	C	5% NCI + LCM
1st Intermediate	Lead	0	987	2.18	2151	12.7	65%	C	Bentonite + 1% CaCl ₂ + 8% NaCl + LCM
	Tail	4162	404	1.33	538	14.8	65%	C	5% NaCl + LCM
2nd Intermediate	Lead	4903	322	2.22	715	11.5	35%	TXI	Fluid Loss + Dispersant + Retarder + LCM
	Tail	10174	99	1.37	136	13.2	35%	H	Fluid Loss + Dispersant + Retarder + LCM
Production	Tail	10474	1023	1.19	1217	15.8	25%	H	Fluid Loss + Dispersant + Retarder + LCM

5. Mud Program

Name	Top	Bottom	Type	Mud Weight	Visc	Fluid Loss
Surface	0	1275	FW Spud Mud	8.30	28	NC
Intermediate	1275	5203	Brine Water	10.00	30-32	NC
Intermediate 2	5203	11174	FW/Cut Brine	9.00	30-32	NC
Production	11174	22134	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.

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.



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7. Down Hole Conditions

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is $\approx 7,118$ psi. Expected bottom hole temperature is $\approx 170^{\circ}$ F.

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

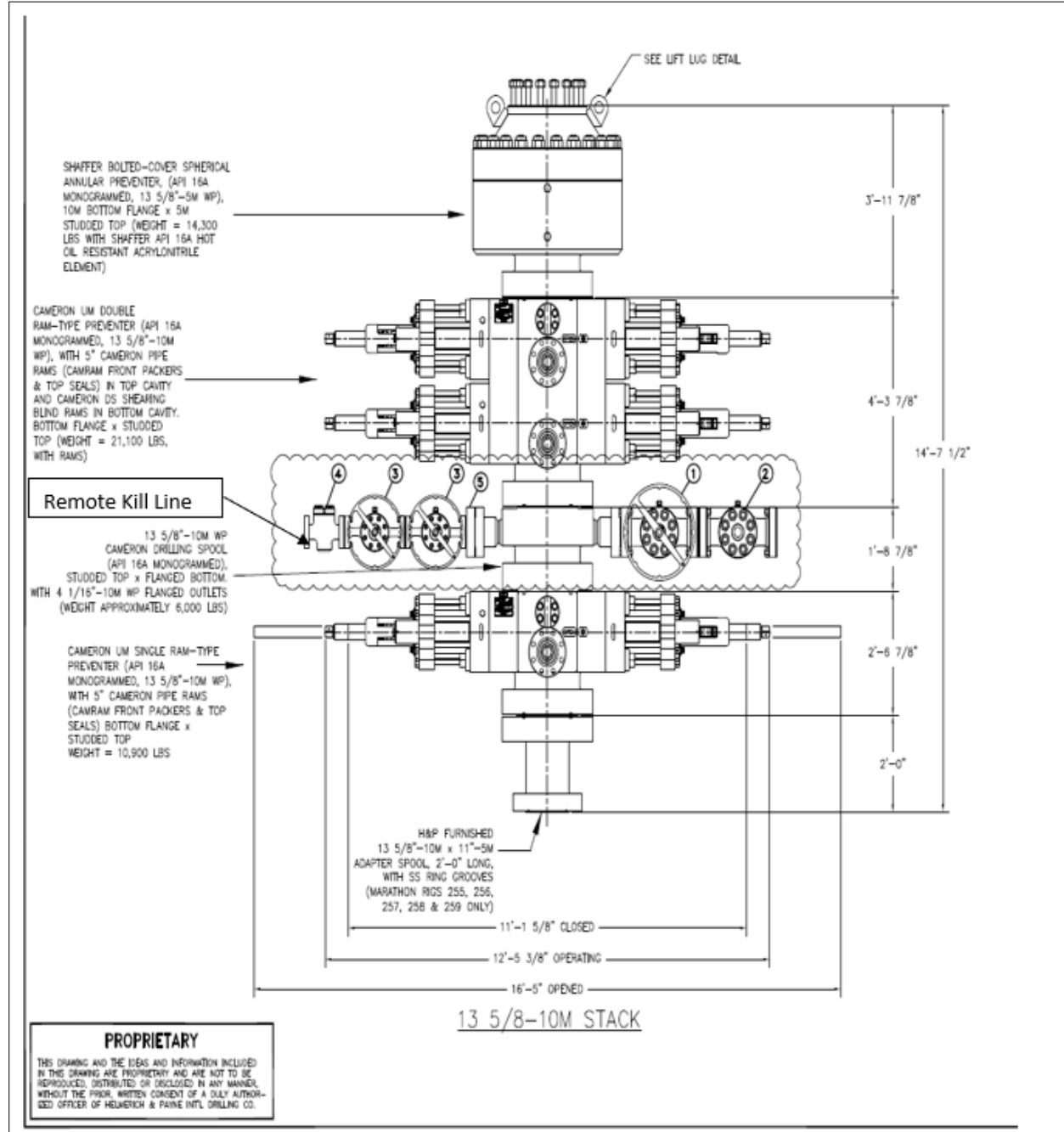
8. Other Information

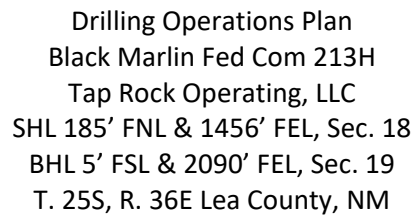
Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved. Drilling expected to take 30 days. If production casing is run an additional 60 days will be required to complete and construct surface facilities.



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10,000 psi BOP Stack

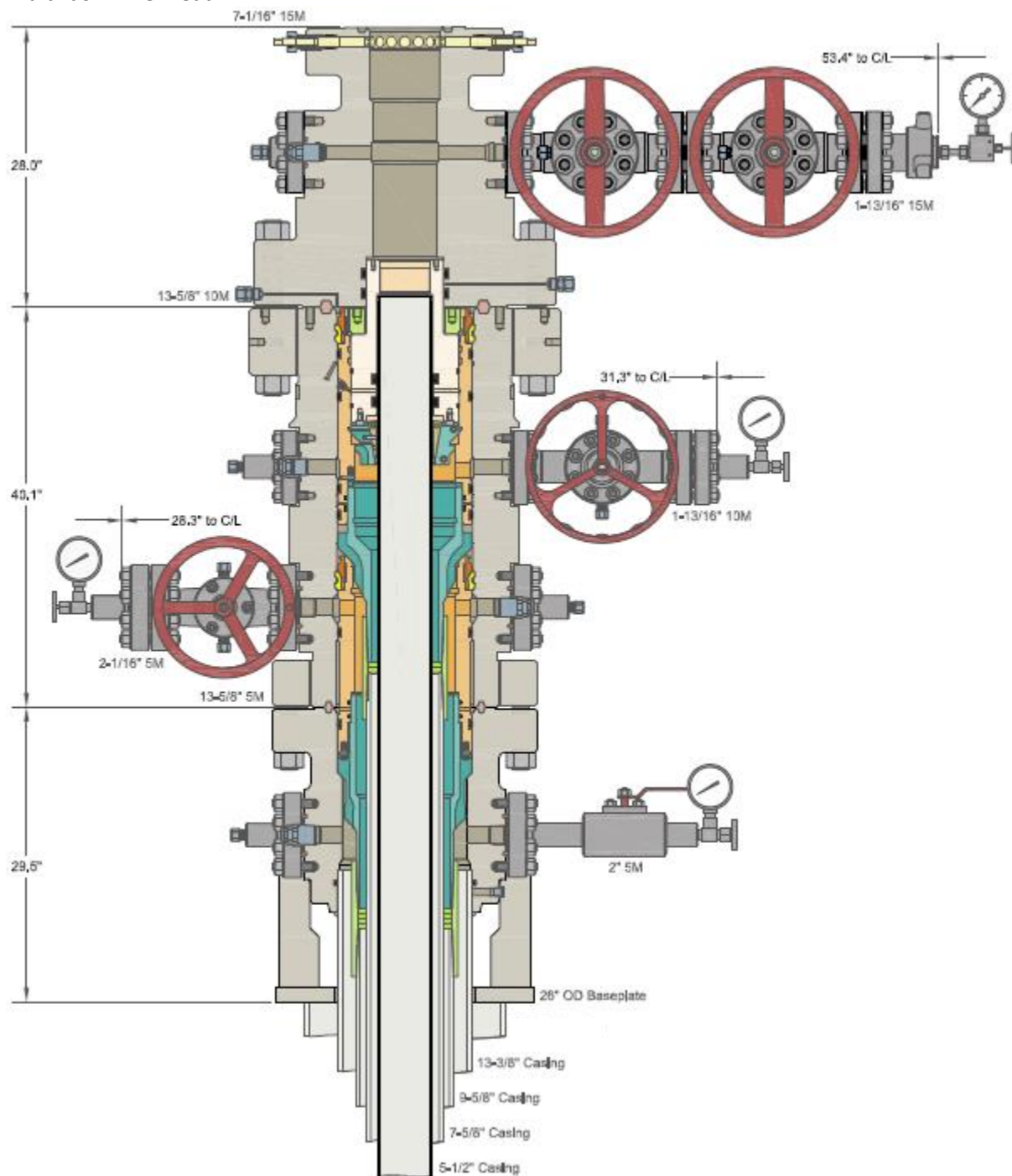






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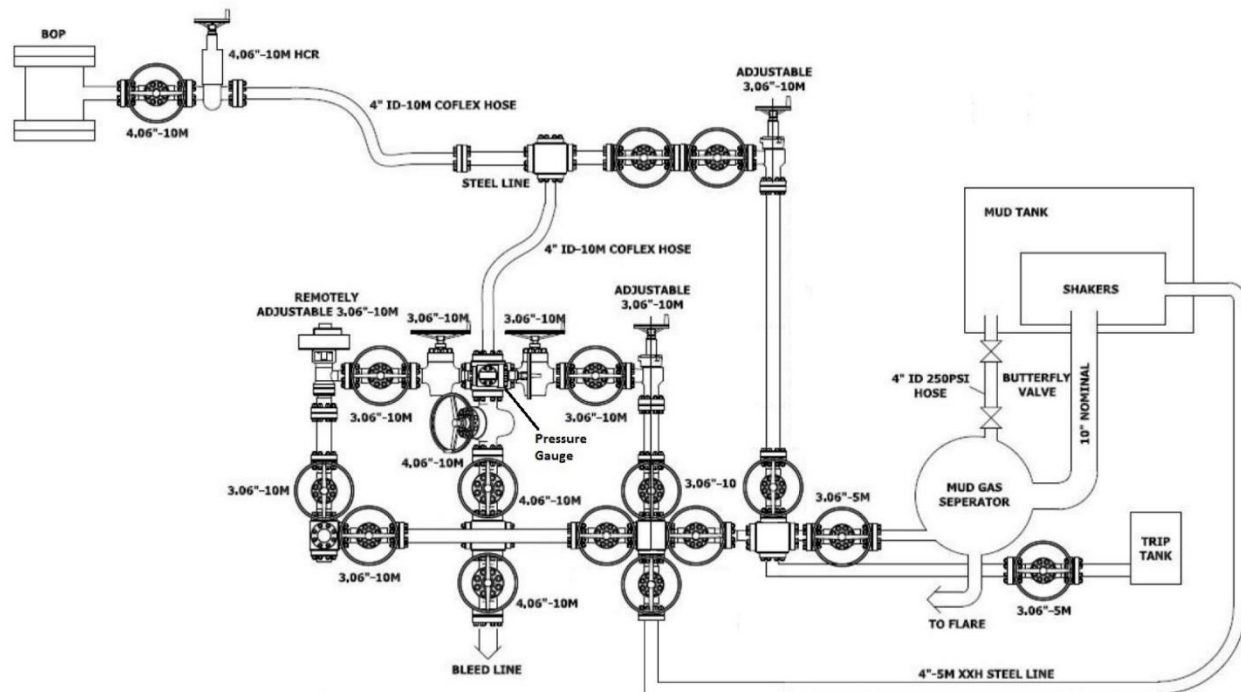
Multi-bowl Wellhead





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T. 25S, R. 36E Lea County, NM

10M Choke Layout





Wedge 441™



Coupling	Pipe Body
Grade: P110-IC	Grade: P110-IC
Body: White	1st Band: White
1st Band: -	2nd Band: Pale Green
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	7.625 in.	Wall Thickness	0.375 in.	Grade	P110-IC
Min. Wall Thickness	90.00 %	Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	7.625 in.	Wall Thickness	0.375 in.	Body Yield Strength	940 x1000 lb
Nominal Weight	29.70 lb/ft	Plain End Weight	29.06 lb/ft	Min. Internal Yield Pressure	9740 psi
Drift	6.750 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	6.875 in.			Collapse Pressure	7360 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	7.900 in.	Tension Efficiency	75 %	Minimum	22,000 ft-lb
Coupling Length	8.666 in.	Joint Yield Strength	705 x1000 lb	Optimum	23,000 ft-lb
Connection ID	6.875 in.	Internal Pressure Capacity	9740 psi	Maximum	27,000 ft-lb
Make-up Loss	3.750 in.	Compression Efficiency	75 %	Operation Limit Torques	
Threads per inch	3.43	Compression Strength	705 x1000 lb	Operating Torque	37,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	49 °/100 ft	Yield Torque	43,000 ft-lb
		External Pressure Capacity	7360 psi	Buck-On	
				Minimum	26,000 ft-lb
				Maximum	27,000 ft-lb

Notes

For the latest performance data, always visit our website: www.tenaris.com

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Wedge 441™



Coupling	Pipe Body
Grade: P110-CY	Grade: P110-CY
Body: White	1st Band: White
1st Band: Grey	2nd Band: Grey
2nd Band: -	3rd Band: -
3rd Band: -	4th Band: -
	5th Band: -
	6th Band: -

Outside Diameter	5.500 in.	Wall Thickness	0.415 in.	Grade	P110-CY
Min. Wall Thickness	87.50 %	Drift	API Standard	Type	Casing
Connection OD Option	REGULAR				

Pipe Body Data

Geometry				Performance	
Nominal OD	5.500 in.	Wall Thickness	0.415 in.	Body Yield Strength	729 x1000 lb
Nominal Weight	23 lb/ft	Plain End Weight	22.56 lb/ft	Min. Internal Yield Pressure	14,530 psi
Drift	4.545 in.	OD Tolerance	API	SMYS	110,000 psi
Nominal ID	4.670 in.			Collapse Pressure	14,540 psi

Connection Data

Geometry		Performance		Make-Up Torques	
Connection OD	5.900 in.	Tension Efficiency	90.80 %	Minimum	15,000 ft-lb
Coupling Length	8.714 in.	Joint Yield Strength	662 x1000 lb	Optimum	16,000 ft-lb
Connection ID	4.670 in.	Internal Pressure Capacity	14,530 psi	Maximum	19,200 ft-lb
Make-up Loss	3.780 in.	Compression Efficiency	90.80 %	Operation Limit Torques	
Threads per inch	3.40	Compression Strength	662 x1000 lb	Operating Torque	33,000 ft-lb
Connection OD Option	Regular	Max. Allowable Bending	79 °/100 ft	Yield Torque	39,000 ft-lb
		External Pressure Capacity	14,540 psi	Buck-On	
		Coupling Face Load	172,000 lb	Minimum	19,200 ft-lb
				Maximum	20,700 ft-lb

Notes

This connection is fully interchangeable with:
Wedge 441™ - 5.5 in. - 0.476 in.
Connections with Dopeless® Technology are fully compatible with the same connection in its Standard version

For the latest performance data, always visit our website: www.tenaris.com

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Tap Rock Operating, LLC.

Lea County, NM (NAD83)

Black Marlin Fed Com

213H

OH

Plan: Plan #2

Standard Planning Report

17 June, 2020

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Black Marlin Fed Com		
Site Position:		Northing:	415,156.20 usft
From:	Lat/Long	Easting:	861,185.90 usft
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 8' 13.651 N
		Longitude:	103° 18' 0.030 W
		Grid Convergence:	0.55 °

Well	213H		
Well Position	+N/-S	0.0 usft	Northing: 415,156.17 usft
	+E/-W	-120.0 usft	Easting: 861,065.91 usft
Position Uncertainty	2.0 usft	Wellhead Elevation:	Latitude: 32° 8' 13.662 N
			Longitude: 103° 18' 1.425 W
			Ground Level: 3,180.0 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	3/8/2020	6.52
			Dip Angle (°)
			59.99
			Field Strength (nT)
			47,636.05049192

Design	Plan #2		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			179.43

Plan Survey Tool Program	Date	6/17/2020		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	22,134.0	Plan #2 (OH)	MWD
				MWD - Standard

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,100.0	6.00	284.00	2,099.3	5.1	-20.3	1.50	1.50	0.00	284.00	
7,965.0	6.00	284.00	7,932.1	153.4	-615.2	0.00	0.00	0.00	0.00	
8,365.0	0.00	0.00	8,331.4	158.4	-635.5	1.50	-1.50	0.00	180.00	
11,274.6	0.00	0.00	11,241.0	158.4	-635.5	0.00	0.00	0.00	0.00	
12,169.5	89.48	179.43	11,814.0	-409.4	-629.8	10.00	10.00	0.00	179.43	
12,230.8	89.48	179.43	11,814.6	-470.6	-629.2	0.00	0.00	0.00	0.00	
22,039.5	89.48	179.43	11,903.0	-10,278.5	-531.8	0.00	0.00	0.00	0.00	LTP_BM.213H
22,134.5	89.48	179.43	11,903.9	-10,373.5	-530.9	0.00	0.00	0.00	0.00	PBHL_BM.213H

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
Rustler Anhydrite									
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 1.50									
1,730.0	0.45	284.00	1,730.0	0.0	-0.1	0.0	1.50	1.50	0.00
Top Salt									
1,800.0	1.50	284.00	1,800.0	0.3	-1.3	-0.3	1.50	1.50	0.00
1,900.0	3.00	284.00	1,899.9	1.3	-5.1	-1.3	1.50	1.50	0.00
2,000.0	4.50	284.00	1,999.7	2.8	-11.4	-3.0	1.50	1.50	0.00
2,100.0	6.00	284.00	2,099.3	5.1	-20.3	-5.3	1.50	1.50	0.00
Start 5865.0 hold at 2100.0 MD									
2,200.0	6.00	284.00	2,198.7	7.6	-30.4	-7.9	0.00	0.00	0.00
2,300.0	6.00	284.00	2,298.2	10.1	-40.6	-10.5	0.00	0.00	0.00
2,400.0	6.00	284.00	2,397.6	12.6	-50.7	-13.2	0.00	0.00	0.00
2,500.0	6.00	284.00	2,497.1	15.2	-60.9	-15.8	0.00	0.00	0.00
2,600.0	6.00	284.00	2,596.5	17.7	-71.0	-18.4	0.00	0.00	0.00
2,700.0	6.00	284.00	2,696.0	20.2	-81.2	-21.0	0.00	0.00	0.00
2,800.0	6.00	284.00	2,795.4	22.8	-91.3	-23.7	0.00	0.00	0.00
2,900.0	6.00	284.00	2,894.9	25.3	-101.4	-26.3	0.00	0.00	0.00
3,000.0	6.00	284.00	2,994.3	27.8	-111.6	-28.9	0.00	0.00	0.00
3,100.0	6.00	284.00	3,093.8	30.3	-121.7	-31.6	0.00	0.00	0.00
3,200.0	6.00	284.00	3,193.2	32.9	-131.9	-34.2	0.00	0.00	0.00
3,300.0	6.00	284.00	3,292.7	35.4	-142.0	-36.8	0.00	0.00	0.00
3,387.8	6.00	284.00	3,380.0	37.6	-150.9	-39.1	0.00	0.00	0.00
Base Salt									
3,400.0	6.00	284.00	3,392.1	37.9	-152.2	-39.4	0.00	0.00	0.00
3,500.0	6.00	284.00	3,491.6	40.5	-162.3	-42.1	0.00	0.00	0.00
3,600.0	6.00	284.00	3,591.1	43.0	-172.4	-44.7	0.00	0.00	0.00
3,700.0	6.00	284.00	3,690.5	45.5	-182.6	-47.3	0.00	0.00	0.00
3,800.0	6.00	284.00	3,790.0	48.1	-192.7	-50.0	0.00	0.00	0.00
3,900.0	6.00	284.00	3,889.4	50.6	-202.9	-52.6	0.00	0.00	0.00
4,000.0	6.00	284.00	3,988.9	53.1	-213.0	-55.2	0.00	0.00	0.00
4,100.0	6.00	284.00	4,088.3	55.6	-223.2	-57.9	0.00	0.00	0.00
4,200.0	6.00	284.00	4,187.8	58.2	-233.3	-60.5	0.00	0.00	0.00
4,300.0	6.00	284.00	4,287.2	60.7	-243.4	-63.1	0.00	0.00	0.00
4,400.0	6.00	284.00	4,386.7	63.2	-253.6	-65.7	0.00	0.00	0.00
4,500.0	6.00	284.00	4,486.1	65.8	-263.7	-68.4	0.00	0.00	0.00
4,600.0	6.00	284.00	4,585.6	68.3	-273.9	-71.0	0.00	0.00	0.00
4,700.0	6.00	284.00	4,685.0	70.8	-284.0	-73.6	0.00	0.00	0.00
4,800.0	6.00	284.00	4,784.5	73.3	-294.1	-76.3	0.00	0.00	0.00
4,900.0	6.00	284.00	4,883.9	75.9	-304.3	-78.9	0.00	0.00	0.00
5,000.0	6.00	284.00	4,983.4	78.4	-314.4	-81.5	0.00	0.00	0.00
5,100.0	6.00	284.00	5,082.8	80.9	-324.6	-84.2	0.00	0.00	0.00
5,152.5	6.00	284.00	5,135.0	82.3	-329.9	-85.5	0.00	0.00	0.00
Delaware Mountain Gp									
5,182.6	6.00	284.00	5,165.0	83.0	-333.0	-86.3	0.00	0.00	0.00
Lamar									
5,197.7	6.00	284.00	5,180.0	83.4	-334.5	-86.7	0.00	0.00	0.00
Bell Canyon									
5,200.0	6.00	284.00	5,182.3	83.5	-334.7	-86.8	0.00	0.00	0.00

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)
5,212.8	6.00	284.00	5,195.0	83.8	-336.0	-87.1	0.00	0.00	0.00
Ramsey Sand									
5,300.0	6.00	284.00	5,281.7	86.0	-344.9	-89.4	0.00	0.00	0.00
5,400.0	6.00	284.00	5,381.2	88.5	-355.0	-92.0	0.00	0.00	0.00
5,500.0	6.00	284.00	5,480.6	91.0	-365.1	-94.7	0.00	0.00	0.00
5,600.0	6.00	284.00	5,580.1	93.6	-375.3	-97.3	0.00	0.00	0.00
5,700.0	6.00	284.00	5,679.5	96.1	-385.4	-99.9	0.00	0.00	0.00
5,800.0	6.00	284.00	5,779.0	98.6	-395.6	-102.6	0.00	0.00	0.00
5,900.0	6.00	284.00	5,878.5	101.2	-405.7	-105.2	0.00	0.00	0.00
6,000.0	6.00	284.00	5,977.9	103.7	-415.9	-107.8	0.00	0.00	0.00
6,100.0	6.00	284.00	6,077.4	106.2	-426.0	-110.4	0.00	0.00	0.00
6,132.8	6.00	284.00	6,110.0	107.0	-429.3	-111.3	0.00	0.00	0.00
Cherry Canyon									
6,200.0	6.00	284.00	6,176.8	108.7	-436.1	-113.1	0.00	0.00	0.00
6,300.0	6.00	284.00	6,276.3	111.3	-446.3	-115.7	0.00	0.00	0.00
6,400.0	6.00	284.00	6,375.7	113.8	-456.4	-118.3	0.00	0.00	0.00
6,500.0	6.00	284.00	6,475.2	116.3	-466.6	-121.0	0.00	0.00	0.00
6,600.0	6.00	284.00	6,574.6	118.9	-476.7	-123.6	0.00	0.00	0.00
6,700.0	6.00	284.00	6,674.1	121.4	-486.9	-126.2	0.00	0.00	0.00
6,800.0	6.00	284.00	6,773.5	123.9	-497.0	-128.9	0.00	0.00	0.00
6,900.0	6.00	284.00	6,873.0	126.4	-507.1	-131.5	0.00	0.00	0.00
7,000.0	6.00	284.00	6,972.4	129.0	-517.3	-134.1	0.00	0.00	0.00
7,100.0	6.00	284.00	7,071.9	131.5	-527.4	-136.7	0.00	0.00	0.00
7,193.6	6.00	284.00	7,165.0	133.9	-536.9	-139.2	0.00	0.00	0.00
Brushy Canyon									
7,200.0	6.00	284.00	7,171.3	134.0	-537.6	-139.4	0.00	0.00	0.00
7,300.0	6.00	284.00	7,270.8	136.6	-547.7	-142.0	0.00	0.00	0.00
7,400.0	6.00	284.00	7,370.2	139.1	-557.8	-144.6	0.00	0.00	0.00
7,500.0	6.00	284.00	7,469.7	141.6	-568.0	-147.3	0.00	0.00	0.00
7,600.0	6.00	284.00	7,569.1	144.1	-578.1	-149.9	0.00	0.00	0.00
7,700.0	6.00	284.00	7,668.6	146.7	-588.3	-152.5	0.00	0.00	0.00
7,800.0	6.00	284.00	7,768.0	149.2	-598.4	-155.1	0.00	0.00	0.00
7,900.0	6.00	284.00	7,867.5	151.7	-608.6	-157.8	0.00	0.00	0.00
7,965.0	6.00	284.00	7,932.1	153.4	-615.2	-159.5	0.00	0.00	0.00
Start Drop -1.50									
8,000.0	5.48	284.00	7,967.0	154.2	-618.5	-160.4	1.50	-1.50	0.00
8,100.0	3.97	284.00	8,066.6	156.2	-626.5	-162.4	1.50	-1.50	0.00
8,200.0	2.47	284.00	8,166.5	157.6	-632.0	-163.9	1.50	-1.50	0.00
8,300.0	0.97	284.00	8,266.4	158.3	-634.9	-164.6	1.50	-1.50	0.00
8,365.0	0.00	0.00	8,331.4	158.4	-635.5	-164.8	1.50	-1.50	0.00
Start 2909.6 hold at 8365.0 MD									
8,400.0	0.00	0.00	8,366.4	158.4	-635.5	-164.8	0.00	0.00	0.00
8,453.6	0.00	0.00	8,420.0	158.4	-635.5	-164.8	0.00	0.00	0.00
Bone Spring Lime									
8,478.6	0.00	0.00	8,445.0	158.4	-635.5	-164.8	0.00	0.00	0.00
Upper Avalon									
8,500.0	0.00	0.00	8,466.4	158.4	-635.5	-164.8	0.00	0.00	0.00
8,600.0	0.00	0.00	8,566.4	158.4	-635.5	-164.8	0.00	0.00	0.00
8,700.0	0.00	0.00	8,666.4	158.4	-635.5	-164.8	0.00	0.00	0.00
8,743.6	0.00	0.00	8,710.0	158.4	-635.5	-164.8	0.00	0.00	0.00
Middle Avalon									
8,800.0	0.00	0.00	8,766.4	158.4	-635.5	-164.8	0.00	0.00	0.00
8,900.0	0.00	0.00	8,866.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,000.0	0.00	0.00	8,966.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,100.0	0.00	0.00	9,066.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,173.6	0.00	0.00	9,140.0	158.4	-635.5	-164.8	0.00	0.00	0.00
Lower Avalon									
9,200.0	0.00	0.00	9,166.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,300.0	0.00	0.00	9,266.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,400.0	0.00	0.00	9,366.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,500.0	0.00	0.00	9,466.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,600.0	0.00	0.00	9,566.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,700.0	0.00	0.00	9,666.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,703.6	0.00	0.00	9,670.0	158.4	-635.5	-164.8	0.00	0.00	0.00
1st Bone Spring Sand									

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)
9,773.6	0.00	0.00	9,740.0	158.4	-635.5	-164.8	0.00	0.00	0.00
2nd Bone Spring Carb									
9,800.0	0.00	0.00	9,766.4	158.4	-635.5	-164.8	0.00	0.00	0.00
9,900.0	0.00	0.00	9,866.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,000.0	0.00	0.00	9,966.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,100.0	0.00	0.00	10,066.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,200.0	0.00	0.00	10,166.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,258.6	0.00	0.00	10,225.0	158.4	-635.5	-164.8	0.00	0.00	0.00
2nd Bone Spring Sand									
10,300.0	0.00	0.00	10,266.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,400.0	0.00	0.00	10,366.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,500.0	0.00	0.00	10,466.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,600.0	0.00	0.00	10,566.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,700.0	0.00	0.00	10,666.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,800.0	0.00	0.00	10,766.4	158.4	-635.5	-164.8	0.00	0.00	0.00
10,883.6	0.00	0.00	10,850.0	158.4	-635.5	-164.8	0.00	0.00	0.00
3rd Bone Spring Carb									
10,900.0	0.00	0.00	10,866.4	158.4	-635.5	-164.8	0.00	0.00	0.00
11,000.0	0.00	0.00	10,966.4	158.4	-635.5	-164.8	0.00	0.00	0.00
11,100.0	0.00	0.00	11,066.4	158.4	-635.5	-164.8	0.00	0.00	0.00
11,200.0	0.00	0.00	11,166.4	158.4	-635.5	-164.8	0.00	0.00	0.00
11,274.6	0.00	0.00	11,241.0	158.4	-635.5	-164.8	0.00	0.00	0.00
Start Build 10.00									
11,300.0	2.54	179.43	11,266.4	157.9	-635.4	-164.2	10.00	10.00	0.00
11,350.0	7.54	179.43	11,316.2	153.5	-635.4	-159.8	10.00	10.00	0.00
11,400.0	12.54	179.43	11,365.4	144.8	-635.3	-151.1	10.00	10.00	0.00
11,450.0	17.54	179.43	11,413.7	131.8	-635.2	-138.1	10.00	10.00	0.00
11,500.0	22.54	179.43	11,460.6	114.7	-635.0	-121.0	10.00	10.00	0.00
11,515.6	24.10	179.43	11,475.0	108.5	-635.0	-114.8	10.00	10.00	0.00
3rd Bone Spring Sand									
11,550.0	27.54	179.43	11,505.9	93.5	-634.8	-99.8	10.00	10.00	0.00
11,600.0	32.54	179.43	11,549.2	68.5	-634.6	-74.8	10.00	10.00	0.00
11,650.0	37.54	179.43	11,590.1	39.8	-634.3	-46.1	10.00	10.00	0.00
11,688.7	41.41	179.43	11,620.0	15.2	-634.0	-21.5	10.00	10.00	0.00
3rd BS W Sand									
11,700.0	42.54	179.43	11,628.4	7.7	-634.0	-14.0	10.00	10.00	0.00
11,737.2	46.26	179.43	11,655.0	-18.4	-633.7	12.1	10.00	10.00	0.00
Wolfcamp A X Sand									
11,750.0	47.54	179.43	11,663.7	-27.7	-633.6	21.4	10.00	10.00	0.00
11,761.3	48.66	179.43	11,671.2	-36.1	-633.5	29.8	10.00	10.00	0.00
FTP_BM.213H									
11,800.0	52.53	179.43	11,695.8	-66.0	-633.2	59.7	10.00	10.00	0.00
11,806.9	53.23	179.43	11,700.0	-71.5	-633.2	65.2	10.00	10.00	0.00
Wolfcamp A Y Sand									
11,850.0	57.53	179.43	11,724.5	-107.0	-632.8	100.7	10.00	10.00	0.00
11,900.0	62.53	179.43	11,749.4	-150.3	-632.4	144.0	10.00	10.00	0.00
11,901.2	62.66	179.43	11,750.0	-151.4	-632.4	145.1	10.00	10.00	0.00
Wolfcamp A Lower									
11,950.0	67.53	179.43	11,770.5	-195.6	-631.9	189.3	10.00	10.00	0.00
12,000.0	72.53	179.43	11,787.6	-242.6	-631.5	236.3	10.00	10.00	0.00
12,050.0	77.53	179.43	11,800.5	-290.9	-631.0	284.6	10.00	10.00	0.00
12,100.0	82.53	179.43	11,809.2	-340.1	-630.5	333.8	10.00	10.00	0.00
12,150.0	87.53	179.43	11,813.5	-389.9	-630.0	383.6	10.00	10.00	0.00
12,169.5	89.48	179.43	11,814.0	-409.4	-629.8	403.1	10.00	10.00	0.00
EOC 12169.5 MD, 11814 TVD									
12,200.0	89.48	179.43	11,814.3	-439.9	-629.5	433.6	0.00	0.00	0.00
12,230.8	89.48	179.43	11,814.6	-470.6	-629.2	464.4	0.00	0.00	0.00
12,300.0	89.48	179.43	11,815.2	-539.9	-628.5	533.6	0.00	0.00	0.00
12,400.0	89.48	179.43	11,816.1	-639.8	-627.5	633.6	0.00	0.00	0.00
12,500.0	89.48	179.43	11,817.0	-739.8	-626.5	733.6	0.00	0.00	0.00
12,600.0	89.48	179.43	11,817.9	-839.8	-625.5	833.6	0.00	0.00	0.00
12,700.0	89.48	179.43	11,818.8	-939.8	-624.5	933.6	0.00	0.00	0.00
12,800.0	89.48	179.43	11,819.7	-1,039.8	-623.5	1,033.6	0.00	0.00	0.00
12,900.0	89.48	179.43	11,820.6	-1,139.8	-622.5	1,133.5	0.00	0.00	0.00
13,000.0	89.48	179.43	11,821.5	-1,239.8	-621.5	1,233.5	0.00	0.00	0.00

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)
13,100.0	89.48	179.43	11,822.4	-1,339.8	-620.6	1,333.5	0.00	0.00	0.00
13,200.0	89.48	179.43	11,823.4	-1,439.8	-619.6	1,433.5	0.00	0.00	0.00
13,300.0	89.48	179.43	11,824.3	-1,539.8	-618.6	1,533.5	0.00	0.00	0.00
13,400.0	89.48	179.43	11,825.2	-1,639.8	-617.6	1,633.5	0.00	0.00	0.00
13,500.0	89.48	179.43	11,826.1	-1,739.7	-616.6	1,733.5	0.00	0.00	0.00
13,600.0	89.48	179.43	11,827.0	-1,839.7	-615.6	1,833.5	0.00	0.00	0.00
13,700.0	89.48	179.43	11,827.9	-1,939.7	-614.6	1,933.5	0.00	0.00	0.00
13,800.0	89.48	179.43	11,828.8	-2,039.7	-613.6	2,033.5	0.00	0.00	0.00
13,900.0	89.48	179.43	11,829.7	-2,139.7	-612.6	2,133.5	0.00	0.00	0.00
14,000.0	89.48	179.43	11,830.6	-2,239.7	-611.6	2,233.5	0.00	0.00	0.00
14,100.0	89.48	179.43	11,831.5	-2,339.7	-610.6	2,333.5	0.00	0.00	0.00
14,200.0	89.48	179.43	11,832.4	-2,439.7	-609.6	2,433.5	0.00	0.00	0.00
14,300.0	89.48	179.43	11,833.3	-2,539.7	-608.6	2,533.5	0.00	0.00	0.00
14,400.0	89.48	179.43	11,834.2	-2,639.7	-607.6	2,633.5	0.00	0.00	0.00
14,500.0	89.48	179.43	11,835.1	-2,739.7	-606.6	2,733.5	0.00	0.00	0.00
14,600.0	89.48	179.43	11,836.1	-2,839.6	-605.6	2,833.5	0.00	0.00	0.00
14,700.0	89.48	179.43	11,837.0	-2,939.6	-604.6	2,933.5	0.00	0.00	0.00
14,800.0	89.48	179.43	11,837.9	-3,039.6	-603.6	3,033.5	0.00	0.00	0.00
14,900.0	89.48	179.43	11,838.8	-3,139.6	-602.6	3,133.5	0.00	0.00	0.00
15,000.0	89.48	179.43	11,839.7	-3,239.6	-601.6	3,233.5	0.00	0.00	0.00
15,100.0	89.48	179.43	11,840.6	-3,339.6	-600.7	3,333.5	0.00	0.00	0.00
15,200.0	89.48	179.43	11,841.5	-3,439.6	-599.7	3,433.5	0.00	0.00	0.00
15,300.0	89.48	179.43	11,842.4	-3,539.6	-598.7	3,533.5	0.00	0.00	0.00
15,400.0	89.48	179.43	11,843.3	-3,639.6	-597.7	3,633.4	0.00	0.00	0.00
15,500.0	89.48	179.43	11,844.2	-3,739.6	-596.7	3,733.4	0.00	0.00	0.00
15,600.0	89.48	179.43	11,845.1	-3,839.6	-595.7	3,833.4	0.00	0.00	0.00
15,700.0	89.48	179.43	11,846.0	-3,939.5	-594.7	3,933.4	0.00	0.00	0.00
15,800.0	89.48	179.43	11,846.9	-4,039.5	-593.7	4,033.4	0.00	0.00	0.00
15,900.0	89.48	179.43	11,847.9	-4,139.5	-592.7	4,133.4	0.00	0.00	0.00
16,000.0	89.48	179.43	11,848.8	-4,239.5	-591.7	4,233.4	0.00	0.00	0.00
16,100.0	89.48	179.43	11,849.7	-4,339.5	-590.7	4,333.4	0.00	0.00	0.00
16,200.0	89.48	179.43	11,850.6	-4,439.5	-589.7	4,433.4	0.00	0.00	0.00
16,300.0	89.48	179.43	11,851.5	-4,539.5	-588.7	4,533.4	0.00	0.00	0.00
16,400.0	89.48	179.43	11,852.4	-4,639.5	-587.7	4,633.4	0.00	0.00	0.00
16,500.0	89.48	179.43	11,853.3	-4,739.5	-586.7	4,733.4	0.00	0.00	0.00
16,600.0	89.48	179.43	11,854.2	-4,839.5	-585.7	4,833.4	0.00	0.00	0.00
16,700.0	89.48	179.43	11,855.1	-4,939.5	-584.7	4,933.4	0.00	0.00	0.00
16,800.0	89.48	179.43	11,856.0	-5,039.4	-583.7	5,033.4	0.00	0.00	0.00
16,900.0	89.48	179.43	11,856.9	-5,139.4	-582.7	5,133.4	0.00	0.00	0.00
17,000.0	89.48	179.43	11,857.8	-5,239.4	-581.8	5,233.4	0.00	0.00	0.00
17,100.0	89.48	179.43	11,858.7	-5,339.4	-580.8	5,333.4	0.00	0.00	0.00
17,200.0	89.48	179.43	11,859.7	-5,439.4	-579.8	5,433.4	0.00	0.00	0.00
17,300.0	89.48	179.43	11,860.6	-5,539.4	-578.8	5,533.4	0.00	0.00	0.00
17,400.0	89.48	179.43	11,861.5	-5,639.4	-577.8	5,633.4	0.00	0.00	0.00
17,500.0	89.48	179.43	11,862.4	-5,739.4	-576.8	5,733.4	0.00	0.00	0.00
17,600.0	89.48	179.43	11,863.3	-5,839.4	-575.8	5,833.4	0.00	0.00	0.00
17,700.0	89.48	179.43	11,864.2	-5,939.4	-574.8	5,933.4	0.00	0.00	0.00
17,800.0	89.48	179.43	11,865.1	-6,039.4	-573.8	6,033.3	0.00	0.00	0.00
17,900.0	89.48	179.43	11,866.0	-6,139.3	-572.8	6,133.3	0.00	0.00	0.00
18,000.0	89.48	179.43	11,866.9	-6,239.3	-571.8	6,233.3	0.00	0.00	0.00
18,100.0	89.48	179.43	11,867.8	-6,339.3	-570.8	6,333.3	0.00	0.00	0.00
18,200.0	89.48	179.43	11,868.7	-6,439.3	-569.8	6,433.3	0.00	0.00	0.00
18,300.0	89.48	179.43	11,869.6	-6,539.3	-568.8	6,533.3	0.00	0.00	0.00
18,400.0	89.48	179.43	11,870.5	-6,639.3	-567.8	6,633.3	0.00	0.00	0.00
18,500.0	89.48	179.43	11,871.5	-6,739.3	-566.8	6,733.3	0.00	0.00	0.00
18,600.0	89.48	179.43	11,872.4	-6,839.3	-565.8	6,833.3	0.00	0.00	0.00
18,700.0	89.48	179.43	11,873.3	-6,939.3	-564.8	6,933.3	0.00	0.00	0.00
18,800.0	89.48	179.43	11,874.2	-7,039.3	-563.8	7,033.3	0.00	0.00	0.00
18,900.0	89.48	179.43	11,875.1	-7,139.3	-562.9	7,133.3	0.00	0.00	0.00
19,000.0	89.48	179.43	11,876.0	-7,239.2	-561.9	7,233.3	0.00	0.00	0.00
19,100.0	89.48	179.43	11,876.9	-7,339.2	-560.9	7,333.3	0.00	0.00	0.00
19,200.0	89.48	179.43	11,877.8	-7,439.2	-559.9	7,433.3	0.00	0.00	0.00
19,300.0	89.48	179.43	11,878.7	-7,539.2	-558.9	7,533.3	0.00	0.00	0.00
19,400.0	89.48	179.43	11,879.6	-7,639.2	-557.9	7,633.3	0.00	0.00	0.00
19,500.0	89.48	179.43	11,880.5	-7,739.2	-556.9	7,733.3	0.00	0.00	0.00
19,600.0	89.48	179.43	11,881.4	-7,839.2	-555.9	7,833.3	0.00	0.00	0.00

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)
19,700.0	89.48	179.43	11,882.3	-7,939.2	-554.9	7,933.3	0.00	0.00	0.00
19,800.0	89.48	179.43	11,883.2	-8,039.2	-553.9	8,033.3	0.00	0.00	0.00
19,900.0	89.48	179.43	11,884.2	-8,139.2	-552.9	8,133.3	0.00	0.00	0.00
20,000.0	89.48	179.43	11,885.1	-8,239.2	-551.9	8,233.3	0.00	0.00	0.00
20,100.0	89.48	179.43	11,886.0	-8,339.1	-550.9	8,333.3	0.00	0.00	0.00
20,200.0	89.48	179.43	11,886.9	-8,439.1	-549.9	8,433.2	0.00	0.00	0.00
20,300.0	89.48	179.43	11,887.8	-8,539.1	-548.9	8,533.2	0.00	0.00	0.00
20,400.0	89.48	179.43	11,888.7	-8,639.1	-547.9	8,633.2	0.00	0.00	0.00
20,500.0	89.48	179.43	11,889.6	-8,739.1	-546.9	8,733.2	0.00	0.00	0.00
20,600.0	89.48	179.43	11,890.5	-8,839.1	-545.9	8,833.2	0.00	0.00	0.00
20,700.0	89.48	179.43	11,891.4	-8,939.1	-544.9	8,933.2	0.00	0.00	0.00
20,800.0	89.48	179.43	11,892.3	-9,039.1	-544.0	9,033.2	0.00	0.00	0.00
20,900.0	89.48	179.43	11,893.2	-9,139.1	-543.0	9,133.2	0.00	0.00	0.00
21,000.0	89.48	179.43	11,894.1	-9,239.1	-542.0	9,233.2	0.00	0.00	0.00
21,100.0	89.48	179.43	11,895.0	-9,339.1	-541.0	9,333.2	0.00	0.00	0.00
21,200.0	89.48	179.43	11,896.0	-9,439.0	-540.0	9,433.2	0.00	0.00	0.00
21,300.0	89.48	179.43	11,896.9	-9,539.0	-539.0	9,533.2	0.00	0.00	0.00
21,400.0	89.48	179.43	11,897.8	-9,639.0	-538.0	9,633.2	0.00	0.00	0.00
21,500.0	89.48	179.43	11,898.7	-9,739.0	-537.0	9,733.2	0.00	0.00	0.00
21,600.0	89.48	179.43	11,899.6	-9,839.0	-536.0	9,833.2	0.00	0.00	0.00
21,700.0	89.48	179.43	11,900.5	-9,939.0	-535.0	9,933.2	0.00	0.00	0.00
21,800.0	89.48	179.43	11,901.4	-10,039.0	-534.0	10,033.2	0.00	0.00	0.00
21,900.0	89.48	179.43	11,902.3	-10,139.0	-533.0	10,133.2	0.00	0.00	0.00
22,000.0	89.48	179.43	11,903.2	-10,239.0	-532.0	10,233.2	0.00	0.00	0.00
22,039.5	89.48	179.43	11,903.0	-10,278.5	-531.8	10,272.7	0.00	0.00	0.00
LTP_BM.213H									
22,100.0	89.48	179.43	11,903.5	-10,339.0	-531.2	10,333.2	0.00	0.00	0.00
22,134.5	89.48	179.43	11,903.9	-10,373.5	-530.9	10,367.7	0.00	0.00	0.00
TD at 22134.5 - PBHL_BM.213H									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP_BM.213H - plan misses target center by 186.3usft at 11761.3usft MD (11671.2 TVD, -36.1 N, -633.5 E) - Point	0.00	0.00	11,814.0	83.5	-635.2	415,239.70	860,430.67	32° 8' 14.549 N	103° 18' 8.803 W
LTP_BM.213H - plan hits target center - Point	0.00	0.00	11,903.0	-10,278.5	-531.8	404,877.71	860,534.09	32° 6' 32.011 N	103° 18' 8.753 W
PBHL_BM.213H - plan hits target center - Point	0.00	0.00	11,903.9	-10,373.5	-530.9	404,782.72	860,535.06	32° 6' 31.071 N	103° 18' 8.752 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,200.0	1,200.0	Rustler Anhydrite				
1,730.0	1,730.0	Top Salt				
3,387.8	3,380.0	Base Salt				
5,152.5	5,135.0	Delaware Mountain Gp				
5,182.6	5,165.0	Lamar				
5,197.7	5,180.0	Bell Canyon				
5,212.8	5,195.0	Ramsey Sand				
6,132.8	6,110.0	Cherry Canyon				
7,193.6	7,165.0	Brushy Canyon				
8,453.6	8,420.0	Bone Spring Lime				
8,478.6	8,445.0	Upper Avalon				
8,743.6	8,710.0	Middle Avalon				
9,173.6	9,140.0	Lower Avalon				
9,703.6	9,670.0	1st Bone Spring Sand				
9,773.6	9,740.0	2nd Bone Spring Carb				
10,258.6	10,225.0	2nd Bone Spring Sand				
10,883.6	10,850.0	3rd Bone Spring Carb				
11,515.6	11,475.0	3rd Bone Spring Sand				
11,688.7	11,620.0	3rd BS W Sand				
11,737.2	11,655.0	Wolfcamp A X Sand				
11,806.9	11,700.0	Wolfcamp A Y Sand				
11,901.2	11,750.0	Wolfcamp A Lower				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,700.0	1,700.0	0.0	0.0	Start Build 1.50	
2,100.0	2,099.3	5.1	-20.3	Start 5865.0 hold at 2100.0 MD	
7,965.0	7,932.1	153.4	-615.2	Start Drop -1.50	
8,365.0	8,331.4	158.4	-635.5	Start 2909.6 hold at 8365.0 MD	
11,274.6	11,241.0	158.4	-635.5	Start Build 10.00	
12,169.5	11,814.0	-409.4	-629.8	EOC 12169.5 MD, 11814 TVD	
22,134.5	11,903.9	-10,373.5	-530.9	TD at 22134.5	

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 38978

CONDITIONS

Operator: TAP ROCK OPERATING, LLC 523 Park Point Drive Golden, CO 80401	OGRID: 372043
	Action Number: 38978
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	8/4/2021