

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No. **NMNM113413**

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
 Oil Well Gas Well Other

2. Name of Operator **CENTENNIAL RESOURCE PRODUCTION LLC**

3a. Address **300 N MARIENFIELD STREET SUITE 1000, MID** 3b. Phone No. (include area code)
(432) 695-4222

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)
SEC 9/T21S/R32E/NMP

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

8. Well Name and No. **MORAN 9 FEDERAL COM/502H**

9. API Well No.

10. Field and Pool or Exploratory Area
2nd BONE SPRING/BILBREY BASIN; BONE SPRING

11. Country or Parish, State
LEA/NM

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

TYPE OF SUBMISSION	TYPE OF ACTION				
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input checked="" type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

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

API: 30-025-52795

No Surface change; Sundry to REVISE Target depth; Well Name/ #; FTP; LTP/BHL; Drilling Plan
NO NEW SURFACE DISTURBANCE

Well Name Change

From: MORAN 9 FED COM 502H

To: MORAN 9 FED COM 171H

Target Depth Change

From: 2BS Depth @ 10606' TVD

To: 3BS Depth @ 11235' TVD

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)
JENNIFER ELROD / Ph: (940) 452-6214

Signature (Electronic Submission)

Title **Senior Regulatory Analyst**

Date **04/21/2024**

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by
CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

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

Title **Petroleum Engineer**

Office **CARLSBAD**

Date **04/29/2024**

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Additional Remarks

First Take Point

From: D-16-21S-32E; 100 FNL, 1254 FWL

To: D-16-21S-32E; 100' FNL & 1100' FWL

Last Take Point/Bottom Hole Location

From: M-21S-32E; 100 FSL, 1254 FWL

To: M-21S-32E; 100' FSL & 1100' FWL

*CHANGES TO DRILLING PLAN ATTACHED

Location of Well

0. SHL: SESW / 271 FSL / 1352 FWL / TWSP: 21S / RANGE: 32E / SECTION: 9 / LAT: 32.486753 / LONG: -103.683882 (TVD: 0 feet, MD: 0 feet)

PPP: NWNW / 100 FNL / 1254 FWL / TWSP: 21S / RANGE: 32E / SECTION: 16 / LAT: 32.485733 / LONG: -103.6842 (TVD: 10606 feet, MD: 11000 feet)

BHL: SWSW / 100 FSL / 1254 FWL / TWSP: 21S / RANGE: 32E / SECTION: 21 / LAT: 32.457232 / LONG: -103.684216 (TVD: 10606 feet, MD: 20766 feet)

CONFIDENTIAL

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#, FTP, LTP/BHL

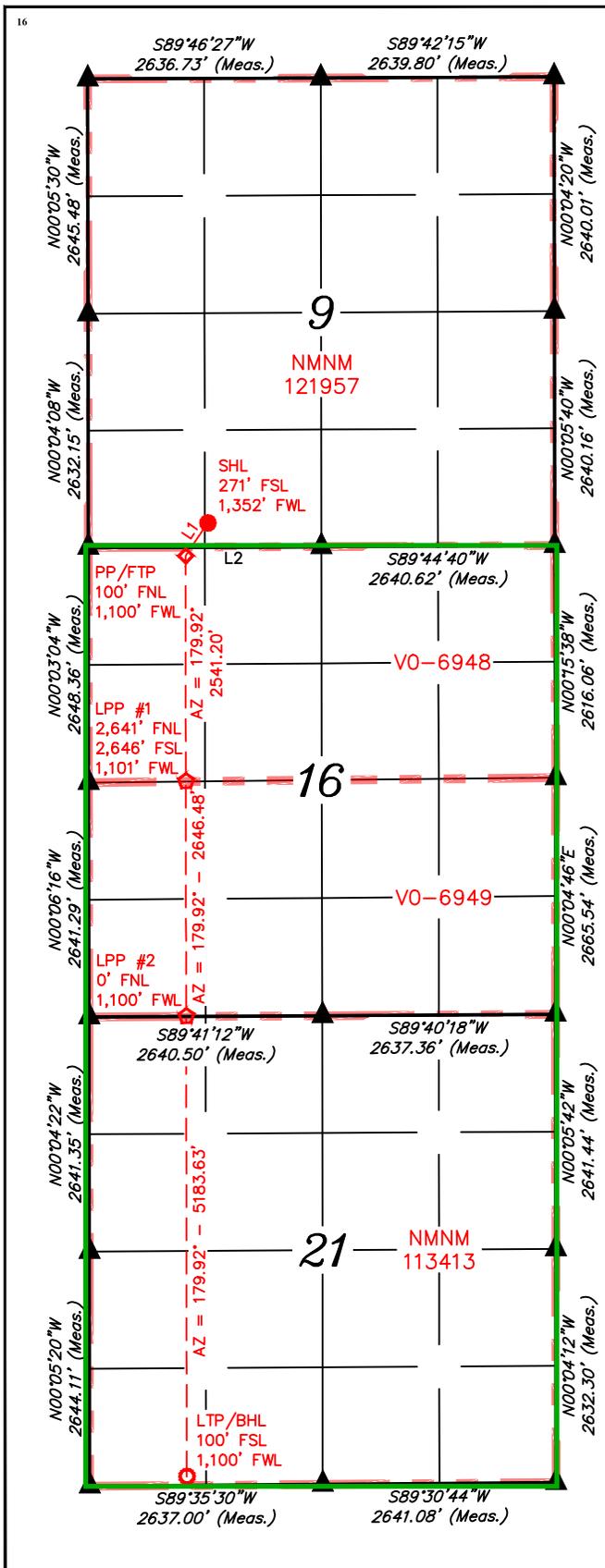
WELL LOCATION AND ACREAGE DEDICATION PLAT

Table with 6 columns: API Number, Pool Code, Pool Name, Property Code, Property Name, Well Number, OGRID No., Operator Name, Elevation.

Table with 10 columns: UL or lot no., Section, Township, Range, Lot Idn, Feet from the, North/South line, Feet from the, East/West line, County.

Table with 10 columns: UL or lot no., Section, Township, Range, Lot Idn, Feet from the, North/South line, Feet from the, East/West line, County. Includes sub-tables for Dedicated Acres, Joint or Infill, Consolidation Code, and Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



- Legend symbols: Red circle for SURFACE HOLE LOCATION, Red diamond for PENETRATION POINT/FIRST TAKE POINT, Red square for LEASE PENETRATION POINT, Red circle with dot for LAST TAKE POINT/BOTTOM HOLE LOCATION, Black triangle for SECTION CORNER LOCATED, Red line for LEASE LINE.

WELLBORE - LINE TABLE
Table with 3 columns: LINE, DIRECTION, LENGTH. Row 1: L1, AZ-214.07, 449.06'

LINE TABLE
Table with 3 columns: LINE, DIRECTION, LENGTH. Row 1: L2, S89°47'20"W, 2636.19'

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°29'12.31" (32.486753°)
LONGITUDE = -103°41'01.97" (-103.683882°)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°29'11.87" (32.486631°)
LONGITUDE = -103°41'00.20" (-103.683390°)
STATE PLANE NAD 83 (N.M. EAST)
N: 541421.20' E: 741590.81'
STATE PLANE NAD 27 (N.M. EAST)
N: 541359.74' E: 700409.39'

NAD 83 (PP/FTP)
LATITUDE = 32°29'08.64" (32.485732°)
LONGITUDE = -103°41'04.92" (-103.684699°)
NAD 27 (PP/FTP)
LATITUDE = 32°29'08.19" (32.485610°)
LONGITUDE = -103°41'03.15" (-103.684208°)
STATE PLANE NAD 83 (N.M. EAST)
N: 541048.21' E: 741340.89'
STATE PLANE NAD 27 (N.M. EAST)
N: 540986.77' E: 700159.45'

NAD 83 (LPP #1)
LATITUDE = 32°28'43.49" (32.478748°)
LONGITUDE = -103°41'04.93" (-103.684703°)
NAD 27 (LPP #1)
LATITUDE = 32°28'43.05" (32.478626°)
LONGITUDE = -103°41'03.16" (-103.684212°)
STATE PLANE NAD 83 (N.M. EAST)
N: 538507.51' E: 741355.12'
STATE PLANE NAD 27 (N.M. EAST)
N: 538446.13' E: 700173.62'

NAD 83 (LPP #2)
LATITUDE = 32°28'17.31" (32.471475°)
LONGITUDE = -103°41'04.95" (-103.684707°)
NAD 27 (LPP #2)
LATITUDE = 32°28'16.87" (32.471353°)
LONGITUDE = -103°41'03.18" (-103.684217°)
STATE PLANE NAD 83 (N.M. EAST)
N: 535861.55' E: 741369.95'
STATE PLANE NAD 27 (N.M. EAST)
N: 535800.24' E: 700188.38'

NAD 83 (LTP/BHL)
LATITUDE = 32°27'26.03" (32.457230°)
LONGITUDE = -103°41'04.98" (-103.684715°)
NAD 27 (LTP/BHL)
LATITUDE = 32°27'25.59" (32.457107°)
LONGITUDE = -103°41'03.21" (-103.684225°)
STATE PLANE NAD 83 (N.M. EAST)
N: 530678.93' E: 741398.99'
STATE PLANE NAD 27 (N.M. EAST)
N: 530617.77' E: 700217.27'

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 herebefore entered by the division.
Signature: Jennifer Elrod
Date: 4/19/2024

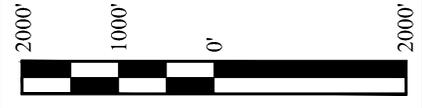
JENNIFER ELROD
Printed Name
jelrod@permres.com
E-mail Address

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 and correct to the best of my belief.
April 04, 2024
Date of Survey
Signature and Seal of Professional Surveyor:



Certificate Number:

NOTE:
Distances referenced on plat to section lines are perpendicular.
Basis of Bearings is a Transverse Mercator Projection with a Central Meridian of W103°53'00" (NAD 83)



SCALE
DRAWN BY: L.K. 04-15-24
REV: 2 D.M.C. 04-19-24
(UPDATE SURVEY DATE)

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Well Name: MORAN 9 FEDERAL COM	Well Location: T21S / R32E / SEC 9 / SESW / 32.486753 / -103.683882	County or Parish/State: LEA / NM
Well Number: 502H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM113413	Unit or CA Name:	Unit or CA Number:
US Well Number:	Operator: CENTENNIAL RESOURCE PRODUCTION LLC	

Notice of Intent

Sundry ID: 2786039

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 04/21/2024

Time Sundry Submitted: 01:04

Date proposed operation will begin: 04/21/2024

Procedure Description: API: 30-025-52795 No Surface change; Sundry to REVISE Target depth; Well Name/ #; FTP; LTP/BHL; Drilling Plan NO NEW SURFACE DISTURBANCE Well Name Change From: MORAN 9 FED COM 502H To: MORAN 9 FED COM 171H Target Depth Change From: 2BS Depth @ 10606' TVD To: 3BS Depth @ 11235' TVD First Take Point From: D-16-21S-32E; 100 FNL, 1254 FWL To: D-16-21S-32E; 100' FNL & 1100' FWL Last Take Point/Bottom Hole Location From: M-21S-32E; 100 FSL, 1254 FWL To: M-21S-32E; 100' FSL & 1100' FWL
*CHANGES TO DRILLING PLAN ATTACHED

NOI Attachments

Procedure Description

MORAN_9_FED_COM_171H_BLM_ATTACHMENTS_20240421130359.pdf

Well Name: MORAN 9 FEDERAL COM

Well Location: T21S / R32E / SEC 9 / SESW / 32.486753 / -103.683882

County or Parish/State: LEA / NM

Well Number: 502H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM113413

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: CENTENNIAL RESOURCE PRODUCTION LLC

Conditions of Approval

Additional

MORAN_9_FED_COM_171H_COAs_20240429094255.pdf

Operator

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

Operator Electronic Signature: JENNIFER ELROD

Signed on: APR 21, 2024 01:03 PM

Name: CENTENNIAL RESOURCE PRODUCTION LLC

Title: Senior Regulatory Analyst

Street Address: 300 N MARIENFIELD STREET SUITE 1000

City: MIDLAND

State: TX

Phone: (940) 452-6214

Email address: JENNIFER.ELROD@PERMIANRES.COM

Field

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 04/29/2024

Signature: Chris Walls

Permian Resources - Moran 9 Fed Com 171H

1. Geologic Formations

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	2545	1211	No
Top of Salt	Salt	1944	1812	No
Yates	Anhydrite/Shale	596	3160	No
Capitan	Limestone	383	3373	No
Cherry Canyon	Sandstone	-1832	5588	No
Brushy Canyon	Sandstone	-3082	6838	No
Bone Spring Lime	Limestone/Shale	-4882	8638	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-6031	9787	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-6559	10315	No
3rd Bone Spring Carb	Sandstone/Limestone/Shale	-6954	10710	Yes
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-7573	11329	No
Wolfcamp	Shale	-7900	11656	No

2. Blowout Prevention

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
9.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
7.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES

Variance request: Diverter to drill surface hole, break testing, flex hose, and offline cement variances, see attachments in section 8.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order II requirements. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checked will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP), choke lines, and choke manifold. See attached schematics.

Choke Diagram Attachment: 5M Choke Manifold

BOP Diagram Attachment: BOP Schematics

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	1236	0	1236	1236	J55	54.5	BTC	1.85	2.11	Dry	5.43	Dry	5.10
Intermediate 1	12.25	10.75	0	3085	0	3085	3085	J55	45.5	BTC	6.79	3.64	Dry	4.42	Dry	4.33
Intermediate 2	9.875	8.625	0	5538	0	5538	5538	P110 HS	32	MO-FXL	4.56	2.26	Dry	2.85	Dry	4.13
Production	7.875	5.5	0	11526	0	11235	11526	P110RY	20	GeoConn	1.90	1.98	Dry	1.97	Dry	1.97
Production	7.875	5.5	11526	21766	11235	11235	10240	P110RY	20	GeoConn	1.90	1.98	Dry	1.97	Dry	1.97
BLM Min Safety Factor											1.125	1	1.6	1.6		

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	1236	970	1.34	14.8	1290	50%	Class C	Accelerator
Intermediate 1	Lead	0	2460	350	1.88	12.9	640	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 1	Tail	2460	3085	140	1.34	14.8	180	50%	Class C	Retarder
Intermediate 2	Lead	0	4430	360	1.88	12.9	670	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 2	Tail	4430	5538	140	1.33	14.8	180	25%	Class C	Salt
Production	Lead	5038	10776	570	2.41	11.5	1360	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	10776	21766	1390	1.73	12.5	2390	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

If losses are encountered while drilling Intermediate 2, Permian Resources requests to pump a bradenhead squeeze to the top of where the first losses were encountered. The cement volume will be adjusted according to the top of the first losses and will consist of a 14.8 ppg Class C cement (1.4 yield) and appropriate excess. The cement top after the squeeze jon will be verified by Echo-meter. Permian Resources will report the Echo-meter verified fluid top and column of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures. The two-stage cement job will be conducted offline as per the approved APD. If the bradehead cement top is 1000' of less we will top out with Class C cement.

5. Circulating Medium

Mud System Type: Closed

Will an air or gas system be used: No

Describe what will be on location to control well or mitigate other conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check

Cuttings Volume: 10380 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	1236	Spud Mud	8.6	9.5
1236	3085	Salt Saturated	10	10
3085	11526	Brine	9	10
11526	21766	OBM	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

List of open and cased hole logs run in the well:

DIRECTIONAL SURVEY,GAMMA RAY LOG,

Coring operation description for the well:

N/A

7. Pressure

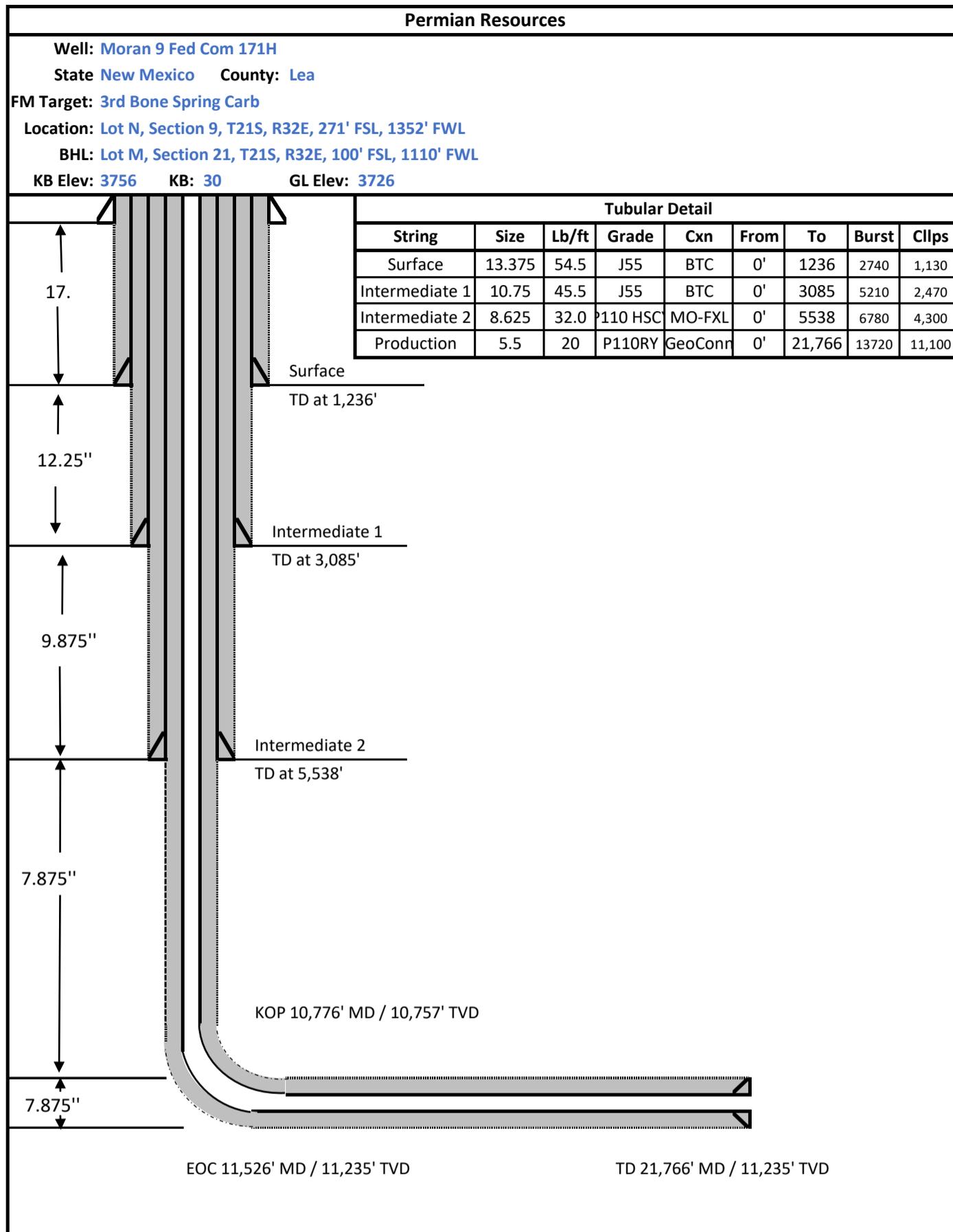
Anticipated Bottom Hole Pressure	5850	psi
Anticipated Surface Pressure	3371	psi
Anticipated Bottom Hole Temperature	167	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Waste Management

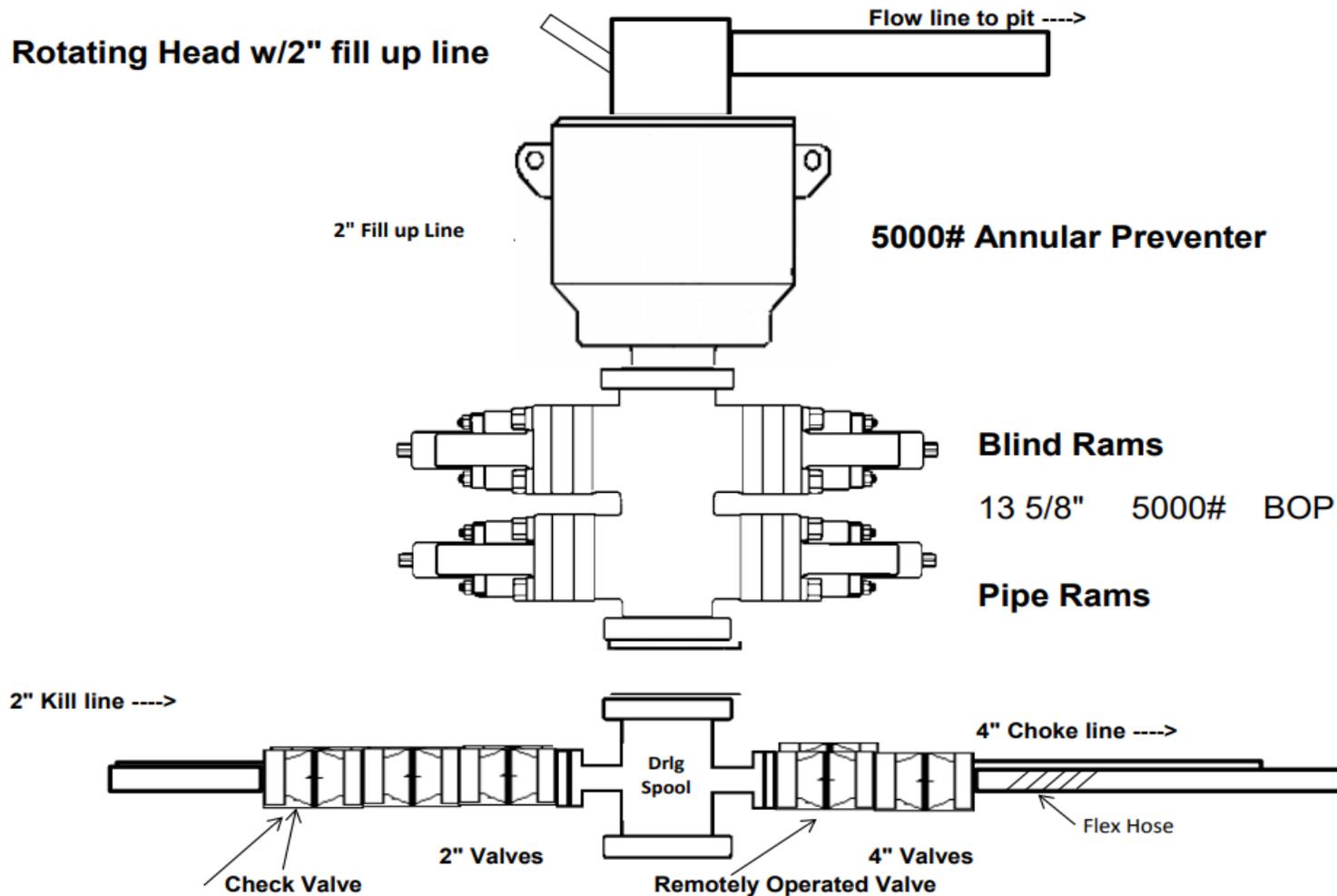
Waste Type:	Drilling
Waste content description:	Fresh water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Weekly (after drilling all surfaces)
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Grey Water & Human Waste
Waste content description:	Grey Water/Human Waste
Amount of waste:	5000 gallons
Waste disposal frequency:	Weekly
Safe containment description:	Approved waste storage tanks with containment
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Garbage
Waste content description:	General trash/garbage
Amount of waste:	5000 lbs
Waste disposal frequency:	Weekly
Safe containment description:	Enclosed trash trailer
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Drilling
Waste content description:	Drill Cuttings
Amount of waste:	10380 Cu Ft
Waste disposal frequency:	Per well
Safe containment description:	Steel tanks
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Drilling
Waste content description:	Brine water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Monthly
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial

9. Other Information

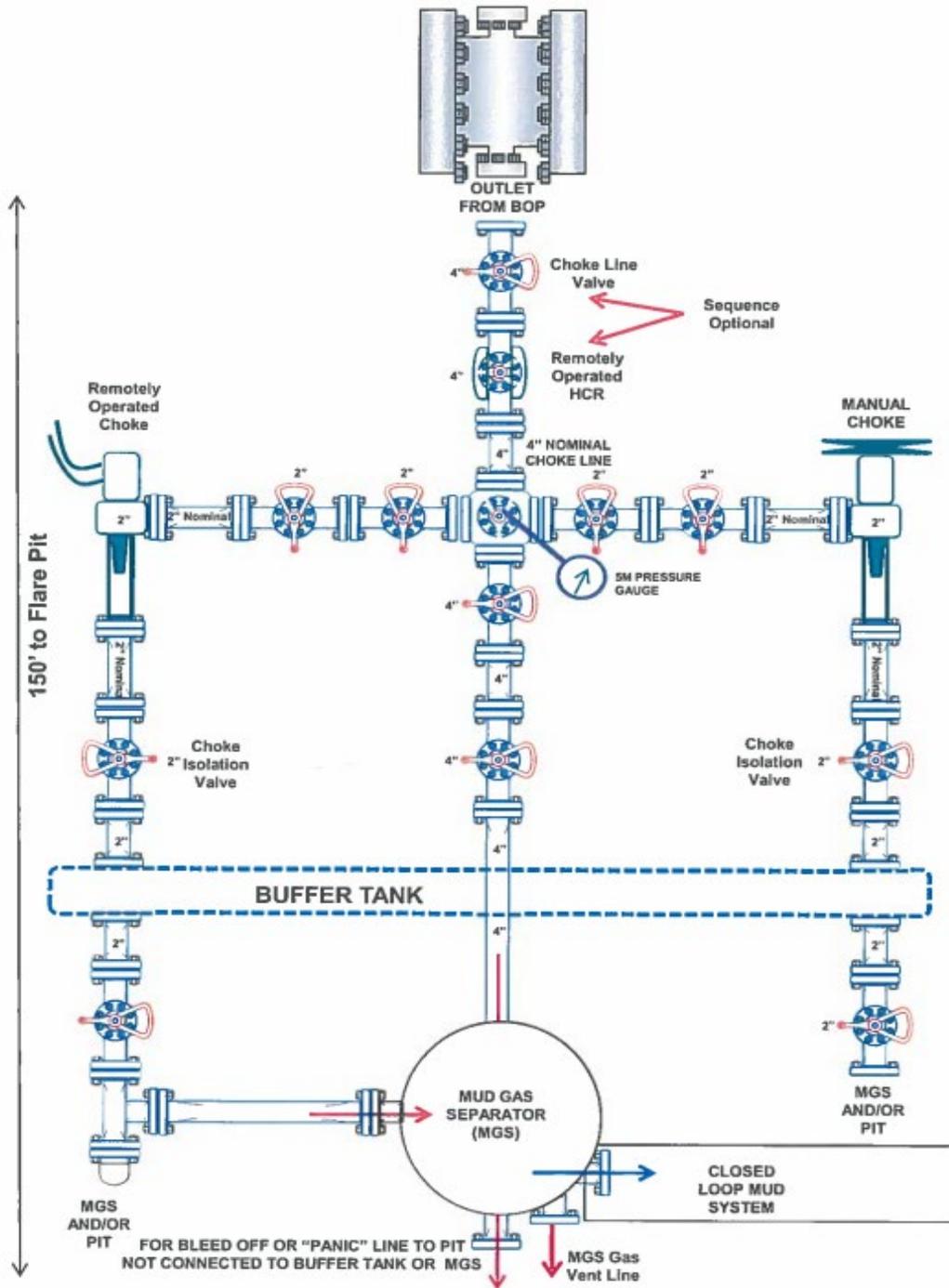
Well Plan and AC Report: attached
Batching Drilling Procedure: attached
WBD: attached
Flex Hose Specs: attached
Offline Cementing Procedure Attached:



5,000 psi BOP Schematic



5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)





CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE		CERT. N°:	504
PURCHASER: ContiTech Oil & Marine Corp.		P.O. N°:	4500409659
CONTITECH RUBBER order N°: 538236	HOSE TYPE: 3" ID	Choke and Kill Hose	
HOSE SERIAL N°: 67255	NOMINAL / ACTUAL LENGTH: 10,67 m / 10,77 m		
W.P. 68,9 MPa 10000 psi	T.P. 103,4 MPa 15000 psi	Duration:	60 min.
Pressure test with water at ambient temperature <p style="text-align: center;">See attachment. (1 page)</p>			
↑ 10 mm = 10 Min. → 10 mm = 20 MPa			
COUPLINGS Type	Serial N°	Quality	Heat N°
3" coupling with	9251 9254	AISI 4130	A0579N
4 1/16" 10K API b.w. Flange end		AISI 4130	035608
Not Designed For Well Testing		API Spec 16 C	
		Temperature rate:"B"	
All metal parts are flawless.			
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.			
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.			
COUNTRY OF ORIGIN HUNGARY/EU			
Date:	Inspector	Quality Control	
20. March 2014.		ContiTech Rubber Industrial Kft. Quality Control Dept. 	

ContiTech Rubber Industrial Kft. | Budapest | 10. H-8728 Szeged | H-6701 P.O.Box 152 Szeged, Hungary
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 The Court of Szeged County Reg. Registry Court | Registry Court No: Cg.95-08-002503 | EU VAT No: HU11537208
 Bank data: Commerzbank Zrt., Budapest | 14220108-20630003

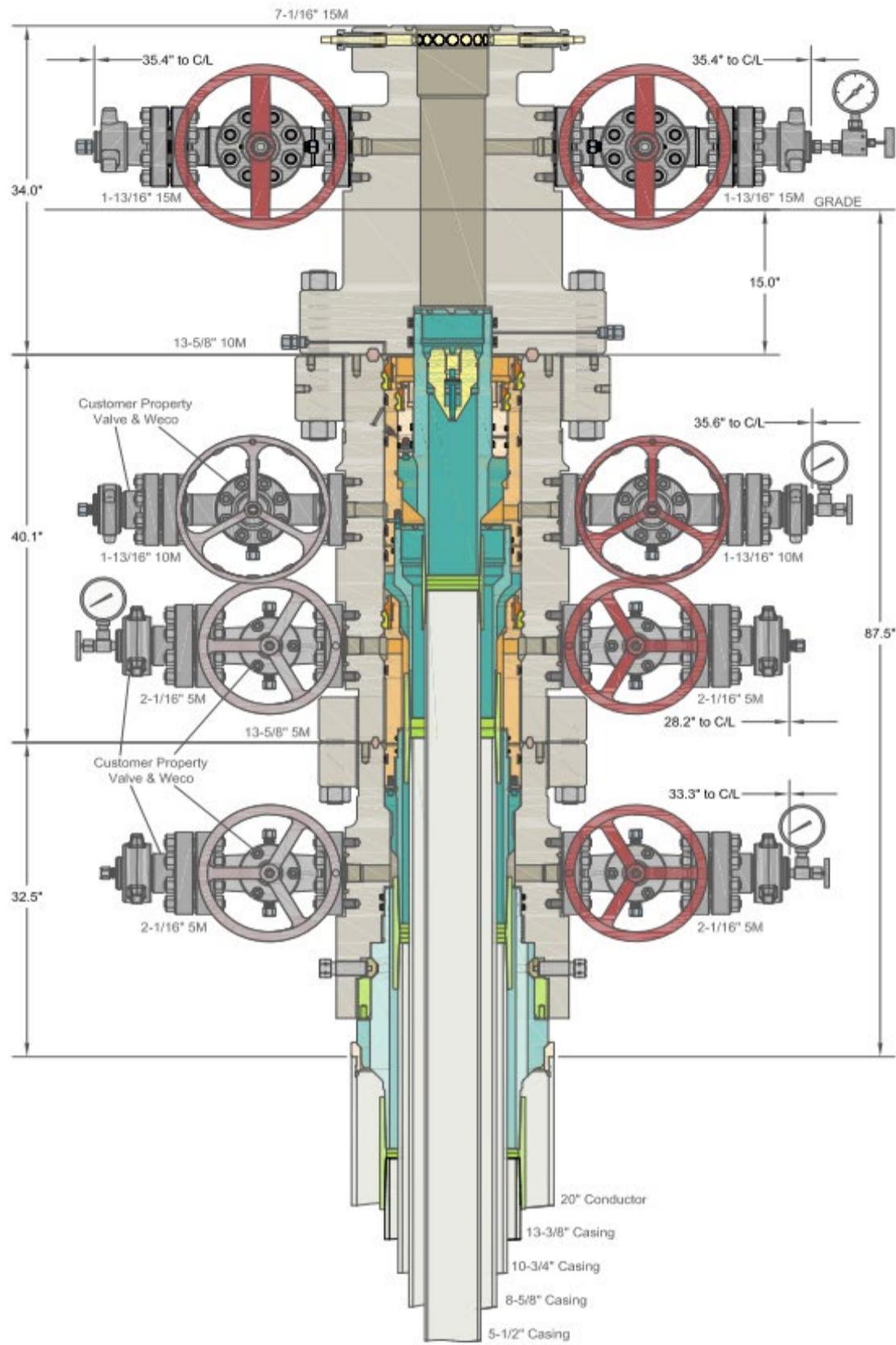


CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014 Page: 15 / 113 ContiTech
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Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St. steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max. design temperature [°C]	100
Min. design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

**PERMIAN RESOURCES
NEW MEXICO**

20" x 13-3/8" x 10-3/4" x 8-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO Sys.
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head
And 10-3/4" & 7-5/8" & 5-1/2" Fluted Mandrel Casing Hangers

DRAWN	DLE	26OCT23
APPRV		
DRAWING NO.	HBE0001038	

Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in On Shore Order II. Casing will be tested as specified in On Shore Order II.

Casing Design Assumptions:

Surface

- 1) Burst Design Loads
 - a) Displacement to Gas
 - (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b) Casing Pressure Test
 - (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a) Cementing
 - (1) Internal: Displacement fluid density.
 - (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b) Lost Returns with Mud Drop
 - (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
- 3) Tension Loads
 - a) Overpull Force
 1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
 - b) Green Cement Casing Test
 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

- 1) Burst Design Loads
 - a) Displacement to Gas
 - (1) Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b) Casing Pressure Test
 - (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.

- (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a) Cementing
 - (1) Internal: Displacement fluid density.
 - (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b) Lost Returns with Mud Drop
 - (1) Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
- 3) Tension Loads
 - a) Overpull Force
 - 1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
 - b) Green Cement Casing Test
 - 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate or Intermediate II

- 1) Burst Design Loads
 - a) Gas Kick Profile
 - (1) Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbl and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b) Casing Pressure Test
 - (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a) Cementing
 - (1) Internal: Displacement fluid density.
 - (2) External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b) Lost Returns with Mud Drop
 - (1) Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
- 3) Tension Loads
 - a) Overpull Force
 - 1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
 - b) Green Cement Casing Test
 - 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

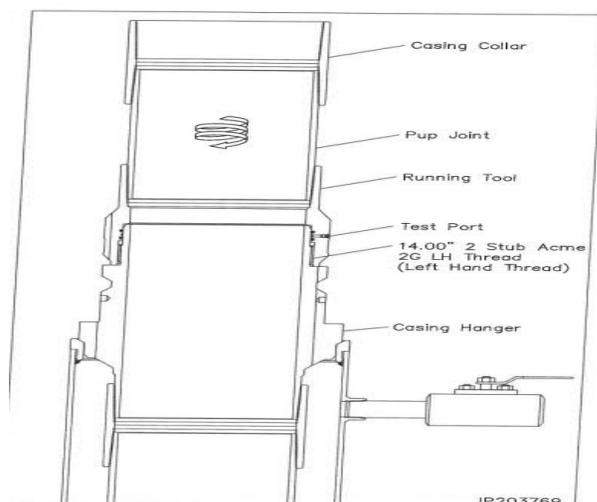
- 1) Burst Design Loads
 - a) Injection Down Casing
 - (1) Internal: Surface pressure plus injection fluid gradient.
 - (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
 - b) Casing Pressure Test (Drilling)
 - (1) Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order No. 2 and NM NMAC 19.15.16 of NMOCD regulations.
 - (2) External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - c) Casing Pressure Test (Production)
 - (1) Internal: The design pressure test should be the greater of the planned test pressure prior to simulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
 - (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
 - d) Tubing Leak
 - (1) Internal: SITP plus a packer fluid gradient to the top of packer.
 - (2) External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a) Cementing
 - (1) Internal: Displacement fluid density.
 - (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
 - b) Full Evacuation
 - (1) Internal: Full void pipe.
 - (2) External: Mud weight to TOC and cement slurry(s) density below TOC.
- 3) Tension Loads
 - a) Overpull Force
 1. Axial: Buoyant weight of the string plus planned 100,000 lbs applied in stuck pipe situation.
 - b) Green Cement Casing Test
 1. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Permian Resources

Multi-Well Pad Batch Drilling & Off Line Cement Procedure

Surface Casing - PR intends to Batch set and offline cement all surface casing to a depth approved in the APD. Surface Holes will be batch drilled by a big rig. Appropriate notifications will be made prior to spudding the well, running, and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill Surface hole to Approved Depth with Surface Preset Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run casing with Cactus Multibowl system, with baseplate supported by Conductor.
3. Circulate 1.5 csg capacity.
4. Flow test – Confirm well is static.
5. Install cap flange.
6. Skid rig to next well on pad
7. Remove cap flange (confirm well is static before removal)
 - a) If well is not static use the casing outlet valves to kill well
 - b) Drillers method will be used in well control event
 - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d) Kill mud will be circulated once influx is circulated out of hole
 - e) Confirm well is static and remove cap flange to start offline cement operations
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
 - a) Test Surface casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment
15. Install night cap with pressure gauge to monitor.

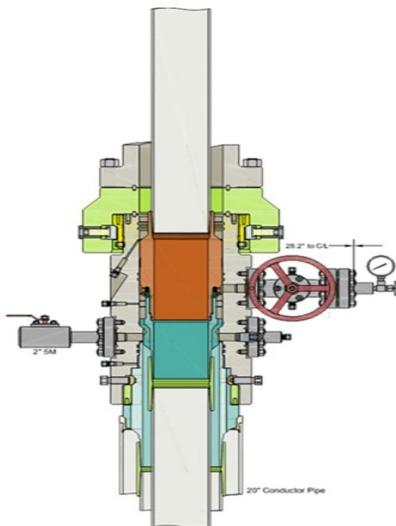


Intermediate 1 Casing – PR intends to Batch set all intermediate 1 casing strings to a depth approved in the APD, typically set into end of salts. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

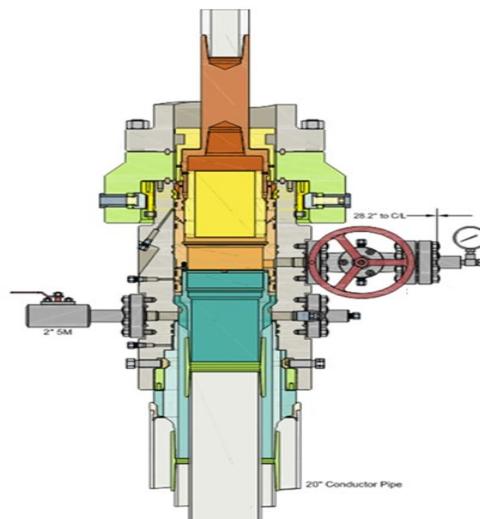
Rig will remove the nightcap and install and test BOPE (testing will be performed on the first Intermediate 1 as per requested break testing variance).

Install wear bushing then drill out 20" shoe-track.

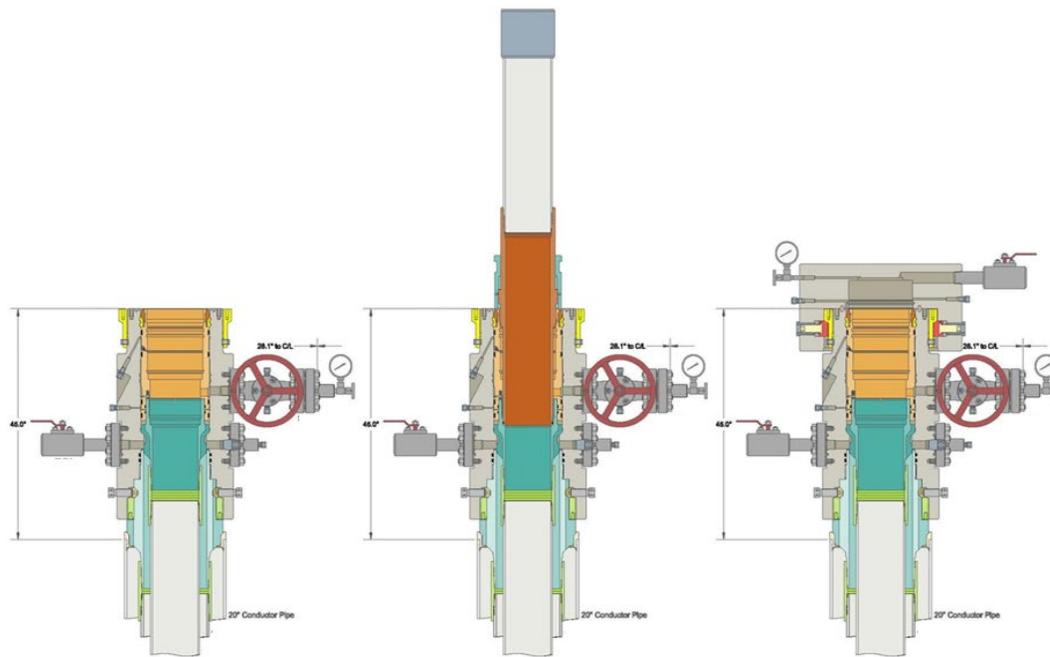
1. Drill Intermediate 1 hole to approved casing point. Trip out of hole with BHA to run Casing.
2. Remove wear bushing then run and land Intermediate 1 casing with mandrel hanger in wellhead.
3. Flow test – Confirm well is static.
4. Set Annular packoff and pressure test. Test to 5k.
5. Install BPV, Nipple down BOP and install cap flange.
6. Skid rig to next well on pad
7. Remove cap flange (confirm well is static before removal)
 - a) If well is not static use the casing outlet valves to kill well
 - b) Drillers method will be used in well control event
 - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d) Kill mud will be circulated once influx is circulated out of hole
 - e) Confirm well is static and remove cap flange to start offline cement operations
8. Install offline cement tool.
9. Rig up cementers.
10. Circulate bottoms up with cement truck
11. Commence planned cement job, take returns through the annulus wellhead valve
12. After plug is bumped confirm floats hold and well is static
13. Perform green cement casing test.
 - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
14. Rig down cementers and equipment



Run Intermediate Casing
Land Intermediate Casing on Mandrel Hanger
Cement Intermediate Casing
Retrieve Running Tool



Run Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool



Intermediate 2 Casing – PR intends to Batch set all Intermediate 2 casing strings to a depth approved in the APD, typically set into Captain past losses. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE (testing will be performed on the first Intermediate 2 as per requested break testing variance).
2. Install wear bushing then drill out Intermediate 1 shoe-track.
3. Drill Intermediate 2 hole to approved casing point. Trip out of hole with BHA to run Casing.
4. Remove wear bushing then run and land Intermediate 2 casing with mandrel hanger in wellhead.
5. Flow test – Confirm well is static.
6. Set Annular packoff and pressure test. Test to 5k.
7. Install BPV, Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
 - a) If well is not static use the casing outlet valves to kill well
 - b) Drillers method will be used in well control event
 - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d) Kill mud will be circulated once influx is circulated out of hole
 - e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Perform green cement casing test.
 - a) Test casing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst.
16. Rig down cementers and equipment
17. Install night cap with pressure gauge to monitor.

Production Casing – PR intends to Batch set all Production casings. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track.
3. 3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run Production Casing.
6. Remove wear bushing then run Production casing to TD landing casing mandrel in wellhead.
7. Cement Production string to surface with floats holding.

Permian Resources BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Permian Resources requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in [§§ 3172.6](#) through [3172.12](#). All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s)". Permian Resources feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Permian Resources submits this request for the variance.

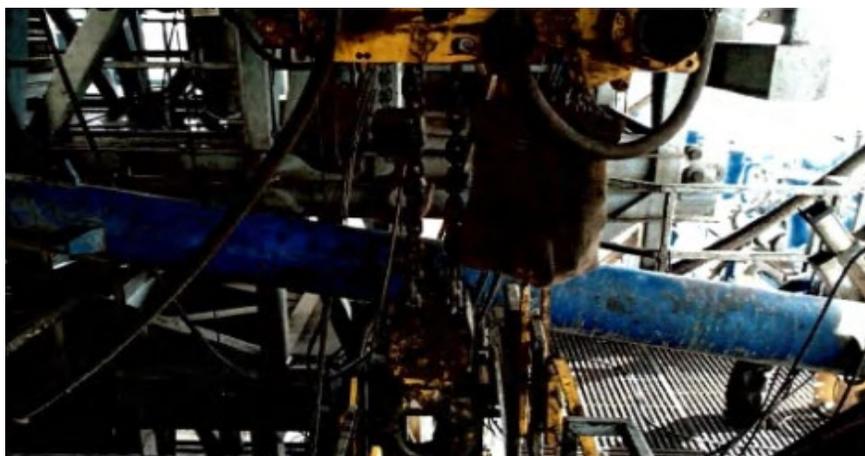
Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Permian Resources drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System



American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

62		API STANDARD 53	
Table C.4—Initial Pressure Testing, Surface BOP Stacks			
Component to be Pressure Tested	Pressure Test—Low Pressure ^{a,c} psig (MPa)	Pressure Test—High Pressure ^{a,c}	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer ^b	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers ^{a,c}	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	

^a Pressure test evaluation periods shall be a minimum of five minutes. No visible leaks. The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure.

^b Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

^c For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

^d For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually.

* Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

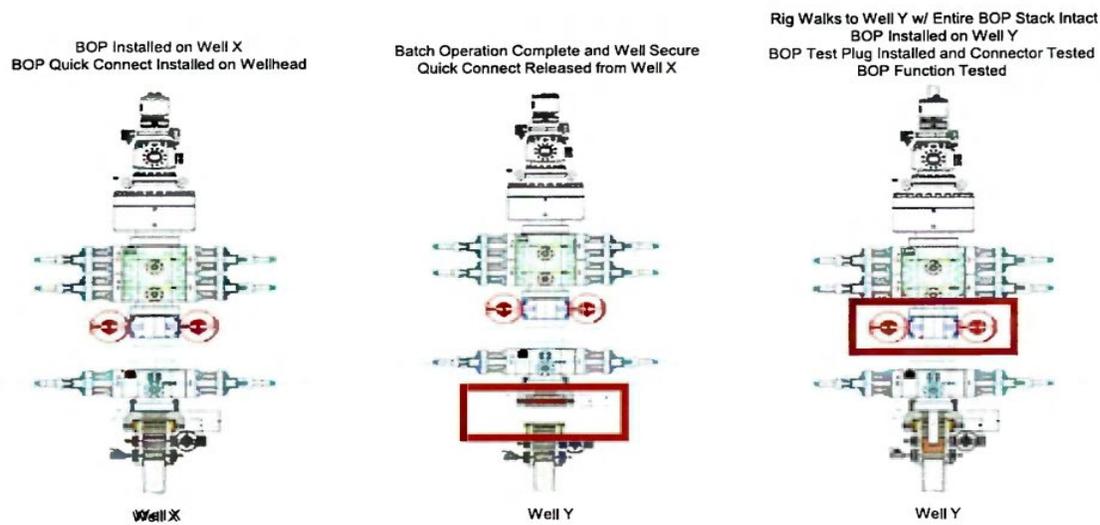
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Permian Resources feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Permian Resources internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Permian Resources performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

- 1) Permian Resources will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
- 2) Permian Resources will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
 - a) A full BOP test will be conducted on the first well on the pad.
 - b) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
 - c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
 - d) A full BOP test will be required prior to drilling any production hole.
- 3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
 - a) Between the HCV valve and choke line connection
 - b) Between the BOP quick connect and the wellhead
- 4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
- 5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
- 6) The connections mentioned in 3a and 3b will then be reconnected.
- 7) Install test plug into the wellhead using test joint or drill pipe.
- 8) A shell test is performed against the upper pipe rams testing the two breaks.
- 9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
- 10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
- 11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
- 12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

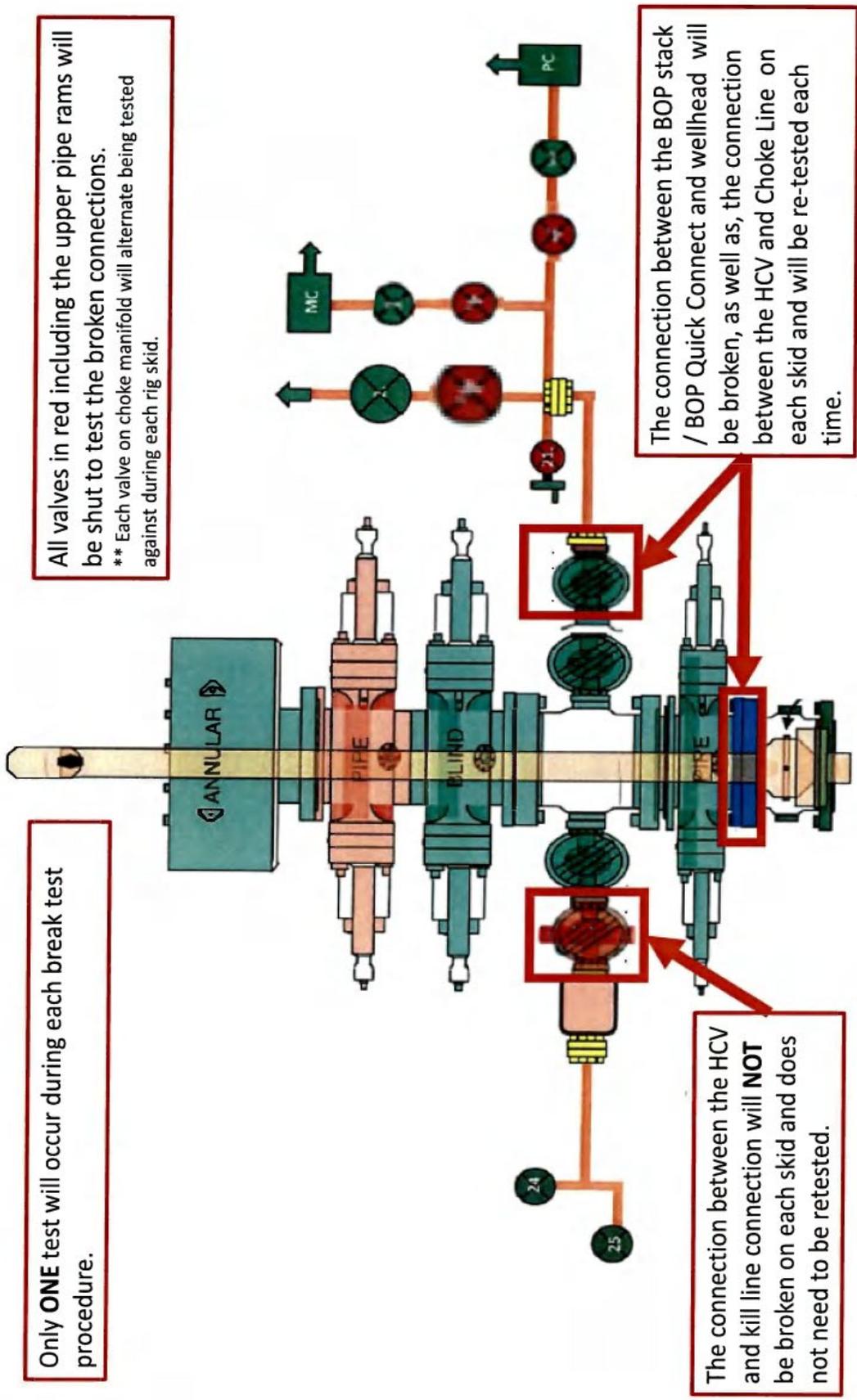
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

- 1) After a full BOP test is conducted on the first well on the pad.
- 2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
- 3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
- 4) A full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.
** Each valve on choke manifold will alternate being tested against during each rig skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.



10-3/4" 45.50# 0.400" J-55

Dimensions (Nominal)

Outside Diameter	10.750	in.
Wall	0.400	in.
Inside Diameter	9.950	in.
Drift	9.875	in.
Weight, T&C	45.500	lbs/ft
Weight, PE	44.260	lbs/ft

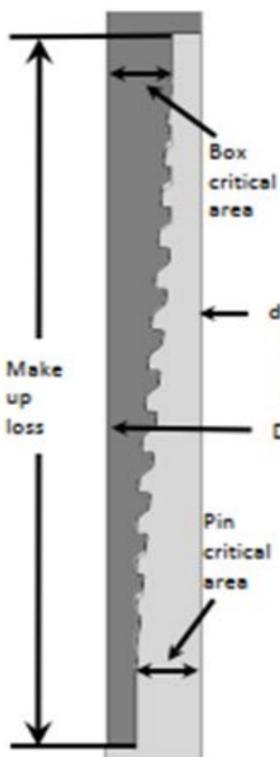
Performance Properties

Collapse	2090	psi
Internal Yield Pressure at Minimum Yield		
PE	3580	psi
STC	3580	psi
BTC	3580	psi
Yield Strength, Pipe Body	715	1000 lbs
Joint Strength		
STC	493	1000 lbs
BTC	796	1000 lbs
BTC Special Clearance (11.25" OD Cplg)	506	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

Metal One Corp. Metal One	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT Connection Data Sheet		CDS#	MO-FXL 8-5/8 32.0	
				P110HSCY	
		MinYS125ksi			
		Min95%WT		Date	8-Sep-21

MO-FXL	Geometry	Imperial		S.I.	
		Pipe Body			
	Grade *1	P110HSCY		P110HSCY	
	MinYS *1	125	ksi	125	ksi
	Pipe OD (D)	8 5/8	in	219.08	mm
	Weight	32.00	lb/ft	47.68	kg/m
	Actual weight	31.10		46.34	kg/m
	Wall Thickness (t)	0.352	in	8.94	mm
	Pipe ID (d)	7.921	in	201.19	mm
	Pipe body cross section	9.149	in ²	5,902	mm ²
	Drift Dia.	7.796	in	198.02	mm
	-	-	-	-	-
	Connection				
	Box OD (W)	8.625	in	219.08	mm
	PIN ID	7.921	in	201.19	mm
	Make up Loss	3.847	in	97.71	mm
	Box Critical Area	5.853	in ²	3686	mm ²
	Joint load efficiency	69	%	69	%
	Thread Taper	1 / 10 (1.2" per ft)			
	Number of Threads	5 TPI			
	Performance				
	Performance Properties for Pipe Body				
	S.M.Y.S. *1	1,144	kips	5,087	kN
	M.I.Y.P. *1	9,690	psi	66.83	MPa
	Collapse Strength *1	4,300	psi	29.66	MPa
	Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body *1: BMP P110HSCY: MinYS125ksi, Min95%WT, Collapse Strength 4,300psi				
	Performance Properties for Connection				
	Tensile Yield load	789 kips (69% of S.M.Y.S.)			
	Min. Compression Yield	789 kips (69% of S.M.Y.S.)			
	Internal Pressure	6,780 psi (70% of M.I.Y.P.)			
	External Pressure	100% of Collapse Strength			
	Max. DLS (deg. /100ft)	29			
	Recommended Torque				
	Min.	13,600	ft-lb	18,400	N-m
	Opti.	14,900	ft-lb	20,200	N-m
	Max.	16,200	ft-lb	21,900	N-m
	Operational Max.	28,400	ft-lb	38,500	N-m
	Note : Operational Max. torque can be applied for high torque application				



Metal One Corp. 	GEOCONN-SC Pipe Body: SeAH P110RY(SMYS110ksi) & 95%RBW *1 Coupling: P110CY (SMYS110ksi) Connection Data Sheet		Page	MAI GC 5.5 20 SeAH PRY 95%RW
			Date	29-Sep-21
			Rev.	0
				SC-CplgOD 6.050 P110CY

Geometry

Imperial

S.I.

Pipe Body				
Grade *1	SeAH P110RY	-	SeAH P110RY	
SMYS	110	ksi	110	ksi
Pipe OD (D)	5.500	in	139.70	mm
Weight	20.00	lb/ft	29.80	kg/m
Wall Thickness (t)	0.381	in	9.17	mm
Pipe ID (d)	4.778	in	121.36	mm
Drift Dia.	4.853	in	118.19	mm

Connection				
Coupling SMYS	110	ksi	110	ksi
Coupling OD (Wsc1)	6.050	in	153.67	mm
Coupling Length (NL)	8.350	in	212.09	mm
Make up Loss	4.125	in	104.78	mm
Pipe Critical Area	5.83	in ²	3,760	mm ²
Box Critical Area	6.00	in ²	3,874	mm ²
Thread Taper	1 / 16 (3/4" per ft)			
Number of Threads	5 TPI			

Performance

Imperial

S.I.

Performance Properties for Pipe Body				
S.M.Y.S.	641	kips	2,852	kN
M.I.Y.P. *1	13,720	psi	94.62	MPa
Collapse Strength	11,100	psi	76.55	MPa

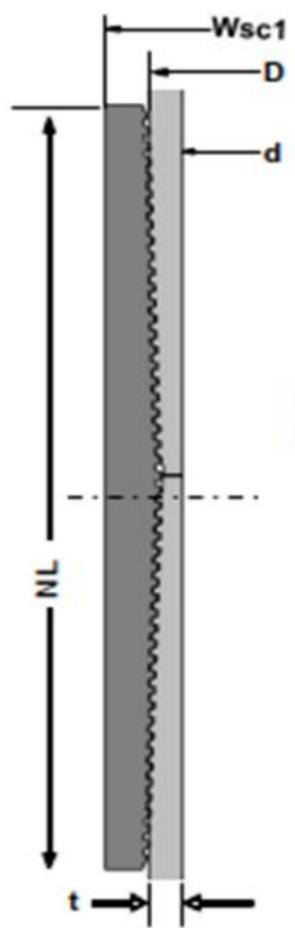
Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
 M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1 Pipe: SeAH P110RY (SMYS110ksi), Min Wall Thickness of Pipe Body: 95% of Nom wall

Performance Properties for Connection		
Min. Connection Joint Strength	100%	of S.M.Y.S.
Min. Compression Yield	100%	of S.M.Y.S.
Internal Pressure	100% of M.I.Y.P.	
External Pressure	100% of Collapse Strength	
Max. DLS (deg. /100ft)	>90	

Recommended Torque				
Min.	14,800	ft-lb	19,700	N-m
Opti.	16,200	ft-lb	21,900	N-m
Max.	17,800	ft-lb	24,100	N-m
Operational Max.	19,500	ft-lb	26,400	N-m

Note : Operational Max. torque can be applied for high torque application



GEOCONN-SC

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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.metalone.com/images/ftp/WebsiteTerms_Active_20333287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

NEW MEXICO

(SP) LEA

MORAN PROJECT

MORAN 9 FED COM 171H

OWB

PWP0

Anticollision Report

18 April, 2024

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference	PWP0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 800.0usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	4/18/2024		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	21,766.9	PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Standard

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
MORAN PROJECT						
MORAN 9 FED COM 601H - OWB - PWP0	2,000.0	2,000.0	35.0	20.9	2.478	CC
MORAN 9 FED COM 601H - OWB - PWP0	2,500.0	2,494.3	36.5	19.1	2.097	ES, SF
MORAN 9 FED COM 602H - OWB - PWP0	2,000.0	1,999.0	70.0	55.9	4.957	CC, ES
MORAN 9 FED COM 602H - OWB - PWP0	2,100.0	2,096.7	73.1	58.3	4.940	SF
MORAN 9 FED COM 701H - owb - PWP0	2,000.0	2,000.0	35.0	20.9	2.478	CC, ES
MORAN 9 FED COM 701H - owb - PWP0	10,776.9	10,763.1	126.5	49.7	1.646	SF

Offset Design: MORAN PROJECT - MORAN 9 FED COM 601H - OWB - PWP0														Offset Site Error:	0.0 usft		
Survey Program: 0-MWD														Offset Well Error:		0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis			Offset Wellbore Centre		Rule Assigned: Distance				Warning				
				Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor					
0.0	0.0	0.0	0.0	0.0	0.0	-69.33	12.3	-32.7	35.0								
100.0	100.0	100.0	100.0	0.3	0.3	-69.33	12.3	-32.7	35.0	34.5	0.50	69.724					
200.0	200.0	200.0	200.0	0.6	0.6	-69.33	12.3	-32.7	35.0	33.8	1.22	28.710					
300.0	300.0	300.0	300.0	1.0	1.0	-69.33	12.3	-32.7	35.0	33.1	1.94	18.077					
400.0	400.0	400.0	400.0	1.3	1.3	-69.33	12.3	-32.7	35.0	32.3	2.65	13.191					
500.0	500.0	500.0	500.0	1.7	1.7	-69.33	12.3	-32.7	35.0	31.6	3.37	10.384					
600.0	600.0	600.0	600.0	2.0	2.0	-69.33	12.3	-32.7	35.0	30.9	4.09	8.563					
700.0	700.0	700.0	700.0	2.4	2.4	-69.33	12.3	-32.7	35.0	30.2	4.80	7.285					
800.0	800.0	800.0	800.0	2.8	2.8	-69.33	12.3	-32.7	35.0	29.5	5.52	6.339					
900.0	900.0	900.0	900.0	3.1	3.1	-69.33	12.3	-32.7	35.0	28.8	6.24	5.610					
1,000.0	1,000.0	1,000.0	1,000.0	3.5	3.5	-69.33	12.3	-32.7	35.0	28.0	6.95	5.032					
1,100.0	1,100.0	1,100.0	1,100.0	3.8	3.8	-69.33	12.3	-32.7	35.0	27.3	7.67	4.561					
1,200.0	1,200.0	1,200.0	1,200.0	4.2	4.2	-69.33	12.3	-32.7	35.0	26.6	8.39	4.172					
1,300.0	1,300.0	1,300.0	1,300.0	4.6	4.6	-69.33	12.3	-32.7	35.0	25.9	9.11	3.843					
1,400.0	1,400.0	1,400.0	1,400.0	4.9	4.9	-69.33	12.3	-32.7	35.0	25.2	9.82	3.563					
1,500.0	1,500.0	1,500.0	1,500.0	5.3	5.3	-69.33	12.3	-32.7	35.0	24.5	10.54	3.320					
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	-69.33	12.3	-32.7	35.0	23.7	11.26	3.109					
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	-69.33	12.3	-32.7	35.0	23.0	11.97	2.923					
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	-69.33	12.3	-32.7	35.0	22.3	12.69	2.757					
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	-69.33	12.3	-32.7	35.0	21.6	13.41	2.610					
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	-69.33	12.3	-32.7	35.0	20.9	14.12	2.478	CC				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 601H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)				
2,100.0	2,100.0	2,098.9	2,098.9	7.4	7.4	26.65	12.3	-34.4	35.0	20.2	14.81	2.366		
2,200.0	2,199.8	2,197.7	2,197.6	7.8	7.7	27.45	12.3	-39.6	35.2	19.7	15.47	2.276		
2,300.0	2,299.5	2,296.6	2,296.1	8.1	8.1	28.77	12.3	-48.1	35.5	19.4	16.12	2.201		
2,400.0	2,398.7	2,395.5	2,394.2	8.5	8.4	30.57	12.3	-60.0	35.9	19.1	16.76	2.142		
2,500.0	2,497.5	2,494.3	2,491.9	8.8	8.8	32.82	12.3	-75.3	36.5	19.1	17.40	2.097	ES, SF	
2,600.0	2,595.9	2,593.2	2,588.9	9.2	9.2	33.99	12.3	-93.9	38.7	20.7	18.04	2.147		
2,700.0	2,694.4	2,693.0	2,686.6	9.6	9.6	33.76	12.3	-114.7	42.7	23.9	18.75	2.277		
2,800.0	2,792.9	2,792.9	2,784.3	9.9	9.9	33.56	12.3	-135.5	46.7	27.2	19.47	2.397		
2,900.0	2,891.4	2,892.9	2,882.1	10.3	10.3	33.39	12.3	-156.2	50.6	30.4	20.20	2.507		
3,000.0	2,989.9	2,992.8	2,979.8	10.7	10.8	33.25	12.3	-177.0	54.6	33.7	20.93	2.608		
3,100.0	3,088.3	3,092.7	3,077.6	11.1	11.2	33.12	12.3	-197.8	58.6	36.9	21.67	2.702		
3,200.0	3,186.8	3,192.6	3,175.3	11.5	11.6	33.02	12.3	-218.6	62.5	40.1	22.42	2.789		
3,300.0	3,285.3	3,292.5	3,273.0	11.9	12.0	32.92	12.3	-239.3	66.5	43.3	23.17	2.870		
3,400.0	3,383.8	3,392.5	3,370.8	12.4	12.5	32.84	12.3	-260.1	70.5	46.5	23.93	2.945		
3,445.1	3,428.2	3,437.6	3,414.9	12.5	12.7	32.80	12.3	-269.5	72.3	48.0	24.27	2.977		
3,500.0	3,482.4	3,492.4	3,468.5	12.8	12.9	32.57	12.3	-280.9	74.9	50.2	24.68	3.033		
3,600.0	3,581.4	3,592.1	3,566.0	13.2	13.3	31.21	12.3	-301.6	82.0	56.5	25.41	3.225		
3,700.0	3,680.9	3,691.5	3,663.3	13.5	13.8	29.02	12.3	-322.3	92.1	66.0	26.11	3.528		
3,800.0	3,780.6	3,790.5	3,760.1	13.9	14.2	26.44	12.3	-342.9	105.5	78.7	26.79	3.937		
3,900.0	3,880.6	3,888.9	3,856.4	14.3	14.7	23.80	12.3	-363.3	122.1	94.7	27.46	4.449		
3,945.1	3,925.7	3,933.2	3,899.7	14.4	14.9	-73.06	12.3	-372.5	130.8	103.0	27.76	4.712		
4,000.0	3,980.6	3,986.8	3,952.1	14.6	15.1	-74.40	12.3	-383.7	141.8	113.6	28.12	5.040		
4,100.0	4,080.6	4,084.6	4,047.8	14.9	15.6	-76.38	12.3	-404.0	161.9	133.1	28.80	5.621		
4,200.0	4,180.6	4,182.5	4,143.5	15.3	16.0	-77.91	12.3	-424.4	182.2	152.7	29.49	6.179		
4,300.0	4,280.6	4,280.3	4,239.2	15.6	16.5	-79.14	12.3	-444.7	202.6	172.4	30.18	6.712		
4,400.0	4,380.6	4,378.1	4,334.8	16.0	16.9	-80.15	12.3	-465.0	223.1	192.2	30.88	7.223		
4,500.0	4,480.6	4,475.9	4,430.5	16.3	17.4	-80.99	12.3	-485.4	243.6	212.0	31.58	7.713		
4,600.0	4,580.6	4,573.7	4,526.2	16.7	17.8	-81.69	12.3	-505.7	264.1	231.9	32.29	8.181		
4,700.0	4,680.6	4,671.5	4,621.9	17.0	18.3	-82.30	12.3	-526.0	284.7	251.8	32.99	8.630		
4,800.0	4,780.6	4,769.3	4,717.6	17.4	18.7	-82.82	12.3	-546.4	305.4	271.7	33.70	9.061		
4,900.0	4,880.6	4,867.2	4,813.2	17.7	19.2	-83.28	12.3	-566.7	326.0	291.6	34.41	9.474		
5,000.0	4,980.6	4,965.0	4,908.9	18.0	19.7	-83.68	12.3	-587.0	346.7	311.6	35.12	9.870		
5,100.0	5,080.6	5,062.8	5,004.6	18.4	20.1	-84.04	12.3	-607.4	367.4	331.5	35.84	10.250		
5,200.0	5,180.6	5,160.6	5,100.3	18.7	20.6	-84.35	12.3	-627.7	388.0	351.5	36.55	10.616		
5,300.0	5,280.6	5,258.4	5,195.9	19.1	21.0	-84.64	12.3	-648.1	408.7	371.5	37.27	10.968		
5,400.0	5,380.6	5,356.2	5,291.6	19.4	21.5	-84.90	12.3	-668.4	429.5	391.5	37.98	11.306		
5,500.0	5,480.6	5,454.0	5,387.3	19.8	22.0	-85.13	12.3	-688.7	450.2	411.5	38.70	11.632		
5,600.0	5,580.6	5,551.9	5,483.0	20.1	22.4	-85.35	12.3	-709.1	470.9	431.5	39.42	11.946		
5,700.0	5,680.6	5,649.7	5,578.7	20.5	22.9	-85.55	12.3	-729.4	491.6	451.5	40.14	12.249		
5,800.0	5,780.6	5,747.5	5,674.3	20.8	23.4	-85.73	12.3	-749.7	512.4	471.5	40.86	12.541		
5,900.0	5,880.6	5,845.3	5,770.0	21.2	23.8	-85.89	12.3	-770.1	533.1	491.5	41.57	12.823		
6,000.0	5,980.6	5,943.1	5,865.7	21.5	24.3	-86.05	12.3	-790.4	553.8	511.5	42.29	13.095		
6,100.0	6,080.6	6,040.9	5,961.4	21.9	24.8	-86.19	12.3	-810.8	574.6	531.6	43.02	13.358		
6,200.0	6,180.6	6,138.7	6,057.0	22.2	25.3	-86.32	12.3	-831.1	595.3	551.6	43.74	13.612		
6,300.0	6,280.6	6,236.6	6,152.7	22.6	25.7	-86.45	12.3	-851.4	616.1	571.6	44.46	13.858		
6,400.0	6,380.6	6,334.4	6,248.4	22.9	26.2	-86.56	12.3	-871.8	636.8	591.7	45.18	14.096		
6,500.0	6,480.6	6,432.2	6,344.1	23.3	26.7	-86.67	12.3	-892.1	657.6	611.7	45.90	14.326		
6,600.0	6,580.6	6,530.0	6,439.7	23.6	27.1	-86.77	12.3	-912.4	678.3	631.7	46.62	14.549		
6,700.0	6,680.6	6,627.8	6,535.4	24.0	27.6	-86.87	12.3	-932.8	699.1	651.8	47.35	14.765		
6,800.0	6,780.6	6,725.6	6,631.1	24.3	28.1	-86.96	12.3	-953.1	719.9	671.8	48.07	14.975		
6,900.0	6,880.6	6,850.7	6,753.8	24.7	28.7	-87.06	12.3	-977.2	739.2	690.1	49.04	15.073		
7,000.0	6,980.6	6,984.4	6,886.0	25.0	29.2	-87.14	12.3	-997.1	754.0	704.0	50.00	15.081		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 601H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Survey Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
7,100.0	7,080.6	7,119.7	7,020.6	25.4	29.8	-87.19	12.3	-1,010.9	764.3	713.4	50.87	15.024		
7,200.0	7,180.6	7,256.0	7,156.7	25.7	30.2	-87.22	12.3	-1,018.4	769.7	718.1	51.63	14.907		
7,300.0	7,280.6	7,379.9	7,280.6	26.1	30.6	-87.22	12.3	-1,019.8	770.7	718.4	52.32	14.732		
7,400.0	7,380.6	7,479.9	7,380.6	26.5	30.9	-87.22	12.3	-1,019.8	770.7	717.7	53.01	14.541		
7,500.0	7,480.6	7,579.9	7,480.6	26.8	31.2	-87.22	12.3	-1,019.8	770.7	717.0	53.70	14.354		
7,600.0	7,580.6	7,679.9	7,580.6	27.2	31.5	-87.22	12.3	-1,019.8	770.7	716.4	54.39	14.172		
7,700.0	7,680.6	7,779.9	7,680.6	27.5	31.8	-87.22	12.3	-1,019.8	770.7	715.7	55.08	13.994		
7,800.0	7,780.6	7,879.9	7,780.6	27.9	32.1	-87.22	12.3	-1,019.8	770.7	715.0	55.77	13.820		
7,900.0	7,880.6	7,979.9	7,880.6	28.2	32.4	-87.22	12.3	-1,019.8	770.7	714.3	56.46	13.651		
8,000.0	7,980.6	8,079.9	7,980.6	28.6	32.7	-87.22	12.3	-1,019.8	770.7	713.6	57.16	13.485		
8,100.0	8,080.6	8,179.9	8,080.6	28.9	33.0	-87.22	12.3	-1,019.8	770.7	712.9	57.85	13.323		
8,200.0	8,180.6	8,279.9	8,180.6	29.3	33.3	-87.22	12.3	-1,019.8	770.7	712.2	58.54	13.165		
8,300.0	8,280.6	8,379.9	8,280.6	29.6	33.6	-87.22	12.3	-1,019.8	770.7	711.5	59.24	13.011		
8,400.0	8,380.6	8,479.9	8,380.6	30.0	34.0	-87.22	12.3	-1,019.8	770.7	710.8	59.93	12.860		
8,500.0	8,480.6	8,579.9	8,480.6	30.3	34.3	-87.22	12.3	-1,019.8	770.7	710.1	60.63	12.712		
8,600.0	8,580.6	8,679.9	8,580.6	30.7	34.6	-87.22	12.3	-1,019.8	770.7	709.4	61.33	12.568		
8,700.0	8,680.6	8,779.9	8,680.6	31.1	34.9	-87.22	12.3	-1,019.8	770.7	708.7	62.02	12.427		
8,800.0	8,780.6	8,879.9	8,780.6	31.4	35.2	-87.22	12.3	-1,019.8	770.7	708.0	62.72	12.289		
8,900.0	8,880.6	8,979.9	8,880.6	31.8	35.5	-87.22	12.3	-1,019.8	770.7	707.3	63.42	12.153		
9,000.0	8,980.6	9,079.9	8,980.6	32.1	35.8	-87.22	12.3	-1,019.8	770.7	706.6	64.12	12.021		
9,100.0	9,080.6	9,179.9	9,080.6	32.5	36.1	-87.22	12.3	-1,019.8	770.7	705.9	64.81	11.892		
9,200.0	9,180.6	9,279.9	9,180.6	32.8	36.5	-87.22	12.3	-1,019.8	770.7	705.2	65.51	11.765		
9,300.0	9,280.6	9,379.9	9,280.6	33.2	36.8	-87.22	12.3	-1,019.8	770.7	704.5	66.21	11.641		
9,400.0	9,380.6	9,479.9	9,380.6	33.5	37.1	-87.22	12.3	-1,019.8	770.7	703.8	66.91	11.519		
9,500.0	9,480.6	9,579.9	9,480.6	33.9	37.4	-87.22	12.3	-1,019.8	770.7	703.1	67.61	11.400		
9,600.0	9,580.6	9,679.9	9,580.6	34.2	37.7	-87.22	12.3	-1,019.8	770.7	702.4	68.31	11.283		
9,700.0	9,680.6	9,779.9	9,680.6	34.6	38.0	-87.22	12.3	-1,019.8	770.7	701.7	69.01	11.168		
9,800.0	9,780.6	9,879.9	9,780.6	35.0	38.4	-87.22	12.3	-1,019.8	770.7	701.0	69.71	11.056		
9,900.0	9,880.6	9,979.9	9,880.6	35.3	38.7	-87.22	12.3	-1,019.8	770.7	700.3	70.41	10.946		
10,000.0	9,980.6	10,079.9	9,980.6	35.7	39.0	-87.22	12.3	-1,019.8	770.7	699.6	71.12	10.838		
10,100.0	10,080.6	10,179.9	10,080.6	36.0	39.3	-87.22	12.3	-1,019.8	770.7	698.9	71.82	10.732		
10,200.0	10,180.6	10,279.9	10,180.6	36.4	39.7	-87.22	12.3	-1,019.8	770.7	698.2	72.52	10.628		
10,300.0	10,280.6	10,379.9	10,280.6	36.7	40.0	-87.22	12.3	-1,019.8	770.7	697.5	73.22	10.526		
10,400.0	10,380.6	10,479.9	10,380.6	37.1	40.3	-87.22	12.3	-1,019.8	770.7	696.8	73.93	10.426		
10,500.0	10,480.6	10,579.9	10,480.6	37.4	40.6	-87.22	12.3	-1,019.8	770.7	696.1	74.63	10.328		
10,600.0	10,580.6	10,679.9	10,580.6	37.8	41.0	-87.22	12.3	-1,019.8	770.7	695.4	75.33	10.231		
10,700.0	10,680.6	10,779.9	10,680.6	38.2	41.3	-87.22	12.3	-1,019.8	770.7	694.7	76.04	10.137		
10,776.9	10,757.5	10,856.8	10,757.5	38.4	41.5	-87.22	12.3	-1,019.8	770.7	694.2	76.58	10.065		
10,800.0	10,780.6	10,879.9	10,780.6	38.5	41.6	93.13	12.3	-1,019.8	770.8	694.0	76.74	10.044		
10,825.0	10,805.5	10,904.8	10,805.5	38.6	41.7	93.25	12.3	-1,019.8	770.9	694.0	76.91	10.024		
10,850.0	10,830.3	10,929.6	10,830.3	38.7	41.8	93.46	12.3	-1,019.8	771.1	694.0	77.07	10.004		
10,875.0	10,854.9	10,954.2	10,854.9	38.8	41.8	93.75	12.3	-1,019.8	771.4	694.1	77.24	9.986		
10,900.0	10,879.2	10,978.5	10,879.2	38.8	41.9	94.12	12.3	-1,019.8	771.8	694.3	77.41	9.969		
10,925.0	10,903.2	11,002.5	10,903.2	38.9	42.0	94.55	12.3	-1,019.8	772.3	694.7	77.58	9.955		
10,950.0	10,926.8	11,026.1	10,926.8	39.0	42.1	95.04	12.3	-1,019.8	773.0	695.3	77.75	9.943		
10,975.0	10,949.9	11,049.3	10,949.9	39.1	42.2	95.57	12.3	-1,019.8	774.0	696.1	77.92	9.933		
11,000.0	10,972.5	11,071.9	10,972.5	39.1	42.2	96.14	12.3	-1,019.8	775.2	697.1	78.09	9.927		
11,025.0	10,994.6	11,093.9	10,994.6	39.2	42.3	96.72	12.3	-1,019.8	776.7	698.4	78.26	9.925		
11,050.0	11,015.9	11,115.3	11,015.9	39.3	42.4	97.32	12.3	-1,019.8	778.5	700.1	78.43	9.927		
11,075.0	11,036.6	11,135.9	11,036.6	39.3	42.4	97.90	12.3	-1,019.8	780.8	702.2	78.60	9.934		
11,100.0	11,056.5	11,155.8	11,056.5	39.4	42.5	98.45	12.3	-1,019.8	783.5	704.7	78.77	9.946		
11,125.0	11,075.6	11,174.9	11,075.6	39.5	42.6	98.97	12.3	-1,019.8	786.7	707.7	78.94	9.965		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 601H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-MWD											Offset Well Error: 0.0 usft		
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
11,150.0	11,093.8	11,193.1	11,093.8	39.5	42.6	99.43	12.3	-1,019.8	790.4	711.3	79.12	9.990	
11,175.0	11,111.0	11,210.4	11,111.0	39.6	42.7	99.81	12.3	-1,019.8	794.7	715.4	79.29	10.022	
11,200.0	11,127.3	11,226.7	11,127.3	39.6	42.7	100.11	12.3	-1,019.8	799.6	720.2	79.47	10.062	

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 602H - OWB - PWPO														Offset Site Error:	0.0 usft		
Survey Program: 0-MWD														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Offset Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning				
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)							
0.0	0.0	0.0	0.0	0.0	0.0	110.66	-24.7	65.5	70.0	69.5	0.50	140.168					
100.0	100.0	99.0	99.0	0.3	0.2	110.66	-24.7	65.5	70.0	68.8	1.22	57.597					
200.0	200.0	199.0	199.0	0.6	0.6	110.66	-24.7	65.5	70.0	68.1	1.93	36.225					
300.0	300.0	299.0	299.0	1.0	1.0	110.66	-24.7	65.5	70.0	67.3	2.65	26.421					
400.0	400.0	399.0	399.0	1.3	1.3	110.66	-24.7	65.5	70.0	66.6	3.37	20.794					
500.0	500.0	499.0	499.0	1.7	1.7	110.66	-24.7	65.5	70.0	65.9	4.08	17.143					
600.0	600.0	599.0	599.0	2.0	2.0	110.66	-24.7	65.5	70.0	65.2	4.80	14.582					
700.0	700.0	699.0	699.0	2.4	2.4	110.66	-24.7	65.5	70.0	64.5	5.52	12.687					
800.0	800.0	799.0	799.0	2.8	2.8	110.66	-24.7	65.5	70.0	63.8	6.23	11.228					
900.0	900.0	899.0	899.0	3.1	3.1	110.66	-24.7	65.5	70.0	63.0	6.95	10.070					
1,000.0	1,000.0	999.0	999.0	3.5	3.5	110.66	-24.7	65.5	70.0	62.3	7.67	9.128					
1,100.0	1,100.0	1,099.0	1,099.0	4.2	4.2	110.66	-24.7	65.5	70.0	61.6	8.38	8.348					
1,200.0	1,200.0	1,199.0	1,199.0	4.6	4.5	110.66	-24.7	65.5	70.0	60.9	9.10	7.690					
1,300.0	1,300.0	1,299.0	1,299.0	4.9	4.9	110.66	-24.7	65.5	70.0	60.2	9.82	7.129					
1,400.0	1,400.0	1,399.0	1,399.0	5.3	5.3	110.66	-24.7	65.5	70.0	59.5	10.54	6.644					
1,500.0	1,500.0	1,499.0	1,499.0	5.6	5.6	110.66	-24.7	65.5	70.0	58.7	11.25	6.220					
1,600.0	1,600.0	1,599.0	1,599.0	6.0	6.0	110.66	-24.7	65.5	70.0	58.0	11.97	5.848					
1,700.0	1,700.0	1,699.0	1,699.0	6.3	6.3	110.66	-24.7	65.5	70.0	57.3	12.69	5.517					
1,800.0	1,800.0	1,799.0	1,799.0	6.7	6.7	110.66	-24.7	65.5	70.0	56.6	13.40	5.222					
1,900.0	1,900.0	1,899.0	1,899.0	7.1	7.1	110.66	-24.7	65.5	70.0	55.9	14.12	4.957 CC, ES					
2,000.0	2,000.0	1,999.0	1,999.0	7.4	7.4	-154.64	-24.7	67.1	73.1	58.3	14.80	4.940 SF					
2,100.0	2,100.0	2,096.7	2,096.7	7.8	7.7	-157.23	-24.7	72.0	82.7	67.3	15.46	5.352					
2,200.0	2,199.8	2,193.6	2,193.5	8.1	8.1	-160.40	-24.7	80.1	98.9	82.8	16.09	6.149					
2,300.0	2,299.5	2,289.2	2,288.8	8.5	8.4	-163.37	-24.7	91.0	121.8	105.1	16.70	7.297					
2,400.0	2,398.7	2,382.9	2,381.7	8.8	8.7	-165.84	-24.7	104.6	151.3	134.1	17.28	8.758					
2,500.0	2,497.5	2,473.9	2,471.8	9.2	9.1	-167.87	-24.7	120.6	184.9	167.0	17.91	10.325					
2,600.0	2,595.9	2,566.5	2,563.0	9.6	9.4	-169.30	-24.7	136.9	218.7	200.2	18.56	11.783					
2,700.0	2,694.4	2,660.5	2,655.6	9.9	9.8	-170.35	-24.7	153.2	252.6	233.4	19.22	13.143					
2,800.0	2,792.9	2,754.5	2,748.1	10.3	10.1	-171.15	-24.7	169.5	286.6	266.7	19.89	14.413					
2,900.0	2,891.4	2,848.5	2,840.7	10.7	10.5	-171.79	-24.7	185.8	320.6	300.1	20.55	15.600					
3,000.0	2,989.9	2,942.5	2,933.2	11.1	10.9	-172.30	-24.7	202.2	354.7	333.4	21.22	16.710					
3,100.0	3,088.3	3,036.5	3,025.8	11.5	11.3	-172.72	-24.7	218.5	388.7	366.8	21.90	17.752					
3,200.0	3,186.8	3,130.5	3,118.3	11.9	11.6	-173.07	-24.7	234.8	422.8	400.2	22.58	18.729					
3,300.0	3,285.3	3,224.4	3,210.9	12.4	12.0	-173.37	-24.7	251.1	456.9	433.7	23.25	19.648					
3,400.0	3,383.8	3,318.4	3,303.5	12.5	12.2	-173.49	-24.7	258.5	472.3	448.7	23.56	20.045					
3,445.1	3,428.2	3,360.8	3,345.2	12.8	12.4	-173.67	-24.7	267.5	490.5	466.6	23.94	20.493					
3,500.0	3,482.4	3,412.6	3,396.2	13.2	12.8	-173.92	-24.7	284.0	521.2	496.6	24.62	21.168					
3,600.0	3,581.4	3,507.7	3,489.9	13.5	13.2	-174.10	-24.7	300.7	548.5	523.2	25.31	21.670					
3,700.0	3,680.9	3,603.9	3,584.6	13.9	13.6	-174.22	-24.7	317.6	572.5	546.5	26.01	22.012					
3,800.0	3,780.6	3,701.0	3,680.2	14.3	14.0	-174.30	-24.7	334.6	593.1	566.4	26.71	22.206					
3,900.0	3,880.6	3,798.8	3,776.6	14.4	14.2	89.97	-24.7	342.3	601.3	574.3	27.03	22.249					
3,945.1	3,925.7	3,843.2	3,820.3	14.6	14.4	89.97	-24.7	351.6	610.8	583.4	27.41	22.282					
4,000.0	3,980.6	3,897.3	3,873.5	14.9	14.9	89.97	-24.7	368.7	628.2	600.1	28.12	22.340					
4,100.0	4,080.6	3,995.7	3,970.5	15.3	15.3	89.97	-24.7	385.8	645.6	616.7	28.83	22.394					
4,200.0	4,180.6	4,094.2	4,067.5	15.6	15.7	89.97	-24.7	402.9	662.9	633.4	29.54	22.444					
4,300.0	4,280.6	4,192.7	4,164.5	16.0	16.1	89.97	-24.7	420.0	680.3	650.1	30.25	22.491					
4,400.0	4,380.6	4,291.2	4,261.4	16.3	16.5	89.97	-24.7	437.1	697.7	666.7	30.96	22.536					
4,500.0	4,480.6	4,389.7	4,358.4	16.7	17.0	89.98	-24.7	454.3	715.0	683.4	31.67	22.578					
4,600.0	4,580.6	4,488.1	4,455.4	17.0	17.4	89.98	-24.7	471.4	732.4	700.0	32.38	22.617					
4,700.0	4,680.6	4,586.6	4,552.4	17.4	17.9	89.98	-24.7	491.2	748.6	715.3	33.31	22.473					
4,800.0	4,780.6	4,709.7	4,673.9	17.7	18.5	89.98	-24.7	507.1	760.4	726.1	34.29	22.179					
4,900.0	4,880.6	4,844.5	4,807.7														

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 602H - OWB - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Offset Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,000.0	4,980.6	4,980.6	4,943.4	18.0	19.0	89.98	-24.7	516.7	767.5	732.3	35.19	21.807		
5,100.0	5,080.6	5,117.2	5,080.0	18.4	19.4	89.98	-24.7	519.9	769.8	733.8	36.03	21.366		
5,133.0	5,113.5	5,149.7	5,112.5	18.5	19.5	89.98	-24.7	519.9	769.8	733.6	36.26	21.231		
5,200.0	5,180.6	5,216.8	5,179.6	18.7	19.8	89.98	-24.7	519.9	769.8	733.1	36.73	20.960		
5,300.0	5,280.6	5,316.8	5,279.6	19.1	20.1	89.98	-24.7	519.9	769.8	732.4	37.43	20.569		
5,400.0	5,380.6	5,416.8	5,379.6	19.4	20.4	89.98	-24.7	519.9	769.8	731.7	38.13	20.191		
5,500.0	5,480.6	5,516.8	5,479.6	19.8	20.7	89.98	-24.7	519.9	769.8	731.0	38.83	19.827		
5,600.0	5,580.6	5,616.8	5,579.6	20.1	21.1	89.98	-24.7	519.9	769.8	730.3	39.53	19.476		
5,700.0	5,680.6	5,716.8	5,679.6	20.5	21.4	89.98	-24.7	519.9	769.8	729.6	40.23	19.136		
5,800.0	5,780.6	5,816.8	5,779.6	20.8	21.7	89.98	-24.7	519.9	769.8	728.9	40.93	18.808		
5,900.0	5,880.6	5,916.8	5,879.6	21.2	22.1	89.98	-24.7	519.9	769.8	728.2	41.63	18.490		
6,000.0	5,980.6	6,016.8	5,979.6	21.5	22.4	89.98	-24.7	519.9	769.8	727.5	42.34	18.183		
6,100.0	6,080.6	6,116.8	6,079.6	21.9	22.7	89.98	-24.7	519.9	769.8	726.8	43.04	17.886		
6,200.0	6,180.6	6,216.8	6,179.6	22.2	23.1	89.98	-24.7	519.9	769.8	726.1	43.74	17.598		
6,300.0	6,280.6	6,316.8	6,279.6	22.6	23.4	89.98	-24.7	519.9	769.8	725.4	44.45	17.319		
6,400.0	6,380.6	6,416.8	6,379.6	22.9	23.7	89.98	-24.7	519.9	769.8	724.7	45.15	17.049		
6,500.0	6,480.6	6,516.8	6,479.6	23.3	24.1	89.98	-24.7	519.9	769.8	724.0	45.86	16.787		
6,600.0	6,580.6	6,616.8	6,579.6	23.6	24.4	89.98	-24.7	519.9	769.8	723.3	46.56	16.533		
6,700.0	6,680.6	6,716.8	6,679.6	24.0	24.8	89.98	-24.7	519.9	769.8	722.6	47.27	16.286		
6,800.0	6,780.6	6,816.8	6,779.6	24.3	25.1	89.98	-24.7	519.9	769.8	721.9	47.98	16.046		
6,900.0	6,880.6	6,916.8	6,879.6	24.7	25.4	89.98	-24.7	519.9	769.8	721.1	48.68	15.813		
7,000.0	6,980.6	7,016.8	6,979.6	25.0	25.8	89.98	-24.7	519.9	769.8	720.4	49.39	15.587		
7,100.0	7,080.6	7,116.8	7,079.6	25.4	26.1	89.98	-24.7	519.9	769.8	719.7	50.10	15.367		
7,200.0	7,180.6	7,216.8	7,179.6	25.7	26.5	89.98	-24.7	519.9	769.8	719.0	50.80	15.153		
7,300.0	7,280.6	7,316.8	7,279.6	26.1	26.8	89.98	-24.7	519.9	769.8	718.3	51.51	14.945		
7,400.0	7,380.6	7,416.8	7,379.6	26.5	27.1	89.98	-24.7	519.9	769.8	717.6	52.22	14.742		
7,500.0	7,480.6	7,516.8	7,479.6	26.8	27.5	89.98	-24.7	519.9	769.8	716.9	52.93	14.545		
7,600.0	7,580.6	7,616.8	7,579.6	27.2	27.8	89.98	-24.7	519.9	769.8	716.2	53.64	14.353		
7,700.0	7,680.6	7,716.8	7,679.6	27.5	28.2	89.98	-24.7	519.9	769.8	715.5	54.34	14.166		
7,800.0	7,780.6	7,816.8	7,779.6	27.9	28.5	89.98	-24.7	519.9	769.8	714.8	55.05	13.983		
7,900.0	7,880.6	7,916.8	7,879.6	28.2	28.9	89.98	-24.7	519.9	769.8	714.1	55.76	13.806		
8,000.0	7,980.6	8,016.8	7,979.6	28.6	29.2	89.98	-24.7	519.9	769.8	713.4	56.47	13.632		
8,100.0	8,080.6	8,116.8	8,079.6	28.9	29.6	89.98	-24.7	519.9	769.8	712.6	57.18	13.463		
8,200.0	8,180.6	8,216.8	8,179.6	29.3	29.9	89.98	-24.7	519.9	769.8	711.9	57.89	13.298		
8,300.0	8,280.6	8,316.8	8,279.6	29.6	30.2	89.98	-24.7	519.9	769.8	711.2	58.60	13.137		
8,400.0	8,380.6	8,416.8	8,379.6	30.0	30.6	89.98	-24.7	519.9	769.8	710.5	59.31	12.980		
8,500.0	8,480.6	8,516.8	8,479.6	30.3	30.9	89.98	-24.7	519.9	769.8	709.8	60.02	12.826		
8,600.0	8,580.6	8,616.8	8,579.6	30.7	31.3	89.98	-24.7	519.9	769.8	709.1	60.73	12.676		
8,700.0	8,680.6	8,716.8	8,679.6	31.1	31.6	89.98	-24.7	519.9	769.8	708.4	61.44	12.530		
8,800.0	8,780.6	8,816.8	8,779.6	31.4	32.0	89.98	-24.7	519.9	769.8	707.7	62.15	12.387		
8,900.0	8,880.6	8,916.8	8,879.6	31.8	32.3	89.98	-24.7	519.9	769.8	707.0	62.86	12.246		
9,000.0	8,980.6	9,016.8	8,979.6	32.1	32.7	89.98	-24.7	519.9	769.8	706.3	63.57	12.110		
9,100.0	9,080.6	9,116.8	9,079.6	32.5	33.0	89.98	-24.7	519.9	769.8	705.5	64.28	11.976		
9,200.0	9,180.6	9,216.8	9,179.6	32.8	33.4	89.98	-24.7	519.9	769.8	704.8	64.99	11.845		
9,300.0	9,280.6	9,316.8	9,279.6	33.2	33.7	89.98	-24.7	519.9	769.8	704.1	65.71	11.716		
9,400.0	9,380.6	9,416.8	9,379.6	33.5	34.1	89.98	-24.7	519.9	769.8	703.4	66.42	11.591		
9,500.0	9,480.6	9,516.8	9,479.6	33.9	34.4	89.98	-24.7	519.9	769.8	702.7	67.13	11.468		
9,600.0	9,580.6	9,616.8	9,579.6	34.2	34.8	89.98	-24.7	519.9	769.8	702.0	67.84	11.348		
9,700.0	9,680.6	9,716.8	9,679.6	34.6	35.1	89.98	-24.7	519.9	769.8	701.3	68.55	11.230		
9,800.0	9,780.6	9,816.8	9,779.6	35.0	35.5	89.98	-24.7	519.9	769.8	700.6	69.26	11.115		
9,900.0	9,880.6	9,916.8	9,879.6	35.3	35.8	89.98	-24.7	519.9	769.8	699.9	69.98	11.001		
10,000.0	9,980.6	10,016.8	9,979.6	35.7	36.2	89.98	-24.7	519.9	769.8	699.1	70.69	10.891		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 602H - OWB - PWPO													Offset Site Error:	0.0 usft	
Survey Program: 0-MWD													Offset Well Error:		0.0 usft
Survey Program Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
10,100.0	10,080.6	10,116.8	10,079.6	36.0	36.5	89.98	-24.7	519.9	769.8	698.4	71.40	10.782			
10,200.0	10,180.6	10,216.8	10,179.6	36.4	36.9	89.98	-24.7	519.9	769.8	697.7	72.11	10.676			
10,300.0	10,280.6	10,316.8	10,279.6	36.7	37.2	89.98	-24.7	519.9	769.8	697.0	72.82	10.571			
10,400.0	10,380.6	10,416.8	10,379.6	37.1	37.6	89.98	-24.7	519.9	769.8	696.3	73.54	10.469			
10,500.0	10,480.6	10,516.8	10,479.6	37.4	37.9	89.98	-24.7	519.9	769.8	695.6	74.25	10.368			
10,600.0	10,580.6	10,616.8	10,579.6	37.8	38.3	89.98	-24.7	519.9	769.8	694.9	74.96	10.270			
10,700.0	10,680.6	10,716.8	10,679.6	38.2	38.6	89.98	-24.7	519.9	769.8	694.2	75.67	10.173			
10,776.9	10,757.5	10,793.7	10,756.5	38.4	38.9	89.98	-24.7	519.9	769.8	693.6	76.22	10.100			
10,800.0	10,780.6	10,816.8	10,779.6	38.5	39.0	-89.75	-24.7	519.9	769.8	693.4	76.38	10.079			
10,825.0	10,805.5	10,841.7	10,804.5	38.6	39.0	-89.89	-24.7	519.9	769.8	693.3	76.55	10.056			
10,837.8	10,818.2	10,854.4	10,817.2	38.6	39.1	-90.00	-24.7	519.9	769.8	693.2	76.64	10.045			
10,850.0	10,830.3	10,866.5	10,829.3	38.7	39.1	-90.13	-24.7	519.9	769.8	693.1	76.72	10.034			
10,875.0	10,854.9	10,891.1	10,853.9	38.8	39.2	-90.45	-24.7	519.9	769.8	693.0	76.89	10.012			
10,900.0	10,879.2	10,915.4	10,878.2	38.8	39.3	-90.86	-24.7	519.9	769.9	692.9	77.06	9.992			
10,925.0	10,903.2	10,939.4	10,902.2	38.9	39.4	-91.34	-24.7	519.9	770.1	692.8	77.22	9.972			
10,950.0	10,926.8	10,963.0	10,925.8	39.0	39.5	-91.89	-24.7	519.9	770.3	692.9	77.38	9.955			
10,975.0	10,949.9	10,986.1	10,948.9	39.1	39.6	-92.49	-24.7	519.9	770.7	693.1	77.54	9.939			
11,000.0	10,972.5	11,008.8	10,971.5	39.1	39.6	-93.14	-24.7	519.9	771.3	693.6	77.70	9.926			
11,025.0	10,994.6	11,030.8	10,993.6	39.2	39.7	-93.81	-24.7	519.9	772.1	694.2	77.85	9.917			
11,050.0	11,015.9	11,052.1	11,014.9	39.3	39.8	-94.50	-24.7	519.9	773.2	695.2	78.00	9.912			
11,075.0	11,036.6	11,072.8	11,035.6	39.3	39.9	-95.19	-24.7	519.9	774.6	696.5	78.15	9.912			
11,100.0	11,056.5	11,092.7	11,055.5	39.4	39.9	-95.86	-24.7	519.9	776.5	698.2	78.30	9.917			
11,125.0	11,075.6	11,111.8	11,074.6	39.5	40.0	-96.49	-24.7	519.9	778.7	700.3	78.44	9.928			
11,150.0	11,093.8	11,130.0	11,092.8	39.5	40.1	-97.08	-24.7	519.9	781.5	702.9	78.58	9.945			
11,175.0	11,111.0	11,147.2	11,110.0	39.6	40.1	-97.59	-24.7	519.9	784.8	706.1	78.71	9.971			
11,200.0	11,127.3	11,163.6	11,126.3	39.6	40.2	-98.03	-24.7	519.9	788.7	709.9	78.84	10.004			
11,225.0	11,142.6	11,178.9	11,141.6	39.7	40.2	-98.36	-24.7	519.9	793.3	714.3	78.97	10.045			
11,250.0	11,156.9	11,199.8	11,162.6	39.8	40.3	-98.98	-24.9	519.9	798.4	719.3	79.11	10.093			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 701H - owb - PWPO														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Survey Program Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
0.0	0.0	0.0	0.0	0.0	0.0	110.67	-12.3	32.7	35.0						
100.0	100.0	100.0	100.0	0.3	0.3	110.67	-12.3	32.7	35.0	34.5	0.50	69.724			
200.0	200.0	200.0	200.0	0.6	0.6	110.67	-12.3	32.7	35.0	33.8	1.22	28.710			
300.0	300.0	300.0	300.0	1.0	1.0	110.67	-12.3	32.7	35.0	33.1	1.94	18.077			
400.0	400.0	400.0	400.0	1.3	1.3	110.67	-12.3	32.7	35.0	32.3	2.65	13.191			
500.0	500.0	500.0	500.0	1.7	1.7	110.67	-12.3	32.7	35.0	31.6	3.37	10.384			
600.0	600.0	600.0	600.0	2.0	2.0	110.67	-12.3	32.7	35.0	30.9	4.09	8.563			
700.0	700.0	700.0	700.0	2.4	2.4	110.67	-12.3	32.7	35.0	30.2	4.80	7.285			
800.0	800.0	800.0	800.0	2.8	2.8	110.67	-12.3	32.7	35.0	29.5	5.52	6.339			
900.0	900.0	900.0	900.0	3.1	3.1	110.67	-12.3	32.7	35.0	28.8	6.24	5.610			
1,000.0	1,000.0	1,000.0	1,000.0	3.5	3.5	110.67	-12.3	32.7	35.0	28.0	6.95	5.032			
1,100.0	1,100.0	1,100.0	1,100.0	3.8	3.8	110.67	-12.3	32.7	35.0	27.3	7.67	4.561			
1,200.0	1,200.0	1,200.0	1,200.0	4.2	4.2	110.67	-12.3	32.7	35.0	26.6	8.39	4.172			
1,300.0	1,300.0	1,300.0	1,300.0	4.6	4.6	110.67	-12.3	32.7	35.0	25.9	9.11	3.843			
1,400.0	1,400.0	1,400.0	1,400.0	4.9	4.9	110.67	-12.3	32.7	35.0	25.2	9.82	3.563			
1,500.0	1,500.0	1,500.0	1,500.0	5.3	5.3	110.67	-12.3	32.7	35.0	24.5	10.54	3.320			
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	110.67	-12.3	32.7	35.0	23.7	11.26	3.109			
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	110.67	-12.3	32.7	35.0	23.0	11.97	2.923			
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	110.67	-12.3	32.7	35.0	22.3	12.69	2.757			
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	110.67	-12.3	32.7	35.0	21.6	13.41	2.610			
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	110.67	-12.3	32.7	35.0	20.9	14.12	2.478 CC, ES			
2,100.0	2,100.0	2,100.0	2,100.0	7.4	7.4	-154.82	-12.3	32.7	36.6	21.7	14.83	2.465			
2,200.0	2,199.8	2,199.8	2,199.8	7.8	7.8	-157.87	-12.3	32.7	41.4	25.8	15.53	2.663			
2,300.0	2,299.5	2,299.5	2,299.5	8.1	8.1	-161.62	-12.3	32.7	49.5	33.3	16.23	3.053			
2,400.0	2,398.7	2,398.7	2,398.7	8.5	8.5	-165.15	-12.3	32.7	61.2	44.3	16.93	3.618			
2,500.0	2,497.5	2,497.5	2,497.5	8.8	8.8	-168.09	-12.3	32.7	76.5	58.8	17.62	4.339			
2,600.0	2,595.9	2,595.9	2,595.9	9.2	9.2	-170.29	-12.3	32.7	93.5	75.2	18.32	5.106			
2,700.0	2,694.4	2,694.4	2,694.4	9.6	9.6	-171.80	-12.3	32.7	110.7	91.7	19.02	5.822			
2,800.0	2,792.9	2,792.9	2,792.9	9.9	9.9	-172.91	-12.3	32.7	127.9	108.2	19.71	6.489			
2,900.0	2,891.4	2,891.4	2,891.4	10.3	10.3	-173.76	-12.3	32.7	145.2	124.8	20.41	7.111			
3,000.0	2,989.9	2,989.9	2,989.9	10.7	10.6	-174.42	-12.3	32.7	162.4	141.3	21.12	7.693			
3,100.0	3,088.3	3,088.3	3,088.3	11.1	11.0	-174.96	-12.3	32.7	179.7	157.9	21.82	8.237			
3,200.0	3,186.8	3,186.8	3,186.8	11.5	11.3	-175.40	-12.3	32.7	197.0	174.5	22.53	8.747			
3,300.0	3,285.3	3,285.3	3,285.3	11.9	11.7	-175.78	-12.3	32.7	214.4	191.1	23.23	9.226			
3,400.0	3,383.8	3,383.8	3,383.8	12.4	12.0	-176.09	-12.3	32.7	231.7	207.7	23.94	9.677			
3,445.1	3,428.2	3,428.2	3,428.2	12.5	12.2	-176.22	-12.3	32.7	239.5	215.2	24.26	9.872			
3,500.0	3,482.4	3,482.4	3,482.4	12.8	12.4	-176.37	-12.3	32.7	248.5	223.8	24.65	10.081			
3,600.0	3,581.4	3,581.4	3,581.4	13.2	12.7	-176.58	-12.3	32.7	262.2	236.9	25.36	10.339			
3,700.0	3,680.9	3,680.9	3,680.9	13.5	13.1	-176.72	-12.3	32.7	272.5	246.4	26.07	10.451			
3,800.0	3,780.6	3,780.6	3,780.6	13.9	13.4	-176.80	-12.3	32.7	279.3	252.5	26.78	10.427			
3,900.0	3,880.6	3,880.6	3,880.6	14.3	13.8	-176.85	-12.3	32.7	282.6	255.1	27.49	10.278			
3,945.1	3,925.7	3,925.7	3,925.7	14.4	14.0	87.44	-12.3	32.7	282.9	255.1	27.81	10.173			
4,000.0	3,980.6	3,980.6	3,980.6	14.6	14.2	87.44	-12.3	32.7	282.9	254.7	28.20	10.033			
4,100.0	4,080.6	4,080.6	4,080.6	14.9	14.5	87.44	-12.3	32.7	282.9	254.0	28.91	9.787			
4,200.0	4,180.6	4,180.6	4,180.6	15.3	14.9	87.44	-12.3	32.7	282.9	253.3	29.62	9.552			
4,300.0	4,280.6	4,280.6	4,280.6	15.6	15.2	87.44	-12.3	32.7	282.9	252.6	30.33	9.329			
4,400.0	4,380.6	4,380.6	4,380.6	16.0	15.6	87.44	-12.3	32.7	282.9	251.9	31.04	9.116			
4,500.0	4,480.6	4,480.6	4,480.6	16.3	16.0	87.44	-12.3	32.7	282.9	251.2	31.75	8.912			
4,600.0	4,580.6	4,580.6	4,580.6	16.7	16.3	87.44	-12.3	32.7	282.9	250.5	32.46	8.717			
4,700.0	4,680.6	4,680.6	4,680.6	17.0	16.7	87.44	-12.3	32.7	282.9	249.8	33.17	8.530			
4,800.0	4,780.6	4,780.6	4,780.6	17.4	17.0	87.44	-12.3	32.7	282.9	249.1	33.88	8.351			
4,900.0	4,880.6	4,880.6	4,880.6	17.7	17.4	87.44	-12.3	32.7	282.9	248.3	34.59	8.179			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 701H - owb - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Ellipses (usft)				
5,000.0	4,980.6	4,980.6	4,980.6	18.0	17.7	87.44	-12.3	32.7	282.9	247.6	35.31	8.014		
5,100.0	5,080.6	5,088.4	5,088.3	18.4	18.1	87.31	-11.8	31.5	281.8	245.8	36.05	7.818		
5,200.0	5,180.6	5,192.3	5,192.2	18.7	18.5	86.90	-10.0	27.4	277.9	241.2	36.76	7.561		
5,300.0	5,280.6	5,292.2	5,292.0	19.1	18.8	86.46	-8.1	23.1	273.8	236.3	37.46	7.309		
5,400.0	5,380.6	5,392.1	5,391.7	19.4	19.2	86.00	-6.2	18.8	269.6	231.5	38.16	7.066		
5,500.0	5,480.6	5,492.0	5,491.5	19.8	19.5	85.53	-4.3	14.5	265.5	226.6	38.86	6.832		
5,600.0	5,580.6	5,591.8	5,591.3	20.1	19.9	85.04	-2.4	10.3	261.4	221.8	39.57	6.606		
5,700.0	5,680.6	5,691.7	5,691.1	20.5	20.2	84.54	-0.5	6.0	257.3	217.0	40.27	6.389		
5,800.0	5,780.6	5,791.6	5,790.9	20.8	20.6	84.02	1.4	1.7	253.2	212.2	40.97	6.180		
5,900.0	5,880.6	5,891.5	5,890.6	21.2	20.9	83.49	3.2	-2.6	249.2	207.5	41.68	5.978		
6,000.0	5,980.6	5,991.4	5,990.4	21.5	21.3	82.93	5.1	-6.8	245.1	202.8	42.38	5.784		
6,100.0	6,080.6	6,091.3	6,090.2	21.9	21.7	82.36	7.0	-11.1	241.1	198.0	43.09	5.596		
6,200.0	6,180.6	6,191.2	6,190.0	22.2	22.0	81.77	8.9	-15.4	237.2	193.4	43.80	5.415		
6,300.0	6,280.6	6,291.1	6,289.8	22.6	22.4	81.16	10.8	-19.7	233.2	188.7	44.50	5.240		
6,400.0	6,380.6	6,391.0	6,389.5	22.9	22.7	80.53	12.7	-23.9	229.3	184.1	45.21	5.071		
6,500.0	6,480.6	6,490.9	6,489.3	23.3	23.1	79.88	14.6	-28.2	225.4	179.5	45.92	4.908		
6,600.0	6,580.6	6,590.8	6,589.1	23.6	23.4	79.20	16.5	-32.5	221.5	174.9	46.63	4.751		
6,700.0	6,680.6	6,690.6	6,688.9	24.0	23.8	78.50	18.4	-36.8	217.7	170.3	47.34	4.598		
6,800.0	6,780.6	6,790.5	6,788.7	24.3	24.1	77.78	20.2	-41.1	213.9	165.8	48.05	4.451		
6,900.0	6,880.6	6,890.4	6,888.4	24.7	24.5	77.03	22.1	-45.3	210.1	161.3	48.76	4.309		
7,000.0	6,980.6	6,990.3	6,988.2	25.0	24.8	76.25	24.0	-49.6	206.4	156.9	49.47	4.172		
7,100.0	7,080.6	7,090.2	7,088.0	25.4	25.2	75.44	25.9	-53.9	202.7	152.5	50.18	4.039		
7,200.0	7,180.6	7,190.1	7,187.8	25.7	25.6	74.61	27.8	-58.2	199.0	148.1	50.89	3.911		
7,300.0	7,280.6	7,290.0	7,287.6	26.1	25.9	73.74	29.7	-62.4	195.4	143.8	51.60	3.787		
7,400.0	7,380.6	7,389.9	7,387.4	26.5	26.3	72.84	31.6	-66.7	191.9	139.5	52.32	3.667		
7,500.0	7,480.6	7,489.8	7,487.1	26.8	26.6	71.90	33.5	-71.0	188.4	135.3	53.03	3.552		
7,600.0	7,580.6	7,589.7	7,586.9	27.2	27.0	70.94	35.4	-75.3	184.9	131.1	53.75	3.440		
7,700.0	7,680.6	7,689.5	7,686.7	27.5	27.3	69.93	37.2	-79.5	181.5	127.0	54.46	3.332		
7,800.0	7,780.6	7,789.4	7,786.5	27.9	27.7	68.89	39.1	-83.8	178.1	123.0	55.18	3.229		
7,900.0	7,880.6	7,889.3	7,886.3	28.2	28.1	67.80	41.0	-88.1	174.9	119.0	55.90	3.128		
8,000.0	7,980.6	7,989.2	7,986.0	28.6	28.4	66.68	42.9	-92.4	171.6	115.0	56.61	3.032		
8,100.0	8,080.6	8,089.1	8,085.8	28.9	28.8	65.51	44.8	-96.7	168.5	111.2	57.33	2.939		
8,200.0	8,180.6	8,189.0	8,185.6	29.3	29.1	64.30	46.7	-100.9	165.4	107.4	58.05	2.849		
8,300.0	8,280.6	8,288.9	8,285.4	29.6	29.5	63.05	48.6	-105.2	162.4	103.6	58.77	2.763		
8,400.0	8,380.6	8,388.8	8,385.2	30.0	29.9	61.75	50.5	-109.5	159.5	100.0	59.49	2.681		
8,500.0	8,480.6	8,488.7	8,484.9	30.3	30.2	60.40	52.4	-113.8	156.7	96.4	60.21	2.602		
8,600.0	8,580.6	8,588.6	8,584.7	30.7	30.6	59.00	54.2	-118.0	153.9	93.0	60.94	2.526		
8,700.0	8,680.6	8,688.5	8,684.5	31.1	30.9	57.55	56.1	-122.3	151.3	89.6	61.66	2.453		
8,800.0	8,780.6	8,788.3	8,784.3	31.4	31.3	56.05	58.0	-126.6	148.7	86.3	62.39	2.384		
8,900.0	8,880.6	8,888.2	8,884.1	31.8	31.7	54.50	59.9	-130.9	146.3	83.2	63.11	2.318		
9,000.0	8,980.6	8,988.1	8,983.8	32.1	32.0	52.90	61.8	-135.1	143.9	80.1	63.84	2.255		
9,100.0	9,080.6	9,088.0	9,083.6	32.5	32.4	51.25	63.7	-139.4	141.7	77.2	64.57	2.195		
9,200.0	9,180.6	9,187.9	9,183.4	32.8	32.7	49.54	65.6	-143.7	139.6	74.3	65.29	2.138		
9,300.0	9,280.6	9,287.8	9,283.2	33.2	33.1	47.79	67.5	-148.0	137.7	71.6	66.02	2.085		
9,400.0	9,380.6	9,387.7	9,383.0	33.5	33.5	45.99	69.4	-152.3	135.8	69.1	66.75	2.035		
9,500.0	9,480.6	9,487.6	9,482.8	33.9	33.8	44.13	71.2	-156.5	134.1	66.6	67.48	1.988		
9,600.0	9,580.6	9,587.5	9,582.5	34.2	34.2	42.24	73.1	-160.8	132.6	64.4	68.21	1.943		
9,700.0	9,680.6	9,687.4	9,682.3	34.6	34.5	40.30	75.0	-165.1	131.2	62.2	68.94	1.903		
9,800.0	9,780.6	9,787.2	9,782.1	35.0	34.9	38.32	76.9	-169.4	129.9	60.2	69.68	1.865		
9,900.0	9,880.6	9,887.1	9,881.9	35.3	35.3	36.31	78.8	-173.6	128.8	58.4	70.41	1.830		
10,000.0	9,980.6	9,987.0	9,981.7	35.7	35.6	34.26	80.7	-177.9	127.9	56.8	71.14	1.798		
10,100.0	10,080.6	10,086.9	10,081.4	36.0	36.0	32.19	82.6	-182.2	127.1	55.3	71.87	1.769		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 701H - owb - PWP0													Offset Site Error:	0.0 usft	
Survey Program: 0-MWD													Offset Well Error:		0.0 usft
Survey Program Reference		Offset		Semi Major Axis Reference		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)					
10,200.0	10,180.6	10,186.8	10,181.2	36.4	36.3	30.09	84.5	-186.5	126.5	53.9	72.60	1.743			
10,300.0	10,280.6	10,286.7	10,281.0	36.7	36.7	27.98	86.4	-190.8	126.1	52.8	73.33	1.720			
10,400.0	10,380.6	10,386.6	10,380.8	37.1	37.1	25.86	88.3	-195.0	125.9	51.8	74.06	1.699			
10,495.3	10,475.9	10,481.8	10,475.9	37.4	37.4	23.83	90.1	-199.1	125.8	51.0	74.76	1.682			
10,500.0	10,480.6	10,486.5	10,480.6	37.4	37.4	23.73	90.1	-199.3	125.8	51.0	74.79	1.682			
10,600.0	10,580.6	10,586.4	10,580.3	37.8	37.8	21.60	92.0	-203.6	125.9	50.3	75.52	1.667			
10,700.0	10,680.6	10,686.3	10,680.1	38.2	38.1	19.48	93.9	-207.9	126.1	49.9	76.25	1.654			
10,776.9	10,757.5	10,763.1	10,756.9	38.4	38.4	17.85	95.4	-211.1	126.5	49.7	76.81	1.646 SF			
10,800.0	10,780.6	10,786.1	10,779.9	38.5	38.5	-162.37	95.8	-212.1	127.1	50.1	76.97	1.651			
10,825.0	10,805.5	10,811.0	10,804.7	38.6	38.6	-163.07	96.3	-213.2	129.0	51.9	77.15	1.673			
10,850.0	10,830.3	10,835.7	10,829.4	38.7	38.7	-163.86	96.7	-214.3	132.2	54.9	77.32	1.710			
10,875.0	10,854.9	10,860.2	10,853.9	38.8	38.8	-164.71	97.2	-215.3	136.7	59.2	77.49	1.764			
10,900.0	10,879.2	10,884.4	10,878.0	38.8	38.9	-165.60	97.7	-216.3	142.4	64.8	77.66	1.834			
10,925.0	10,903.2	10,908.2	10,901.8	38.9	38.9	-166.50	98.1	-217.4	149.5	71.6	77.82	1.921			
10,950.0	10,926.8	10,931.6	10,925.2	39.0	39.0	-167.37	98.6	-218.4	157.7	79.8	77.98	2.023			
10,975.0	10,949.9	10,954.6	10,948.1	39.1	39.1	-168.21	99.0	-219.3	167.3	89.1	78.14	2.141			
11,000.0	10,972.5	10,976.9	10,970.5	39.1	39.2	-168.99	99.4	-220.3	178.0	99.7	78.29	2.274			
11,025.0	10,994.6	10,998.7	10,992.2	39.2	39.3	-169.71	99.8	-221.2	190.0	111.5	78.44	2.422			
11,050.0	11,015.9	11,019.8	11,013.3	39.3	39.4	-170.37	100.2	-222.1	203.1	124.5	78.58	2.584			
11,075.0	11,036.6	11,040.2	11,033.6	39.3	39.4	-170.95	100.6	-223.0	217.3	138.6	78.71	2.761			
11,100.0	11,056.5	11,059.7	11,053.2	39.4	39.5	-171.46	101.0	-223.9	232.6	153.8	78.84	2.950			
11,125.0	11,075.6	11,078.5	11,071.9	39.5	39.6	-171.89	101.3	-224.7	248.9	170.0	78.96	3.153			
11,150.0	11,093.8	11,096.3	11,089.8	39.5	39.6	-172.26	101.7	-225.4	266.2	187.2	79.08	3.367			
11,175.0	11,111.0	11,113.2	11,106.6	39.6	39.7	-172.56	102.0	-226.1	284.5	205.3	79.18	3.593			
11,200.0	11,127.3	11,129.2	11,122.6	39.6	39.7	-172.78	102.3	-226.8	303.6	224.3	79.28	3.830			
11,225.0	11,142.6	11,144.1	11,137.4	39.7	39.8	-172.93	102.6	-227.5	323.6	244.2	79.37	4.077			
11,250.0	11,156.9	11,157.9	11,151.3	39.8	39.9	-172.99	102.8	-228.1	344.3	264.9	79.46	4.333			
11,275.0	11,170.0	11,170.6	11,164.0	39.8	39.9	-172.97	103.1	-228.6	365.7	286.2	79.53	4.599			
11,300.0	11,182.0	11,182.2	11,175.5	39.9	39.9	-172.84	103.3	-229.1	387.8	308.2	79.60	4.872			
11,325.0	11,192.9	11,192.6	11,185.9	39.9	40.0	-172.58	103.5	-229.5	410.5	330.8	79.66	5.153			
11,350.0	11,202.6	11,201.8	11,195.1	40.0	40.0	-172.15	103.7	-229.9	433.7	354.0	79.71	5.440			
11,375.0	11,211.0	11,209.8	11,203.1	40.1	40.0	-171.46	103.8	-230.3	457.3	377.6	79.76	5.734			
11,400.0	11,218.2	11,216.6	11,209.8	40.2	40.1	-170.38	103.9	-230.6	481.4	401.6	79.79	6.032			
11,425.0	11,224.1	12,033.1	11,725.0	40.2	42.1	179.78	-401.3	-249.8	500.9	453.1	47.82	10.474			
11,450.0	11,228.8	12,057.6	11,725.0	40.3	42.2	179.78	-425.9	-249.6	496.2	448.3	47.88	10.364			
11,475.0	11,232.1	12,082.4	11,725.0	40.4	42.3	179.78	-450.6	-249.5	492.9	444.9	47.93	10.282			
11,500.0	11,234.2	12,107.3	11,725.0	40.5	42.3	179.78	-475.6	-249.3	490.8	442.8	47.99	10.227			
11,526.9	11,235.0	12,134.2	11,725.0	40.5	42.4	179.78	-502.5	-249.2	490.0	442.0	48.06	10.197			
11,600.0	11,235.0	12,207.3	11,725.0	40.8	42.7	179.78	-575.5	-248.8	490.0	441.8	48.24	10.158			
11,700.0	11,235.0	12,307.3	11,725.0	41.2	43.1	179.79	-675.5	-248.2	490.0	441.5	48.54	10.095			
11,800.0	11,235.0	12,407.3	11,725.0	41.6	43.5	179.79	-775.5	-247.7	490.0	441.1	48.89	10.023			
11,900.0	11,235.0	12,507.3	11,725.0	42.2	44.0	179.79	-875.5	-247.1	490.0	440.8	49.28	9.943			
12,000.0	11,235.0	12,607.3	11,725.0	42.7	44.6	179.79	-975.5	-246.5	490.0	440.3	49.73	9.855			
12,100.0	11,235.0	12,707.3	11,725.0	43.4	45.2	179.79	-1,075.5	-246.0	490.0	439.8	50.21	9.759			
12,200.0	11,235.0	12,807.3	11,725.0	44.0	45.9	179.80	-1,175.5	-245.4	490.0	439.3	50.74	9.657			
12,300.0	11,235.0	12,907.3	11,725.0	44.8	46.6	179.80	-1,275.5	-244.9	490.0	438.7	51.32	9.549			
12,400.0	11,235.0	13,007.3	11,725.0	45.6	47.4	179.80	-1,375.5	-244.3	490.0	438.1	51.93	9.436			
12,500.0	11,235.0	13,107.3	11,725.0	46.4	48.2	179.80	-1,475.5	-243.7	490.0	437.4	52.59	9.318			
12,600.0	11,235.0	13,207.3	11,725.0	47.2	49.0	179.81	-1,575.5	-243.2	490.0	436.8	53.28	9.197			
12,700.0	11,235.0	13,307.3	11,725.0	48.2	49.9	179.81	-1,675.5	-242.6	490.0	436.0	54.01	9.073			
12,800.0	11,235.0	13,407.3	11,725.0	49.1	50.8	179.81	-1,775.5	-242.1	490.0	435.3	54.77	8.946			
12,900.0	11,235.0	13,507.3	11,725.0	50.1	51.8	179.81	-1,875.5	-241.5	490.0	434.5	55.57	8.818			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 701H - owb - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
13,000.0	11,235.0	13,607.3	11,725.0	51.1	52.8	179.81	-1,975.5	-240.9	490.0	433.6	56.41	8.688		
13,100.0	11,235.0	13,707.3	11,725.0	52.2	53.8	179.82	-2,075.5	-240.4	490.0	432.8	57.27	8.557		
13,200.0	11,235.0	13,807.3	11,725.0	53.2	54.9	179.82	-2,175.5	-239.8	490.0	431.9	58.16	8.426		
13,300.0	11,235.0	13,907.3	11,725.0	54.4	56.0	179.82	-2,275.5	-239.3	490.0	431.0	59.08	8.294		
13,400.0	11,235.0	14,007.3	11,725.0	55.5	57.1	179.82	-2,375.5	-238.7	490.0	430.0	60.03	8.164		
13,500.0	11,235.0	14,107.3	11,725.0	56.7	58.3	179.82	-2,475.5	-238.1	490.0	429.0	61.00	8.033		
13,600.0	11,235.0	14,207.3	11,725.0	57.8	59.4	179.83	-2,575.5	-237.6	490.0	428.0	62.00	7.904		
13,700.0	11,235.0	14,307.3	11,725.0	59.1	60.6	179.83	-2,675.5	-237.0	490.0	427.0	63.02	7.776		
13,800.0	11,235.0	14,407.3	11,725.0	60.3	61.8	179.83	-2,775.5	-236.5	490.0	426.0	64.06	7.650		
13,900.0	11,235.0	14,507.3	11,725.0	61.5	63.1	179.83	-2,875.5	-235.9	490.0	424.9	65.12	7.525		
14,000.0	11,235.0	14,607.3	11,725.0	62.8	64.3	179.83	-2,975.5	-235.3	490.0	423.8	66.21	7.401		
14,100.0	11,235.0	14,707.3	11,725.0	64.1	65.6	179.84	-3,075.5	-234.8	490.0	422.7	67.31	7.280		
14,200.0	11,235.0	14,807.3	11,725.0	65.4	66.9	179.84	-3,175.5	-234.2	490.0	421.6	68.43	7.161		
14,300.0	11,235.0	14,907.3	11,725.0	66.7	68.2	179.84	-3,275.5	-233.7	490.0	420.5	69.57	7.043		
14,400.0	11,235.0	15,007.3	11,725.0	68.0	69.5	179.84	-3,375.5	-233.1	490.0	419.3	70.73	6.928		
14,500.0	11,235.0	15,107.3	11,725.0	69.4	70.8	179.85	-3,475.5	-232.5	490.0	418.1	71.90	6.816		
14,600.0	11,235.0	15,207.3	11,725.0	70.8	72.1	179.85	-3,575.5	-232.0	490.0	416.9	73.08	6.705		
14,700.0	11,235.0	15,307.3	11,725.0	72.1	73.5	179.85	-3,675.5	-231.4	490.0	415.7	74.28	6.597		
14,800.0	11,235.0	15,407.3	11,725.0	73.5	74.9	179.85	-3,775.5	-230.9	490.0	414.5	75.50	6.491		
14,900.0	11,235.0	15,507.3	11,725.0	74.9	76.2	179.85	-3,875.5	-230.3	490.0	413.3	76.72	6.387		
15,000.0	11,235.0	15,607.3	11,725.0	76.3	77.6	179.86	-3,975.5	-229.7	490.0	412.1	77.96	6.285		
15,100.0	11,235.0	15,707.3	11,725.0	77.7	79.0	179.86	-4,075.5	-229.2	490.0	410.8	79.21	6.186		
15,200.0	11,235.0	15,807.3	11,725.0	79.1	80.4	179.86	-4,175.5	-228.6	490.0	409.5	80.48	6.089		
15,300.0	11,235.0	15,907.3	11,725.0	80.6	81.9	179.86	-4,275.5	-228.1	490.0	408.3	81.75	5.994		
15,400.0	11,235.0	16,007.3	11,725.0	82.0	83.3	179.86	-4,375.5	-227.5	490.0	407.0	83.03	5.902		
15,500.0	11,235.0	16,107.3	11,725.0	83.5	84.7	179.87	-4,475.5	-226.9	490.0	405.7	84.32	5.811		
15,600.0	11,235.0	16,207.3	11,725.0	84.9	86.2	179.87	-4,575.5	-226.4	490.0	404.4	85.63	5.723		
15,700.0	11,235.0	16,307.3	11,725.0	86.4	87.6	179.87	-4,675.5	-225.8	490.0	403.1	86.94	5.637		
15,800.0	11,235.0	16,407.3	11,725.0	87.9	89.1	179.87	-4,775.5	-225.3	490.0	401.8	88.26	5.552		
15,900.0	11,235.0	16,507.3	11,725.0	89.3	90.5	179.88	-4,875.5	-224.7	490.0	400.4	89.58	5.470		
16,000.0	11,235.0	16,607.3	11,725.0	90.8	92.0	179.88	-4,975.5	-224.1	490.0	399.1	90.92	5.390		
16,100.0	11,235.0	16,707.3	11,725.0	92.3	93.5	179.88	-5,075.5	-223.6	490.0	397.8	92.26	5.311		
16,200.0	11,235.0	16,807.3	11,725.0	93.8	95.0	179.88	-5,175.5	-223.0	490.0	396.4	93.61	5.235		
16,300.0	11,235.0	16,907.3	11,725.0	95.3	96.5	179.88	-5,275.5	-222.5	490.0	395.1	94.97	5.160		
16,400.0	11,235.0	17,007.3	11,725.0	96.8	97.9	179.89	-5,375.5	-221.9	490.0	393.7	96.33	5.087		
16,500.0	11,235.0	17,107.3	11,725.0	98.3	99.4	179.89	-5,475.5	-221.3	490.0	392.3	97.70	5.016		
16,600.0	11,235.0	17,207.3	11,725.0	99.8	100.9	179.89	-5,575.5	-220.8	490.0	390.9	99.07	4.946		
16,700.0	11,235.0	17,307.3	11,725.0	101.3	102.5	179.89	-5,675.5	-220.2	490.0	389.6	100.45	4.878		
16,800.0	11,235.0	17,407.3	11,725.0	102.9	104.0	179.89	-5,775.5	-219.6	490.0	388.2	101.84	4.812		
16,900.0	11,235.0	17,507.3	11,725.0	104.4	105.5	179.90	-5,875.5	-219.1	490.0	386.8	103.23	4.747		
17,000.0	11,235.0	17,607.3	11,725.0	105.9	107.0	179.90	-5,975.5	-218.5	490.0	385.4	104.62	4.684		
17,100.0	11,235.0	17,707.3	11,725.0	107.5	108.5	179.90	-6,075.5	-218.0	490.0	384.0	106.03	4.622		
17,200.0	11,235.0	17,807.3	11,725.0	109.0	110.1	179.90	-6,175.5	-217.4	490.0	382.6	107.43	4.561		
17,300.0	11,235.0	17,907.3	11,725.0	110.5	111.6	179.90	-6,275.4	-216.8	490.0	381.2	108.84	4.502		
17,400.0	11,235.0	18,007.3	11,725.0	112.1	113.1	179.91	-6,375.4	-216.3	490.0	379.8	110.26	4.444		
17,500.0	11,235.0	18,107.3	11,725.0	113.6	114.7	179.91	-6,475.4	-215.7	490.0	378.3	111.68	4.388		
17,600.0	11,235.0	18,207.3	11,725.0	115.2	116.2	179.91	-6,575.4	-215.2	490.0	376.9	113.10	4.333		
17,700.0	11,235.0	18,307.3	11,725.0	116.7	117.7	179.91	-6,675.4	-214.6	490.0	375.5	114.52	4.279		
17,800.0	11,235.0	18,407.3	11,725.0	118.3	119.3	179.92	-6,775.4	-214.0	490.0	374.1	115.95	4.226		
17,900.0	11,235.0	18,507.3	11,725.0	119.8	120.8	179.92	-6,875.4	-213.5	490.0	372.6	117.39	4.174		
18,000.0	11,235.0	18,607.3	11,725.0	121.4	122.4	179.92	-6,975.4	-212.9	490.0	371.2	118.83	4.124		
18,100.0	11,235.0	18,707.3	11,725.0	123.0	124.0	179.92	-7,075.4	-212.4	490.0	369.7	120.27	4.074		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Offset Design: MORAN PROJECT - MORAN 9 FED COM 701H - owb - PWPO													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
18,200.0	11,235.0	18,807.3	11,725.0	124.5	125.5	179.92	-7,175.4	-211.8	490.0	368.3	121.71	4.026		
18,300.0	11,235.0	18,907.3	11,725.0	126.1	127.1	179.93	-7,275.4	-211.2	490.0	366.9	123.16	3.979		
18,400.0	11,235.0	19,007.3	11,725.0	127.7	128.6	179.93	-7,375.4	-210.7	490.0	365.4	124.61	3.932		
18,500.0	11,235.0	19,107.3	11,725.0	129.2	130.2	179.93	-7,475.4	-210.1	490.0	364.0	126.06	3.887		
18,600.0	11,235.0	19,207.3	11,725.0	130.8	131.8	179.93	-7,575.4	-209.6	490.0	362.5	127.51	3.843		
18,700.0	11,235.0	19,307.3	11,725.0	132.4	133.3	179.93	-7,675.4	-209.0	490.0	361.0	128.97	3.799		
18,800.0	11,235.0	19,407.3	11,725.0	134.0	134.9	179.94	-7,775.4	-208.4	490.0	359.6	130.43	3.757		
18,900.0	11,235.0	19,507.3	11,725.0	135.5	136.5	179.94	-7,875.4	-207.9	490.0	358.1	131.90	3.715		
19,000.0	11,235.0	19,607.3	11,725.0	137.1	138.1	179.94	-7,975.4	-207.3	490.0	356.6	133.36	3.674		
19,100.0	11,235.0	19,707.3	11,725.0	138.7	139.6	179.94	-8,075.4	-206.8	490.0	355.2	134.83	3.634		
19,200.0	11,235.0	19,807.3	11,725.0	140.3	141.2	179.95	-8,175.4	-206.2	490.0	353.7	136.30	3.595		
19,300.0	11,235.0	19,907.3	11,725.0	141.9	142.8	179.95	-8,275.4	-205.6	490.0	352.2	137.77	3.557		
19,400.0	11,235.0	20,007.3	11,725.0	143.5	144.4	179.95	-8,375.4	-205.1	490.0	350.8	139.25	3.519		
19,500.0	11,235.0	20,107.3	11,725.0	145.0	146.0	179.95	-8,475.4	-204.5	490.0	349.3	140.72	3.482		
19,600.0	11,235.0	20,207.3	11,725.0	146.6	147.5	179.95	-8,575.4	-204.0	490.0	347.8	142.20	3.446		
19,700.0	11,235.0	20,307.3	11,725.0	148.2	149.1	179.96	-8,675.4	-203.4	490.0	346.3	143.68	3.410		
19,800.0	11,235.0	20,407.3	11,725.0	149.8	150.7	179.96	-8,775.4	-202.8	490.0	344.8	145.16	3.376		
19,900.0	11,235.0	20,507.3	11,725.0	151.4	152.3	179.96	-8,875.4	-202.3	490.0	343.4	146.65	3.341		
20,000.0	11,235.0	20,607.3	11,725.0	153.0	153.9	179.96	-8,975.4	-201.7	490.0	341.9	148.13	3.308		
20,100.0	11,235.0	20,707.3	11,725.0	154.6	155.5	179.96	-9,075.4	-201.2	490.0	340.4	149.62	3.275		
20,200.0	11,235.0	20,807.3	11,725.0	156.2	157.1	179.97	-9,175.4	-200.6	490.0	338.9	151.11	3.243		
20,300.0	11,235.0	20,907.3	11,725.0	157.8	158.7	179.97	-9,275.4	-200.0	490.0	337.4	152.60	3.211		
20,400.0	11,235.0	21,007.3	11,725.0	159.4	160.3	179.97	-9,375.4	-199.5	490.0	335.9	154.10	3.180		
20,500.0	11,235.0	21,107.3	11,725.0	161.0	161.9	179.97	-9,475.4	-198.9	490.0	334.4	155.59	3.149		
20,600.0	11,235.0	21,207.3	11,725.0	162.6	163.5	179.98	-9,575.4	-198.4	490.0	332.9	157.08	3.119		
20,700.0	11,235.0	21,307.3	11,725.0	164.2	165.1	179.98	-9,675.4	-197.8	490.0	331.4	158.58	3.090		
20,800.0	11,235.0	21,407.3	11,725.0	165.8	166.7	179.98	-9,775.4	-197.2	490.0	329.9	160.08	3.061		
20,900.0	11,235.0	21,507.3	11,725.0	167.4	168.3	179.98	-9,875.4	-196.7	490.0	328.4	161.58	3.033		
21,000.0	11,235.0	21,607.3	11,725.0	169.0	169.9	179.98	-9,975.4	-196.1	490.0	326.9	163.08	3.005		
21,100.0	11,235.0	21,707.3	11,725.0	170.6	171.5	179.99	-10,075.4	-195.6	490.0	325.4	164.58	2.977		
21,200.0	11,235.0	21,807.3	11,725.0	172.2	173.1	179.99	-10,175.4	-195.0	490.0	323.9	166.09	2.950		
21,300.0	11,235.0	21,907.3	11,725.0	173.8	174.7	179.99	-10,275.4	-194.4	490.0	322.4	167.59	2.924		
21,400.0	11,235.0	22,007.3	11,725.0	175.5	176.3	179.99	-10,375.4	-193.9	490.0	320.9	169.10	2.898		
21,500.0	11,235.0	22,107.3	11,725.0	177.1	177.9	179.99	-10,475.4	-193.3	490.0	319.4	170.60	2.872		
21,600.0	11,235.0	22,207.3	11,725.0	178.7	179.5	180.00	-10,575.4	-192.8	490.0	317.9	172.11	2.847		
21,700.0	11,235.0	22,307.3	11,725.0	180.3	181.1	180.00	-10,675.4	-192.2	490.0	316.4	173.62	2.822		
21,766.9	11,235.0	22,374.2	11,725.0	181.4	182.2	180.00	-10,742.3	-191.8	490.0	315.4	174.63	2.806		

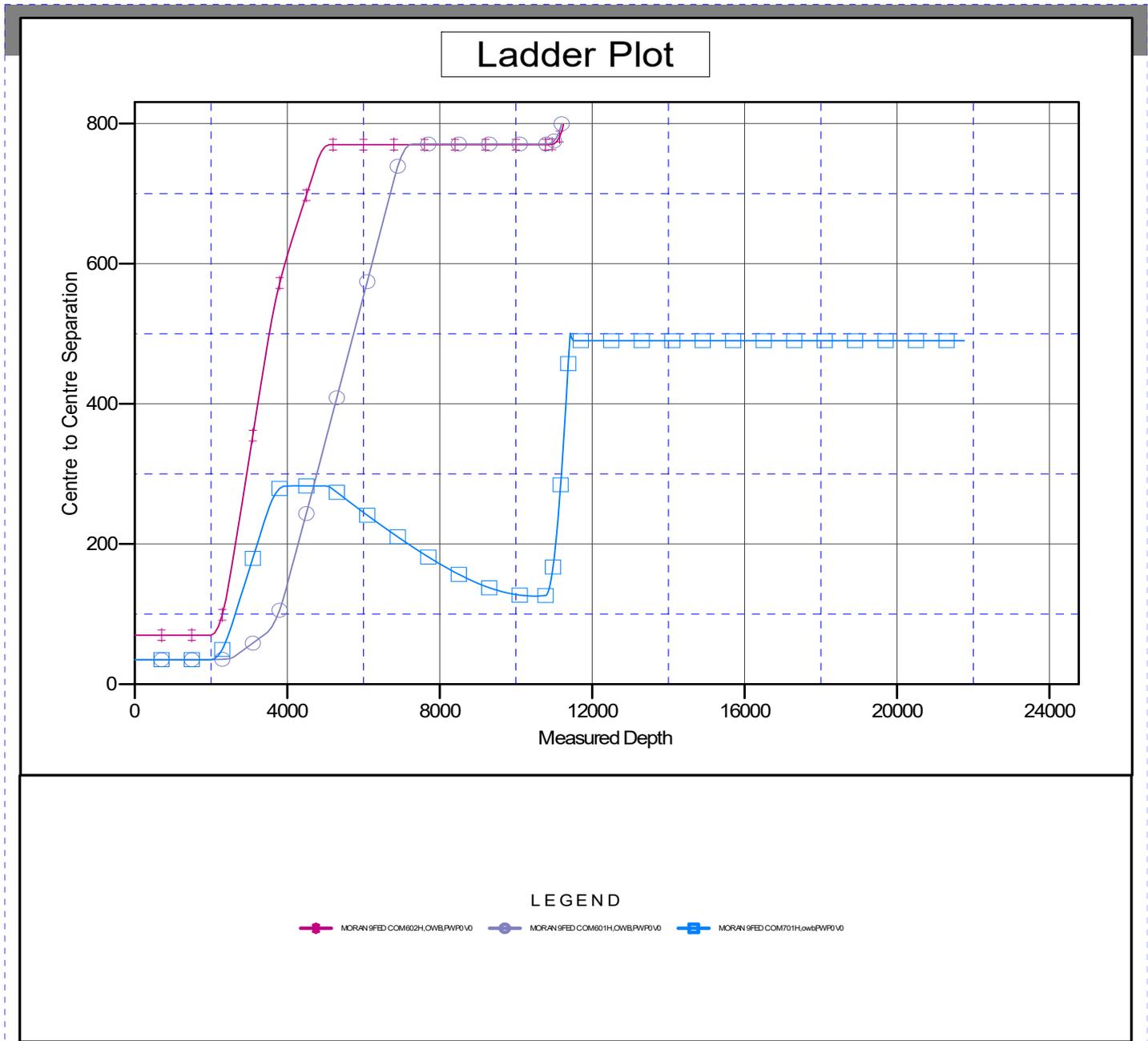
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Permian Resources

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Project:	(SP) LEA	TVD Reference:	KB @ 3756.0usft
Reference Site:	MORAN PROJECT	MD Reference:	KB @ 3756.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWPO	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3756.0usft	Coordinates are relative to: MORAN 9 FED COM 171H
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Central Meridian is 104° 20' 0.000 W	Grid Convergence at Surface is: 0.35°



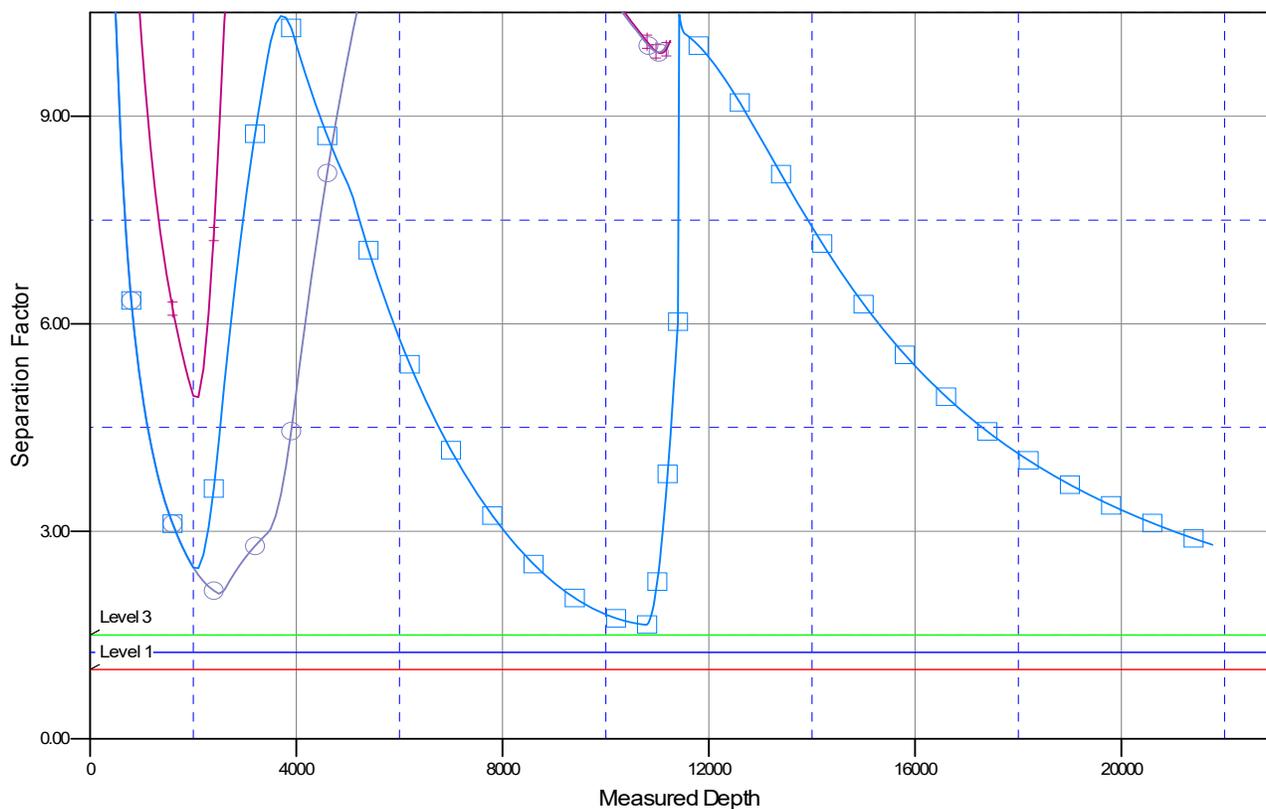
Permian Resources Anticollision Report

Company: NEW MEXICO	Local Co-ordinate Reference: Well MORAN 9 FED COM 171H
Project: (SP) LEA	TVD Reference: KB @ 3756.0usft
Reference Site: MORAN PROJECT	MD Reference: KB @ 3756.0usft
Site Error: 0.0 usft	North Reference: Grid
Reference Well: MORAN 9 FED COM 171H	Survey Calculation Method: Minimum Curvature
Well Error: 0.0 usft	Output errors are at: 2.00 sigma
Reference Wellbore: OWB	Database: Compass
Reference Design: PWPO	Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 3756.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: MORAN 9 FED COM 171H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.35°

Separation Factor Plot



LEGEND

● MORAN 9 FED COM602H,OWB,PWPO'0
■ MORAN 9 FED COM601H,OWB,PWPO'0
■ MORAN 9 FED COM701H,OWB,PWPO'0

NEW MEXICO

**(SP) LEA
MORAN PROJECT
MORAN 9 FED COM 171H**

OWB

Plan: PWP0

Standard Planning Report - Geographic

18 April, 2024

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	(SP) LEA		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	MORAN PROJECT				
Site Position:		Northing:	541,421.20 usft	Latitude:	32° 29' 12.311 N
From:	Map	Easting:	741,590.81 usft	Longitude:	103° 41' 1.973 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	MORAN 9 FED COM 171H					
Well Position	+N/-S	0.0 usft	Northing:	541,421.20 usft	Latitude:	32° 29' 12.311 N
	+E/-W	0.0 usft	Easting:	741,590.81 usft	Longitude:	103° 41' 1.973 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,726.0 usft
Grid Convergence:	0.35 °					

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.82	60.47	48,937.25850191

Design	PWP0				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	181.02	

Plan Survey Tool Program	Date 4/18/2024				
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	21,766.9 PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Star	

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	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	
2,500.0	10.00	264.29	2,497.5	-4.3	-43.3	2.00	2.00	0.00	0.00	264.29	
3,445.1	10.00	264.29	3,428.2	-20.7	-206.6	0.00	0.00	0.00	0.00	0.00	
3,945.1	0.00	0.00	3,925.7	-25.0	-249.9	2.00	-2.00	0.00	0.00	180.00	
10,776.9	0.00	0.00	10,757.5	-25.0	-249.9	0.00	0.00	0.00	0.00	0.00	
11,526.9	90.00	179.69	11,235.0	-502.5	-247.3	12.00	12.00	23.96	179.69	179.69	
21,766.9	90.00	179.69	11,235.0	-10,742.3	-191.8	0.00	0.00	0.00	0.00	0.00	LTP/BHL-MORAN 1

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
100.0	0.00	0.00	100.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
200.0	0.00	0.00	200.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
300.0	0.00	0.00	300.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
400.0	0.00	0.00	400.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
500.0	0.00	0.00	500.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
600.0	0.00	0.00	600.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
700.0	0.00	0.00	700.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
800.0	0.00	0.00	800.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
900.0	0.00	0.00	900.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	541,421.20	741,590.81	32° 29' 12.311 N	103° 41' 1.973 W	
Start Build 2.00										
2,100.0	2.00	264.29	2,100.0	-0.2	-1.7	541,421.03	741,589.07	32° 29' 12.310 N	103° 41' 1.994 W	
2,200.0	4.00	264.29	2,199.8	-0.7	-6.9	541,420.51	741,583.86	32° 29' 12.305 N	103° 41' 2.055 W	
2,300.0	6.00	264.29	2,299.5	-1.6	-15.6	541,419.64	741,575.19	32° 29' 12.297 N	103° 41' 2.156 W	
2,400.0	8.00	264.29	2,398.7	-2.8	-27.7	541,418.43	741,563.07	32° 29' 12.286 N	103° 41' 2.298 W	
2,500.0	10.00	264.29	2,497.5	-4.3	-43.3	541,416.87	741,547.50	32° 29' 12.271 N	103° 41' 2.479 W	
Start 945.1 hold at 2500.0 MD										
2,600.0	10.00	264.29	2,595.9	-6.1	-60.6	541,415.14	741,530.22	32° 29' 12.255 N	103° 41' 2.681 W	
2,700.0	10.00	264.29	2,694.4	-7.8	-77.9	541,413.41	741,512.94	32° 29' 12.239 N	103° 41' 2.883 W	
2,800.0	10.00	264.29	2,792.9	-9.5	-95.1	541,411.68	741,495.66	32° 29' 12.223 N	103° 41' 3.085 W	
2,900.0	10.00	264.29	2,891.4	-11.2	-112.4	541,409.96	741,478.39	32° 29' 12.207 N	103° 41' 3.287 W	
3,000.0	10.00	264.29	2,989.9	-13.0	-129.7	541,408.23	741,461.11	32° 29' 12.191 N	103° 41' 3.489 W	
3,100.0	10.00	264.29	3,088.3	-14.7	-147.0	541,406.50	741,443.83	32° 29' 12.175 N	103° 41' 3.690 W	
3,200.0	10.00	264.29	3,186.8	-16.4	-164.3	541,404.77	741,426.55	32° 29' 12.159 N	103° 41' 3.892 W	
3,300.0	10.00	264.29	3,285.3	-18.2	-181.5	541,403.04	741,409.27	32° 29' 12.143 N	103° 41' 4.094 W	
3,400.0	10.00	264.29	3,383.8	-19.9	-198.8	541,401.31	741,391.99	32° 29' 12.126 N	103° 41' 4.296 W	
3,445.1	10.00	264.29	3,428.2	-20.7	-206.6	541,400.53	741,384.19	32° 29' 12.119 N	103° 41' 4.387 W	
Start Drop -2.00										
3,500.0	8.90	264.29	3,482.4	-21.6	-215.6	541,399.64	741,375.23	32° 29' 12.111 N	103° 41' 4.492 W	
3,600.0	6.90	264.29	3,581.4	-22.9	-229.3	541,398.27	741,361.55	32° 29' 12.098 N	103° 41' 4.652 W	
3,700.0	4.90	264.29	3,680.9	-24.0	-239.5	541,397.25	741,351.32	32° 29' 12.089 N	103° 41' 4.771 W	
3,800.0	2.90	264.29	3,780.6	-24.6	-246.3	541,396.57	741,344.54	32° 29' 12.082 N	103° 41' 4.850 W	
3,900.0	0.90	264.29	3,880.6	-25.0	-249.6	541,396.24	741,341.24	32° 29' 12.079 N	103° 41' 4.889 W	
3,945.1	0.00	0.00	3,925.7	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
Start 6831.8 hold at 3945.1 MD										
4,000.0	0.00	0.00	3,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,100.0	0.00	0.00	4,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,200.0	0.00	0.00	4,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,300.0	0.00	0.00	4,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,400.0	0.00	0.00	4,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,500.0	0.00	0.00	4,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,600.0	0.00	0.00	4,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,700.0	0.00	0.00	4,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,800.0	0.00	0.00	4,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
4,900.0	0.00	0.00	4,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,000.0	0.00	0.00	4,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,100.0	0.00	0.00	5,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,200.0	0.00	0.00	5,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,300.0	0.00	0.00	5,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,400.0	0.00	0.00	5,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,500.0	0.00	0.00	5,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,600.0	0.00	0.00	5,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,700.0	0.00	0.00	5,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,800.0	0.00	0.00	5,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
5,900.0	0.00	0.00	5,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,000.0	0.00	0.00	5,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,100.0	0.00	0.00	6,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,200.0	0.00	0.00	6,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,300.0	0.00	0.00	6,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,400.0	0.00	0.00	6,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,500.0	0.00	0.00	6,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,600.0	0.00	0.00	6,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,700.0	0.00	0.00	6,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,800.0	0.00	0.00	6,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
6,900.0	0.00	0.00	6,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,000.0	0.00	0.00	6,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,100.0	0.00	0.00	7,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,200.0	0.00	0.00	7,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,300.0	0.00	0.00	7,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,400.0	0.00	0.00	7,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,500.0	0.00	0.00	7,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,600.0	0.00	0.00	7,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,700.0	0.00	0.00	7,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,800.0	0.00	0.00	7,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
7,900.0	0.00	0.00	7,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,000.0	0.00	0.00	7,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,100.0	0.00	0.00	8,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,200.0	0.00	0.00	8,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,300.0	0.00	0.00	8,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,400.0	0.00	0.00	8,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,500.0	0.00	0.00	8,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,600.0	0.00	0.00	8,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,700.0	0.00	0.00	8,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,800.0	0.00	0.00	8,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
8,900.0	0.00	0.00	8,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,000.0	0.00	0.00	8,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,100.0	0.00	0.00	9,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,200.0	0.00	0.00	9,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,300.0	0.00	0.00	9,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,400.0	0.00	0.00	9,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,500.0	0.00	0.00	9,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,600.0	0.00	0.00	9,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,700.0	0.00	0.00	9,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,800.0	0.00	0.00	9,780.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
9,900.0	0.00	0.00	9,880.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,000.0	0.00	0.00	9,980.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,100.0	0.00	0.00	10,080.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,200.0	0.00	0.00	10,180.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,300.0	0.00	0.00	10,280.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,400.0	0.00	0.00	10,380.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,500.0	0.00	0.00	10,480.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,600.0	0.00	0.00	10,580.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,700.0	0.00	0.00	10,680.6	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
10,776.9	0.00	0.00	10,757.5	-25.0	-249.9	541,396.20	741,340.89	32° 29' 12.079 N	103° 41' 4.893 W	
Start DLS 12.00 TFO 179.69										
10,800.0	2.77	179.69	10,780.6	-25.6	-249.9	541,395.64	741,340.89	32° 29' 12.073 N	103° 41' 4.893 W	
10,825.0	5.77	179.69	10,805.5	-27.4	-249.9	541,393.78	741,340.90	32° 29' 12.055 N	103° 41' 4.893 W	
10,850.0	8.77	179.69	10,830.3	-30.6	-249.9	541,390.62	741,340.92	32° 29' 12.024 N	103° 41' 4.893 W	
10,875.0	11.77	179.69	10,854.9	-35.0	-249.9	541,386.17	741,340.94	32° 29' 11.980 N	103° 41' 4.893 W	
10,900.0	14.77	179.69	10,879.2	-40.8	-249.8	541,380.43	741,340.97	32° 29' 11.923 N	103° 41' 4.893 W	
10,925.0	17.77	179.69	10,903.2	-47.8	-249.8	541,373.43	741,341.01	32° 29' 11.854 N	103° 41' 4.893 W	
10,950.0	20.77	179.69	10,926.8	-56.0	-249.8	541,365.18	741,341.05	32° 29' 11.772 N	103° 41' 4.893 W	
10,975.0	23.77	179.69	10,949.9	-65.5	-249.7	541,355.70	741,341.11	32° 29' 11.678 N	103° 41' 4.893 W	
11,000.0	26.77	179.69	10,972.5	-76.2	-249.6	541,345.03	741,341.16	32° 29' 11.573 N	103° 41' 4.893 W	
11,025.0	29.77	179.69	10,994.6	-88.0	-249.6	541,333.20	741,341.23	32° 29' 11.456 N	103° 41' 4.893 W	
11,050.0	32.77	179.69	11,015.9	-101.0	-249.5	541,320.22	741,341.30	32° 29' 11.327 N	103° 41' 4.894 W	
11,075.0	35.77	179.69	11,036.6	-115.1	-249.4	541,306.15	741,341.37	32° 29' 11.188 N	103° 41' 4.894 W	
11,100.0	38.77	179.69	11,056.5	-130.2	-249.3	541,291.01	741,341.46	32° 29' 11.038 N	103° 41' 4.894 W	
11,125.0	41.77	179.69	11,075.6	-146.4	-249.3	541,274.85	741,341.54	32° 29' 10.878 N	103° 41' 4.894 W	
11,150.0	44.77	179.69	11,093.8	-163.5	-249.2	541,257.72	741,341.64	32° 29' 10.709 N	103° 41' 4.894 W	
11,175.0	47.77	179.69	11,111.0	-181.5	-249.1	541,239.66	741,341.74	32° 29' 10.530 N	103° 41' 4.894 W	
11,200.0	50.77	179.69	11,127.3	-200.5	-249.0	541,220.71	741,341.84	32° 29' 10.342 N	103° 41' 4.894 W	
11,225.0	53.77	179.69	11,142.6	-220.3	-248.9	541,200.94	741,341.95	32° 29' 10.147 N	103° 41' 4.894 W	
11,250.0	56.77	179.69	11,156.9	-240.8	-248.8	541,180.40	741,342.06	32° 29' 9.944 N	103° 41' 4.895 W	
11,275.0	59.77	179.69	11,170.0	-262.1	-248.6	541,159.14	741,342.17	32° 29' 9.733 N	103° 41' 4.895 W	
11,288.0	61.33	179.69	11,176.4	-273.4	-248.6	541,147.84	741,342.23	32° 29' 9.621 N	103° 41' 4.895 W	
NMM 121957 Exit at 11288.0 MD										
11,300.0	62.77	179.69	11,182.0	-284.0	-248.5	541,137.22	741,342.29	32° 29' 9.516 N	103° 41' 4.895 W	
11,325.0	65.77	179.69	11,192.9	-306.5	-248.4	541,114.70	741,342.41	32° 29' 9.293 N	103° 41' 4.895 W	
11,350.0	68.77	179.69	11,202.6	-329.6	-248.3	541,091.65	741,342.54	32° 29' 9.065 N	103° 41' 4.895 W	
11,375.0	71.77	179.69	11,211.0	-353.1	-248.1	541,068.12	741,342.67	32° 29' 8.832 N	103° 41' 4.895 W	
11,400.0	74.77	179.69	11,218.2	-377.0	-248.0	541,044.18	741,342.79	32° 29' 8.596 N	103° 41' 4.896 W	
11,425.0	77.77	179.69	11,224.1	-401.3	-247.9	541,019.90	741,342.93	32° 29' 8.355 N	103° 41' 4.896 W	
11,450.0	80.77	179.69	11,228.8	-425.9	-247.7	540,995.34	741,343.06	32° 29' 8.112 N	103° 41' 4.896 W	
11,475.0	83.77	179.69	11,232.1	-450.6	-247.6	540,970.57	741,343.19	32° 29' 7.867 N	103° 41' 4.896 W	
11,500.0	86.77	179.69	11,234.2	-475.5	-247.5	540,945.66	741,343.33	32° 29' 7.621 N	103° 41' 4.896 W	
11,526.9	90.00	179.69	11,235.0	-502.5	-247.3	540,918.75	741,343.47	32° 29' 7.354 N	103° 41' 4.897 W	
Start 10240.0 hold at 11526.9 MD										
11,600.0	90.00	179.69	11,235.0	-575.5	-246.9	540,845.67	741,343.87	32° 29' 6.631 N	103° 41' 4.897 W	
11,700.0	90.00	179.69	11,235.0	-675.5	-246.4	540,745.67	741,344.41	32° 29' 5.642 N	103° 41' 4.898 W	
11,800.0	90.00	179.69	11,235.0	-775.5	-245.9	540,645.68	741,344.96	32° 29' 4.652 N	103° 41' 4.899 W	
11,900.0	90.00	179.69	11,235.0	-875.5	-245.3	540,545.68	741,345.50	32° 29' 3.663 N	103° 41' 4.900 W	
12,000.0	90.00	179.69	11,235.0	-975.5	-244.8	540,445.68	741,346.04	32° 29' 2.673 N	103° 41' 4.900 W	
12,100.0	90.00	179.69	11,235.0	-1,075.5	-244.2	540,345.68	741,346.58	32° 29' 1.684 N	103° 41' 4.901 W	
12,200.0	90.00	179.69	11,235.0	-1,175.5	-243.7	540,245.68	741,347.12	32° 29' 0.694 N	103° 41' 4.902 W	
12,300.0	90.00	179.69	11,235.0	-1,275.5	-243.1	540,145.68	741,347.67	32° 28' 59.705 N	103° 41' 4.903 W	
12,400.0	90.00	179.69	11,235.0	-1,375.5	-242.6	540,045.69	741,348.21	32° 28' 58.715 N	103° 41' 4.903 W	
12,500.0	90.00	179.69	11,235.0	-1,475.5	-242.1	539,945.69	741,348.75	32° 28' 57.726 N	103° 41' 4.904 W	
12,600.0	90.00	179.69	11,235.0	-1,575.5	-241.5	539,845.69	741,349.29	32° 28' 56.736 N	103° 41' 4.905 W	
12,700.0	90.00	179.69	11,235.0	-1,675.5	-241.0	539,745.69	741,349.83	32° 28' 55.747 N	103° 41' 4.906 W	
12,800.0	90.00	179.69	11,235.0	-1,775.5	-240.4	539,645.69	741,350.38	32° 28' 54.757 N	103° 41' 4.906 W	
12,900.0	90.00	179.69	11,235.0	-1,875.5	-239.9	539,545.69	741,350.92	32° 28' 53.768 N	103° 41' 4.907 W	

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,000.0	90.00	179.69	11,235.0	-1,975.5	-239.3	539,445.69	741,351.46	32° 28' 52.778 N	103° 41' 4.908 W	
13,100.0	90.00	179.69	11,235.0	-2,075.5	-238.8	539,345.70	741,352.00	32° 28' 51.789 N	103° 41' 4.909 W	
13,200.0	90.00	179.69	11,235.0	-2,175.5	-238.3	539,245.70	741,352.54	32° 28' 50.799 N	103° 41' 4.910 W	
13,300.0	90.00	179.69	11,235.0	-2,275.5	-237.7	539,145.70	741,353.09	32° 28' 49.809 N	103° 41' 4.910 W	
13,400.0	90.00	179.69	11,235.0	-2,375.5	-237.2	539,045.70	741,353.63	32° 28' 48.820 N	103° 41' 4.911 W	
13,500.0	90.00	179.69	11,235.0	-2,475.5	-236.6	538,945.70	741,354.17	32° 28' 47.830 N	103° 41' 4.912 W	
13,600.0	90.00	179.69	11,235.0	-2,575.5	-236.1	538,845.70	741,354.71	32° 28' 46.841 N	103° 41' 4.913 W	
13,700.0	90.00	179.69	11,235.0	-2,675.5	-235.6	538,745.70	741,355.26	32° 28' 45.851 N	103° 41' 4.913 W	
13,800.0	90.00	179.69	11,235.0	-2,775.5	-235.0	538,645.71	741,355.80	32° 28' 44.862 N	103° 41' 4.914 W	
13,900.0	90.00	179.69	11,235.0	-2,875.5	-234.5	538,545.71	741,356.34	32° 28' 43.872 N	103° 41' 4.915 W	
13,939.0	90.00	179.69	11,235.0	-2,914.5	-234.3	538,506.74	741,356.55	32° 28' 43.487 N	103° 41' 4.915 W	
VO-6948 Exit at 13939.0 MD										
14,000.0	90.00	179.69	11,235.0	-2,975.5	-233.9	538,445.71	741,356.88	32° 28' 42.883 N	103° 41' 4.916 W	
14,100.0	90.00	179.69	11,235.0	-3,075.5	-233.4	538,345.71	741,357.42	32° 28' 41.893 N	103° 41' 4.916 W	
14,200.0	90.00	179.69	11,235.0	-3,175.5	-232.8	538,245.71	741,357.97	32° 28' 40.904 N	103° 41' 4.917 W	
14,300.0	90.00	179.69	11,235.0	-3,275.5	-232.3	538,145.71	741,358.51	32° 28' 39.914 N	103° 41' 4.918 W	
14,400.0	90.00	179.69	11,235.0	-3,375.5	-231.8	538,045.71	741,359.05	32° 28' 38.925 N	103° 41' 4.919 W	
14,500.0	90.00	179.69	11,235.0	-3,475.5	-231.2	537,945.72	741,359.59	32° 28' 37.935 N	103° 41' 4.920 W	
14,600.0	90.00	179.69	11,235.0	-3,575.5	-230.7	537,845.72	741,360.13	32° 28' 36.946 N	103° 41' 4.920 W	
14,700.0	90.00	179.69	11,235.0	-3,675.5	-230.1	537,745.72	741,360.68	32° 28' 35.956 N	103° 41' 4.921 W	
14,800.0	90.00	179.69	11,235.0	-3,775.5	-229.6	537,645.72	741,361.22	32° 28' 34.967 N	103° 41' 4.922 W	
14,900.0	90.00	179.69	11,235.0	-3,875.5	-229.0	537,545.72	741,361.76	32° 28' 33.977 N	103° 41' 4.923 W	
15,000.0	90.00	179.69	11,235.0	-3,975.5	-228.5	537,445.72	741,362.30	32° 28' 32.988 N	103° 41' 4.923 W	
15,100.0	90.00	179.69	11,235.0	-4,075.5	-228.0	537,345.72	741,362.84	32° 28' 31.998 N	103° 41' 4.924 W	
15,200.0	90.00	179.69	11,235.0	-4,175.5	-227.4	537,245.73	741,363.39	32° 28' 31.009 N	103° 41' 4.925 W	
15,300.0	90.00	179.69	11,235.0	-4,275.5	-226.9	537,145.73	741,363.93	32° 28' 30.019 N	103° 41' 4.926 W	
15,400.0	90.00	179.69	11,235.0	-4,375.5	-226.3	537,045.73	741,364.47	32° 28' 29.030 N	103° 41' 4.926 W	
15,500.0	90.00	179.69	11,235.0	-4,475.5	-225.8	536,945.73	741,365.01	32° 28' 28.040 N	103° 41' 4.927 W	
15,600.0	90.00	179.69	11,235.0	-4,575.5	-225.3	536,845.73	741,365.56	32° 28' 27.050 N	103° 41' 4.928 W	
15,700.0	90.00	179.69	11,235.0	-4,675.5	-224.7	536,745.73	741,366.10	32° 28' 26.061 N	103° 41' 4.929 W	
15,800.0	90.00	179.69	11,235.0	-4,775.5	-224.2	536,645.74	741,366.64	32° 28' 25.071 N	103° 41' 4.929 W	
15,900.0	90.00	179.69	11,235.0	-4,875.5	-223.6	536,545.74	741,367.18	32° 28' 24.082 N	103° 41' 4.930 W	
16,000.0	90.00	179.69	11,235.0	-4,975.5	-223.1	536,445.74	741,367.72	32° 28' 23.092 N	103° 41' 4.931 W	
16,100.0	90.00	179.69	11,235.0	-5,075.5	-222.5	536,345.74	741,368.27	32° 28' 22.103 N	103° 41' 4.932 W	
16,200.0	90.00	179.69	11,235.0	-5,175.5	-222.0	536,245.74	741,368.81	32° 28' 21.113 N	103° 41' 4.933 W	
16,300.0	90.00	179.69	11,235.0	-5,275.5	-221.5	536,145.74	741,369.35	32° 28' 20.124 N	103° 41' 4.933 W	
16,400.0	90.00	179.69	11,235.0	-5,375.5	-220.9	536,045.74	741,369.89	32° 28' 19.134 N	103° 41' 4.934 W	
16,500.0	90.00	179.69	11,235.0	-5,475.5	-220.4	535,945.75	741,370.43	32° 28' 18.145 N	103° 41' 4.935 W	
16,585.0	90.00	179.69	11,235.0	-5,560.4	-219.9	535,860.78	741,370.89	32° 28' 17.304 N	103° 41' 4.936 W	
NMM 113413 Entry at 16585.0 MD										
16,600.0	90.00	179.69	11,235.0	-5,575.5	-219.8	535,845.75	741,370.98	32° 28' 17.155 N	103° 41' 4.936 W	
16,700.0	90.00	179.69	11,235.0	-5,675.5	-219.3	535,745.75	741,371.52	32° 28' 16.166 N	103° 41' 4.936 W	
16,800.0	90.00	179.69	11,235.0	-5,775.5	-218.7	535,645.75	741,372.06	32° 28' 15.176 N	103° 41' 4.937 W	
16,900.0	90.00	179.69	11,235.0	-5,875.5	-218.2	535,545.75	741,372.60	32° 28' 14.187 N	103° 41' 4.938 W	
17,000.0	90.00	179.69	11,235.0	-5,975.4	-217.7	535,445.75	741,373.14	32° 28' 13.197 N	103° 41' 4.939 W	
17,100.0	90.00	179.69	11,235.0	-6,075.4	-217.1	535,345.75	741,373.69	32° 28' 12.208 N	103° 41' 4.939 W	
17,200.0	90.00	179.69	11,235.0	-6,175.4	-216.6	535,245.76	741,374.23	32° 28' 11.218 N	103° 41' 4.940 W	
17,300.0	90.00	179.69	11,235.0	-6,275.4	-216.0	535,145.76	741,374.77	32° 28' 10.229 N	103° 41' 4.941 W	
17,400.0	90.00	179.69	11,235.0	-6,375.4	-215.5	535,045.76	741,375.31	32° 28' 9.239 N	103° 41' 4.942 W	
17,500.0	90.00	179.69	11,235.0	-6,475.4	-215.0	534,945.76	741,375.86	32° 28' 8.250 N	103° 41' 4.943 W	
17,600.0	90.00	179.69	11,235.0	-6,575.4	-214.4	534,845.76	741,376.40	32° 28' 7.260 N	103° 41' 4.943 W	
17,700.0	90.00	179.69	11,235.0	-6,675.4	-213.9	534,745.76	741,376.94	32° 28' 6.271 N	103° 41' 4.944 W	
17,800.0	90.00	179.69	11,235.0	-6,775.4	-213.3	534,645.76	741,377.48	32° 28' 5.281 N	103° 41' 4.945 W	
17,900.0	90.00	179.69	11,235.0	-6,875.4	-212.8	534,545.77	741,378.02	32° 28' 4.291 N	103° 41' 4.946 W	

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,000.0	90.00	179.69	11,235.0	-6,975.4	-212.2	534,445.77	741,378.57	32° 28' 3.302 N	103° 41' 4.946 W	
18,100.0	90.00	179.69	11,235.0	-7,075.4	-211.7	534,345.77	741,379.11	32° 28' 2.312 N	103° 41' 4.947 W	
18,200.0	90.00	179.69	11,235.0	-7,175.4	-211.2	534,245.77	741,379.65	32° 28' 1.323 N	103° 41' 4.948 W	
18,300.0	90.00	179.69	11,235.0	-7,275.4	-210.6	534,145.77	741,380.19	32° 28' 0.333 N	103° 41' 4.949 W	
18,400.0	90.00	179.69	11,235.0	-7,375.4	-210.1	534,045.77	741,380.73	32° 27' 59.344 N	103° 41' 4.949 W	
18,500.0	90.00	179.69	11,235.0	-7,475.4	-209.5	533,945.77	741,381.28	32° 27' 58.354 N	103° 41' 4.950 W	
18,600.0	90.00	179.69	11,235.0	-7,575.4	-209.0	533,845.78	741,381.82	32° 27' 57.365 N	103° 41' 4.951 W	
18,700.0	90.00	179.69	11,235.0	-7,675.4	-208.4	533,745.78	741,382.36	32° 27' 56.375 N	103° 41' 4.952 W	
18,800.0	90.00	179.69	11,235.0	-7,775.4	-207.9	533,645.78	741,382.90	32° 27' 55.386 N	103° 41' 4.952 W	
18,900.0	90.00	179.69	11,235.0	-7,875.4	-207.4	533,545.78	741,383.44	32° 27' 54.396 N	103° 41' 4.953 W	
19,000.0	90.00	179.69	11,235.0	-7,975.4	-206.8	533,445.78	741,383.99	32° 27' 53.407 N	103° 41' 4.954 W	
19,100.0	90.00	179.69	11,235.0	-8,075.4	-206.3	533,345.78	741,384.53	32° 27' 52.417 N	103° 41' 4.955 W	
19,200.0	90.00	179.69	11,235.0	-8,175.4	-205.7	533,245.78	741,385.07	32° 27' 51.428 N	103° 41' 4.956 W	
19,300.0	90.00	179.69	11,235.0	-8,275.4	-205.2	533,145.79	741,385.61	32° 27' 50.438 N	103° 41' 4.956 W	
19,400.0	90.00	179.69	11,235.0	-8,375.4	-204.7	533,045.79	741,386.16	32° 27' 49.449 N	103° 41' 4.957 W	
19,500.0	90.00	179.69	11,235.0	-8,475.4	-204.1	532,945.79	741,386.70	32° 27' 48.459 N	103° 41' 4.958 W	
19,600.0	90.00	179.69	11,235.0	-8,575.4	-203.6	532,845.79	741,387.24	32° 27' 47.470 N	103° 41' 4.959 W	
19,700.0	90.00	179.69	11,235.0	-8,675.4	-203.0	532,745.79	741,387.78	32° 27' 46.480 N	103° 41' 4.959 W	
19,800.0	90.00	179.69	11,235.0	-8,775.4	-202.5	532,645.79	741,388.32	32° 27' 45.491 N	103° 41' 4.960 W	
19,900.0	90.00	179.69	11,235.0	-8,875.4	-201.9	532,545.80	741,388.87	32° 27' 44.501 N	103° 41' 4.961 W	
20,000.0	90.00	179.69	11,235.0	-8,975.4	-201.4	532,445.80	741,389.41	32° 27' 43.511 N	103° 41' 4.962 W	
20,100.0	90.00	179.69	11,235.0	-9,075.4	-200.9	532,345.80	741,389.95	32° 27' 42.522 N	103° 41' 4.962 W	
20,200.0	90.00	179.69	11,235.0	-9,175.4	-200.3	532,245.80	741,390.49	32° 27' 41.532 N	103° 41' 4.963 W	
20,300.0	90.00	179.69	11,235.0	-9,275.4	-199.8	532,145.80	741,391.03	32° 27' 40.543 N	103° 41' 4.964 W	
20,400.0	90.00	179.69	11,235.0	-9,375.4	-199.2	532,045.80	741,391.58	32° 27' 39.553 N	103° 41' 4.965 W	
20,500.0	90.00	179.69	11,235.0	-9,475.4	-198.7	531,945.80	741,392.12	32° 27' 38.564 N	103° 41' 4.965 W	
20,600.0	90.00	179.69	11,235.0	-9,575.4	-198.1	531,845.81	741,392.66	32° 27' 37.574 N	103° 41' 4.966 W	
20,700.0	90.00	179.69	11,235.0	-9,675.4	-197.6	531,745.81	741,393.20	32° 27' 36.585 N	103° 41' 4.967 W	
20,800.0	90.00	179.69	11,235.0	-9,775.4	-197.1	531,645.81	741,393.74	32° 27' 35.595 N	103° 41' 4.968 W	
20,900.0	90.00	179.69	11,235.0	-9,875.4	-196.5	531,545.81	741,394.29	32° 27' 34.606 N	103° 41' 4.969 W	
21,000.0	90.00	179.69	11,235.0	-9,975.4	-196.0	531,445.81	741,394.83	32° 27' 33.616 N	103° 41' 4.969 W	
21,100.0	90.00	179.69	11,235.0	-10,075.4	-195.4	531,345.81	741,395.37	32° 27' 32.627 N	103° 41' 4.970 W	
21,200.0	90.00	179.69	11,235.0	-10,175.4	-194.9	531,245.81	741,395.91	32° 27' 31.637 N	103° 41' 4.971 W	
21,300.0	90.00	179.69	11,235.0	-10,275.4	-194.4	531,145.82	741,396.46	32° 27' 30.648 N	103° 41' 4.972 W	
21,400.0	90.00	179.69	11,235.0	-10,375.4	-193.8	531,045.82	741,397.00	32° 27' 29.658 N	103° 41' 4.972 W	
21,500.0	90.00	179.69	11,235.0	-10,475.4	-193.3	530,945.82	741,397.54	32° 27' 28.669 N	103° 41' 4.973 W	
21,600.0	90.00	179.69	11,235.0	-10,575.4	-192.7	530,845.82	741,398.08	32° 27' 27.679 N	103° 41' 4.974 W	
21,700.0	90.00	179.69	11,235.0	-10,675.4	-192.2	530,745.82	741,398.62	32° 27' 26.690 N	103° 41' 4.975 W	
21,766.9	90.00	179.69	11,235.0	-10,742.3	-191.8	530,678.93	741,398.99	32° 27' 26.028 N	103° 41' 4.975 W	
TD at 21766.9										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP-MORAN 171H - hit/miss target - Shape	0.00	0.01	11,235.0	-373.0	-249.9	541,048.21	741,340.89	32° 29' 8.636 N	103° 41' 4.918 W	
- plan misses target center by 17.4usft at 11400.1usft MD (11218.2 TVD, -377.1 N, -248.0 E)										
- Point										
LTP/BHL-MORAN 17 - plan hits target center - Point	0.00	0.00	11,235.0	-10,742.3	-191.8	530,678.93	741,398.99	32° 27' 26.028 N	103° 41' 4.975 W	

Permian Resources Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well MORAN 9 FED COM 171H
Company:	NEW MEXICO	TVD Reference:	KB @ 3756.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3756.0usft
Site:	MORAN PROJECT	North Reference:	Grid
Well:	MORAN 9 FED COM 171H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	Start Build 2.00
2,500.0	2,497.5	-4.3	-43.3	Start 945.1 hold at 2500.0 MD
3,445.1	3,428.2	-20.7	-206.6	Start Drop -2.00
3,945.1	3,925.7	-25.0	-249.9	Start 6831.8 hold at 3945.1 MD
10,776.9	10,757.5	-25.0	-249.9	Start DLS 12.00 TFO 179.69
11,288.0	11,176.4	-273.4	-248.6	NMNM 121957 Exit at 11288.0 MD
11,526.9	11,235.0	-502.5	-247.3	Start 10240.0 hold at 11526.9 MD
13,939.0	11,235.0	-2,914.5	-234.3	VO-6948 Exit at 13939.0 MD
16,585.0	11,235.0	-5,560.4	-219.9	NMNM 113413 Entry at 16585.0 MD
21,766.9	11,235.0	-10,742.3	-191.8	TD at 21766.9

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CENTENNIAL RESOURCE PRODUCTION LLC
WELL NAME & NO.:	MORAN 9 FEDERAL COM 171H
SURFACE HOLE FOOTAGE:	271'/S & 1352'/W
BOTTOM HOLE FOOTAGE:	100'/S & 1100'/W
LOCATION:	Section 9, T.21 S., R.32 E., NMP
COUNTY:	Lea County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" 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
Wellhead Variance	<input type="radio"/> Diverter		
Other	<input checked="" type="checkbox"/> 4 String	<input checked="" type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Pilot Hole	<input type="checkbox"/> Open Annulus
Cementing	<input checked="" type="checkbox"/> Contingency Cement Squeeze	<input checked="" type="checkbox"/> EchoMeter	<input type="checkbox"/> Primary Cement Squeeze
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input checked="" type="checkbox"/> Break Testing	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

- The **13-3/8** inch surface casing shall be set at approximately **1236 feet** (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **17.5** inch in diameter.

- 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 **24 hours in the Potash Area** 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 **10-3/4** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.**
 - ❖ In R111 Potash Areas if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing salt string must come to surface.
 - ❖ **Special Capitan Reef requirements.** Only fresh water must be utilized through the Capitan Reef section.
3. The minimum required fill of cement behind the **8-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef. Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

Contingency Squeeze if cement does not reach surface:

Operator has proposed to pump down 10-3/4" X 8-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 10-3/4" casing to surface after the second stage BH to verify TOC.

Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.

If cement does not reach surface, the next casing string must come to surface.

Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 500 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

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 **13-3/8** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 2.
- 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.

(Note: For a minimum 5M BOPE or less (Utilizing a 10M BOPE system)

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-689-5981 Lea County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per Onshore Oil and Gas Order No. 2.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

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

EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

BLM_NM_CFO_DrillingNotifications@BLM.GOV

(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 2nd 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 **43 CFR part 3170 Subpart 3172** 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 **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
 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 cement), 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** 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 **43 CFR**

part 3170 Subpart 3172.

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.

JS 4/29/2024

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
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CONDITIONS
 Action 339194

CONDITIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 339194
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	ALL PREVIOUS COA's APPLY.	10/10/2024