

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

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

Form C-101
August 1, 2011

Permit 401663

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address EOG RESOURCES INC 5509 Champions Drive Midland, TX 79706		2. OGRID Number 7377
4. Property Code 319634		3. API Number 30-025-55381
5. Property Name MAMBA 30 STATE COM		6. Well No. 509H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
O	30	24S	33E	O	267	S	1849	E	Lea

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
M	30	24S	33E	4	100	S	799	W	Lea

9. Pool Information

WC-025 G-07 S243225C;LWR BONE SPRIN	97964
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3547
16. Multiple N	17. Proposed Depth 22050	18. Formation Bone Spring	19. Contractor	20. Spud Date 11/14/2024
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	13	10.75	40.5	1271	350	0
Int1	9.875	8.625	35.7	5211	720	0
Prod	7.875	6	24.5	10657	2360	0
Prod	6.75	5.5	20	22050	2360	0

Casing/Cement Program: Additional Comments

EOG respectfully requests the option to use the casing and cement program described in Design B of the drill plan. The NMOCDC will be notified of EOG's election at spud.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION
Signature:	
Printed Name: Electronically filed by Kristina Agee	Approved By: Jeffrey Harrison
Title: Senior Regulatory Administrator	Title: Petroleum Specialist III
Email Address: Kristina_agee@eogresources.com	Approved Date: 10/24/2025 Expiration Date: 10/24/2027
Date: 10/23/2025 Phone: 432-686-6996	Conditions of Approval Attached

C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☒ Initial Submittal
			☒ Amended Report
		☐ As Drilled	

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025- 55381	Pool Code 97964	Pool Name WC-025 G-07 S243225C; LWR BONE SPRIN
Property Code 319634	Property Name MAMBA 30 STATE COM	Well Number 509H
OGRID No. 7377	Operator Name EOG RESOURCES, INC.	Ground Level Elevation 3547'
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal

Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	30	24-S	33-E	-	267' S	1849' E	N 32.1821322	W 103.6088273	LEA

Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
4	30	24-S	33-E	-	100' S	799' W	N 32.1816795	W 103.6172598	LEA

Dedicated Acres 316.72	Infill or Defining Well DEFINING	Defining Well API PENDING	Overlapping Spacing Unit (Y/N) Y	Consolidated Code C
Order Numbers PENDING			Well Setbacks are under Common Ownership: ☐ Yes ☒ No	

Kick Off Point (KOP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
N	30	24-S	33-E	-	50' S	2249' W	N 32.1815393	W 103.6125733	LEA

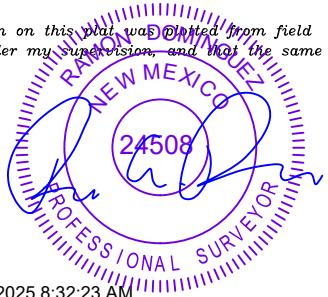
First Take Point (FTP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
N	30	24-S	33-E	-	100' S	2249' W	N 32.1816767	W 103.6125732	LEA

Last Take Point (LTP)

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
4	30	24-S	33-E	-	100' S	799' W	N 32.1816795	W 103.6172598	LEA

Unitized Area or Area of Uniform Interest COMM AGREEMENT	Spacing Unity Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation 3572'
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OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief; and, if the well is a vertical or directional well, 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 a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> <i>If this well is a horizontal well, I further certify that this organization has received The consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.</i> <i>Kayla McConnell</i> Signature Date 10/22/2025 KAYLA MCCONNELL Print Name KAYLA_MCCONNELL@EOGRESOURCES.COM E-mail Address		SURVEYORS CERTIFICATION <i>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.</i>  10/16/2025 8:32:23 AM Signature and Seal of Professional Surveyor Date Certificate Number Date of Survey 09/13/2025	
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C-102

Submit Electronically
Via OCD PermittingState of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

Revised July 9, 2024

Submittal
Type:

- ☐ Initial Submittal
- ☒ Amended Report
- ☐ As Drilled

Property Name and Well Number

MAMBA 30 STATE COM 509H

SURFACE LOCATION (SHL)

NEW MEXICO EAST
NAD 1983
X=765483 Y=430749
LAT.: N 32.1821322
LONG.: W 103.6088273

NAD 1927

X=724299 Y=430691
LAT.: N 32.1820089
LONG.: W 103.6083497
267' FSL 1849' FWL

KICK OFF POINT (KOP)

NEW MEXICO EAST
NAD 1983
X=764326 Y=430526
LAT.: N 32.1815393
LONG.: W 103.6125733

NAD 1927

X=723141 Y=430468
LAT.: N 32.1814159
LONG.: W 103.6120957
50' FSL 2249' FWL

UPPER MOST PERF. (UMP)

NEW MEXICO EAST
NAD 1983
X=764325 Y=430576
LAT.: N 32.1816767
LONG.: W 103.6125732

NAD 1927

X=723141 Y=430518
LAT.: N 32.1815533
LONG.: W 103.6120955
100' FSL 2249' FWL

PROPOSED PERF. POINT (PPP1)

NEW MEXICO EAST
NAD 1983
X=764311 Y=433112
LAT.: N 32.1886496
LONG.: W 103.6125660

NAD 1927

X=723126 Y=433054
LAT.: N 32.1885263
LONG.: W 103.6120880
2637' FSL 2249' FWL

DEFLECTION POINT (DP1)

NEW MEXICO EAST
NAD 1983
X=764299 Y=435177
LAT.: N 32.1943247
LONG.: W 103.6125594

NAD 1927

X=723114 Y=435119
LAT.: N 32.1942015
LONG.: W 103.6120811
578' FNL 2249' FWL

NON PERF. ZONE (NPZ1)

NEW MEXICO EAST
NAD 1983
X=764153 Y=435518
LAT.: N 32.1952646
LONG.: W 103.6130241

NAD 1927

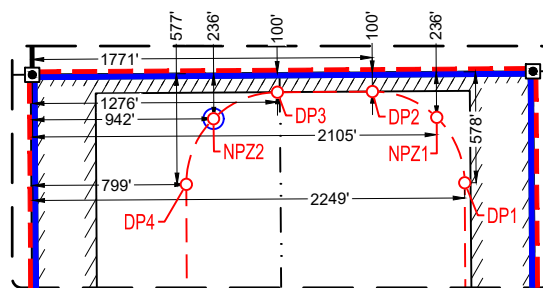
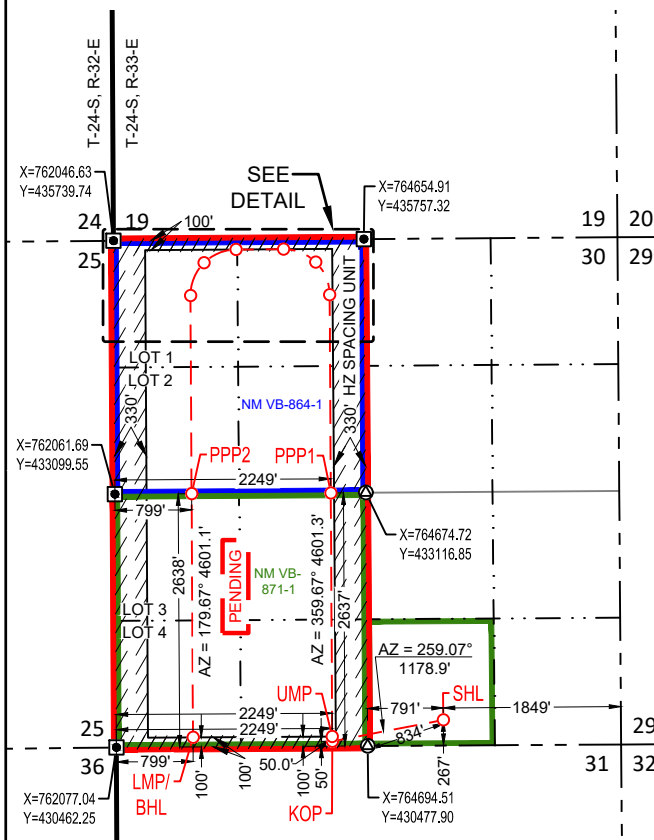
X=722968 Y=435460
LAT.: N 32.1951414
LONG.: W 103.6125458
236' FNL 2105' FWL

DEFLECTION POINT (DP2)

NEW MEXICO EAST
NAD 1983
X=763818 Y=435652
LAT.: N 32.1956384
LONG.: W 103.6141030

NAD 1927

X=722634 Y=435593
LAT.: N 32.1955152
LONG.: W 103.6136247
100' FNL 1771' FWL

DETAIL VIEW
SCALE: 1" = 1000'

T-24-S, R-33-E
SECTION 30
LOT 1 - 39.07 ACRES
LOT 2 - 39.15 ACRES
LOT 3 - 39.21 ACRES
LOT 4 - 39.29 ACRES

DEFLECTION POINT (DP3)

NEW MEXICO EAST
NAD 1983
X=763323 Y=435648
LAT.: N 32.1956383
LONG.: W 103.6157032

NAD 1927

X=722139 Y=435590
LAT.: N 32.1955152
LONG.: W 103.6152248
100' FNL 1276' FWL

NON PERF. ZONE (NPZ2)

NEW MEXICO EAST
NAD 1983
X=762990 Y=435510
LAT.: N 32.1952644
LONG.: W 103.6167820

NAD 1927

X=721806 Y=435452
LAT.: N 32.1951412
LONG.: W 103.6163036
236' FNL 942' FWL

DEFLECTION POINT (DP4)

NEW MEXICO EAST
NAD 1983
X=762849 Y=435168
LAT.: N 32.1943270
LONG.: W 103.6172466

NAD 1927

X=721664 Y=435110
LAT.: N 32.1942038
LONG.: W 103.6167682
577' FNL 799' FWL

PROPOSED PERF. POINT (PPP2)

NEW MEXICO EAST
NAD 1983
X=762861 Y=433105
LAT.: N 32.1886555
LONG.: W 103.6172526

NAD 1927

X=721676 Y=433047
LAT.: N 32.1885322
LONG.: W 103.6167744
2638' FSL 799' FWL

LOWER MOST PERF. (LMP)
BOTTOM HOLE LOCATION (BHL)

NEW MEXICO EAST
NAD 1983
X=762875 Y=430567
LAT.: N 32.1816795
LONG.: W 103.6172598

NAD 1927

X=721691 Y=430509
LAT.: N 32.1815561
LONG.: W 103.6167820
100' FSL 799' FWL

SURVEYORS CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.
09/13/2025

Date of Survey

Signature and Seal of Professional Surveyor:



0/16/2025 8:32:24 AM

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Phone: (505) 476-3441

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

Form APD Conditions

Permit 401663

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: EOG RESOURCES INC [7377] 5509 Champions Drive Midland, TX 79706	API Number: 30-025-55381
	Well: MAMBA 30 STATE COM #509H

OCD Reviewer	Condition
jeffrey.harrison	Cement is required to circulate on both surface and intermediate1 strings of casing.
jeffrey.harrison	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.
jeffrey.harrison	A [C-103] Sub. Drilling (C-103N) is required within (10) days of spud.
jeffrey.harrison	Notify the OCD 24 hours prior to casing & cement.
jeffrey.harrison	File As Drilled C-102 and a directional Survey with C-104 completion packet.
jeffrey.harrison	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.
jeffrey.harrison	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
jeffrey.harrison	No additives containing PFAS chemicals will be added to the drilling fluids or completion fluids used during drilling, completions, or recompletions operations.
jeffrey.harrison	All logs run on the well must be submitted to NMOCD.
jeffrey.harrison	NSL required IF any portion of the well is completed within 330' of the spacing unit boundary perpendicular to the well's trajectory.
jeffrey.harrison	If an alteration to the setting depth of the intermediate casing shoe is desired a form C-103A must be approved prior to the change being made.
jeffrey.harrison	Surface casing shall be set a minimum of 25' into the Rustler Anhydrite, above the salt, and below usable fresh water and cemented to the surface. If salt is encountered set casing at least 25 ft. above the salt.

**EOG Batch Casing**

Pad Name: Mamba 30 State Com Horseshoe PERMITS
SHL: Section 30, Township 24-S, Range 33-E, LEA County, NM

Well Name	API #	Surface		Intermediate		Production	
		MD	TVD	MD	TVD	MD	TVD
Mamba 30 State Com #508H	30-025-*****	1,271	1,271	5,088	5,085	21,830	10,845
Mamba 30 State Com #509H	30-025-*****	1,271	1,271	5,211	5,085	22,050	10,873
Mamba 30 State Com #720H	30-025-*****	1,271	1,271	11,435	11,379	23,659	12,787





Master Variance Document

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Table of Contents

- [BOPE Break Test](#) (3/25/2025)
- [Offline Surface/Intermediate Cement](#) (8/15/2023)
- [Intermediate Bradenhead Cement \(Deep Targets\)](#) (8/15/2023)
- [Wolfcamp Intermediate Casing Setpoint](#) (6/26/2024)
- [Offline Production Cement](#) (11/12/2024)
- [Production Bradenhead Cement](#) (8/9/2024)
- [Salt Section Annular Clearance](#) (11/8/2022)



BOPE Break Test Variance

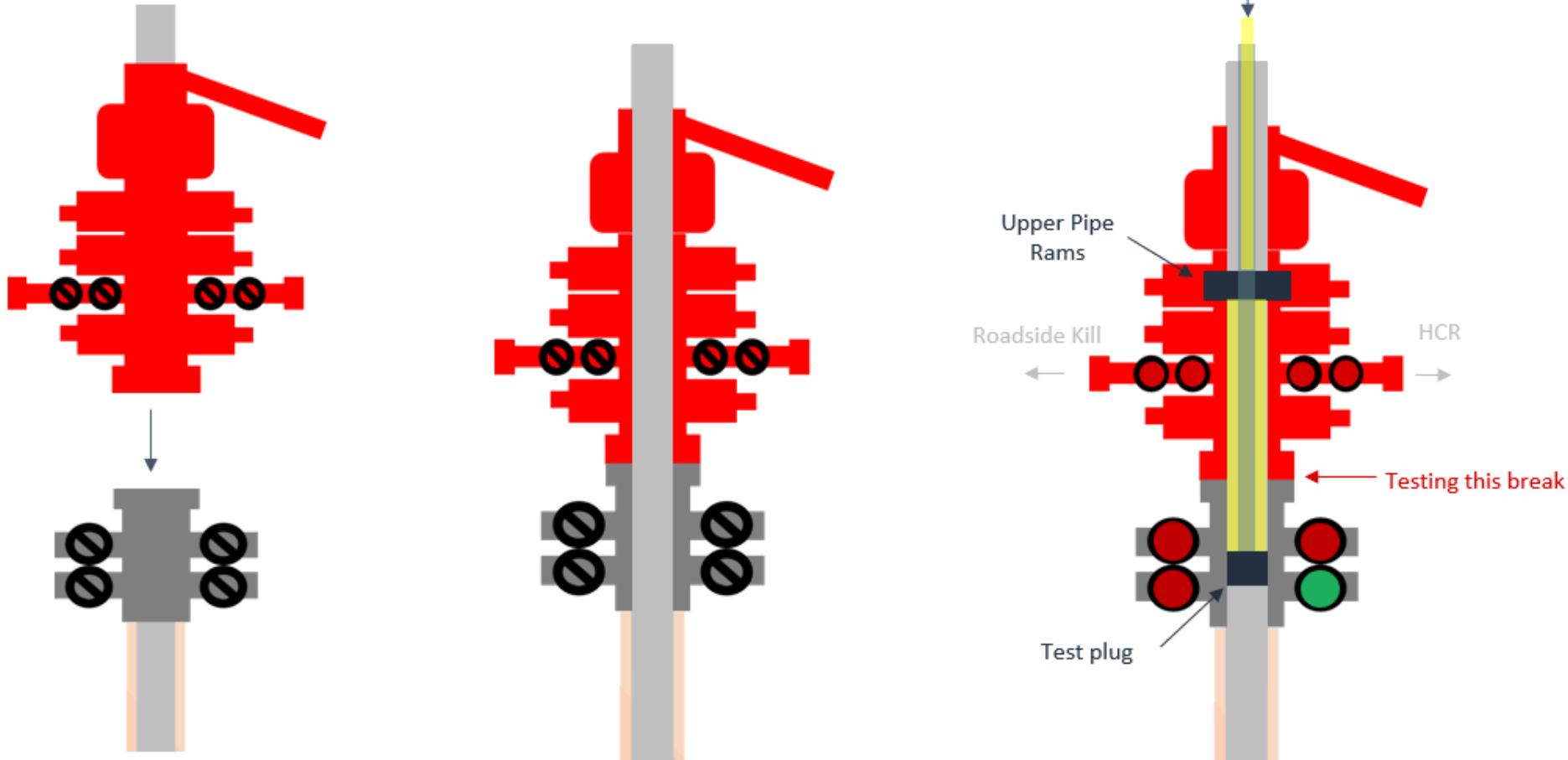
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EOG BOPE Break Test Variance (Intervals 5M MASP or less)

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of ECFR Title 43 Part 3172.6(b)(9)(iv) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement operations to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 21 days.
- Break-test only available for the Base of the Wolfcamp or shallower
 - If anything out of the ordinary is observed during drilling, tripping or casing running operations in the production hole section, break testing will not be performed in the subsequent well's production hole section.
 - Furthermore, break testing in the production hole section will not be performed if offset frac operations are observed within 1 mile and within the same producing horizon.
- Each rig requesting the break-test variance is capable of picking up the BOP without damaging components using winches, following API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth edition, December 2018, Annex C. Table C.4) which recognizes break testing as an acceptable practice.
- Function tests will be performed on the following BOP elements:
 - Annular → during each full BOPE test and at least weekly
 - Pipe Rams → Every trip and on trip ins where FIT required
 - Blind Rams → Every trip
- Break testing BOP and BOPE coupled with batch drilling operations and option to offline cement and/or remediate (if needed) any surface, intermediate or production sections, according to attached offline cementing support documentation.
- After the well section is secured, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad.
- TA cap will also be installed per Wellhead vendor procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

Break Test Diagram (Test Joint)



Steps

1. Set plug in with test joint wellhead (lower barrier)
2. Close Upper Pipe Rams (upper barrier)
3. Close roadside kill
4. Close HCR
5. Open wellhead valves below test plug to ensure if leak past test plug, pressure won't be applied to wellbore
6. Tie BOP testers high pressure line to top of test joint
7. Pressure up to test break
8. Bleed test pressure from BOP testing unit



Offline Surface + Intermediate Variance

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Offline Surface + Intermediate Cement

Cement Program

1. No changes to the cement program will take place for offline cementing.

Summarized Operational Procedure for Intermediate Casing

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment back pressure valves.
 - a. Float equipment is equipped with two back pressure valves rated to a minimum of 5,000 psi.
2. Land production casing on mandrel hanger through BOP.
 - a. If casing is unable to be landed with a mandrel hanger, then the **casing will be cemented online.**
3. Break circulation and confirm no restrictions.
 - a. Ensure no blockage of float equipment and appropriate annular returns.
 - b. Perform flow check to confirm well is static.
4. Set pack-off
 - a. If utilizing a fluted/ported mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid, remove landing joint, and set annular packoff through BOP. Pressure test to 5,000 psi for 10 min.
 - b. If utilizing a solid mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid. Pressure test seals to 5,000 psi for 10 min. Remove landing joint through BOP.
5. After confirmation of both annular barriers and the two casing barriers, install TA plug and pressure test to 5,000 psi for 10 min. Notify the BLM with intent to proceed with nipple down and offline cementing.
 - a. Minimum 4 hrs notice.
6. With the well secured and BLM notified, nipple down BOP and secure on hydraulic carrier or cradle.
 - a. **Note, if any of the barriers fail to test, the BOP stack will not be nipped down until after the cement job has concluded and both lead and tail slurry have reached 500 psi.**
7. Skid/Walk rig off current well.
8. Confirm well is static before removing TA Plug.
 - a. Cementing operations will not proceed until well is under control. (If well is not static, notify BLM and proceed to kill)
 - b. Casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing.
 - c. Well control plan can be seen in Section B, Well Control Procedures.
 - d. If need be, rig can be moved back over well and BOP nipped back up for any further remediation.

Offline Surface + Intermediate Cement

- e. Diagram for rig positioning relative to offline cementing can be seen in Figure 4.
9. Rig up return lines to take returns from wellhead to pits and rig choke.
 - a. Test all connections and lines from wellhead to choke manifold to 5,000 psi high for 10 min.
 - b. If either test fails, perform corrections and retest before proceeding.
 - c. Return line schematics can be seen in Figure 3.
10. Remove TA Plug from the casing.
11. Install offline cement tool.
 - a. Current offline cement tool schematics can be seen in Figure 1 (Cameron) and Figure 2 (Cactus).
12. Rig up cement head and cementing lines.
 - a. Pressure test cement lines against cement head to 80% of casing burst for 10 min.
13. Break circulation on well to confirm no restrictions.
 - a. If gas is present on circulation, well will be shut in and returns rerouted through gas buster.
 - b. Max anticipated time before circulating with cement truck is 6 hrs.
14. Pump cement job as per plan.
 - a. At plug bump, test casing to 0.22 psi/ft or 1500 psi, whichever is greater.
 - b. If plug does not bump on calculated, shut down and wait 8 hrs or 500 psi compressive strength, whichever is greater before testing casing.
15. Confirm well is static and floats are holding after cement job.
 - a. With floats holding and backside static:
 - i. Remove cement head.
 - b. If floats are leaking:
 - i. Shut-in well and WOC (Wait on Cement) until tail slurry reaches 500 psi compressive strength and the casing is static prior to removing cement head.
 - c. If there is flow on the backside:
 - i. Shut in well and WOC until tail slurry reaches 500 psi compressive strength. Ensure that the casing is static prior to removing cement head.
16. Remove offline cement tool.
17. Install night cap with pressure gauge for monitoring.
18. Test night cap to 5,000 psi for 10 min.

Offline Surface + Intermediate Cement

Example Well Control Plan Content

A. Well Control Component Table

The table below, which covers the cementing of the 5M MASP (Maximum Allowable Surface Pressure) portion of the well, outlines the well control component rating in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the BOP nipped up to the wellhead.

Intermediate hole section, 5M requirement

Component	RWP
Pack-off	10M
Casing Wellhead Valves	10M
Annular Wellhead Valves	5M
TA Plug	10M
Float Valves	5M
2" 1502 Lo-Torque Valves	15M

B. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while circulating and cementing through the Offline Cement Adapter.

General Procedure While Circulating

1. Sound alarm (alert crew).
2. Shut down pumps.
3. Shut-in Well (close valves to rig pits and open valve to rig choke line. Rig choke will already be in the closed position).
4. Confirm shut-in.
5. Notify tool pusher/company representative.

Offline Surface + Intermediate Cement

Example Well Control Plan Content

A. Well Control Component Table

The table below, which covers the cementing of the 5M MASP (Maximum Allowable Surface Pressure) portion of the well, outlines the well control component rating in use. This table, combined with the mud program, documents that two barriers to flow can be maintained at all times, independent of the BOP nipped up to the wellhead.

Intermediate hole section, 5M requirement

Component	RWP
Pack-off	10M
Casing Wellhead Valves	10M
Annular Wellhead Valves	5M
TA Plug	10M
Float Valves	5M
2" 1502 Lo-Torque Valves	15M

B. Well Control Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are the minimal high-level tasks prescribed to assure a proper shut-in while circulating and cementing through the Offline Cement Adapter.

General Procedure While Circulating

1. Sound alarm (alert crew).
2. Shut down pumps.
3. Shut-in Well (close valves to rig pits and open valve to rig choke line. Rig choke will already be in the closed position).
4. Confirm shut-in.
5. Notify tool pusher/company representative.

Offline Surface + Intermediate Cement

6. Read and record the following:
 - a. SICP (Shut in Casing Pressure) and AP (Annular Pressure)
 - b. Pit gain
 - c. Time
 - d. Regroup and identify forward plan to continue circulating out kick via rig choke and mud/gas separator. Circulate and adjust mud density as needed to control well.

General Procedure While Cementing

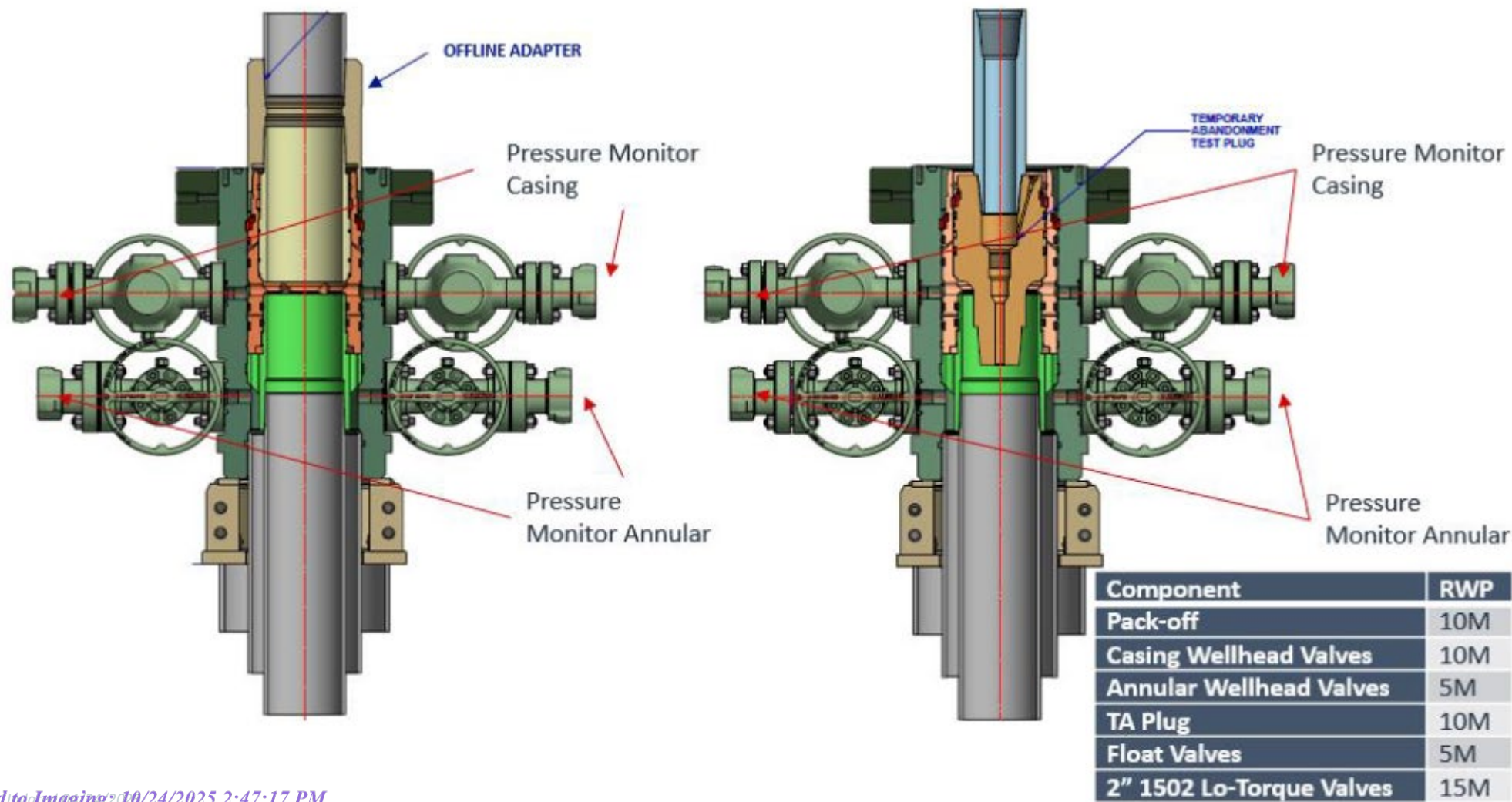
1. Sound alarm (alert crew).
2. Shut down pumps.
3. Shut-in Well (close valves to rig pits and open valve to rig choke line. Rig choke will already be in the closed position).
4. Confirm shut-in.
5. Notify tool pusher/company representative.
6. Open rig choke and begin pumping again taking returns through choke manifold and mud/gas separator.
7. Continue to place cement until plug bumps.
8. At plug bump close rig choke and cement head.
9. Read and record the following
 - a. SICP and AP
 - b. Pit gain
 - c. Time
 - d. Shut-in annulus valves on wellhead

General Procedure After Cementing

1. Sound alarm (alert crew).
2. Shut-in Well (close valves to rig pits and open valve to rig choke line. Rig choke will already be in the closed position).
3. Confirm shut-in.
4. Notify tool pusher/company representative.
5. Read and record the following:
 - a. SICP and AP
 - b. Pit gain
 - c. Time
 - d. Shut-in annulus valves on wellhead

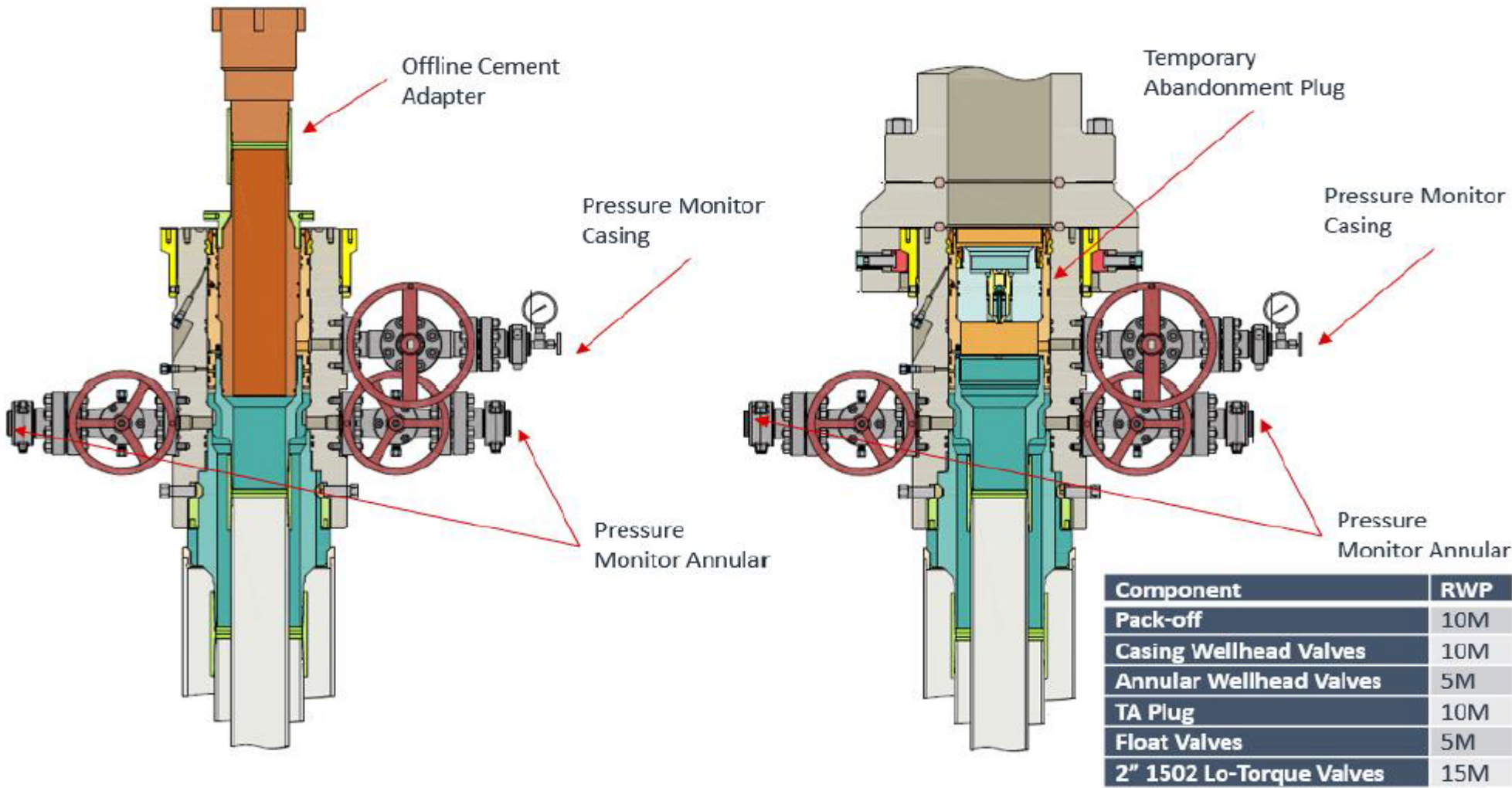
Offline Surface + Intermediate Cement

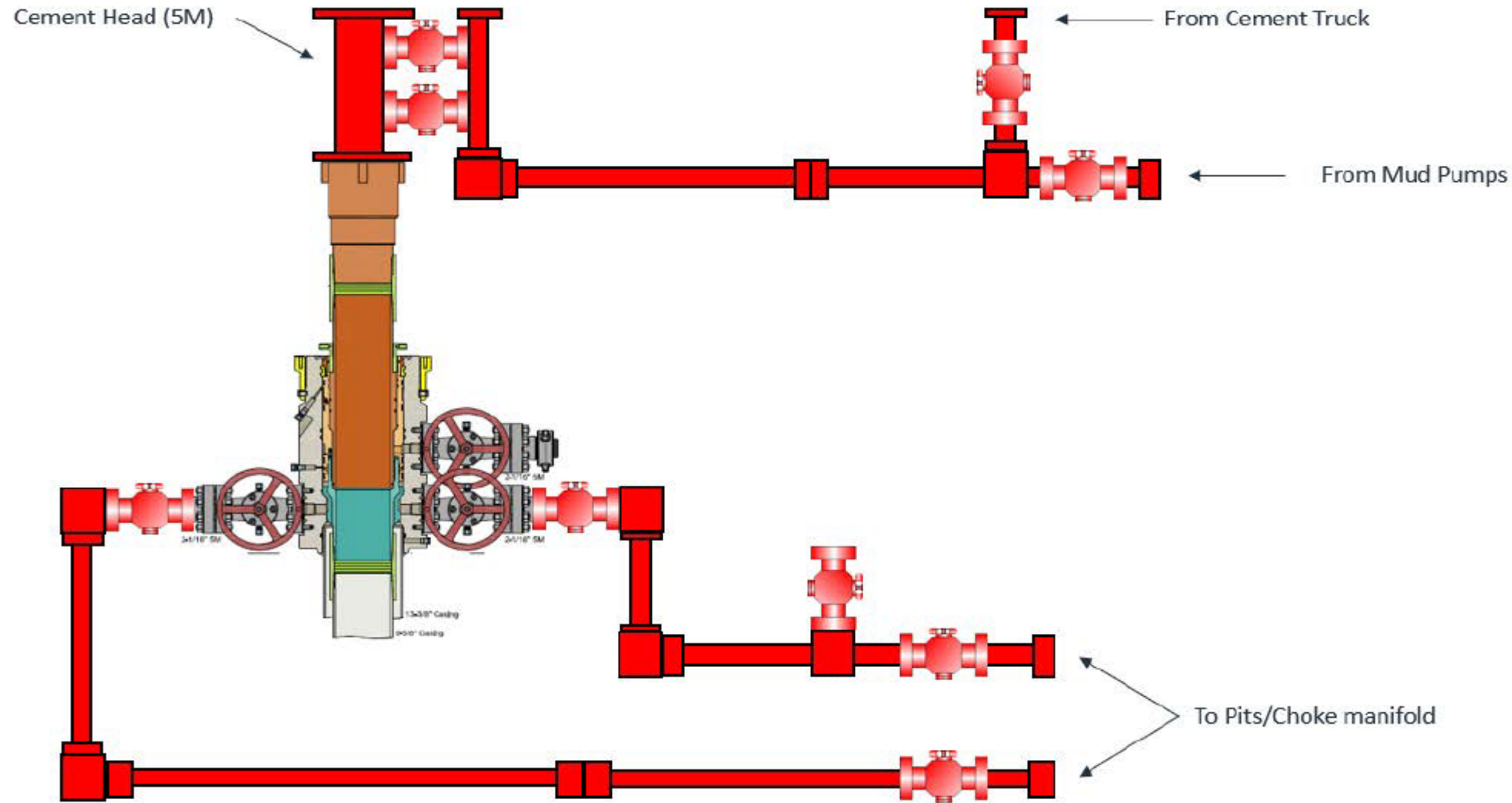
Figure 1: Cameron TA Plug and Offline Adapter Schematic



Offline Surface + Intermediate Cement

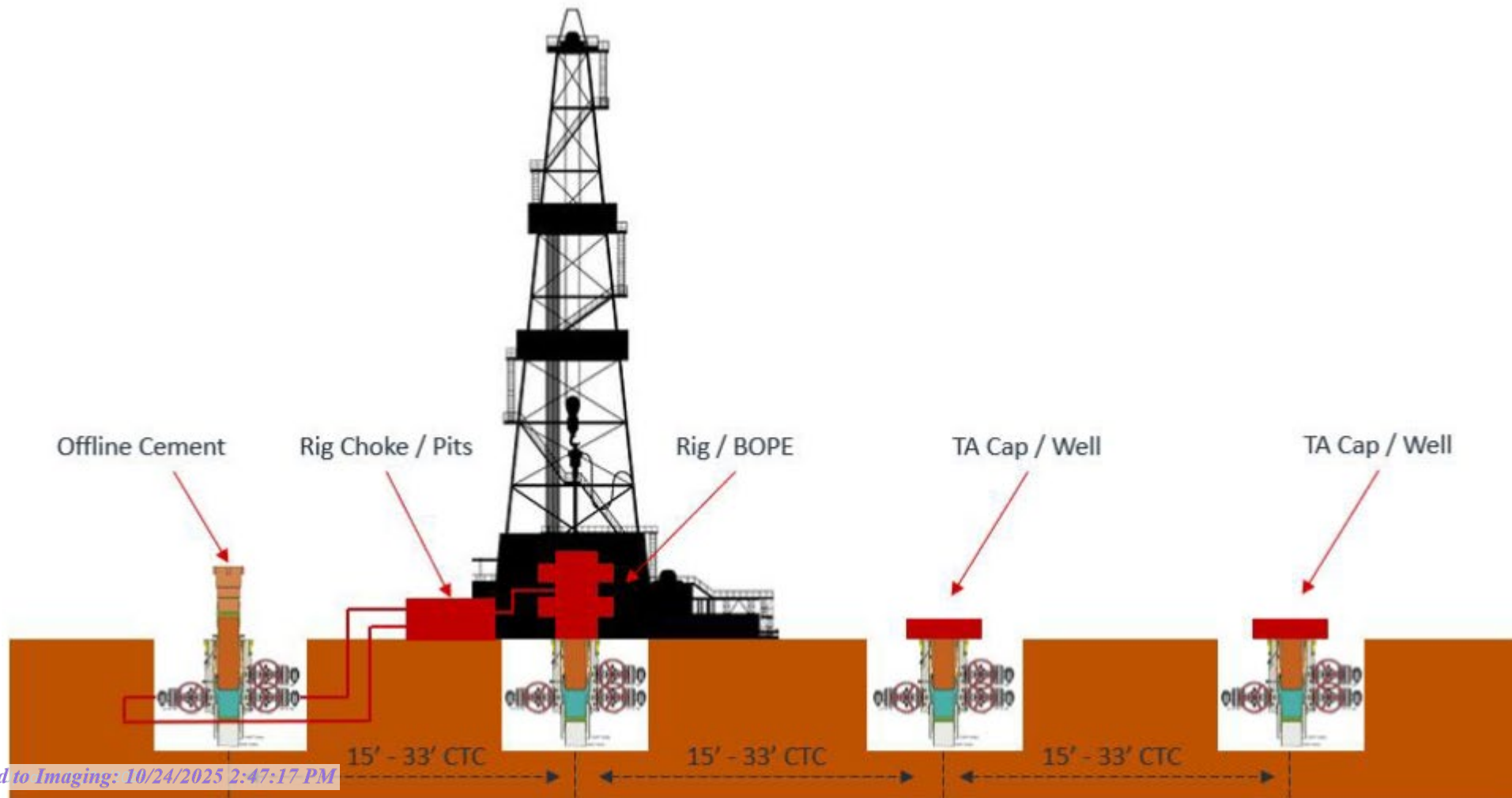
Figure 2: Cactus TA Plug and Offline Adapter Schematic





Offline Surface + Intermediate Cement

Figure 4: Rig Placement Diagram





Intermediate Bradenhead Cement Variance

Intermediate Bradenhead Cement

Deep Target Intermediate Bradenhead:

EOG requests variance from minimum standards to pump a two stage cement job on the intermediate casing string **when set below the Delaware Mountain Group** with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage bradenhead squeezed to be performed at a minimum of **50% of OH excess (typically increased to ~1,000 sacks)** with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of Class C/H cement + additives (2.30 yld, 12.91 ppg) will be executed as a contingency. Top of cement will be verified by Echo-meter.

EOG will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

EOG will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.



Wolfcamp Intermediate Casing Setpoint

Intermediate Bradenhead Cement

EOG Resources Inc. (EOG) requests a variance to set the intermediate casing shoe in the Bone Spring formation OR the Wolfcamp formation, depending on depletion in the area and well conditions. EOG will monitor the well and ensure the well is static before casing operations begin.



Offline Production Cement Variance —

EOG Offline Production Checklist

Offline Checklist

All items below must be met. If not, the production cement will be done online.

1. Offline production cement jobs **are applicable for the Base of the Wolfcamp or shallower.**
2. Nothing out of the ordinary observed during drilling, tripping, or casing running operations in the Production Hole Section.
3. Casing must be landed with Hanger.
4. EOG Company Man and Superintendent with Well Control certification must be present to monitor returns.
5. EOG Cement Advisor must be present to oversee the Cement Job.
6. Rig Manager is responsible for walking the rig to the next well.
7. The BOP will NOT be nipped down if:
 - a) ANY barrier fails to test.
 - b) ANY offset frac operations are observed within 1 mile and within the same producing horizon.
8. After all barriers test and the BLM has been notified, the BOP may be nipped down to proceed with offline operations.
9. EOG will not Drill out of the next well until Cement Operations have concluded on the offline well.

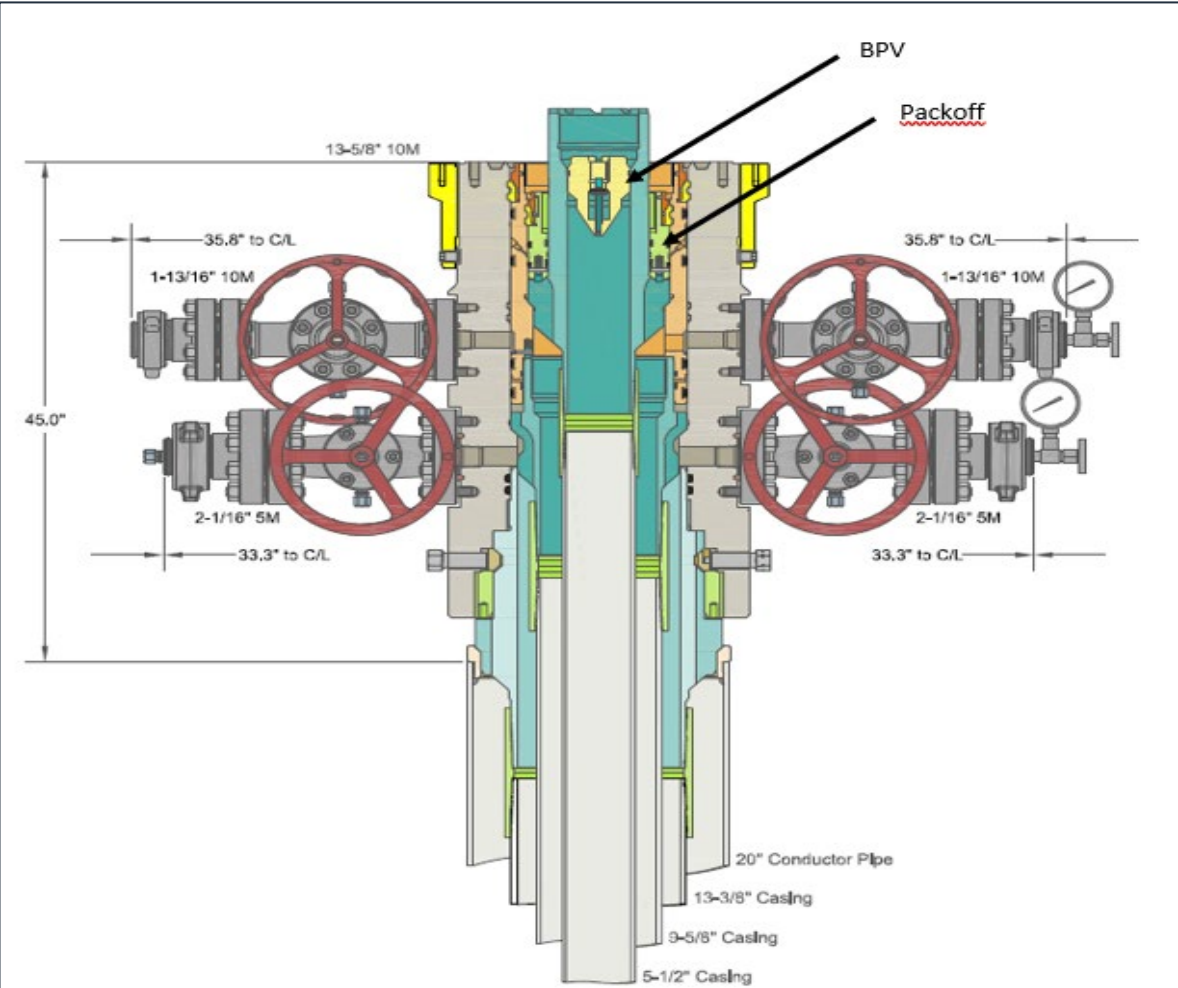
Offline Procedure

1. Run casing as per normal operations. Review EOG Offline Requirements Checklist, if the well is a candidate for Offline Cement on the Production continue following this procedure. Conduct negative pressure test while running casing and confirm integrity of the float equipment back pressure valves.
 - a. Float equipment is equipped with two back pressure valves rated to 15,000 psi.
2. Land production casing on mandrel hanger.
 - a. If casing is unable to be landed with a mandrel hanger, then the casing will be cemented online.
 - b. If utilizing a fluted/ported mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid, remove landing joint, and set annular packoff rated to 10,000 psi. Pressure test same to 10,000 psi.
 - c. If utilizing a solid mandrel hanger, ensure well is static on the annulus and inside the casing by filling the pipe with kill weight fluid. Pressure test seals to 10,000 psi. Remove landing joint.
3. Install back pressure valve in the casing for a 3rd casing barrier.
 - a. Back pressure valve rated to a minimum of 10,000 psi.
4. With the well Secured and BLM notified; Nipple down BOP and secure on hydraulic carrier or cradle and Skid/Walk rig to next well on pad.
 - a. Note, if any of the barriers fail to test, the BOP stack will not be nipped down until after the cement job has concluded.
 - b. Note, EOG Company Man and Cement Advisor will oversee Cementing Operations while Rig Manager walks the rig and nipples up the BOP.
 - c. Note, EOG will not drill out of the subsequent well until after plug bump.
5. Install 10M Gate Valve, with Wellhead Adapter.
 - a. This creates an additional barrier on the annulus and inside the casing.
 - b. Gate valve rated to a minimum of 10,000 psi.
6. Test connection between Wellhead Adapter seals against hanger neck and ring gasket to 10,000 psi.
7. Remove backpressure valve from the casing.
8. Rig up cement head and cementing lines.
9. After rig up of cement head and cement lines, and confirmation of the annular barriers and casing barriers, notify the BLM with intent to proceed offline cementing.
10. Perform cement job.
11. *Note* – Procedure continued on the next page.

Offline Procedure

12. If an influx is noted during the Cement Job:
 - a. It is the Company Man and Superintendent's responsibility to maintain well control.
 - b. The aux manifold will be redirected to the rig's chokes.
 - c. Backpressure will be held on the well with the chokes to ensure well control is maintained through the remainder of the cement job while circulating out the influx.
 - d. If annular surface pressure approaches 90% tested pressure of the manifold or if circulating the influx out with the cementing pumps is not feasible, the well can be secured by closing the casing valves (10M).
 - e. Once cement is in place, we will close the casing valves and confirm the well is static and floats are holding.
 - f. If the floats fail, the gate valve (10M) or cement head (10M) can be closed to secure the well.
13. Confirm well is static and floats are holding after cement job.
14. Remove cement head.
15. Install back pressure valve.
16. Remove 10M Gate Valve and Wellhead Adapter.
17. Install night cap with pressure gauge for monitoring.
18. Test night cap to 5,000 psi.

Offline Barrier Overview



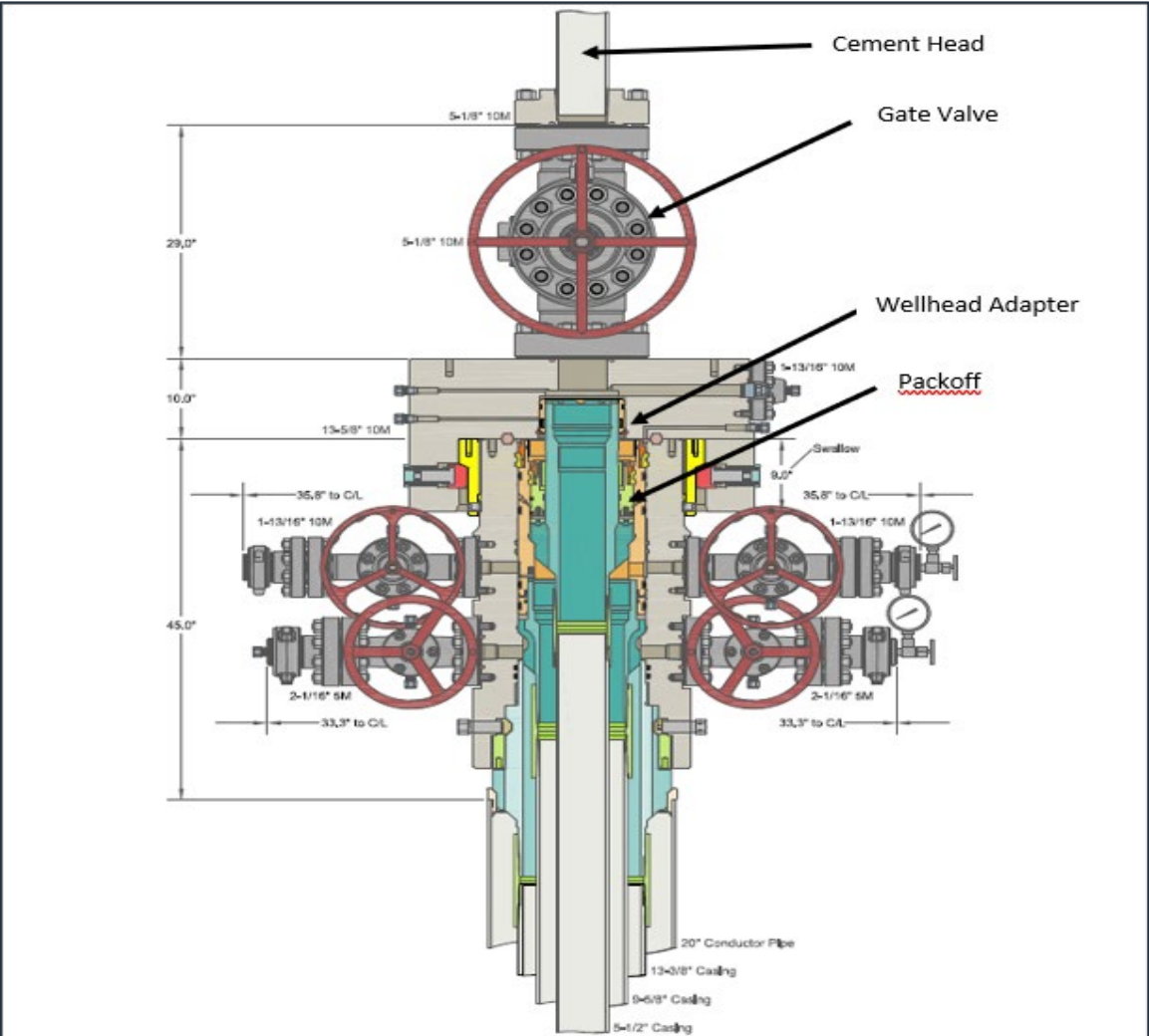
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CACTUS WELLHEAD LLC		EOG RESOURCES PERMIAN		
13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL-DBLO-SF Wellhead System		DRAWN	DLE	28AUG19
And 13-3/8", 9-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers		APPRV		
		DRAWING NO.	SDT-2297-2	

Barriers in Place during removal of BOP		
Operation	Casing	Annulus
Nippling Down BOP	1. BPV 2. Hydrostatic Barrier 3. Float Valves	1. Hydrostatic Barrier 2. Mechanical 10M Packoff

Barriers in Place during Offline Cementing of Production Casing		
Operation	Casing	Annulus
Pull BPV	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical Packoff 3. 10M Wellhead Adapter
Install Cement Head	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Cement Job	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve 4. Cement Head	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Remove Cement Head	1. Float Valves 2. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Install BPV	1. Float Valves 2. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Remove 10M Gate Valve	1. Float Valves 2. BPV	1. Hydrostatic Barrier 2. Mechanical 10M Packoff
Nipple Up TA Cap	1. Float Valves 2. BPV	1. Hydrostatic Barrier 2. Mechanical 10M Packoff

Offline Barrier Overview



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13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL-DBLO-SF Wellhead System		DRAWN	DLE
Released to Imaging 10/24/2025 2:47:17 PM		APPRV	28AUG19
And 13-3/8", 9-5/8" & 5-1/2" Pin Bottom Mandrel Casing Hangers		DRAWING NO.	SDT-2297-3

Barriers in Place during removal of BOP		
Operation	Casing	Annulus
Nippling Down BOP	1. BPV 2. Hydrostatic Barrier 3. Float Valves	1. Hydrostatic Barrier 2. Mechanical 10M Packoff

Barriers in Place during Offline Cementing of Production Casing		
Operation	Casing	Annulus
Pull BPV	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical Packoff 3. 10M Wellhead Adapter
Install Cement Head	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Cement Job	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve 4. Cement Head	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Remove Cement Head	1. Float Valves 2. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Install BPV	1. Float Valves 2. 10M Gate Valve	1. Hydrostatic Barrier 2. Mechanical 10M Packoff 3. 10M Wellhead Adapter
Remove 10M Gate Valve	1. Float Valves 2. BPV	1. Hydrostatic Barrier 2. Mechanical 10M Packoff
Nipple Up TA Cap	1. Float Valves 2. BPV	1. Hydrostatic Barrier 2. Mechanical 10M Packoff

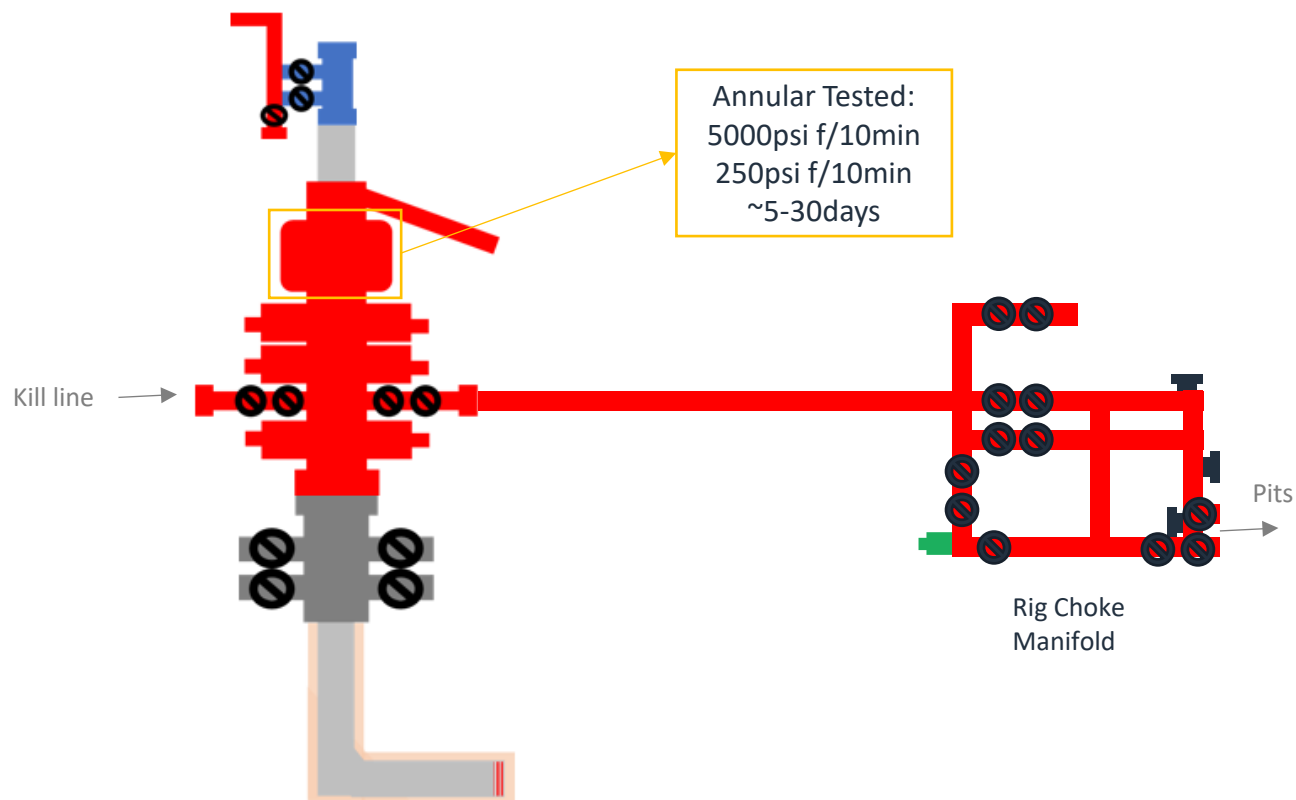
More Control: Meeting/Exceeding Barrier Requirements

Casing Barriers – Online vs Offline		
Operation	Online	Offline
Install Cement Head	1. Hydrostatic Barrier 2. Float Valves	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve ✓
Cement Job	1. Hydrostatic Barrier 2. Float Valves 3. Cement Head	1. Hydrostatic Barrier 2. Float Valves 3. 10M Gate Valve 4. Cement Head ✓
Remove Cement Head	1. Float Valves	1. Float Valves 2. 10M Gate Valve ✓
Install BPV & Nipple Down BOP / Offline Adapter	1. Float Valves	1. Float Valves 2. BPV ✓
Nipple Up TA Cap	1. Float Valves	1. Float Valves 2. BPV ✓

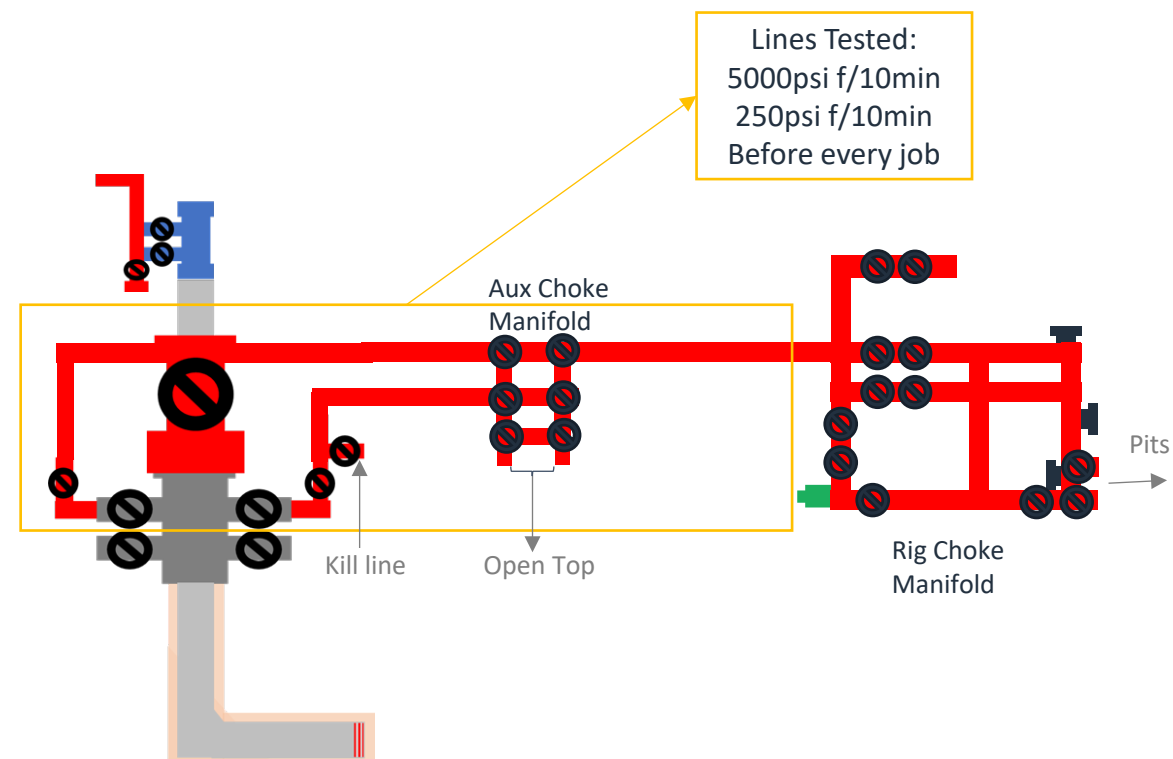
Annulus Barriers – Online vs Offline		
Operation	Online	Offline
Install Cement Head	1. Hydrostatic Barrier 2. Annular 3. VBR	1. Hydrostatic Barrier 2. Mechanical Pack-off 3. 10M Wellhead Adapter ✓
Cement Job	1. Hydrostatic Barrier 2. Annular 3. VBR	1. Hydrostatic Barrier 2. Mechanical Pack-off 3. 10M Wellhead Adapter ✓
Remove Cement Head	1. Hydrostatic Barrier 2. Annular 3. VBR	1. Hydrostatic Barrier 2. Mechanical Pack-off 3. 10M Wellhead Adapter ✓
Install BPV & Nipple Down BOP / Offline Adapter	1. Hydrostatic barrier 2. Mechanical Pack-off	1. Hydrostatic Barrier 2. Mechanical Pack-off ✓
Nipple Up TA Cap	1. Hydrostatic barrier 2. Mechanical Pack-off	1. Hydrostatic Barrier 2. Mechanical Pack-off ✓

Return Rig Up Diagram

Online



Offline



Note:

- 1) Have the Rig's same Well Control Capabilities as Online
- 2) Have more flexibility with Gate Valve than with a Landing Joint through BOP
- 3) Never had to circulate out a kick during Offline



Production Bradenhead Cement Variance

—

Production Bradenhead Cement

Shallow Target Production Offline Bradenhead:

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards to allow for offline bradenhead cementing of the production string after primary cementing operations have been completed. The primary cement job will be pumped conventionally (online) to top of the Brushy Canyon and will cover the target production intervals, and after production pack-off is set and tested, bradenhead will be pumped through casing valves between the production and intermediate casings (offline). For the bradenhead stage of production cementing, the barriers remain the same for offline cementing compared to performing it online.

The bradenhead will be the primary option for production cementing. EOG also requests to have the conventional option in place to accommodate for logistical or wellbore conditions. The tie back requirements will be met if the cement is pumped conventionally, and cement volumes will be adjusted accordingly. TOC will be verified by CBL.



Salt Section Annular Clearance

Current Design (Salt Strings)

0.422" Annular clearance requirement

- Casing collars shall have a minimum clearance of 0.422 inches on all sides in the hole/casing annulus, with recognition that variances can be granted for justified exceptions.

- 12.25" Hole x 9.625" 40# J55/HCK55 LTC Casing
 - 1.3125" Clearance to casing OD
 - 0.8125" Clearance to coupling OD
- 9.875" Hole x 8.75" 38.5# P110 Sprint-SF Casing
 - 0.5625" Clearance to casing OD
 - 0.433" Clearance to coupling OD

Annular Clearance Variance Request

EOG request permission to allow deviation from the 0.422" annulus clearance requirement for the intermediate (salt) section from Onshore Order #2 under the following conditions:

- The variance is not applicable within the Potash Boundaries or Capitan Reef areas.
- Operator takes responsibility to get casing to set point in the event that the clearance causes stuck pipe issues

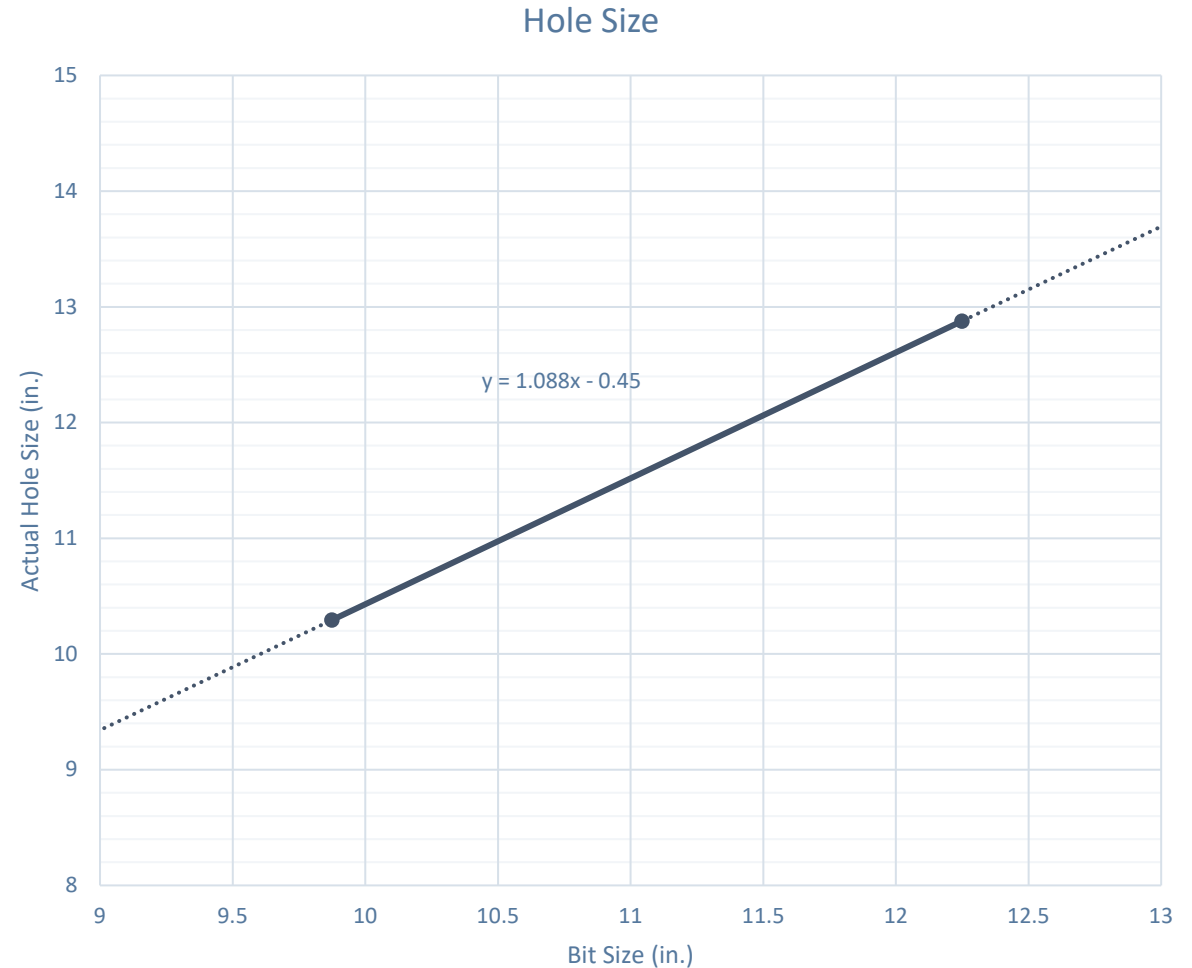
Volumetric Hole Size Calculation

Hole Size Calculations Off Cement Volumes

- Known volume of cement pumped
- Known volume of cement returned to surface
- Must not have had any losses
- Must have bumped plug

Average Hole Size

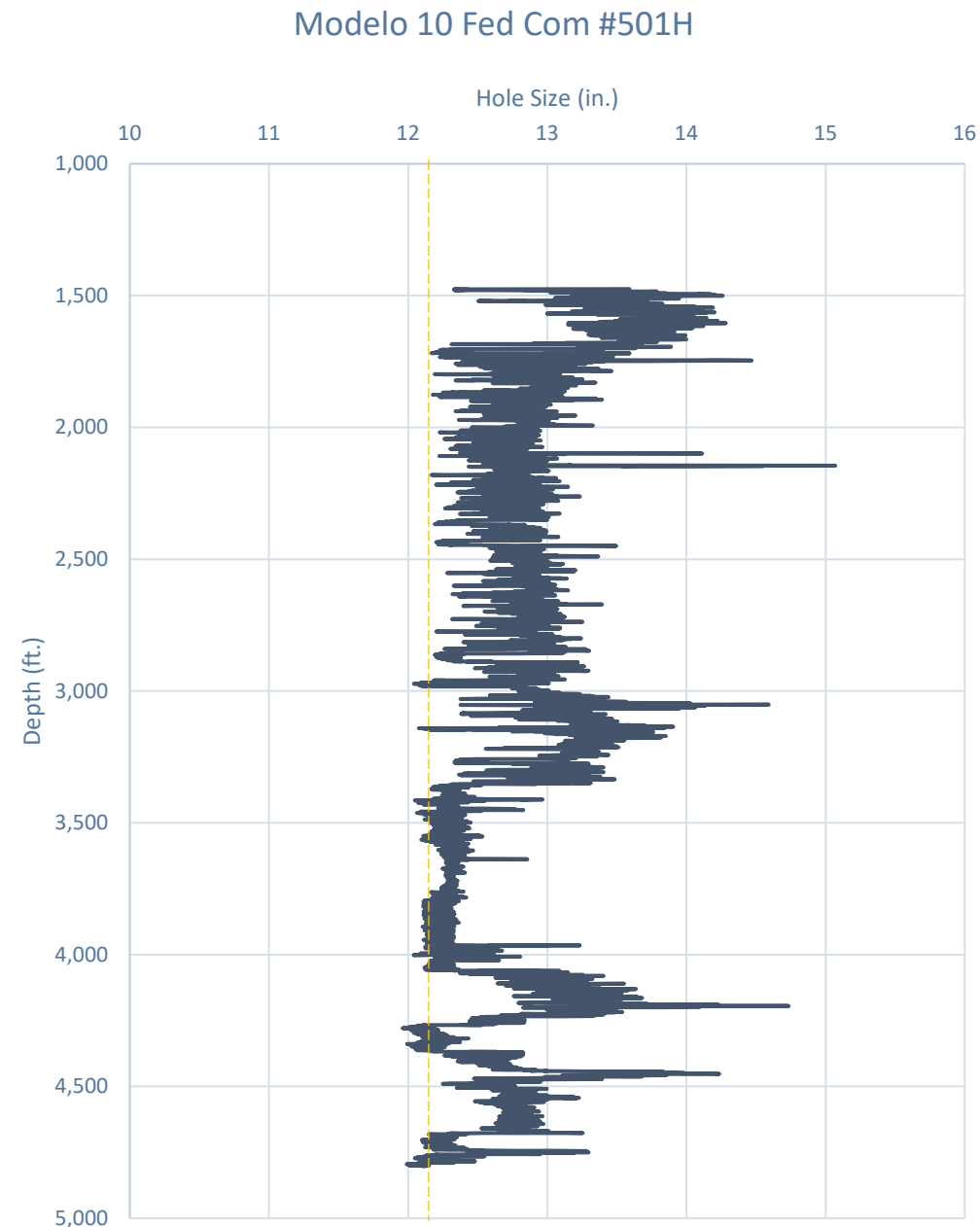
- 12.25" Hole
 - 12.88" Hole
 - 5.13% diameter increase
 - 10.52% area increase
 - 0.63" Average enlargement
 - 0.58" Median enlargement
 - 179 Well Count
- 9.875" Hole
 - 10.30" Hole
 - 4.24% diameter increase
 - 9.64% area increase
 - 0.42" Average enlargement
 - 0.46" Median enlargement
 - 11 Well Count



Caliper Hole Size (12.25")

Average Hole Size

- 12.25" Bit
 - 12.76" Hole
 - 4.14% diameter increase
 - 8.44% area increase
 - 0.51" Average enlargement
 - 0.52" Median enlargement
 - Brine

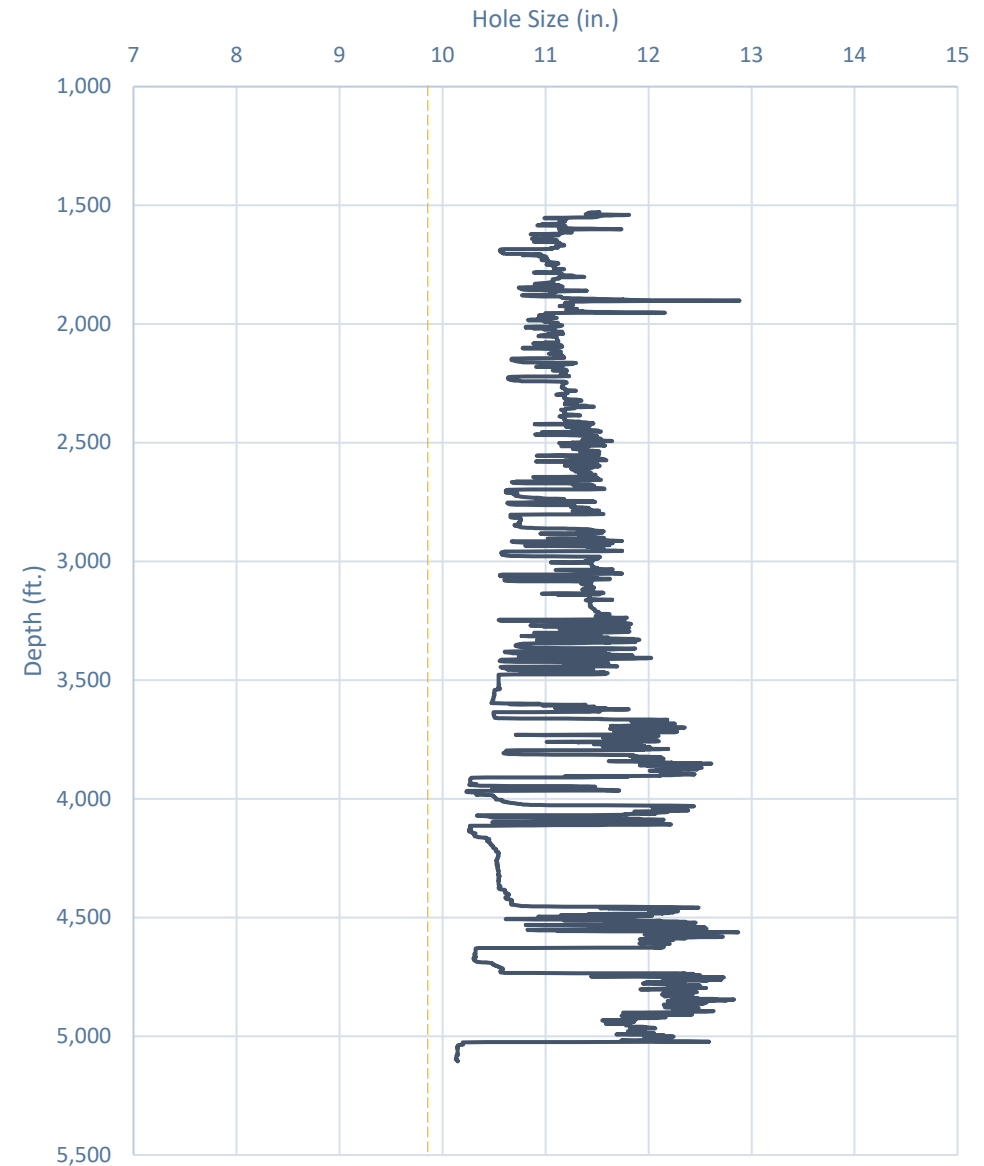


Caliper Hole Size (9.875")

Average Hole Size

- 9.875" Hole
 - 11.21" Hole
 - 13.54% diameter increase
 - 28.92% area increase
 - 1.33" Average enlargement
 - 1.30" Median enlargement
 - EnerLite

Whirling Wind 11 Fed Com #744H



Design A

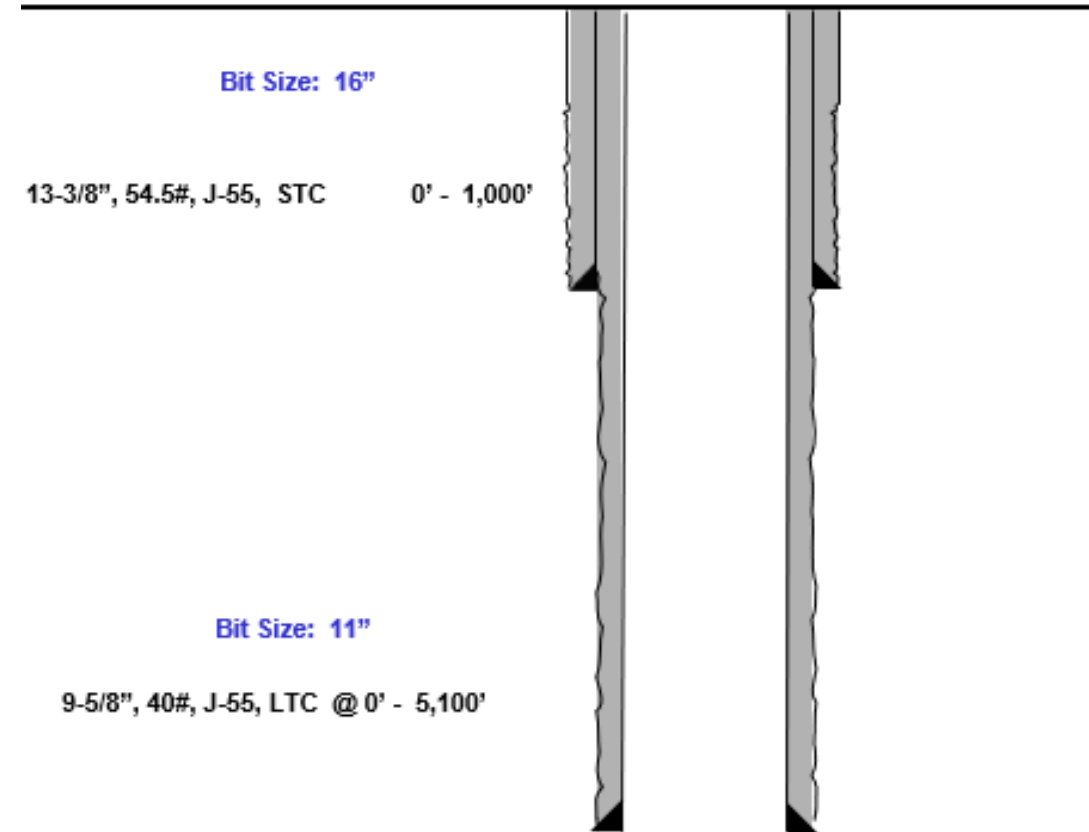
Proposed 11" Hole with 9.625" 40# J55/HCK55 LTC Casing

- 11" Bit + 0.52" Average hole enlargement = 11.52" Hole Size
 - 0.9475" Clearance to casing OD

$$= \frac{11.52 - 9.625}{2}$$
 - 0.4475" Clearance to coupling OD

$$= \frac{11.52 - 10.625}{2}$$
- Previous Shoe – 13.375" 54.5# J55 STC
 - 0.995" Clearance to coupling OD (~1,200' overlap)

$$= \frac{12.615 - 10.625}{2}$$



Design B

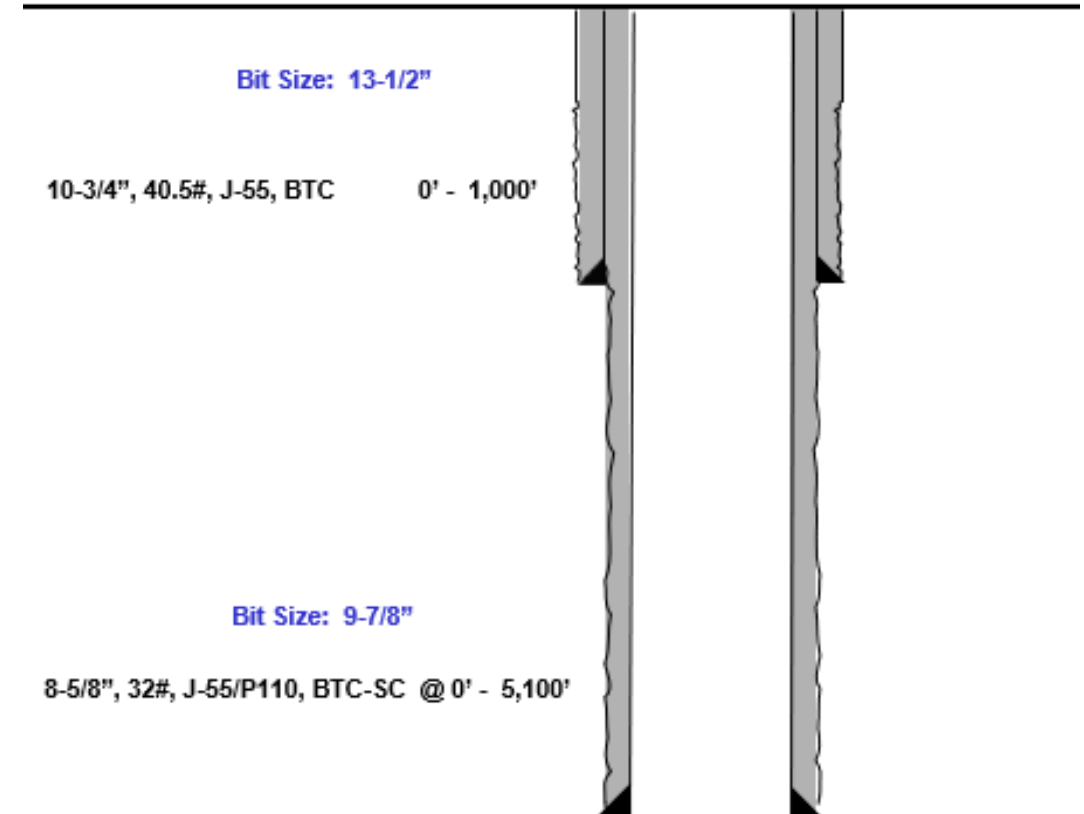
Proposed 9.875" Hole with 8.625" 32# J55/P110 BTC-SC Casing

- 9.875" Bit + 0.42" Average hole enlargement = 10.295" Hole Size
 - 0.835" Clearance to casing OD

$$= \frac{10.295 - 8.625}{2}$$
 - 0.585" Clearance to coupling OD

$$= \frac{10.295 - 9.125}{2}$$
- Previous Shoe – 10.75" 40.5# J55 STC
 - 0.4625" Clearance to coupling OD (~1,200' overlap)

$$= \frac{10.05 - 9.125}{2}$$





Index

Casing Spec Sheets

PERFORMANCE DATA

API LTC

Technical Data Sheet

9.625 in

40.00 lbs/ft

K55 HC

Tubular Parameters

Size	9.625	in	Minimum Yield	55	ksi
Nominal Weight	40.00	lbs/ft	Minimum Tensile	95	ksi
Grade	K55 HC		Yield Load	629	kips
PE Weight	38.94	lbs/ft	Tensile Load	1088	kips
Wall Thickness	0.395	in	Min. Internal Yield Pressure	3,950	psi
Nominal ID	8.835	in	Collapse Pressure	3600	psi
Drift Diameter	8.750	in			
Nom. Pipe Body Area	11.454	in²			

Connection Parameters

Connection OD	10.625	in
Coupling Length	10.500	in
Threads Per Inch	8	tpi
Standoff Thread Turns	3.50	turns
Make-Up Loss	4.750	in
Min. Internal Yield Pressure	3,950	psi

Pipe Body and API Connections Performance Data

13.375 54.50/0.380 J55

PDF

New Search »

« Back to Previous List

USC ☒ Metric

6/8/2015 10:04:37 AM

Mechanical Properties	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
Dimensions	Pipe	BTC	LTC	STC	
Outside Diameter	13.375	14.375	--	14.375	in.
Wall Thickness	0.380	--	--	--	in.
Inside Diameter	12.615	12.615	--	12.615	in.
Standard Drift	12.459	12.459	--	12.459	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	54.50	--	--	--	lbs/ft
Plain End Weight	52.79	--	--	--	lbs/ft
Performance	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	1,130	1,130	--	1,130	psi
Minimum Internal Yield Pressure	2,740	2,740	--	2,740	psi
Minimum Pipe Body Yield Strength	853.00	--	--	--	1000 lbs
Joint Strength	--	909	--	514	1000 lbs
Reference Length	--	11,125	--	6,290	ft
Make-Up Data	Pipe	BTC	LTC	STC	
Make-Up Loss	--	4.81	--	3.50	in.
Minimum Make-Up Torque	--	--	--	3,860	ft-lbs
Maximum Make-Up Torque	--	--	--	6,430	ft-lbs

Casing Spec Sheets

Pipe Body and API Connections Performance Data

10.750 40.50/0.350 J55

PDF

New Search »

« Back to Previous List

USC ☒ Metric

6/8/2015 10:14:05 AM

Mechanical Properties	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
Dimensions	Pipe	BTC	LTC	STC	
Outside Diameter	10.750	11.750	--	11.750	in.
Wall Thickness	0.350	--	--	--	in.
Inside Diameter	10.050	10.050	--	10.050	in.
Standard Drift	9.894	9.894	--	9.894	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	40.50	--	--	--	lbs/ft
Plain End Weight	38.91	--	--	--	lbs/ft
Performance	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	1,580	1,580	--	1,580	psi
Minimum Internal Yield Pressure	3,130	3,130	--	3,130	psi
Minimum Pipe Body Yield Strength	629.00	--	--	--	1000 lbs
Joint Strength	--	700	--	420	1000 lbs
Reference Length	--	11,522	--	6,915	ft
Make-Up Data	Pipe	BTC	LTC	STC	
Make-Up Loss	--	4.81	--	3.50	in.
Minimum Make-Up Torque	--	--	--	3,150	ft-lbs
Maximum Make-Up Torque	--	--	--	5,250	ft-lbs



API 5CT, 10th Ed. Connection Data Sheet

O.D. (in)	WEIGHT (lb/ft)	WALL (in)	GRADE	*API DRIFT (in)	RBW %
8.625	Nominal: 32.00 Plain End: 31.13	0.352	J55	7.796	87.5

Material Properties (PE)		Pipe Body Data (PE)	
Pipe		Geometry	
Minimum Yield Strength:	55 ksi	Nominal ID:	7.92 inch
Maximum Yield Strength:	80 ksi	Nominal Area:	9.149 in ²
Minimum Tensile Strength:	75 ksi	*Special/Alt. Drift:	7.875 inch
Coupling		Performance	
Minimum Yield Strength:	55 ksi	Pipe Body Yield Strength:	503 kips
Maximum Yield Strength:	80 ksi	Collapse Resistance:	2,530 psi
Minimum Tensile Strength:	75 ksi	Internal Yield Pressure: (API Historical)	3,930 psi

API Connection Data		API Connection Torque	
Coupling OD: 9.625"		STC Torque (ft-lbs)	
STC Performance		Min: 2,793 Opti: 3,724 Max: 4,655	
STC Internal Pressure: 3,930 psi			
STC Joint Strength: 372 kips			
LTC Performance		LTC Torque (ft-lbs)	
LTC Internal Pressure: 3,930 psi		Min: 3,130 Opti: 4,174 Max: 5,217	
LTC Joint Strength: 417 kips			
SC-BTC Performance - Cplg OD = 9.125"		BTC Torque (ft-lbs)	
BTC Internal Pressure: 3,930 psi		follow API guidelines regarding positional make up	
BTC Joint Strength: 503 kips			

*Alt. Drift will be used unless API Drift is specified on order.

**If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

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Rev 3, 7/30/2021

10/21/2022 15:24



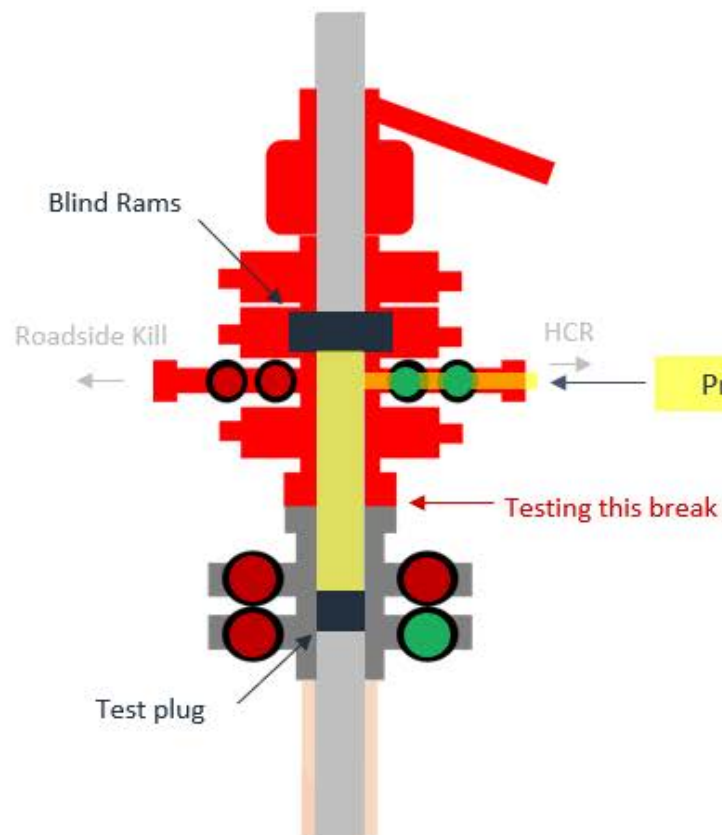
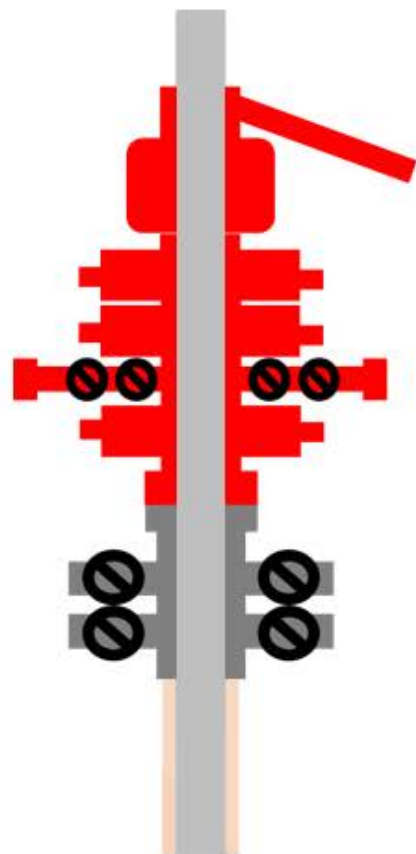
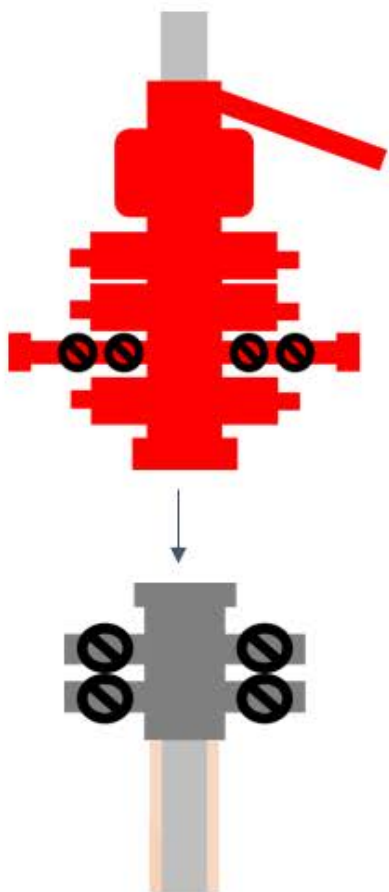
Confidential

**Break-test BOP & Offline Cementing:**

EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of ECFR Title 43 Part 3172.6(b)(9)(iv) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement operations to include the following:

- Full BOPE test at first installation on the pad.
- Full BOPE test every 30 days.
- This test will be conducted for 5M rated hole intervals only.
- Each rig requesting the break-test variance is capable of picking up the BOP without damaging components using winches, following API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth edition, December 2018, Annex C. Table C.4) which recognizes break testing as an acceptable practice.
- Function tests will be performed on the following BOP elements:
 - Annular → during each full BOPE test
 - Upper Pipe Rams → On trip ins where FIT required
 - Blind Rams → Every trip
 - Lower Pipe Rams → during each full BOPE test
- Break testing BOP and BOPE coupled with batch drilling operations and option to offline cement and/or remediate (if needed) any surface or intermediate sections, according to attached offline cementing support documentation.
- After the well section is secured, the BOP will be disconnected from the wellhead and walked with the rig to another well on the pad.
- TA cap will also be installed per Wellhead vendor procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

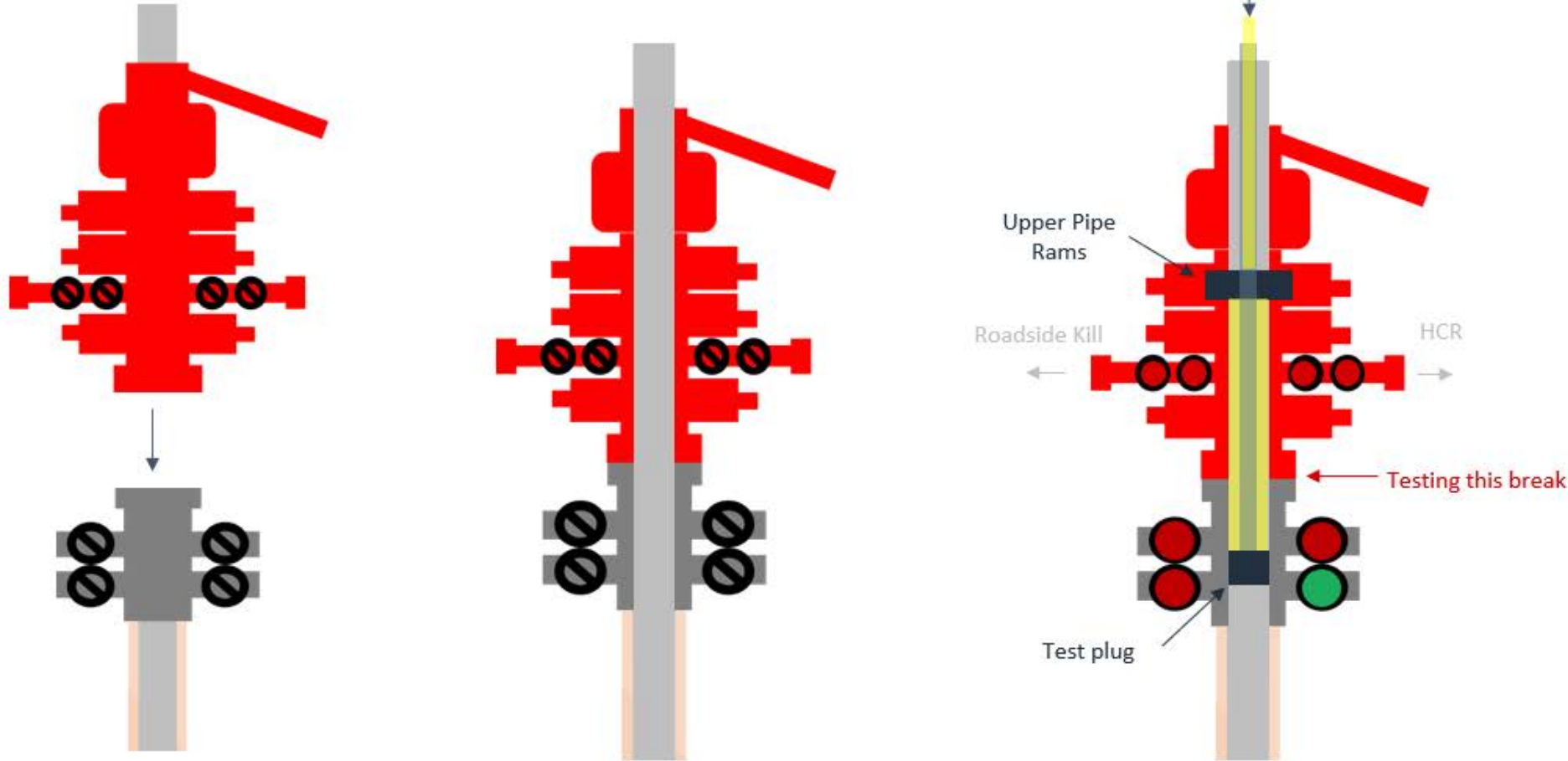
Break Test Diagram (HCR valve)



Steps

1. Set plug in wellhead (lower barrier)
2. Close Blind Rams (upper barrier)
3. Close roadside kill
4. Open HCR (pressure application)
5. Open wellhead valves below test plug to ensure if leak past test plug, pressure won't be applied to wellbore
6. Tie BOP testers high pressure line to main choke manifold crown valve
7. Pressure up to test break
8. Bleed test pressure from BOP testing unit

Break Test Diagram (Test Joint)



Steps

1. Set plug in with test joint wellhead (lower barrier)
2. Close Upper Pipe Rams (upper barrier)
3. Close roadside kill
4. Close HCR
5. Open wellhead valves below test plug to ensure if leak past test plug, pressure won't be applied to wellbore
6. Tie BOP testers high pressure line to top of test joint
7. Pressure up to test break
8. Bleed test pressure from BOP testing unit

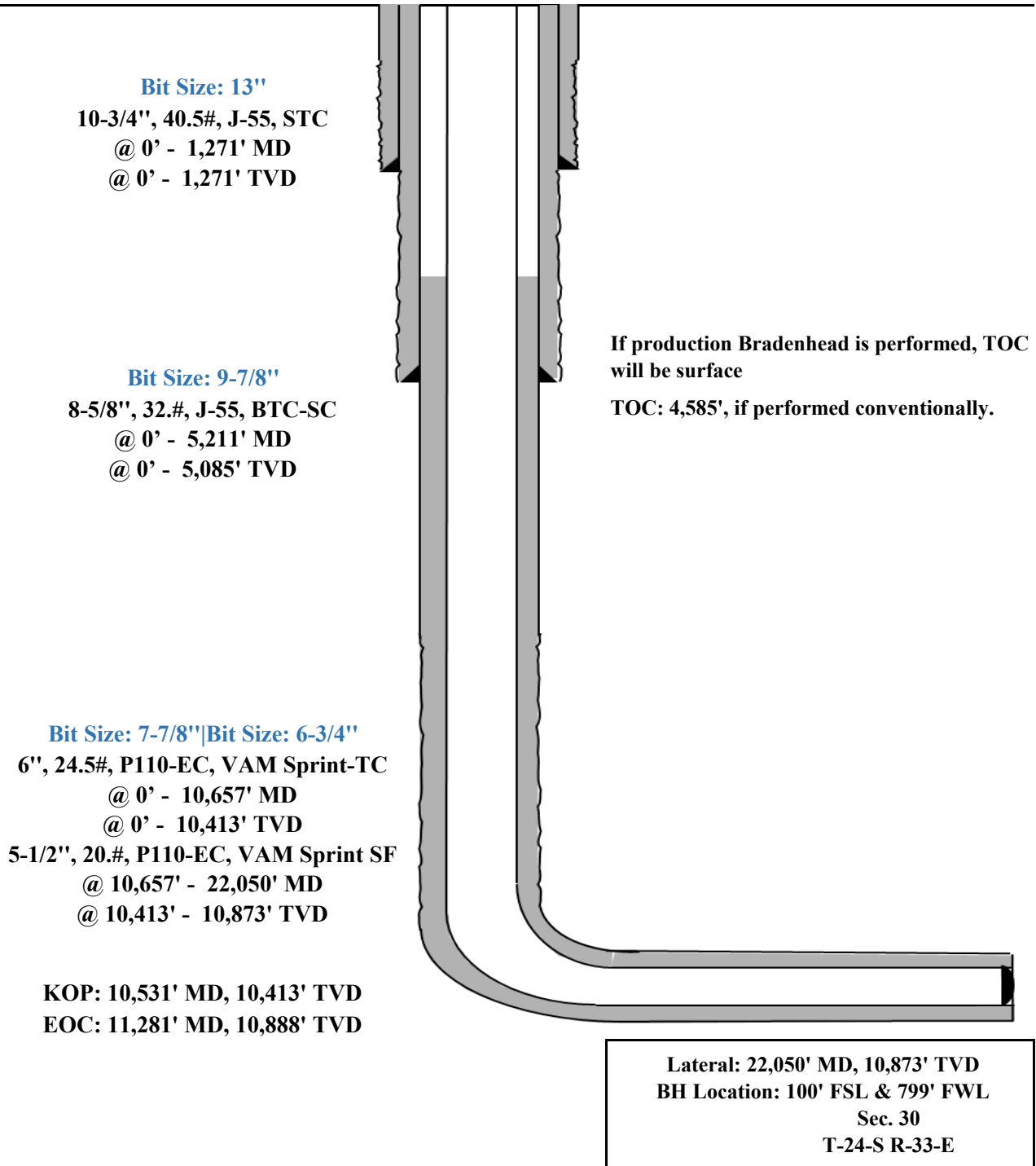


Mamba 30 State Com #509H
LEA County, New Mexico
Proposed Wellbore
Design A

267' FSL
1849' FEL
Section 30
T-24-S, R-33-E

KB: 3572'
GL: 3547'

API: 30-025-*****



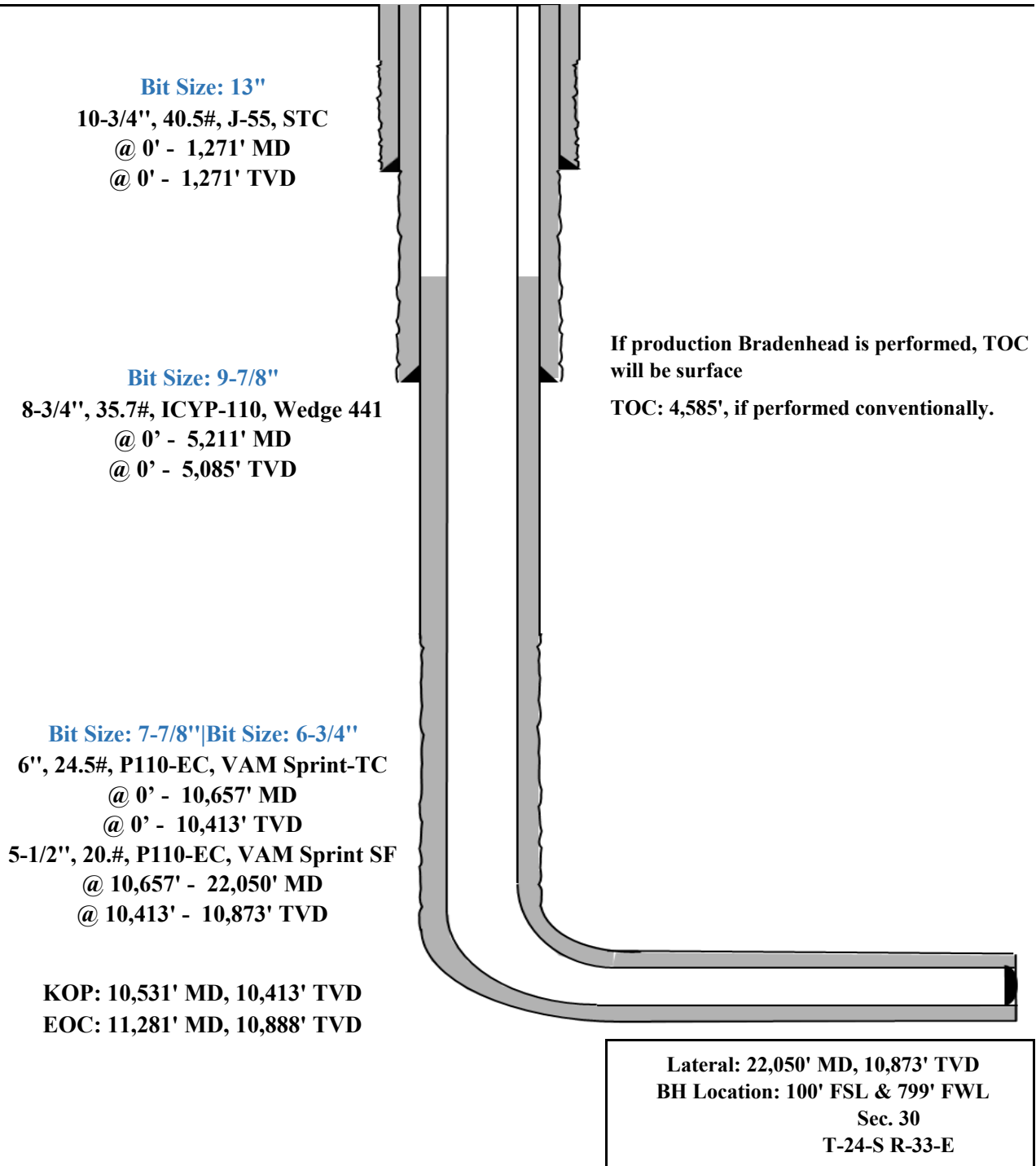


Mamba 30 State Com #509H
LEA County, New Mexico
Proposed Wellbore
Design B

267' FSL
1849' FEL
Section 30
T-24-S, R-33-E

KB: 3572'
GL: 3547'

API: 30-025-*****





Mamba 30 State Com #509H

Permit Information:

Well Name: Mamba 30 State Com #509H

Location:

SHL: 267' FSL & 1849' FEL, Section 30, T-24-S, R-33-E, LEA Co., N.M.

BHL: 100' FSL & 799' FWL, Section 30, T-24-S, R-33-E, LEA Co., N.M.

Primary Permit Design A

Casing Program:

Hole Size	Interval MD From (ft) To (ft)		Interval TVD From (ft) To (ft)		Csg OD	Weight	Grade	Conn
13"	0	1,271	0	1,271	10-3/4"	40.5#	J-55	STC
9-7/8"	0	5,211	0	5,085	8-5/8"	32#	J-55	BTC-SC
7-7/8"	0	10,657	0	10,413	6"	24.5#	P110-EC	VAM Sprint-TC
6-3/4"	10,657	22,050	10,413	10,873	5-1/2"	20#	P110-EC	VAM Sprint SF

**For highlighted rows above, variance is requested to run entire string of either 6" or 5-1/2" casing string above due to availability.

Cement Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
1,271'	280	14.8	1.73	Class C/H + additives (TOC @ Surface)
	100	14.8	1.34	Class C/H + additives
5,210'	430	12.7	1.11	Lead: Class C/H + additives (TOC @ Surface)
	290	14.8	1.5	Tail: Class C/H + additives (TOC @ 4,068')
22,050'	1000	14.8	1.32	Bradenhead squeeze: Class C/H + additives (TOC @ surface)
	1360	13.2	1.52	Tail: Class C/H + additives

Mud Program:

Depth	Type	Wt (ppg)	Viscosity	Water Loss
0 – 1,271'	Fresh - Gel	8.6-8.8	28-34	N/c
1,271' – 5,211'	Brine	9.8-10.8	28-34	N/c
5,211' – 22,050' Lateral	Oil Base	8.8-9.5	58-68	N/c - 6

Bradenhead will be the primary option for production cementing. EOG also requests to have the conventional option in place to accommodate for logistical or wellbore conditions. The tie back requirements will be met if the cement is pumped conventionally, and cement volumes will be adjusted accordingly. TOC will be verified by CBL.



Mamba 30 State Com #509H

Primary Permit Design B**CASING PROGRAM**

Hole Size	Interval MD		Interval TVD		Csg OD	Weight	Grade	Conn
	From (ft)	To (ft)	From (ft)	To (ft)				
13"	0	1,271	0	1,271	10-3/4"	40.5#	J-55	STC
9-7/8"	0	5,211	0	5,085	8-3/4"	35.7#	ICYP-110	Wedge 441
7-7/8"	0	10,657	0	10,413	6"	24.5#	P110-EC	VAM Sprint-TC
6-3/4"	10,657	22,050	10,413	10,873	5-1/2"	20#	P110-EC	VAM Sprint SF

**For highlighted rows above, variance is requested to run entire string of either 6" or 5-1/2" casing string above due to availability.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft3/sk	Slurry Description
1,271'	300	14.8	1.73	Class C/H + additives (TOC @ Surface)
	50	14.8	1.34	Class C/H + additives
5,210'	530	12.7	1.11	Lead: Class C/H + additives (TOC @ Surface)
	250	14.8	1.5	Tail: Class C/H + additives (TOC @ 4,068')
22,050'	1000	14.8	1.32	Bradenhead squeeze: Class C/H + additives (TOC @ surface)
	1360	13.2	1.52	Tail: Class C/H + additives

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,271'	Fresh - Gel	8.6-8.8	28-34	N/c
1,271' – 5,211'	Brine	9.8-10.8	28-34	N/c
5,211' – 22,050' Lateral	Oil Base	8.8-9.5	58-68	N/c - 6

Bradenhead will be the primary option for production cementing. EOG also requests to have the conventional option in place to accommodate for logistical or wellbore conditions. The tie back requirements will be met if the cement is pumped conventionally, and cement volumes will be adjusted accordingly. TOC will be verified by CBL.



Mamba 30 State Com 509H

EOG requests variance from minimum standards to pump a two stage cement job on the 6" and 5-1/2" production casing strings with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (7,467') and the second stage performed as a 1000 sack bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of 400 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (1.32 yld, 14.8 ppg) will be executed as a contingency. Top will be verified by Echo-meter.

Bradenhead will be the primary option for production cementing. EOG also requests to have the conventional option in place to accommodate for logistical or wellbore conditions. The tie back requirements will be met if the cement is pumped conventionally, and cement volumes will be adjusted accordingly. TOC will be verified by CBL.

TUBING REQUIREMENTS

EOG respectively requests an exception to the following NMOCD rule:

- 19.15.16.10 Casing AND TUBING REQUIREMENTS:
J (3): "The operator shall set tubing as near the bottom as practical and tubing perforations shall not be more than 250 feet above top of pay zone."

With horizontal flowing and gas lifted wells an end of tubing depth placed at or slightly above KOP is a conservative way to ensure the tubing stays clean from debris, plugging, and allows for fewer well interventions post offset completion. The deeper the tubulars are run into the curve, the higher the probability is that the tubing will become stuck in sand and or well debris as the well produces over time. An additional consideration for EOT placement during artificial lift installations is avoiding the high dog leg severity and inclinations found in the curve section of the wellbore to help improve reliability and performance. Dog leg severity and inclinations tend not to hamper gas lifted or flowing wells, but they do effect other forms of artificial lift like rod pump or ESP (electric submersible pump). Keeping the EOT above KOP is an industry best practice for those respective forms of artificial lift.

**Mamba 30 State Com #509H****Hydrogen Sulfide Plan Summary**

- A. All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment

- a. Flare line 150' from wellhead to be ignited by flare gun.
- b. Choke manifold with a remotely operated choke.
- c. Mud/gas separator

- Protective equipment for essential personnel.

- Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
 - b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
 - c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

- Auxiliary Rescue Equipment:

- a. Stretcher
 - b. Two OSHA full body harness
 - c. 100 ft 5/8 inch OSHA approved rope
 - d. 1-20# class ABC fire extinguisher

- H₂S detection and monitoring equipment:

- The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

- (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
 - b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
 - c. Two wind socks will be placed in strategic locations, visible from all angles.



Mamba 30 State Com #509H

- **Mud program:**
The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.
- **Metallurgy:**
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
- **Communication:**
Communication will be via cell phones and land lines where available.



Mamba 30 State Com #509H
Emergency Assistance Telephone List

PUBLIC SAFETY:		911 or
Lea County Sheriff's Department		(575) 396-3611
Rod Coffman		
Fire Department:		
Carlsbad		(575) 885-3125
Artesia		(575) 746-5050
Hospitals:		
Carlsbad		(575) 887-4121
Artesia		(575) 748-3333
Hobbs		(575) 392-1979
Dept. of Public Safety/Carlsbad		(575) 748-9718
Highway Department		(575) 885-3281
New Mexico Oil Conservation		(575) 476-3440
NMOCD Inspection Group - South		(575) 626-0830
U.S. Dept. of Labor		(575) 887-1174
EOG Resources, Inc.		
EOG / Midland	Office	(432) 686-3600
Company Drilling Consultants:		
David Dominique	Cell	(985) 518-5839
Mike Vann	Cell	(817) 980-5507
Drilling Engineer		
Stephen Davis	Cell	(432) 235-9789
Matt Day	Cell	(432) 296-4456
Drilling Manager		
Branden Keener	Office	(432) 686-3752
	Cell	(210) 294-3729
Drilling Superintendent		
Steve Kelly	Office	(432) 686-3706
	Cell	(210) 416-7894
H&P Drilling		
H&P Drilling	Office	(432) 563-5757
H&P 651 Drilling Rig	Rig	(903) 509-7131
Tool Pusher:		
Johnathan Craig	Cell	(817) 760-6374
Brad Garrett		
Safety:		
Brian Chandler (HSE Manager)	Office	(432) 686-3695
	Cell	(817) 239-0251



Mamba 30 State Com #509H

GEOLOGIC NAME OF SURFACE FORMATION:

Permian

ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,130'
Tamarisk Anhydrite	1,246'
Top of Salt	1,455'
Base of Salt	4,744'
Lamar	5,035'
Bell Canyon	5,062'
Cherry Canyon	5,998'
Brushy Canyon	7,467'
Bone Spring Lime	9,044'
Leonard (Avalon) Shale	9,228'
1st Bone Spring Sand	10,146'
2nd Bone Spring Shale	10,394'
2nd Bone Spring Sand	10,746'
3rd Bone Spring Carb	11,279'
3rd Bone Spring Sand	11,928'
Wolfcamp	12,371'
TD	10,873'

ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0 - 400' Fresh Water
Lamar	5,035' Oil
Cherry Canyon	5,998' Oil
Brushy Canyon	7,467' Oil
Bone Spring Lime	9,044' Oil
Leonard (Avalon) Shale	9,228' Oil
1st Bone Spring Sand	10,146' Oil
2nd Bone Spring Shale	10,394' Oil
2nd Bone Spring Sand	10,746' Oil

Midland

Lea County, NM (NAD 83 NME)

Mamba 30 State Com

#509H

OH

Plan: Plan #0.1

Standard Planning Report

17 October, 2025

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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

Site		Mamba 30 State Com			
Site Position:		Northing:	430,807.00 usft	Latitude:	32° 10' 56.143 N
From:	Map	Easting:	767,053.00 usft	Longitude:	103° 36' 13.509 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	#509H, Staple Well					
Well Position	+N/-S	0.0 usft	Northing:	430,749.00 usft	Latitude:	32° 10' 55.674 N
	+E/-W	0.0 usft	Easting:	765,483.00 usft	Longitude:	103° 36' 31.781 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,547.0 usft
Grid Convergence:		0.39 °				

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2025	9/17/2025	6.24	59.71	46,964.53479551

Design	Plan #0.1				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	359.67	

Plan Survey Tool Program	Date	10/17/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	22,050.3 Plan #0.1 (OH)	EOG MWD+IFR1		
			MWD + IFR1		

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,232.0	0.00	0.00	1,232.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,828.2	11.92	259.07	1,823.9	-11.7	-60.7	2.00	2.00	0.00	259.07	
6,935.6	11.92	259.07	6,821.1	-211.8	-1,096.8	0.00	0.00	0.00	0.00	
7,531.8	0.00	0.00	7,413.0	-223.5	-1,157.5	2.00	-2.00	0.00	180.00	
10,531.3	0.00	0.00	10,412.5	-223.5	-1,157.5	0.00	0.00	0.00	0.00	
10,751.9	26.71	359.47	10,625.2	-173.0	-1,158.0	12.11	12.11	-0.24	359.47	FTP(509H)
11,281.1	90.22	359.68	10,888.0	255.3	-1,160.9	12.00	12.00	0.04	0.24	
15,453.9	90.22	359.68	10,872.0	4,428.0	-1,184.0	0.00	0.00	0.00	0.00	DP1(509H)
16,204.6	90.85	269.59	10,863.1	4,902.8	-1,664.8	12.00	0.08	-12.00	-89.15	
16,699.9	90.85	269.59	10,855.8	4,899.2	-2,160.0	0.00	0.00	0.00	0.00	
17,449.2	89.73	179.68	10,851.0	4,419.0	-2,634.0	12.00	-0.15	-12.00	-90.28	DP4(509H)
22,050.3	89.73	179.68	10,873.0	-182.0	-2,608.0	0.00	0.00	0.00	0.00	PBHL(509H)

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,232.0	0.00	0.00	1,232.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	1.36	259.07	1,300.0	-0.2	-0.8	-0.1	2.00	2.00	0.00
1,400.0	3.36	259.07	1,399.9	-0.9	-4.8	-0.9	2.00	2.00	0.00
1,500.0	5.36	259.07	1,499.6	-2.4	-12.3	-2.3	2.00	2.00	0.00
1,600.0	7.36	259.07	1,599.0	-4.5	-23.2	-4.3	2.00	2.00	0.00
1,700.0	9.36	259.07	1,697.9	-7.2	-37.5	-7.0	2.00	2.00	0.00
1,800.0	11.36	259.07	1,796.3	-10.6	-55.1	-10.3	2.00	2.00	0.00
1,828.2	11.92	259.07	1,823.9	-11.7	-60.7	-11.4	2.00	2.00	0.00
1,900.0	11.92	259.07	1,894.2	-14.5	-75.3	-14.1	0.00	0.00	0.00
2,000.0	11.92	259.07	1,992.0	-18.4	-95.5	-17.9	0.00	0.00	0.00
2,100.0	11.92	259.07	2,089.8	-22.4	-115.8	-21.7	0.00	0.00	0.00
2,200.0	11.92	259.07	2,187.7	-26.3	-136.1	-25.5	0.00	0.00	0.00
2,300.0	11.92	259.07	2,285.5	-30.2	-156.4	-29.3	0.00	0.00	0.00
2,400.0	11.92	259.07	2,383.4	-34.1	-176.7	-33.1	0.00	0.00	0.00
2,500.0	11.92	259.07	2,481.2	-38.0	-197.0	-36.9	0.00	0.00	0.00
2,600.0	11.92	259.07	2,579.1	-42.0	-217.3	-40.7	0.00	0.00	0.00
2,700.0	11.92	259.07	2,676.9	-45.9	-237.6	-44.5	0.00	0.00	0.00
2,800.0	11.92	259.07	2,774.7	-49.8	-257.8	-48.3	0.00	0.00	0.00
2,900.0	11.92	259.07	2,872.6	-53.7	-278.1	-52.1	0.00	0.00	0.00
3,000.0	11.92	259.07	2,970.4	-57.6	-298.4	-55.9	0.00	0.00	0.00
3,100.0	11.92	259.07	3,068.3	-61.5	-318.7	-59.7	0.00	0.00	0.00
3,200.0	11.92	259.07	3,166.1	-65.5	-339.0	-63.5	0.00	0.00	0.00
3,300.0	11.92	259.07	3,263.9	-69.4	-359.3	-67.3	0.00	0.00	0.00
3,400.0	11.92	259.07	3,361.8	-73.3	-379.6	-71.1	0.00	0.00	0.00
3,500.0	11.92	259.07	3,459.6	-77.2	-399.9	-74.9	0.00	0.00	0.00
3,600.0	11.92	259.07	3,557.5	-81.1	-420.1	-78.7	0.00	0.00	0.00
3,700.0	11.92	259.07	3,655.3	-85.0	-440.4	-82.5	0.00	0.00	0.00
3,800.0	11.92	259.07	3,753.2	-89.0	-460.7	-86.3	0.00	0.00	0.00
3,900.0	11.92	259.07	3,851.0	-92.9	-481.0	-90.1	0.00	0.00	0.00
4,000.0	11.92	259.07	3,948.8	-96.8	-501.3	-93.9	0.00	0.00	0.00
4,100.0	11.92	259.07	4,046.7	-100.7	-521.6	-97.7	0.00	0.00	0.00
4,200.0	11.92	259.07	4,144.5	-104.6	-541.9	-101.5	0.00	0.00	0.00
4,300.0	11.92	259.07	4,242.4	-108.5	-562.2	-105.3	0.00	0.00	0.00
4,400.0	11.92	259.07	4,340.2	-112.5	-582.4	-109.1	0.00	0.00	0.00
4,500.0	11.92	259.07	4,438.1	-116.4	-602.7	-112.9	0.00	0.00	0.00
4,600.0	11.92	259.07	4,535.9	-120.3	-623.0	-116.7	0.00	0.00	0.00
4,700.0	11.92	259.07	4,633.7	-124.2	-643.3	-120.5	0.00	0.00	0.00
4,800.0	11.92	259.07	4,731.6	-128.1	-663.6	-124.3	0.00	0.00	0.00
4,900.0	11.92	259.07	4,829.4	-132.0	-683.9	-128.1	0.00	0.00	0.00
5,000.0	11.92	259.07	4,927.3	-136.0	-704.2	-131.9	0.00	0.00	0.00
5,100.0	11.92	259.07	5,025.1	-139.9	-724.4	-135.7	0.00	0.00	0.00

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.0	11.92	259.07	5,122.9	-143.8	-744.7	-139.5	0.00	0.00	0.00	
5,300.0	11.92	259.07	5,220.8	-147.7	-765.0	-143.3	0.00	0.00	0.00	
5,400.0	11.92	259.07	5,318.6	-151.6	-785.3	-147.1	0.00	0.00	0.00	
5,500.0	11.92	259.07	5,416.5	-155.5	-805.6	-150.9	0.00	0.00	0.00	
5,600.0	11.92	259.07	5,514.3	-159.5	-825.9	-154.7	0.00	0.00	0.00	
5,700.0	11.92	259.07	5,612.2	-163.4	-846.2	-158.5	0.00	0.00	0.00	
5,800.0	11.92	259.07	5,710.0	-167.3	-866.5	-162.3	0.00	0.00	0.00	
5,900.0	11.92	259.07	5,807.8	-171.2	-886.7	-166.1	0.00	0.00	0.00	
6,000.0	11.92	259.07	5,905.7	-175.1	-907.0	-169.9	0.00	0.00	0.00	
6,100.0	11.92	259.07	6,003.5	-179.0	-927.3	-173.7	0.00	0.00	0.00	
6,200.0	11.92	259.07	6,101.4	-183.0	-947.6	-177.5	0.00	0.00	0.00	
6,300.0	11.92	259.07	6,199.2	-186.9	-967.9	-181.3	0.00	0.00	0.00	
6,400.0	11.92	259.07	6,297.1	-190.8	-988.2	-185.1	0.00	0.00	0.00	
6,500.0	11.92	259.07	6,394.9	-194.7	-1,008.5	-188.9	0.00	0.00	0.00	
6,600.0	11.92	259.07	6,492.7	-198.6	-1,028.8	-192.7	0.00	0.00	0.00	
6,700.0	11.92	259.07	6,590.6	-202.6	-1,049.0	-196.5	0.00	0.00	0.00	
6,800.0	11.92	259.07	6,688.4	-206.5	-1,069.3	-200.3	0.00	0.00	0.00	
6,900.0	11.92	259.07	6,786.3	-210.4	-1,089.6	-204.1	0.00	0.00	0.00	
6,935.6	11.92	259.07	6,821.1	-211.8	-1,096.8	-205.5	0.00	0.00	0.00	
7,000.0	10.64	259.07	6,884.3	-214.2	-1,109.2	-207.8	2.00	-2.00	0.00	
7,100.0	8.64	259.07	6,982.8	-217.3	-1,125.6	-210.9	2.00	-2.00	0.00	
7,200.0	6.64	259.07	7,081.9	-219.9	-1,138.7	-213.3	2.00	-2.00	0.00	
7,300.0	4.64	259.07	7,181.5	-221.7	-1,148.3	-215.1	2.00	-2.00	0.00	
7,400.0	2.64	259.07	7,281.2	-222.9	-1,154.6	-216.3	2.00	-2.00	0.00	
7,500.0	0.64	259.07	7,381.2	-223.5	-1,157.4	-216.8	2.00	-2.00	0.00	
7,531.8	0.00	0.00	7,413.0	-223.5	-1,157.5	-216.8	2.00	-2.00	0.00	
7,600.0	0.00	0.00	7,481.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,581.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,681.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,781.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,881.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,100.0	0.00	0.00	7,981.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,081.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,181.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,281.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,381.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,481.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,581.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,681.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,781.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,881.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,100.0	0.00	0.00	8,981.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,081.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,181.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,281.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,381.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,481.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,581.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,681.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,781.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,881.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
10,100.0	0.00	0.00	9,981.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,081.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,181.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00	

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.0	0.00	0.00	10,281.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00
10,500.0	0.00	0.00	10,381.2	-223.5	-1,157.5	-216.8	0.00	0.00	0.00
10,531.3	0.00	0.00	10,412.5	-223.5	-1,157.5	-216.8	0.00	0.00	0.00
10,550.0	2.26	359.47	10,431.2	-223.1	-1,157.5	-216.5	12.11	12.11	0.00
10,575.0	5.29	359.47	10,456.1	-221.5	-1,157.5	-214.8	12.11	12.11	0.00
10,600.0	8.32	359.47	10,481.0	-218.5	-1,157.6	-211.9	12.11	12.11	0.00
10,625.0	11.35	359.47	10,505.6	-214.3	-1,157.6	-207.6	12.11	12.11	0.00
10,650.0	14.37	359.47	10,530.0	-208.7	-1,157.7	-202.0	12.11	12.11	0.00
10,675.0	17.40	359.47	10,554.0	-201.8	-1,157.7	-195.2	12.11	12.11	0.00
10,700.0	20.43	359.47	10,577.7	-193.7	-1,157.8	-187.1	12.11	12.11	0.00
10,725.0	23.46	359.47	10,600.8	-184.4	-1,157.9	-177.7	12.11	12.11	0.00
10,751.9	26.71	359.47	10,625.2	-173.0	-1,158.0	-166.3	12.11	12.11	0.00
10,775.0	29.48	359.49	10,645.6	-162.1	-1,158.1	-155.5	12.00	12.00	0.10
10,800.0	32.48	359.51	10,667.0	-149.3	-1,158.2	-142.6	12.00	12.00	0.09
10,825.0	35.48	359.53	10,687.7	-135.3	-1,158.3	-128.6	12.00	12.00	0.07
10,850.0	38.48	359.55	10,707.7	-120.2	-1,158.4	-113.6	12.00	12.00	0.06
10,875.0	41.48	359.56	10,726.9	-104.2	-1,158.6	-97.5	12.00	12.00	0.06
10,900.0	44.48	359.57	10,745.1	-87.1	-1,158.7	-80.5	12.00	12.00	0.05
10,925.0	47.48	359.58	10,762.5	-69.2	-1,158.8	-62.5	12.00	12.00	0.04
10,950.0	50.48	359.59	10,778.9	-50.3	-1,159.0	-43.6	12.00	12.00	0.04
10,975.0	53.48	359.60	10,794.3	-30.6	-1,159.1	-23.9	12.00	12.00	0.04
11,000.0	56.48	359.61	10,808.6	-10.1	-1,159.3	-3.5	12.00	12.00	0.03
11,025.0	59.48	359.62	10,821.9	11.1	-1,159.4	17.7	12.00	12.00	0.03
11,050.0	62.48	359.63	10,834.0	32.9	-1,159.5	39.6	12.00	12.00	0.03
11,075.0	65.48	359.63	10,845.0	55.4	-1,159.7	62.1	12.00	12.00	0.03
11,100.0	68.48	359.64	10,854.8	78.4	-1,159.8	85.1	12.00	12.00	0.03
11,125.0	71.48	359.65	10,863.3	101.9	-1,160.0	108.6	12.00	12.00	0.03
11,150.0	74.48	359.65	10,870.6	125.8	-1,160.1	132.5	12.00	12.00	0.02
11,175.0	77.48	359.66	10,876.7	150.0	-1,160.3	156.7	12.00	12.00	0.02
11,200.0	80.48	359.66	10,881.5	174.6	-1,160.4	181.2	12.00	12.00	0.02
11,225.0	83.48	359.67	10,884.9	199.3	-1,160.6	206.0	12.00	12.00	0.02
11,250.0	86.48	359.68	10,887.1	224.2	-1,160.7	230.9	12.00	12.00	0.02
11,275.0	89.48	359.68	10,888.0	249.2	-1,160.8	255.9	12.00	12.00	0.02
11,281.1	90.22	359.68	10,888.0	255.3	-1,160.9	262.0	12.00	12.00	0.02
11,300.0	90.22	359.68	10,888.0	274.2	-1,161.0	280.9	0.00	0.00	0.00
11,400.0	90.22	359.68	10,887.6	374.2	-1,161.5	380.9	0.00	0.00	0.00
11,500.0	90.22	359.68	10,887.2	474.2	-1,162.1	480.9	0.00	0.00	0.00
11,600.0	90.22	359.68	10,886.8	574.2	-1,162.6	580.9	0.00	0.00	0.00
11,700.0	90.22	359.68	10,886.4	674.2	-1,163.2	680.9	0.00	0.00	0.00
11,800.0	90.22	359.68	10,886.0	774.2	-1,163.7	780.9	0.00	0.00	0.00
11,900.0	90.22	359.68	10,885.7	874.2	-1,164.3	880.9	0.00	0.00	0.00
12,000.0	90.22	359.68	10,885.3	974.2	-1,164.9	980.9	0.00	0.00	0.00
12,100.0	90.22	359.68	10,884.9	1,074.2	-1,165.4	1,080.9	0.00	0.00	0.00
12,200.0	90.22	359.68	10,884.5	1,174.2	-1,166.0	1,180.9	0.00	0.00	0.00
12,300.0	90.22	359.68	10,884.1	1,274.2	-1,166.5	1,280.9	0.00	0.00	0.00
12,400.0	90.22	359.68	10,883.7	1,374.2	-1,167.1	1,380.9	0.00	0.00	0.00
12,500.0	90.22	359.68	10,883.3	1,474.2	-1,167.6	1,480.9	0.00	0.00	0.00
12,600.0	90.22	359.68	10,883.0	1,574.2	-1,168.2	1,580.9	0.00	0.00	0.00
12,700.0	90.22	359.68	10,882.6	1,674.2	-1,168.7	1,680.9	0.00	0.00	0.00
12,800.0	90.22	359.68	10,882.2	1,774.2	-1,169.3	1,780.9	0.00	0.00	0.00
12,900.0	90.22	359.68	10,881.8	1,874.2	-1,169.8	1,880.9	0.00	0.00	0.00
13,000.0	90.22	359.68	10,881.4	1,974.2	-1,170.4	1,980.9	0.00	0.00	0.00
13,100.0	90.22	359.68	10,881.0	2,074.2	-1,171.0	2,080.9	0.00	0.00	0.00
13,200.0	90.22	359.68	10,880.7	2,174.2	-1,171.5	2,180.9	0.00	0.00	0.00

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,300.0	90.22	359.68	10,880.3	2,274.2	-1,172.1	2,280.9	0.00	0.00	0.00	
13,400.0	90.22	359.68	10,879.9	2,374.2	-1,172.6	2,380.9	0.00	0.00	0.00	
13,500.0	90.22	359.68	10,879.5	2,474.1	-1,173.2	2,480.9	0.00	0.00	0.00	
13,600.0	90.22	359.68	10,879.1	2,574.1	-1,173.7	2,580.9	0.00	0.00	0.00	
13,700.0	90.22	359.68	10,878.7	2,674.1	-1,174.3	2,680.9	0.00	0.00	0.00	
13,800.0	90.22	359.68	10,878.4	2,774.1	-1,174.8	2,780.9	0.00	0.00	0.00	
13,900.0	90.22	359.68	10,878.0	2,874.1	-1,175.4	2,880.9	0.00	0.00	0.00	
14,000.0	90.22	359.68	10,877.6	2,974.1	-1,175.9	2,980.9	0.00	0.00	0.00	
14,100.0	90.22	359.68	10,877.2	3,074.1	-1,176.5	3,080.9	0.00	0.00	0.00	
14,200.0	90.22	359.68	10,876.8	3,174.1	-1,177.1	3,180.9	0.00	0.00	0.00	
14,300.0	90.22	359.68	10,876.4	3,274.1	-1,177.6	3,280.9	0.00	0.00	0.00	
14,400.0	90.22	359.68	10,876.0	3,374.1	-1,178.2	3,380.9	0.00	0.00	0.00	
14,500.0	90.22	359.68	10,875.7	3,474.1	-1,178.7	3,480.9	0.00	0.00	0.00	
14,600.0	90.22	359.68	10,875.3	3,574.1	-1,179.3	3,580.9	0.00	0.00	0.00	
14,700.0	90.22	359.68	10,874.9	3,674.1	-1,179.8	3,680.9	0.00	0.00	0.00	
14,800.0	90.22	359.68	10,874.5	3,774.1	-1,180.4	3,780.9	0.00	0.00	0.00	
14,900.0	90.22	359.68	10,874.1	3,874.1	-1,180.9	3,880.9	0.00	0.00	0.00	
15,000.0	90.22	359.68	10,873.7	3,974.1	-1,181.5	3,980.9	0.00	0.00	0.00	
15,100.0	90.22	359.68	10,873.4	4,074.1	-1,182.0	4,080.9	0.00	0.00	0.00	
15,200.0	90.22	359.68	10,873.0	4,174.1	-1,182.6	4,180.9	0.00	0.00	0.00	
15,300.0	90.22	359.68	10,872.6	4,274.1	-1,183.1	4,280.9	0.00	0.00	0.00	
15,400.0	90.22	359.68	10,872.2	4,374.1	-1,183.7	4,380.9	0.00	0.00	0.00	
15,453.9	90.22	359.68	10,872.0	4,428.0	-1,184.0	4,434.7	0.00	0.00	0.00	
15,475.0	90.26	357.15	10,871.9	4,449.1	-1,184.6	4,455.8	12.00	0.18	-12.00	
15,500.0	90.30	354.15	10,871.8	4,474.0	-1,186.5	4,480.8	12.00	0.17	-12.00	
15,525.0	90.34	351.15	10,871.6	4,498.8	-1,189.7	4,505.6	12.00	0.17	-12.00	
15,550.0	90.39	348.15	10,871.5	4,523.4	-1,194.2	4,530.2	12.00	0.17	-12.00	
15,575.0	90.43	345.15	10,871.3	4,547.7	-1,199.9	4,554.6	12.00	0.16	-12.00	
15,600.0	90.47	342.15	10,871.1	4,571.7	-1,207.0	4,578.6	12.00	0.16	-12.00	
15,625.0	90.50	339.15	10,870.9	4,595.3	-1,215.3	4,602.2	12.00	0.15	-12.00	
15,650.0	90.54	336.15	10,870.7	4,618.4	-1,224.8	4,625.4	12.00	0.15	-12.00	
15,675.0	90.58	333.15	10,870.4	4,641.0	-1,235.5	4,648.0	12.00	0.14	-12.00	
15,700.0	90.61	330.15	10,870.2	4,663.0	-1,247.3	4,670.1	12.00	0.14	-12.00	
15,725.0	90.64	327.15	10,869.9	4,684.3	-1,260.3	4,691.5	12.00	0.13	-12.00	
15,750.0	90.67	324.15	10,869.6	4,705.0	-1,274.4	4,712.2	12.00	0.12	-12.00	
15,775.0	90.70	321.15	10,869.3	4,724.9	-1,289.6	4,732.2	12.00	0.11	-12.00	
15,800.0	90.73	318.15	10,869.0	4,743.9	-1,305.8	4,751.3	12.00	0.11	-12.00	
15,825.0	90.75	315.15	10,868.7	4,762.1	-1,322.9	4,769.6	12.00	0.10	-12.00	
15,850.0	90.77	312.15	10,868.4	4,779.3	-1,341.0	4,787.0	12.00	0.09	-12.00	
15,875.0	90.79	309.15	10,868.0	4,795.6	-1,360.0	4,803.4	12.00	0.08	-12.00	
15,900.0	90.81	306.15	10,867.7	4,810.9	-1,379.8	4,818.7	12.00	0.07	-12.00	
15,925.0	90.83	303.15	10,867.3	4,825.1	-1,400.3	4,833.1	12.00	0.06	-12.00	
15,950.0	90.84	300.15	10,866.9	4,838.2	-1,421.6	4,846.3	12.00	0.05	-12.00	
15,975.0	90.85	297.15	10,866.6	4,850.2	-1,443.6	4,858.4	12.00	0.05	-12.00	
16,000.0	90.86	294.15	10,866.2	4,861.0	-1,466.1	4,869.4	12.00	0.04	-12.00	
16,025.0	90.87	291.15	10,865.8	4,870.6	-1,489.2	4,879.1	12.00	0.03	-12.00	
16,050.0	90.87	288.15	10,865.4	4,879.0	-1,512.7	4,887.7	12.00	0.02	-12.00	
16,075.0	90.88	285.15	10,865.1	4,886.2	-1,536.6	4,895.0	12.00	0.01	-12.00	
16,100.0	90.88	282.15	10,864.7	4,892.1	-1,560.9	4,901.0	12.00	0.00	-12.00	
16,125.0	90.87	279.15	10,864.3	4,896.7	-1,585.5	4,905.8	12.00	-0.01	-12.00	
16,150.0	90.87	276.15	10,863.9	4,900.0	-1,610.3	4,909.2	12.00	-0.02	-12.00	
16,175.0	90.86	273.15	10,863.5	4,902.1	-1,635.2	4,911.4	12.00	-0.03	-12.00	
16,200.0	90.85	270.15	10,863.2	4,902.8	-1,660.2	4,912.3	12.00	-0.04	-12.00	
16,204.6	90.85	269.59	10,863.1	4,902.8	-1,664.8	4,912.3	12.06	-0.05	-12.06	

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,300.0	90.85	269.59	10,861.7	4,902.1	-1,760.1	4,912.1	0.00	0.00	0.00	
16,400.0	90.85	269.59	10,860.2	4,901.4	-1,860.1	4,912.0	0.00	0.00	0.00	
16,500.0	90.85	269.59	10,858.7	4,900.6	-1,960.1	4,911.8	0.00	0.00	0.00	
16,600.0	90.85	269.59	10,857.2	4,899.9	-2,060.1	4,911.7	0.00	0.00	0.00	
16,699.9	90.85	269.59	10,855.8	4,899.2	-2,160.0	4,911.6	0.00	0.00	0.00	
16,725.0	90.83	266.57	10,855.4	4,898.4	-2,185.1	4,910.9	12.00	-0.06	-12.00	
16,750.0	90.81	263.57	10,855.0	4,896.2	-2,210.0	4,908.9	12.00	-0.07	-12.00	
16,775.0	90.79	260.57	10,854.7	4,892.8	-2,234.7	4,905.6	12.00	-0.08	-12.00	
16,800.0	90.77	257.57	10,854.4	4,888.0	-2,259.3	4,901.0	12.00	-0.09	-12.00	
16,825.0	90.75	254.57	10,854.0	4,882.0	-2,283.5	4,895.1	12.00	-0.10	-12.00	
16,850.0	90.72	251.57	10,853.7	4,874.7	-2,307.4	4,887.9	12.00	-0.11	-12.00	
16,875.0	90.69	248.57	10,853.4	4,866.2	-2,330.9	4,879.6	12.00	-0.11	-12.00	
16,900.0	90.66	245.57	10,853.1	4,856.5	-2,354.0	4,870.0	12.00	-0.12	-12.00	
16,925.0	90.63	242.57	10,852.8	4,845.5	-2,376.4	4,859.2	12.00	-0.13	-12.00	
16,950.0	90.60	239.57	10,852.5	4,833.5	-2,398.3	4,847.2	12.00	-0.14	-12.00	
16,975.0	90.56	236.57	10,852.3	4,820.2	-2,419.5	4,834.1	12.00	-0.14	-12.00	
17,000.0	90.52	233.57	10,852.1	4,805.9	-2,440.0	4,819.9	12.00	-0.15	-12.00	
17,025.0	90.48	230.57	10,851.8	4,790.6	-2,459.7	4,804.7	12.00	-0.15	-12.00	
17,050.0	90.45	227.57	10,851.6	4,774.2	-2,478.6	4,788.4	12.00	-0.16	-12.00	
17,075.0	90.40	224.57	10,851.4	4,756.8	-2,496.6	4,771.1	12.00	-0.16	-12.00	
17,100.0	90.36	221.57	10,851.3	4,738.6	-2,513.7	4,753.0	12.00	-0.17	-12.00	
17,125.0	90.32	218.57	10,851.1	4,719.5	-2,529.8	4,734.0	12.00	-0.17	-12.00	
17,150.0	90.28	215.57	10,851.0	4,699.5	-2,544.9	4,714.1	12.00	-0.18	-12.00	
17,175.0	90.23	212.57	10,850.9	4,678.8	-2,558.9	4,693.5	12.00	-0.18	-12.00	
17,200.0	90.19	209.57	10,850.8	4,657.4	-2,571.8	4,672.1	12.00	-0.18	-12.00	
17,225.0	90.14	206.58	10,850.7	4,635.3	-2,583.5	4,650.1	12.00	-0.18	-12.00	
17,250.0	90.09	203.58	10,850.7	4,612.7	-2,594.1	4,627.6	12.00	-0.18	-12.00	
17,275.0	90.05	200.58	10,850.7	4,589.5	-2,603.5	4,604.5	12.00	-0.19	-12.00	
17,300.0	90.00	197.58	10,850.6	4,565.9	-2,611.7	4,580.9	12.00	-0.19	-12.00	
17,325.0	89.95	194.58	10,850.7	4,541.9	-2,618.6	4,556.9	12.00	-0.19	-12.00	
17,350.0	89.91	191.58	10,850.7	4,517.5	-2,624.3	4,532.6	12.00	-0.19	-12.00	
17,375.0	89.86	188.58	10,850.7	4,492.9	-2,628.6	4,508.0	12.00	-0.18	-12.00	
17,400.0	89.81	185.58	10,850.8	4,468.1	-2,631.7	4,483.2	12.00	-0.18	-12.00	
17,425.0	89.77	182.58	10,850.9	4,443.2	-2,633.5	4,458.3	12.00	-0.18	-12.00	
17,449.2	89.73	179.68	10,851.0	4,419.0	-2,634.0	4,434.1	11.99	-0.18	-11.99	
17,500.0	89.73	179.68	10,851.2	4,368.2	-2,633.7	4,383.3	0.00	0.00	0.00	
17,600.0	89.73	179.68	10,851.7	4,268.2	-2,633.1	4,283.3	0.00	0.00	0.00	
17,700.0	89.73	179.68	10,852.2	4,168.2	-2,632.6	4,183.3	0.00	0.00	0.00	
17,800.0	89.73	179.68	10,852.7	4,068.2	-2,632.0	4,083.3	0.00	0.00	0.00	
17,900.0	89.73	179.68	10,853.2	3,968.2	-2,631.5	3,983.3	0.00	0.00	0.00	
18,000.0	89.73	179.68	10,853.6	3,868.2	-2,630.9	3,883.3	0.00	0.00	0.00	
18,100.0	89.73	179.68	10,854.1	3,768.2	-2,630.3	3,783.3	0.00	0.00	0.00	
18,200.0	89.73	179.68	10,854.6	3,668.2	-2,629.8	3,683.3	0.00	0.00	0.00	
18,300.0	89.73	179.68	10,855.1	3,568.2	-2,629.2	3,583.3	0.00	0.00	0.00	
18,400.0	89.73	179.68	10,855.5	3,468.2	-2,628.6	3,483.3	0.00	0.00	0.00	
18,500.0	89.73	179.68	10,856.0	3,368.2	-2,628.1	3,383.3	0.00	0.00	0.00	
18,600.0	89.73	179.68	10,856.5	3,268.2	-2,627.5	3,283.3	0.00	0.00	0.00	
18,700.0	89.73	179.68	10,857.0	3,168.2	-2,626.9	3,183.3	0.00	0.00	0.00	
18,800.0	89.73	179.68	10,857.5	3,068.2	-2,626.4	3,083.3	0.00	0.00	0.00	
18,900.0	89.73	179.68	10,857.9	2,968.2	-2,625.8	2,983.3	0.00	0.00	0.00	
19,000.0	89.73	179.68	10,858.4	2,868.2	-2,625.2	2,883.3	0.00	0.00	0.00	
19,100.0	89.73	179.68	10,858.9	2,768.2	-2,624.7	2,783.3	0.00	0.00	0.00	
19,200.0	89.73	179.68	10,859.4	2,668.3	-2,624.1	2,683.3	0.00	0.00	0.00	
19,300.0	89.73	179.68	10,859.8	2,568.3	-2,623.5	2,583.3	0.00	0.00	0.00	

Planning Report

Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,400.0	89.73	179.68	10,860.3	2,468.3	-2,623.0	2,483.3	0.00	0.00	0.00	
19,500.0	89.73	179.68	10,860.8	2,368.3	-2,622.4	2,383.3	0.00	0.00	0.00	
19,600.0	89.73	179.68	10,861.3	2,268.3	-2,621.8	2,283.3	0.00	0.00	0.00	
19,700.0	89.73	179.68	10,861.8	2,168.3	-2,621.3	2,183.3	0.00	0.00	0.00	
19,800.0	89.73	179.68	10,862.2	2,068.3	-2,620.7	2,083.3	0.00	0.00	0.00	
19,900.0	89.73	179.68	10,862.7	1,968.3	-2,620.2	1,983.3	0.00	0.00	0.00	
20,000.0	89.73	179.68	10,863.2	1,868.3	-2,619.6	1,883.3	0.00	0.00	0.00	
20,100.0	89.73	179.68	10,863.7	1,768.3	-2,619.0	1,783.3	0.00	0.00	0.00	
20,200.0	89.73	179.68	10,864.2	1,668.3	-2,618.5	1,683.3	0.00	0.00	0.00	
20,300.0	89.73	179.68	10,864.6	1,568.3	-2,617.9	1,583.3	0.00	0.00	0.00	
20,400.0	89.73	179.68	10,865.1	1,468.3	-2,617.3	1,483.3	0.00	0.00	0.00	
20,500.0	89.73	179.68	10,865.6	1,368.3	-2,616.8	1,383.3	0.00	0.00	0.00	
20,600.0	89.73	179.68	10,866.1	1,268.3	-2,616.2	1,283.3	0.00	0.00	0.00	
20,700.0	89.73	179.68	10,866.5	1,168.3	-2,615.6	1,183.3	0.00	0.00	0.00	
20,800.0	89.73	179.68	10,867.0	1,068.3	-2,615.1	1,083.3	0.00	0.00	0.00	
20,900.0	89.73	179.68	10,867.5	968.3	-2,614.5	983.3	0.00	0.00	0.00	
21,000.0	89.73	179.68	10,868.0	868.3	-2,613.9	883.3	0.00	0.00	0.00	
21,100.0	89.73	179.68	10,868.5	768.3	-2,613.4	783.3	0.00	0.00	0.00	
21,200.0	89.73	179.68	10,868.9	668.3	-2,612.8	683.3	0.00	0.00	0.00	
21,300.0	89.73	179.68	10,869.4	568.3	-2,612.2	583.3	0.00	0.00	0.00	
21,400.0	89.73	179.68	10,869.9	468.3	-2,611.7	483.3	0.00	0.00	0.00	
21,500.0	89.73	179.68	10,870.4	368.3	-2,611.1	383.3	0.00	0.00	0.00	
21,600.0	89.73	179.68	10,870.8	268.3	-2,610.5	283.3	0.00	0.00	0.00	
21,700.0	89.73	179.68	10,871.3	168.3	-2,610.0	183.3	0.00	0.00	0.00	
21,800.0	89.73	179.68	10,871.8	68.3	-2,609.4	83.4	0.00	0.00	0.00	
21,900.0	89.73	179.68	10,872.3	-31.7	-2,608.8	-16.6	0.00	0.00	0.00	
22,000.0	89.73	179.68	10,872.8	-131.7	-2,608.3	-116.6	0.00	0.00	0.00	
22,050.3	89.73	179.68	10,873.0	-182.0	-2,608.0	-167.0	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP(509H) - hit/miss target - Shape - Point	0.00	0.00	10,613.5	-223.0	-1,157.0	430,526.00	764,326.00	32° 10' 53.544 N	103° 36' 45.261 W
- plan misses target center by 40.5usft at 10722.3usft MD (10598.4 TVD, -185.5 N, -1157.9 E)									
FTP(509H) - plan hits target center - Point	0.00	0.00	10,625.2	-173.0	-1,158.0	430,576.00	764,325.00	32° 10' 54.039 N	103° 36' 45.268 W
DP4(509H) - plan hits target center - Point	0.00	0.00	10,851.0	4,419.0	-2,634.0	435,168.00	762,849.00	32° 11' 39.576 N	103° 37' 2.087 W
DP1(509H) - plan hits target center - Point	0.00	0.00	10,872.0	4,428.0	-1,184.0	435,177.00	764,299.00	32° 11' 39.569 N	103° 36' 45.212 W
PBHL(509H) - plan hits target center - Point	0.00	0.00	10,873.0	-182.0	-2,608.0	430,567.00	762,875.00	32° 10' 54.046 N	103° 37' 2.141 W

Planning Report

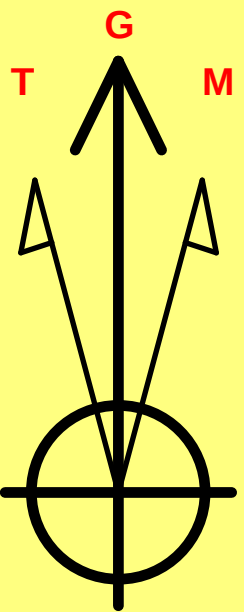
Database:	EDT_18	Local Co-ordinate Reference:	Well #509H
Company:	Midland	TVD Reference:	KB 26 @ 3573.0usft
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB 26 @ 3573.0usft
Site:	Mamba 30 State Com	North Reference:	Grid
Well:	#509H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.1	0.1	0.0	0.0	SHL: 267' FSL & 1849' FEL (Sec 30)
5,424.8	5,342.9	-152.6	-790.3	Lease #NM VB-871-1 Entry: 119' FSL & 2617'FWL (Sec 30)
8,970.0	8,851.2	-223.5	-1,157.5	BONE SPRING LIME: 50' FSL & 2249' FWL (Sec 30)
10,531.3	10,412.5	-223.5	-1,157.5	KOP: 50' FSL & 2249' FWL (Sec 30)
22,051.8	10,873.0	-182.0	-2,608.0	BHL: 100' FSL & 799' FWL (Sec 30)

Lea County, NM (NAD 83 NME)

Mamba 30 State Com #509H

Plan #0.1



Azimuths to Grid North
True North: -0.39°
Magnetic North: 5.86°

Magnetic Field
Strength: 46964.5nT
Dip Angle: 59.71°
Date: 9/17/2025
Model: IGRF2025

To convert a Magnetic Direction to a Grid Direction, Add 5.86°
To convert a Magnetic Direction to a True Direction, Add 6.24° East
To convert a True Direction to a Grid Direction, Subtract 0.39°

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELL DETAILS: #509H

KB 26 @ 3573.0usft 3547.0

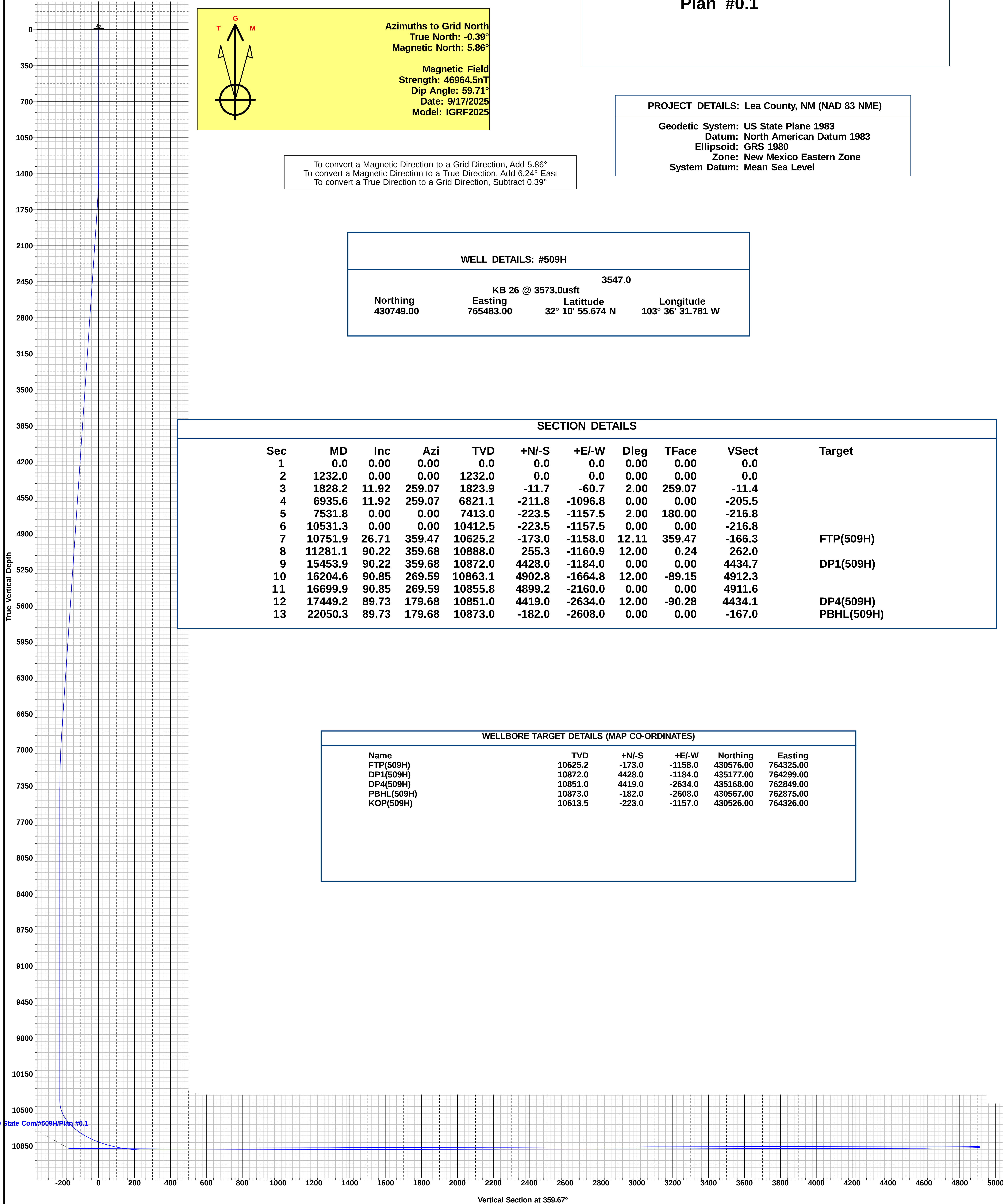
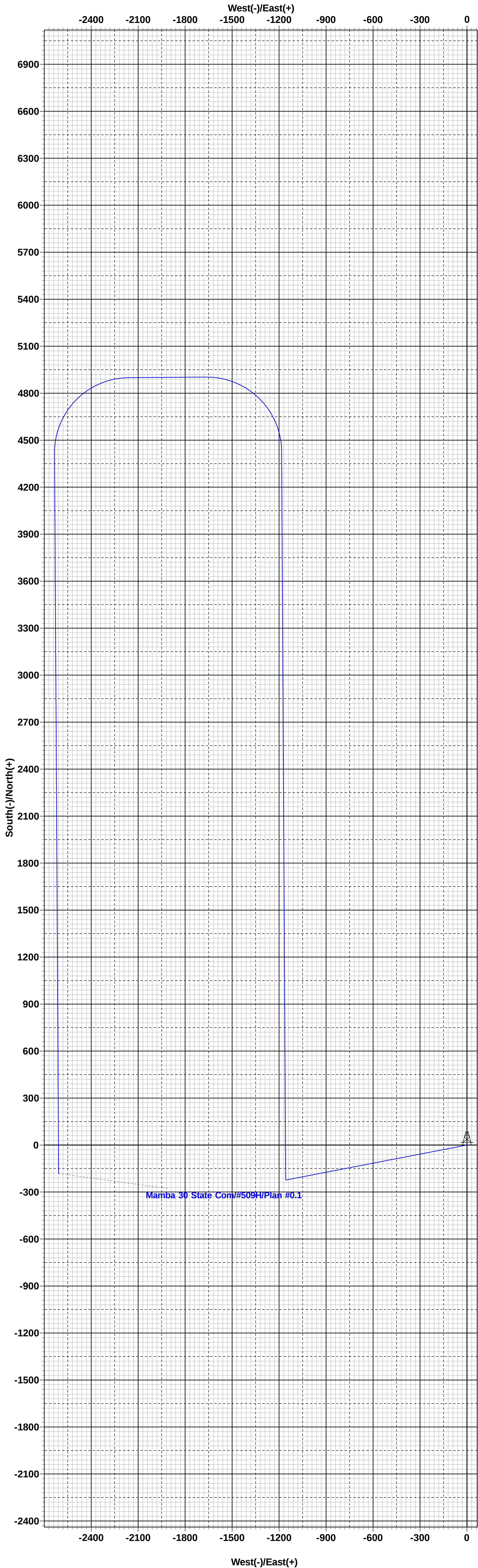
Northing	Easting	Latitude	Longitude
430749.00	765483.00	32° 10' 55.674 N	103° 36' 31.781 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1232.0	0.00	0.00	1232.0	0.0	0.0	0.00	0.00	0.0	
3	1828.2	11.92	259.07	1823.9	-11.7	-60.7	2.00	259.07	-11.4	
4	6935.6	11.92	259.07	6821.1	-211.8	-1096.8	0.00	0.00	-205.5	
5	7531.8	0.00	0.00	7413.0	-223.5	-1157.5	2.00	180.00	-216.8	
6	10531.3	0.00	0.00	10412.5	-223.5	-1157.5	0.00	0.00	-216.8	
7	10751.9	26.71	359.47	10625.2	-173.0	-1158.0	12.11	359.47	-166.3	FTP(509H)
8	11281.1	90.22	359.68	10888.0	255.3	-1160.9	12.00	0.24	262.0	
9	15453.9	90.22	359.68	10872.0	4428.0	-1184.0	0.00	0.00	4434.7	DP1(509H)
10	16204.6	90.85	269.59	10863.1	4902.8	-1664.8	12.00	-89.15	4912.3	
11	16699.9	90.85	269.59	10855.8	4899.2	-2160.0	0.00	0.00	4911.6	
12	17449.2	89.73	179.68	10851.0	4419.0	-2634.0	12.00	-90.28	4434.1	DP4(509H)
13	22050.3	89.73	179.68	10873.0	-182.0	-2608.0	0.00	0.00	-167.0	PBHL(509H)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
FTP(509H)	10625.2	-173.0	-1158.0	430576.00	764325.00
DP1(509H)	10872.0	4428.0	-1184.0	435177.00	764299.00
DP4(509H)	10851.0	4419.0	-2634.0	435168.00	762849.00
PBHL(509H)	10873.0	-182.0	-2608.0	430567.00	762875.00
KOP(509H)	10613.5	-223.0	-1157.0	430526.00	764326.00



State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: EOG Resources, Inc. **OGRID:** 7377 **Date:** 10/22/2025

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
MAMBA 30 STATE COM 509H		O-30-24S-33E	267' FSL & 1849' FEL	+/- 1000	+/- 3500	+/- 3000

IV. Central Delivery Point Name: MAMBA 30 STATE COM CTB [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
MAMBA 30 STATE COM 509H		11/15/25	12/26/25	01/26/26	03/1/26	05/15/26

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

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

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

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

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

Section 4 - Notices

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

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

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

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

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

Signature: <i>Kayla McConnell</i>
Printed Name: KAYLA MCCONNELL
Title: Regulatory Specialist
E-mail Address: KAYLA_MCCONNELL@EOGRESOURCES.COM
Date: 10/22/2025
Phone: (432) 265-6804
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Natural Gas Management Plan**Items VI-VIII****VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.**

- Separation equipment will be sized to provide adequate separation for anticipated rates.
- Adequate separation relates to retention time for Liquid – Liquid separation and velocity for Gas-Liquid separation.
- Collection systems are appropriately sized to handle facility production rates on all (3) phases.
- Ancillary equipment and metering is selected to be serviced without flow interruptions or the need to release gas from the well.

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

- All flare stacks will be properly sized. The flare stacks will be located at a minimum 100' from the nearest surface hole location on the pad.
- All natural gas produced during drilling operations will be flared, unless there is an equipment malfunction and/or to avoid risk of an immediate and substantial adverse impact on safety and the environment, at which point the gas will be vented.

Completions/Recompletions Operations

- New wells will not be flowed back until they are connected to a properly sized gathering system.
- The facility will be built/sized for maximum anticipated flowrates and pressures to minimize waste.
- For flowback operations, multiple stages of separation will be used as well as excess VRU and blowers to make sure waste is minimized off the storage tanks and facility.
- During initial flowback, the well stream will be routed to separation equipment.
- At an existing facility, when necessary, post separation natural gas will be flared until it meets pipeline specifications, at which point it will be turned into a collection system.
- At a new facility, post separation natural gas will be vented until storage tanks can safely function, at which point it will be flared until it meets pipeline spec.

Production Operations

- Weekly AVOs will be performed on all facilities.
- All flares will be equipped with auto-ignition systems and continuous pilot operations.
- After a well is stabilized from liquid unloading, the well will be turned back into the collection system.
- All plunger lift systems will be optimized to limit the amount of waste.
- All tanks will have automatic gauging equipment installed.
- Leaking thief hatches found during AVOs will be cleaned and properly re-sealed.

Performance Standards

- Production equipment will be designed to handle maximum anticipated rates and pressure.
- All flared gas will be combusted in a flare stack that is properly sized and designed to ensure proper combustion.
- Weekly AVOs will be performed on all wells and facilities that produce more than 60 Mcfd.

Measurement & Estimation

- All volume that is flared and vented that is not measured will be estimated.
- All measurement equipment for flared volumes will conform to API 14.10.
- No meter bypasses will be installed.

- When metering is not practical due to low pressure/low rate, the vented or flared volume will be estimated.

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

- During downhole well maintenance, EOG will use best management practices to vent as minimally as possible.
- Prior to the commencement of any maintenance, the tank or vessel will be isolated from the rest of the facilities.
- All valves upstream of the equipment will be closed and isolated.
- After equipment has been isolated, the equipment will be blown down to as low a pressure as possible into the collection system.
- If the equipment being maintained cannot be relieved into the collection system, it shall be released to a tank where the vapor can either be captured or combusted if possible.
- After downhole well maintenance, natural gas will be flared until it reaches pipeline specification.