

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

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

5. Lease Serial No. **NMNM17241**  
6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		7. If Unit of CA/Agreement, Name and/or No.
2. Name of Operator <b>EOG RESOURCES INCORPORATED</b>		8. Well Name and No. <b>YUKON 20 FED COM/702H</b>
3a. Address <b>1111 BAGBY SKY LOBBY 2, HOUSTON, TX 770</b>	3b. Phone No. (include area code) <b>(713) 651-7000</b>	9. API Well No. <b>30-025-50377</b>
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) <b>SEC 20/T24S/R34E/NMP</b>		10. Field and Pool or Exploratory Area <b>RED HILLS; BONE SPRING, NORTH</b>
		11. Country or Parish, State <b>LEA/NM</b>

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

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

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

EOG respectfully requests an amendment to our approved APD for this well to reflect the following changes:

Yukon 20 Fed Com 105H (FKA 702H) API #: 30-025-50377

Change name from Yukon 20 Fed Com 702H to Yukon 20 Fed Com 105H.

Change BHL from T-24-S, R-34-E, Sec 29, 100' FSL, 792' FEL, Lea Co., NM, to T-24-S, R-34-E, Sec 29, 100' FSL, 1254' FEL, Lea Co., N.M.

Change target formation to Leonard A.

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) <b>STAR HARRELL / Ph: (432) 848-9161</b>	Title <b>Regulatory Specialist</b>
Signature	Date <b>03/15/2023</b>

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by <b>KEITH P IMMATTY / Ph: (575) 988-4722 / Approved</b>	Title <b>ENGINEER</b>	Date <b>03/15/2023</b>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office <b>CARLSBAD</b>	

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

## GENERAL INSTRUCTIONS

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

## SPECIFIC INSTRUCTIONS

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

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

## NOTICES

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

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

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

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

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

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

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

Response to this request is mandatory.

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

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

## Additional Information

### Additional Remarks

Update casing and cement program to current design.

Update HSU to 640 acres.

Update the Pool as reflected in the C-102.

### Location of Well

0. SHL: NENE / 787 FNL / 1204 FEL / TWSP: 24S / RANGE: 34E / SECTION: 20 / LAT: 32.2081546 / LONG: -103.4873256 ( TVD: 0 feet, MD: 0 feet )

PPP: NENE / 100 FNL / 792 FEL / TWSP: 24S / RANGE: 34E / SECTION: 20 / LAT: 32.2100422 / LONG: -103.4859964 ( TVD: 11825 feet, MD: 11893 feet )

BHL: SESE / 100 FSL / 792 FEL / TWSP: 24S / RANGE: 34E / SECTION: 29 / LAT: 32.1815676 / LONG: -103.4859607 ( TVD: 12090 feet, MD: 22353 feet )

CONFIDENTIAL

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

FORM C-102

Revised August 1, 2011

Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number <b>30-025-50377</b>		<sup>2</sup> Pool Code <b>96434</b>		<sup>3</sup> Pool Name <b>Red Hills; Bone Spring, North</b>	
<sup>4</sup> Property Code <b>327233</b>		<sup>5</sup> Property Name <b>YUKON 20 FED COM</b>			<sup>6</sup> Well Number <b>105H</b>
<sup>7</sup> OGRID No. <b>7377</b>		<sup>8</sup> Operator Name <b>EOG RESOURCES, INC.</b>			<sup>9</sup> Elevation <b>3528'</b>

<sup>10</sup>Surface Location

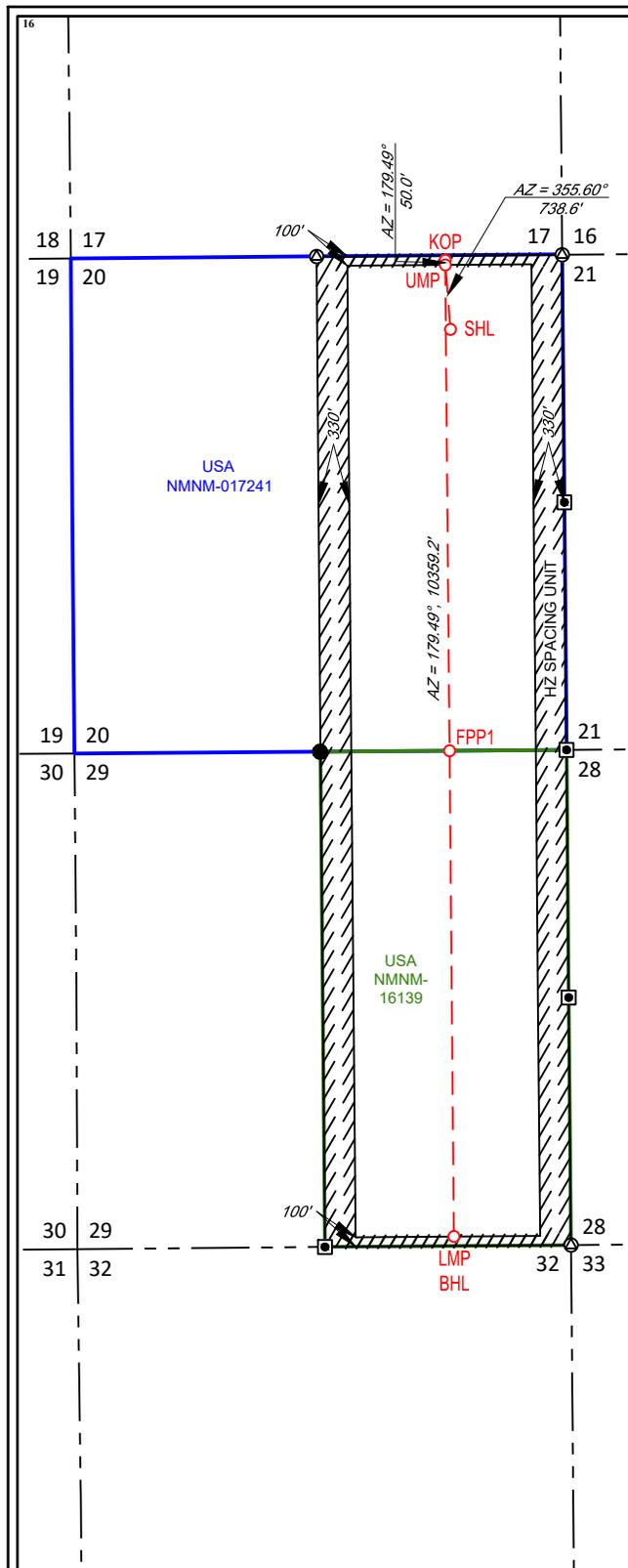
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	20	24-S	34-E	-	787'	NORTH	1204'	EAST	LEA

<sup>11</sup>Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	29	24-S	34-E	-	100'	SOUTH	1254'	EAST	LEA

<sup>12</sup> Dedicated Acres <b>640.00</b>	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



<p>NEW MEXICO EAST NAD 1983</p> <p><u>SURFACE LOCATION (SHL)</u> 787' FNL - SEC. 20 1204' FEL - SEC. 20 X=803000 Y=440490 LAT.: N 32.2081546 LONG.: W 103.4873256</p> <p><u>KICK OFF POINT (KOP)</u> 50' FNL - SEC. 20 1254' FEL - SEC. 20 X=802943 Y=441227 LAT.: N 32.2101800 LONG.: W 103.4874900</p> <p><u>UPPER MOST PERF. (UMP)</u> 100' FNL - SEC. 20 1254' FEL - SEC. 20 X=802944 Y=441177 LAT.: N 32.2100426 LONG.: W 103.4874898</p> <p><u>FED PERF. POINT (FPP1)</u> 1' FNL - SEC. 29 1254' FEL - SEC. 20 X=802990 Y=435998 LAT.: N 32.1958060 LONG.: W 103.4874719</p> <p><u>LOWER MOST PERF. (LMP)</u> <u>BOTTOM HOLE LOCATION (BHL)</u> 100' FSL - SEC. 29 1254' FEL - SEC. 29 X=803036 Y=430818 LAT.: N 32.1815683 LONG.: W 103.4874539</p>
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<sup>17</sup>OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

*Star L Harrell* 3/15/2023  
Signature Date

**Star L Harrell**  
Printed Name

star\_harrell@eogresources.com  
E-mail Address

<sup>18</sup>SURVEYOR CERTIFICATION

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

02/16/23  
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number

NEW MEXICO EAST  
NAD 1927

<p><u>SURFACE LOCATION (SHL)</u> X=761815 Y=440432 LAT.: N 32.2080303 LONG.: W 103.4868509</p> <p><u>UPPER MOST PERF. (UMP)</u> X=761759 Y=441118 LAT.: N 32.2099183 LONG.: W 103.4870150</p> <p><u>LOWER MOST PERF. (LMP)</u> <u>BOTTOM HOLE LOCATION (BHL)</u> X=761851 Y=430760 LAT.: N 32.1814438 LONG.: W 103.4869808</p>	<p><u>KICK OFF POINT (KOP)</u> X=761758 Y=441168 LAT.: N 32.2100557 LONG.: W 103.4870151</p> <p><u>FED PERF. POINT (FPP1)</u> X=761805 Y=435939 LAT.: N 32.1958816 LONG.: W 103.4869979</p>
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**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

**1. GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

Rustler	1,177'
Tamarisk Anhydrite	1,295'
Top of Salt	1,730'
Base of Salt	5,117'
Lamar	5,265'
Bell Canyon	5,920'
Cherry Canyon	6,172'
Brushy Canyon	7,577'
Bone Spring Lime	9,039'
Leonard A Shale	9,131'
Leonard B Shale	9,264'
1 <sup>st</sup> Bone Spring Sand	10,010'
2 <sup>nd</sup> Bone Spring Shale	10,270'
2 <sup>nd</sup> Bone Spring Sand	10,444'
3 <sup>rd</sup> Bone Spring Carb	11,091'
3 <sup>rd</sup> Bone Spring Sand	11,685'
Wolfcamp	11,934'
TD	12,090'

**3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,172'	Oil
Brushy Canyon	7,577'	Oil
Leonard A Shale	9,131'	Oil
Leonard B Shale	9,264'	Oil
1 <sup>st</sup> Bone Spring Sand	10,010'	Oil
2 <sup>nd</sup> Bone Spring Shale	10,270'	Oil
2 <sup>nd</sup> Bone Spring Sand	10,444'	Oil
3 <sup>rd</sup> Bone Spring Carb	11,091'	Oil
3 <sup>rd</sup> Bone Spring Sand	11,685'	Oil
Wolfcamp	11,934'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 9.625" casing at 1,320' and circulating cement back to surface.

**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

**4. CASING PROGRAM - NEW**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
12.25"	0' – 1,320'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
8.75"	0' – 11,200'	7.625"	29.7#	HCP-110	FXL	1.125	1.25	1.60
6.75"	0' – 10,700'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	10,700'–11,200'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60
6.75"	11,200' – 22,353'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60

Variance is requested to waive the centralizer requirements for the 7-5/8" casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 5-1/2" casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive the annular clearance requirements for the 5-1/2" casing by 7-5/8" casing annulus to the proposed top of cement.

EOG requests permission to allow deviation from the 0.422" annulus clearance requirement from Onshore Order #2 under the following conditions:

- Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
- Annular clearance less than 0.422" is acceptable for the production open hole section.

**Cementing Program:**

Depth	No. Sacks	Wt. ppg	Yld Ft <sup>3</sup> /sk	Slurry Description
1,320' 9-5/8"	1,190	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	90	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 1,120')
11,200' 7-5/8"	440	14.2	1.11	1 <sup>st</sup> Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 7,577')
	1,000	12.7	2.30	2 <sup>nd</sup> Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
22,353' 5-1/2"	980	14.2	1.31	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 10,700')

**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

<b>Additive</b>	<b>Purpose</b>
Bentonite Gel	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
MagOx	Expansive agent
Pre-Mag-M	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

EOG requests to pump a two stage cement job on the 7-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (7,577') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of 1,000 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. Once cement circulates to surface drilling operations to drill out of the intermediate shoe will proceed (per clarification from BLM 4/21/2020). The final cement top 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.

Cement integrity tests will be performed immediately following plug bump.

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

**5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:**

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top.

**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

EOG will utilize wing unions on BOPE connections that can be isolated from wellbore pressure through means of a choke. All wing unions will be rated to a pressure that meets or exceeds the pressure rating of the BOPE system.

Variance is requested to use a 5,000 psi annular BOP with the 10,000 psi BOP stack.

Pipe rams and blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:**

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

<b>Depth</b>	<b>Type</b>	<b>Weight (ppg)</b>	<b>Viscosity</b>	<b>Water Loss</b>
0 – 1,320'	Fresh - Gel	8.6-8.8	28-34	N/c
1,320' – 11,200'	Brine	10.0-10.2	28-34	N/c
11,200' – 11,673'	Oil Base	8.7-9.4	58-68	N/c - 6
11,673' – 22,353' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

**7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:**

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) H<sub>2</sub>S monitoring and detection equipment will be utilized from surface casing point to TD.

**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

**8. LOGGING, TESTING AND CORING PROGRAM:**

Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

**9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:**

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 8,792 psig and a maximum anticipated surface pressure of 6,132 psig (based on 14.0 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,577' to Intermediate casing point.

**10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:**

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. After WOC 8 hours or 500 psi compressive strength (whichever is greater), the Surface Rig will move off so the wellhead can be installed. A welder will cut the casing to the proper height and weld on the wellhead (both "A" and "B" sections). The weld will be tested to 1000 psi. All valves will be closed and a wellhead cap will be installed (diagram attached). If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

**11. WELLHEAD:**

A multi-bowl wellhead system will be utilized.

After running the 9-5/8" surface casing, a 9-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10,000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 10,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cactus Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

**EOG RESOURCES, INC.  
YUKON 20 FED COM #702H**

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. EOG Resources reserves the option to conduct BOPE testing during wait on cement periods provided a test plug is utilized.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

Casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

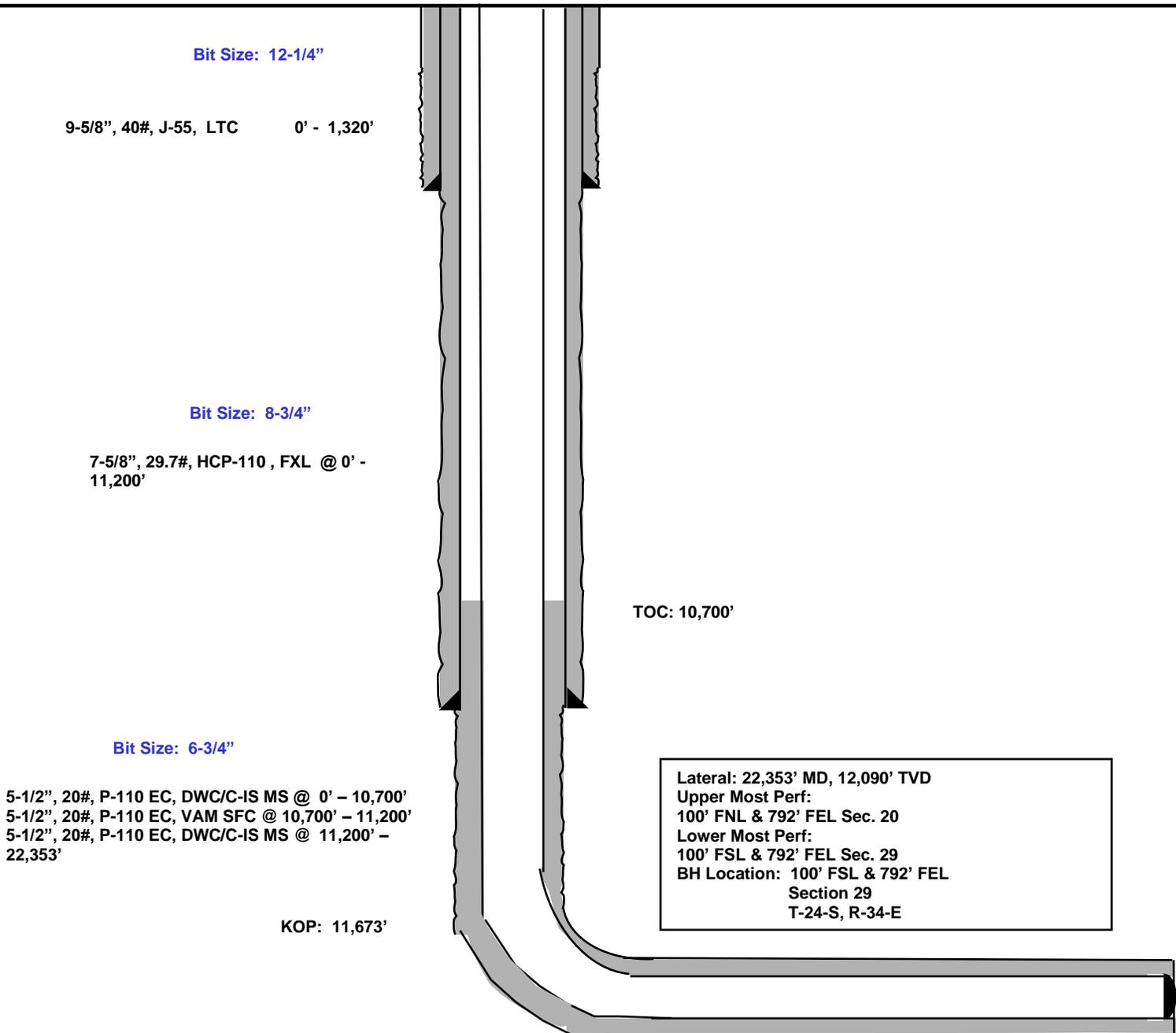
EOG RESOURCES, INC.  
YUKON 20 FED COM #702H

787' FNL  
1,204' FEL  
Section 20  
T-24-S, R-34-E

Proposed Wellbore

KB: 3,554'  
GL: 3,529'

API: 30-025-\*\*\*\*\*





## **Midland**

**Lea County, NM (NAD 83 NME)**

**Yukon 20 Fed Com**

**#105H**

**OH**

**Plan: Plan #0.2**

## **Standard Planning Report**

**28 February, 2023**



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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

<b>Site</b>	Yukon 20 Fed Com				
<b>Site Position:</b>		<b>Northing:</b>	440,613.00 usft	<b>Latitude:</b>	32° 12' 30.615 N
<b>From:</b>	Map	<b>Easting:</b>	802,407.00 usft	<b>Longitude:</b>	103° 29' 21.259 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	#105H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	440,490.00 usft	<b>Latitude:</b>	32° 12' 29.352 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	803,000.00 usft	<b>Longitude:</b>	103° 29' 14.369 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	3,528.0 usft
<b>Grid Convergence:</b>	0.45 °					

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	2/24/2023	6.31	59.84	47,315.42528393

<b>Design</b>	Plan #0.2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	179.79

<b>Plan Survey Tool Program</b>	<b>Date</b>	2/28/2023		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.0	19,649.0 Plan #0.2 (OH)	EOG MWD+IFR1	
			MWD + IFR1	



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,851.7	7.03	355.58	1,850.8	21.5	-1.7	2.00	2.00	0.00	355.58	
7,535.8	7.03	355.58	7,492.2	715.5	-55.3	0.00	0.00	0.00	0.00	
7,887.5	0.00	0.00	7,843.0	737.0	-57.0	2.00	-2.00	0.00	180.00	
8,967.0	0.00	0.00	8,922.5	737.0	-57.0	0.00	0.00	0.00	0.00	0.00 KOP (Yukon 20 Fed C
9,187.5	26.46	178.85	9,135.2	687.0	-56.0	12.00	12.00	81.13	178.85	FTP (Yukon 20 Fed C
9,717.0	90.00	179.51	9,399.9	259.6	-50.8	12.00	12.00	0.12	0.73	
14,468.8	90.00	179.51	9,400.0	-4,492.0	-10.0	0.00	0.00	0.00	0.00	0.00 FED PP (Yukon 20 Fe
19,649.0	90.00	179.47	9,400.0	-9,672.0	36.0	0.00	0.00	0.00	-86.38	PBHL (Yukon 20 Fed



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	2.00	355.58	1,600.0	1.7	-0.1	-1.7	2.00	2.00	0.00
1,700.0	4.00	355.58	1,699.8	7.0	-0.5	-7.0	2.00	2.00	0.00
1,800.0	6.00	355.58	1,799.5	15.6	-1.2	-15.7	2.00	2.00	0.00
1,851.7	7.03	355.58	1,850.8	21.5	-1.7	-21.5	2.00	2.00	0.00
1,900.0	7.03	355.58	1,898.8	27.4	-2.1	-27.4	0.00	0.00	0.00
2,000.0	7.03	355.58	1,998.0	39.6	-3.1	-39.6	0.00	0.00	0.00
2,100.0	7.03	355.58	2,097.2	51.8	-4.0	-51.8	0.00	0.00	0.00
2,200.0	7.03	355.58	2,196.5	64.0	-5.0	-64.0	0.00	0.00	0.00
2,300.0	7.03	355.58	2,295.7	76.2	-5.9	-76.3	0.00	0.00	0.00
2,400.0	7.03	355.58	2,395.0	88.4	-6.8	-88.5	0.00	0.00	0.00
2,500.0	7.03	355.58	2,494.2	100.7	-7.8	-100.7	0.00	0.00	0.00
2,600.0	7.03	355.58	2,593.5	112.9	-8.7	-112.9	0.00	0.00	0.00
2,700.0	7.03	355.58	2,692.7	125.1	-9.7	-125.1	0.00	0.00	0.00
2,800.0	7.03	355.58	2,792.0	137.3	-10.6	-137.3	0.00	0.00	0.00
2,900.0	7.03	355.58	2,891.2	149.5	-11.6	-149.5	0.00	0.00	0.00
3,000.0	7.03	355.58	2,990.5	161.7	-12.5	-161.7	0.00	0.00	0.00
3,100.0	7.03	355.58	3,089.7	173.9	-13.5	-174.0	0.00	0.00	0.00
3,200.0	7.03	355.58	3,189.0	186.1	-14.4	-186.2	0.00	0.00	0.00
3,300.0	7.03	355.58	3,288.2	198.3	-15.3	-198.4	0.00	0.00	0.00
3,400.0	7.03	355.58	3,387.5	210.5	-16.3	-210.6	0.00	0.00	0.00
3,500.0	7.03	355.58	3,486.7	222.7	-17.2	-222.8	0.00	0.00	0.00
3,600.0	7.03	355.58	3,586.0	235.0	-18.2	-235.0	0.00	0.00	0.00
3,700.0	7.03	355.58	3,685.2	247.2	-19.1	-247.2	0.00	0.00	0.00
3,800.0	7.03	355.58	3,784.5	259.4	-20.1	-259.4	0.00	0.00	0.00
3,900.0	7.03	355.58	3,883.7	271.6	-21.0	-271.7	0.00	0.00	0.00
4,000.0	7.03	355.58	3,982.9	283.8	-21.9	-283.9	0.00	0.00	0.00
4,100.0	7.03	355.58	4,082.2	296.0	-22.9	-296.1	0.00	0.00	0.00
4,200.0	7.03	355.58	4,181.4	308.2	-23.8	-308.3	0.00	0.00	0.00
4,300.0	7.03	355.58	4,280.7	320.4	-24.8	-320.5	0.00	0.00	0.00
4,400.0	7.03	355.58	4,379.9	332.6	-25.7	-332.7	0.00	0.00	0.00
4,500.0	7.03	355.58	4,479.2	344.8	-26.7	-344.9	0.00	0.00	0.00
4,600.0	7.03	355.58	4,578.4	357.1	-27.6	-357.2	0.00	0.00	0.00
4,700.0	7.03	355.58	4,677.7	369.3	-28.6	-369.4	0.00	0.00	0.00
4,800.0	7.03	355.58	4,776.9	381.5	-29.5	-381.6	0.00	0.00	0.00
4,900.0	7.03	355.58	4,876.2	393.7	-30.4	-393.8	0.00	0.00	0.00
5,000.0	7.03	355.58	4,975.4	405.9	-31.4	-406.0	0.00	0.00	0.00
5,100.0	7.03	355.58	5,074.7	418.1	-32.3	-418.2	0.00	0.00	0.00
5,200.0	7.03	355.58	5,173.9	430.3	-33.3	-430.4	0.00	0.00	0.00



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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)
5,300.0	7.03	355.58	5,273.2	442.5	-34.2	-442.6	0.00	0.00	0.00
5,400.0	7.03	355.58	5,372.4	454.7	-35.2	-454.9	0.00	0.00	0.00
5,500.0	7.03	355.58	5,471.7	466.9	-36.1	-467.1	0.00	0.00	0.00
5,600.0	7.03	355.58	5,570.9	479.1	-37.1	-479.3	0.00	0.00	0.00
5,700.0	7.03	355.58	5,670.2	491.4	-38.0	-491.5	0.00	0.00	0.00
5,800.0	7.03	355.58	5,769.4	503.6	-38.9	-503.7	0.00	0.00	0.00
5,900.0	7.03	355.58	5,868.6	515.8	-39.9	-515.9	0.00	0.00	0.00
6,000.0	7.03	355.58	5,967.9	528.0	-40.8	-528.1	0.00	0.00	0.00
6,100.0	7.03	355.58	6,067.1	540.2	-41.8	-540.3	0.00	0.00	0.00
6,200.0	7.03	355.58	6,166.4	552.4	-42.7	-552.6	0.00	0.00	0.00
6,300.0	7.03	355.58	6,265.6	564.6	-43.7	-564.8	0.00	0.00	0.00
6,400.0	7.03	355.58	6,364.9	576.8	-44.6	-577.0	0.00	0.00	0.00
6,500.0	7.03	355.58	6,464.1	589.0	-45.6	-589.2	0.00	0.00	0.00
6,600.0	7.03	355.58	6,563.4	601.2	-46.5	-601.4	0.00	0.00	0.00
6,700.0	7.03	355.58	6,662.6	613.5	-47.4	-613.6	0.00	0.00	0.00
6,800.0	7.03	355.58	6,761.9	625.7	-48.4	-625.8	0.00	0.00	0.00
6,900.0	7.03	355.58	6,861.1	637.9	-49.3	-638.0	0.00	0.00	0.00
7,000.0	7.03	355.58	6,960.4	650.1	-50.3	-650.3	0.00	0.00	0.00
7,100.0	7.03	355.58	7,059.6	662.3	-51.2	-662.5	0.00	0.00	0.00
7,200.0	7.03	355.58	7,158.9	674.5	-52.2	-674.7	0.00	0.00	0.00
7,300.0	7.03	355.58	7,258.1	686.7	-53.1	-686.9	0.00	0.00	0.00
7,400.0	7.03	355.58	7,357.4	698.9	-54.1	-699.1	0.00	0.00	0.00
7,500.0	7.03	355.58	7,456.6	711.1	-55.0	-711.3	0.00	0.00	0.00
7,535.8	7.03	355.58	7,492.2	715.5	-55.3	-715.7	0.00	0.00	0.00
7,600.0	5.75	355.58	7,555.9	722.6	-55.9	-722.8	2.00	-2.00	0.00
7,700.0	3.75	355.58	7,655.6	730.9	-56.5	-731.1	2.00	-2.00	0.00
7,800.0	1.75	355.58	7,755.5	735.7	-56.9	-735.9	2.00	-2.00	0.00
7,887.5	0.00	0.00	7,843.0	737.0	-57.0	-737.2	2.00	-2.00	0.00
7,900.0	0.00	0.00	7,855.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,000.0	0.00	0.00	7,955.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,100.0	0.00	0.00	8,055.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,200.0	0.00	0.00	8,155.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,300.0	0.00	0.00	8,255.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,400.0	0.00	0.00	8,355.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,500.0	0.00	0.00	8,455.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,600.0	0.00	0.00	8,555.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,700.0	0.00	0.00	8,655.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,800.0	0.00	0.00	8,755.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,900.0	0.00	0.00	8,855.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,967.0	0.00	0.00	8,922.5	737.0	-57.0	-737.2	0.00	0.00	0.00
8,975.0	0.95	178.85	8,930.5	736.9	-57.0	-737.1	12.00	12.00	0.00
9,000.0	3.96	178.85	8,955.4	735.9	-57.0	-736.1	12.00	12.00	0.00
9,025.0	6.96	178.85	8,980.3	733.5	-56.9	-733.7	12.00	12.00	0.00
9,050.0	9.96	178.85	9,005.0	729.8	-56.9	-730.0	12.00	12.00	0.00
9,075.0	12.96	178.85	9,029.5	724.8	-56.8	-725.1	12.00	12.00	0.00
9,100.0	15.96	178.85	9,053.7	718.6	-56.6	-718.8	12.00	12.00	0.00
9,125.0	18.96	178.85	9,077.6	711.1	-56.5	-711.3	12.00	12.00	0.00
9,150.0	21.96	178.85	9,101.0	702.4	-56.3	-702.6	12.00	12.00	0.00
9,175.0	24.96	178.85	9,123.9	692.4	-56.1	-692.6	12.00	12.00	0.00
9,187.5	26.46	178.85	9,135.2	687.0	-56.0	-687.2	12.00	12.00	0.00
9,200.0	27.96	178.89	9,146.3	681.3	-55.9	-681.5	12.00	12.00	0.33
9,225.0	30.96	178.97	9,168.1	669.0	-55.7	-669.2	12.00	12.00	0.28
9,250.0	33.96	179.02	9,189.2	655.6	-55.4	-655.8	12.00	12.00	0.24
9,275.0	36.96	179.08	9,209.5	641.1	-55.2	-641.3	12.00	12.00	0.20



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.0	39.96	179.12	9,229.1	625.5	-54.9	-625.7	12.00	12.00	0.18
9,325.0	42.96	179.16	9,247.8	609.0	-54.7	-609.2	12.00	12.00	0.16
9,350.0	45.96	179.19	9,265.7	591.5	-54.4	-591.7	12.00	12.00	0.14
9,375.0	48.96	179.22	9,282.6	573.1	-54.2	-573.3	12.00	12.00	0.13
9,400.0	51.96	179.25	9,298.5	553.8	-53.9	-554.0	12.00	12.00	0.11
9,425.0	54.96	179.28	9,313.4	533.7	-53.7	-533.9	12.00	12.00	0.11
9,450.0	57.96	179.30	9,327.2	512.9	-53.4	-513.1	12.00	12.00	0.10
9,475.0	60.96	179.33	9,339.9	491.3	-53.2	-491.5	12.00	12.00	0.09
9,500.0	63.96	179.35	9,351.4	469.2	-52.9	-469.4	12.00	12.00	0.09
9,525.0	66.96	179.37	9,361.8	446.4	-52.6	-446.6	12.00	12.00	0.08
9,550.0	69.96	179.39	9,371.0	423.2	-52.4	-423.4	12.00	12.00	0.08
9,575.0	72.96	179.41	9,379.0	399.5	-52.1	-399.7	12.00	12.00	0.08
9,600.0	75.96	179.43	9,385.6	375.4	-51.9	-375.6	12.00	12.00	0.07
9,625.0	78.96	179.44	9,391.1	351.0	-51.7	-351.2	12.00	12.00	0.07
9,650.0	81.96	179.46	9,395.2	326.4	-51.4	-326.5	12.00	12.00	0.07
9,675.0	84.96	179.48	9,398.1	301.5	-51.2	-301.7	12.00	12.00	0.07
9,700.0	87.96	179.50	9,399.6	276.6	-51.0	-276.8	12.00	12.00	0.07
9,717.0	90.00	179.51	9,399.9	259.6	-50.8	-259.8	12.00	12.00	0.07
9,800.0	90.00	179.51	9,399.9	176.6	-50.1	-176.8	0.00	0.00	0.00
9,900.0	90.00	179.51	9,399.9	76.6	-49.3	-76.8	0.00	0.00	0.00
10,000.0	90.00	179.51	9,399.9	-23.4	-48.4	23.2	0.00	0.00	0.00
10,100.0	90.00	179.51	9,399.9	-123.4	-47.5	123.2	0.00	0.00	0.00
10,200.0	90.00	179.51	9,399.9	-223.4	-46.7	223.2	0.00	0.00	0.00
10,300.0	90.00	179.51	9,399.9	-323.4	-45.8	323.2	0.00	0.00	0.00
10,400.0	90.00	179.51	9,399.9	-423.4	-45.0	423.2	0.00	0.00	0.00
10,500.0	90.00	179.51	9,399.9	-523.4	-44.1	523.2	0.00	0.00	0.00
10,600.0	90.00	179.51	9,399.9	-623.4	-43.2	623.2	0.00	0.00	0.00
10,700.0	90.00	179.51	9,399.9	-723.4	-42.4	723.2	0.00	0.00	0.00
10,800.0	90.00	179.51	9,399.9	-823.4	-41.5	823.2	0.00	0.00	0.00
10,900.0	90.00	179.51	9,399.9	-923.4	-40.7	923.2	0.00	0.00	0.00
11,000.0	90.00	179.51	9,399.9	-1,023.4	-39.8	1,023.2	0.00	0.00	0.00
11,100.0	90.00	179.51	9,399.9	-1,123.4	-38.9	1,123.2	0.00	0.00	0.00
11,200.0	90.00	179.51	9,399.9	-1,223.4	-38.1	1,223.2	0.00	0.00	0.00
11,300.0	90.00	179.51	9,399.9	-1,323.4	-37.2	1,323.2	0.00	0.00	0.00
11,400.0	90.00	179.51	9,399.9	-1,423.4	-36.4	1,423.2	0.00	0.00	0.00
11,500.0	90.00	179.51	9,399.9	-1,523.4	-35.5	1,523.2	0.00	0.00	0.00
11,600.0	90.00	179.51	9,399.9	-1,623.3	-34.6	1,623.2	0.00	0.00	0.00
11,700.0	90.00	179.51	9,399.9	-1,723.3	-33.8	1,723.2	0.00	0.00	0.00
11,800.0	90.00	179.51	9,400.0	-1,823.3	-32.9	1,823.2	0.00	0.00	0.00
11,900.0	90.00	179.51	9,400.0	-1,923.3	-32.1	1,923.2	0.00	0.00	0.00
12,000.0	90.00	179.51	9,400.0	-2,023.3	-31.2	2,023.2	0.00	0.00	0.00
12,100.0	90.00	179.51	9,400.0	-2,123.3	-30.4	2,123.2	0.00	0.00	0.00
12,200.0	90.00	179.51	9,400.0	-2,223.3	-29.5	2,223.2	0.00	0.00	0.00
12,300.0	90.00	179.51	9,400.0	-2,323.3	-28.6	2,323.2	0.00	0.00	0.00
12,400.0	90.00	179.51	9,400.0	-2,423.3	-27.8	2,423.2	0.00	0.00	0.00
12,500.0	90.00	179.51	9,400.0	-2,523.3	-26.9	2,523.2	0.00	0.00	0.00
12,600.0	90.00	179.51	9,400.0	-2,623.3	-26.1	2,623.2	0.00	0.00	0.00
12,700.0	90.00	179.51	9,400.0	-2,723.3	-25.2	2,723.2	0.00	0.00	0.00
12,800.0	90.00	179.51	9,400.0	-2,823.3	-24.3	2,823.2	0.00	0.00	0.00
12,900.0	90.00	179.51	9,400.0	-2,923.3	-23.5	2,923.2	0.00	0.00	0.00
13,000.0	90.00	179.51	9,400.0	-3,023.3	-22.6	3,023.2	0.00	0.00	0.00
13,100.0	90.00	179.51	9,400.0	-3,123.3	-21.8	3,123.2	0.00	0.00	0.00
13,200.0	90.00	179.51	9,400.0	-3,223.3	-20.9	3,223.2	0.00	0.00	0.00
13,300.0	90.00	179.51	9,400.0	-3,323.3	-20.0	3,323.2	0.00	0.00	0.00



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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)
13,400.0	90.00	179.51	9,400.0	-3,423.3	-19.2	3,423.2	0.00	0.00	0.00
13,500.0	90.00	179.51	9,400.0	-3,523.3	-18.3	3,523.2	0.00	0.00	0.00
13,600.0	90.00	179.51	9,400.0	-3,623.3	-17.5	3,623.2	0.00	0.00	0.00
13,700.0	90.00	179.51	9,400.0	-3,723.3	-16.6	3,723.2	0.00	0.00	0.00
13,800.0	90.00	179.51	9,400.0	-3,823.3	-15.7	3,823.2	0.00	0.00	0.00
13,900.0	90.00	179.51	9,400.0	-3,923.3	-14.9	3,923.2	0.00	0.00	0.00
14,000.0	90.00	179.51	9,400.0	-4,023.3	-14.0	4,023.2	0.00	0.00	0.00
14,100.0	90.00	179.51	9,400.0	-4,123.3	-13.2	4,123.2	0.00	0.00	0.00
14,200.0	90.00	179.51	9,400.0	-4,223.3	-12.3	4,223.2	0.00	0.00	0.00
14,300.0	90.00	179.51	9,400.0	-4,323.3	-11.4	4,323.2	0.00	0.00	0.00
14,400.0	90.00	179.51	9,400.0	-4,423.2	-10.6	4,423.2	0.00	0.00	0.00
14,468.8	90.00	179.51	9,400.0	-4,492.0	-10.0	4,491.9	0.00	0.00	0.00
14,500.0	90.00	179.51	9,400.0	-4,523.2	-9.7	4,523.2	0.00	0.00	0.00
14,600.0	90.00	179.51	9,400.0	-4,623.2	-8.9	4,623.2	0.00	0.00	0.00
14,700.0	90.00	179.51	9,400.0	-4,723.2	-8.0	4,723.2	0.00	0.00	0.00
14,800.0	90.00	179.51	9,400.0	-4,823.2	-7.1	4,823.2	0.00	0.00	0.00
14,900.0	90.00	179.50	9,400.0	-4,923.2	-6.3	4,923.2	0.00	0.00	0.00
15,000.0	90.00	179.50	9,400.0	-5,023.2	-5.4	5,023.2	0.00	0.00	0.00
15,100.0	90.00	179.50	9,400.0	-5,123.2	-4.6	5,123.2	0.00	0.00	0.00
15,200.0	90.00	179.50	9,400.0	-5,223.2	-3.7	5,223.2	0.00	0.00	0.00
15,300.0	90.00	179.50	9,400.0	-5,323.2	-2.8	5,323.2	0.00	0.00	0.00
15,400.0	90.00	179.50	9,400.0	-5,423.2	-2.0	5,423.2	0.00	0.00	0.00
15,500.0	90.00	179.50	9,400.0	-5,523.2	-1.1	5,523.2	0.00	0.00	0.00
15,600.0	90.00	179.50	9,400.0	-5,623.2	-0.2	5,623.2	0.00	0.00	0.00
15,700.0	90.00	179.50	9,400.0	-5,723.2	0.7	5,723.2	0.00	0.00	0.00
15,800.0	90.00	179.50	9,400.0	-5,823.2	1.5	5,823.2	0.00	0.00	0.00
15,900.0	90.00	179.50	9,400.0	-5,923.2	2.4	5,923.2	0.00	0.00	0.00
16,000.0	90.00	179.50	9,400.0	-6,023.2	3.3	6,023.2	0.00	0.00	0.00
16,100.0	90.00	179.50	9,400.0	-6,123.2	4.2	6,123.2	0.00	0.00	0.00
16,200.0	90.00	179.50	9,400.0	-6,223.2	5.0	6,223.2	0.00	0.00	0.00
16,300.0	90.00	179.50	9,400.0	-6,323.2	5.9	6,323.2	0.00	0.00	0.00
16,400.0	90.00	179.50	9,400.0	-6,423.2	6.8	6,423.2	0.00	0.00	0.00
16,500.0	90.00	179.49	9,400.0	-6,523.2	7.7	6,523.2	0.00	0.00	0.00
16,600.0	90.00	179.49	9,400.0	-6,623.2	8.6	6,623.1	0.00	0.00	0.00
16,700.0	90.00	179.49	9,400.0	-6,723.2	9.4	6,723.1	0.00	0.00	0.00
16,800.0	90.00	179.49	9,400.0	-6,823.2	10.3	6,823.1	0.00	0.00	0.00
16,900.0	90.00	179.49	9,400.0	-6,923.2	11.2	6,923.1	0.00	0.00	0.00
17,000.0	90.00	179.49	9,400.0	-7,023.1	12.1	7,023.1	0.00	0.00	0.00
17,100.0	90.00	179.49	9,400.0	-7,123.1	13.0	7,123.1	0.00	0.00	0.00
17,200.0	90.00	179.49	9,400.0	-7,223.1	13.9	7,223.1	0.00	0.00	0.00
17,300.0	90.00	179.49	9,400.0	-7,323.1	14.8	7,323.1	0.00	0.00	0.00
17,400.0	90.00	179.49	9,400.0	-7,423.1	15.7	7,423.1	0.00	0.00	0.00
17,500.0	90.00	179.49	9,400.0	-7,523.1	16.6	7,523.1	0.00	0.00	0.00
17,600.0	90.00	179.49	9,400.0	-7,623.1	17.4	7,623.1	0.00	0.00	0.00
17,700.0	90.00	179.49	9,400.0	-7,723.1	18.3	7,723.1	0.00	0.00	0.00
17,800.0	90.00	179.49	9,400.0	-7,823.1	19.2	7,823.1	0.00	0.00	0.00
17,900.0	90.00	179.49	9,400.0	-7,923.1	20.1	7,923.1	0.00	0.00	0.00
18,000.0	90.00	179.49	9,400.0	-8,023.1	21.0	8,023.1	0.00	0.00	0.00
18,100.0	90.00	179.48	9,400.0	-8,123.1	21.9	8,123.1	0.00	0.00	0.00
18,200.0	90.00	179.48	9,400.0	-8,223.1	22.8	8,223.1	0.00	0.00	0.00
18,300.0	90.00	179.48	9,400.0	-8,323.1	23.7	8,323.1	0.00	0.00	0.00
18,400.0	90.00	179.48	9,400.0	-8,423.1	24.6	8,423.1	0.00	0.00	0.00
18,500.0	90.00	179.48	9,400.0	-8,523.1	25.5	8,523.1	0.00	0.00	0.00
18,600.0	90.00	179.48	9,400.0	-8,623.1	26.4	8,623.1	0.00	0.00	0.00



Planning Report

<b>Database:</b>	PEDM	<b>Local Co-ordinate Reference:</b>	Well #105H
<b>Company:</b>	Midland	<b>TVD Reference:</b>	KB @ 3554.0usft
<b>Project:</b>	Lea County, NM (NAD 83 NME)	<b>MD Reference:</b>	KB @ 3554.0usft
<b>Site:</b>	Yukon 20 Fed Com	<b>North Reference:</b>	Grid
<b>Well:</b>	#105H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #0.2		

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)	
18,700.0	90.00	179.48	9,400.0	-8,723.1	27.3	8,723.1	0.00	0.00	0.00	
18,800.0	90.00	179.48	9,400.0	-8,823.1	28.3	8,823.1	0.00	0.00	0.00	
18,900.0	90.00	179.48	9,400.0	-8,923.1	29.2	8,923.1	0.00	0.00	0.00	
19,000.0	90.00	179.48	9,400.0	-9,023.1	30.1	9,023.1	0.00	0.00	0.00	
19,100.0	90.00	179.48	9,400.0	-9,123.1	31.0	9,123.1	0.00	0.00	0.00	
19,200.0	90.00	179.48	9,400.0	-9,223.1	31.9	9,223.1	0.00	0.00	0.00	
19,300.0	90.00	179.48	9,400.0	-9,323.1	32.8	9,323.1	0.00	0.00	0.00	
19,400.0	90.00	179.48	9,400.0	-9,423.0	33.7	9,423.1	0.00	0.00	0.00	
19,500.0	90.00	179.48	9,400.0	-9,523.0	34.6	9,523.1	0.00	0.00	0.00	
19,600.0	90.00	179.47	9,400.0	-9,623.0	35.6	9,623.1	0.00	0.00	0.00	
19,649.0	90.00	179.47	9,400.0	-9,672.0	36.0	9,672.1	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 (Yukon 20 Fed Cor - plan hits target center - Point	0.00	0.00	8,922.5	737.0	-57.0	441,227.00	802,943.00	32° 12' 36.649 N	103° 29' 14.965 W	
FTP (Yukon 20 Fed Cor - plan hits target center - Point	0.00	0.00	9,135.2	687.0	-56.0	441,177.00	802,944.00	32° 12' 36.154 N	103° 29' 14.958 W	
PBHL (Yukon 20 Fed Cc - plan hits target center - Point	0.00	0.00	9,400.0	-9,672.0	36.0	430,818.00	803,036.00	32° 10' 53.644 N	103° 29' 14.836 W	
FED PP (Yukon 20 Fed - plan hits target center - Point	0.00	0.00	9,400.0	-4,492.0	-10.0	435,998.00	802,990.00	32° 11' 44.904 N	103° 29' 14.897 W	

Lea County, NM (NAD 83 NME)

Yukon 20 Fed Com #105H

Plan #0.2



To convert a Magnetic Direction to a Grid Direction, Add 5.85°  
 To convert a Magnetic Direction to a True Direction, Add 6.31° East  
 To convert a True Direction to a Grid Direction, Subtract 0.45°

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: #105H

KB @ 3554.0usft 3528.0  
 Northing 440490.00 Easting 803000.00 Latitude 32° 12' 29.352 N Longitude 103° 29' 14.369 W

SECTION DETAILS

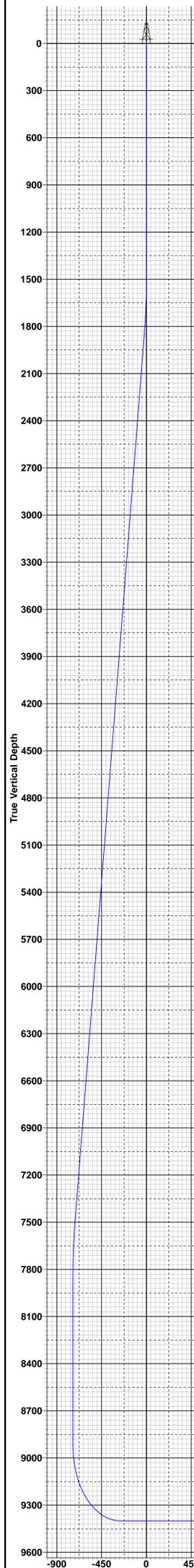
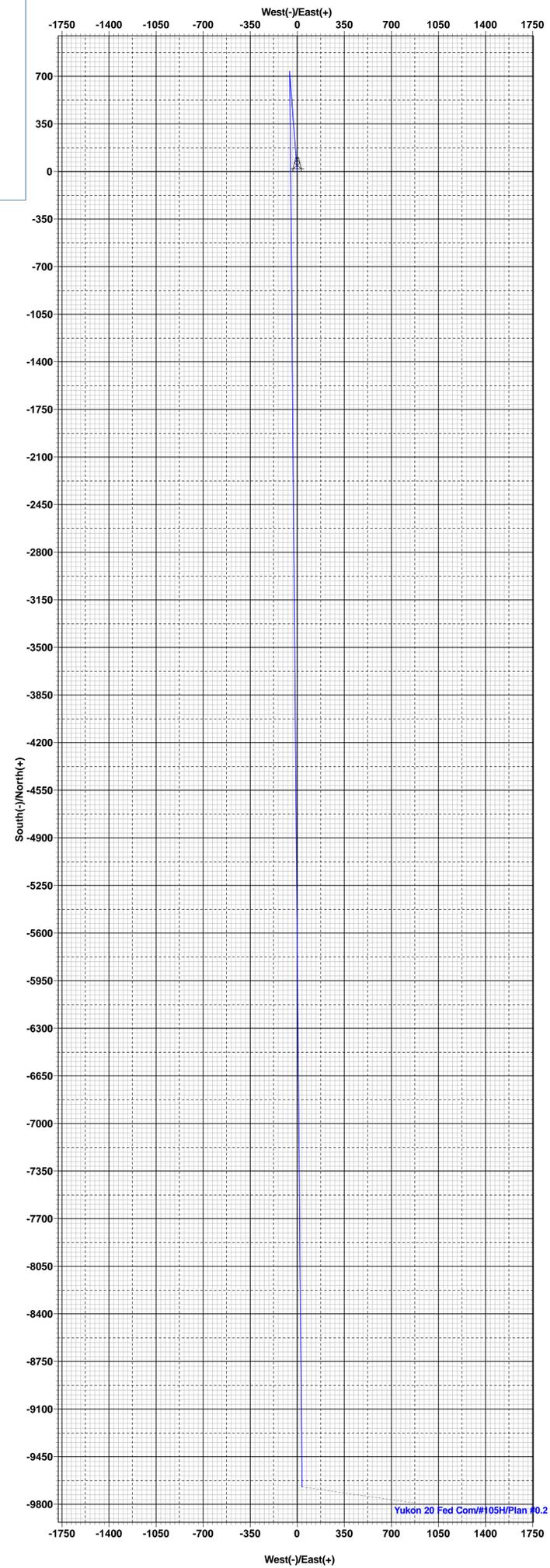
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1851.7	7.03	355.58	1850.8	21.5	-1.7	2.00	355.58	-21.5	
4	7535.8	7.03	355.58	7492.2	715.5	-55.3	0.00	0.00	-715.7	
5	7887.5	0.00	0.00	7843.0	737.0	-57.0	2.00	180.00	-737.2	
6	8967.0	0.00	0.00	8922.5	737.0	-57.0	0.00	0.00	-737.2	KOP (Yukon 20 Fed Com #105H)
7	9187.5	26.46	178.85	9135.2	687.0	-56.0	12.00	178.85	-687.2	FTP (Yukon 20 Fed Com #105H)
8	9717.0	90.00	179.51	9399.9	259.6	-50.0	12.00	0.73	-259.8	
9	14468.8	90.00	179.51	9400.0	-4492.0	-10.0	0.00	0.00	4491.9	FED PP (Yukon 20 Fed Com #105H)
10	19649.0	90.00	179.47	9400.0	-9672.0	36.0	0.00	-86.38	9672.1	PBHL (Yukon 20 Fed Com #105H)

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP (Yukon 20 Fed Com #105H)	8922.5	737.0	-57.0	441227.00	802943.00
FTP (Yukon 20 Fed Com #105H)	9135.2	687.0	-56.0	441177.00	802944.00
FED PP (Yukon 20 Fed Com #105H)	9400.0	-4492.0	-10.0	435998.00	802990.00
PBHL (Yukon 20 Fed Com #105H)	9400.0	-9672.0	36.0	430818.00	803036.00



Vertical Section at 179.79°

Yukon 20 Fed Com #105H/Plan #0.2



## Offline Intermediate Cementing Procedure

2/24/2022

**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 Intermediate Cementing Procedure

2/24/2022

- 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.



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## 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.

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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



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Figure 1: Cameron TA Plug and Offline Adapter Schematic

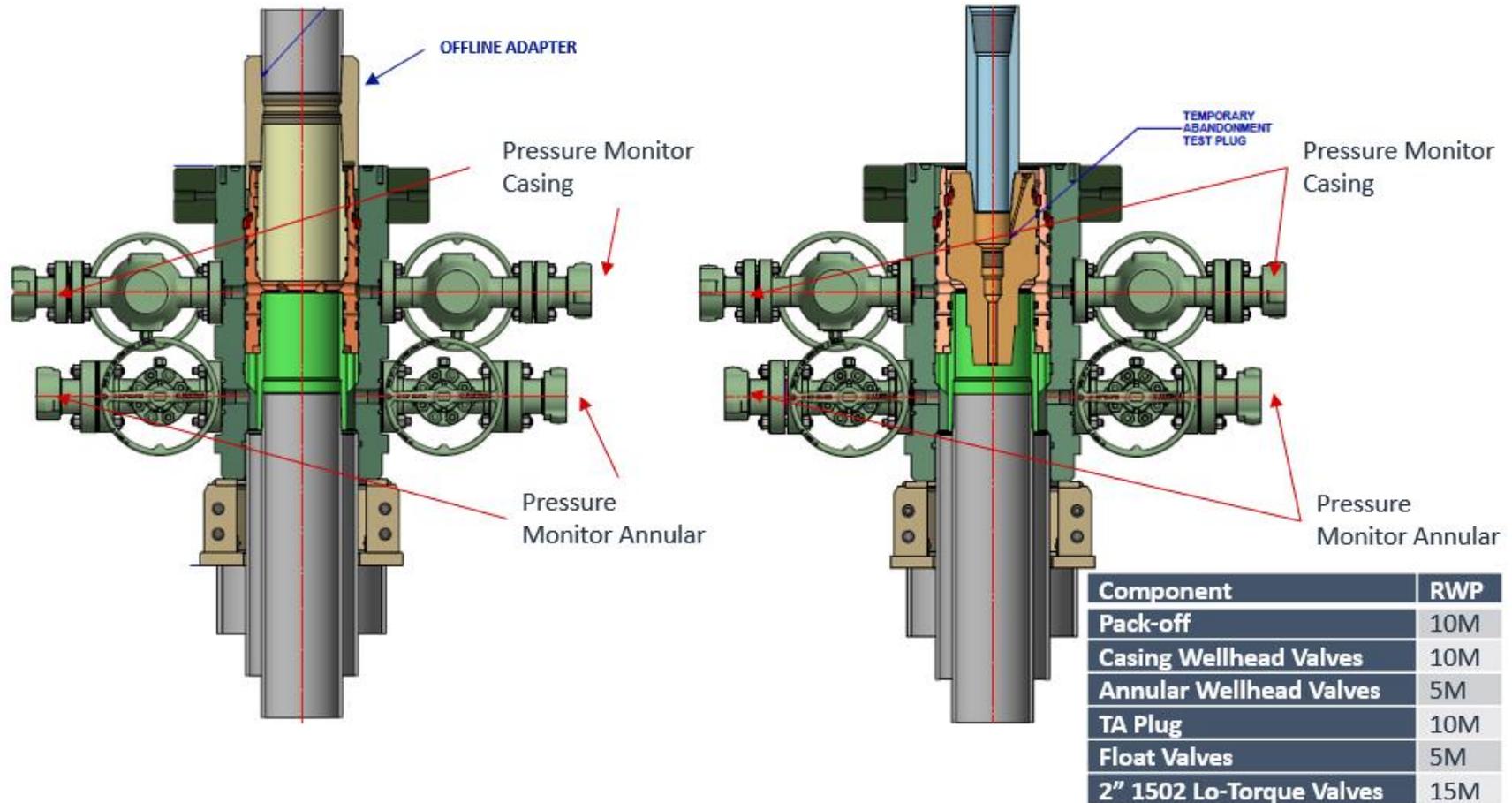
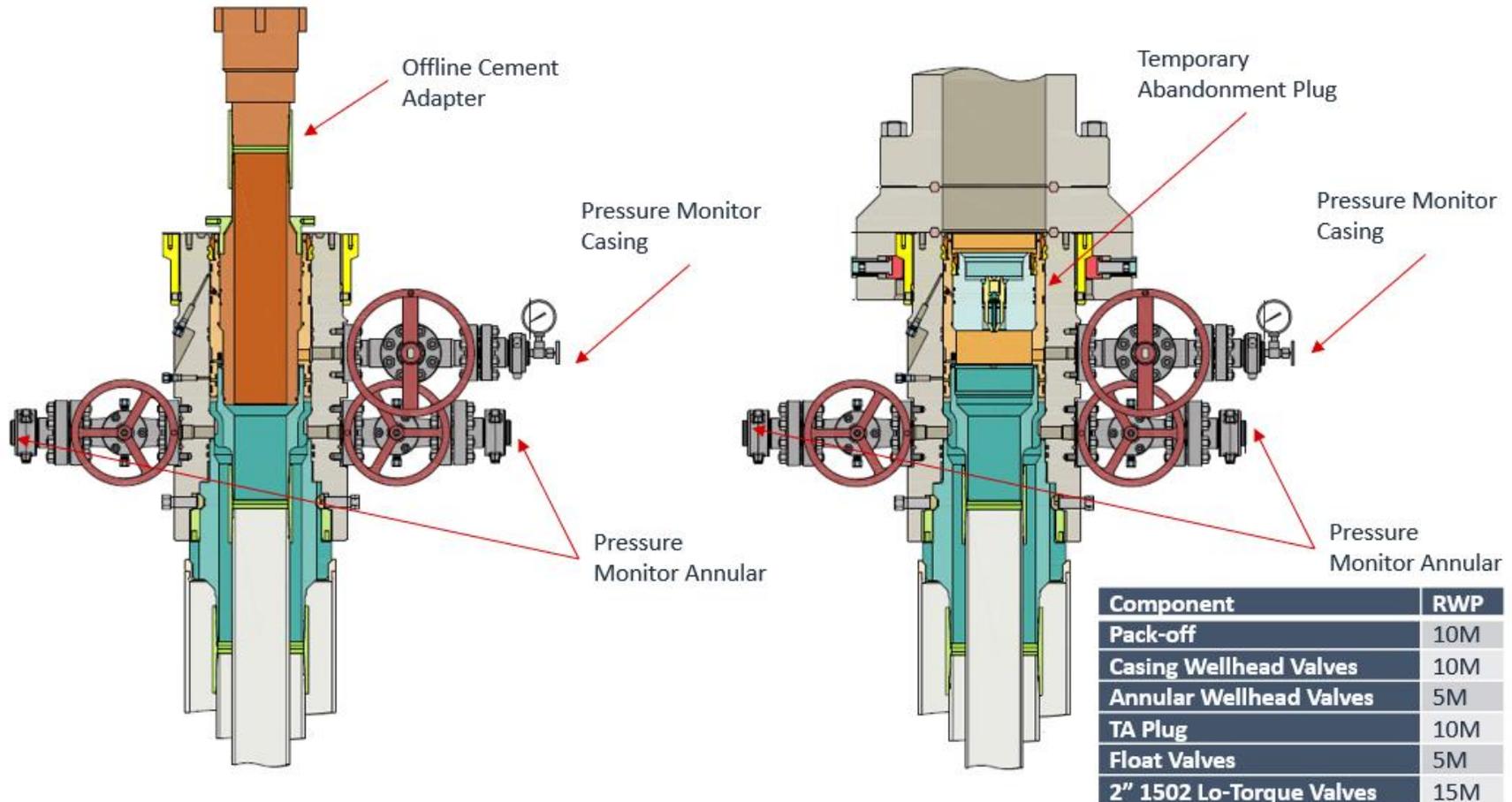




Figure 2: Cactus TA Plug and Offline Adapter Schematic

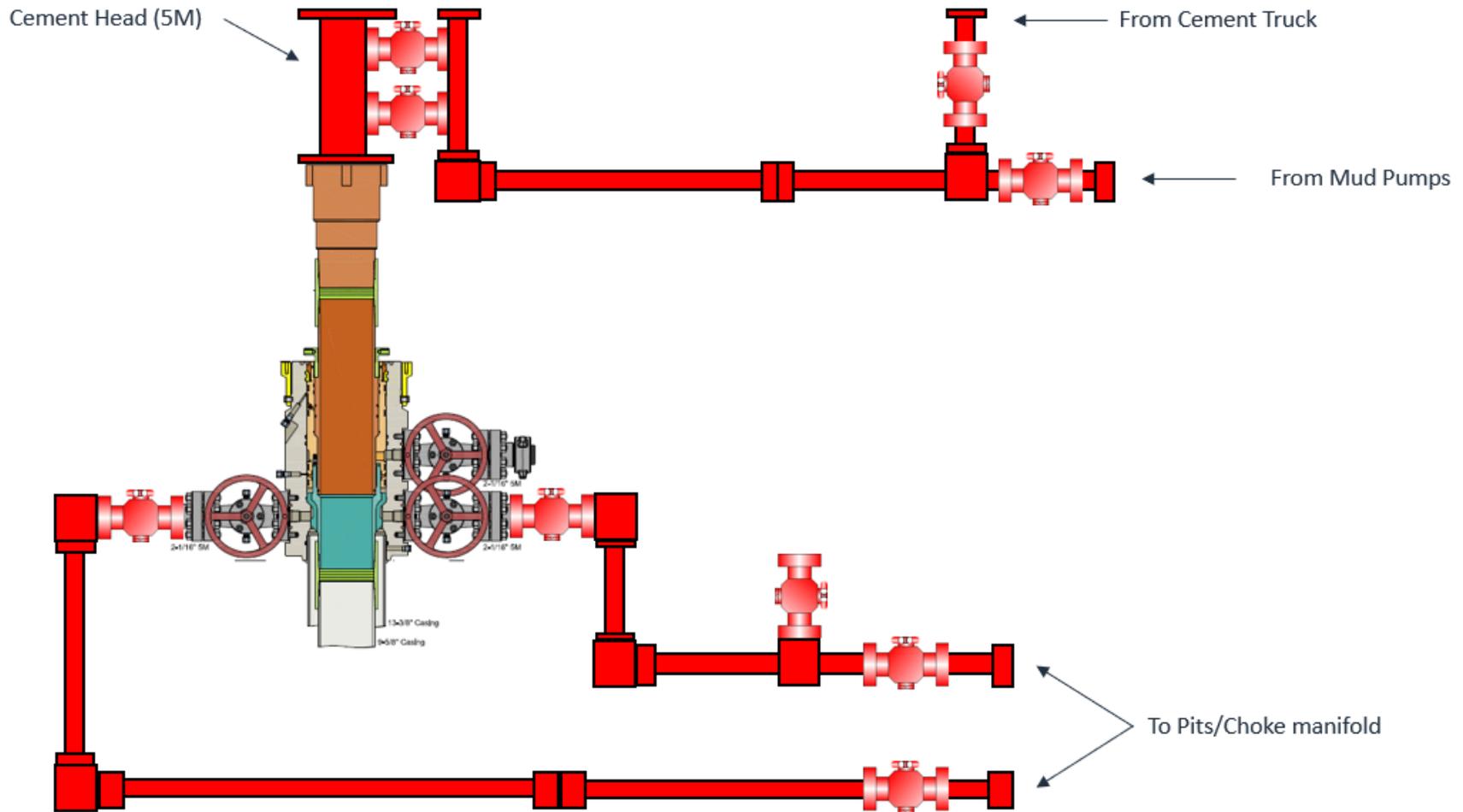




Offline Intermediate Cementing Procedure

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Figure 3: Back Yard Rig Up



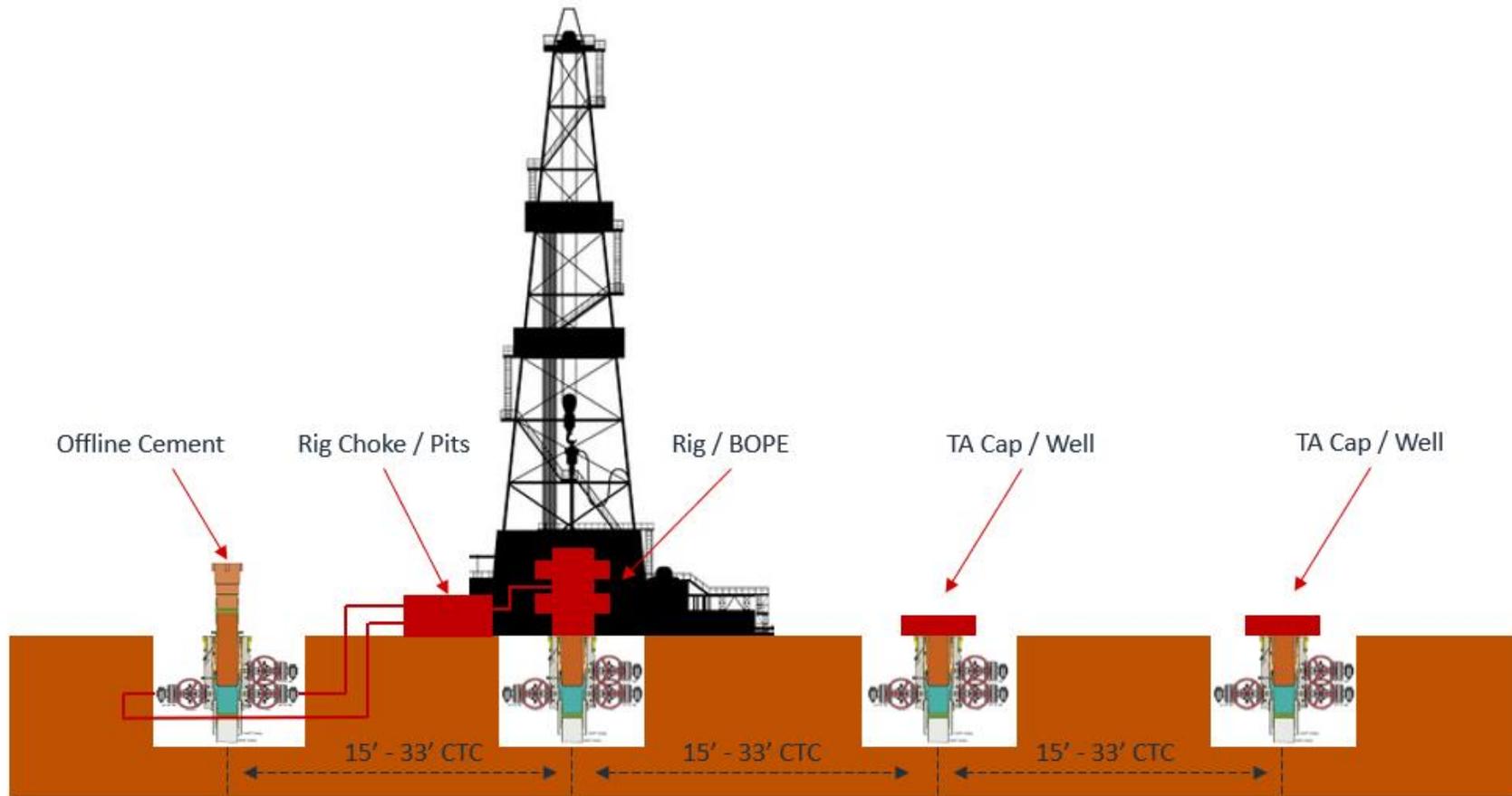
\*\*\* All Lines 10M rated working pressure



Offline Intermediate Cementing Procedure

2/24/2022

Figure 4: Rig Placement Diagram





# Salt Section Annular Clearance Variance Request

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Daniel Moose

# 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

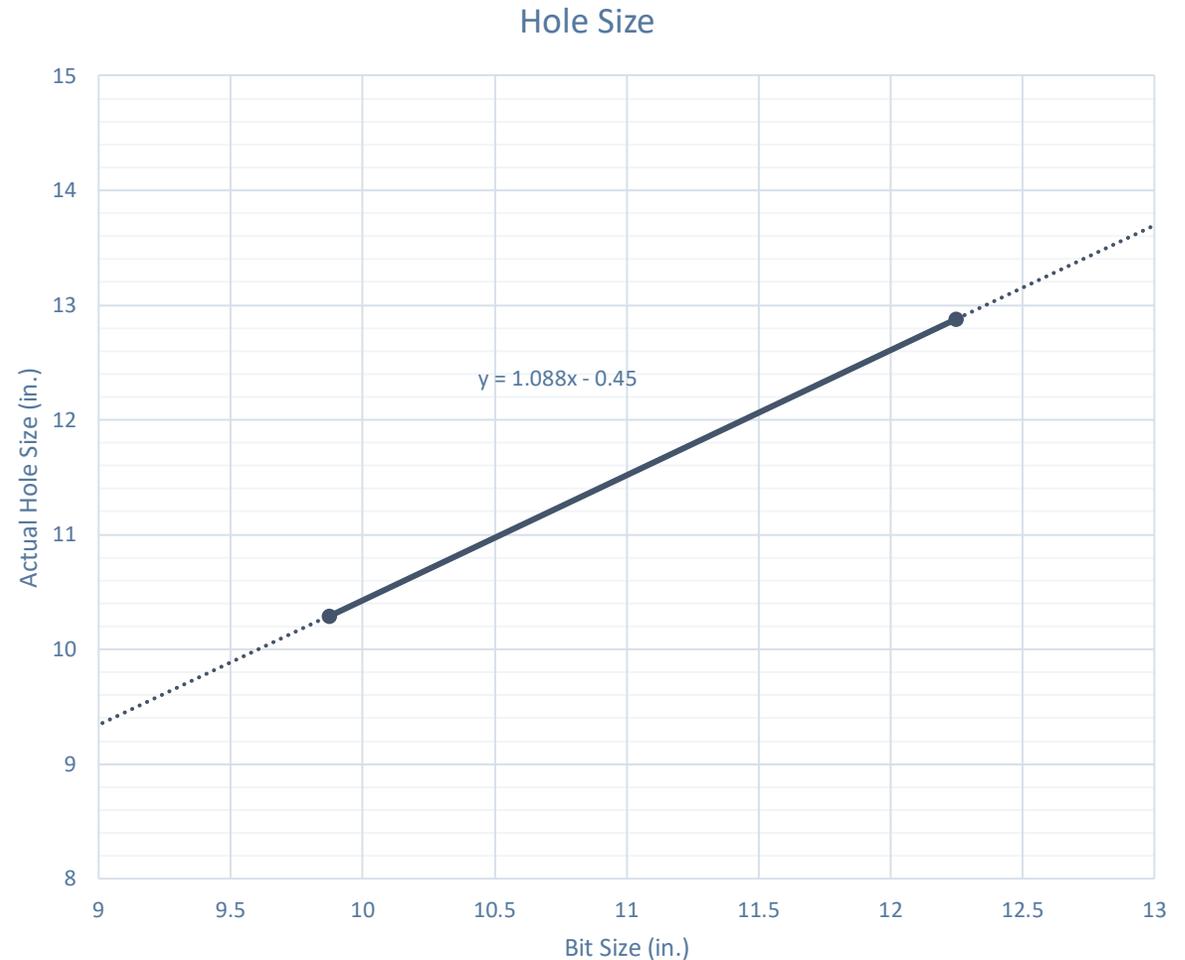
# Volumetric Hole Size Calculation

## 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

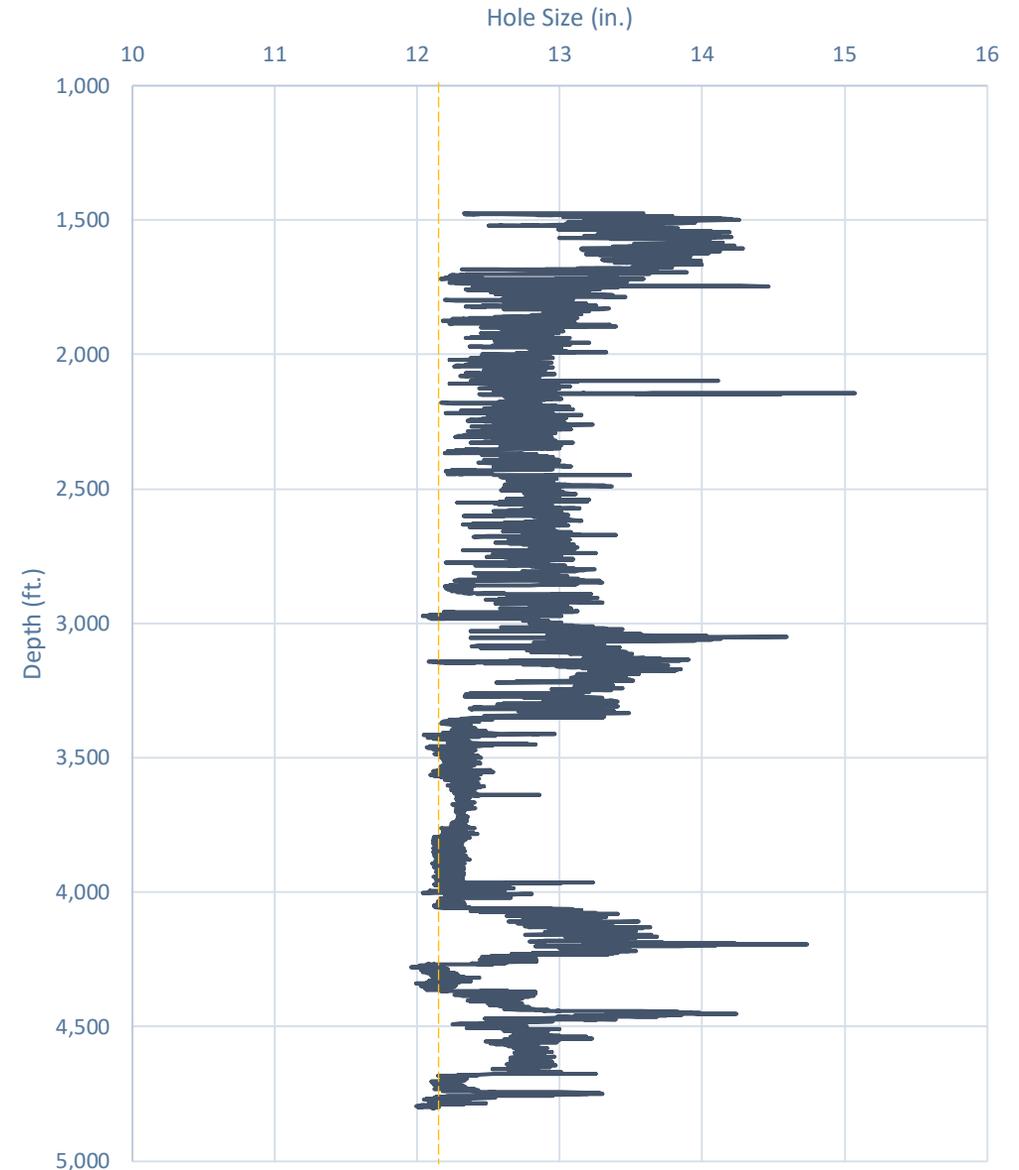


# Caliper Hole Size (12.25")

## 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

Modelo 10 Fed Com #501H

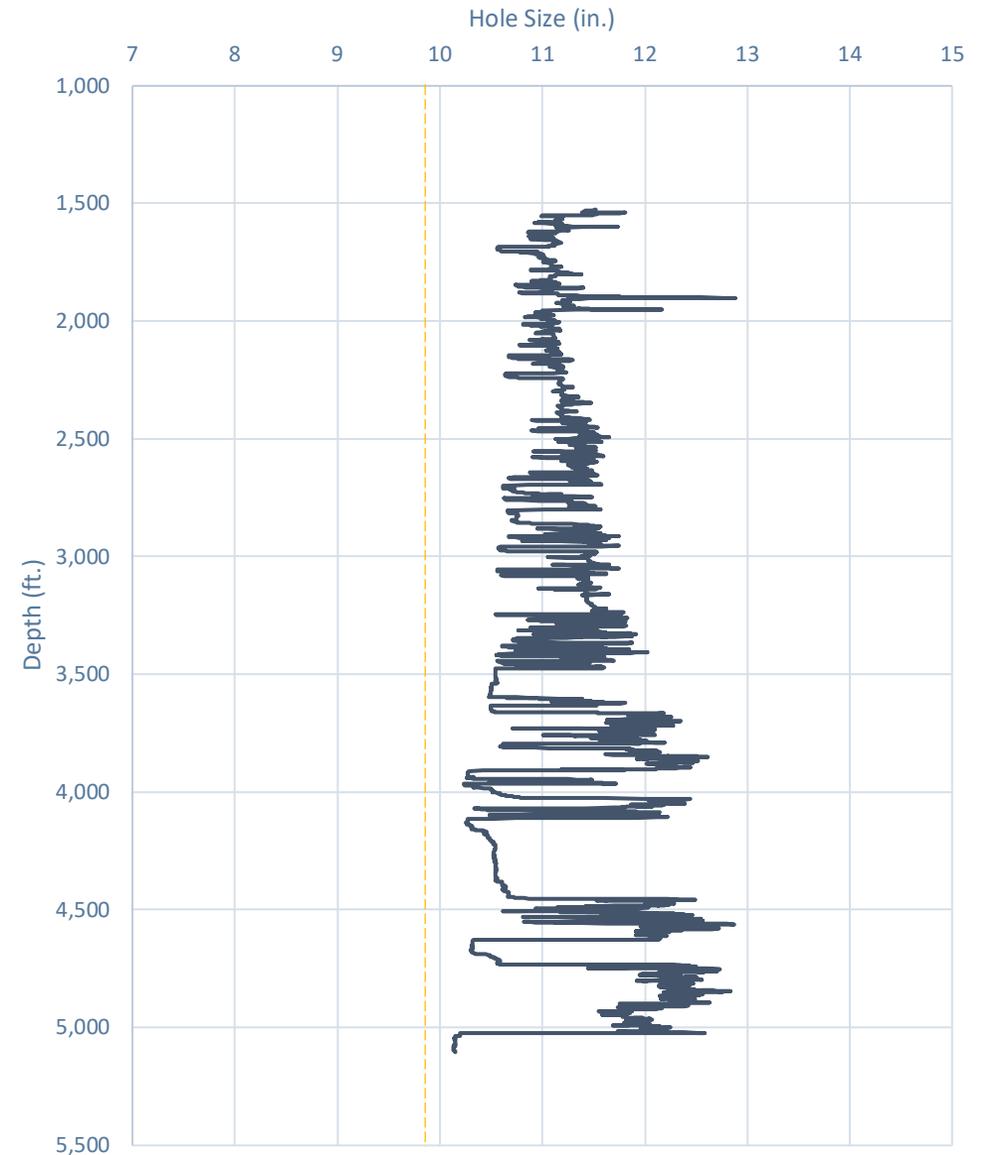


# Caliper Hole Size (9.875")

## 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

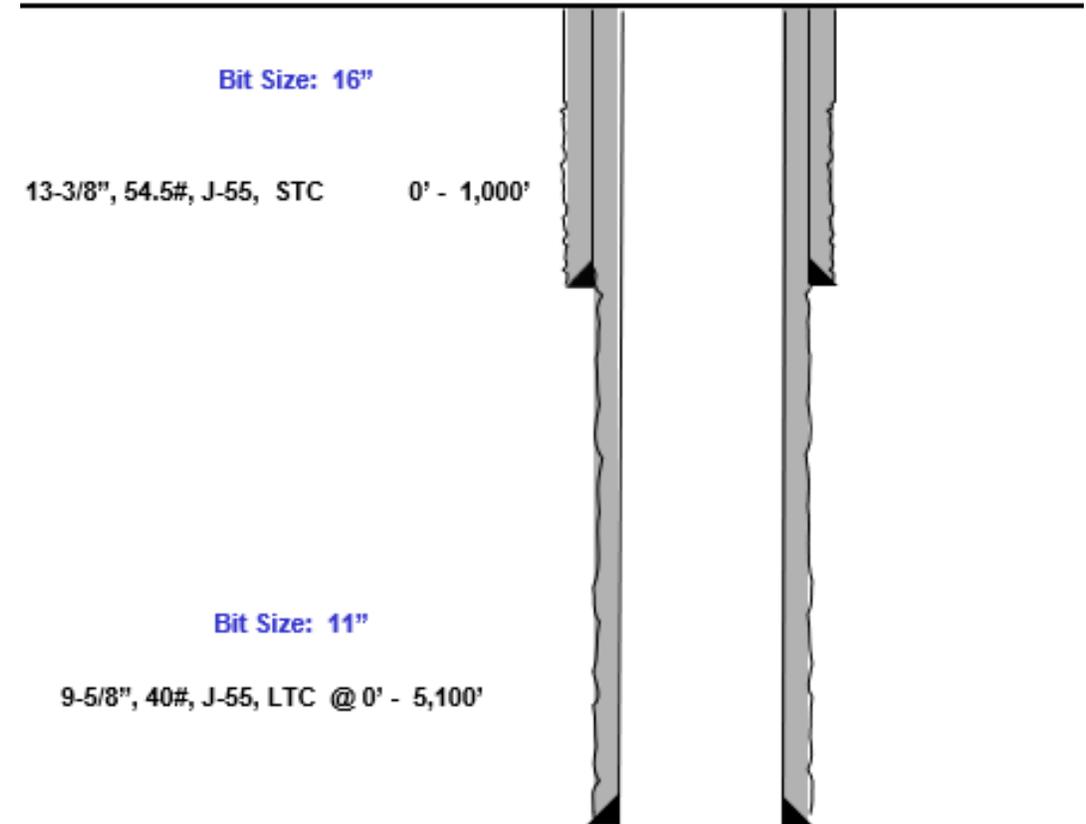
Whirling Wind 11 Fed Com #744H



# Design A

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

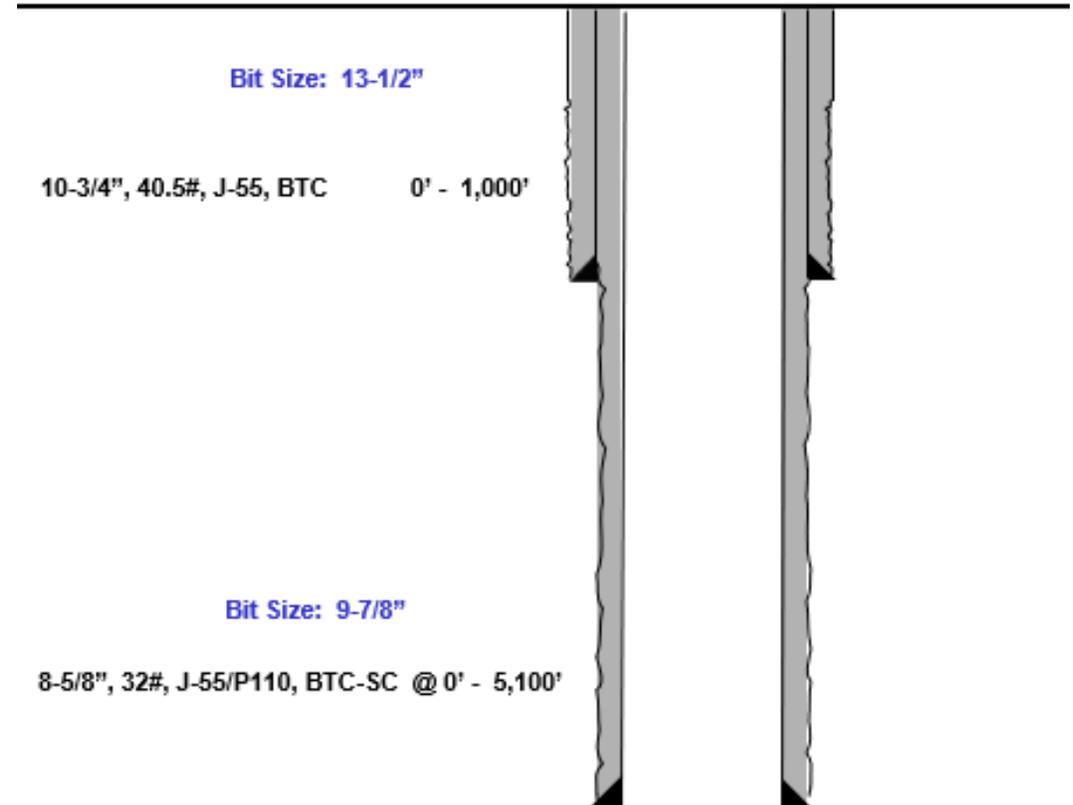
- 11" Bit + 0.52" Average hole enlargement = 11.52" Hole Size
  - 0.9475" Clearance to casing OD
 
$$= \frac{11.52 - 9.625}{2}$$
  - 0.4475" Clearance to coupling OD
 
$$= \frac{11.52 - 10.625}{2}$$
- Previous Shoe – 13.375" 54.5# J55 STC
  - 0.995" Clearance to coupling OD (~1,200' overlap)
 
$$= \frac{12.615 - 10.625}{2}$$



# 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

## Pipe Body and API Connections Performance Data

10.750 40.50/0.350 J55

PDF

New Search »

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USC  Metric

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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	
Minimum Yield Strength:	55 ksi
Maximum Yield Strength:	80 ksi
Minimum Tensile Strength:	75 ksi
Coupling	
Minimum Yield Strength:	55 ksi
Maximum Yield Strength:	80 ksi
Minimum Tensile Strength:	75 ksi

#### Pipe Body Data (PE)

Geometry	
Nominal ID:	7.92 inch
Nominal Area:	9.149 in <sup>2</sup>
*Special/Alt. Drift:	7.875 inch
Performance	
Pipe Body Yield Strength:	503 kips
Collapse Resistance:	2,530 psi
Internal Yield Pressure: (API Historical)	3,930 psi

#### API Connection Data

Coupling OD: 9.625"

STC Performance	
STC Internal Pressure:	3,930 psi
STC Joint Strength:	372 kips
LTC Performance	
LTC Internal Pressure:	3,930 psi
LTC Joint Strength:	417 kips
SC-BTC Performance - Cplg OD = 9.125"	
BTC Internal Pressure:	3,930 psi
BTC Joint Strength:	503 kips

#### API Connection Torque

STC Torque (ft-lbs)		
Min:	2,793	Opti: 3,724
		Max: 4,655
LTC Torque (ft-lbs)		
Min:	3,130	Opti: 4,174
		Max: 5,217
BTC Torque (ft-lbs)		
follow API guidelines regarding positional make up		

\*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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**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
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**Santa Fe, NM 87505**

CONDITIONS

Action 197489

**CONDITIONS**

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 197489
	Action Type: [C-103] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
pkautz	None	3/15/2023