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.

SUBMIT IN TRIPLICATE *- Other instructions on page 2*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

1. Type of Well

☐ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*

11. Country or Parish, State

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 perfonned 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 detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title

Date

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

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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand 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 1280 acres.

Update the Pool as reflected in the C-102.

Location of Well

0. SHL: SWSW / 455 FSL / 1217 FWL / TWSP: 25S / RANGE: 30E / SECTION: 32 / LAT: 32.080299 / LONG: -103.908133 (TVD: 0 feet, MD: 0 feet)

PPP: NWNE / 100 FNL / 2615 FEL / TWSP: 26S / RANGE: 30E / SECTION: 5 / LAT: 32.07879 / LONG: -103.90333 (TVD: 9909 feet, MD: 10469 feet)

BHL: SWSE / 100 FSL / 2615 FEL / TWSP: 26S / RANGE: 30E / SECTION: 8 / LAT: 32.050122 / LONG: -103.903323 (TVD: 9909 feet, MD: 20898 feet)

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

Property Name and Well Number: STARK 32 FED COM 753H

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-48266	98220	PURPLE SAGE; WOLFCAMP (GAS)

Property Code	Property Name	Well Number
	STARK 32 FED COM	753H

OGRID No.	Operator Name	Ground Level Elevation
7377	EOG RESOURCES, INC.	3163'

Surface Location

UL or Lot No.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
M	32	25 S	30 E		455 FSL	1217 FWL	N 32.080299°	W 103.908133°	EDDY

Bottom Hole Location If Different From Surface

UL or Lot No.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	8	26 S	30 E		230 FSL	2067 FEL	N 32.050485°	W 103.901554°	EDDY

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidated Code
1280	INFILL	30-015-48598	YES	

Order Numbers: COM AGREEMENT NMNM105810903 — Well Setbacks are under Common Ownership: ☐ Yes ☐ No

Kick Off Point (KOP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
B	5	26 S	30 E		50 FNL	2067 FEL	N 32.078934°	W 103.901561°	EDDY

First Take Point (FTP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
B	5	26 S	30 E		330 FNL	2067 FEL	N 32.078164°	W 103.901558°	EDDY

Last Take Point (LTP)

UL or lot no.	Section	Township	Range	Lot	Feet from the N/S	Feet from the E/W	Latitude	Longitude	County
O	8	26 S	30 E		330 FSL	2067 FEL	N 32.050760°	W 103.901554°	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unity Type	Ground Floor Elevation
	☒ Horizontal ☐ Vertical	3188'

OPERATOR CERTIFICATION

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.

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.

Kayla McConnell — 8/15/2024
Signature — Date

KAYLA MCCONNELL
Print Name

KAYLA_MCCONNELL@EOGRESORCES.COM
E-mail Address

SURVEYORS CERTIFICATION

MITCHELL L. McDONALD — NEW MEXICO — 29821 — 08/06/2024 — PROFESSIONAL SURVEYOR

Signature and Seal of Professional Surveyor — Date

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.

MITCHELL L. MCDONALD, N.M. P.L.S.

Certificate Number	Date of Survey
29821	FEBRUARY 8, 2024

Note: 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.

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

Property Name and Well Number

STARK 32 FED COM 753H

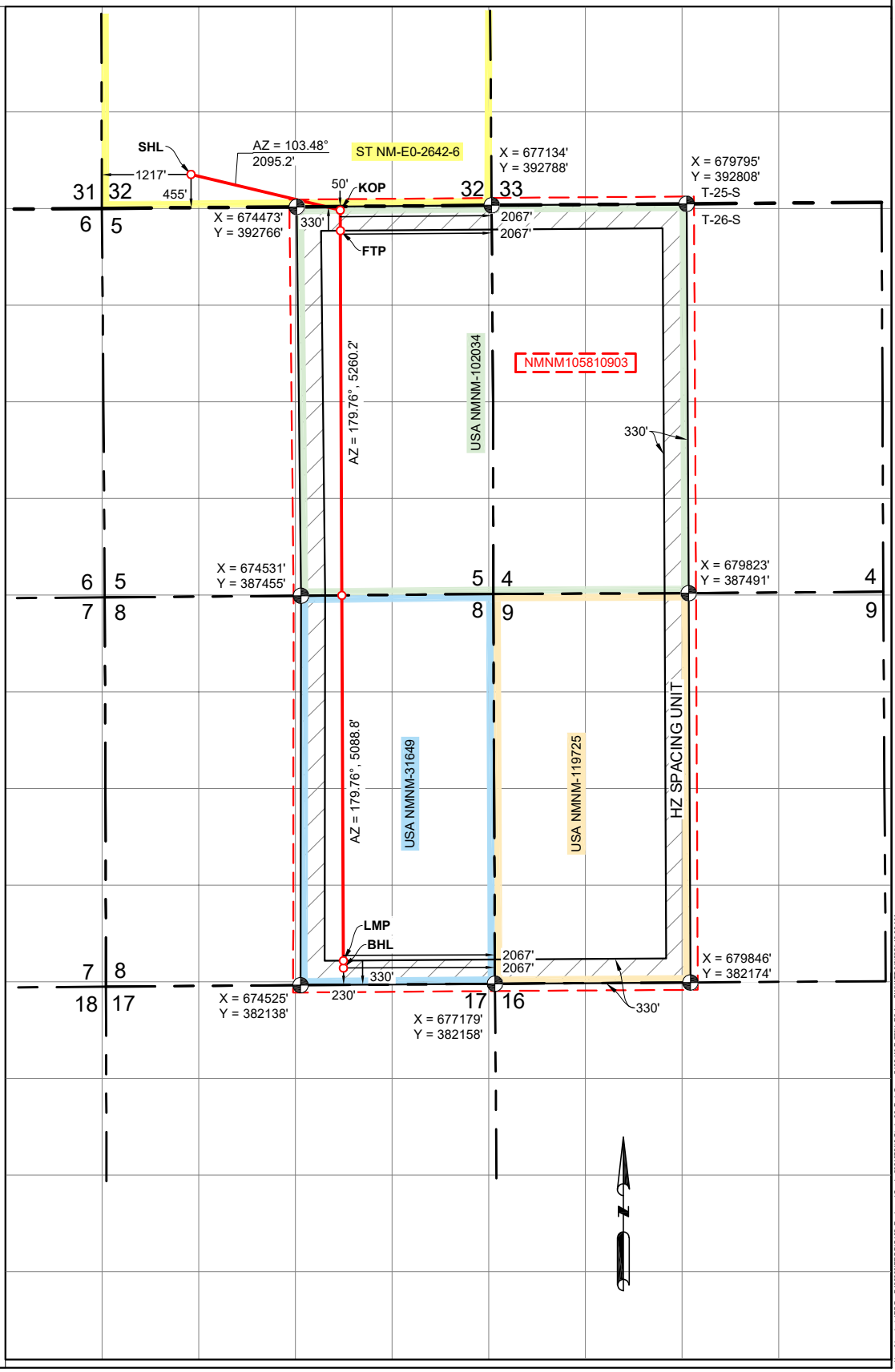
SURFACE LOCATION
NEW MEXICO EAST
NAD 1983
X=673030' Y=393209'
LAT=N32.080299°
LONG=W103.908133°
NAD 1927
X=631845' Y=393152'
LAT=N32.080174°
LONG=W103.907652°
455' FSL 1217' FWL

KOP LOCATION
NEW MEXICO EAST
NAD 1983
X=675068' Y=392721'
LAT=N32.078934°
LONG=W103.901561°
NAD 1927
X=633882' Y=392663'
LAT=N32.078809°
LONG=W103.901080°
50' FNL 2067' FEL

FIRST TAKE POINT
NEW MEXICO EAST
NAD 1983
X=675070' Y=392441'
LAT=N32.078164°
LONG=W103.901558°
NAD 1927
X=633884' Y=392383'
LAT=N32.078040°
LONG=W103.901078°
330' FNL 2067' FEL

LOWER MOST PERF.
NEW MEXICO EAST
NAD 1983
X=675111' Y=382472'
LAT=N32.050760°
LONG=W103.901554°
NAD 1927
X=633925' Y=382414'
LAT=N32.050635°
LONG=W103.901075°
330' FSL 2067' FEL

BOTTOM HOLE LOCATION
NEW MEXICO EAST
NAD 1983
X=675111' Y=382372'
LAT=N32.050485°
LONG=W103.901554°
NAD 1927
X=633925' Y=382314'
LAT=N32.050360°
LONG=W103.901075°
230' FSL 2067' FEL



eog resources

Stark 32 Fed Com 753H

Revised Permit Information 07/19/2024:

Well Name: Stark 32 Fed Com 753H

Location: SHL: 455' FSL & 1217' FWL, Section 32, T-25-S, R-30-E, Eddy Co., N.M.
BHL: 230' FSL & 2067' FEL, Section 8, T-26-S, R-30-E, Eddy Co., N.M.

CASING PROGRAM:

Hole Size	Interval MD From (ft)	Interval MD To (ft)	Interval TVD From (ft)	Interval TVD To (ft)	Csg OD	Weight	Grade	Conn
12-1/4"	0	1,320	0	1,320	9-5/8"	36#	J-55	LTC
8-3/4"	0	11,846	0	11,600	7-5/8"	29.7#	ICYP-110	MO FXL
6-3/4"	0	11,346	0	11,100	5-1/2"	20#	P110-EC	DWC/C IS MS
6-3/4"	11,346	11,846	11,100	11,600	5-1/2"	20#	P110-EC	VAM Sprint SF
6-3/4"	11,846	21,979	11,600	11,599	5-1/2"	20#	P110-EC	DWC/C IS MS

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 Ft3/sk	Slurry Description
1,320' 9-5/8"	360	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl2 + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	80	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 1,120')
11,600' 7-5/8"	1330	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 5,630')
	1000	14.8	1.5	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
21,979' 5-1/2"	2249	12.5	2.05	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ Surface)
5-1/2"	2250	13.2	1.41	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 11,100')

eog resources

Stark 32 Fed Com 753H

Additive	Purpose
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 variance from minimum standards 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 (5,826') 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 100 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. 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.

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.

MUD PROGRAM:

Measured Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,320'	Fresh - Gel	8.6-8.8	28-34	N/c
1,320' – 11,600'	Brine	9.0-10.5	28-34	N/c
11,600’ – 11,355'	Oil Base	8.7-9.4	58-68	N/c - 6
11,355’ – 21,979’ Lateral	Oil Base	10.0-14.0	58-68	4 - 6

Stark 32 Fed Com 753H

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.

TUBING REQUIREMENTS

EOG respectively requests an exception to the following NMOCD rule:

- 19.15.16.10 Casing AND TUBING RQUIREMENTS:
  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.

eog resources

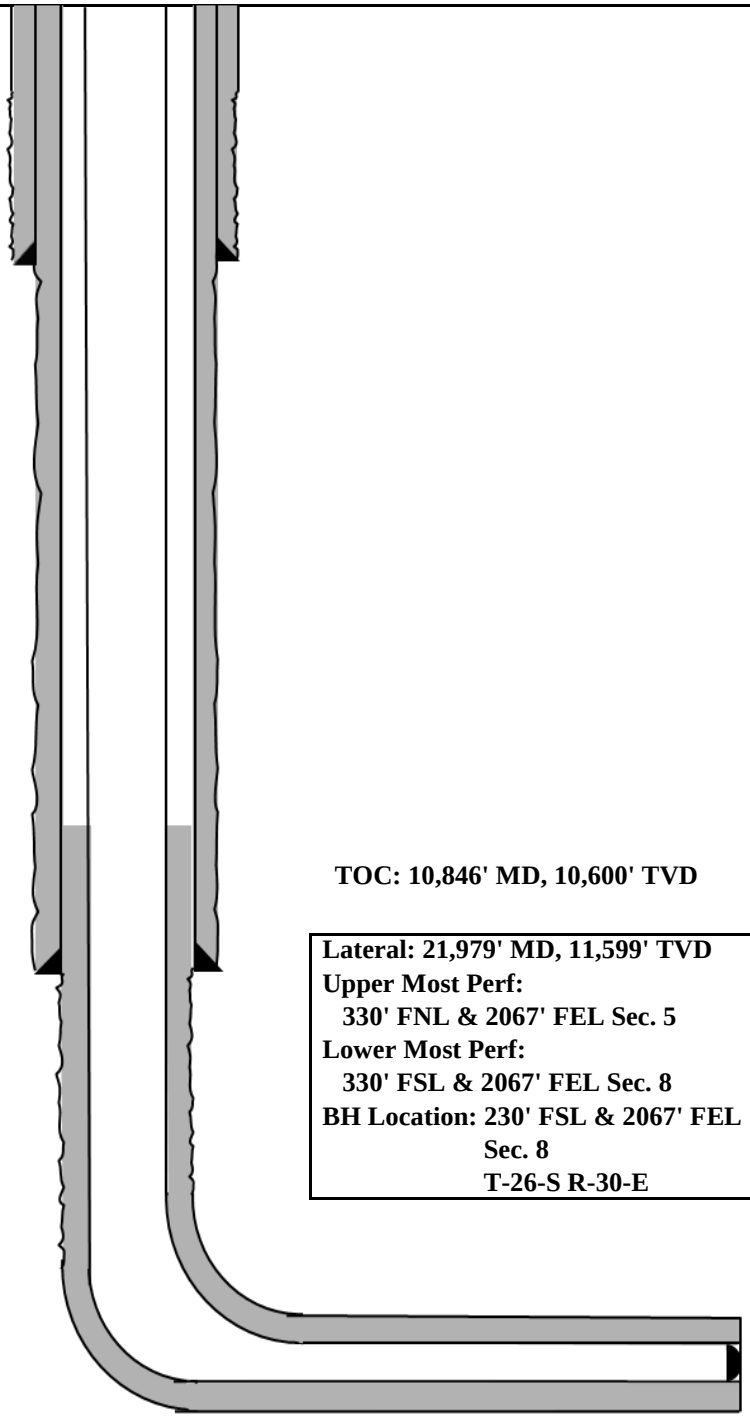
Stark 32 Fed Com 753H

455' FSL
1217' FWL
Section 32
T-25-S, R-30-E

Revised Wellbore

API: 30-015-48266

KB: 3188'
GL: 3163'



Bit Size: 12-1/4"
9-5/8'', 36#, J-55, LTC,
@ 0' - 1,320'

Bit Size: 8-3/4"
7-5/8'', 29.7#, ICYP-110, MO FXL,
@ 0' - 11,600'

Bit Size: 6-3/4"
5-1/2'', 20.#, P110-EC, DWC/C IS MS
@ 0' - 11,100'
5-1/2'', 20.#, P110-EC, VAM Sprint SF
@ 11,100' - 11,600'
5-1/2'', 20.#, P110-EC, DWC/C IS MS
@ 11,600' - 21,979'

KOP: 11,355' MD, 11,122' TVD
EOC: 12,105' MD, 11,599' TVD

TOC: 10,846' MD, 10,600' TVD

Lateral: 21,979' MD, 11,599' TVD
Upper Most Perf:
330' FNL & 2067' FEL Sec. 5
Lower Most Perf:
330' FSL & 2067' FEL Sec. 8
BH Location: 230' FSL & 2067' FEL
Sec. 8
T-26-S R-30-E

eog resources

Stark 32 Fed Com 753H

Design B

CASING PROGRAM:

Hole Size	Interval MD From (ft)	Interval MD To (ft)	Interval TVD From (ft)	Interval TVD To (ft)	Csg OD	Weight	Grade	Conn
13"	0	1,320	0	1,320	10-3/4"	40.5#	J-55	STC
9-7/8"	0	11,846	0	11,600	8-3/4"	38.5#	P110-EC	VAM Sprint-SF
7-7/8"	0	11,355	0	11,122	6"	22.3#	P110-EC	DWC/C IS
6.75"	11,355	21,979	11,122	11,599	5-1/2"	20#	P110-EC	DWC/C IS MS

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

Variance is requested to waive the centralizer requirements for the 8-3/4" casing in the 9-7/8" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 9-7/8" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 6" and 5-1/2" casings in the 7-7/8" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 7-7/8" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive the annular clearance requirements for the 6" and 5-1/2" casings by 8-3/4" 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 Ft3/sk	Slurry Description
1,320' 10-3/4"	330	13.5	1.73	Lead: Class C + 4.0% Bentonite Gel + 0.5% CaCl2 + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	70	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 1,120')
11,600' 8-3/4"	1510	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 5,626')
	1000	14.8	1.5	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
21,979' 6"	1520	13.2	1.31	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 11,100')

eog resources

Stark 32 Fed Com 753H

EOG requests variance from minimum standards to pump a two stage cement job on the 8-3/4" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (5,826') 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 -973 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. 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.

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.

VARIANCE REQUESTS:

EOG requests the additional variance(s) in the attached document(s):

Variances requested include (supporting documents attached):

- BOP Break Testing for 5M Intermediate Intervals (EOG BLM Variance 3a_b)
- Offline Cementing for Surface and Intermediate Intervals (EOG BLM Variance 3a_b)
- Intermediate Bradenhead Cement (EOG BLM Variance 2a)

eog resources

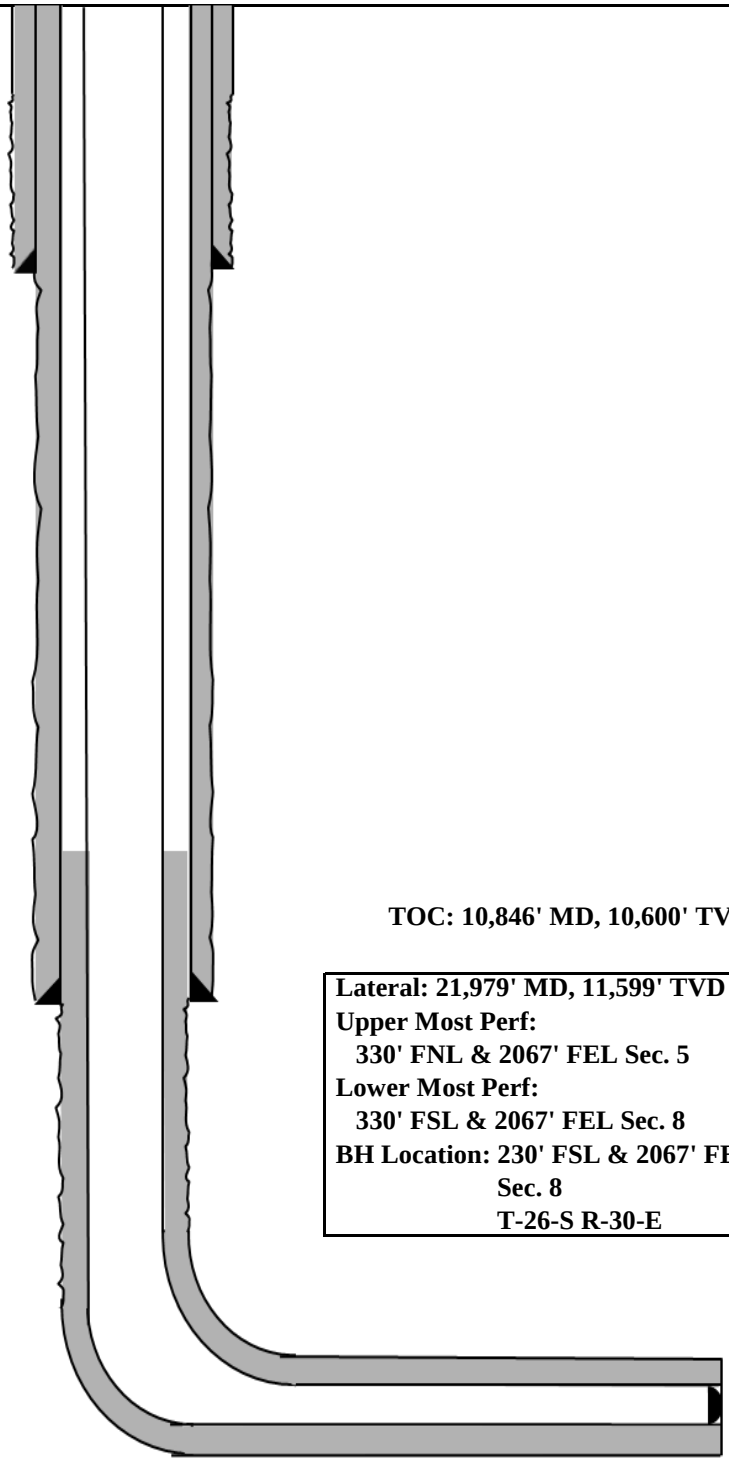
Stark 32 Fed Com 753H

455' FSL
1217' FWL
Section 32
T-25-S, R-30-E

Proposed Wellbore

KB: 3188'
GL: 3163'

API: 30-015-48266



Bit Size: 13"
10-3/4'', 40.5#, J-55, STC,
@ 0' - 1,320'

Bit Size: 9-7/8"
8-3/4'' 38.5#, P110-EC, VAM Sprint-SF,
@ 0' - 11,600'

Bit Size: 7-7/8"
6'', 22.3#, P110-EC, DWC/C IS,
@ 0' - 11,355'
5-1/2'', 20#, P110-EC, DWC/C IS MS,
@ 11,355' - 21,979'

TOC: 10,846' MD, 10,600' TVD

Lateral: 21,979' MD, 11,599' TVD
Upper Most Perf:
330' FNL & 2067' FEL Sec. 5
Lower Most Perf:
330' FSL & 2067' FEL Sec. 8
BH Location: 230' FSL & 2067' FEL Sec. 8 T-26-S R-30-E

KOP: 11,355' MD, 11,122' TVD
EOC: 12,105' MD, 11,599' TVD

eog resources

Stark 32 Fed Com 753H

GEOLOGIC NAME OF SURFACE FORMATION:

Permian

ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,242'
Tamarisk Anhydrite	1,292'
Top of Salt	1,549'
Base of Salt	3,436'
Lamar	3,634'
Bell Canyon	3,661'
Cherry Canyon	577'
Brushy Canyon	5,826'
Bone Spring Lime	7,481'
Leonard (Avalon) Shale	7,547'
1st Bone Spring Sand	8,412'
2nd Bone Spring Shale	8,685'
2nd Bone Spring Sand	9,134'
3rd Bone Spring Carb	9,615'
3rd Bone Spring Sand	10,326'
Wolfcamp	10,738'
TD	11,599'

ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400’	Fresh Water
Bell Canyon	3,661'	Oil
Cherry Canyon	577'	Oil
Brushy Canyon	5,826'	Oil
Leonard (Avalon) Shale	7,547'	Oil
1st Bone Spring Sand	8,412'	Oil
2nd Bone Spring Shale	8,685'	Oil
2nd Bone Spring Sand	9,134'	Oil

Midland

Eddy County, NM (NAD 83 NME)
Stark 32 Fed Com
#753H

OH

Plan: Plan #0.1 RT

Standard Planning Report

08 August, 2024

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Project Eddy 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		Using geodetic scale factor

Site Stark 32 Fed Com

Site Position:		**Northing:**	393,209.00 usft	**Latitude:**	32° 4' 49.072 N
From:	Map	**Easting:**	673,030.00 usft	**Longitude:**	103° 54' 29.279 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "		

Well #753H

Well Position	**+N/-S**	0.0 usft	**Northing:**	393,209.00 usft	**Latitude:**	32° 4' 49.072 N
	+E/-W	0.0 usft	**Easting:**	673,030.00 usft	**Longitude:**	103° 54' 29.279 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,163.0 usft
Grid Convergence:		0.23 °				

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	8/6/2024	6.32	59.62	47,049.73148832

Design Plan #0.1 RT

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	169.13

Plan Survey Tool Program **Date**

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	21,978.5	Plan #0.1 RT (OH)	EOG MWD+IFR1	
				MWD + IFR1	

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

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	
1,417.0	0.00	0.00	1,417.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,062.1	13.03	103.47	2,056.6	-17.0	71.0	2.02	2.02	0.00	103.47	
10,710.2	13.03	103.47	10,481.9	-471.1	1,967.5	0.00	0.00	0.00	0.00	
11,355.3	0.00	0.00	11,121.5	-488.1	2,038.5	2.02	-2.02	0.00	180.00	
11,355.3	0.00	0.00	11,121.5	-488.1	2,038.5	0.00	0.00	0.00	0.00	KOP(Banjo 32 Fed C
11,901.8	65.59	179.60	11,556.2	-768.2	2,040.5	12.00	12.00	32.87	179.60	FTP(Banjo 32 Fed Cc
12,105.2	90.00	179.77	11,598.9	-965.5	2,041.6	12.00	12.00	0.08	0.41	
21,878.5	90.00	179.77	11,599.0	-10,738.7	2,081.3	0.00	0.00	0.00	0.00	Fed LTP(Banjo 32 Fe
21,978.5	90.00	180.23	11,599.0	-10,838.7	2,081.3	0.47	0.00	0.47	89.85	PBHL(Banjo 32 Fed C

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

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
1,417.0	0.00	0.00	1,417.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	1.68	103.47	1,500.0	-0.3	1.2	0.5	2.02	2.02	0.00
1,600.0	3.70	103.47	1,599.9	-1.4	5.7	2.4	2.02	2.02	0.00
1,700.0	5.72	103.47	1,699.5	-3.3	13.7	5.8	2.02	2.02	0.00
1,800.0	7.74	103.47	1,798.8	-6.0	25.1	10.6	2.02	2.02	0.00
1,900.0	9.76	103.47	1,897.7	-9.6	39.9	16.9	2.02	2.02	0.00
2,000.0	11.78	103.47	1,995.9	-13.9	58.1	24.6	2.02	2.02	0.00
2,062.1	13.03	103.47	2,056.6	-17.0	71.0	30.1	2.02	2.02	0.00
2,100.0	13.03	103.47	2,093.5	-19.0	79.3	33.6	0.00	0.00	0.00
2,200.0	13.03	103.47	2,190.9	-24.3	101.3	42.9	0.00	0.00	0.00
2,300.0	13.03	103.47	2,288.3	-29.5	123.2	52.2	0.00	0.00	0.00
2,400.0	13.03	103.47	2,385.8	-34.8	145.1	61.5	0.00	0.00	0.00
2,500.0	13.03	103.47	2,483.2	-40.0	167.1	70.8	0.00	0.00	0.00
2,600.0	13.03	103.47	2,580.6	-45.3	189.0	80.1	0.00	0.00	0.00
2,700.0	13.03	103.47	2,678.0	-50.5	210.9	89.4	0.00	0.00	0.00
2,800.0	13.03	103.47	2,775.4	-55.8	232.9	98.7	0.00	0.00	0.00
2,900.0	13.03	103.47	2,872.9	-61.0	254.8	108.0	0.00	0.00	0.00
3,000.0	13.03	103.47	2,970.3	-66.3	276.7	117.3	0.00	0.00	0.00
3,100.0	13.03	103.47	3,067.7	-71.5	298.6	126.5	0.00	0.00	0.00
3,200.0	13.03	103.47	3,165.1	-76.8	320.6	135.8	0.00	0.00	0.00
3,300.0	13.03	103.47	3,262.6	-82.0	342.5	145.1	0.00	0.00	0.00
3,400.0	13.03	103.47	3,360.0	-87.3	364.4	154.4	0.00	0.00	0.00
3,500.0	13.03	103.47	3,457.4	-92.5	386.4	163.7	0.00	0.00	0.00
3,600.0	13.03	103.47	3,554.8	-97.8	408.3	173.0	0.00	0.00	0.00
3,700.0	13.03	103.47	3,652.3	-103.0	430.2	182.3	0.00	0.00	0.00
3,800.0	13.03	103.47	3,749.7	-108.3	452.1	191.6	0.00	0.00	0.00
3,900.0	13.03	103.47	3,847.1	-113.5	474.1	200.9	0.00	0.00	0.00
4,000.0	13.03	103.47	3,944.5	-118.8	496.0	210.2	0.00	0.00	0.00
4,100.0	13.03	103.47	4,042.0	-124.0	517.9	219.5	0.00	0.00	0.00
4,200.0	13.03	103.47	4,139.4	-129.3	539.9	228.8	0.00	0.00	0.00
4,300.0	13.03	103.47	4,236.8	-134.5	561.8	238.1	0.00	0.00	0.00
4,400.0	13.03	103.47	4,334.2	-139.8	583.7	247.3	0.00	0.00	0.00
4,500.0	13.03	103.47	4,431.7	-145.0	605.6	256.6	0.00	0.00	0.00
4,600.0	13.03	103.47	4,529.1	-150.3	627.6	265.9	0.00	0.00	0.00
4,700.0	13.03	103.47	4,626.5	-155.5	649.5	275.2	0.00	0.00	0.00
4,800.0	13.03	103.47	4,723.9	-160.8	671.4	284.5	0.00	0.00	0.00
4,900.0	13.03	103.47	4,821.4	-166.0	693.4	293.8	0.00	0.00	0.00
5,000.0	13.03	103.47	4,918.8	-171.3	715.3	303.1	0.00	0.00	0.00
5,100.0	13.03	103.47	5,016.2	-176.5	737.2	312.4	0.00	0.00	0.00

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

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	13.03	103.47	5,113.6	-181.8	759.2	321.7	0.00	0.00	0.00
5,300.0	13.03	103.47	5,211.1	-187.0	781.1	331.0	0.00	0.00	0.00
5,400.0	13.03	103.47	5,308.5	-192.3	803.0	340.3	0.00	0.00	0.00
5,500.0	13.03	103.47	5,405.9	-197.5	824.9	349.6	0.00	0.00	0.00
5,600.0	13.03	103.47	5,503.3	-202.8	846.9	358.8	0.00	0.00	0.00
5,700.0	13.03	103.47	5,600.8	-208.0	868.8	368.1	0.00	0.00	0.00
5,800.0	13.03	103.47	5,698.2	-213.3	890.7	377.4	0.00	0.00	0.00
5,900.0	13.03	103.47	5,795.6	-218.5	912.7	386.7	0.00	0.00	0.00
6,000.0	13.03	103.47	5,893.0	-223.8	934.6	396.0	0.00	0.00	0.00
6,100.0	13.03	103.47	5,990.5	-229.0	956.5	405.3	0.00	0.00	0.00
6,200.0	13.03	103.47	6,087.9	-234.3	978.4	414.6	0.00	0.00	0.00
6,300.0	13.03	103.47	6,185.3	-239.5	1,000.4	423.9	0.00	0.00	0.00
6,400.0	13.03	103.47	6,282.7	-244.8	1,022.3	433.2	0.00	0.00	0.00
6,500.0	13.03	103.47	6,380.2	-250.0	1,044.2	442.5	0.00	0.00	0.00
6,600.0	13.03	103.47	6,477.6	-255.3	1,066.2	451.8	0.00	0.00	0.00
6,700.0	13.03	103.47	6,575.0	-260.5	1,088.1	461.1	0.00	0.00	0.00
6,800.0	13.03	103.47	6,672.4	-265.8	1,110.0	470.4	0.00	0.00	0.00
6,900.0	13.03	103.47	6,769.9	-271.0	1,131.9	479.6	0.00	0.00	0.00
7,000.0	13.03	103.47	6,867.3	-276.3	1,153.9	488.9	0.00	0.00	0.00
7,100.0	13.03	103.47	6,964.7	-281.5	1,175.8	498.2	0.00	0.00	0.00
7,200.0	13.03	103.47	7,062.1	-286.8	1,197.7	507.5	0.00	0.00	0.00
7,300.0	13.03	103.47	7,159.6	-292.0	1,219.7	516.8	0.00	0.00	0.00
7,400.0	13.03	103.47	7,257.0	-297.3	1,241.6	526.1	0.00	0.00	0.00
7,500.0	13.03	103.47	7,354.4	-302.6	1,263.5	535.4	0.00	0.00	0.00
7,600.0	13.03	103.47	7,451.8	-307.8	1,285.5	544.7	0.00	0.00	0.00
7,700.0	13.03	103.47	7,549.2	-313.1	1,307.4	554.0	0.00	0.00	0.00
7,800.0	13.03	103.47	7,646.7	-318.3	1,329.3	563.3	0.00	0.00	0.00
7,900.0	13.03	103.47	7,744.1	-323.6	1,351.2	572.6	0.00	0.00	0.00
8,000.0	13.03	103.47	7,841.5	-328.8	1,373.2	581.9	0.00	0.00	0.00
8,100.0	13.03	103.47	7,938.9	-334.1	1,395.1	591.2	0.00	0.00	0.00
8,200.0	13.03	103.47	8,036.4	-339.3	1,417.0	600.4	0.00	0.00	0.00
8,300.0	13.03	103.47	8,133.8	-344.6	1,439.0	609.7	0.00	0.00	0.00
8,400.0	13.03	103.47	8,231.2	-349.8	1,460.9	619.0	0.00	0.00	0.00
8,500.0	13.03	103.47	8,328.6	-355.1	1,482.8	628.3	0.00	0.00	0.00
8,600.0	13.03	103.47	8,426.1	-360.3	1,504.7	637.6	0.00	0.00	0.00
8,700.0	13.03	103.47	8,523.5	-365.6	1,526.7	646.9	0.00	0.00	0.00
8,800.0	13.03	103.47	8,620.9	-370.8	1,548.6	656.2	0.00	0.00	0.00
8,900.0	13.03	103.47	8,718.3	-376.1	1,570.5	665.5	0.00	0.00	0.00
9,000.0	13.03	103.47	8,815.8	-381.3	1,592.5	674.8	0.00	0.00	0.00
9,100.0	13.03	103.47	8,913.2	-386.6	1,614.4	684.1	0.00	0.00	0.00
9,200.0	13.03	103.47	9,010.6	-391.8	1,636.3	693.4	0.00	0.00	0.00
9,300.0	13.03	103.47	9,108.0	-397.1	1,658.2	702.7	0.00	0.00	0.00
9,400.0	13.03	103.47	9,205.5	-402.3	1,680.2	712.0	0.00	0.00	0.00
9,500.0	13.03	103.47	9,302.9	-407.6	1,702.1	721.2	0.00	0.00	0.00
9,600.0	13.03	103.47	9,400.3	-412.8	1,724.0	730.5	0.00	0.00	0.00
9,700.0	13.03	103.47	9,497.7	-418.1	1,746.0	739.8	0.00	0.00	0.00
9,800.0	13.03	103.47	9,595.2	-423.3	1,767.9	749.1	0.00	0.00	0.00
9,900.0	13.03	103.47	9,692.6	-428.6	1,789.8	758.4	0.00	0.00	0.00
10,000.0	13.03	103.47	9,790.0	-433.8	1,811.8	767.7	0.00	0.00	0.00
10,100.0	13.03	103.47	9,887.4	-439.1	1,833.7	777.0	0.00	0.00	0.00
10,200.0	13.03	103.47	9,984.9	-444.3	1,855.6	786.3	0.00	0.00	0.00
10,300.0	13.03	103.47	10,082.3	-449.6	1,877.5	795.6	0.00	0.00	0.00
10,400.0	13.03	103.47	10,179.7	-454.8	1,899.5	804.9	0.00	0.00	0.00
10,500.0	13.03	103.47	10,277.1	-460.1	1,921.4	814.2	0.00	0.00	0.00

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.0	13.03	103.47	10,374.6	-465.3	1,943.3	823.5	0.00	0.00	0.00
10,700.0	13.03	103.47	10,472.0	-470.6	1,965.3	832.8	0.00	0.00	0.00
10,710.2	13.03	103.47	10,481.9	-471.1	1,967.5	833.7	0.00	0.00	0.00
10,800.0	11.22	103.47	10,569.7	-475.5	1,985.8	841.5	2.02	-2.02	0.00
10,900.0	9.20	103.47	10,668.1	-479.6	2,003.1	848.8	2.02	-2.02	0.00
11,000.0	7.18	103.47	10,767.1	-483.0	2,016.9	854.6	2.02	-2.02	0.00
11,100.0	5.16	103.47	10,866.5	-485.5	2,027.4	859.1	2.02	-2.02	0.00
11,200.0	3.14	103.47	10,966.3	-487.1	2,034.4	862.0	2.02	-2.02	0.00
11,300.0	1.12	103.47	11,066.2	-488.0	2,038.0	863.6	2.02	-2.02	0.00
11,355.3	0.00	0.00	11,121.5	-488.1	2,038.5	863.8	2.02	-2.02	0.00
11,375.0	2.36	179.60	11,141.2	-488.5	2,038.5	864.2	12.00	12.00	0.00
11,400.0	5.36	179.60	11,166.1	-490.2	2,038.6	865.9	12.00	12.00	0.00
11,425.0	8.36	179.60	11,190.9	-493.2	2,038.6	868.8	12.00	12.00	0.00
11,450.0	11.36	179.60	11,215.6	-497.5	2,038.6	873.0	12.00	12.00	0.00
11,475.0	14.36	179.60	11,239.9	-503.1	2,038.6	878.5	12.00	12.00	0.00
11,500.0	17.36	179.60	11,264.0	-509.9	2,038.7	885.2	12.00	12.00	0.00
11,525.0	20.36	179.60	11,287.6	-518.0	2,038.7	893.1	12.00	12.00	0.00
11,550.0	23.36	179.60	11,310.8	-527.3	2,038.8	902.3	12.00	12.00	0.00
11,575.0	26.37	179.60	11,333.5	-537.8	2,038.9	912.6	12.00	12.00	0.00
11,600.0	29.37	179.60	11,355.6	-549.5	2,039.0	924.1	12.00	12.00	0.00
11,625.0	32.37	179.60	11,377.1	-562.3	2,039.1	936.7	12.00	12.00	0.00
11,650.0	35.37	179.60	11,397.8	-576.2	2,039.2	950.4	12.00	12.00	0.00
11,675.0	38.37	179.60	11,417.8	-591.2	2,039.3	965.2	12.00	12.00	0.00
11,700.0	41.37	179.60	11,437.0	-607.2	2,039.4	980.9	12.00	12.00	0.00
11,725.0	44.37	179.60	11,455.3	-624.2	2,039.5	997.7	12.00	12.00	0.00
11,750.0	47.37	179.60	11,472.7	-642.2	2,039.6	1,015.3	12.00	12.00	0.00
11,775.0	50.37	179.60	11,489.2	-661.0	2,039.8	1,033.8	12.00	12.00	0.00
11,800.0	53.37	179.60	11,504.6	-680.7	2,039.9	1,053.2	12.00	12.00	0.00
11,825.0	56.37	179.60	11,519.0	-701.1	2,040.0	1,073.3	12.00	12.00	0.00
11,850.0	59.37	179.60	11,532.3	-722.3	2,040.2	1,094.1	12.00	12.00	0.00
11,875.0	62.37	179.60	11,544.5	-744.1	2,040.3	1,115.5	12.00	12.00	0.00
11,901.8	65.59	179.60	11,556.2	-768.2	2,040.5	1,139.2	12.00	12.00	0.00
11,925.0	68.37	179.62	11,565.3	-789.6	2,040.7	1,160.2	12.00	12.00	0.09
11,950.0	71.37	179.64	11,573.9	-813.0	2,040.8	1,183.3	12.00	12.00	0.09
11,975.0	74.37	179.66	11,581.2	-836.9	2,041.0	1,206.8	12.00	12.00	0.09
12,000.0	77.37	179.68	11,587.3	-861.2	2,041.1	1,230.6	12.00	12.00	0.08
12,025.0	80.37	179.70	11,592.2	-885.7	2,041.2	1,254.7	12.00	12.00	0.08
12,050.0	83.37	179.72	11,595.7	-910.4	2,041.4	1,279.1	12.00	12.00	0.08
12,075.0	86.37	179.74	11,597.9	-935.3	2,041.5	1,303.5	12.00	12.00	0.08
12,100.0	89.37	179.76	11,598.9	-960.3	2,041.6	1,328.1	12.00	12.00	0.08
12,105.2	90.00	179.77	11,598.9	-965.5	2,041.6	1,333.2	12.00	12.00	0.08
12,200.0	90.00	179.77	11,598.9	-1,060.3	2,042.0	1,426.4	0.00	0.00	0.00
12,300.0	90.00	179.77	11,598.9	-1,160.3	2,042.4	1,524.6	0.00	0.00	0.00
12,400.0	90.00	179.77	11,598.9	-1,260.3	2,042.8	1,622.9	0.00	0.00	0.00
12,500.0	90.00	179.77	11,598.9	-1,360.3	2,043.2	1,721.2	0.00	0.00	0.00
12,600.0	90.00	179.77	11,598.9	-1,460.3	2,043.6	1,819.5	0.00	0.00	0.00
12,700.0	90.00	179.77	11,598.9	-1,560.3	2,044.0	1,917.8	0.00	0.00	0.00
12,800.0	90.00	179.77	11,598.9	-1,660.3	2,044.4	2,016.0	0.00	0.00	0.00
12,900.0	90.00	179.77	11,598.9	-1,760.3	2,044.8	2,114.3	0.00	0.00	0.00
13,000.0	90.00	179.77	11,598.9	-1,860.3	2,045.2	2,212.6	0.00	0.00	0.00
13,100.0	90.00	179.77	11,598.9	-1,960.3	2,045.6	2,310.9	0.00	0.00	0.00
13,200.0	90.00	179.77	11,598.9	-2,060.3	2,046.0	2,409.2	0.00	0.00	0.00
13,300.0	90.00	179.77	11,598.9	-2,160.3	2,046.5	2,507.5	0.00	0.00	0.00
13,400.0	90.00	179.77	11,598.9	-2,260.3	2,046.9	2,605.7	0.00	0.00	0.00

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

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)
13,500.0	90.00	179.77	11,598.9	-2,360.3	2,047.3	2,704.0	0.00	0.00	0.00
13,600.0	90.00	179.77	11,598.9	-2,460.3	2,047.7	2,802.3	0.00	0.00	0.00
13,700.0	90.00	179.77	11,598.9	-2,560.3	2,048.1	2,900.6	0.00	0.00	0.00
13,800.0	90.00	179.77	11,598.9	-2,660.3	2,048.5	2,998.9	0.00	0.00	0.00
13,900.0	90.00	179.77	11,598.9	-2,760.3	2,048.9	3,097.1	0.00	0.00	0.00
14,000.0	90.00	179.77	11,598.9	-2,860.3	2,049.3	3,195.4	0.00	0.00	0.00
14,100.0	90.00	179.77	11,598.9	-2,960.3	2,049.7	3,293.7	0.00	0.00	0.00
14,200.0	90.00	179.77	11,598.9	-3,060.3	2,050.1	3,392.0	0.00	0.00	0.00
14,300.0	90.00	179.77	11,598.9	-3,160.3	2,050.5	3,490.3	0.00	0.00	0.00
14,400.0	90.00	179.77	11,598.9	-3,260.3	2,050.9	3,588.6	0.00	0.00	0.00
14,500.0	90.00	179.77	11,598.9	-3,360.3	2,051.3	3,686.8	0.00	0.00	0.00
14,600.0	90.00	179.77	11,598.9	-3,460.3	2,051.7	3,785.1	0.00	0.00	0.00
14,700.0	90.00	179.77	11,598.9	-3,560.3	2,052.1	3,883.4	0.00	0.00	0.00
14,800.0	90.00	179.77	11,598.9	-3,660.3	2,052.6	3,981.7	0.00	0.00	0.00
14,900.0	90.00	179.77	11,598.9	-3,760.3	2,053.0	4,080.0	0.00	0.00	0.00
15,000.0	90.00	179.77	11,598.9	-3,860.3	2,053.4	4,178.2	0.00	0.00	0.00
15,100.0	90.00	179.77	11,598.9	-3,960.3	2,053.8	4,276.5	0.00	0.00	0.00
15,200.0	90.00	179.77	11,598.9	-4,060.3	2,054.2	4,374.8	0.00	0.00	0.00
15,300.0	90.00	179.77	11,598.9	-4,160.3	2,054.6	4,473.1	0.00	0.00	0.00
15,400.0	90.00	179.77	11,598.9	-4,260.3	2,055.0	4,571.4	0.00	0.00	0.00
15,500.0	90.00	179.77	11,598.9	-4,360.3	2,055.4	4,669.7	0.00	0.00	0.00
15,600.0	90.00	179.77	11,598.9	-4,460.3	2,055.8	4,767.9	0.00	0.00	0.00
15,700.0	90.00	179.77	11,598.9	-4,560.3	2,056.2	4,866.2	0.00	0.00	0.00
15,800.0	90.00	179.77	11,598.9	-4,660.3	2,056.6	4,964.5	0.00	0.00	0.00
15,900.0	90.00	179.77	11,598.9	-4,760.3	2,057.0	5,062.8	0.00	0.00	0.00
16,000.0	90.00	179.77	11,598.9	-4,860.3	2,057.4	5,161.1	0.00	0.00	0.00
16,100.0	90.00	179.77	11,598.9	-4,960.3	2,057.8	5,259.3	0.00	0.00	0.00
16,200.0	90.00	179.77	11,598.9	-5,060.3	2,058.2	5,357.6	0.00	0.00	0.00
16,300.0	90.00	179.77	11,598.9	-5,160.3	2,058.7	5,455.9	0.00	0.00	0.00
16,400.0	90.00	179.77	11,598.9	-5,260.3	2,059.1	5,554.2	0.00	0.00	0.00
16,500.0	90.00	179.77	11,598.9	-5,360.3	2,059.5	5,652.5	0.00	0.00	0.00
16,600.0	90.00	179.77	11,598.9	-5,460.3	2,059.9	5,750.7	0.00	0.00	0.00
16,700.0	90.00	179.77	11,598.9	-5,560.3	2,060.3	5,849.0	0.00	0.00	0.00
16,800.0	90.00	179.77	11,598.9	-5,660.3	2,060.7	5,947.3	0.00	0.00	0.00
16,900.0	90.00	179.77	11,598.9	-5,760.3	2,061.1	6,045.6	0.00	0.00	0.00
17,000.0	90.00	179.77	11,598.9	-5,860.3	2,061.5	6,143.9	0.00	0.00	0.00
17,100.0	90.00	179.77	11,598.9	-5,960.3	2,061.9	6,242.2	0.00	0.00	0.00
17,200.0	90.00	179.77	11,598.9	-6,060.3	2,062.3	6,340.4	0.00	0.00	0.00
17,300.0	90.00	179.77	11,599.0	-6,160.3	2,062.7	6,438.7	0.00	0.00	0.00
17,400.0	90.00	179.77	11,599.0	-6,260.3	2,063.1	6,537.0	0.00	0.00	0.00
17,500.0	90.00	179.77	11,599.0	-6,360.3	2,063.5	6,635.3	0.00	0.00	0.00
17,600.0	90.00	179.77	11,599.0	-6,460.3	2,063.9	6,733.6	0.00	0.00	0.00
17,700.0	90.00	179.77	11,599.0	-6,560.3	2,064.3	6,831.8	0.00	0.00	0.00
17,800.0	90.00	179.77	11,599.0	-6,660.3	2,064.7	6,930.1	0.00	0.00	0.00
17,900.0	90.00	179.77	11,599.0	-6,760.3	2,065.2	7,028.4	0.00	0.00	0.00
18,000.0	90.00	179.77	11,599.0	-6,860.3	2,065.6	7,126.7	0.00	0.00	0.00
18,100.0	90.00	179.77	11,599.0	-6,960.3	2,066.0	7,225.0	0.00	0.00	0.00
18,200.0	90.00	179.77	11,599.0	-7,060.3	2,066.4	7,323.3	0.00	0.00	0.00
18,300.0	90.00	179.77	11,599.0	-7,160.3	2,066.8	7,421.5	0.00	0.00	0.00
18,400.0	90.00	179.77	11,599.0	-7,260.3	2,067.2	7,519.8	0.00	0.00	0.00
18,500.0	90.00	179.77	11,599.0	-7,360.2	2,067.6	7,618.1	0.00	0.00	0.00
18,600.0	90.00	179.77	11,599.0	-7,460.2	2,068.0	7,716.4	0.00	0.00	0.00
18,700.0	90.00	179.77	11,599.0	-7,560.2	2,068.4	7,814.7	0.00	0.00	0.00
18,800.0	90.00	179.77	11,599.0	-7,660.2	2,068.8	7,912.9	0.00	0.00	0.00

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

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)
18,900.0	90.00	179.77	11,599.0	-7,760.2	2,069.2	8,011.2	0.00	0.00	0.00
19,000.0	90.00	179.77	11,599.0	-7,860.2	2,069.6	8,109.5	0.00	0.00	0.00
19,100.0	90.00	179.77	11,599.0	-7,960.2	2,070.0	8,207.8	0.00	0.00	0.00
19,200.0	90.00	179.77	11,599.0	-8,060.2	2,070.4	8,306.1	0.00	0.00	0.00
19,300.0	90.00	179.77	11,599.0	-8,160.2	2,070.8	8,404.4	0.00	0.00	0.00
19,400.0	90.00	179.77	11,599.0	-8,260.2	2,071.3	8,502.6	0.00	0.00	0.00
19,500.0	90.00	179.77	11,599.0	-8,360.2	2,071.7	8,600.9	0.00	0.00	0.00
19,600.0	90.00	179.77	11,599.0	-8,460.2	2,072.1	8,699.2	0.00	0.00	0.00
19,700.0	90.00	179.77	11,599.0	-8,560.2	2,072.5	8,797.5	0.00	0.00	0.00
19,800.0	90.00	179.77	11,599.0	-8,660.2	2,072.9	8,895.8	0.00	0.00	0.00
19,900.0	90.00	179.77	11,599.0	-8,760.2	2,073.3	8,994.0	0.00	0.00	0.00
20,000.0	90.00	179.77	11,599.0	-8,860.2	2,073.7	9,092.3	0.00	0.00	0.00
20,100.0	90.00	179.77	11,599.0	-8,960.2	2,074.1	9,190.6	0.00	0.00	0.00
20,200.0	90.00	179.77	11,599.0	-9,060.2	2,074.5	9,288.9	0.00	0.00	0.00
20,300.0	90.00	179.77	11,599.0	-9,160.2	2,074.9	9,387.2	0.00	0.00	0.00
20,400.0	90.00	179.77	11,599.0	-9,260.2	2,075.3	9,485.4	0.00	0.00	0.00
20,500.0	90.00	179.77	11,599.0	-9,360.2	2,075.7	9,583.7	0.00	0.00	0.00
20,600.0	90.00	179.77	11,599.0	-9,460.2	2,076.1	9,682.0	0.00	0.00	0.00
20,700.0	90.00	179.77	11,599.0	-9,560.2	2,076.5	9,780.3	0.00	0.00	0.00
20,800.0	90.00	179.77	11,599.0	-9,660.2	2,076.9	9,878.6	0.00	0.00	0.00
20,900.0	90.00	179.77	11,599.0	-9,760.2	2,077.4	9,976.9	0.00	0.00	0.00
21,000.0	90.00	179.77	11,599.0	-9,860.2	2,077.8	10,075.1	0.00	0.00	0.00
21,100.0	90.00	179.77	11,599.0	-9,960.2	2,078.2	10,173.4	0.00	0.00	0.00
21,200.0	90.00	179.77	11,599.0	-10,060.2	2,078.6	10,271.7	0.00	0.00	0.00
21,300.0	90.00	179.77	11,599.0	-10,160.2	2,079.0	10,370.0	0.00	0.00	0.00
21,400.0	90.00	179.77	11,599.0	-10,260.2	2,079.4	10,468.3	0.00	0.00	0.00
21,500.0	90.00	179.77	11,599.0	-10,360.2	2,079.8	10,566.5	0.00	0.00	0.00
21,600.0	90.00	179.77	11,599.0	-10,460.2	2,080.2	10,664.8	0.00	0.00	0.00
21,700.0	90.00	179.77	11,599.0	-10,560.2	2,080.6	10,763.1	0.00	0.00	0.00
21,800.0	90.00	179.77	11,599.0	-10,660.2	2,081.0	10,861.4	0.00	0.00	0.00
21,878.5	90.00	179.77	11,599.0	-10,738.7	2,081.3	10,938.5	0.00	0.00	0.00
21,900.0	90.00	179.87	11,599.0	-10,760.2	2,081.4	10,959.7	0.47	0.00	0.47
21,978.5	90.00	180.23	11,599.0	-10,838.7	2,081.3	11,036.7	0.47	0.00	0.47

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP(Banjo 32 Fed Com - plan hits target center - Point	0.00	0.00	11,121.5	-488.1	2,038.5	392,721.00	675,068.00	32° 4' 44.162 N	103° 54' 5.614 W
FTP(Banjo 32 Fed Com - plan hits target center - Point	0.00	0.00	11,556.2	-768.2	2,040.5	392,441.00	675,070.00	32° 4' 41.392 N	103° 54' 5.604 W
Fed LTP(Banjo 32 Fed C - plan hits target center - Point	0.00	0.00	11,599.0	-10,738.7	2,081.3	382,472.00	675,111.00	32° 3' 2.736 N	103° 54' 5.591 W
PBHL(Banjo 32 Fed Cor - plan hits target center - Point	0.00	0.00	11,599.0	-10,838.7	2,081.3	382,372.00	675,111.00	32° 3' 1.747 N	103° 54' 5.596 W

eog resources

Planning Report

Database:	PEDMB	**Local Co-ordinate Reference:**	Well #753H
Company:	Midland	**TVD Reference:**	kb = 26' @ 3189.0usft
Project:	Eddy County, NM (NAD 83 NME)	**MD Reference:**	kb = 26' @ 3189.0usft
Site:	Stark 32 Fed Com	**North Reference:**	Grid
Well:	#753H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1 RT		

eog resources

Eddy County, NM (NAD 83 NME)

Stark 32 Fed Com #753H

Plan #0.1 RT

Azimuths to Grid North
True North: -0.23°
Magnetic North: 6.09°

Magnetic Field
Strength: 47049.7nT
Dip Angle: 59.62°
Date: 8/6/2024
Model: IGRF2020

To convert a Magnetic Direction to a Grid Direction, Add 6.09°
To convert a Magnetic Direction to a True Direction, Add 6.32° East
To convert a True Direction to a Grid Direction, Subtract 0.23°

PROJECT DETAILS: Eddy 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: #753H

3163.0
kb = 26' @ 3189.0usft

Northing	Easting	Latittude	Longitude
393209.00	673030.00	32° 4' 49.072 N	103° 54' 29.279 W

SECTION DETAILS

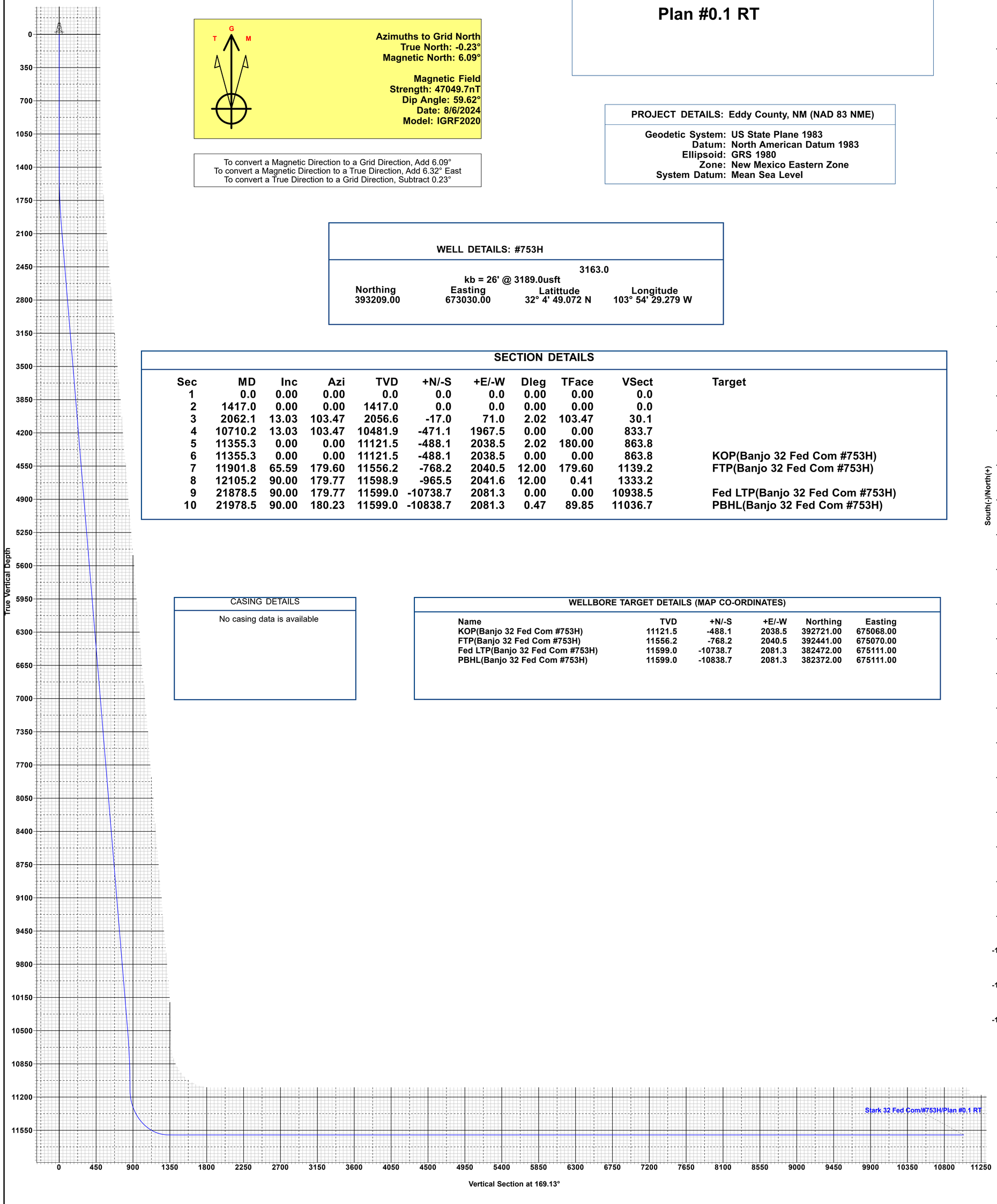
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1417.0	0.00	0.00	1417.0	0.0	0.0	0.00	0.00	0.0	
3	2062.1	13.03	103.47	2056.6	-17.0	71.0	2.02	103.47	30.1	
4	10710.2	13.03	103.47	10481.9	-471.1	1967.5	0.00	0.00	833.7	
5	11355.3	0.00	0.00	11121.5	-488.1	2038.5	2.02	180.00	863.8	
6	11355.3	0.00	0.00	11121.5	-488.1	2038.5	0.00	0.00	863.8	KOP(Banjo 32 Fed Com #753H)
7	11901.8	65.59	179.60	11556.2	-768.2	2040.5	12.00	179.60	1139.2	FTP(Banjo 32 Fed Com #753H)
8	12105.2	90.00	179.77	11598.9	-965.5	2041.6	12.00	0.41	1333.2	
9	21878.5	90.00	179.77	11599.0	-10738.7	2081.3	0.00	0.00	10938.5	Fed LTP(Banjo 32 Fed Com #753H)
10	21978.5	90.00	180.23	11599.0	-10838.7	2081.3	0.47	89.85	11036.7	PBHL(Banjo 32 Fed Com #753H)

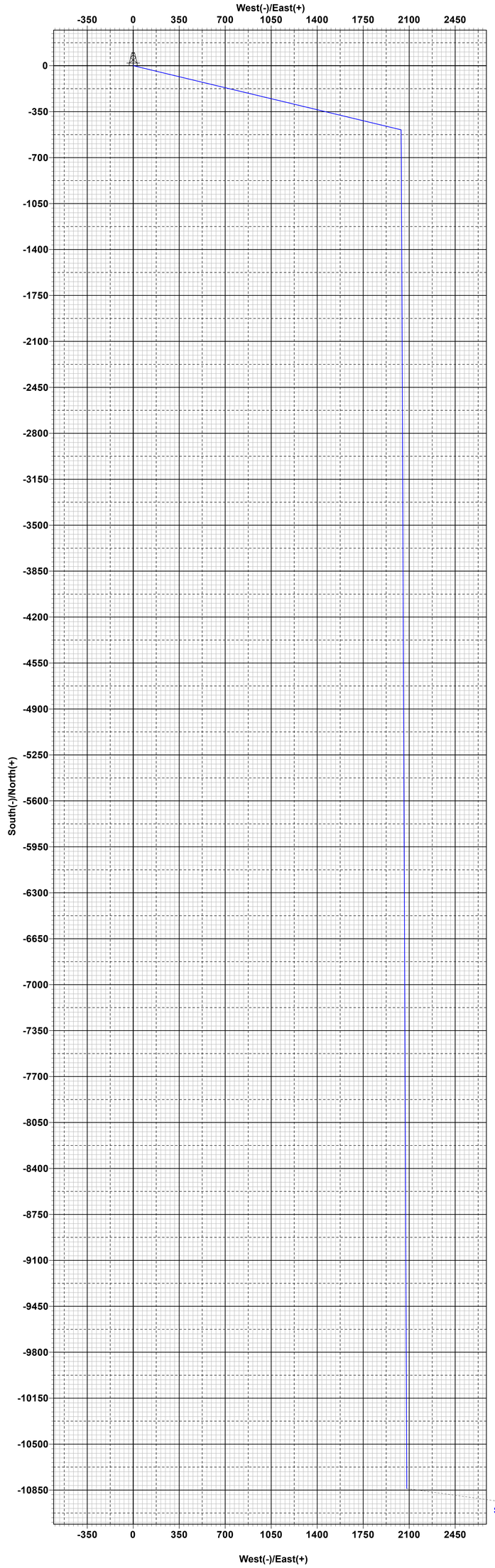
CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
KOP(Banjo 32 Fed Com #753H)	11121.5	-488.1	2038.5	392721.00	675068.00
FTP(Banjo 32 Fed Com #753H)	11556.2	-768.2	2040.5	392441.00	675070.00
Fed LTP(Banjo 32 Fed Com #753H)	11599.0	-10738.7	2081.3	382472.00	675111.00
PBHL(Banjo 32 Fed Com #753H)	11599.0	-10838.7	2081.3	382372.00	675111.00





Eddy County, NM (NAD 83 NME)
Stark 32 Fed Com
#753H
OH
Plan #0.1 RT
11:25, August 08 2024

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

PAD: BANJO/ STARK 32/5 FED COM – DEEP TARGETS
SHL: SEC32/5 T25S R30E, EDDY COUNTY

Well Name	API #	Surface		Intermediate		Production	
		MD	TVD	MD	TVD	MD	TVD
Banjo 32 Fed Com #761H (FKA 594H)	30-015-48267	1,320	1,320	11,632	11,600	21,987	11,811
Banjo 32 Fed Com #762H (FKA 584H)	30-015-48265	1,320	1,320	11,934	11,600	22,226	11,811
Banjo 32 Fed Com #771H (FKA 504H)	30-015-48264	1,320	1,320	11,696	11,600	22,205	11,972
Banjo 5 Fed Com #751H (FKA 586H)	30-025-47901	1,320	1,320	11,617	11,600	21,761	11,599
Banjo 5 Fed Com #752H (FKA 595H)	30-015-47904	1,320	1,320	11,923	11,600	22,006	11,599
Stark 32 Fed Com #753H (FKA Banjo 32 Fed Com 593H)	30-015-48266	1,320	1,320	11,846	11,600	21,979	11,599

SUNDRY WRITTEN FOR DEEPEST WELL IN THE LIST ABOVE, BUT APPROVAL APPLIES TO ALL. ALL PREVIOUS COAs STILL APPLY

COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Wellhead Variance	○ Diverter		
Other	☐ 4 String	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Contingency Cement Squeeze	☑ EchoMeter	☑ Primary Cement Squeeze
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☑ Break Testing	☑ Offline Cementing	☑ Casing Clearance

A. CASING

Primary Casing Design:

1. The **9-5/8** inch surface casing shall be set at approximately **1,320** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run

to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **7-5/8** inch intermediate casing shall be set at approximately **11,600 feet TVD**. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon**

b. Second stage:
   - Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified.

Operator has proposed to pump down 7-5/8" X 9-5/8" annulus. Operator must top out cement after the bradenhead squeeze and verify cement to surface. Operator can also check TOC with Echo-meter. CBL must be run from TD of the 7-5/8" casing to surface if confidence is lacking on the quality of the bradenhead squeeze cement job. Submit results to BLM.

If cement does not tie-back into the previous casing shoe, a third stage remediation BH may be performed. The appropriate BLM office shall be notified.

Bradenhead squeeze in the production interval is only as an edge case remediation measure and is NOT approved in this COA. If production cement job experiences losses and a bradenhead squeeze is needed for tie-back, BLM Engineering should be

notified prior to job with volumes and planned wellbore schematic. CBL will be needed when this occurs.
If cement does not reach surface, the next casing string must come to surface.

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

3. The **5-1/2** inch production casing shall be set at approximately **22,226** feet. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **1,320** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.

e. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
f. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
g. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
h. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The **8-3/4** inch intermediate casing shall be set at approximately **11,600 feet TVD**. The minimum required fill of cement behind the **8-3/4** inch intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Option 2:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

c. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon**

d. Second stage:

- Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified.

Operator has proposed to pump down 10-3/4 X 8-3/4" annulus. Operator must top out cement after the bradenhead squeeze and verify cement to surface. Operator can also check TOC with Echo-meter. CBL must be run from TD of the 8-3/4" casing to surface if confidence is lacking on the quality of the bradenhead squeeze cement job. Submit results to BLM.

If cement does not tie-back into the previous casing shoe, a third stage remediation BH may be performed. The appropriate BLM office shall be notified.

Bradenhead squeeze in the production interval is only as an edge case remediation measure and is NOT approved in this COA. If production cement job experiences losses and a bradenhead squeeze is needed for tie-back, BLM Engineering should be notified prior to job with volumes and planned wellbore schematic. CBL will be needed when this occurs.
If cement does not reach surface, the next casing string must come to surface.

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

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The **6** inch production casing shall be set at approximately **22,226** feet. The minimum required fill of cement behind the **6** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Production casing must be kept fluid filled to meet BLM minimum collapse requirement.

NOTE ON PRODUCTION CASING FOR ALTERNATE DESIGN: OPERATOR HAS REQUESTED TO RUN 6" OR 5.5" OR A TAPERED STRING WITH BOTH. ALL THREE OPTIONS REVIEWED AND IS OK.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 3500 (70% Working Pressure) psi.**

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

Offline Cementing
Offline cementing approved for surface and intermediate intervals. Contact the BLM PETs prior to the commencement of any offline cementing procedure.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:
a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

Contact Eddy County Petroleum Engineering Inspection Staff:
Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220; **BLM_NM_CFO_DrillingNotifications@BLM.GOV**; (575) 361-2822

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
b. When the operator proposes to set surface casing with Spudder Rig
    i. Notify the BLM when moving in and removing the Spudder Rig.
    ii. Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR 3172**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review.

These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    ii. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    iii. Manufacturer representative shall install the test plug for the initial BOP test.
    iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
    v. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    i. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
    ii. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the

cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)

iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

iv. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

v. The results of the test shall be reported to the appropriate BLM office.

vi. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

vii. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

viii. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.)

created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

KPI 8/30/2024

Stark 32 Fed Com 753H (FKA Banjo 32 Fed Com 593H) API #: 30-015-48266 Variances

EOG respectfully requests the below variances to be applied to the above well:

- Variance is requested to waive the centralizer requirements for the intermediate casing in the intermediate hole. An expansion additive will be utilized, in the cement slurry, for the entire length of the intermediate interval to maximize cement bond and zonal isolation.
- Variance is also requested to waive the centralizer requirements for the production casing in the production hole. An expansion additive will be utilized, in the cement slurry, for the entire length of the production interval to maximize cement bond and zonal isolation.
- 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.

- Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).
- Variance is requested to use a 5,000 psi annular BOP with the 10,000 psi BOP stack.
- 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 1,500 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.

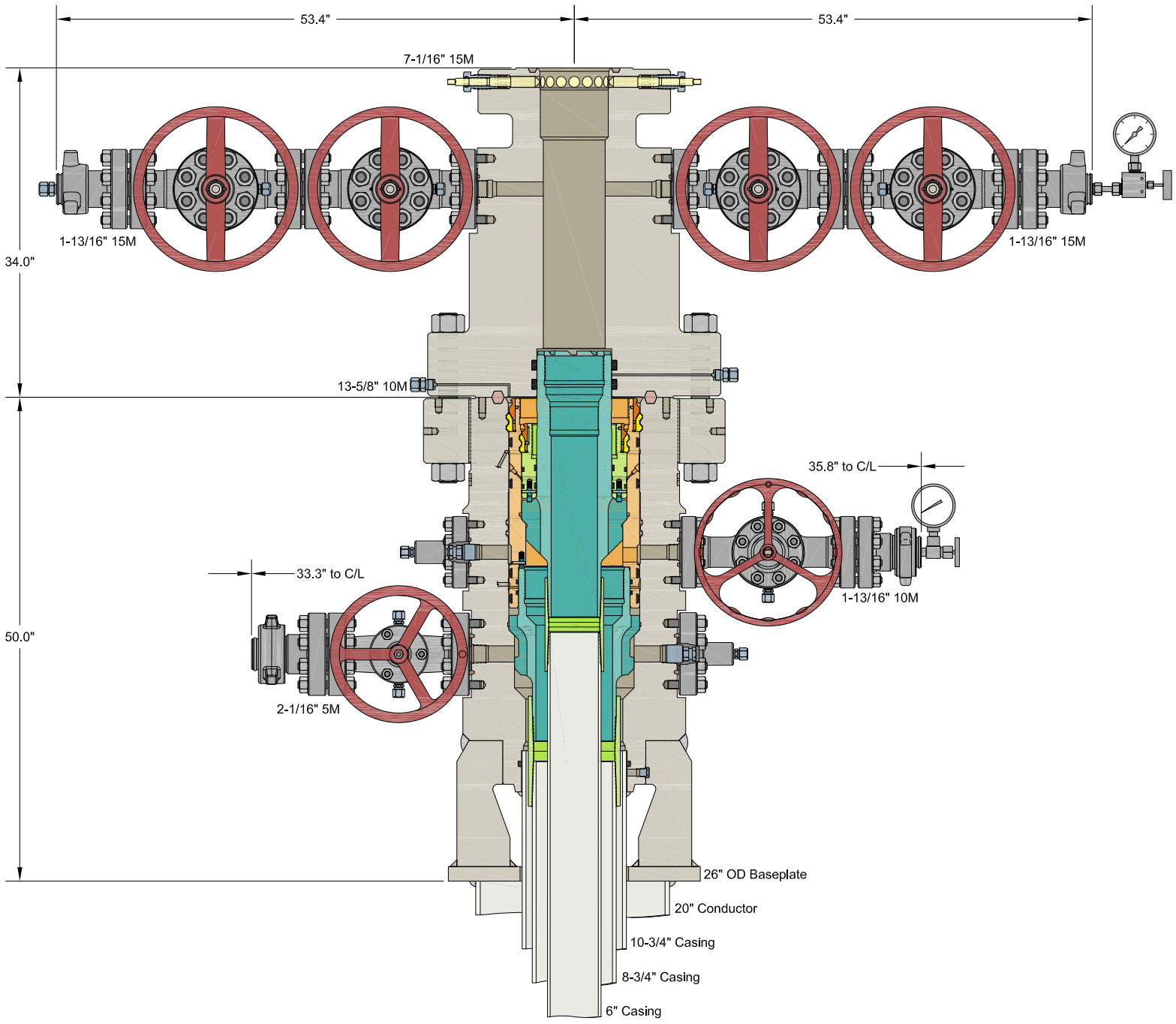
EOG requests the additional variance(s) in the attached document(s):

- EOG BLM Variance 2a - Inermediate Bradenhead Cement
- EOG BLM Variance 3a_b - BOP Break-test and Offline Intermediate Cement

Intermediate Bradenhead Cement:
EOG requests variance from minimum standards to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as 1000 sack bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. Top of cement will be verified by Echo-meter.

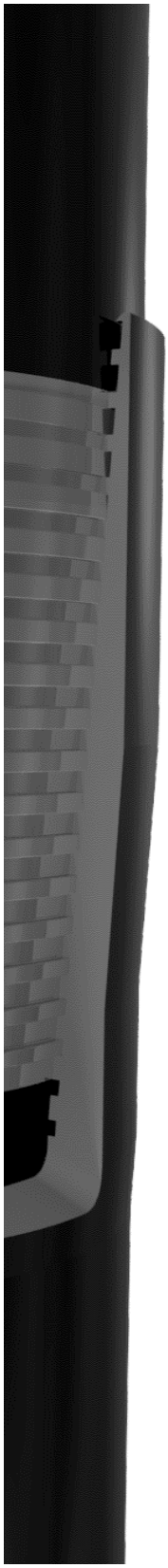
EOG will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

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



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC	EOG RESOURCES		
10-3/4" x 8-3/4" x 6" MBU-3T-SF-SOW Wellhead System With 8-5/8" & 6" Pin Bottom Mandrel Casing Hangers And 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head	DRAWN	DLE	14APR21
	APPRV		
	DRAWING NO.	SDT-3141-1	



Issued on: 10 Feb. 2021 by Wesley Ott

VAM® SPRINT-SF
Connection Data Sheet

OD	Weight (lb/ft)	Wall Th.	Grade	API Drift:	Connection
6 in.	Nominal: 24.50 Plain End: 23.95	0.400 in.	P110EC	5.075 in.	VAM® SPRINT-SF

PIPE PROPERTIES		
Nominal OD	6.000	in.
Nominal ID	5.200	in.
Nominal Cross Section Area	7.037	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

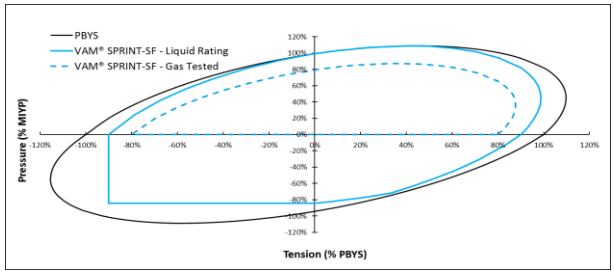
CONNECTION PROPERTIES		
Connection Type	Integral Semi-Flush	
Connection OD (nom):	6.277	in.
Connection ID (nom):	5.146	in.
Make-Up Loss	5.386	in.
Critical Cross Section	6.417	sqin.
Tension Efficiency	91.0	% of pipe
Compression Efficiency	91.0	% of pipe
Internal Pressure Efficiency	100	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	801	klb
Compression Resistance	801	klb
Internal Yield Pressure	14,580	psi
Collapse Resistance	12,500	psi
Max. Structural Bending	83	°/100ft
Max. Bending with ISO/API Sealability	30	°/100ft

* 87.5% RBW

TORQUE VALUES		
Min. Make-up torque	21,750	ft.lb
Opt. Make-up torque	24,250	ft.lb
Max. Make-up torque	26,750	ft.lb
Max. Torque with Sealability (MTS)	53,000	ft.lb

VAM® SPRINT-SF is a semi-flush connection innovatively designed for extreme shale applications. Its high tension rating and ultra high torque capacity make it ideal to run a fill string length as production casing in shale wells with extended horizontal sections and tight clearance requirements.



Do you need help on this product? - Remember no one knows VAM® like VAM®

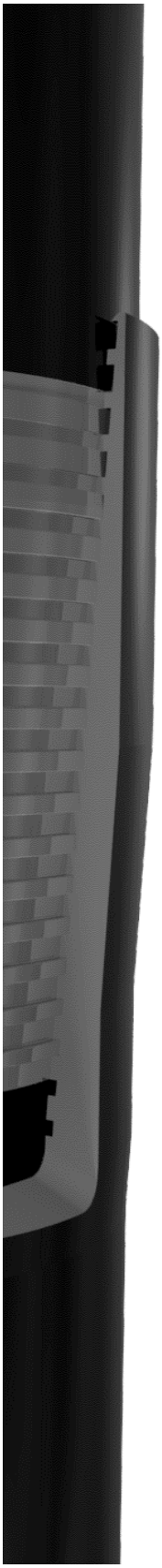
canada@vamfieldservice.com
usa@vamfieldservice.com
mexico@vamfieldservice.com
brazil@vamfieldservice.com

uk@vamfieldservice.com
dubai@vamfieldservice.com
nigeria@vamfieldservice.com
angola@vamfieldservice.com

china@vamfieldservice.com
baku@vamfieldservice.com
singapore@vamfieldservice.com
australia@vamfieldservice.com

Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

VAM® USA



Issued on: 09 Dec. 2020 by Wesley Ott

VAM® SPRINT-SF
Connection Data Sheet

OD	Weight (lb/ft)	Wall Th.	Grade	Spec. Drift:	Connection
8 3/4 in.	Nominal: 38.50 Plain End: 36.98	0.415 in.	P110EC	7.875 in.	VAM® SPRINT-SF

PIPE PROPERTIES		
Nominal OD	8.750	in.
Nominal ID	7.920	in.
Nominal Cross Section Area	10.867	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

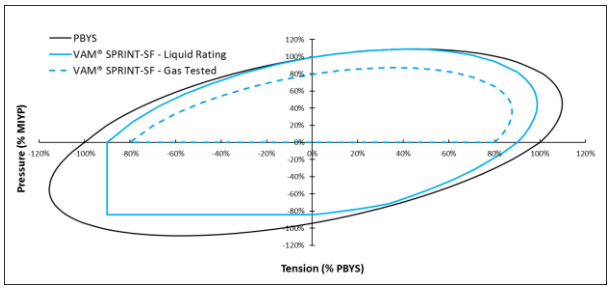
CONNECTION PROPERTIES		
Connection Type	Integral Semi-Flush	
Connection OD (nom):	9.009	in.
Connection ID (nom):	7.945	in.
Make-Up Loss	4.905	in.
Critical Cross Section	9.970	sqin.
Tension Efficiency	89.0	% of pipe
Compression Efficiency	80.0	% of pipe
Internal Pressure Efficiency	87	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	1,209	klb
Compression Resistance	1,086	klb
Internal Yield Pressure	9,030	psi
Collapse Resistance	5,210	psi
Max. Structural Bending	55	°/100ft
Max. Bending with ISO/API Sealability	30	°/100ft

* 87.5% RBW

TORQUE VALUES		
Min. Make-up torque	20,750	ft.lb
Opt. Make-up torque	23,250	ft.lb
Max. Make-up torque	25,750	ft.lb
Max. Torque with Sealability (MTS)	50,000	ft.lb

VAM® SPRINT-SF is a semi-flush connection innovatively designed for extreme shale applications. Its high tension rating and ultra high torque capacity make it ideal to run a fill string length as production casing in shale wells with extended horizontal sections and tight clearance requirements.



Do you need help on this product? - Remember no one knows VAM® like VAM®

canada@vamfieldservice.com
usa@vamfieldservice.com
mexico@vamfieldservice.com
brazil@vamfieldservice.com

uk@vamfieldservice.com
dubai@vamfieldservice.com
nigeria@vamfieldservice.com
angola@vamfieldservice.com

china@vamfieldservice.com
baku@vamfieldservice.com
singapore@vamfieldservice.com
australia@vamfieldservice.com

Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

VAM USA

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

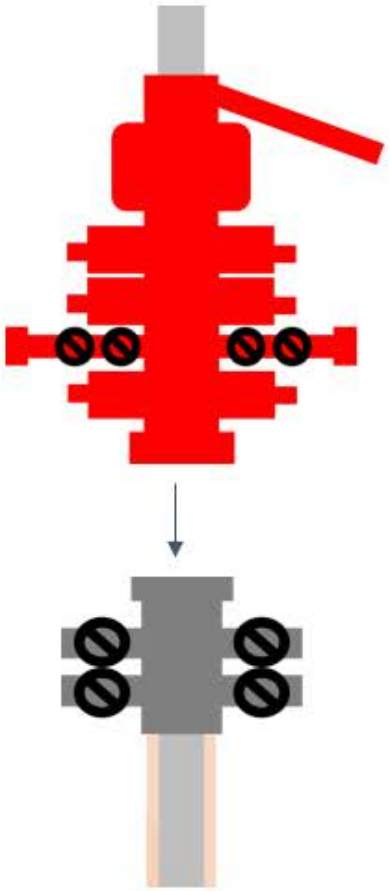
Mechanical Properties	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
Dimensions	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	10.750	11.750	--	11.750	in.
Wall Thickness	0.350	--	--	--	in.
Inside 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

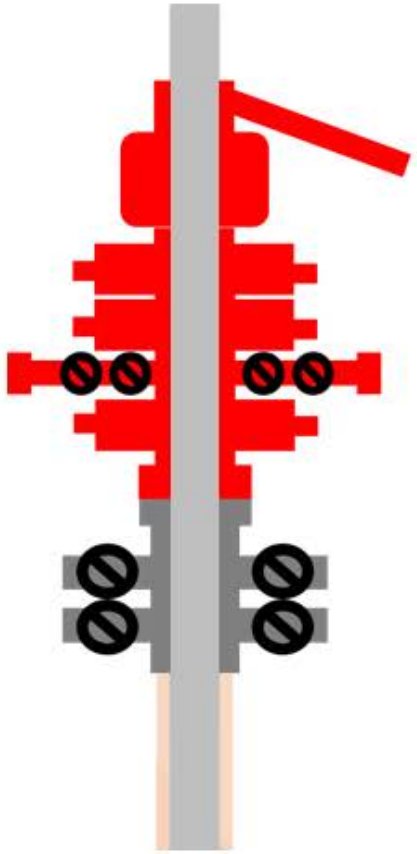
Break-test BOP & Offline Cementing:

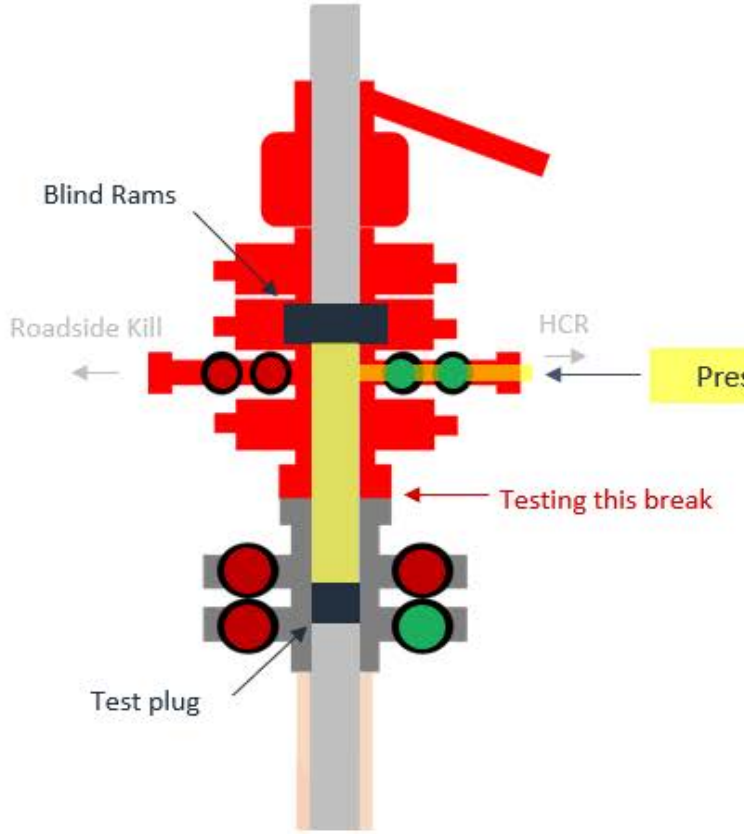
EOG Resources Inc. (EOG) respectfully requests a variance from the minimum standards for well control equipment testing of ECFR Title 43 Part 3172.6(b)(9)(iv) to allow a testing schedule of the blow out preventer (BOP) and blow out prevention equipment (BOPE) along with Batch Drilling & Offline cement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

- Full BOPE test at first installation on the pad.
- Full BOPE test every 21 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 à during each full BOPE test
    - Upper Pipe Rams à On trip ins where FIT required
    - Blind Rams à Every trip
    - Lower Pipe Rams à 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)



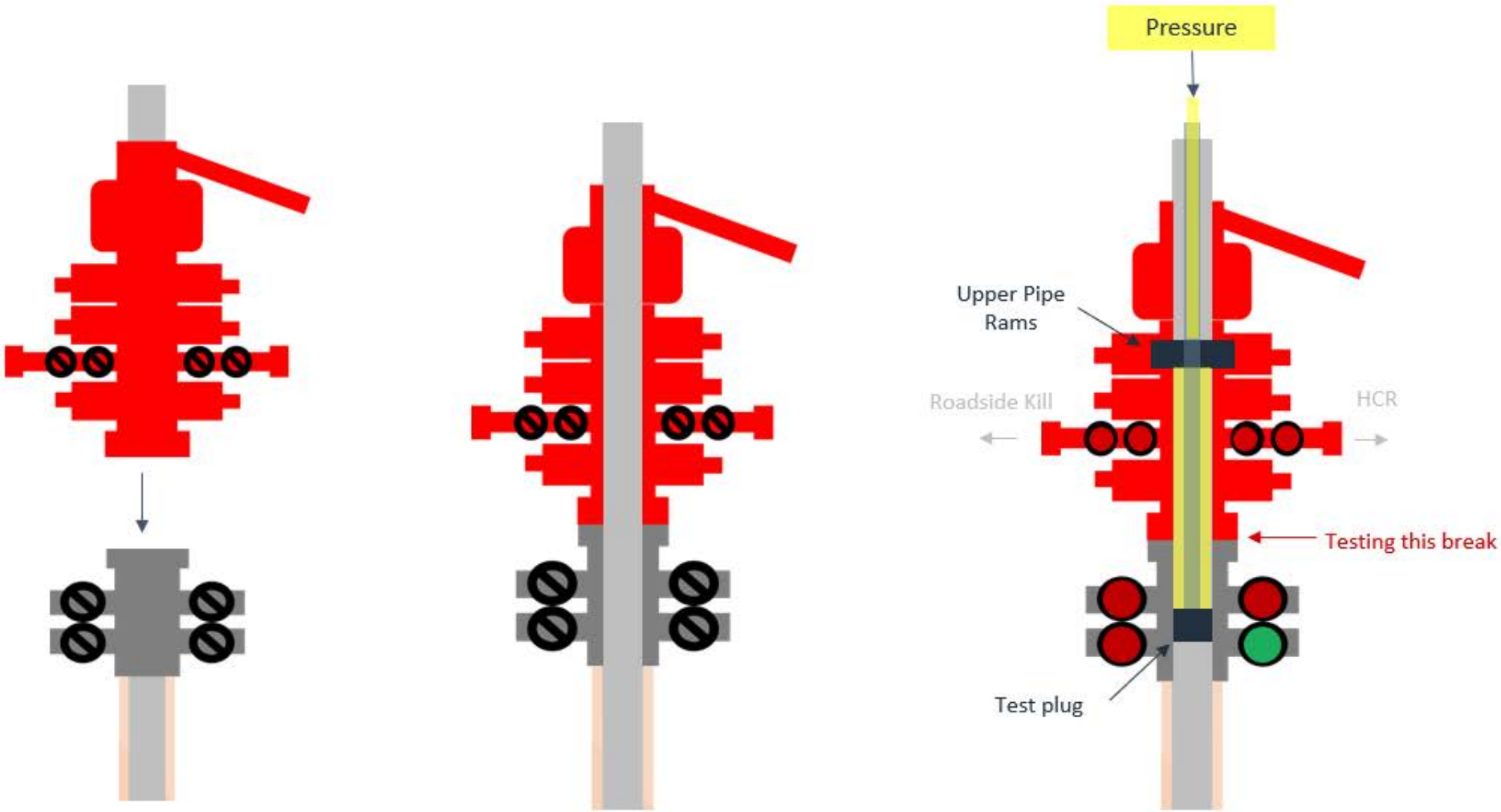




Steps

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

eog resources

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 nippled 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 nippled back up for any further remediation.

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.

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 nippled 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.

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.

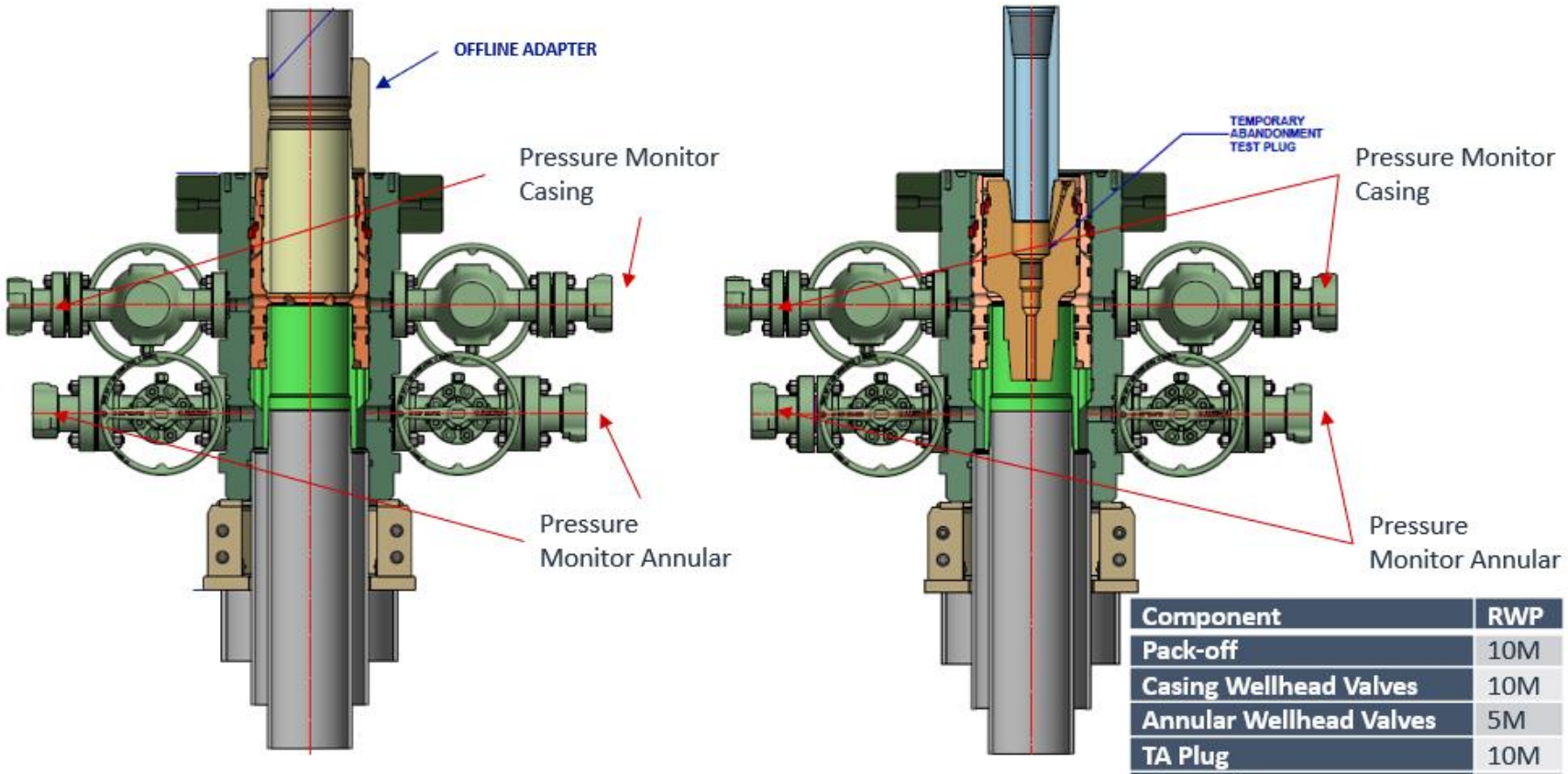
General Procedure While Cementing

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

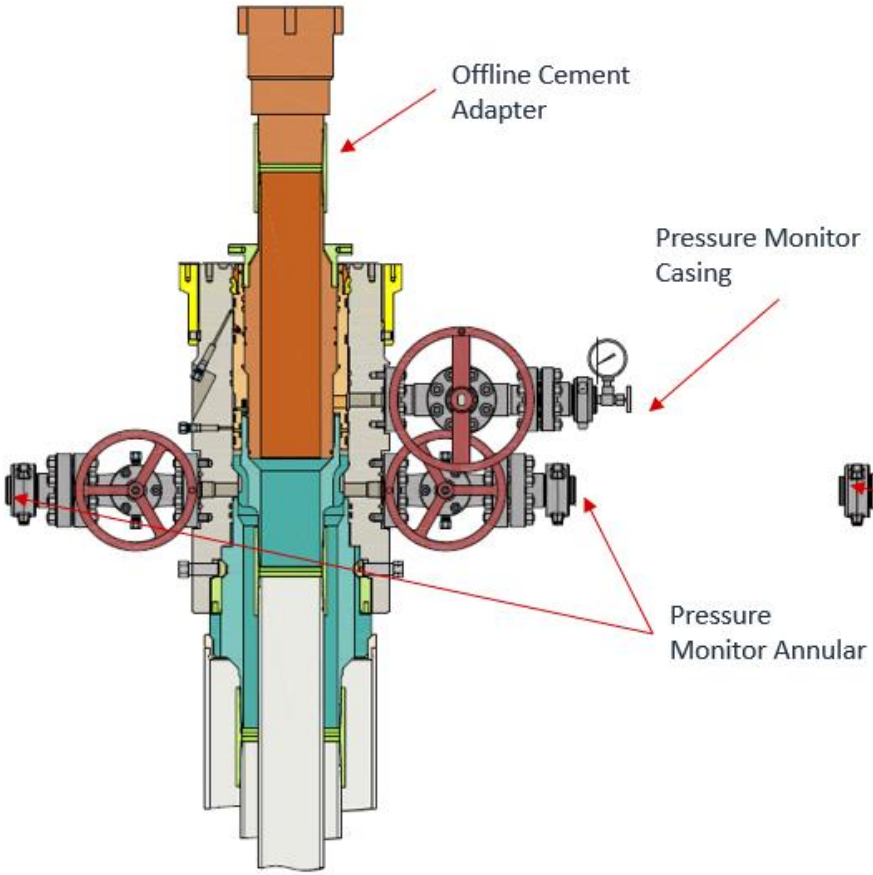
1. Sound alarm (alert crew).
2. Shut-in Well (close valves to rig pits and open valve to rig choke line. Rig choke will already be in the closed position).
3. Confirm shut-in.
4. Notify tool pusher/company representative.
5. Read and record the following:
    a. SICP and AP
    b. Pit gain
    c. Time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

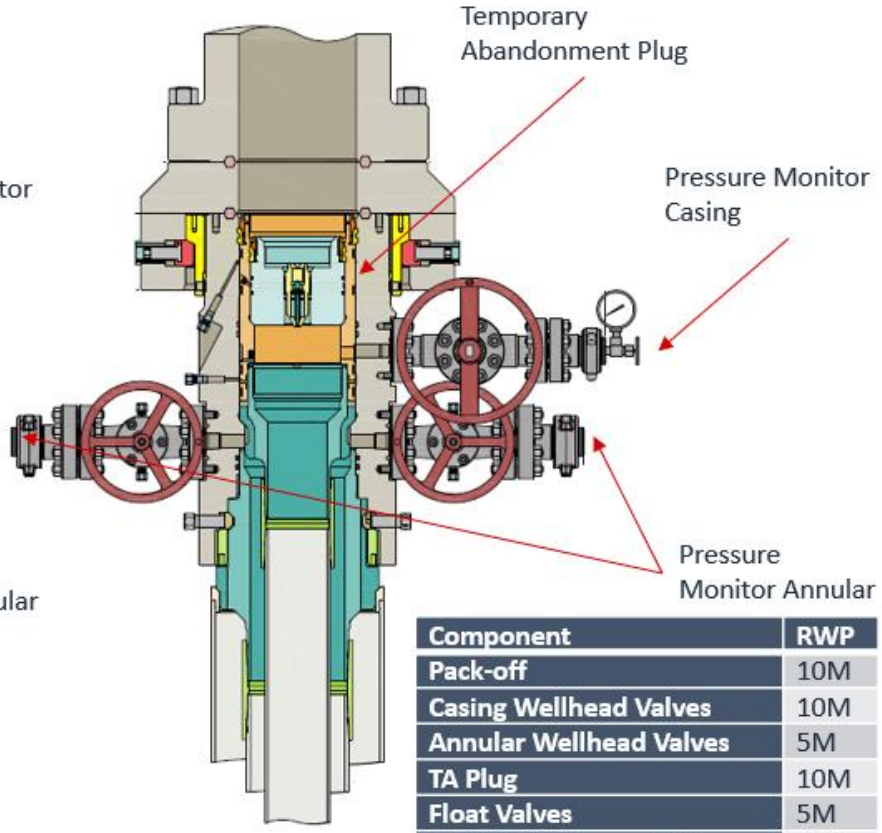
Figure 1: Cameron TA Plug and Offline Adapter Schematic



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

Figure 2: Cactus TA Plug and Offline Adapter Schematic





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

Figure 3: Back Yard Rig Up

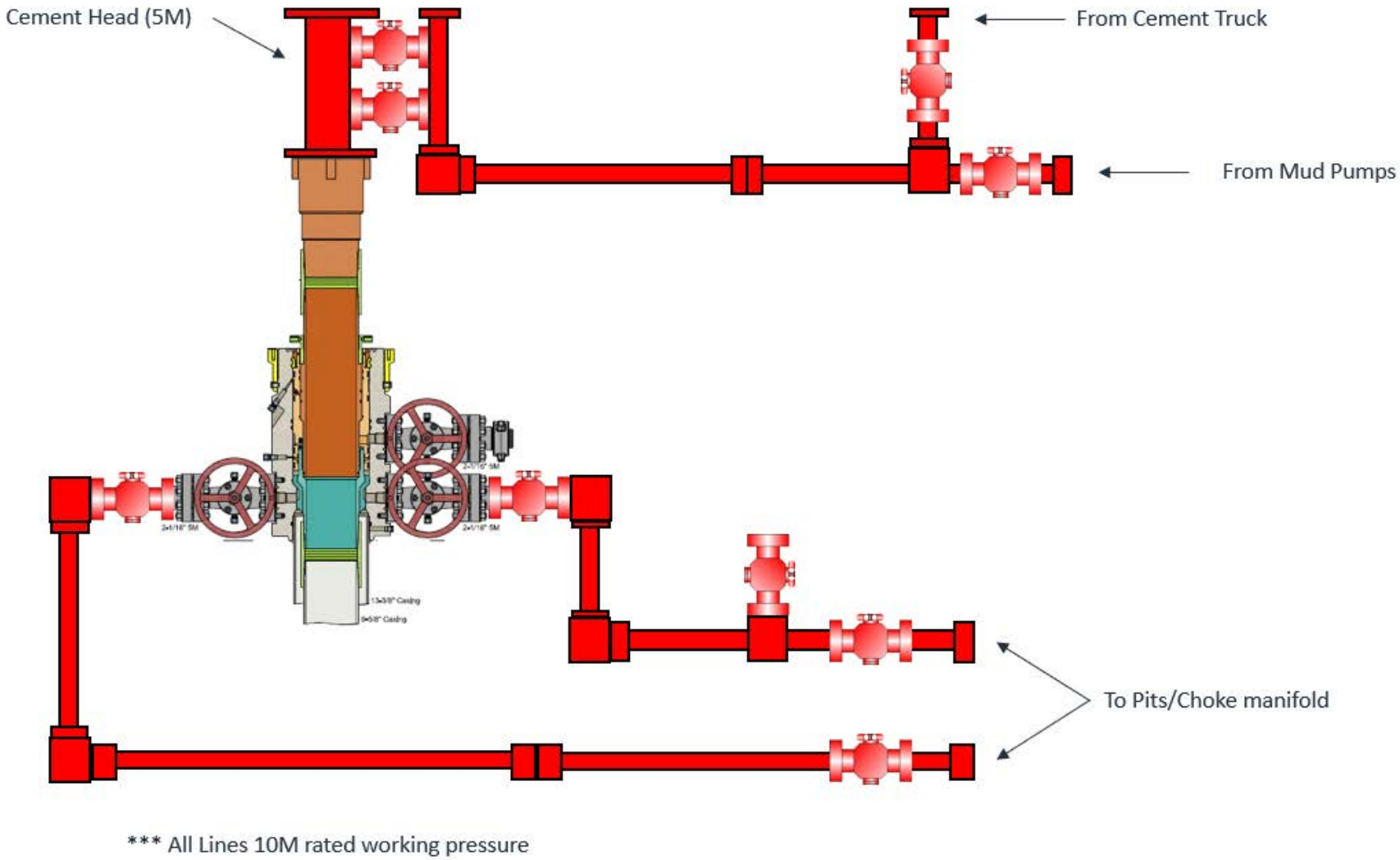
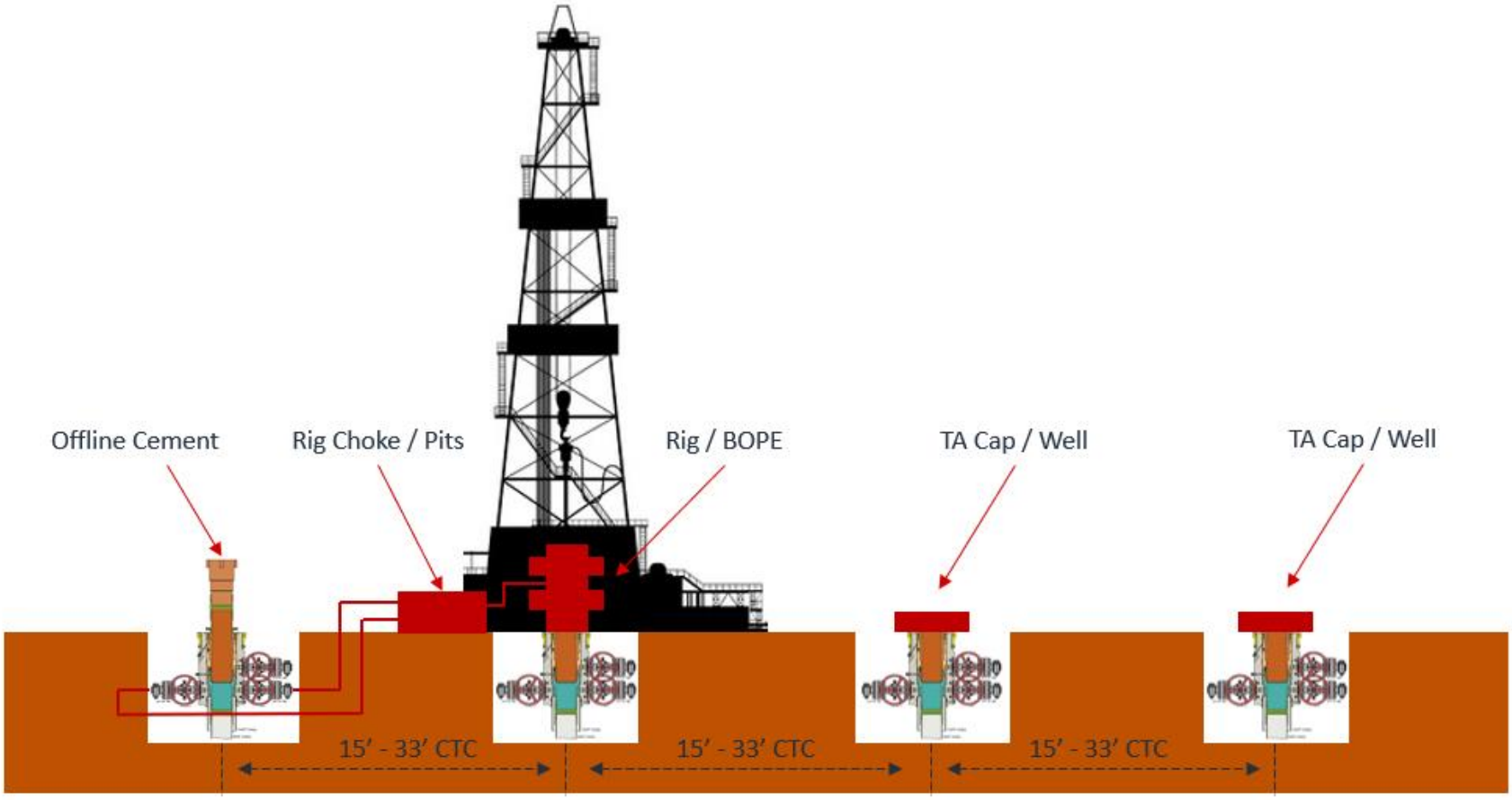


Figure 4: Rig Placement Diagram



eog resources

EOG Batch Casing

Pad Name: Banjo 32-5 Stark 32-5 Fed Com DEEP

SHL: Section 32, Township 25-S, Range 30-E, Eddy County, NM

Well Name	API #	Surface		Intermediate		Production	
		MD	TVD	MD	TVD	MD	TVD
Banjo 32 Fed Com #761H (FKA 594H)	30-015-48267	1,320	1,320	11,632	11,600	21,987	11,811
Banjo 32 Fed Com #762H (FKA 584H)	30-015-48265	1,320	1,320	11,934	11,600	22,226	11,811
Banjo 32 Fed Com #771H (FKA 504H)	30-015-48264	1,320	1,320	11,696	11,600	22,205	11,972
Banjo 5 Fed Com #751H (FKA 586H)	30-025-47901	1,320	1,320	11,617	11,600	21,761	11,599
Banjo 5 Fed Com #752H (FKA 595H)	30-015-47904	1,320	1,320	11,923	11,600	22,006	11,599
Stark 32 Fed Com #753H (FKA Banjo 32 Fed Com 593H)	30-015-48266	1,320	1,320	11,846	11,600	21,979	11,599

EOG Batch Casing

Variances

EOG requests the additional variance(s) in the attached document(s):

- EOG BLM Variance 2a - Intermediate Bradenhead Cement
- EOG BLM Variance 3a_b - BOP Break-test and Offline Intermediate Cement

eog resources

EOG Batch Casing

GEOLOGIC NAME OF SURFACE FORMATION:

Permian

ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	1,242'
Tamarisk Anhydrite	1,292'
Top of Salt	1,549'
Base of Salt	3,436'
Lamar	3,634'
Bell Canyon	3,661'
Cherry Canyon	577'
Brushy Canyon	5,826'
Bone Spring Lime	7,481'
Leonard (Avalon) Shale	7,547'
1st Bone Spring Sand	8,412'
2nd Bone Spring Shale	8,685'
2nd Bone Spring Sand	9,134'
3rd Bone Spring Carb	9,615'
3rd Bone Spring Sand	10,326'
Wolfcamp	10,738'

ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400’	Fresh Water
Bell Canyon	3,661'	Oil
Cherry Canyon	577'	Oil
Brushy Canyon	5,826'	Oil
Leonard (Avalon) Shale	7,547'	Oil
1st Bone Spring Sand	8,412'	Oil
2nd Bone Spring Shale	8,685'	Oil
2nd Bone Spring Sand	9,134'	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 surface casing at 1,320' and circulating cement back to surface.

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

CONDITIONS

Operator:	OGRID:
EOG RESOURCES INC 5509 Champions Drive Midland, TX 79706	7377
	Action Number: 390649
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Work was performed without OCD approval.	7/26/2025