

HOBBS OCD
FEB 28 2018

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

Lease Serial No.
NMNM0160973

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.
TIGERCAT FEDERAL COM 4H

9. API Well No.
30-025-44535

10. Field and Pool, or Exploratory
WILDCAT / BONE SPRING

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 8 / T26S / R33E / NMP

1a. Type of work: DRILL REENTER

1b. Type of Well: Oil Well Gas Well Other Single Zone Multiple Zone

2. Name of Operator
COG OPERATING LLC (229137)

3a. Address
600 West Illinois Ave Midland TX 79701

3b. Phone No. (include area code)
(432)683-7443

4. Location of Well (Report location clearly and in accordance with any State requirements.)*

At surface NENW / 360 FNL / 1620 FWL / LAT 32.064306 / LONG -103.597621

At proposed prod. zone SWSW / 200 FSL / 990 FWL / LAT 32.051338 / LONG -103.599643

14. Distance in miles and direction from nearest town or post office*
22 miles

12. County or Parish
LEA

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
200 feet

16. No. of acres in lease
1238.72

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, 1290 feet applied for, on this lease, ft.

19. Proposed Depth
10281 feet / 14768 feet

20. BLM/BIA Bond No. on file
FED: NMB000215

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3324 feet

22. Approximate date work will start*
11/01/2017

23. Estimated duration
30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature (Electronic Submission) Name (Printed/Typed) Date
Mayte Reyes / Ph: (575)748-6945 09/12/2017

Title
Regulatory Analyst

Approved by (Signature) (Electronic Submission) Name (Printed/Typed) Date
Cody Layton / Ph: (575)234-5959 02/26/2018

Title
Supervisor Multiple Resources
Office
CARLSBAD

Application approval 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.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

*(Instructions on page 2)

GCP REQUESTED 02/28/18
GCP RECEIVED 02/28/18

APPROVED WITH CONDITIONS
Approval Date: 02/26/2018

KB
02/10/18

Double sided

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and 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., 25 U.S.C. 396; 43 CFR 31.60

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Operator Remarks

Location of Well

- 1. SHL: NENW / 360 FNL / 1620 FWL / TWSP: 26S / RANGE: 33E / SECTION: 8 / LAT: 32.064306 / LONG: -103.597621 (TVD: 0 feet, MD: 0 feet)
- PPP: NWNW / 330 FNL / 990 FWL / TWSP: 26S / RANGE: 33E / SECTION: 8 / LAT: 32.064389 / LONG: -103.599653 (TVD: 9741 feet, MD: 9773 feet)
- BHL: SWSW / 200 FSL / 990 FWL / TWSP: 26S / RANGE: 33E / SECTION: 8 / LAT: 32.051338 / LONG: -103.599643 (TVD: 10281 feet, MD: 14768 feet)

BLM Point of Contact

Name: Sipra Dahal
Title: Legal Instruments Examiner
Phone: 5752345983
Email: sdahal@blm.gov

CONFIDENTIAL

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

CONFIDENTIAL



APD ID: 10400021892

Submission Date: 09/12/2017

Highlighted data reflects the most recent changes

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400021892

Tie to previous NOS?

Submission Date: 09/12/2017

BLM Office: CARLSBAD

User: Mayte Reyes

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM0160973

Lease Acres: 1238.72

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: COG OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: COG OPERATING LLC

Operator Address: 600 West Illinois Ave

Zip: 79701

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)683-7443

Operator Internet Address: RODOM@CONCHO.COM

Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WILDCAT

Pool Name: BONE SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,OIL

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Describe other minerals:

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: SINGLE WELL

Multiple Well Pad Name:

Number:

Well Class: HORIZONTAL

Number of Legs:

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: EXPLORATORY (WILDCAT)

Describe sub-type:

Distance to town: 22 Miles

Distance to nearest well: 1290 FT

Distance to lease line: 200 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: COG_Tigercat_4H_C102_20170912160223.pdf

Well work start Date: 11/01/2017

Duration: 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|------------------|---------|--------------|----------|--------------|------|-------|---------|--------------------------|---------------|---------------------|--------|-------------------|-------------------|------------|--------------|---------------|----------|----------|
| SHL Leg #1 | 360 | FNL | 162 0 | FWL | 26S | 33E | 8 | Aliquot NENW 6 | 32.06430 6 | - 103.5976 21 | LEA | NEW MEXI CO | NEW MEXI CO | F | FEE | 332 4 | 0 | 0 |
| KOP Leg #1 | 360 | FNL | 162 0 | FWL | 26S | 33E | 8 | Aliquot NENW 6 | 32.06430 6 | - 103.5976 21 | LEA | NEW MEXI CO | NEW MEXI CO | F | FEE | 332 4 | 0 | 0 |
| PPP Leg #1 | 330 | FNL | 990 | FWL | 26S | 33E | 8 | Aliquot NWN W 9 | 32.06438 9 | - 103.5996 53 | LEA | NEW MEXI CO | NEW MEXI CO | F | FEE | - 641 7 | 977 3 | 974 1 |



APD ID: 10400021892

Submission Date: 09/12/2017

Highlighted data reflects the most recent changes

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|--------------|--------------------|-----------|---------------------|----------------|-------------|--------------------|---------------------|
| 1 | QUATERNARY | 3324 | 0 | 0 | | NONE | No |
| 2 | RUSTLER | 2454 | 870 | 870 | | NONE | No |
| 3 | TOP SALT | 2124 | 1200 | 1200 | SALT | NONE | No |
| 4 | BASE OF SALT | -1376 | 4700 | 4700 | ANHYDRITE | NONE | No |
| 5 | LAMAR | -1545 | 4869 | 4869 | LIMESTONE | OTHER : Salt Water | No |
| 6 | BELL CANYON | -1565 | 4889 | 4889 | | OTHER : Salt Water | No |
| 7 | CHERRY CANYON | -2627 | 5951 | 5951 | | NATURAL GAS,OIL | No |
| 8 | BRUSHY CANYON | -4176 | 7500 | 7500 | | NATURAL GAS,OIL | No |
| 9 | BONE SPRING LIME | -5687 | 9011 | 9011 | SANDSTONE | NATURAL GAS,OIL | No |
| 10 | UPPER AVALON SHALE | -5862 | 9186 | 9186 | | NATURAL GAS,OIL | No |
| 11 | -- | -6087 | 9411 | 9411 | | NATURAL GAS,OIL | No |
| 12 | BONE SPRING 1ST | -6647 | 9971 | 9971 | | NATURAL GAS,OIL | Yes |

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 4895

Equipment: Annular. Accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to the choke manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

COG_Tigercat_4H_2M_Choke_20170912162412.pdf

BOP Diagram Attachment:

COG_Tigercat_4H_2M_BOP_20170912162427.pdf

COG_Tigercat_4H_Flex_Hose_20170912162440.pdf

Pressure Rating (PSI): 3M

Rating Depth: 10281

Equipment: Annular, Blind Ram, Pipe Ram. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to the choke manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

COG_Tigercat_4H_3M_Choke_20170912162505.pdf

BOP Diagram Attachment:

COG_Tigercat_4H_3M_BOP_20170912162520.pdf

COG_Tigercat_4H_Flex_Hose_20170912162530.pdf

Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|--------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|-----------------------------|-------|--------|------------|-------------|----------|---------------|----------|--------------|---------|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 895 | 0 | 895 | -6999 | -7974 | 895 | J-55 | 54.5 | STC | 2.76 | 1.26 | DRY | 10.54 | DRY | 10.54 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | Y | 0 | 4895 | 0 | 4895 | -6999 | -18749 | 4895 | L-80 | 40 | LTC | 1.2 | 1.46 | DRY | 5.73 | DRY | 5.73 |
| 3 | PRODUCTION | 8.75 | 5.5 | NEW | API | N | 0 | 14768 | 0 | 14768 | -6999 | -24211 | 14768 | P-110 | 17 | LTC | 1.5 | 2.7 | DRY | 2.55 | DRY | 2.55 |

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Tigercat_4H_Casing_Plan_20170912162715.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Tigercat_4H_Casing_Plan_20170912162754.pdf

Casing Design Assumptions and Worksheet(s):

COG_Tigercat_4H_Casing_Plan_20170912162816.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Tigercat_4H_Casing_Plan_20170912162851.pdf

Section 4 - Cement

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|--------------|-----------|------------------|--------|-----------|--------------|-------|---------|-------|---------|-----------------------|-------------------|
| SURFACE | Lead | | 0 | 895 | 350 | 1.75 | 13.5 | 612 | 50 | Class C | 4% Gel + 1% CaCl2 |
| SURFACE | Tail | | 0 | 895 | 250 | 1.34 | 14.8 | 335 | 50 | Class C | 2% CaCl2 |
| INTERMEDIATE | Lead | | 0 | 4895 | 940 | 2 | 12.7 | 1880 | 50 | Lead: 35:65:6 C Blend | As needed |
| INTERMEDIATE | Tail | | 0 | 4895 | 250 | 1.34 | 14.8 | 335 | 50 | Tail: Class C | 2% CaCl |
| PRODUCTION | Lead | | 0 | 14768 | 750 | 2.5 | 11.9 | 1875 | 25 | 50:50:10 H Blend | As needed |
| PRODUCTION | Tail | | 0 | 14768 | 1270 | 1.24 | 14.4 | 1575 | 25 | 50:50:2 Class H Blend | As needed |

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|-----------|--------------|-------------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|----------------------------|
| 895 | 4895 | OTHER : Saturated Brine | 10 | 10.1 | | | | | | | Saturated Brine |
| 0 | 895 | OTHER : FW Gel | 8.6 | 8.8 | | | | | | | FW Gel |
| 4895 | 14768 | OTHER : Cut Brine | 8.6 | 9.3 | | | | | | | Cut Brine |

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Section 6 - Test, Logging, Coring

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

None planned

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

CNL,GR

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4975

Anticipated Surface Pressure: 2713.18

Anticipated Bottom Hole Temperature(F): 160

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG_Tigercat_4H_H2S_Schem_20170912163249.pdf

COG_Tigercat_4H_H2S_SUP_20170912163257.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_Tigercat_4H_AC_Report_20170912163325.pdf

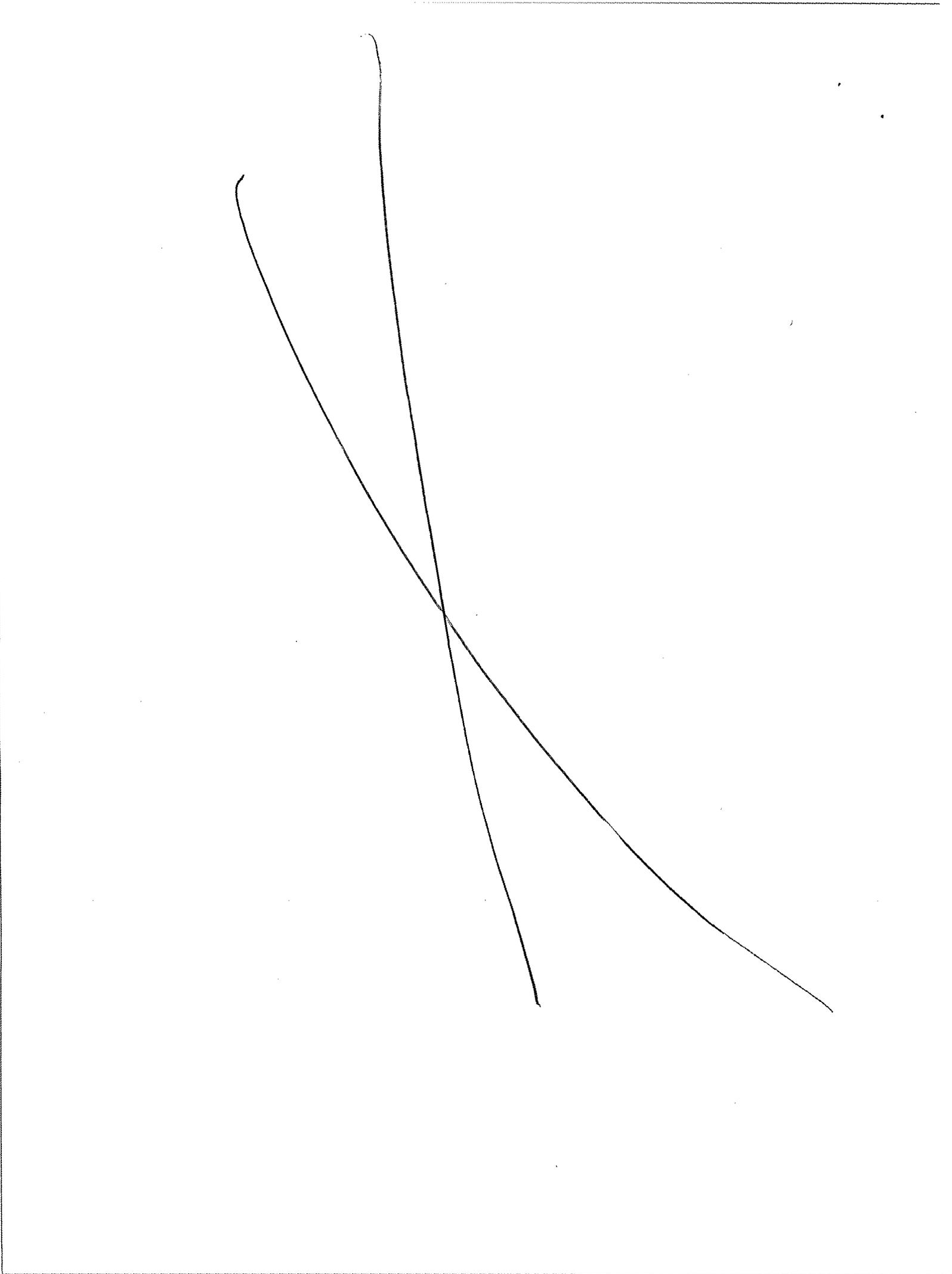
COG_Tigercat_4H_Direct_Plan_20170912163333.pdf

Other proposed operations facets description:

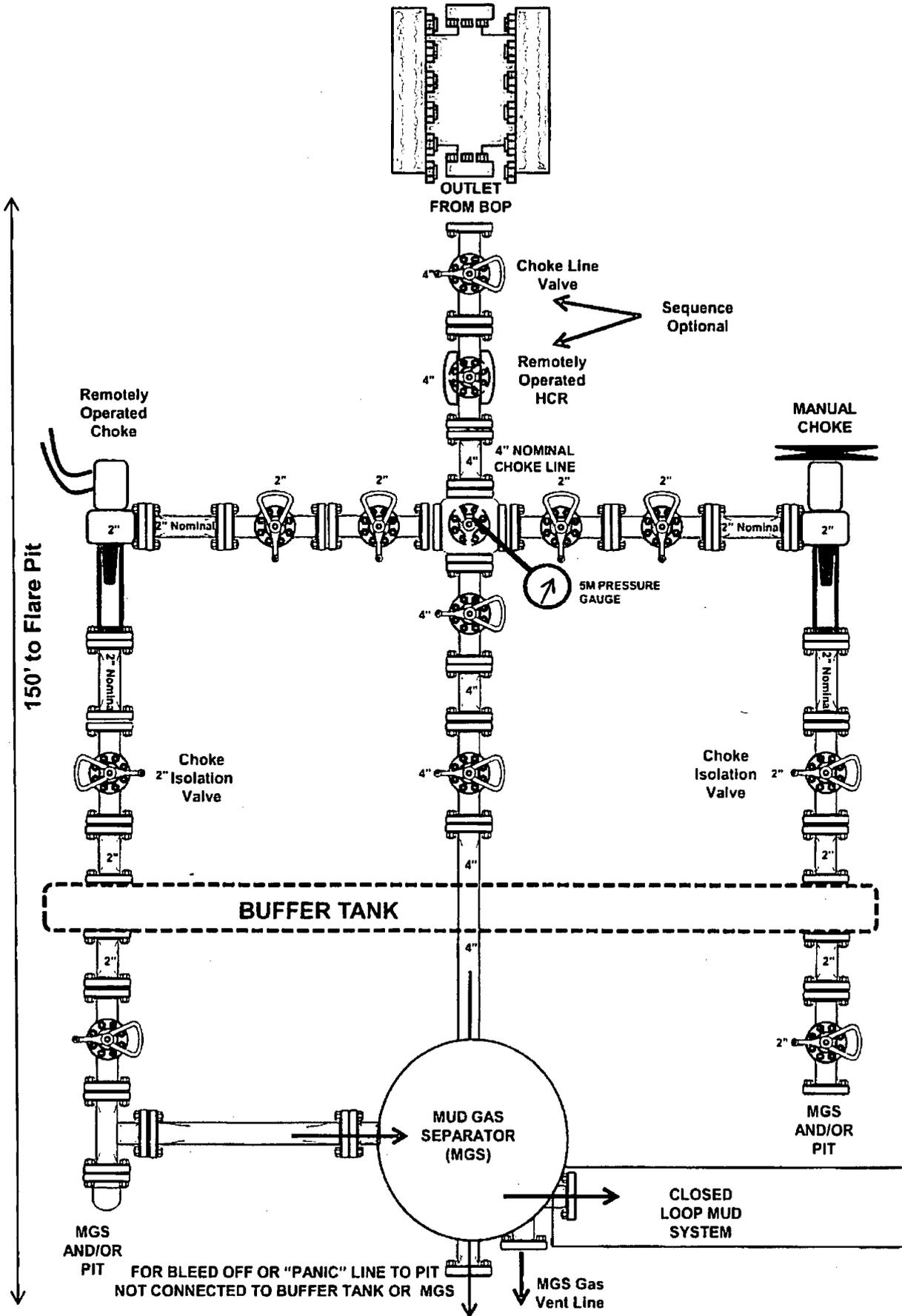
Other proposed operations facets attachment:

COG_Tigercat_4H_Drill_Plan_20170912163350.pdf

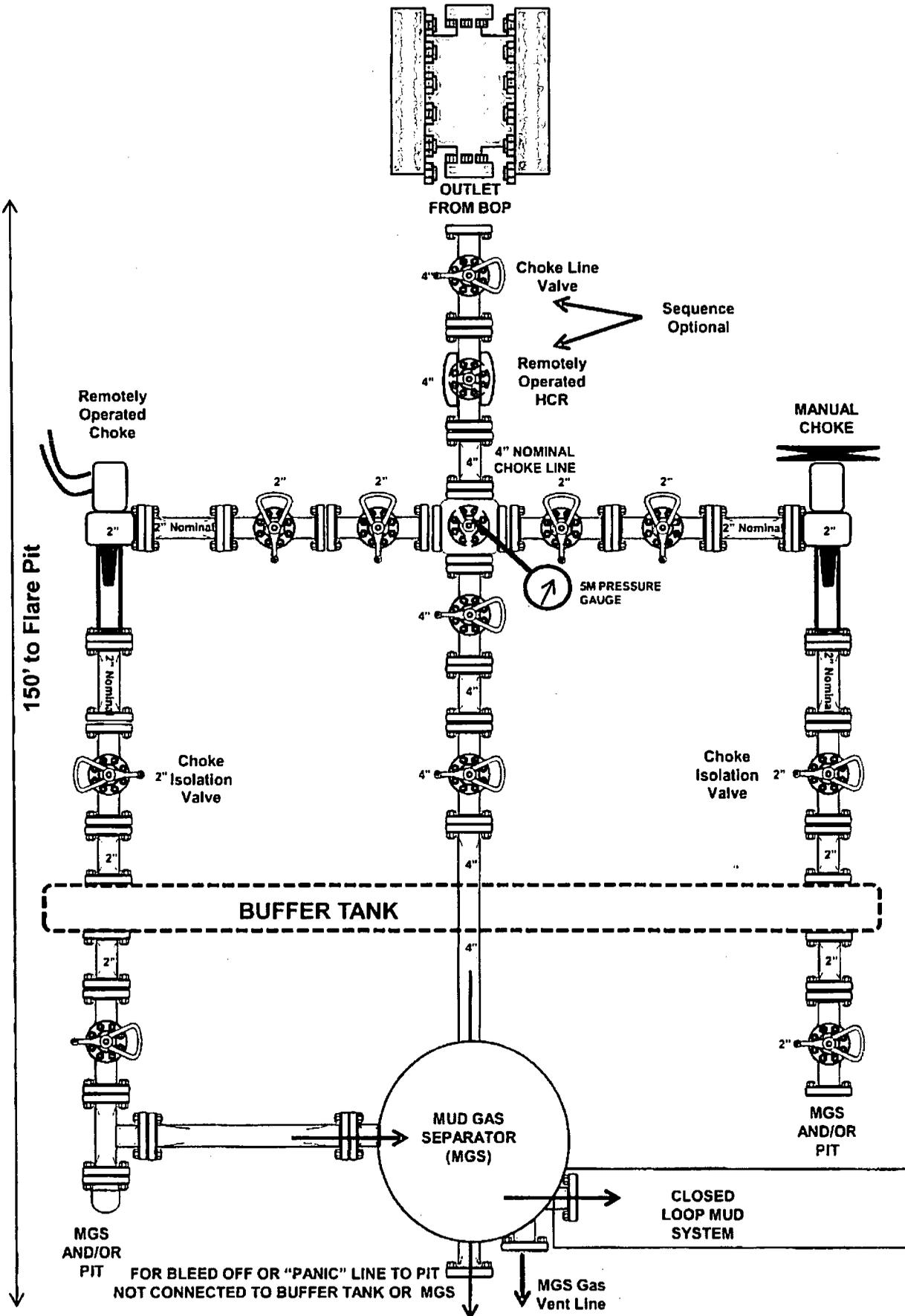
Other Variance attachment:



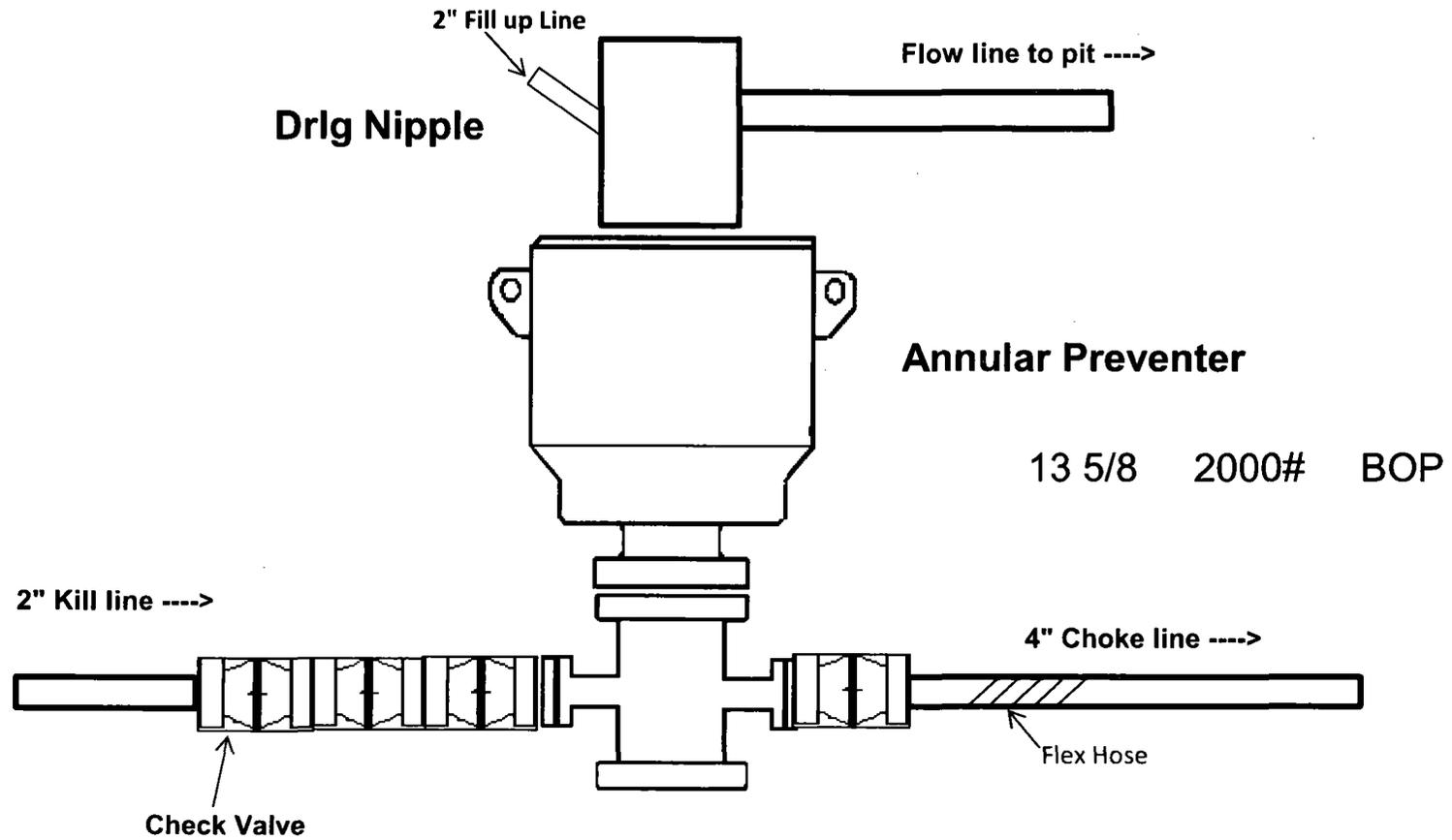
2M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



3M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



2,000 psi BOP Schematic





Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

| General Information | | Hose Specifications | |
|-----------------------------------|-------------|--|-------------------|
| Customer | Odessa | Hose Assembly Type | Choke & Kill |
| MWH Sales Representative | Charles Ash | Certification | API 7K/FSL LEVEL2 |
| Date Assembled | 11/11/2016 | Hose Grade | Mud |
| Location Assembled | OKC | Hose Working Pressure | 100000 |
| Sales Order # | 308747 | Hose Lot # and Date Code | 12354-09/15 |
| Customer Purchase Order # | 345144 | Hose I.D. (Inches) | 3.5" |
| Assembly Serial # (Pick Ticket #) | 371501 | Hose O.D. (Inches) | 5.87" |
| Hose Assembly Length | 35 Feet | Armor (yes/no) | No |
| Fittings | | | |
| End A | | End B | |
| Stem (Part and Revision #) | R3.5X64WB | Stem (Part and Revision #) | R3.5X64WB |
| Stem (Heat #) | A112669 | Stem (Heat #) | A112669 |
| Ferrule (Part and Revision #) | RF3.5X5750 | Ferrule (Part and Revision #) | RF3.5X5750 |
| Ferrule (Heat #) | 41632 | Ferrule (Heat #) | 41632 |
| Connection (Part #) | 4-1/16-10K | Connection (Part #) | 4-1/16-10K |
| Connection (Heat #) | | Connection (Heat #) | |
| Nut (Part #) | | Nut (Part #) | |
| Nut (Heat #) | | Nut (Heat #) | |
| Dies Used | 5.80" | Dies Used | 5.80" |
| Hydrostatic Test Requirements | | | |
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. | |
| Test Pressure Hold Time (minutes) | 24 1/2 | | |
| Date Tested | Tested By | Approved By | |
| 11/11/2016 | Peter Deir | Charles Ash | |



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

| | |
|-----------------------------|-----------------------------------|
| Customer: Odessa | Customer P.O.# 345144 |
| Sales Order # 308747 | Date Assembled: 11/11/2016 |

Specifications

| | |
|---|--|
| Hose Assembly Type: Choke & Kill | Rig # N/A |
| Assembly Serial # 371501 | Hose Lot # and Date Code 12354-09/15 |
| Hose Working Pressure (psi) 100000 | Test Pressure (psi) 15000 |
| Hose Assembly Description: | CK56-SS-10K-6410K-6410K-35'00" FT-W/LIFTERS |

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

| Approved By | Date |
|--------------------|-------------|
| <i>Charles Ash</i> | 11/11/2016 |



Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Graph

November 11, 2016

Customer: Odessa

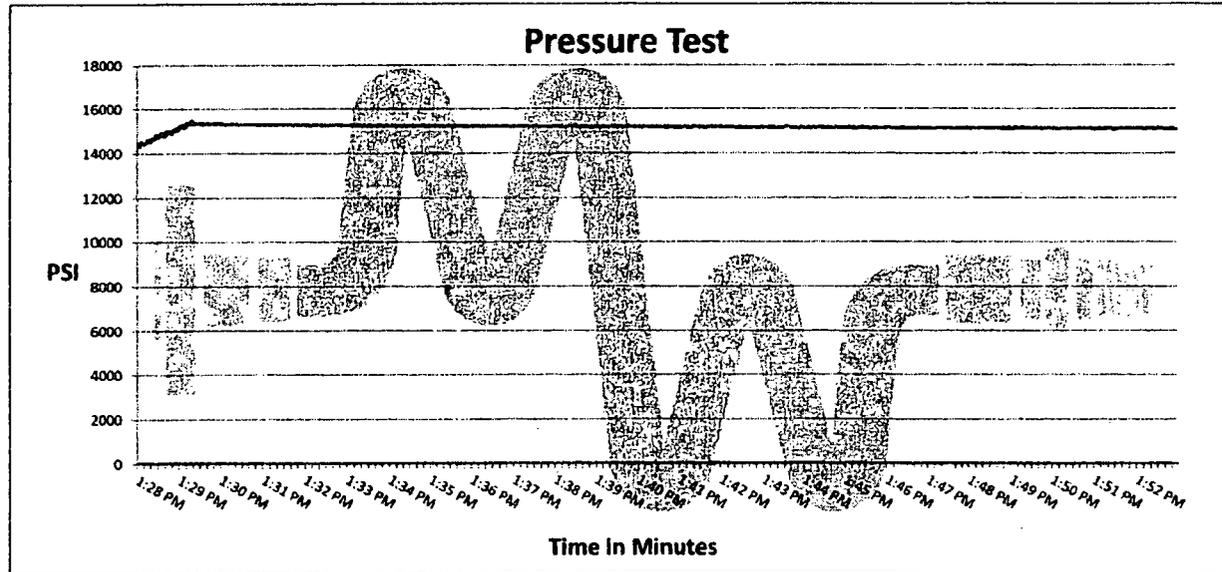
Pick Ticket #: 371501

Hose Specifications

| | |
|-------------------------|------------------------------------|
| Hose Type | Length |
| Ck | 35' |
| I.D. | O.D. |
| 3.5" | 5.30" |
| Working Pressure | Burst Pressure |
| 10000 PSI | Standard Safety Multiplier Applies |

Verification

| | |
|------------------------|-------------------------------|
| Type of Fitting | Coupling Method |
| 4 1/16 10K | Swage |
| Die Size | Final O.D. |
| 5.80" | 5.83" |
| Hose Serial # | Hose Assembly Serial # |
| 12354 | 371501 |



Test Pressure
15000 PSI

Time Held at Test Pressure
24 2/4 Minutes

Actual Burst Pressure

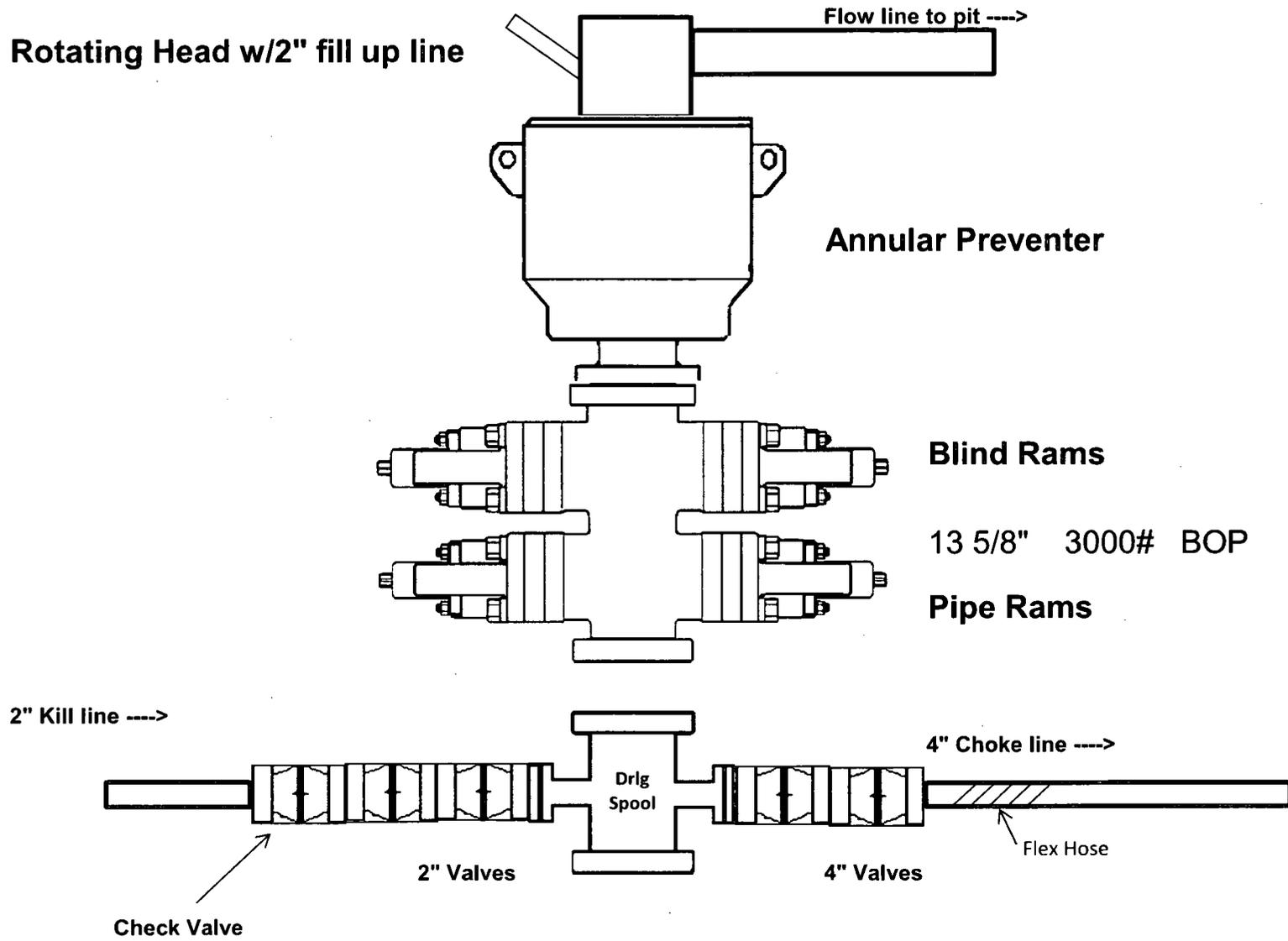
Peak Pressure
15512 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Richard Davis

Approved By: Charles Ash

3,000 psi BOP Schematic





Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

| General Information | | Hose Specifications | |
|--------------------------------------|-------------|--|-------------------|
| Customer | Odessa | Hose Assembly Type | Choke & Kill |
| MWH Sales Representative | Charles Ash | Certification | API 7K/FSL LEVEL2 |
| Date Assembled | 11/11/2016 | Hose Grade | Mud |
| Location Assembled | OKC | Hose Working Pressure | 100000 |
| Sales Order # | 308747 | Hose Lot # and Date Code | 12354-09/15 |
| Customer Purchase Order # | 345144 | Hose I.D. (Inches) | 3.5" |
| Assembly Serial # (Pick Ticket #) | 371501 | Hose O.D. (Inches) | 5.87" |
| Hose Assembly Length | 35 Feet | Armor (yes/no) | No |
| Fittings | | | |
| End A | | End B | |
| Stem (Part and Revision #) | R3.5X64WB | Stem (Part and Revision #) | R3.5X64WB |
| Stem (Heat #) | A112669 | Stem (Heat #) | A112669 |
| Ferrule (Part and Revision #) | RF3.5X5750 | Ferrule (Part and Revision #) | RF3.5X5750 |
| Ferrule (Heat #) | 41632 | Ferrule (Heat #) | 41632 |
| Connection: Flange Hammer Union Part | 4-1/16-10K | Connection: (Part #) | 4-1/16-10K |
| Connection: (Heat #) | | Connection: (Heat #) | |
| Nut (Part #) | | Nut (Part #) | |
| Nut (Heat #) | | Nut (Heat #) | |
| Dies Used | 5.80" | Dies Used | 5.80" |
| Hydrostatic Test Requirements | | | |
| Test Pressure (psi) | 15,000 | Hose assembly was tested with ambient water temperature. | |
| Test Pressure Hold Time (minutes) | 24 1/2 | | |
| Date Tested | | Tested By | |
| 11/11/2016 | | Approved By <i>Charles Ash</i> | |



Midwest Hose
& Specialty, Inc.

Certificate of Conformity

| | |
|-----------------------------|-----------------------------------|
| Customer: Odessa | Customer P.O.# 345144 |
| Sales Order # 308747 | Date Assembled: 11/11/2016 |

Specifications

| | |
|---|--|
| Hose Assembly Type: Choke & Kill | Rig # N/A |
| Assembly Serial # 371501 | Hose Lot # and Date Code 12354-09/15 |
| Hose Working Pressure (psi) 100000 | Test Pressure (psi) 15000 |
| Hose Assembly Description: | CK56-SS-10K-6410K-6410K-35.00' FT-W/LIFTERS |

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

| | |
|--------------------|-------------|
| Approved By | Date |
| <i>Charles Ash</i> | 11/11/2016 |



Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

November 11, 2016

Customer: Odessa

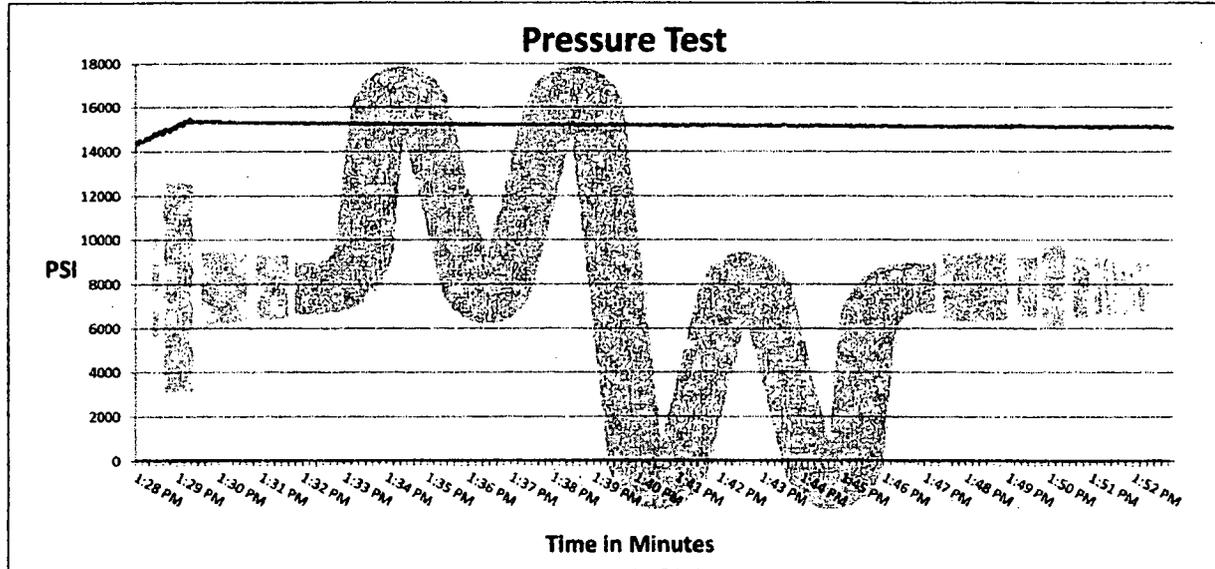
Pick Ticket #: 371501

Hose Specifications

| | |
|-------------------------|------------------------------------|
| Hose Type | Length |
| Ck | 35' |
| I.D. | O.D. |
| 3.5" | 5.30" |
| Working Pressure | Hurst Pressure |
| 10000 PSI | Standard Safety Multiplier Applies |

Verification

| | |
|------------------------|-------------------------------|
| Type of Fitting | Coupling Method |
| 4 1/16 10K | Swage |
| Die Size | Final O.D. |
| 5.80" | 5.83" |
| Hose Serial # | Hose Assembly Serial # |
| 12354 | 371501 |



Test Pressure
15000 PSI

Time Held at Test Pressure
24 1/4 Minutes

Actual Burst Pressure

Peak Pressure
15512 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Richard Davis

Approved By: Charles Ash

Casing Program

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Body |
|---------------------------|-----------------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 13.5" | 0 | 975 | 10.75" | 45.5 | N80 | BTC | 5.54 | 1.20 | 23.44 |
| 9.875" | 0 | 11750 | 7.625" | 29.7 | P110 | BTC | 1.29 | 1.11 | 3.11 |
| 6.75" | 0 | 11250 | 5.5" | 23 | P110 | BTC | 1.95 | 2.04 | 3.25 |
| 6.75" | 11250 | 17,212 | 5" | 18 | P110 | BTC | 1.95 | 2.04 | 3.25 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 500' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

Casing Program

| Hole Size | Casing | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|--------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 875 | 13.375" | 54.5 | J55 | STC | 2.82 | 1.27 | 10.78 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4875 | 9.625" | 40 | L80 | LTC | 1.21 | 1.45 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.69 | 2.54 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Program

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|-----------------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 895 | 13.375" | 54.5 | J55 | STC | 2.76 | 1.26 | 10.54 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4895 | 9.625" | 40 | L80 | LTC | 1.20 | 1.46 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.70 | 2.55 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface. All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Program

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|-----------------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 895 | 13.375" | 54.5 | J55 | STC | 2.76 | 1.26 | 10.54 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4895 | 9.625" | 40 | L80 | LTC | 1.20 | 1.46 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.70 | 2.55 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Program

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|-----------------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 895 | 13.375" | 54.5 | J55 | STC | 2.76 | 1.26 | 10.54 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4895 | 9.625" | 40 | L80 | LTC | 1.20 | 1.46 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.70 | 2.55 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Program

| Hole Size | Casing Interval | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|-----------------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 895 | 13.375" | 54.5 | J55 | STC | 2.76 | 1.26 | 10.54 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4895 | 9.625" | 40 | L80 | LTC | 1.20 | 1.46 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.70 | 2.55 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
 All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Operating, LLC - Tigercat Federal Com #4H

1. Geologic Formations

| | | | |
|---------------|-------------|-------------------------------|------|
| TVD of target | 10,281' EOL | Pilot hole depth | NA |
| MD at TD: | 14,768' | Deepest expected fresh water: | 157' |

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/ Target Zone? | Hazards* |
|----------------------|---------------------|-------------------------------------|----------|
| Quaternary Fill | Surface | Water | |
| Rustler | 870 | Water | |
| Top of Salt | 1200 | Salt | |
| Base of Salt | 4700 | Salt | |
| Lamar | 4869 | Salt Water | |
| Bell Canyon | 4889 | Salt Water | |
| Cherry Canyon | 5951 | Oil/Gas | |
| Brushy Canyon | 7500 | Oil/Gas | |
| Bone Spring Lime | 9011 | Oil/Gas | |
| U. Avalon Shale | 9186 | Oil/Gas | |
| L. Avalon Shale | 9411 | Oil/Gas | |
| 1st Bone Spring Sand | 9971 | Oil/Gas | |
| 2nd Bone Spring Sand | X | Oil/Gas | |
| 3rd Bone Spring Sand | X | Oil/Gas | |
| Wolfcamp | X | Oil/Gas | |

2. Casing Program

| Hole Size | Casing | | Csg. Size | Weight (lbs) | Grade | Conn. | SF Collapse | SF Burst | SF Tension |
|---------------------------|--------|--------|-----------|--------------|-------|-------|-------------|----------|--------------------|
| | From | To | | | | | | | |
| 17.5" | 0 | 895 | 13.375" | 54.5 | J55 | STC | 2.76 | 1.26 | 10.54 |
| 12.25" | 0 | 4000 | 9.625" | 40 | J55 | LTC | 1.22 | 1.00 | 3.25 |
| 12.25" | 4000 | 4895 | 9.625" | 40 | L80 | LTC | 1.20 | 1.46 | 5.73 |
| 8.75" | 0 | 14,768 | 5.5" | 17 | P110 | LTC | 1.50 | 2.70 | 2.55 |
| BLM Minimum Safety Factor | | | | | | | 1.125 | 1 | 1.6 Dry 1.8 Wet |

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Operating, LLC - Tigercat Federal Com #4H

| | Y or N |
|---|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1 | Y |
| Does casing meet API specifications? If no, attach casing specification sheet. | Y |
| Is premium or uncommon casing planned? If yes attach casing specification sheet. | N |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y |
| Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing? | Y |
| Is well located within Capitan Reef? If yes, does production casing cement tie back a minimum of 50' above the Reef? Is well within the designated 4 string boundary? | N |
| Is well located in SOPA but not in R-111-P? If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing? | N |
| Is well located in R-111-P and SOPA? If yes, are the first three strings cemented to surface? Is 2 nd string set 100' to 600' below the base of salt? | N |
| Is well located in high Cave/Karst? If yes, are there two strings cemented to surface? (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? | N |
| Is well located in critical Cave/Karst? If yes, are there three strings cemented to surface? | N |

COG Operating, LLC - Tigercat Federal Com #4H

3. Cementing Program

| Casing | # Sks | Wt. lb/ gal | Yld ft3/ sack | H₂O gal/sk | 500# Comp. Strength (hours) | Slurry Description |
|---------------|--------------|------------------------|--------------------------|------------------------------|--|---|
| Surf. | 350 | 13.5 | 1.75 | 9 | 12 | Lead: Class C + 4% Gel + 1% CaCl ₂ |
| | 250 | 14.8 | 1.34 | 6.34 | 8 | Tail: Class C + 2% CaCl ₂ |
| Inter. | 940 | 12.7 | 2.0 | 9.6 | 16 | Lead: 35:65:6 C Blend |
| | 250 | 14.8 | 1.34 | 6.34 | 8 | Tail: Class C + 2% CaCl |
| 5.5 Prod | 750 | 11.9 | 2.5 | 19 | 72 | Lead: 50:50:10 H Blend |
| | 1270 | 14.4 | 1.24 | 5.7 | 19 | Tail: 50:50:2 Class H Blend |

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

| Casing String | TOC | % Excess |
|------------------------------|------------|---|
| Surface | 0' | 50% |
| 1 st Intermediate | 0' | 50% |
| Production | 3,500' | 25% OH in Lateral (KOP to EOL) – 40% OH in Vertical |

COG Operating, LLC - Tigercat Federal Com #4H

4. Pressure Control Equipment

| | |
|---|--|
| N | A variance is requested for the use of a diverter on the surface casing. See attached for schematic. |
|---|--|

| BOP installed and tested before drilling which hole? | Size? | Min. Required WP | Type | x | Tested to: |
|--|---------|------------------|------------|---|----------------------|
| 12-1/4" | 13-5/8" | 2M | Annular | x | 2000 psi |
| | | | Blind Ram | | 2M |
| | | | Pipe Ram | | |
| | | | Double Ram | | |
| | | | Other* | | |
| 8-3/4" | 13-5/8" | 3M | Annular | x | 50% testing pressure |
| | | | Blind Ram | x | 3M |
| | | | Pipe Ram | x | |
| | | | Double Ram | | |
| | | | Other* | | |

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

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

| | |
|---|---|
| X | Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |
| Y | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart. |
| N | Are anchors required by manufacturer? |
| N | A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. |

COG Operating, LLC - Tigercat Federal Com #4H

5. Mud Program

| Depth | | Type | Weight (ppg) | Viscosity | Water Loss |
|-----------------|-----------------|-----------------|--------------|-----------|------------|
| From | To | | | | |
| 0 | Surf. Shoe | FW Gel | 8.6 - 8.8 | 28-34 | N/C |
| Surf csg | 9-5/8" Int shoe | Saturated Brine | 10 - 10.1 | 28-34 | N/C |
| 9-5/8" Int shoe | Lateral TD | Cut Brine | 8.6 - 9.3 | 28-34 | N/C |

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

| | |
|---|-----------------------------|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |
|---|-----------------------------|

6. Logging and Testing Procedures

| Logging, Coring and Testing. | |
|------------------------------|---|
| Y | Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
| Y | No Logs are planned based on well control or offset log information. |
| N | Drill stem test? If yes, explain. |
| N | Coring? If yes, explain. |

| Additional logs planned | | Interval |
|-------------------------|-------------|--|
| N | Resistivity | Pilot Hole TD to ICP |
| N | Density | Pilot Hole TD to ICP |
| Y | CBL | Production casing (If cement not circulated to surface) |
| Y | Mud log | Intermediate shoe to TD |
| N | PEX | |

COG Operating, LLC - Tigercat Federal Com #4H

7. Drilling Conditions

| Condition | Specify what type and where? |
|----------------------------|------------------------------|
| BH Pressure at deepest TVD | 4975 psi at 10281' TVD |
| Abnormal Temperature | NO 160 Deg. F. |

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

| | |
|--|-------------------|
| Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM. | |
| N | H2S is present |
| Y | H2S Plan attached |

8. Other Facets of Operation

| | |
|---|----------------------------|
| N | Is it a walking operation? |
| N | Is casing pre-set? |

| | |
|---|-------------------------|
| x | H2S Plan. |
| x | BOP & Choke Schematics. |
| x | Directional Plan |



| | | |
|---|------------------------------------|--|
| APD ID: 10400021892 | Submission Date: 09/12/2017 | Highlighted data reflects the most recent changes Show Final Text |
| Operator Name: COG OPERATING LLC | | |
| Well Name: TIGERCAT FEDERAL COM | Well Number: 4H | |
| Well Type: OIL WELL | Well Work Type: Drill | |

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Tigercat_4H_Existing_Road_20170912161000.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

COG_Tigercat_4H_Maps_Plats_20170912161026.pdf

New road type: TWO-TRACK

Length: 101.7 Feet

Width (ft.): 30

Max slope (%): 33

Max grade (%): 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Blading

Access other construction information: No turnouts are planned. Re-routing access road around proposed well location.

Access miscellaneous information:

Number of access turnouts:

Access turnout map:

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: None necessary.

Road Drainage Control Structures (DCS) description: None needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

COG_Tigercat_4H_1Mile_Data_20170912161120.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Production will be sent to the proposed Tigercat Central Tank Battery facility. A surface flow line of approximately 2157.1' of 3" steel pipe carrying oil, gas and water under a maximum pressure of 125 psi will follow the road to the facility at the Tigercat Central Tank Battery location. We plan to install a 4" surface polyethylene pipe transporting Gas Lift Gas from the Tigercat Central Tank Battery to the Tigercat Federal Com 3H. The surface Gas Lift Gas pipe of approximately 2157.1' under a maximum pressure of 125 psi will be installed no farther than 10 feet from the edge of the road.

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING

Water source type: OTHER

Describe type: Brine water will be obtained from the Malaga II Brine station in Section 12. T23S. R28E., and will be provided by Malaga Brine Station.

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: COMMERCIAL

Water source transport method: TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 15000

Source volume (acre-feet): 1.9333965

Source volume (gal): 630000

Water source use type: STIMULATION, SURFACE CASING

Water source type: OTHER

Describe type: Fresh water will be obtained from Dinwiddie Cattle Co. LLC. Po Box 963, Capitan, NM 88354 C-02289 Water Well located in Section 3. T26S. R33E.

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE

Source transportation land ownership: PRIVATE

Water source volume (barrels): 225000

Source volume (acre-feet): 29.000946

Source volume (gal): 9450000

Water source and transportation map:

COG_Tigercat_4H_Brine_H2O_20170912161529.pdf

COG_Tigercat_4H_Fresh_H2O_20170912161539.pdf

Water source comments: Fresh water will be obtained from Dinwiddie Cattle Co. LLC. Po Box 963, Capitan, NM 88354 C-02289 Water Well located in Section 3. T26S. R33E. Brine water will be obtained from the Malaga II Brine station in Section 12. T23S. R28E., and will be provided by Malaga Brine Station.

New water well? NO

New Water Well Info

Well latitude:

Well Longitude:

Well datum:

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Well target aquifer:

Est. depth to top of aquifer(ft):

Est thickness of aquifer:

Aquifer comments:

Aquifer documentation:

Well depth (ft):

Well casing type:

Well casing outside diameter (in.):

Well casing inside diameter (in.):

New water well casing?

Used casing source:

Drilling method:

Drill material:

Grout material:

Grout depth:

Casing length (ft.):

Casing top depth (ft.):

Well Production type:

Completion Method:

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be obtained from Dinwiddie Cattle Co., LLC caliche pit located in Section 4, T26S, R33E Phone 575-390-2076.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and produced oil and water during drilling and completion operations

Amount of waste: 6000 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling waste will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: SEWAGE

Waste content description: Human waste and gray water

Amount of waste: 250 gallons

Waste disposal frequency : Weekly

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations

Amount of waste: 125 pounds

Waste disposal frequency : Weekly

Safe containment description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL FACILITY

Disposal type description:

Disposal location description: Trucked to an approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) Reserve pit width (ft.)

Reserve pit depth (ft.) Reserve pit volume (cu. yd.)

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Roll off cuttings containers on tracks

Cuttings area length (ft.) Cuttings area width (ft.)

Cuttings area depth (ft.) Cuttings area volume (cu. yd.)

Is at least 50% of the cuttings area in cut?

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG_Tigercat_4H_Prod_Facility_20170912161604.pdf

COG_Tigercat_CTB_Schem_20170912161620.pdf

COG_Tigercat_CTB_20170912161630.pdf

Comments: Production will be sent to the proposed Tigercat Central Tank Battery facility. A surface flow line of approximately 163.5 of 3" steel pipe carrying oil, gas and water under a maximum pressure of 125 psi will follow the road to the facility at the Windward Central Tank Battery location. We plan to install a 4" surface polyethylene pipe transporting Gas Lift Gas from the Tigercat Central Tank Battery to the Tigercat Federal Com 1H. The surface Gas Lift Gas pipe of approximately 163.5' under a maximum pressure of 125 psi will be installed no farther than 10 feet from the edge of the road.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name:

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: Immediately following pad construction approximately 400' of straw waddles will be placed on the North and West sides of the location to reduce sediment impacts to fragile/sensitive soils.

Drainage/Erosion control reclamation: Reclaim the south side 80'

Wellpad long term disturbance (acres): 2.94

Wellpad short term disturbance (acres): 3.67

Access road long term disturbance (acres): 0.03

Access road short term disturbance (acres): 0.03

Pipeline long term disturbance (acres): 9.1827366E-7

Pipeline short term disturbance (acres): 9.1827366E-7

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 2.970001

Total short term disturbance: 3.700001

Reconstruction method: New construction of pad.

Topsoil redistribution: South 80'

Soil treatment: None

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Existing Vegetation at the well pad: Shinnery Oak/Mesquite grassland

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery Oak/Mesquite grassland

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary

Total pounds/Acre:

| Seed Summary | |
|--------------|-------------|
| Seed Type | Pounds/Acre |
| | |

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Rand

Last Name: French

Phone: (432)254-5556

Email: rfrench@concho.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: N/A

Weed treatment plan attachment:

Monitoring plan description: N/A

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

COG_Tigercat_4H_Closed_Loop_20170912161730.pdf

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: AE&J Royalties, LLC. Elizabeth J. Written

Phone: (646)637-6355

Fee Owner Address: 23 Bergen Street. Brooklyn, New York 11201.

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: COG Operating LLC is in the process of getting a Surface Use Agreement.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? YES

Previous Onsite information: Onsite completed on 6/13/2017 by Rand French (COG); Gerald Herrera (COG) and Jeff Robertson (BLM). Note: Well was previously named Tigercat Federal C0m 28H.

Other SUPO Attachment

COG_Tigercat_4H_Certification_20170912161927.pdf

Surface Use Plan

COG Operating LLC

Tigercat Federal Com 4H

SHL: 360' FNL & 1620' FWL UL C

Section 8, T26S, R33E

BHL: 200' FSL & 990' FWL UL M

Section 8, T26S, R33E

Lea County, New Mexico

OPERATOR CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 17th day of August, 2017.

Signed: 

Printed Name: Mayte Reyes

Position: Regulatory Analyst

Address: 2208 W. Main Street, Artesia, NM 88210

Telephone: (575) 748-6945

E-mail: mreyes1@concho.com

Field Representative (if not above signatory): Rand French

Telephone: (575) 748-6940. E-mail: rfrench@concho.com



Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

02/26/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000215

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Name: COG OPERATING LLC

Well Name: TIGERCAT FEDERAL COM

Well Number: 4H

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|-------------------|---------|--------------|---------|--------------|------|-------|---------|--------------------------|---------------|---------------------|--------|-------------------|-------------------|------------|---------------------|---------------|-----------|-----------|
| EXIT Leg #1 | 330 | FSL | 990 | FWL | 26S | 33E | 8 | Aliquot SWS W 5 | 32.05169 5 | - 103.5996 43 | LEA | NEW MEXI CO | NEW MEXI CO | F | NMNM 016097 3 | - 695 5 | 147 00 | 102 79 |
| BHL Leg #1 | 200 | FSL | 990 | FWL | 26S | 33E | 8 | Aliquot SWS W 8 | 32.05133 8 | - 103.5996 43 | LEA | NEW MEXI CO | NEW MEXI CO | F | NMNM 016097 3 | - 695 7 | 147 68 | 102 81 |