F/F

OCD Hobbs

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD
APR 30 2018
RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM077090
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. (321303) MORTARBOARD FEDERAL COM 13H
2. Name of Operator COG OPERATING LLC (229137)	9. API Well No. 30-025-44725
3a. Address 600 West Illinois Ave Midland TX 79701	3b. Phone No. (include area code) (432)683-7443 REDHILLS
	10. Field and Pool, or Exploratory ~~WILDCAT~~ / BONE SPRING (96434 NORTH)
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface LOT 3 / 210 FNL / 1980 FWL / LAT 32.253234 / LONG -103.425867 At proposed prod. zone SESW / 200 FSL / 1980 FWL / LAT 32.225331 / LONG -103.425795	11. Sec., T. R. M. or Blk. and Survey or Area SEC 1 / T24S / R34E / NMP
14. Distance in miles and direction from nearest town or post office* 14 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 1440.02	17. Spacing Unit dedicated to this well 320.01
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2208 feet	19. Proposed Depth 11627 feet / 21589 feet	20. BLM/BIA Bond No. on file FED: NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3464 feet	22. Approximate date work will start* 03/01/2018	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:

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Mayte Reyes / Ph: (575)748-6945	Date 12/14/2017
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 04/16/2018
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)

Requested OCD 5/1/18
OCD Acc 5/2/18

APPROVED WITH CONDITIONS

KB
03/03/18

Approval Date: 04/16/2018

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Ind[illegible] 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 3160
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.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: LOT 3 / 210 FNL / 1980 FWL / TWSP: 24S / RANGE: 34E / SECTION: 1 / LAT: 32.253234 / LONG: -103.425867 (TVD: 0 feet, MD: 0 feet)
   PPP: SESW / 1320 FSL / 1980 FWL / TWSP: 24S / RANGE: 34E / SECTION: 1 / LAT: 32.242917 / LONG: -103.42584 (TVD: 11847 feet, MD: 16400 feet)
   PPP: LOT 3 / 330 FNL / 1980 FWL / TWSP: 24S / RANGE: 34E / SECTION: 1 / LAT: 32.252904 / LONG: -103.425866 (TVD: 11154 feet, MD: 11154 feet)
   BHL: SESW / 200 FSL / 1980 FWL / TWSP: 24S / RANGE: 34E / SECTION: 12 / LAT: 32.225331 / LONG: -103.425795 (TVD: 11627 feet, MD: 21589 feet)

BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

Approval Date: 04/16/2018

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.

AFMSS

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

Application Data Report

04/17/2018

APD ID: 10400025381 **Submission Date:** 12/14/2017

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400025381 **Tie to previous NOS?** **Submission Date:** 12/14/2017

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: NMNM077090 **Lease Acres:** 1440.02

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 **Mater Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H **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: MORTARBOARD FEDERAL COM **Well Number:** 13H

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: 14 Miles **Distance to nearest well:** 2208 FT **Distance to lease line:** 200 FT

Reservoir well spacing assigned acres Measurement: 320.01 Acres

Well plat: COG_Mortarboard_13H_C102_20171211083027.pdf

Well work start Date: 03/01/2018 **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	210	FNL	1980	FWL	24S	34E	1	Lot 3	32.253234	-103.425867	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077090	3464	0	0
KOP Leg #1	210	FNL	1980	FWL	24S	34E	1	Lot 3	32.253234	-103.425867	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077090	3464	0	0
PPP Leg #1	330	FNL	1980	FWL	24S	34E	1	Lot 3	32.252904	-103.425866	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077090	-7690	11154	11154

APD ID: 10400025381 **Submission Date:** 12/14/2017

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	3464	0	0		NONE	No
2	RUSTLER	2625	839	839		NONE	No
3	TOP SALT	2333	1131	1131	SALT	NONE	No
4	BASE OF SALT	-1436	4900	4900	ANHYDRITE	NONE	No
5	LAMAR	-1815	5279	5279	LIMESTONE	OTHER : Salt Water	No
6	BELL CANYON	-1860	5324	5324		OTHER : Salt Water	No
7	CHERRY CANYON	-2683	6147	6147		NATURAL GAS,OIL	No
8	BRUSHY CANYON	-4099	7563	7563		NATURAL GAS,OIL	No
9	BONE SPRING LIME	-5345	8809	8809	SANDSTONE	NATURAL GAS,OIL	No
10	UPPER AVALON SHALE	-5590	9054	9054		NATURAL GAS,OIL	No
11	---	-5740	9204	9204		NATURAL GAS,OIL	No
12	BONE SPRING 1ST	-6380	9844	9844		NATURAL GAS,OIL	No
13	BONE SPRING 2ND	-6903	10367	10367		NATURAL GAS,OIL	No
14	BONE SPRING 3RD	-7805	11269	11269		NATURAL GAS,OIL	Yes
15	WOLFCAMP	-8185	11649	11649		NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Pressure Rating (PSI): 10M **Rating Depth:** 11627

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_Mortarboard_13H_10M_Choke_20180409064745.pdf

BOP Diagram Attachment:

COG_Mortarboard_13H_FlexHose_20171214110207.pdf

COG_Mortarboard_13H_10M_BOP_20180409064755.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 5305

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 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_Mortarboard_13H_5M_Choke_20180219135827.pdf

BOP Diagram Attachment:

COG_Mortarboard_13H_FlexHose_20171214110112.pdf

COG_Mortarboard_13H_5M_BOP_20180219135838.pdf

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

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	865	0	865	-6999	-7974	865	J-55	54.5	STC	2.85	1.15	DRY	10.9	DRY	10.9
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	5305	0	5305	-6999	-18749	5305	L-80	40	LTC	1.11	1.29	DRY	5.73	DRY	5.73
3	PRODUCTION	8.75	5.5	NEW	API	N	0	21589	0	21589	-6999	-24211	21589	P-110	17	LTC	1.33	2.39	DRY	2.25	DRY	2.25

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Mortarboard_13H_Casing_20171214110640.pdf

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Mortarboard_13H_Casing_20171214110558.pdf

Casing Design Assumptions and Worksheet(s):

COG_Mortarboard_13H_Casing_20171214110648.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Mortarboard_13H_Casing_20171214110728.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	865	330	1.75	13.5	577	50	Class C	4% Gel + 1% CaCl2
SURFACE	Tail		0	865	250	1.34	14.8	335	50	Class C	2% CaCl2
INTERMEDIATE	Lead		0	5305	1040	2	12.7	2080	50	Lead: 35:65:6 C Blend	As needed
INTERMEDIATE	Tail		0	5305	250	1.34	14.8	335	50	Tail: Class C	2% CaCl
PRODUCTION	Lead		0	21589	880	2.5	11.9	2200	25	50:50:10 H Blend	As needed

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail		0	21589	2660	1.24	14.4	3298	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
865	5305	OTHER : Saturated Brine	10	10.1							Saturated Brine
0	865	OTHER : FW Gel	8.6	8.8							FW Gel
5305	21589	OTHER : Cut Brine	8.6	9.3							Cut Brine

COG Operating, LLC - Mortarboard Federal #13H

1. Geologic Formations

TVD of target	11,627' EOL	Pilot hole depth	NA
MD at TD:	21,589'	Deepest expected fresh water:	300'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	839	Water	
Top of Salt	1131	Salt	
Base of Salt	4900	Salt	
Lamar	5279	Salt Water	
Bell Canyon	5324	Salt Water	
Cherry Canyon	6147	Oil/Gas	
Brushy Canyon	7563	Oil/Gas	
Bone Spring Lime	8809	Oil/Gas	
U. Avalon Shale	9054	Oil/Gas	
L. Avalon Shale	9204	Oil/Gas	
1st Bone Spring Sand	9844	Oil/Gas	
2nd Bone Spring Sand	10367	Oil/Gas	
3rd Bone Spring Sand	11269	Oil/Gas	
Wolfcamp	11649	Oil/Gas	

2. Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	865	13.375"	54.5	J55	STC	2.85	1.15	10.90
12.25"	0	4000	9.625"	40	J55	LTC	1.22	0.89	3.25
12.25"	4000	5305	9.625"	40	L80	LTC	1.11	1.29	5.73
8.75"	0	21,589	5.5"	17	P110	LTC	1.33	2.39	2.25
			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. 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

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: 5625 **Anticipated Surface Pressure:** 3018.66

Anticipated Bottom Hole Temperature(F): 170

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG_Mortarboard_13H_H2S_Schem_20171214111049.pdf
COG_Mortarboard_13H_H2S_SUP_20171214111054.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_Mortarboard_13H_DirectRpt_20171214111108.pdf

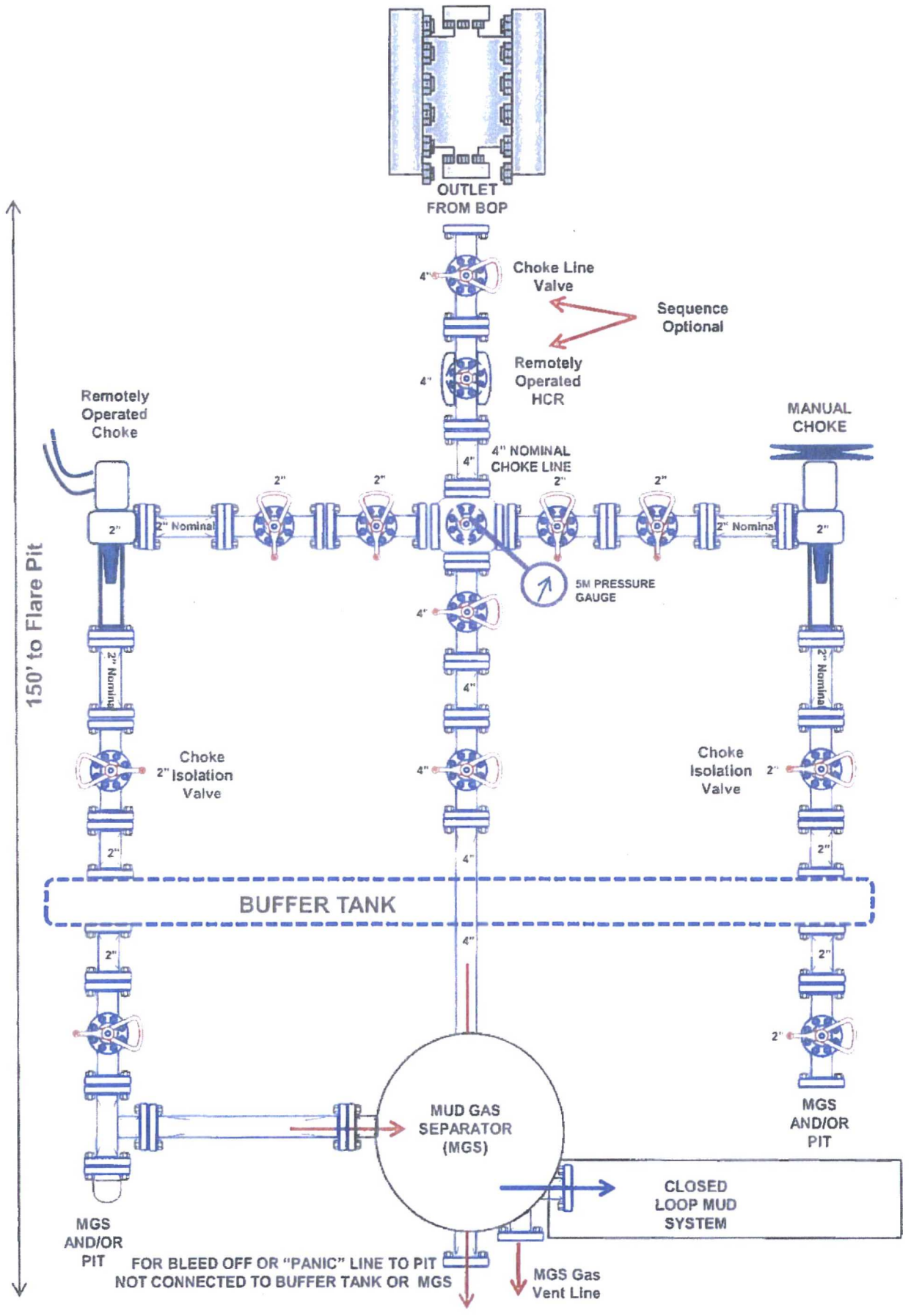
Other proposed operations facets description:

Other proposed operations facets attachment:

COG_Mortarboard_13H_Drill_Rpt_20180409070208.pdf

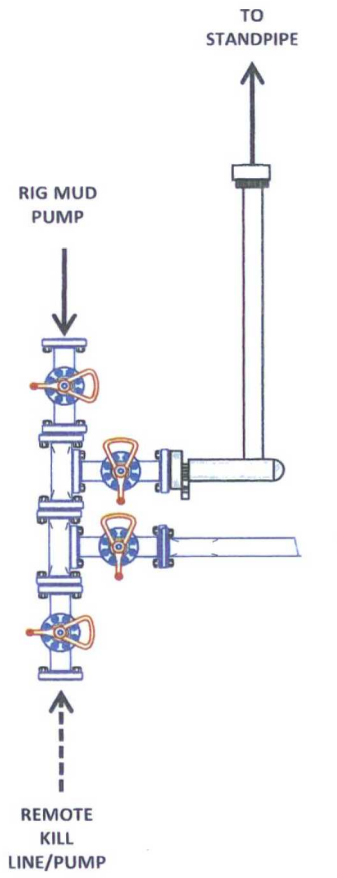
Other Variance attachment:

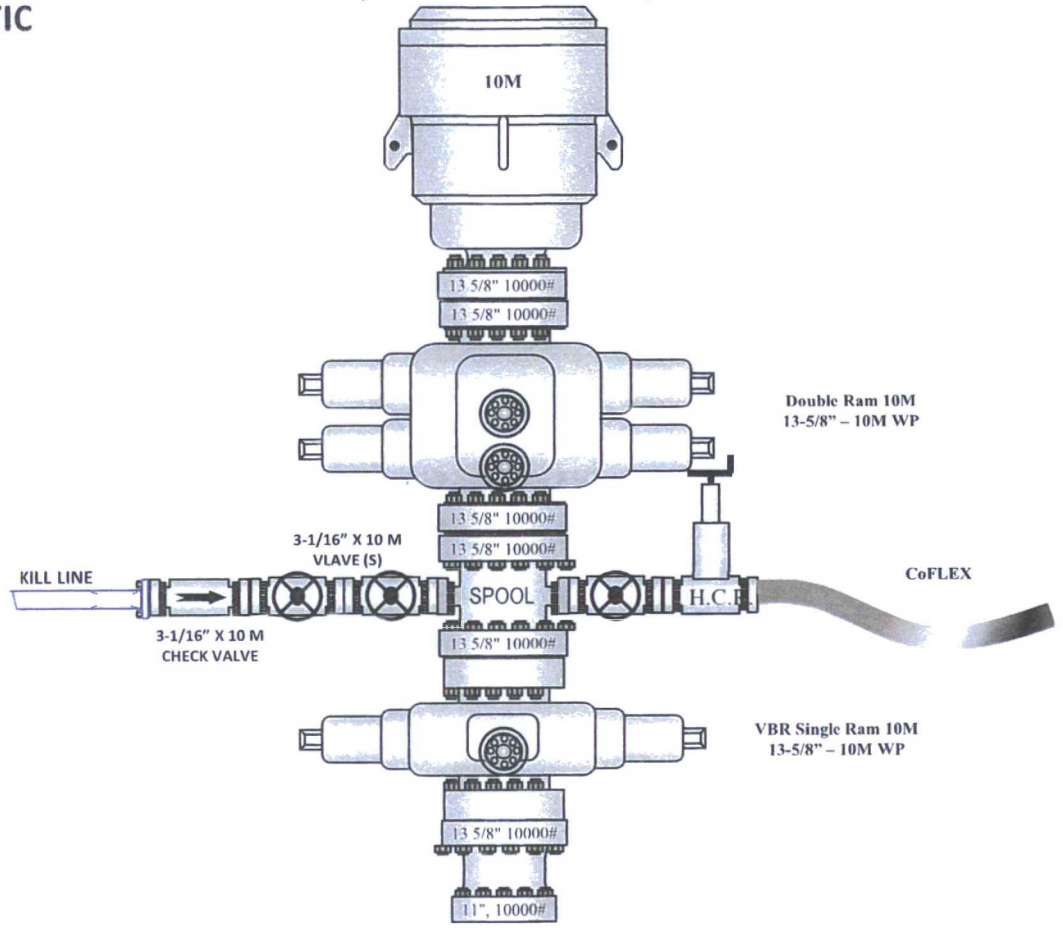
5M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



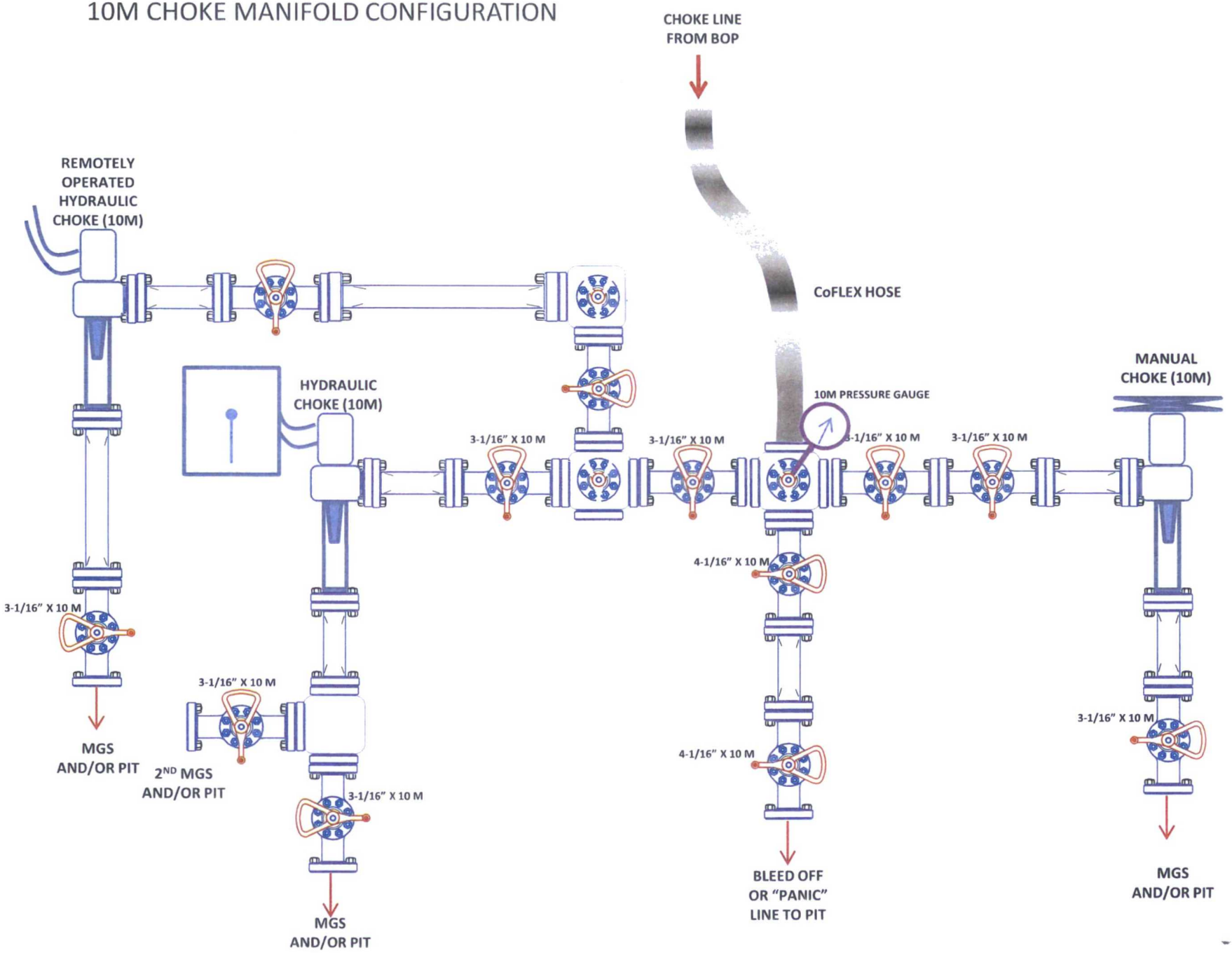
10M BOP Stack

10M REMOTE KILL SCHEMATIC



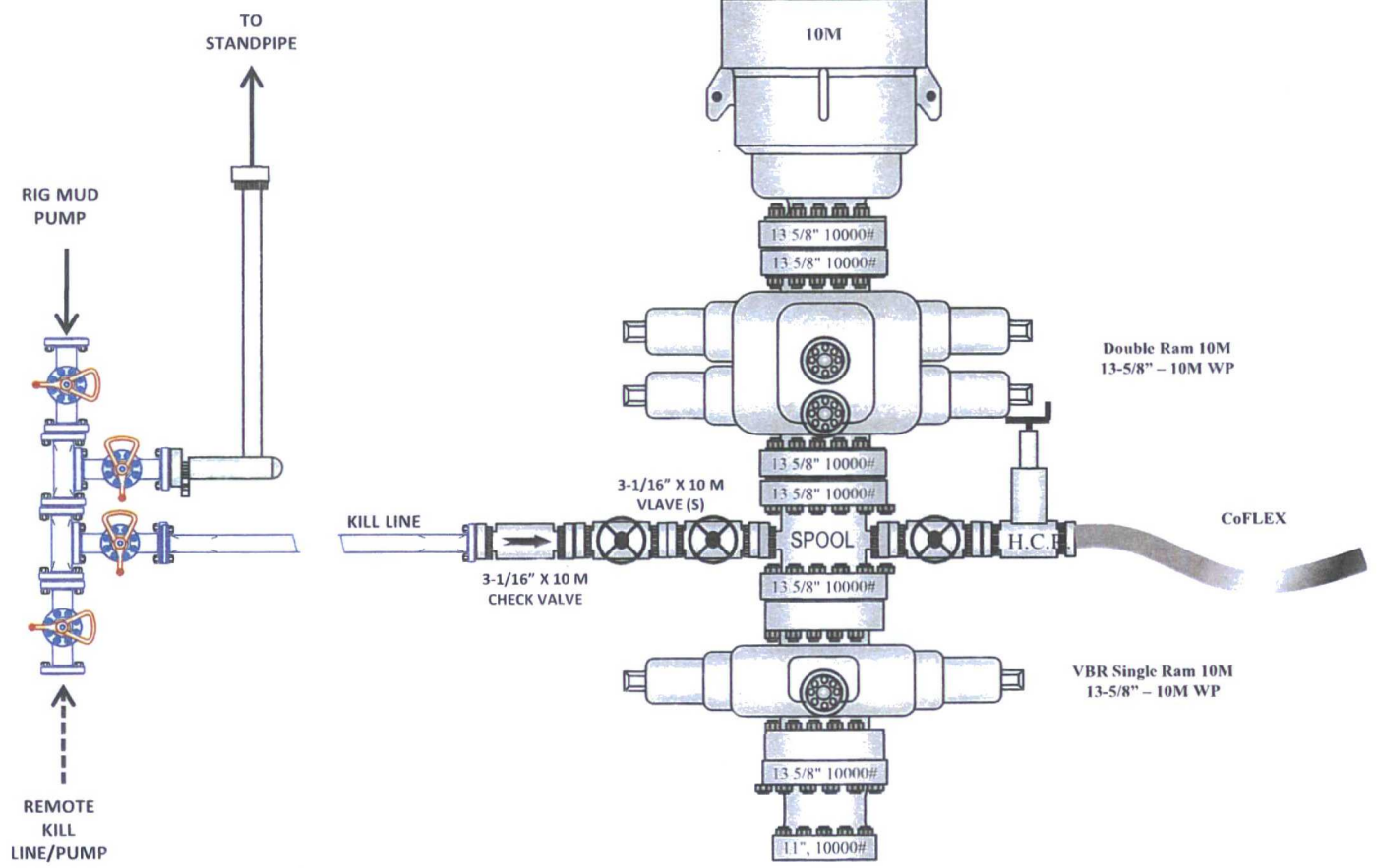


10M CHOKE MANIFOLD CONFIGURATION



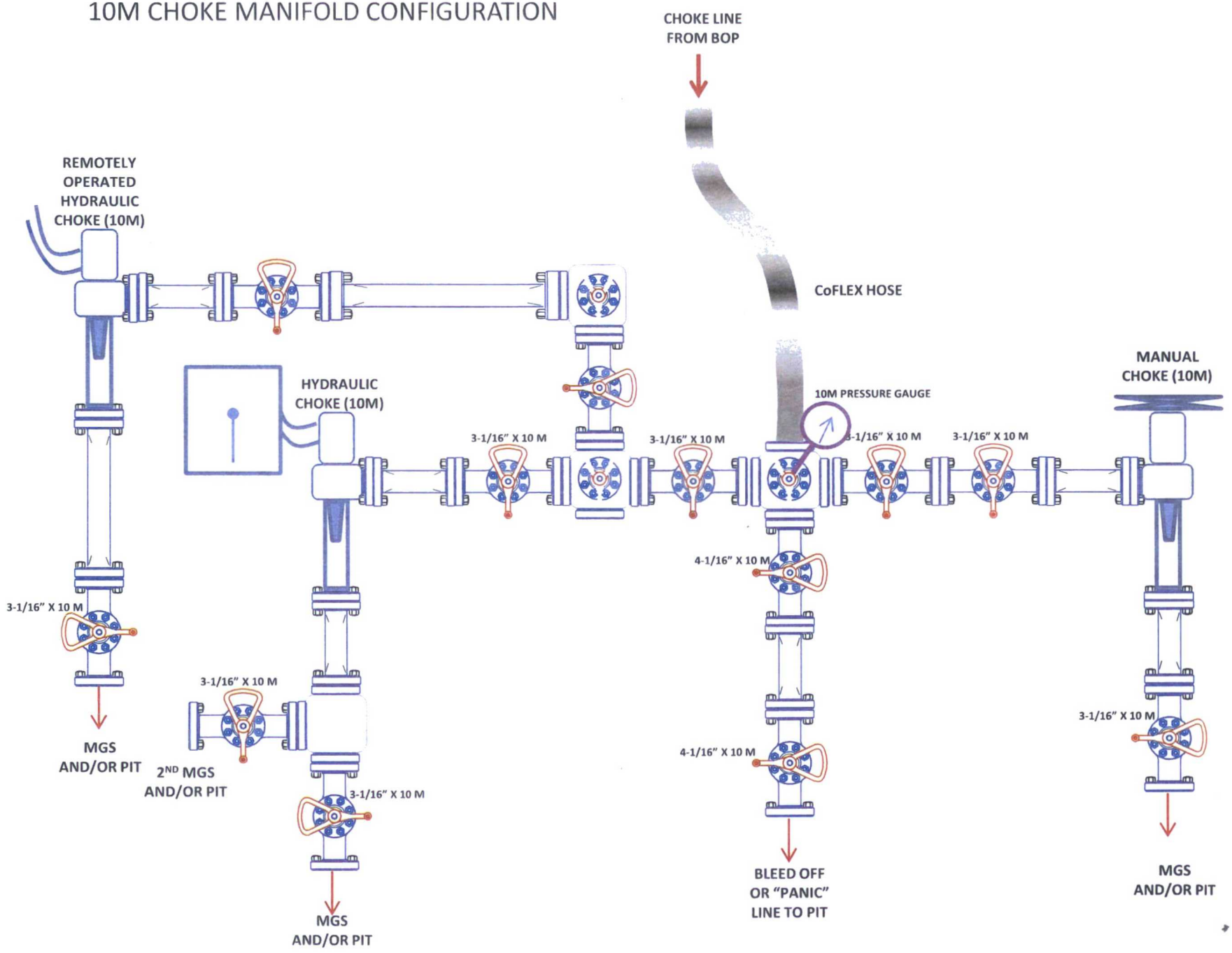
10M BOP Stack

10M REMOTE KILL SCHEMATIC



10M BOP Stack
(10M Annular)

10M CHOKE MANIFOLD CONFIGURATION



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 From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
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 From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	865	13.375"	54.5	J55	STC	2.85	1.15	10.90
12.25"	0	4000	9.625"	40	J55	LTC	1.22	0.89	3.25
12.25"	4000	5305	9.625"	40	L80	LTC	1.11	1.29	5.73
8.75"	0	21,589	5.5"	17	P110	LTC	1.33	2.39	2.25
			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. 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 From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	865	13.375"	54.5	J55	STC	2.85	1.15	10.90
12.25"	0	4000	9.625"	40	J55	LTC	1.22	0.89	3.25
12.25"	4000	5305	9.625"	40	L80	LTC	1.11	1.29	5.73
8.75"	0	21,589	5.5"	17	P110	LTC	1.33	2.39	2.25
			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. 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 From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	865	13.375"	54.5	J55	STC	2.85	1.15	10.90
12.25"	0	4000	9.625"	40	J55	LTC	1.22	0.89	3.25
12.25"	4000	5305	9.625"	40	L80	LTC	1.11	1.29	5.73
8.75"	0	21,589	5.5"	17	P110	LTC	1.33	2.39	2.25
			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. 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 From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	865	13.375"	54.5	J55	STC	2.85	1.15	10.90
12.25"	0	4000	9.625"	40	J55	LTC	1.22	0.89	3.25
12.25"	4000	5305	9.625"	40	L80	LTC	1.11	1.29	5.73
8.75"	0	21,589	5.5"	17	P110	LTC	1.33	2.39	2.25
			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. 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 - Mortarboard Federal #13H

	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?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	330	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	1040	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	880	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	2660	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%
1st Intermediate	0'	50%
Production	3,500'	25% OH in Lateral (KOP to EOL) – 40% OH in Vertical

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"	5M	Annular	x	50% testing pressure
			Blind Ram		5M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	10M	5M Annular	x	50% testing pressure
			Blind Ram	x	10M
			Pipe Ram	x	
			Double Ram	x	
			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.

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	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5625 psi at 11627' TVD
Abnormal Temperature	NO 170 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: 10400025381 **Submission Date:** 12/14/2017

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Mortarboard_13H_Exist_Rd_20171211084110.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_Mortarboard_13H_Roads_20171211084126.pdf

New road type: TWO-TRACK

Length: 4834.7 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:

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_Mortarboard_13H_1Mile_20171211084211.pdf

Existing Wells description:

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: If the well is productive, contemplated facilities will be as follows: A tank battery and facilities will be constructed as shown on the Production Facility Layout. The tank battery and facilities including all flow lines and piping will be installed according to API specifications.
Production Facilities map:

COG_Mortarboard_13H_ProdFacil_20171211085138.pdf

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

Source latitude: **Source longitude:**

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): 30000 **Source volume (acre-feet):** 3.866793

Source volume (gal): 1260000

Water source use type: STIMULATION, SURFACE CASING **Water source type:** OTHER

Describe type: Fresh Water

Source latitude: **Source longitude:**

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): 450000 **Source volume (acre-feet):** 58.001892

Source volume (gal): 18900000

Water source and transportation map:

COG_Motarboard_13H_BrineH2O_20171211084851.pdf
COG_Motarboard_13H_FreshH2O_20171211084906.pdf

Water source comments: Fresh water will be obtained from Rupert Madera P.O. Box 2795, Ruidoso, NM 88355, 575-631-4444, water well located in Section 6. T24S. R35E. 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:**

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 Rupert Madera caliche pit located in Section 33, T24S, R34E Phone 575-631-4444.
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 facility
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: 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
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?

WCuttings area liner

Cuttings area liner specifications and installation description

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: YES

Ancillary Facilities attachment:

COG_Mortarboard_13H_GCP_20171211091020.pdf

Comments: GCP attached.

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG_Mortarboard_13H_ProdFacil_20171211090953.pdf

Comments: If the well is productive, contemplated facilities will be as follows: A tank battery and facilities will be constructed as shown on the Production Facility Layout. The tank battery and facilities including all flow lines and piping will be installed according to API specifications.

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 West and 400' on the South side of the location to reduce sediment impacts to fragile/sensitive soils.
Drainage/Erosion control reclamation: Reclaim the east side 80'

Well pad proposed disturbance (acres): 3.67
Road proposed disturbance (acres): 1.55
Powerline proposed disturbance (acres): 0
Pipeline proposed disturbance (acres): 0
Other proposed disturbance (acres): 0

Total proposed disturbance: 5.22

Well pad interim reclamation (acres): 0.01
Road interim reclamation (acres): 1.55
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0

Total interim reclamation: 1.56

Well pad long term disturbance (acres): 2.94
Road long term disturbance (acres): 1.55
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0

Total long term disturbance: 4.49

Reconstruction method: New construction of pad.

Topsoil redistribution: East 80'

Soil treatment: None

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 Type	Pounds/Acre

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_Mortarboard_13H_Closed_Loop_20171211091059.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:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: Bert Madera **Fee Owner Address:** P.O. Box 2795, Ruidoso, NM 88355

Phone: (575)631-4444 **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 and Rupert Madera signed the Surface Use Agreement on June 6th, 2016.

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 10/5/2017 by Rand French (COG); Gerald Herrera (COG) and Jeff Robertson (BLM).

Other SUPO Attachment

COG_Mortarboard_13H_Certif_20171211091931.pdf

AFMSS

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

Bond Info Data Report

04/17/2018

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:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

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:

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:

Decribe 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:

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:

Decribe 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:

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 5th day of December, 2017.

Signed: Mayte Reyes

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

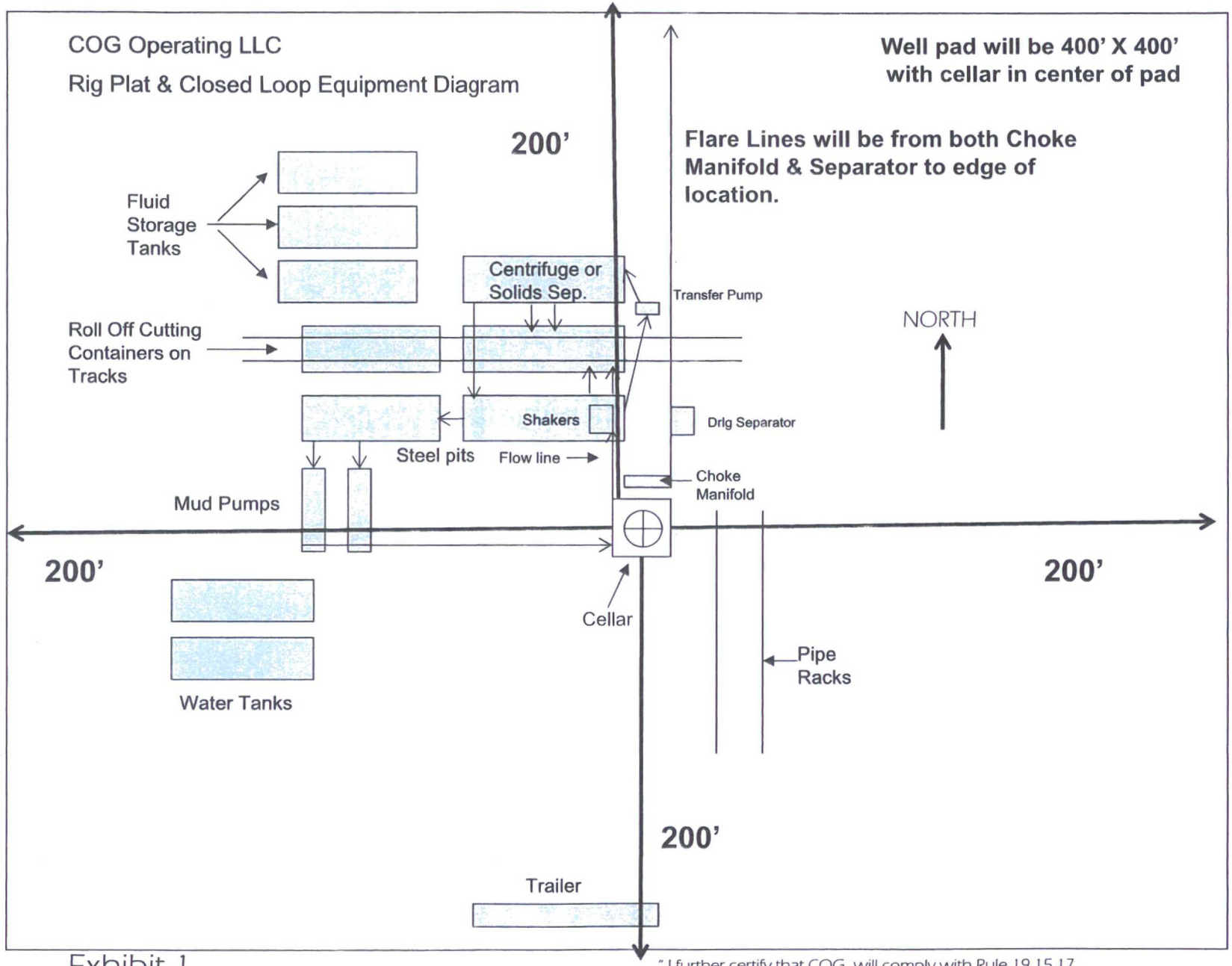


Exhibit 1

"I further certify that COG will comply with Rule 19.15.17 NMAC by using a Closed Loop System."

Operator Name: COG OPERATING LLC

Well Name: MORTARBOARD FEDERAL COM **Well Number:** 13H

	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
PPP Leg #1	1320	FSL	1980	FWL	24S	34E	1	Aliquot SESW	32.242917	-103.42584	LEA	NEW MEXICO	NEW MEXICO	F	FEE	-8383	16400	11847
EXIT Leg #1	330	FSL	1980	FWL	24S	34W	12	Aliquot SESW	32.225688	-103.425796	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077090	-6498	21350	9962
BHL Leg #1	200	FSL	1980	FWL	24S	34E	12	Aliquot SESW	32.225331	-103.425795	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 077090	-8163	21589	11627