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17-377

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No.
NMNM112942

6. If Indian, Allotee or Tribe Name

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

1a. Type of work: ☑ DRILL ☐ REENTER

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

8. Lease Name and Well No. COM 319419
WHITE FALCON 16 FEDERAL COM 22H

2. Name of Operator
COG OPERATING LLC (229137)

9. API Well No.
30-025-43932

3a. Address
600 West Illinois Ave Midland TX 79701

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

10. Field and Pool, or Exploratory
DOGIE DRAW / WOLFCAMP (13980)

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NENW / 226 FNL / 1940 FWL / LAT 32.137015 / LONG -103.374756
At proposed prod. zone SESW / 200 FSL / 1650 FWL / LAT 32.10917 / LONG -103.375687

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 16 / T25S / R35E / NMP

14. Distance in miles and direction from nearest town or post office*
9 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
680

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
1070 feet

19. Proposed Depth
12610 feet / 22458 feet

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

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3246 feet

22. Approximate date work will start*
06/01/2017

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:

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	Name *(Printed/Typed)*	Date
(Electronic Submission)	Mayte Reyes / Ph: (575)748-6945	03/28/2017

Title
Regulatory Analyst

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	08/14/2017

Title	Office
Supervisor Multiple Resources	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)

APPROVED WITH CONDITIONS

08/21/17

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

Operator Certification Data Report

08/15/2017

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently 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 the company I represent, 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.

NAME: Mayte Reyes **Signed on:** 03/27/2017

Title: Regulatory Analyst

Street Address: 2208 W Main Street

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-6945

Email address: Mreyes1@concho.com

Field Representative

Representative Name: Rand French

Street Address: 2208 West Main Street

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-6940

Email address: rfrench@concho.com

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

Application Data Report

08/15/2017

APD ID: 10400012707 **Submission Date:** 03/28/2017

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

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

Section 1 - General

APD ID: 10400012707 **Tie to previous NOS?** **Submission Date:** 03/28/2017

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: NMNM112942 **Lease Acres:** 680

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:

Keep application confidential? YES

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: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** DOGIE DRAW **Pool Name:** WOLFCAMP

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

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

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: 9 Miles **Distance to nearest well:** 1070 FT **Distance to lease line:** 200 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: COG_White_Falcon_22H_C102_03-27-2017.pdf

Well work start Date: 06/01/2017 **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	226	FNL	1940	FWL	25S	35E	16	Aliquot NENW	32.137015	-103.374756	LEA	NEW MEXICO	NEW MEXICO	S	STATE	3246	0	0
KOP Leg #1	226	FNL	1940	FWL	25S	35E	16	Aliquot NENW	32.137015	-103.374756	LEA	NEW MEXICO	NEW MEXICO	S	STATE	3246	0	0
PPP Leg #1	330	FNL	1650	FWL	25S	35E	16	Aliquot NENW	32.136729	-103.375692	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-2754	6000	6000

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

	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	2640	FSL	1650	FWL	25S	35E	21	Aliquot NESW	32.115866	-103.375689	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 132952	-9339	19600	12585
EXIT Leg #1	330	FSL	1650	FWL	25S	35E	21	Aliquot SESW	32.10917	-103.375687	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 112942	-9362	22200	12608
BHL Leg #1	200	FSL	1650	FWL	25S	35E	21	Aliquot SESW	32.10917	-103.375687	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 112942	-9364	22458	12610

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

Drilling Plan Data Report

08/15/2017

APD ID: 10400012707 **Submission Date:** 03/28/2017

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

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

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Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
17318	UNKNOWN	3246	0	0		NONE	No
17348	RUSTLER	2380	866	866		NONE	No
17349	TOP OF SALT	2039	1207	1207	SALT	NONE	No
17350	BASE OF SALT	-1756	5002	5002	ANHYDRITE	NONE	No
17360	LAMAR LS	-2086	5332	5332	LIMESTONE	NATURAL GAS,OIL	No
17345	BELL CANYON	-2118	5364	5364		NONE	No
17339	CHERRY CANYON	-3058	6304	6304		NATURAL GAS,OIL	No
18596	BRUSHY CANYON	-4516	7762	7762		NATURAL GAS,OIL	No
17316	BONE SPRING	-5757	9003	9003	SANDSTONE	NATURAL GAS,OIL	No
18620	AVALON	-5791	9037	9037		NATURAL GAS,OIL	No
18620	AVALON	-5965	9211	9211		NATURAL GAS,OIL	No
17359	BONE SPRING 1ST	-7146	10392	10392		NATURAL GAS,OIL	No
17364	BONE SPRING 2ND	-7664	10910	10910		NATURAL GAS,OIL	No
17366	BONE SPRING 3RD	-8669	11915	11915		NATURAL GAS,OIL	No
17333	WOLFCAMP	-9105	12351	12351	SHALE	NATURAL GAS,OIL	Yes
17320	STRAWN	-10470	13716	13716		NONE	No

Section 2 - Blowout Prevention

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

Pressure Rating (PSI): 3M **Rating Depth:** 11905

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_White_Falcon_22H_3M_Choke_03-27-2017.pdf

BOP Diagram Attachment:

COG_White_Falcon_22H_3M_BOP_03-27-2017.pdf

COG_White_Falcon_22H_Flex_Hose_06-26-2017.pdf

Pressure Rating (PSI): 5M **Rating Depth:** 12750

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_White_Falcon_22H_5M_Choke_03-27-2017.pdf

BOP Diagram Attachment:

COG_White_Falcon_22H_5M_BOP_03-27-2017.pdf

COG_White_Falcon_22H_Flex_Hose_06-26-2017.pdf

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

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	-9364	-10534	895	J-55	68	STC	4.76	0.79	DRY	11.09	DRY	11.09
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	11905	0	11905	-9364	-21444	11905	L-80	47	OTHER	1.27	1.15	DRY	1.94	DRY	1.94
3	PRODUCTION	8.5	5.5	NEW	API	N	0	22458	0	22458	-9364	-29271	22458	P-110	23	OTHER	2.01	2.12	DRY	2.51	DRY	2.51

Casing Attachments

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

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

COG_White_Falcon_22H_Casing_Prog_03-27-2017.pdf

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

Casing Attachments

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

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

COG_White_Falcon_22H_Casing_Prog_03-27-2017.pdf

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

Inspection Document:

Spec Document:

Taperd String Spec:

Casing Design Assumptions and Worksheet(s):

COG_White_Falcon_22H_Casing_Prog_03-27-2017.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	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	11905	1490	3.5	10.3	5215		Tuned Light Blend	As needed
INTERMEDIATE	Tail		0	11905	250	1.34	14.8	335	50	Class C	2% CaCl

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	22458	140	2.5	11.9	350	30	50:50:10 H Blend	As needed
PRODUCTION	Tail		0	22458	2740	1.24	14.4	3397	30	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
11905	22458	OIL-BASED MUD	9.6	11							
0	895	OTHER : FW Gel	8.6	8.8							FW Gel
895	11905	OTHER : Diesel Brine Emulsion	8.4	9							Diesel Brine Emulsion

Operator Name: COG OPERATING LLC

Well Name: WHITE FALCON 16 FEDERAL COM **Well Number:** 22H

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: 7215 **Anticipated Surface Pressure:** 4440.8

Anticipated Bottom Hole Temperature(F): 180

Anticipated abnormal proessures, 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_White_Falcon_22H_H2S_Schem_03-27-2017.pdf
COG_White_Falcon_22H_H2S_SUP_03-27-2017.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_White_Falcon_22H_AC_Report_03-27-2017.pdf
COG_White_Falcon_22H_Directional_Plan_03-27-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

COG_White_Falcon_22H_Drilling_Prog_03-27-2017.pdf

Other Variance attachment:

COG_White_Falcon_22H_Flex_Hose_03-27-2017.pdf

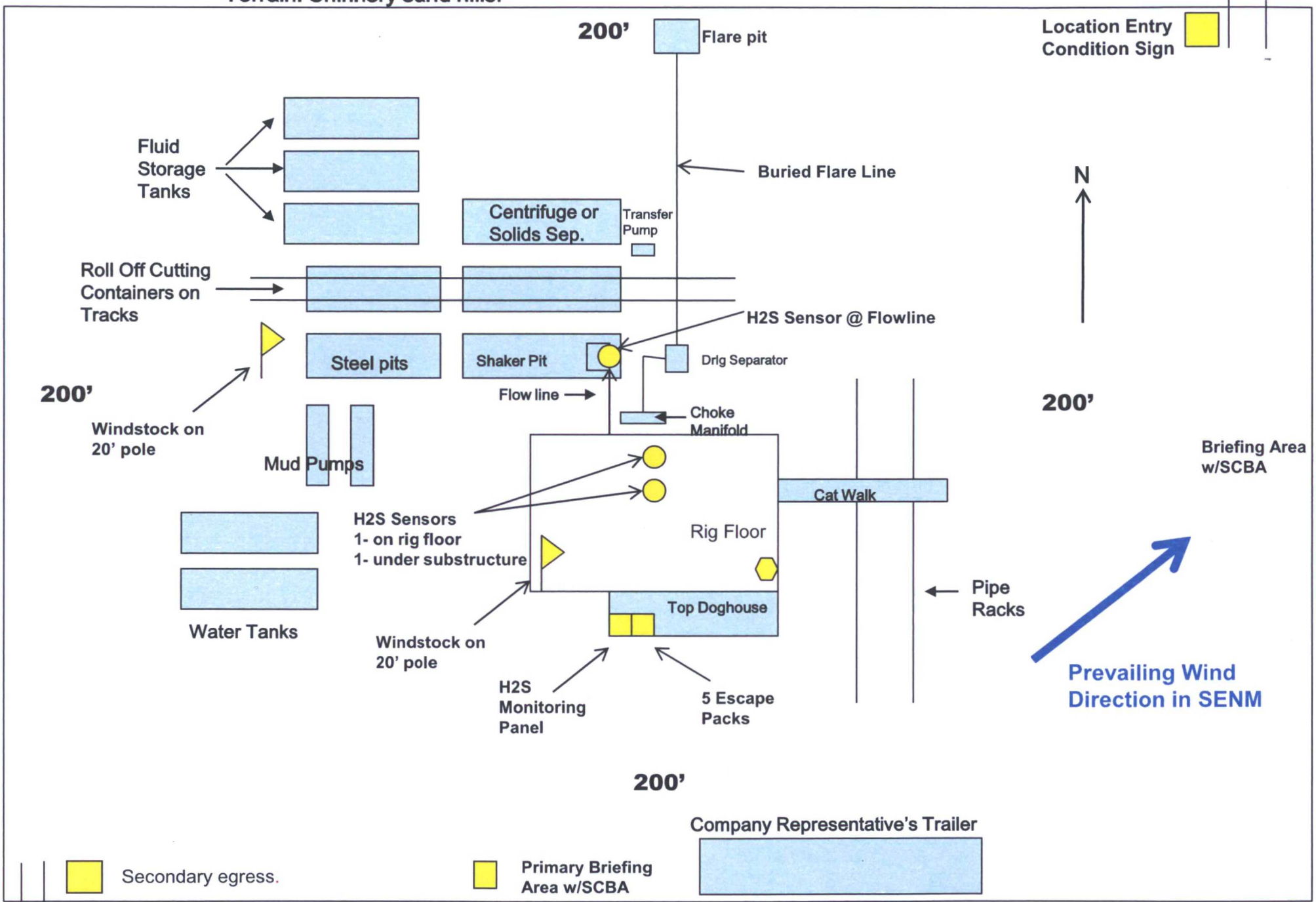
Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
17.5"	0	895	13.375"	68	J55	STC	4.76	0.79	11.09
12.25"	0	11905	9.625"	47	L80	BTC	1.27	1.15	1.94
8.5"	0	22,458	5.5"	23	P110	BTC	2.01	2.12	2.51
			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

COG Operating LLC
H_2S Equipment Schematic
Terrain: Shinnery sand hills.

Well pad will be 400' x 400'
with cellar in center of pad



COG Operating, LLC - White Falcon 16 Federal Com 22H

1. Geologic Formations

TVD of target	12,610' EOL	Pilot hole depth	NA
MD at TD:	22,458'	Deepest expected fresh water:	207'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	866	Water	
Top of Salt	1207	Salt	
Base of Salt	5002	Salt	
Lamar	5332	Salt Water	
Bell Canyon	5364	Salt Water	
Cherry Canyon	6304	Oil/Gas	
Brushy Canyon	7762	Oil/Gas	
Bone Spring Lime	9003	Oil/Gas	
U. Avalon Shale	9037	Oil/Gas	
L. Avalon Shale	9211	Oil/Gas	
1st Bone Spring Sand	10392	Oil/Gas	
2nd Bone Spring Sand	10910	Oil/Gas	
3rd Bone Spring Sand	11915	Oil/Gas	
Wolfcamp	12351	Target Oil/Gas	
Strawn	13716	Not Penetrated	Abnormal Press.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body
	From	To							
17.5"	0	895	13.375"	68	J55	STC	4.76	0.79	11.09
12.25"	0	11905	9.625"	47	L80	BTC	1.27	1.15	1.94
8.5"	0	22,458	5.5"	23	P110	BTC	2.01	2.12	2.51
				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

	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.	350	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.	1490	10.3	3.5	21.4	16	Tuned light blend
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	140	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	2740	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	11,405'	30% 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"	3M	Annular	x	3000psi
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			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.

Y	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	Brine Diesel Emulsion	8.4 - 9	28-34	N/C
9-5/8" Int shoe	Lateral TD	OBM	9.6 - 11	35-45	<20

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	Piolt hole TD to ICP
N	Density	Piolt hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	5000' to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7215 psi at 12610' TVD
Abnormal Temperature	NO 180 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

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

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