Form 3160-3
(June 2015)

OCD – HOBBS
07/20/2020
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM125402

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
COMANCHE 25-36 FED STATE COM
[328896]
2H

2. Name of Operator
CAZA OPERATING LLC [249099]

9. API Well No. 30-025-47450

3a. Address
200 N. Loraine Street, Suite 1550, Midland , TX 79701

3b. Phone No. *(include area code)*
(432) 682-7424

10. Field and Pool, or Exploratory [98234]
WC-025 G-09 S263619C/WC-025 G-09 S

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNE / 349 FNL / 1475 FEL / LAT 32.0205015 / LONG -103.3174446
At proposed prod. zone LOT 1 / 40 FSL / 915 FEL / LAT 32.0004172 / LONG -103.3156239

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 25/T26S/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)
350 feet

16. No of acres in lease
320

17. Spacing Unit dedicated to this well
240.0

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

19. Proposed Depth
12263 feet / 19710 feet

20. BLM/BIA Bond No. in file
FED: NMB000471

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2946 feet

22. Approximate date work will start*
04/14/2020

23. Estimated duration
30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	TONY SAM / Ph: (432) 682-7424	08/29/2019

Title
VP Operations

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575) 234-5959	06/05/2020

Title	Office
Assistant Field Manager Lands & Minerals	Carlsbad Field Office

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.

GCP Rec 07/20/20220

SL

APPROVED WITH CONDITIONS

KZ
07/22/2020

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 06/05/2020

APD ID: 10400046051 **Submission Date:** 08/29/2019

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400046051 **Tie to previous NOS?** N **Submission Date:** 08/29/2019

BLM Office: CARLSBAD **User:** Tony B Sam **Title:** VP Operations

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM125402 **Lease Acres:** 320

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO **APD Operator:** CAZA OPERATING LLC

Operator letter of designation:

Operator Info

Operator Organization Name: CAZA OPERATING LLC

Operator Address: 200 N. Loraine Street, Suite 1550

Zip: 79701

Operator PO Box:

Operator City: Midland **State:** TX

Operator Phone: (432)682-7424

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NEW **Master Development Plan name:** Comanche 25-36 Fed State

Well in Master SUPO? **Master SUPO name:**

Well in Master Drilling Plan? **Master Drilling Plan name:**

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WC-025 G-09 S263619C **Pool Name:** WC-025 G-09 S263619C

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

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** Y **New surface disturbance?** N

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Comanche 25-36 Fed State Com **Number:** 1H

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: DELINEATION

Describe sub-type:

Distance to town: 9 Miles **Distance to nearest well:** 30 FT **Distance to lease line:** 350 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Comanche_25_36_State_Fed_Com_2H___C_102_signed_20191108092637.pdf

Well work start Date: 04/14/2020 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: R4029_001_B **Reference Datum:** RIG FLOOR

Wellbore	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	Will this well produce from this lease?
SHL Leg #1	349	FNL	1475	FEL	26S	35E	25	Aliquot NWNE	32.0205015	-103.3174446	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 125402	2946	0	0	Y
KOP Leg #1	15	FNL	915	FEL	26S	35E	25	Aliquot NENE	32.021408	-103.315592	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 125402	-8638	11619	11584	Y
PPP Leg #1-1	100	FNL	905	FEL	26S	35E	25	Aliquot NENE	32.0211853	-103.3156069	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 125402	-9138	12159	12084	Y

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Wellbore	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	Will this well produce from this lease?
PPP Leg #1-2	0	FNL	915	FEL	26S	35E	36	Aliquot NENE	32.006934	-103.315621	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-9308	17304	12254	Y
EXIT Leg #1	100	FSL	915	FEL	26S	35E	36	Lot 1	32.0005821	-103.315624	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-9317	19670	12263	Y
BHL Leg #1	40	FSL	915	FEL	26S	35E	36	Lot 1	32.0004172	-103.315239	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-9317	19710	12263	Y

APD ID: 10400046051 **Submission Date:** 08/29/2019

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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

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Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
521708	---	2940	0	0	OTHER : surface dirt	NONE	N
521709	RUSTLER	2268	672	672	DOLOMITE, LIMESTONE, OTHER, SILTSTONE : carbonate	USEABLE WATER	N
521710	TOP SALT	2121	819	819	SALT	NONE	N
521711	BASE OF SALT	-1739	4679	4679	SALT	NONE	N
521712	DELAWARE	-2080	5020	5020	CONGLOMERATE, LIMESTONE, SANDSTONE	NATURAL GAS, OIL	N
521713	BRUSHY CANYON	-4506	7446	7459	CONGLOMERATE, LIMESTONE, SANDSTONE	NATURAL GAS, OIL	N
521714	BONE SPRING	-5806	8746	8766	DOLOMITE, LIMESTONE, OTHER, SANDSTONE : carbonate	NONE	N
521715	BONE SPRING 1ST	-7557	10497	10527	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
521716	BONE SPRING 2ND	-7903	10843	10875	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
521717	BONE SPRING 3RD	-8810	11750	11785	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
521718	WOLFCAMP	-9122	12062	12137	SANDSTONE, SHALE	NATURAL GAS, OIL	N

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 18000

Equipment: Rotating head with a rating of 500psi will be used. A remote kill line and gas buster will be used

Requesting Variance? YES

Variance request: Variance is requested for the use of a coflex hose for the choke line to from the BOP to the choke manifold. A variance is requested to use 1502(15,000psi working pressure) hammer unions downstream of the Choke Manifold used to connect the mud/gas separator and panic line. See choke manifold diagram Variance is requested to have a 5M Annular which will be tested to 100% working pressure. Prior to drilling into the producing zone the mud weight will be 12.2ppg. Flow checks will be conducted every connection. Pit drills will be performed each tour. If the well flows the upper pipe rams will be used to shut in the well. The wait and weight method will be used to kill the well in the event of a kick.

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Testing Procedure: Minimum Working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 13-3/8 inch casing shoe shall be 10000 (10M) psi. 10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips the minimum wait time before cut-off is eight hours after bumping the pug. BOP/BOPE testing can begin after cut-off or once cement reaches 500PSI compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified). The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater prior to initiating the test (see casing segment as lead cement may be critical item). a. The results of the test shall be reported to the appropriate BLM office. b. All Tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office. c. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. 5M Annular which will be tested to 100% working pressure

Choke Diagram Attachment:

Comanche_25_36_State_Fed_Com_2H___10M_Choke_Schematic_20191108093511.pdf

Comanche_25_36_State_Fed_Com_2H___Coflex_Hyd_Test_Cert_20191108093512.pdf

Comanche_25_36_State_Fed_Com_2H___Coflex_Hose_Test_Chart_20191108093514.pdf

BOP Diagram Attachment:

Comanche_25_36_State_Fed_Com_2H___10M_BOP_Schematic_20191108093518.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	CONDUCTOR	26	20.0	NEW	API	N	0	120	0	120	2962	2842	120	H-40	94	SLIM LINE HIGH PERFORMANCE						
2	SURFACE	17.5	13.375	NEW	API	N	0	794	0	794	2962	2168	794	J-55	54.5	ST&C	3.08	1	DRY	11.88	DRY	11.88
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	7200	0	7188	0	-4226	7200	HCL-80	40	BUTT	1.13	1.09	DRY	1.49	DRY	1.49
4	INTERMEDIATE	12.25	9.625	NEW	API	N	7200	9172	7188	9150	-4226	-6188	1972	HCL-80	47	BUTT	1.49	1.3	DRY	11.71	DRY	11.71
5	PRODUCTION	8.5	5.5	NEW	API	N	0	19710	0	12263	0	-9301	19710	P-110	20	BUTT	1.39	1.59	DRY	2.61	DRY	2.61

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Casing Attachments

Casing ID: 1 **String Type:** CONDUCTOR

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Casing ID: 2 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Comanche_25_36_State_Fed_Com_2H___Casing_and_Cement_Design_20191108093610.pdf

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Comanche_25_36_State_Fed_Com_2H___Casing_and_Cement_Design_20191108093847.pdf

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Casing Attachments

Casing ID: 4 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Comanche_25_36_State_Fed_Com_2H___Casing_and_Cement_Design_20191108093940.pdf

Casing ID: 5 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Comanche_25_36_State_Fed_Com_2H___Casing_and_Cement_Design_20191108094015.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
CONDUCTOR	Lead		0	120	140	1.35	14.8	135	5	Class C	CaCl2
SURFACE	Lead		0	494	355	1.93	13.5	687	100	Class C	4% bwoc Bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005% bwoc Static Free + 0.005 gps FP- 6L

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Tail		494	794	309	1.35	1438	417	100	Class C	CaCl2
INTERMEDIATE	Lead	4900	0	4800	1395	2.13	12.6	2971	100	Class C	(35:65) + Poz (Fly Ash) + 4% bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM- 1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride
INTERMEDIATE	Tail		4800	4900	150	1.35	14.8	202	100	Class C	CaCl2
INTERMEDIATE	Lead	4900	4900	8672	1105	2.13	12.6	2353	100	Class C	(35:65) + Poz (Fly Ash) + 4% bwoc Bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM- 1 + 0.125 lbs/sack Cello Flake + 0.005 lbs/sack Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride
INTERMEDIATE	Tail		8672	9172	232	1.35	14.8	313	100	Class C	CaCl2
PRODUCTION	Lead		0	11500	2475	2.38	11.8	5890	100	Class H	(50:50) + Poz (Fly Ash) + 10% bwoc Bentonite II + 5% bwow Sodium Chloride + 5 lbs/sack LCM-1 + 0.005 lbs/sack Static Free + 0.005 gps FP-6L
PRODUCTION	Tail		11500	19710	2270	1.62	13.2	3677	100	Class H	(15:61:11) Poz (Fly Ash):Class H Cement:CSE-2 + 4% Sodium Chloride + 3 lbs/sack LCM-1 + 0.6% bwoc FL-25 + FP-6L + 0.005% bwoc Static Free

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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 will be on location to control any abnormal conditions encountered. Such as but not limited to a kick, lost circulation and hole sloughing

Describe the mud monitoring system utilized: A Pason PVT system will be rigged up prior to spudding the well. A volume monitoring system that measures, calculates, and displays readings from the mud system on the rig to alert the rig crew of impending gas kicks and lost circulation issues. Components a) PVT Pit Bull monitor: Acts as the heart of the system, containing all the controls, switches, and alarms. Typically, it is mounted near the driller's console. b) Junction box: Provides a safe, convenient place for making the wiring connections. c) Mud probes: Measure the volume of drilling fluid in each individual tank. d) Flow sensor: Measures the relative amount of mud flowing in the return line

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
794	9150	SALT SATURATED	9.2	10	75	0.1	9.5	2	150000	0	
9150	19710	OIL-BASED MUD	9.2	12.5	90	0.4	9.5	6	135000	18	
0	794	SPUD MUD	8.4	8.9	62.8	0.1	9.5	2	0	0	

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Section 6 - Test, Logging, Coring

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

no production tests

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

GAMMA RAY LOG,DIRECTIONAL SURVEY,MEASUREMENT WHILE DRILLING,MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

no coring

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7963 **Anticipated Surface Pressure:** 5265

Anticipated Bottom Hole Temperature(F): 169

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:

Comanche_25_36_Fed_State_Com_2H___H2S_Plan_20190822130408.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

190815_Comanche_25_36_Fed_State_Com_2H___Directional_Plot_20190822130427.pdf
190815_Comanche_25_36_Fed_State_Com_2H___Directional_Plan_20190822130428.pdf
Comanche_25_36_State_Fed_Com_2H___Multi_Bowl_Wellhead_20191108094721.pdf

Other proposed operations facets description:

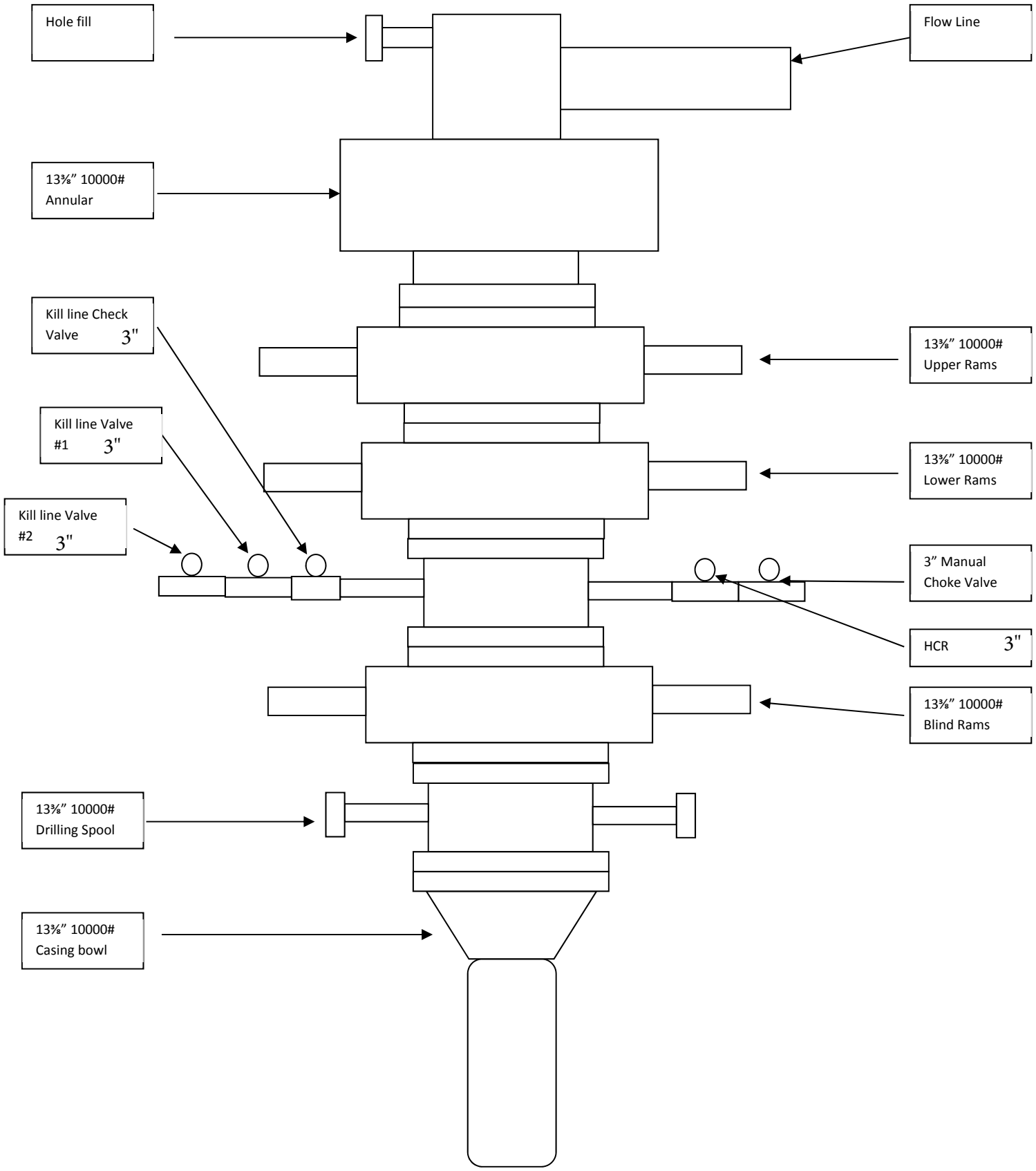
A multi bowl well head will be used. There is a 1-5/8" slot for a grout string on the 13-3/8" hanger if required.

Other proposed operations facets attachment:

Comanche_25_36_Fed_State_Com_2H___Closed_Loop_Diagram_Design_Plan_20190822130452.pdf
Comanche_25_36_Fed_State_Com_2H___Closed_Loop_Design_Operating_and_Closure_Plan_20190822130452.pdf
Comanche_25_36_Fed_State_Com_2H___Gas_Capture_Plan_20190822130453.pdf
Comanche_25_36_State_Fed_Com_2H___Interim_Reclamation_Plat_20191108094650.pdf

Other Variance attachment:

Comanche_25_36_State_Fed_Com_2H___Multi_Bowl_Wellhead_20191108094736.pdf


Hole fill
Flow Line
13⅝" 10000# Annular
Kill line Check Valve 3"
13⅝" 10000# Upper Rams
Kill line Valve #1 3"
13⅝" 10000# Lower Rams
Kill line Valve #2 3"
3" Manual Choke Valve
HCR 3"
13⅝" 10000# Blind Rams
13⅝" 10000# Drilling Spool
13⅝" 10000# Casing bowl

Operator	Caza Operating LLC
Well Name & No.	Comanche 2H
County	Lea
Location (S/T/R/Ali)	
Lease Number	
ATS or EC #	APD### or EC###

Colors:
Choose casings
Fill in, if applicable

Name	
Date	
Version	

Remarks

ral 6H Lea NM114998 Caza Operating LLC 13-22 10052019 LV

Type of Casing	Size of Hole (in)	Size of Casing (in)	Weight per Foot (lbs/ft)	Grade	Yield	Coupling #:	Top (ft)	Bottom (MD) (ft)	Setting Depth (TVD) (TVD of entire string) (ft)	Min Mud Weight (ppg)	Max Mud Weight (ppg)	ID	Drift ID	Cplg OD
Surface	17.500	13.375	54.50	j	55	stc	0	794	794	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	7200	9150	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1	12.250	9.625	47.00	hcl	80	btc	7200	9172	9150	9.20	10.00	8.6810	8.6250	10.6250
<Choose Casing>														
Prod 1	8.500	5.500	20.00	p	110	btc	0	19710	12263	9.20	12.50	4.7780	4.6530	6.0500
<Choose Casing>														
<Choose Casing>														

Cement

Surface			Int 1			Prod 1			<Choose Casing>			<Choose Casing>		
TOC	0		TOC	0		TOC	0		TOC			TOC		
DV Depth			DV Depth	4900		DV Depth			DV Depth			DV Depth		
	Sacks	Yield (ft3/sx)			Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)
Lead	355	1.93	Lead	1105	2.13	Lead 1	2475	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2270	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1395	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	1102.30	cuft	Cement Added	2666.9 / 3173.9	cuft	Cement Added	9567.90	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	552	cuft	Cement Req.	1337.9 / 1573.9	cuft	Cement Req.	4776	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.86%		Excess	99.3% / 101.7%		Excess	100.32%		Excess	#N/A		Excess	#N/A	

Clearances	in Hole	In Surface	In Int 1	In Int 1 Taper 1		In Prod 1		
Surface	Pass = 1.5625							
Int 1	Pass = 0.8125	Pass = 0.995						
Int 1 Taper 1	Pass = 0.8125	No Overlap	No Overlap					
Prod 1	Pass = 1.225	Pass = 3.2825	Pass = 1.3925	Pass = 1.3155	No Overlap			

Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
Surface	11.88	3.08	0.57	1.00
Int 1	2.41	1.13	0.72	1.09
Int 1 Taper 1	11.71	1.49	0.86	1.30
Prod 1	2.61	1.39	1.59	2.40

BOP Requirements After the Shoe

Surface		Int 1		Prod 1	
Max. Surf. Pressure	2740 psi	Max. Surf. Pressure	5265 psi	Max. Surf. Pressur	psi
BOP Required	3M System	BOP Required	10M System	BOP Required	System
<Choose Casing>					
Max. Surf. Pressure	psi				
BOP Required	System				

Operator	Caza Operating LLC
Well Name & No.	Comanche 2H
County	Lea
Location (S/T/R/Ali)	
Lease Number	
ATS or EC #	APD### or EC###

Colors:
Choose casings
Fill in, if applicable

Name	
Date	
Version	

Remarks

ral 6H Lea NM114998 Caza Operating LLC 13-22 10052019 LV

Type of Casing	Size of Hole (in)	Size of Casing (in)	Weight per Foot (lbs/ft)	Grade	Yield	Coupling #:	Top (ft)	Bottom (MD) (ft)	Setting Depth (TVD) (TVD of entire string) (ft)	Min Mud Weight (ppg)	Max Mud Weight (ppg)	ID	Drift ID	Cplg OD
Surface	17.500	13.375	54.50	j	55	stc	0	794	794	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	7200	9150	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1	12.250	9.625	47.00	hcl	80	btc	7200	9172	9150	9.20	10.00	8.6810	8.6250	10.6250
<Choose Casing>														
Prod 1	8.500	5.500	20.00	p	110	btc	0	19710	12263	9.20	12.50	4.7780	4.6530	6.0500
<Choose Casing>														
<Choose Casing>														

Cement

Surface			Int 1			Prod 1			<Choose Casing>			<Choose Casing>		
TOC	0		TOC	0		TOC	0		TOC			TOC		
DV Depth			DV Depth	4900		DV Depth			DV Depth			DV Depth		
	Sacks	Yield (ft3/sx)			Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)
Lead	355	1.93	Lead	1105	2.13	Lead 1	2475	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2270	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1395	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	1102.30	cuft	Cement Added	2666.9 / 3173.9	cuft	Cement Added	9567.90	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	552	cuft	Cement Req.	1337.9 / 1573.9	cuft	Cement Req.	4776	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.86%		Excess	99.3% / 101.7%		Excess	100.32%		Excess	#N/A		Excess	#N/A	

Clearances	in Hole	In Surface	In Int 1	In Int 1 Taper 1		In Prod 1		
Surface	Pass = 1.5625							
Int 1	Pass = 0.8125	Pass = 0.995						
Int 1 Taper 1	Pass = 0.8125	No Overlap	No Overlap					
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Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
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BOP Requirements After the Shoe

Surface		Int 1		Prod 1	
Max. Surf. Pressure	2740 psi	Max. Surf. Pressure	5265 psi	Max. Surf. Pressur	psi
BOP Required	3M System	BOP Required	10M System	BOP Required	System
<Choose Casing>					
Max. Surf. Pressure	psi				
BOP Required	System				

In a Lesser Prairie-Chicken section.

13 3/8	surface csg in a	17 1/2	inch hole.		Design Factors		SURFACE		
Segment	**#/ft**	**Grade**	**Coupling**	**Joint**	**Collapse**	**Burst**	**Length**	**Weight**	**ALT Burst**
"A"	54.50	J 55	ST&C	11.88	3.08	0.6	794	43,273	1.04
"B"							**0**	**0**	
w/8.4#/g mud, 30min Sfc Csg Test psig:	1,500		Tail Cmt	does not	circ to sfc.	Totals:	794	43,273	

Comparison of Proposed to Minimum Required Cement Volumes

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
17 1/2	0.6946	**1036**	1819	**625**	191	**8.90**	2633	**3M**	1.56

Burst Frac Gradient(s) for Segment(s) A, B = 3.44, b All > 0.70, Site plat (pipe racks S or E) as per O.O.1.III.D.4.i. not found.

9 5/8	casing inside the	13 3/8			Design Factors		INTERMEDIATE		
Segment	**#/ft**	**Grade**	**Coupling**	**Joint**	**Collapse**	**Burst**	**Length**	**Weight**	**ALT Burst**
"A"	40.00	L 80	LT&C	2.00	1.14	0.99	5,200	208,000	1.86
"B"	**40.00**	**HCL 80**	**LT&C**	5.40	**1.13**	**0.99**	**2,000**	**80,000**	1.86
"C"	**47.00**	**HCL 80**	**LT&C**	13.72	1.55	1.19	**1,613**	**75,811**	
"D"							**0**	**0**	
w/8.4#/g mud, 30min Sfc Csg Test psig:	883					Totals:	8,813	363,811	

The cement volume(s) are intended to achieve a top of 0 ft from surface or a 794 overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
12 1/4	0.3132	**2672**	5506	**2818**	95	**10.00**	3099	**5M**	0.81
Setting Depths for D V Tool(s):		**4100**					sum of sx	Σ CuFt	Σ%excess
excess cmt by stage % :		**130**	57				2585	5506	95

Class 'C' tail cmt yld > 1.35

Burst Frac Gradient(s) for Segment(s): A, B, C, D = 1.11, 0.8, c, d All > 0.70, OK.

Tail cmt proposed for the csg below could overlap the previous csg shoe.

5 1/2	casing inside the	9 5/8			Design Factors		PRODUCTION	
Segment	**#/ft**	**Grade**	**Coupling**	**Body**	**Collapse**	**Burst**	**Length**	**Weight**
"A"	20.00	P 110	BUTT	2.61	2.02	2.18	11,619	232,380
"B"	**20.00**	**P 110**	**BUTT**	8.16	**1.75**	**2.18**	**8,091**	**161,820**
w/8.4#/g mud, 30min Sfc Csg Test psig:	2,556					Totals:	19,710	394,200
B	Segment Design	Factors would be:		49.78	1.91	if it were a vertical wellbore.		
No Pilot Hole Planned			MTD	Max VTD	Csg VD	Curve KOP	Dogleg°	Severity°	MEOC
			19710	12263	12263	11619	90	9	12565

The cement volume(s) are intended to achieve a top of 0 ft from surface or a 8813 overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
8 1/2	0.2291	**5400**	10800	**4776**	126	**9.10**			1.23

Class 'H' tail cmt yld > 1.20

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Well Name & No.	Comanche 2H
County	Lea
Location (S/T/R/Ali)	
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Fill in, if applicable

Name	
Date	
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Remarks

ral 6H Lea NM114998 Caza Operating LLC 13-22 10052019 LV

Type of Casing	Size of Hole (in)	Size of Casing (in)	Weight per Foot (lbs/ft)	Grade	Yield	Coupling #:	Top (ft)	Bottom (MD) (ft)	Setting Depth (TVD) (TVD of entire string) (ft)	Min Mud Weight (ppg)	Max Mud Weight (ppg)	ID	Drift ID	Cplg OD
Surface	17.500	13.375	54.50	j	55	stc	0	794	794	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	7200	9150	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1	12.250	9.625	47.00	hcl	80	btc	7200	9172	9150	9.20	10.00	8.6810	8.6250	10.6250
<Choose Casing>														
Prod 1	8.500	5.500	20.00	p	110	btc	0	19710	12263	9.20	12.50	4.7780	4.6530	6.0500
<Choose Casing>														
<Choose Casing>														

Cement

Surface			Int 1			Prod 1			<Choose Casing>			<Choose Casing>		
TOC	0		TOC	0		TOC	0		TOC			TOC		
DV Depth			DV Depth	4900		DV Depth			DV Depth			DV Depth		
	Sacks	Yield (ft3/sx)			Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)
Lead	355	1.93	Lead	1105	2.13	Lead 1	2475	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2270	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1395	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	1102.30	cuft	Cement Added	2666.9 / 3173.9	cuft	Cement Added	9567.90	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	552	cuft	Cement Req.	1337.9 / 1573.9	cuft	Cement Req.	4776	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
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Clearances	in Hole	In Surface	In Int 1	In Int 1 Taper 1		In Prod 1		
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Int 1 Taper 1	Pass = 0.8125	No Overlap	No Overlap					
Prod 1	Pass = 1.225	Pass = 3.2825	Pass = 1.3925	Pass = 1.3155	No Overlap			

Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
Surface	11.88	3.08	0.57	1.00
Int 1	2.41	1.13	0.72	1.09
Int 1 Taper 1	11.71	1.49	0.86	1.30
Prod 1	2.61	1.39	1.59	2.40

BOP Requirements After the Shoe

Surface		Int 1		Prod 1	
Max. Surf. Pressure	2740 psi	Max. Surf. Pressure	5265 psi	Max. Surf. Pressur	psi
BOP Required	3M System	BOP Required	10M System	BOP Required	System
<Choose Casing>					
Max. Surf. Pressure	psi				
BOP Required	System				

Operator	Caza Operating LLC
Well Name & No.	Comanche 2H
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<Choose Casing>														
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Cement

Surface			Int 1			Prod 1			<Choose Casing>			<Choose Casing>		
TOC	0		TOC	0		TOC	0		TOC			TOC		
DV Depth			DV Depth	4900		DV Depth			DV Depth			DV Depth		
	Sacks	Yield (ft3/sx)			Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)		Sacks	Yield (ft3/sx)
Lead	355	1.93	Lead	1105	2.13	Lead 1	2475	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2270	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1395	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	1102.30	cuft	Cement Added	2666.9 / 3173.9	cuft	Cement Added	9567.90	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	552	cuft	Cement Req.	1337.9 / 1573.9	cuft	Cement Req.	4776	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.86%		Excess	99.3% / 101.7%		Excess	100.32%		Excess	#N/A		Excess	#N/A	

Clearances	in Hole	In Surface	In Int 1	In Int 1 Taper 1		In Prod 1		
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Prod 1	2.61	1.39	1.59	2.40

BOP Requirements After the Shoe

Surface		Int 1		Prod 1	
Max. Surf. Pressure	2740 psi	Max. Surf. Pressure	5265 psi	Max. Surf. Pressur	psi
BOP Required	3M System	BOP Required	10M System	BOP Required	System
<Choose Casing>					
Max. Surf. Pressure	psi				
BOP Required	System				

Caza Oil and Gas, Inc

H2S Drilling Operations Plan

Sioux 25-36 State Fed Com 9H

Lea County, New Mexico

Prepared by: Steve Morris

Date: 06/27/2018

Table of Contents

H2S Contingency Plan Section

Scope:

This contingency plan provides an organized plan of action for alerting and protecting the public within an area of exposure prior to an intentional release, of following the accidental release of a potentially hazardous volume of hydrogen sulfide. The plan establishes guidelines for all personnel whose work activity may involve exposure to Hydrogen Sulfide Gas (H2S).

Objective:

Prevent any and all accidents, and prevent the uncontrolled release of H2S into the atmosphere.

Provide proper evacuation procedures to cope with emergencies.

Provide immediate and adequate medical attention should an injury occur.

Implementation: This plan, with all details, is to be fully implemented 1000’ before drilling into the first sour zone.

Emergency Response Procedure: This section outlines the conditions and denotes steps to be taken in the event of an emergency.

Emergency Equipment and Procedure: This section outlines the safety and emergency equipment that will be required for the drilling of this well.

Training Provisions: This section outlines the training provisions that must be adhered to 1000’ before drilling into the first sour zone.

Emergency Call Lists: Included are the telephone numbers of all persons that would need to be contacted, should an H2S emergency occur.

Briefing: This section deals with the briefing of all persons involved with the drilling of this well.

Public Safety: Public safety personnel will be made aware of the drilling of this well.

Check Lists: Status check lists and procedural check lists have been included to ensure adherence to the plan.

General Information: A general information section has been included to supply support information.

Emergency Procedures Section

Emergency Procedures

I. **In the event of any evidence of H2S level above 10 ppm, take the following steps immediately:**
   A. Secure breathing apparatus.
   B. Order non-essential personnel out of the danger zone.
   C. Take steps to determine if the H2S level can be corrected or suppressed, and if so, proceed with normal operations.

II. **If uncontrollable conditions occur, proceed with the following:**
   A. Take steps to protect and/or remove any public downwind of the rig, including partial evacuation or isolation. Notify necessary public safety personnel and the New Mexico Oil & Gas of the situation.
   B. Remove all personnel to the safe briefing area.
   C. Notify public safety personnel for help with maintaining roadblocks and implementing evacuation.
   D. Determine and proceed with the best possible plan to regain control of the well. Maintain tight security and safety measures.

III. **Responsibility:**
   A. The company approved supervisor shall be responsible for the total implementation of the plan.
   B. The company approved supervisor shall be in complete command during any emergency.
   C. The company approved supervisor shall designate a backup supervisor in the event that he/she is not available.

Emergency Procedure Implementation

I. **Drilling or Tripping:**
   A. All Personnel
      1. When alarm sounds, don escape unit and report to upwind safe briefing area.
      2. Check status of other personnel (buddy system).
      3. Secure breathing apparatus.
      4. Wait for orders from supervisor.
   B. Drilling Foreman
      1. Report to the upwind safe briefing area.
      2. Don breathing apparatus and return to the point of release with the Tool pusher of Driller (buddy system).
      3. Determine the concentration of H2S.
      4. Address the situation and take appropriate control measures.
   C. Tool Pusher
      1. Report to the upwind safe briefing area.
      2. Don breathing apparatus and return to the point of release with the Drilling Foreman or the Driller (buddy system).

3. Determine the concentration.
4. Address the situation and take appropriate control measures.

D. Driller
   1. Check the status of other personnel (in a rescue attempt, always use the buddy system).
   2. Assign the least essential person to notify the Drilling Foreman and Tool Pusher, in the event of their absence.
   3. Assume the responsibility of the Drilling Foreman and the Tool Pusher until they arrive, in the event of their absence.

E. Derrick Man and Floor Hands
   1. Remain in the upwind safe briefing area until otherwise instructed by a supervisor.

F. Mud Engineer
   1. Report to the upwind safe briefing area.
   2. When instructed, begin check of mud for PH level and H2S level.

G. Safety Personnel
   1. Don breathing apparatus.
   2. Check the status of all personnel.
   3. Wait for instructions from Drilling Foreman or Tool Pusher.

II. Taking a Kick:

A. All personnel report to the upwind safe briefing area.
B. Follow standard BOP procedures.

III. Open Hole Logging:

A. All unnecessary personnel should leave the rig floor.
B. Drilling Foreman and Safety personnel should monitor the conditions and make necessary safety equipment recommendations.

IV. Running Casing or Plugging:

A. Follow “Drilling or Tripping” procedures.
B. Assure that all personnel have access to protective equipment.

Simulated Blowout Control Drills

All drills will be initiated by activating alarm devices (air horn). One long blast on the air horn for ACTUAL and SIMULATED blowout control drills. This operation will be performed by the Drilling Foreman or Tool Pusher at least one time per week for each of the following conditions, with each crew:

Drill #1	On-bottom Drilling
Drill #2	Tripping Drill Pipe

In each of these drills, the initial reaction time to shutting in the well shall be timed as well as the total time for the crew to complete its entire put drill assignment. The times must be recorded on the IADC Driller’s log as “Blowout Control Drill”.

Drill No.:		
Reaction Time to Shut-in:	minutes,	seconds.
Total Time to Complete Assignment:	minutes,	seconds.

I. Drill Overviews:
   A. Drill No. 1 – On-bottom Drilling
      1. Sound the alarm immediately.
      2. Stop the rotary and hoist the Kelly joint above the rotary table.
      3. Stop the circulatory pump.
      4. Close the drill pipe rams.
      5. Record casing and drill pipe shut-in pressures and pit volume increases.
   B. Drill No. 2 – Tripping Drill Pipe:
      1. Sound the alarm immediately.
      2. Position the upper tool joint just above the rotary table and set the slips.
      3. Install a full opening valve inside blowout preventer tool in order to close the drill pipe.
      4. Close the drill pipe rams.
      5. Record the shut-in annular pressure.

II. Crew Assignments
   A. Drill No. 1 – On-bottom Drilling:
      1. Driller
         a) Stop the rotary and hoist the Kelly joint above the rotary table.
         b) Stop the circulatory pump.
         c) Check flow.
         d) If flowing, sound the alarm immediately.
         e) Record the shut-in drill pipe pressure.
         f) Determine the mud weight increase needed or other courses of action.
      2. Derrick Man
         a) Open choke line valve at BOP.
         b) Signal Floor Man #1 at accumulator that choke line is open.
         c) Close choke upstream valve after pipe rams have been closed.
         d) Read the shut-in annular pressure and report readings to Driller.
      3. Floor Man #1
         a) Close the pipe rams after receiving the signal from the Derrick Man.
         b) Report to Driller for further instructions.
      4. Floor Man #2
         a) Notify the Tool Pusher and Operator Representative of the H2S alarms.
         b) Check for open fires and, if safe to do so, extinguish them.
         c) Stop all welding operations.
         d) Turn-off all non-explosive proof lights and instruments.

e) Report to Driller for further instructions.

5. Tool Pusher
   a) Report to the rig floor.
   b) Have a meeting with all crews.
   c) Compile and summarize all information.
   d) Calculate the proper kill weight.
   e) Ensure that proper well procedures are put into action.
6. Operator Representative
   a) Notify the Drilling Superintendent.
   b) Determine if an emergency exists and if so, activate the contingency plan.

B. Drill No. 2 – Tripping Pipe:
1. Driller
   a) Sound the alarm immediately when mud volume increase has been detected.
   b) Position the upper tool joint just above the rotary table and set slips.
   c) Install a full opening valve or inside blowout preventer tool to close the drill pipe.
   d) Check flow.
   e) Record all data reported by the crew.
   f) Determine the course of action.
2. Derrick Man
   a) Come down out of derrick.
   b) Notify Tool Pusher and Operator Representative.
   c) Check for open fires and, if safe to do so, extinguish them.
   d) Stop all welding operations.
   e) Report to Driller for further instructions.

3. Floor Man #1
   a) Pick up full opening valve or inside blowout preventer tool and slab into tool join above rotary table (with Floor Man #2)
   b) Tighten valve with back-up tongs.
   c) Close pipe rams after signal from Floor Man #2.
   d) Read accumulator pressure and check for possible high pressure fluid leaks in valves or piping.
   e) Report to Driller for further instructions.
4. Floor Man #2
   a) Pick-up full opening valve or inside blowout preventer tool and tab into tool joint above rotary table (with Floor Man #1)
   b) Position back-up tongs on drill pipe.
   c) Open choke line valve at BOP.
   d) Signal Floor Man #1 at accumulator that choke line is open.
   e) Close choke and upstream valve after pipe rams have been closed.
   f) Check for leaks on BOP stack and choke manifold.

g) Read annular pressure.
h) Report readings to the Driller.

5. Tool Pusher
   a) Report to the rig floor.
   b) Have a meeting with all of the crews.
   c) Compile and summarize all information.
   d) See that proper well kill procedures are put into action.
6. Operator Representative
   a) Notify Drilling Superintendent.
   b) Determine if an emergency exists, and if so, activate the contingency plan

Ignition Procedures

Responsibility:

The decision to ignite the well is responsibility of the DRILLING FOREMAN in concurrence with the STATE POLICE. In the event of the Drilling Foreman is incapacitated, it becomes the responsibility of the RIG TOOL PUSHER. This decision should be made only as a last resort and in a situation where it is clear that:

1. Human life and property are endangered.
2. There is no hope of controlling the blowout under the prevailing conditions.

If time permits, notify the main office, but do not delay if human life is in danger. Initiate the first phase of the evacuation plan.

Instructions for Igniting the Well:

1. Two people are required for the actual igniting operation. Both men must wear self-contained breathing apparatus and must use a full body harness and attach a retrievable safety line to the D-Ring in the back. One man must monitor the atmosphere for explosive gases with the LEL monitor, while the Drilling Foreman is responsible for igniting the well.
2. The primary method to ignite is a 25mm flare gun with a range of approximately 500 feet.
3. Ignite from upwind and do not approach any closer than is warranted.
4. Select the ignition site best suited for protection and which offers an easy escape route.
5. Before igniting, check for the presence of combustible gases.
6. After igniting, continue emergency actions and procedures as before.
7. All unassigned personnel will limit their actions to those directed by the Drilling Foreman.

NOTE: After the well is ignited, burning Hydrogen Sulfide will convert to Sulfur Dioxide, which is also highly toxic. Do not assume the area is safe after the well is ignited.

Training Program

When working in an area where Hydrogen Sulfide (H2S) might be encountered, definite training requirements for all personnel must be carried out. The Company Supervisor will ensure that all personnel at the well site have had adequate training in the following:

1. Hazards and Characteristics of Hydrogen Sulfide.
2. Physicals effects of Hydrogen Sulfide on the human body.
3. Toxicity of Hydrogen Sulfide and Sulfur Dioxide.
4. H2S detection, emergency alarm and sensor location.
5. Emergency rescue.
6. Resuscitators.
7. First aid and artificial resuscitation.
8. The effects of Hydrogen Sulfide on metals.
9. Location safety.

Service company personnel and visiting personnel must be notified if the zone contains H2S, and each service company must provide adequate training and equipment for their employees before they arrive at the well site.

Emergency Equipment Requirements

Lease Entrance Sign:

Should be located at the lease entrance with the following information:

CAUTION- POTENTIAL POISON GAS HYDROGEN SULFIDE

Well Control Equipment:

- A flare line will be located a minimum of 150' from the wellhead to be ignited by a flare gun.
- The choke manifold will include a remotely operated choke.
- A mud/gas separator will be installed to separate gas from the drilling mud.

Mud Program:

The drilling mud program has been designed to minimize the volume of hydrogen sulfide (H2S) circulated to surface. The operator will have the necessary mud products on location to minimize the hazards while drilling in H2S-bearing zones.

Metallurgy:

- All drill strings , casings, tubing, wellhead equipment , the blowout preventer , the drilling spool, kill lines, choke manifold and lines, and all valves shall be suitable for H2S service.
- All elastomers used for packing and seals shall be H2S trim.

Respiratory Equipment:

- Fresh air breathing equipment should be placed at the safe briefing areas and should include the following: Two SCBA's will be placed at each briefing area. A moveable breathing air trailer with 2 SCBA's, 5 work/escape units, ample breathing air hose and manifolds will be on location. The breathing air hose will be installed on the rig floor and derrick along with breathing air manifolds so that it will not restrict work activity. All employees that may wear respiratory will complete a MEQ and be quantitative fit tested 1000' prior to the 1st zone that may contain H2S.

Windsocks or Wind Streamers:

- A minimum of two 10" windsocks located at strategic locations so that they may be seen from any point on location. More will be used if necessary for wind consciousness.
- Wind streamers (if preferred) should be placed at various locations on the well site to ensure wind consciousness at all times. (Corners of location).

Hydrogen Sulfide Detector and Alarms:

- 1 - Four channel H2S monitor with audible and visual alarms, strategically located to be seen and heard by all employees working on the well site. All sensors will be bump tested or calibrated if necessary on a weekly basis. The alarms will be set to visually alarm at 10 PPM and audible at 14 PPM.
- Four (4) sensors located as follows: #1 -Rig Floor, #2 & #3- Bell Nipple, #4- End of flow line where wellbore fluid is discharged.
- Portable color metric tube detector with tubes will be stored in the Tool Pusher trailer.

Well Condition Sign and Flags:

The Well Condition Sign with flags should be placed a minimum of 150' before entry to the location. It should have three (3) color coded flags (green, yellow and red) that will be used to denote the following location conditions:

GREEN - Normal Operating Conditions

YELLOW - Potential Danger

RED - Danger, H2S Gas Present

Auxiliary Rescue Equipment:

- Stretcher (drilling contractor)
- 2- 100' OSHA approved Rescue lines (drilling contractor)
- First Aid Kit properly stocked (drilling contractor)

Mud Inspection Equipment:

Garret Gas Train or Hach Tester for inspection of Hydrogen Sulfide in the drilling mud system.

Fire Extinguishers:

Adequate fire extinguishers shall be located at strategic locations (provided by drilling contractor)

Blowout Preventer:

- The well shall have hydraulic BOP equipment for the anticipated BHP.
- The BOP should be tested upon installation.
- BOP, Choke Line and Kill Line will be tested as specified by Operator.

Confined Space Monitor:

There should be a portable multi-gas monitor with at least 3 sensors (02, LEL & H2S). This instrument should be used to test the atmosphere of any confined space before entering. It should also be used for atmospheric testing for LEL gas before beginning any type of Hot Work. Proper calibration documentation will need to be provided. (Supplied by Drilling Contractor)

Communication Equipment:

- Proper communication equipment such as cell phones or 2 -way radios should be available at the rig.
- Radio communication shall be available for communication between the company man's trailer, rig floor and the tool pusher's trailer.
- Communication equipment shall be available on the vehicles.

Special Control Equipment:

- Hydraulic BOP equipment with remote control on the ground.
- Rotating head at the surface casing point.
- BOP, Choke Manifold and Process Flow Diagrams (see the attached - previously submitted)
- Patriot Rig #5 SM Choke Manifold Equipment (see the attached - previously submitted)

Evacuation Plan:

- Evacuation routes should be established prior to spudding the well.
- Should be discussed with all rig personnel.

Designated Areas:

Parking and Visitor area:

- All vehicles are to be parked at a pre-determined safe distance from the wellhead.
- Designated smoking area.

Safe Briefing Areas:

- Two safe briefing Areas shall be designated on either side of the location at the maximum allowable distance from the well bore so they offset prevailing winds or they are at a 180 degree angle if wind directions tend to shift in the area.
- Personal protective equipment should be stored at both briefing areas or if a moveable cascade trailer is used, it should be kept upwind of existing winds. When wind is from the prevailing direction, both briefing areas should be accessible.

NOTES:

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- Additional personal H2S monitors are available for all employees on location.
- Automatic Flare Igniters are recommended for installation on the rig.

CHECK LISTS

Status Check List

Note: Date each item as they are implemented.

1. Sign at location entrance.
2. Two (2) wind socks (in required locations).
3. Wind Streamers (if required).
4. SCBA's on location for all rig personnel and mud loggers.
5. Air packs, inspected and ready for use.
6. Spare bottles for each air pack (if required).
7. Cascade system for refilling air bottles.
8. Cascade system and hose line hook up.
9. Choke manifold hooked-up and tested. (Before drilling out surface casing.)
10. Remote Hydraulic BOP control (hooked-up and tested before drilling out surface casing).
11. BOP tested (before drilling out surface casing).
12. Mud engineer on location with equipment to test mud for H2S.
13. Safe Briefing Areas set-up.
14. Well Condition sign and flags on location and ready.
15. Hydrogen Sulfide detection system hooked-up & tested.
16. Hydrogen Sulfide alarm system hooked-up & tested.
17. Stretcher on location at Safe Briefing Area.
18. 2-100' OSHA Approved Life Lines on location.
19. 1-20# Fire Extinguisher in safety trailer.
20. Confined Space Monitor on location and tested.
21. All rig crews and supervisor trained (as required).
22. Access restricted for unauthorized personnel.
23. Drills on H2S and well control procedures.
24. All outside service contractors advised of potential H2S on the well.
25. NO SMOKING sign posted.
26. H2S Detector Pump w/tubes on location.
27. 25mm Flare Gun on location w/flares.
28. Automatic Flare Igniter installed on rig.

Procedural Check List

Perform the following on each tour:

1. Check fire extinguishers to see that they have the proper charge.
2. Check breathing equipment to insure that they have not been tampered with.
3. Check pressure on the supply air bottles to make sure they are capable of recharging.
4. Make sure all of the Hydrogen Sulfide detection systems are operative.

Perform the following each week:

1. Check each piece of breathing equipment to make sure that they are fully charged and operational. This requires that the air cylinder be opened and the mask assembly be put on and tested to make sure that the regulators and

masks are properly working. Negative and positive pressure should be conducted on all masks.
2. BOP skills.
3. Check supply pressure on BOP accumulator stand-by source.
4. Check all breathing air mask assemblies to see that straps are loosened and turned back, ready to use.
5. Check pressure on cascade air cylinders to make sure they are fully charged and ready to use for refill purposes if necessary.
6. Check all cascade system regulators to make sure they work properly.
7. Perform breathing drills with on-site personnel.
8. Check the following supplies for availability:
    - Stretcher
    - Safety Belts and ropes.
    - Spare air bottles.
    - Spare oxygen bottles (if resuscitator required).
    - Gas Detector Pump and tubes.
    - Emergency telephone lists.
9. Test the Confined Space Monitor to verify the batteries are good and that the unit is in good working condition and has been properly calibrated according to manufacturer's recommendations.

Briefing Procedures

The following scheduled briefings will be held to ensure the effective drilling and operation of this project:

Pre-Spud Meeting

Date: Prior to spudding the well.

Attendance: Drilling Supervisor
Drilling Engineer
Drilling Foreman
Rig Tool Pushers
Mud Engineer
All Safety Personnel
Key Service Company Personnel

Purpose: Review and discuss the well program, step-by-step, to ensure complete understanding of assignments and responsibilities.

Evacuation Plan

General Plan

The direct lines of action prepared by Caza SAFETY, to protect the public from hazardous gas situations are as follows:

1. When the company approved supervisor (Drilling Foremen, Tool Pusher or Driller) determine that Hydrogen Sulfide gas cannot be limited to the well location, and the public will be involved, he will activate the evacuation plan. Escape routes are noted on the Area Map.
2. Company safety personnel or designee will notify the appropriate local government agency that a hazardous condition exists and evacuation needs to be implemented.
3. Company approved safety personnel that have been trained in the use of the proper emergency equipment will be utilized.
4. Law enforcement personnel (State Police, Local Police Department, Fire Department, and the Sheriff's Department) will be called to aid in setting up and maintaining road blocks. Also, they will aid in evacuation of the public if necessary.

NOTE: Law enforcement personnel will not be asked to come into a contaminated area. Their assistance will be limited to uncontaminated areas. Constant radio contact will be maintained with them.

5. After the discharge of gas has been controlled, "Company" safety personnel will determine when the area is safe for re-entry.

Emergency Assistance Telephone List

PUBLIC SAFETY: 911 or

Lea County Sheriff or Police..... (575) 396-3611

Fire Department .....(575) 397-9308

Hospital ..... (575) 492-5000

Ambulance 911

Department of Public Safety..... (392) 392-5588

Oil Conservation Division .....(575) 748-1823

New Mexico Energy, Minerals & Natural Resources Department .....(575) 748-1283

Caza Oil and Gas, Inc:

Office .....(423) 682-7424

VP Operations: Tony Sam

Office .....(423) 682-7424

Cell .....(432) 556-6708

Project Manager: Steve Morris

Cell .....(972) 835-3315

Project Manager: Joel Stockford

Cell .....(972) 835-3349

The geologic zones that will be encountered during drilling may contain hazardous quantities of H2S. The accompanying map illustrates the affected areas of the community. The residents within this radius will be notified via a hand delivered written notice describing the activities, potential hazards, and conditions of evacuation, evacuation drill siren alarms and other precautionary measures.

Evacuee Description:

Residents: THERE ARE NO RESIDENTS WITHIN 3000' ROE.

Notification Process:

A continuous siren audible to all residence will be activated, signaling evacuation of previously notified and informed residents.

Evacuation Plan:

All evacuees will migrate laterally toward the wind direction.

Caza Oil and Gas, Inc. will identify all home bound or highly susceptible individuals and make special evacuation preparations, interfacing with the local and emergency medical service as necessary.

MAPS AND PLATS

See the attached map showing the 3000' ROE clarification.

Project: Comanche 25-36 Fed State Com 2H
Site: Comanche 25-36 Fed State Com 2H
Well: Comanche 25-36 Fed State Com 2H
Wellbore: Comanche 25-36 Fed State Com 2H
Design: 190815 Comanche 25-36 Fed State Com 2H

Caza Petroleum

G
T M

Azimuths to Grid North
True North: -0.54°
Magnetic North: 5.90°

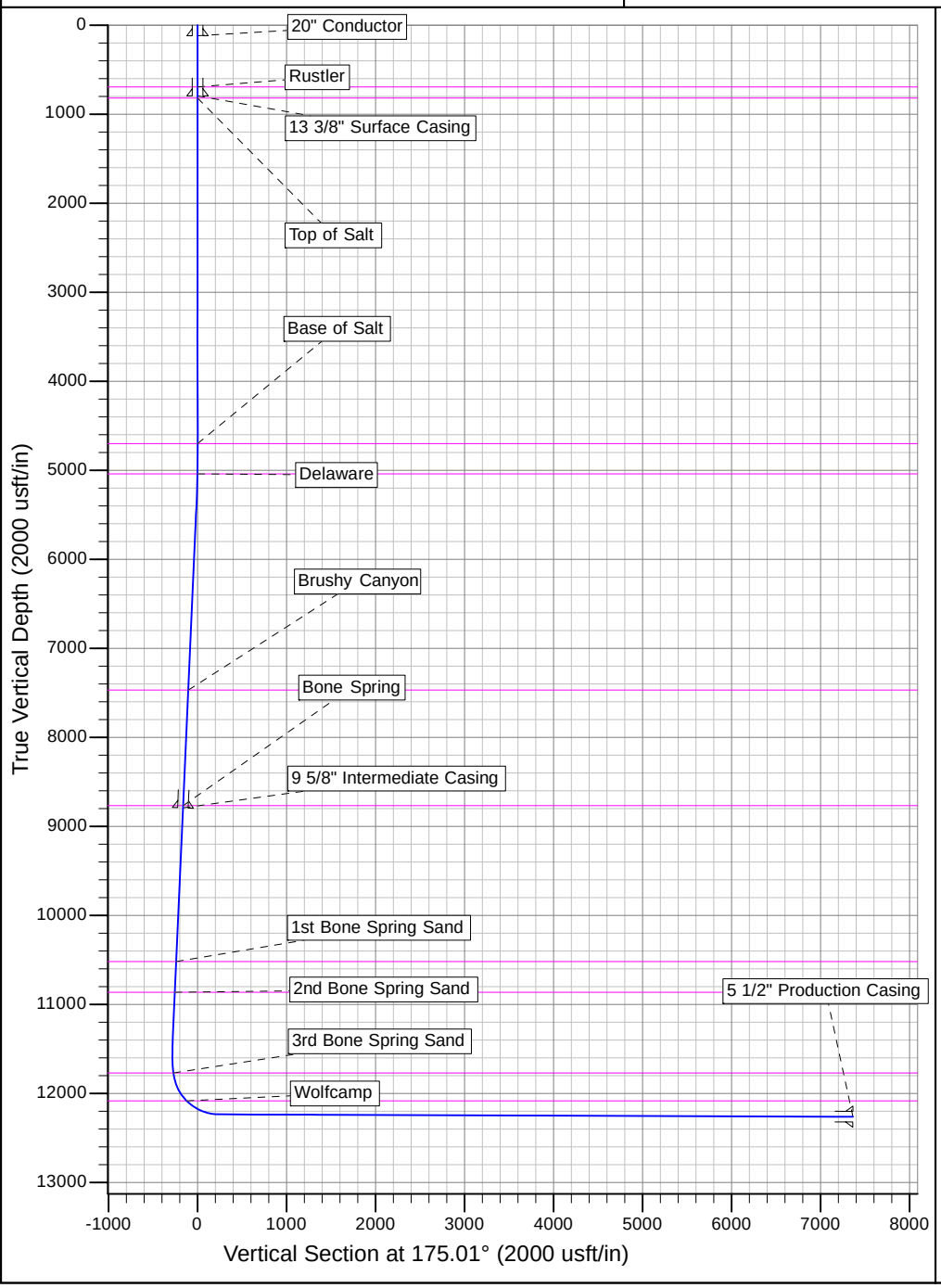
Magnetic Field
Strength: 47706.6snT
Dip Angle: 59.83°
Date: 8/15/2019
Model: IGRF2010

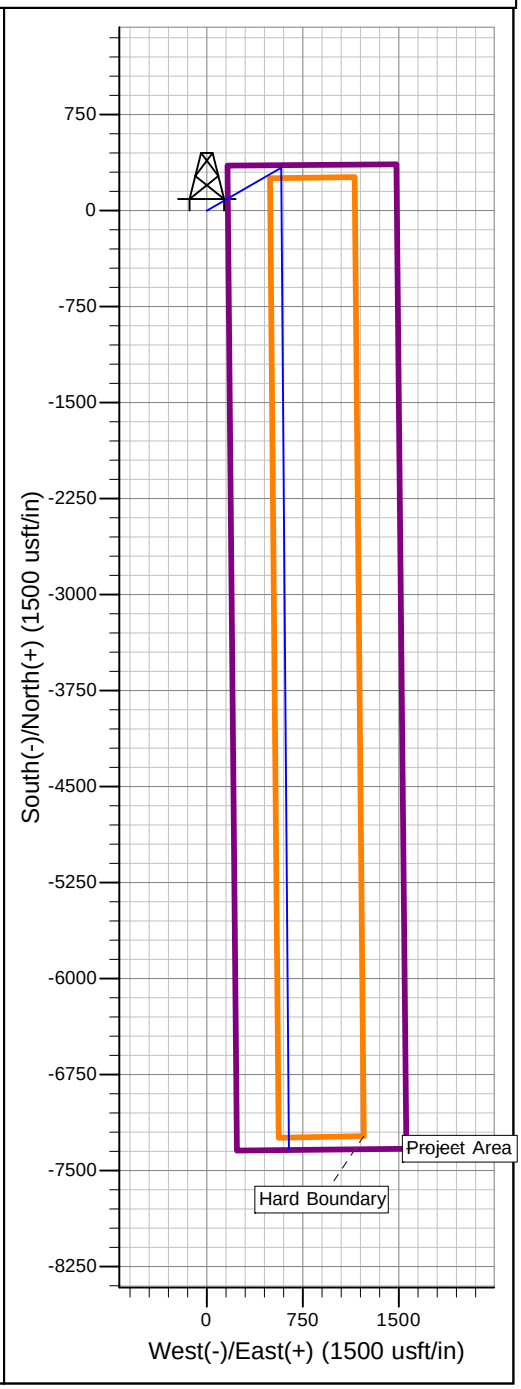
CASING DETAILS

TVD	MD	Name	Size
120.0	120.0	20" Conductor	20
794.0	794.0	13 3/8" Surface Casing	13-3/8
8793.0	8813.2	9 5/8" Intermediate Casing	9-5/8
12263.3	19710.0	5 1/2" Production Casing	5-1/2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
694.0	694.0	Rustler	0.00	
819.0	819.0	Top of Salt	0.00	
4701.0	4701.0	Base of Salt	0.00	
5042.0	5042.0	Delaware	0.00	
7468.0	7480.9	Brushy Canyon	0.00	
8768.0	8788.0	Bone Spring	0.00	
10519.0	10548.7	1st Bone Spring Sand	0.00	
10865.0	10896.6	2nd Bone Spring Sand	0.00	
11772.0	11807.3	3rd Bone Spring Sand	0.00	
12084.0	12159.8	Wolfcamp	0.00	





Caza Operating LLC

Comanche 25-36 Fed State Com 2H
Comanche 25-36 Fed State Com 2H
Comanche 25-36 Fed State Com 2H
Comanche 25-36 Fed State Com 2H

Plan: 190815 Comanche 25-36 Fed State Com 2H

Morcor Standard Plan

15 August, 2019

Company:	Caza Operating LLC	**Local Co-ordinate Reference:**	Well Comanche 25-36 Fed State Com 2H
Project:	Comanche 25-36 Fed State Com 2H	**TVD Reference:**	WELL @ 2962.0usft (Original Well Elev)
Site:	Comanche 25-36 Fed State Com 2H	**MD Reference:**	WELL @ 2962.0usft (Original Well Elev)
Well:	Comanche 25-36 Fed State Com 2H	**North Reference:**	Grid
Wellbore:	Comanche 25-36 Fed State Com 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	190815 Comanche 25-36 Fed State Com 2H	**Database:**	EDM 5000.1 Single User Db

Project Comanche 25-36 Fed State Com 2H

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Comanche 25-36 Fed State Com 2H

Site Position:		**Northing:**	372,676.90 usft	**Latitude:**	32° 1' 13.801 N
From:	Map	**Easting:**	856,178.10 usft	**Longitude:**	103° 19' 2.916 W
Position Uncertainty:	1.0 usft	**Slot Radius:**	17 "	**Grid Convergence:**	0.54 °

Well Comanche 25-36 Fed State Com 2H

Well Position	**+N/-S**	0.0 usft	**Northing:**	372,676.90 usft	**Latitude:**	32° 1' 13.801 N
	+E/-W	0.0 usft	**Easting:**	856,178.10 usft	**Longitude:**	103° 19' 2.916 W
Position Uncertainty		1.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	2,940.0 usft

Wellbore Comanche 25-36 Fed State Com 2H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/15/2019	6.44	59.83	47,707

Design 190815 Comanche 25-36 Fed State Com 2H

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	175.01

Survey Tool Program **Date** 8/15/2019

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	19,710.0	190815 Comanche 25-36 Fed State Com 2	MWD	MWD - Standard

Company:	Caza Operating LLC	**Local Co-ordinate Reference:**	Well Comanche 25-36 Fed State Com 2H
Project:	Comanche 25-36 Fed State Com 2H	**TVD Reference:**	WELL @ 2962.0usft (Original Well Elev)
Site:	Comanche 25-36 Fed State Com 2H	**MD Reference:**	WELL @ 2962.0usft (Original Well Elev)
Well:	Comanche 25-36 Fed State Com 2H	**North Reference:**	Grid
Wellbore:	Comanche 25-36 Fed State Com 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	190815 Comanche 25-36 Fed State Com 2H	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	-2,962.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
120.0	0.00	0.00	120.0	-2,842.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
20" Conductor										
694.0	0.00	0.00	694.0	-2,268.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
Rustler										
794.0	0.00	0.00	794.0	-2,168.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
13 3/8" Surface Casing										
819.0	0.00	0.00	819.0	-2,143.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
Top of Salt										
4,701.0	0.00	0.00	4,701.0	1,739.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
Base of Salt										
5,000.0	0.00	0.00	5,000.0	2,038.0	0.0	0.0	856,178.10	372,676.90	0.00	0.00
Start Build 3.00										
5,042.0	1.26	60.00	5,042.0	2,080.0	0.2	0.4	856,178.50	372,677.13	-0.20	3.00
Delaware										
5,200.0	6.00	60.00	5,199.6	2,237.6	5.2	9.1	856,187.16	372,682.13	-4.42	3.00
Start 6219.0 hold at 5200.0 MD										
7,480.9	6.00	60.00	7,468.0	4,506.0	124.4	215.5	856,393.63	372,801.34	-105.23	0.00
Brushy Canyon										
8,788.0	6.00	60.00	8,768.0	5,806.0	192.8	333.9	856,511.96	372,869.66	-163.01	0.00
Bone Spring										
8,813.2	6.00	60.00	8,793.0	5,831.0	194.1	336.1	856,514.24	372,870.97	-164.12	0.00
9 5/8" Intermediate Casing										
10,548.7	6.00	60.00	10,519.0	7,557.0	284.8	493.2	856,671.34	372,961.68	-240.82	0.00
1st Bone Spring Sand										
10,896.6	6.00	60.00	10,865.0	7,903.0	303.0	524.7	856,702.84	372,979.86	-256.20	0.00
2nd Bone Spring Sand										
11,419.0	6.00	60.00	11,384.6	8,422.6	330.3	572.0	856,750.13	373,007.16	-279.29	0.00
Start Drop -3.00										

Company:	Caza Operating LLC	**Local Co-ordinate Reference:**	Well Comanche 25-36 Fed State Com 2H
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Wellbore:	Comanche 25-36 Fed State Com 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	190815 Comanche 25-36 Fed State Com 2H	**Database:**	EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Easting (usft)	Northing (usft)	V. Sec (usft)	DLeg (°/100usft)
11,619.0	0.00	0.00	11,584.2	8,622.2	335.5	581.1	856,759.19	373,012.39	-283.71	3.00
Start Build 3.88										
11,807.3	7.31	179.56	11,772.0	8,810.0	323.5	581.2	856,759.28	373,000.39	-271.75	3.88
3rd Bone Spring Sand										
11,825.0	8.00	179.56	11,789.5	8,827.5	321.1	581.2	856,759.30	372,998.04	-269.40	3.88
Start Build 11.05										
12,159.8	45.00	179.56	12,084.0	9,122.0	174.3	582.3	856,760.43	372,851.21	-123.04	11.05
Wolfcamp										
12,565.0	89.78	179.56	12,235.8	9,273.8	-190.3	585.1	856,763.23	372,486.64	240.40	11.05
Start 7145.0 hold at 12565.0 MD										
19,710.0	89.78	179.56	12,263.3	9,301.3	-7,335.0	640.0	856,818.10	365,341.90	7,362.87	0.00
TD at 19710.0 - 5 1/2" Production Casing										

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
19,710.0	12,263.3	5 1/2" Production Casing	5-1/2	8-1/2
120.0	120.0	20" Conductor	20	26
794.0	794.0	13 3/8" Surface Casing	13-3/8	17-1/2
8,813.2	8,793.0	9 5/8" Intermediate Casing	9-5/8	12-1/4

Company:	Caza Operating LLC	**Local Co-ordinate Reference:**	Well Comanche 25-36 Fed State Com 2H
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Wellbore:	Comanche 25-36 Fed State Com 2H	**Survey Calculation Method:**	Minimum Curvature
Design:	190815 Comanche 25-36 Fed State Com 2H	**Database:**	EDM 5000.1 Single User Db

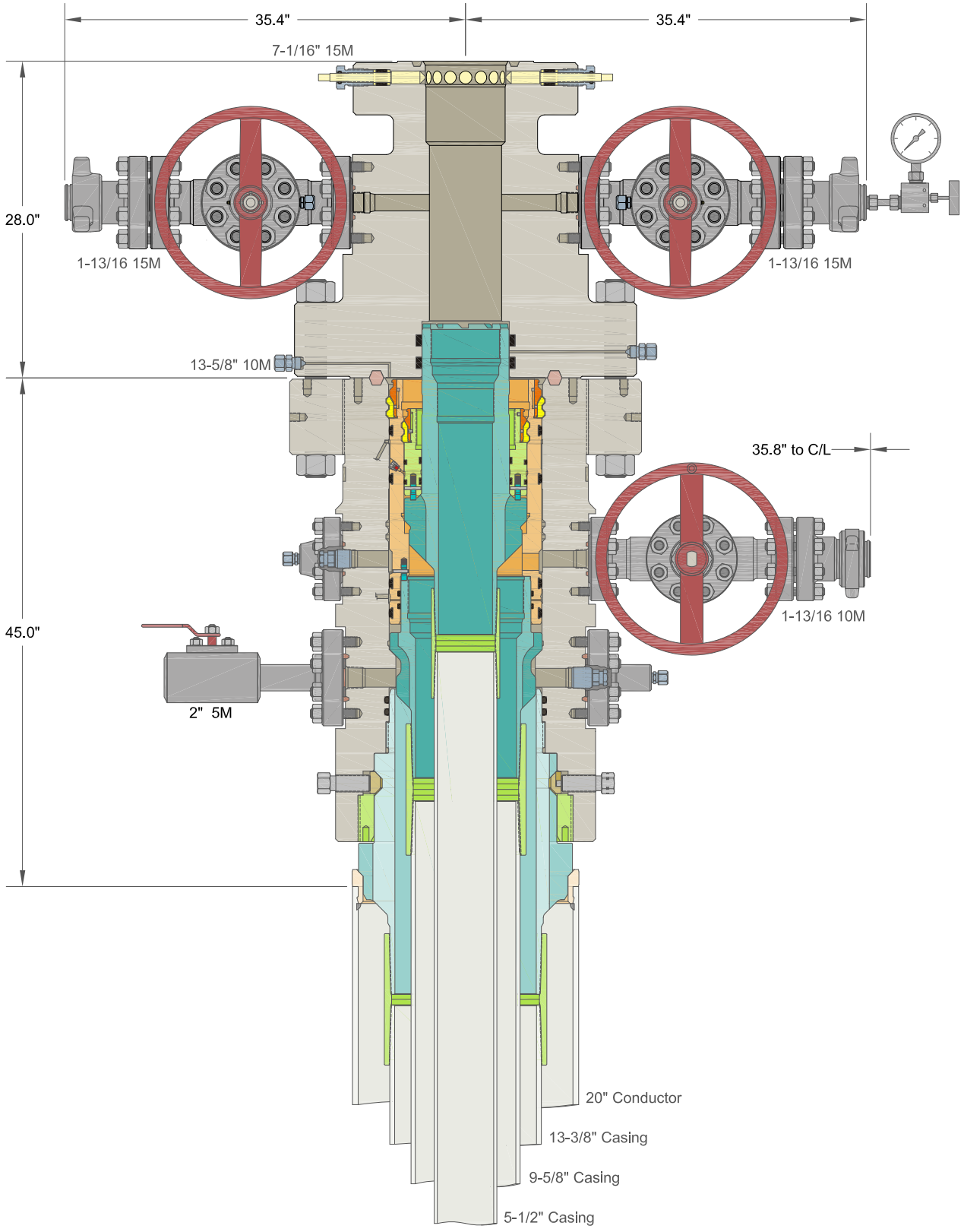
Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
10,548.7	10,519.0	1st Bone Spring Sand		0.00	
4,701.0	4,701.0	Base of Salt		0.00	
694.0	694.0	Rustler		0.00	
819.0	819.0	Top of Salt		0.00	
12,159.8	12,084.0	Wolfcamp		0.00	
11,807.3	11,772.0	3rd Bone Spring Sand		0.00	
10,896.6	10,865.0	2nd Bone Spring Sand		0.00	
8,788.0	8,768.0	Bone Spring		0.00	
7,480.9	7,468.0	Brushy Canyon		0.00	
5,042.0	5,042.0	Delaware		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,000.0	5,000.0	0.0	0.0	Start Build 3.00
5,200.0	5,199.6	5.2	9.1	Start 6219.0 hold at 5200.0 MD
11,419.0	11,384.6	330.3	572.0	Start Drop -3.00
11,619.0	11,584.2	335.5	581.1	Start Build 3.88
11,825.0	11,789.5	321.1	581.2	Start Build 11.05
12,565.0	12,235.8	-190.3	585.1	Start 7145.0 hold at 12565.0 MD
19,710.0	12,263.3	-7,335.0	640.0	TD at 19710.0

Checked By: _____ Approved By: _____ Date: _____



ALL DIMENSIONS APPROXIMATE

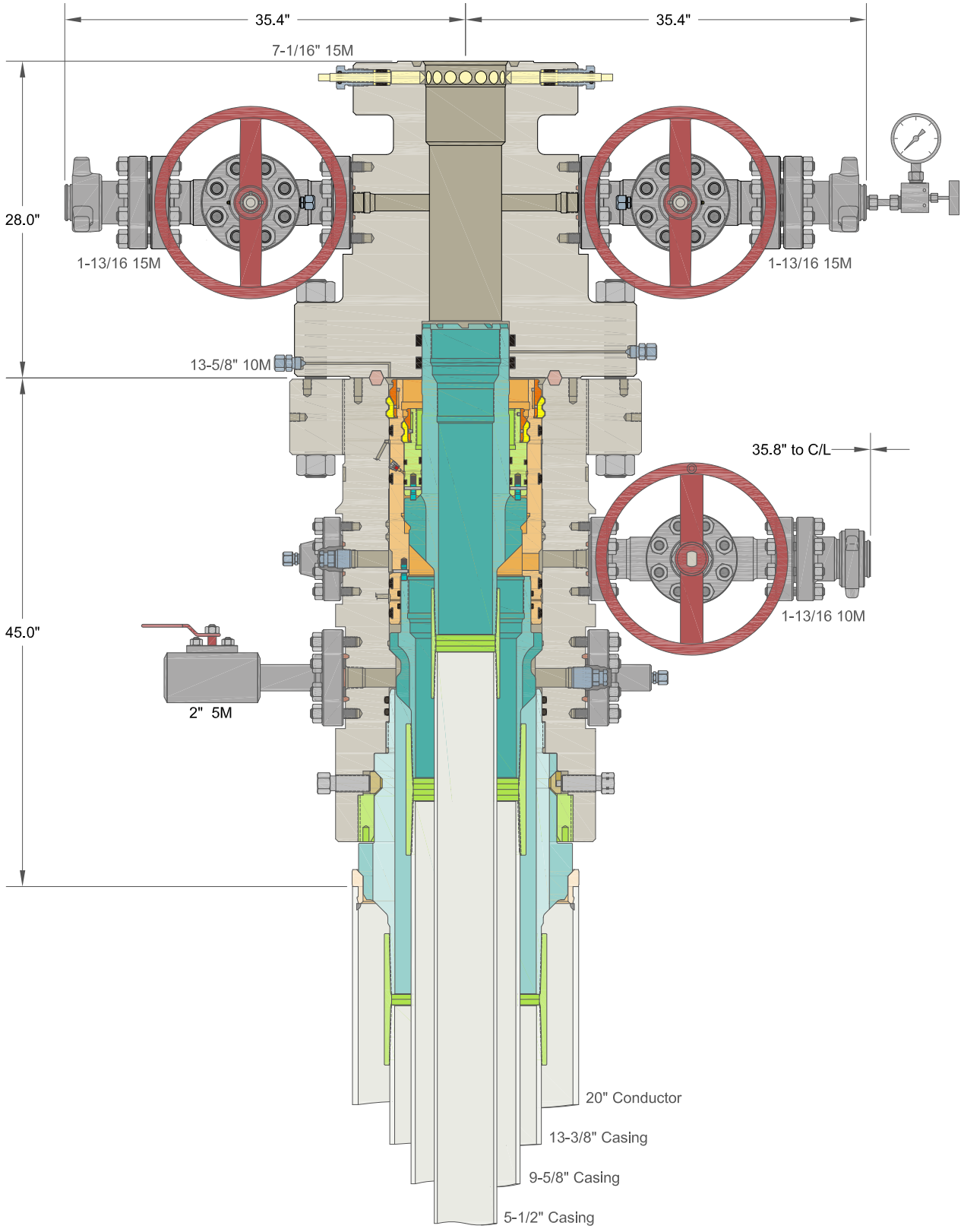
CACTUS WELLHEAD LLC

CAZA PETROLEUM
PERMIAN BASIN

13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL-R-DBLO Wellhead System
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head
And 13-3/8", 9-5/8" & 5-1/2" Mandrel Casing Hangers

DRAWN	DLE	25SEP19
APPRV		

DRAWING NO. ODE0003135



ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

CAZA PETROLEUM
PERMIAN BASIN

13-3/8" x 9-5/8" x 5-1/2" MBU-3T-CFL-R-DBLO Wellhead System
With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head
And 13-3/8", 9-5/8" & 5-1/2" Mandrel Casing Hangers

DRAWN	DLE	25SEP19
APPRV		

DRAWING NO. ODE0003135

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 8/15/2019

■ Original Operator & OGRID No.: 249099
☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomplete to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Comanche 25-36 Fed State Com 1H		B-25-26S-35E	350'FNL 1485'FEL	1000	flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Verdsado and will be connected to Versado low/high pressure gathering system located in Lea County, New Mexico. It will require 1000' of pipeline to connect the facility to low/high pressure gathering system. Caza provides (periodically) to Versado a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Caza and Versado have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Versado Processing Plant located in Sec.29, Twn.21S, Rng.37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

WELL PAD EXISTING TOPO

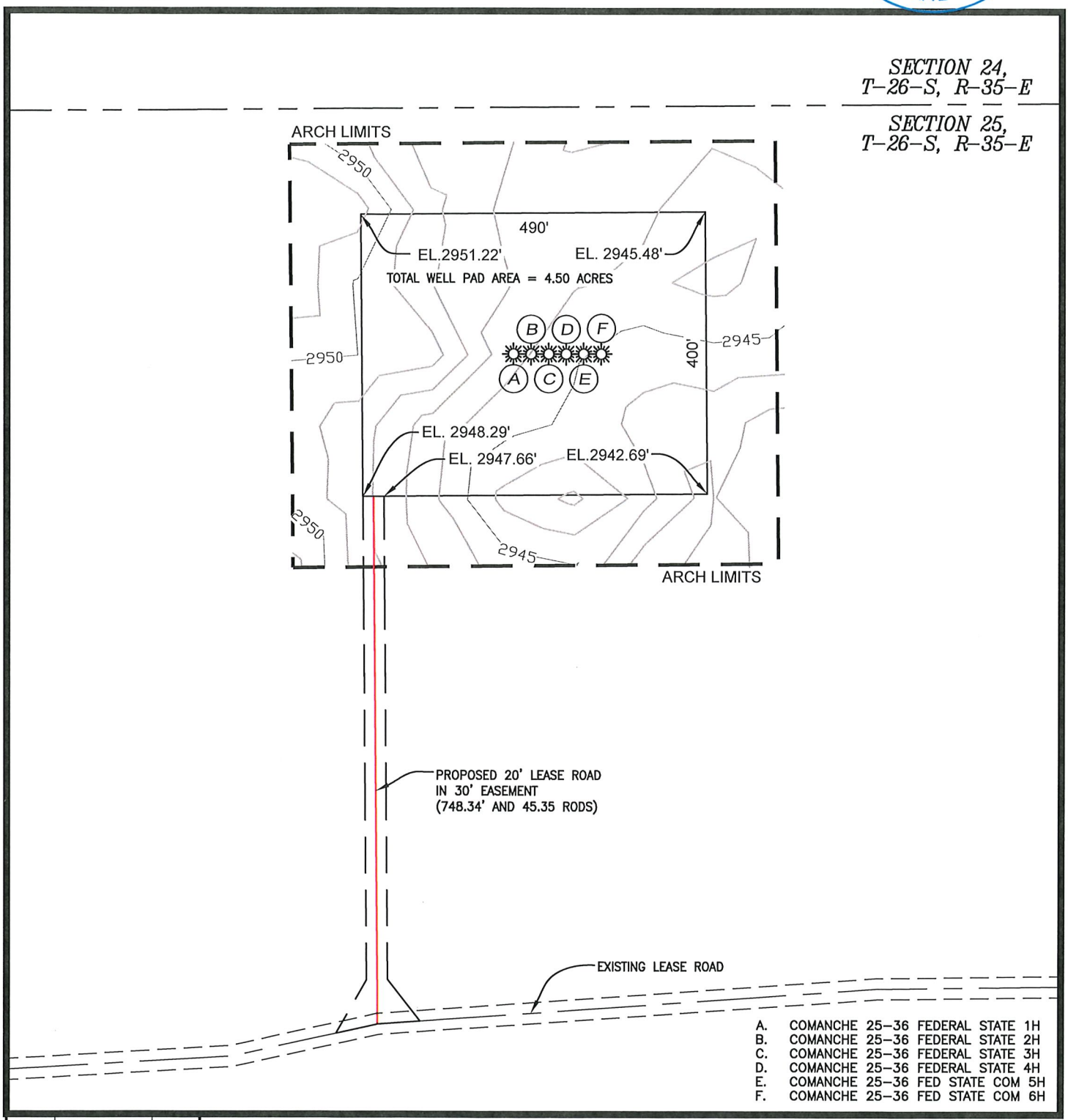
COMANCHE 25-36 FED STATE COM
SEC. 25 TWP. 26-S RGE. 35-E
SURVEY: N.M.P.M.
COUNTY: EDDY
OPERATOR: CAZA OPERATING, LLC
U.S.G.S. TOPOGRAPHIC MAP: JAVELINA BASIN, N.M.

NOVEMBER 5, 2019

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

LLOYD P. SHORT 21653

100' 0' 100' 200'
SCALE: 1" = 200'



REV1	10/30/2019	BFF

LEGEND

- PROPOSED PAD SURFACE
- ARCH SURVEY LIMITS
- PROPOSED LEASE ROAD
- EXIST. 1' CONTOUR LINES
- EXIST. 5' CONTOUR LINES
- WATER LINE — W —
- PROPERTY LINE — PL —
- PROPOSED 1' CONTOUR LINES
- PROPOSED 5' CONTOUR LINES
- EROSION CONTROL FENCE — ECF —
- OVERHEAD POWER — OHP —
- FENCE — x — x —

PREPARED BY:
R-SQUARED GLOBAL, LLC
1309 LOUISVILLE AVENUE, MONROE, LA 71201
318-323-6900 OFFICE
JOB No. R4029_001

APD ID: 10400046051 **Submission Date:** 08/29/2019

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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

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? N

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:

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

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?

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

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? N

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: **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? N

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? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM **Well Number:** 2H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

07/19/2020

APD ID: 10400046051

Submission Date: 08/29/2019

Operator Name: CAZA OPERATING LLC

Well Name: COMANCHE 25-36 FED STATE COM

Well Number: 2H

Well Type: OIL WELL

Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000471

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:

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

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

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

OCD – HOBBS
07/20/2020
RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-025-47450	98234	WC-025 G-09 S263619C; WOLFCAMP

[4] Property Code	[5] Property Name	[6] Well Number
328896	COMANCHE 25-36 FEDERAL STATE	2H

[7] OGRID No.	[8] Operator Name	[9] Elevation
249099	CAZA OPERATING LLC	2946'

[10] Surface Location

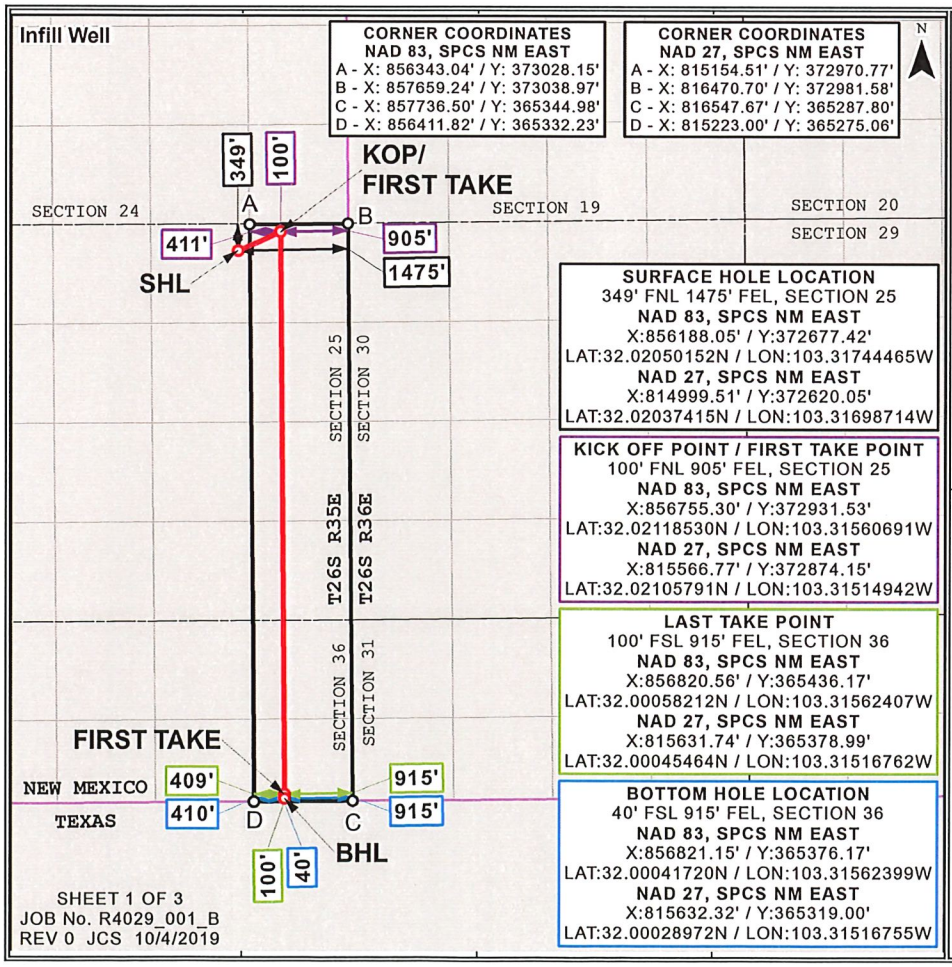
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	25	26S	35E		349	NORTH	1475	EAST	LEA

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H (L 1)	36	26S	35E		40	SOUTH	915	EAST	LEA

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
233.22			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



[17] OPERATOR CERTIFICATION

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

11/7/2019
Signature Date

Steven Morris
Printed Name

steve.morris@morcorengineering.com
E-mail Address

[18] SURVEYOR CERTIFICATION

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

NOVEMBER 5, 2019
Date of Survey

Signature and Seal of Professional Surveyor:

Lloyd P. Short 21653

LLOYD P. SHORT NEW MEXICO 21653 PROFESSIONAL SURVEYOR

Certificate Number
LLOYD P. SHORT 21653

Distances/areas relative to NAD 83 Combined Scale Factor: 0.99988291 Convergence: 00°32'08.45268"

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OCD – HOBBS
07/20/2020
RECEIVED

GAS CAPTURE PLAN

Date: 8/15/2019

■ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: 249099

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