

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

OCD - HOBBS
07/20/2020
RECEIVED

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM007484
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator CAZA OPERATING LLC [249099]		8. Lease Name and Well No. TALON 5-8 STATE FED COM 5H [328897]
3a. Address 200 N. Loraine Street, Suite 1550 Midland TX 79701	3b. Phone No. (include area code) (432)682-7424	9. API Well No. 30-025-47486
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWNE / 285 FNL / 1455 FEL / LAT 32.6088164 / LONG -103.4756283 At proposed prod. zone SWNE / 2605 FNL / 1980 FEL / LAT 32.587798 / LONG -103.477316		10. Field and Pool, or Exploratory [96989] WOLFCAMP / WC-025 G-08 S2035606D;
11. Sec., T. R. M. or Blk. and Survey or Area SEC 5 / T20S / R35E / NMP		
14. Distance in miles and direction from nearest town or post office* 16 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) 190 feet	16. No of acres in lease 1282.8	17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet	19. Proposed Depth 10571 feet / 18265 feet	20. BLM/BIA Bond No. in file FED: NMB000471
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3694 feet	22. Approximate date work will start* 07/07/2020	23. Estimated duration 38 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature (Electronic Submission)	Name (Printed/Typed) Tony B Sam / Ph: (432)682-7424	Date 04/12/2019
Title VP Operations		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Christopher Walls / Ph: (575)234-2234	Date 05/19/2020
Title Petroleum Engineer		
Office CARLSBAD		

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 08/06/2020

SL

(Continued on page 2)

APPROVED WITH CONDITIONS
Approval Date: 05/19/2020

KZ
08/06/2020

*(Instructions on page 2)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Caza Operating LLC
WELL NAME & NO.:	Talon 5-8 State Fed Com 5H
LOCATION:	Sec 5-20S-35E-NMP
COUNTY:	County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the Yates-Seven Rivers formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch conductor casing shall be set at approximately 120 feet and cemented to the surface
2. The **13-3/8** inch surface casing shall be set at approximately 1926 feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8**

- hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing which shall be set at 3,790 ft is:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
4. The minimum required fill of cement behind the 6 inch production casing is:
- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.

- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

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

- a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours.

WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead 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).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. 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 (8 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).

- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. 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.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.



APD ID: 10400039289

Submission Date: 04/12/2019

Highlighted data
reflects the most
recent changes

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400039289

Tie to previous NOS? Y

Submission Date: 04/12/2019

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: NMNM007484

Lease Acres: 1282.8

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: 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? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: WOLFCAMP

Pool Name: WC-025 G-08
S2035606D; BONE SPRING

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

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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

Is the proposed well in a Helium production area? N

Use Existing Well Pad? YES

New surface disturbance? N

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name:

Number: 1H

TALON 5-8 STATE FED COM

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 16 Miles

Distance to nearest well: 30 FT

Distance to lease line: 190 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: TALON_5_8_STATE_FED_COM_5H_C_102_signed_20191209141712.pdf

Well work start Date: 07/07/2020

Duration: 38 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number: R4033_001_E

Reference Datum:

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	285	FNL	1455	FEL	20S	35E	5	Aliquot NWNE	32.6088164	-103.4756283	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 007484	3694	0	0	
KOP Leg #1	10	FNL	1980	FEL	20S	35E	5	Aliquot NWNE	32.6095	-103.477324	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 007484	-6349	10070	10043	
PPP Leg #1-1	32	FNL	1980	FEL	20S	35E	5	Aliquot NWNE	32.609442	-103.477324	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 007484	-6490	10213	10184	

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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?
EXIT Leg #1	2605	FNL	1980	FEL	20S	35E	8	Aliquot SWNE	32.587798	- 103.477316	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 007484	- 6878	18265	10572	
BHL Leg #1	2605	FNL	1980	FEL	20S	35E	8	Aliquot SWNE	32.587798	- 103.477316	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 007484	- 6877	18265	10571	



APD ID: 10400039289

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Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
437826	---	3693	0	0		NONE	N
437827	RUSTLER	1839	1854	1854		USEABLE WATER	N
437828	TOP SALT	1493	2200	2200	SALT	NONE	N
437829	BASE OF SALT	267	3426	3426		NONE	N
437830	DELAWARE	-441	4134	4134		NONE	N
437831	BONE SPRING	-4391	8084	8101		NATURAL GAS, OIL	N
437832	BONE SPRING 1ST	-6469	10162	10191		NATURAL GAS, OIL	Y
652656	BONE SPRING 2ND	-6513	10206	10206		NATURAL GAS, OIL	N
652657	BONE SPRING 3RD	-7353	11046	11626		NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

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

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 5000 (5M) psi. 5M 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

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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.

Choke Diagram Attachment:

Talon_5_8_State_Fed_Com_5H___Choke_Schematic_20190412065455.pdf

Talon_5_8_State_Fed_Com_5H___Coflex_Hose_Test_Chart_20190412065456.pdf

Talon_5_8_State_Fed_Com_5H___Coflex_Hyd_Test_Cert_20190412065457.pdf

BOP Diagram Attachment:

Talon_5_8_State_Fed_Com_5H___BOP_Schematic_20190412065504.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	3692	3572	120	H-40	94	SLIM LINE HIGH PERFORMANCE						
2	SURFACE	17.5	13.375	NEW	API	N	0	1926	0	1926	3692	1790	1926	J-55	54.5	ST&C	1.27	1.66	DRY	4.9	DRY	4.9
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5496	0	5493	3694	-1777	5496	HCL-80	40	BUTT	1.48	1.82	DRY	4.17	DRY	4.17
4	PRODUCTION	8.75	OTHER	NEW	API	N	0	18265	0	10571	3692	-6855	18265	P-110	24.5	BUTT	2.08	2.34	DRY	3.1	DRY	3.1

Casing Attachments

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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):

Talon_5_8_State_Fed_Com_5H___Casing_and_Cement_Design___New_20191209142109.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Talon_5_8_State_Fed_Com_5H___Casing_and_Cement_Design___New_20191209142155.pdf

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Casing Attachments

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Talon_5_8_State_Fed_Com_5H___Casing_and_Cement_Design___New_20191209142229.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	1626	1170	1.62	13.5	1895	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
SURFACE	Tail		1626	1926	309	1.35	14.8	417	100	Class C	1.5% bwoc Calcium Chloride + 0.005 lbs/sack Static Free + 0.005 gps FP-6L
INTERMEDIATE	Lead	3900	0	3800	1140	2.13	12.6	2428	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

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Tail		3800	3900	150	1.35	14.8	202	100	Class C	CaCl2
INTERMEDIATE	Lead	3900	3900	4946	325	2.13	12.6	692	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		4946	5496	232	1.35	14.8	317	100	Class C	CaCl2
PRODUCTION	Lead		0	1011 1	1950	2.38	11.8	4641	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		1011 1	1826 5	2200	1.62	13.2	3564	100	Class H	(15:61:11) Poz (Fly Ash):Class H Cement:CSE-2

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

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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
0	1926	SPUD MUD	8.4	8.9	62.8	0.1	9.5	2	0	0	
1926	5493	SALT SATURATED	9.2	10	75	0.1	9.5	2	150000	0	
5493	10571	OIL-BASED MUD	9.2	10	75	0.4	9.5	6	135000	18	

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:

DS,GR,MWD,MUDLOG

Coring operation description for the well:

No coring

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5492

Anticipated Surface Pressure: 3166.16

Anticipated Bottom Hole Temperature(F): 162

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Talon_5_8_State_Fed_Com_5H___H2S_Plan_20190412065758.pdf

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

190412_Talon_5_8_State_Fed_Com_5H___Directional_Plan_20190412065814.pdf

190412_Talon_5_8_State_Fed_Com_5H___Directional_Plot_20190412065814.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

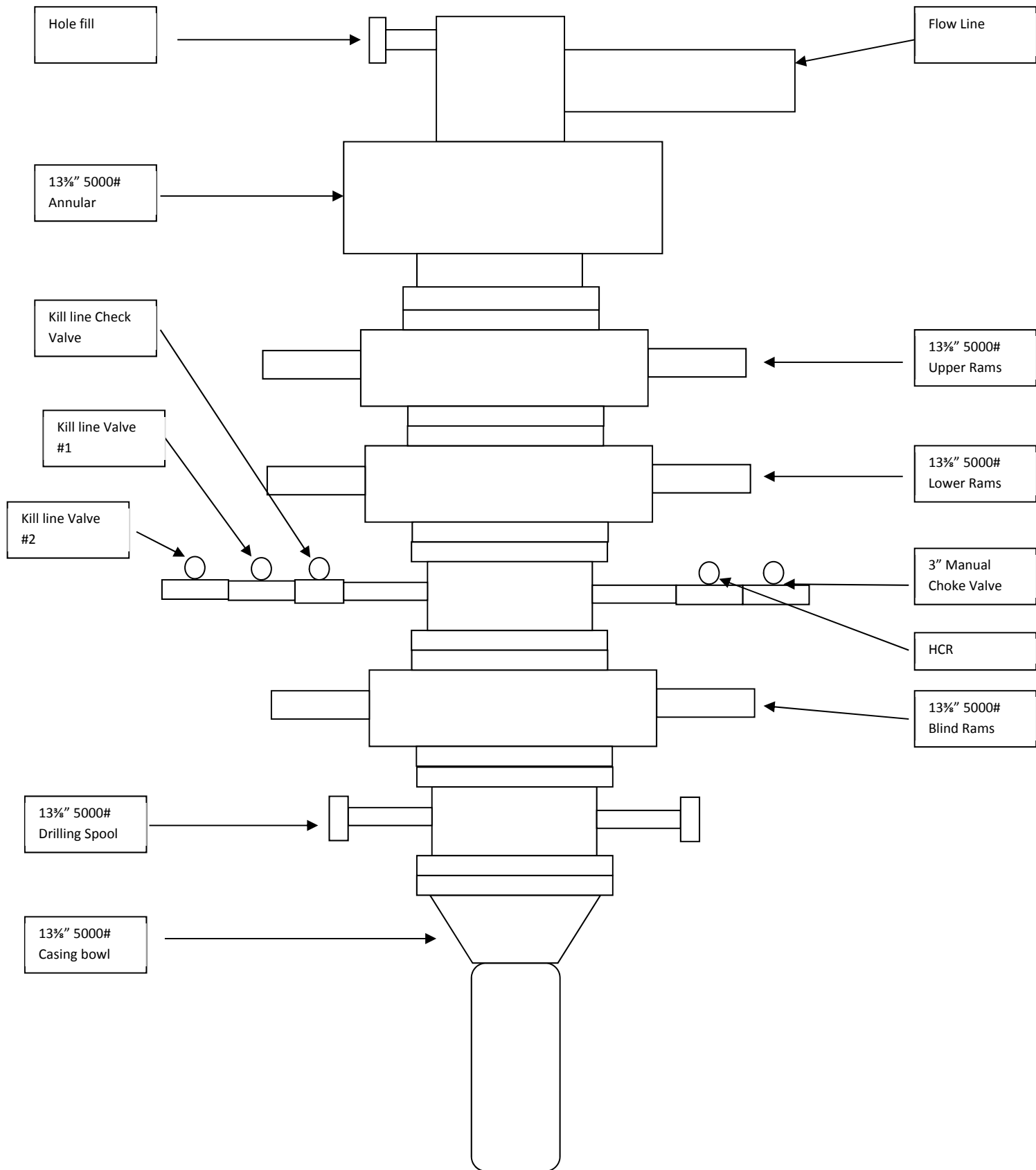
Talon_5_8_State_Fed_Com_5H___Closed_Loop_Design_Operating_and_Closure_Plan_20190412065846.pdf

Talon_5_8_State_Fed_Com_5H___Closed_Loop_Diagram_Design_Plan_20190412065847.pdf

Talon_5_8_State_Fed_Com_5H___Gas_Capture_Plan_20190412065847.pdf

Other Variance attachment:

TALON_5_8_STATE_FED_COM___5H___Multi_Bowl_Wellhead_20191209142803.pdf



Operator

Caza Operating LLC

Well Name & No.

Talon 5H

County

Lea

Location (S/T/R/Alt)

Lease Number

ATS or EC #

Colors:

Choose casings

Fill in, if applicable

Name

Date

Version

Remarks

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

APD### or EC###

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	1926	1926	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	5496	5493	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1														
<Choose Casing>														
Prod 1	8.750	6.000	24.50	p	110	btc	0	18265	10571	9.20	10.00	5.2000	5.0750	6.8750
<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	3900		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	1170	1.93	Lead	325	2.13	Lead 1	1950	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2200	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1140	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	2675.25	cuft	Cement Added	1005.5 / 2630.7	cuft	Cement Added	8205.00	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	1338	cuft	Cement Req.	499.8 / 1316.8	cuft	Cement Req.	4086	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.96%		Excess	101.2% / 99.8%		Excess	100.82%		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								
Prod 1	Pass = 0.9375	Pass = 2.87	Pass = 0.98	No Overlap	No Overlap			

Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
Surface	4.90	1.27	0.96	1.66
Int 1	4.17	1.48	1.05	1.82
Int 1 Taper 1				
Prod 1	3.10	2.08	2.34	4.06

BOP Requirements After the Shoe				
Surface		Int 1		Prod 1
Max. Surf. Pressure	1645 psi	Max. Surf. Pressure	3166 psi	Max. Surf. Pressur psi
BOP Required	2M System	BOP Required	5M System	BOP Required System
<Choose Casing>				
Max. Surf. Pressure	psi			
BOP Required	System			

Operator

Caza Operating LLC

Well Name & No.

Talon 5H

County

Lea

Location (S/T/R/Alt)

Lease Number

ATS or EC #

Colors:

Choose casings

Fill in, if applicable

Name

Date

Version

Remarks

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

APD### or EC###

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	1926	1926	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	5496	5493	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1														
<Choose Casing>														
Prod 1	8.750	6.000	24.50	p	110	btc	0	18265	10571	9.20	10.00	5.2000	5.0750	6.8750
<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	3900		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	1170	1.93	Lead	325	2.13	Lead 1	1950	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2200	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1140	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	2675.25	cuft	Cement Added	1005.5 / 2630.7	cuft	Cement Added	8205.00	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	1338	cuft	Cement Req.	499.8 / 1316.8	cuft	Cement Req.	4086	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.96%		Excess	101.2% / 99.8%		Excess	100.82%		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								
Prod 1	Pass = 0.9375	Pass = 2.87	Pass = 0.98	No Overlap	No Overlap			

Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
Surface	4.90	1.27	0.96	1.66
Int 1	4.17	1.48	1.05	1.82
Int 1 Taper 1				
Prod 1	3.10	2.08	2.34	4.06

BOP Requirements After the Shoe				
Surface		Int 1		Prod 1
Max. Surf. Pressure	1645 psi	Max. Surf. Pressure	3166 psi	Max. Surf. Pressur psi
BOP Required	2M System	BOP Required	5M System	BOP Required System
<Choose Casing>				
Max. Surf. Pressure	psi			
BOP Required	System			

Operator

Caza Operating LLC

Well Name & No.

Talon 5H

County

Lea

Location (S/T/R/Alt)

Lease Number

ATS or EC #

Colors:

Choose casings

Fill in, if applicable

APD### or EC###

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

Name

Date

Version

Remarks

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	1926	1926	8.40	8.90	12.6150	12.4900	14.3750
Int 1	12.250	9.625	40.00	hcl	80	btc	0	5496	5493	9.20	10.00	8.8350	8.7500	10.6250
Int 1 Taper 1														
<Choose Casing>														
Prod 1	8.750	6.000	24.50	p	110	btc	0	18265	10571	9.20	10.00	5.2000	5.0750	6.8750
<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	3900		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	1170	1.93	Lead	325	2.13	Lead 1	1950	2.38	Lead 1			Lead 1		
Tail	309	1.35	Tail	232	1.35	Tail 1	2200	1.62	Tail 1			Tail 1		
DV Lead			DV Lead	1140	2.13	DV Lead			DV Lead			DV Lead		
DV Tail			DV Tail	150	1.35	DV Tail			DV Tail			DV Tail		
Cmt Added	2675.25	cuft	Cement Added	1005.5 / 2630.7	cuft	Cement Added	8205.00	cuft	Cement Added	#N/A	cuft	Cement Added	#N/A	cuft
Cmt Req.	1338	cuft	Cement Req.	499.8 / 1316.8	cuft	Cement Req.	4086	cuft	Cement Req.	0	cuft	Cement Req.	0	cuft
Excess	99.96%		Excess	101.2% / 99.8%		Excess	100.82%		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								
Prod 1	Pass = 0.9375	Pass = 2.87	Pass = 0.98	No Overlap	No Overlap			

Safety Factors	Joint/Body	Collapse	Burst	Alt Burst
Surface	4.90	1.27	0.96	1.66
Int 1	4.17	1.48	1.05	1.82
Int 1 Taper 1				
Prod 1	3.10	2.08	2.34	4.06

BOP Requirements After the Shoe				
Surface		Int 1		Prod 1
Max. Surf. Pressure	1645 psi	Max. Surf. Pressure	3166 psi	Max. Surf. Pressur psi
BOP Required	2M System	BOP Required	5M System	BOP Required System
<Choose Casing>				
Max. Surf. Pressure	psi			
BOP Required	System			

Caza Oil and Gas, Inc

H2S Drilling Operations Plan

Prepared by: Steve Morris

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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 joint 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 (O2, 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:

- 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

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.



Caza Operating LLC

Talon 5-8 State Fed Com 5H

Talon 5-8 State Fed Com 5H

Talon 5-8 State Fed Com 5H

Talon 5-8 State Fed Com 5H

Plan: 190412 Talon 5-8 State Fed Com 5H

Morcor Standard Plan

12 April, 2019

Company:	Caza Operating LLC			Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H			TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H			MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H			North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H			Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H			Database:	EDM 5000.1 Single User Db

Project	Talon 5-8 State Fed Com 5H				
Map System:	US State Plane 1983		System Datum:	Mean Sea Level	
Geo Datum:	North American Datum 1983				
Map Zone:	New Mexico Eastern Zone				

Site	Talon 5-8 State Fed Com 5H				
Site Position:		Northing:	586,348.28 usft	Latitude:	32° 36' 32.382 N
From:	Lat/Long	Easting:	805,418.15 usft	Longitude:	103° 28' 32.606 W
Position Uncertainty:	1.0 usft	Slot Radius:	17-1/2 "	Grid Convergence:	0.46 °

Well	Talon 5-8 State Fed Com 5H					
Well Position	+N/-S	0.0 usft	Northing:	586,348.28 usft	Latitude:	32° 36' 32.382 N
	+E/-W	0.0 usft	Easting:	805,418.15 usft	Longitude:	103° 28' 32.606 W
Position Uncertainty		1.0 usft	Wellhead Elevation:	usft	Ground Level:	3,694.0 usft

Wellbore	Talon 5-8 State Fed Com 5H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/19/2018	6.63	60.36	48,102

Design	190412 Talon 5-8 State Fed Com 5H				
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	183.55	

Survey Tool Program	Date	4/12/2019			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	18,265.0	190412 Talon 5-8 State Fed Com 5H (Talo	MWD	MWD - Standard	

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Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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	-3,716.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
50.0	0.00	0.00	50.0	-3,666.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
100.0	0.00	290.00	100.0	-3,616.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
120.0	0.00	290.00	120.0	-3,596.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
20" Conductor										
150.0	0.00	290.00	150.0	-3,566.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
200.0	0.00	290.00	200.0	-3,516.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
250.0	0.00	290.00	250.0	-3,466.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
300.0	0.00	290.00	300.0	-3,416.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
350.0	0.00	290.00	350.0	-3,366.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
400.0	0.00	290.00	400.0	-3,316.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
450.0	0.00	290.00	450.0	-3,266.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
500.0	0.00	290.00	500.0	-3,216.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
550.0	0.00	290.00	550.0	-3,166.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
600.0	0.00	290.00	600.0	-3,116.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
650.0	0.00	290.00	650.0	-3,066.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
700.0	0.00	290.00	700.0	-3,016.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
750.0	0.00	290.00	750.0	-2,966.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
800.0	0.00	290.00	800.0	-2,916.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
850.0	0.00	290.00	850.0	-2,866.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
900.0	0.00	290.00	900.0	-2,816.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
950.0	0.00	290.00	950.0	-2,766.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,000.0	0.00	290.00	1,000.0	-2,716.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,050.0	0.00	290.00	1,050.0	-2,666.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,100.0	0.00	290.00	1,100.0	-2,616.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,150.0	0.00	290.00	1,150.0	-2,566.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,200.0	0.00	290.00	1,200.0	-2,516.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
1,250.0	0.00	290.00	1,250.0	-2,466.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,300.0	0.00	290.00	1,300.0	-2,416.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,350.0	0.00	290.00	1,350.0	-2,366.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,400.0	0.00	290.00	1,400.0	-2,316.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,450.0	0.00	290.00	1,450.0	-2,266.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,500.0	0.00	290.00	1,500.0	-2,216.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,550.0	0.00	290.00	1,550.0	-2,166.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,600.0	0.00	290.00	1,600.0	-2,116.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,650.0	0.00	290.00	1,650.0	-2,066.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,700.0	0.00	290.00	1,700.0	-2,016.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,750.0	0.00	290.00	1,750.0	-1,966.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,800.0	0.00	290.00	1,800.0	-1,916.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,850.0	0.00	290.00	1,850.0	-1,866.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,876.0	0.00	290.00	1,876.0	-1,840.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
Rustler										
1,900.0	0.00	290.00	1,900.0	-1,816.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
1,901.0	0.00	290.00	1,901.0	-1,815.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
13 3/8" Surface Casing										
1,950.0	0.00	290.00	1,950.0	-1,766.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,000.0	0.00	290.00	2,000.0	-1,716.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,050.0	0.00	290.00	2,050.0	-1,666.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,071.0	0.00	290.00	2,071.0	-1,645.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
Top of Salt										
2,100.0	0.00	290.00	2,100.0	-1,616.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,150.0	0.00	290.00	2,150.0	-1,566.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,200.0	0.00	290.00	2,200.0	-1,516.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,250.0	0.00	290.00	2,250.0	-1,466.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
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Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
2,300.0	0.00	290.00	2,300.0	-1,416.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,350.0	0.00	290.00	2,350.0	-1,366.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,400.0	0.00	290.00	2,400.0	-1,316.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,450.0	0.00	290.00	2,450.0	-1,266.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,500.0	0.00	290.00	2,500.0	-1,216.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,550.0	0.00	290.00	2,550.0	-1,166.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,600.0	0.00	290.00	2,600.0	-1,116.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,650.0	0.00	290.00	2,650.0	-1,066.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,700.0	0.00	290.00	2,700.0	-1,016.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,750.0	0.00	290.00	2,750.0	-966.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,800.0	0.00	290.00	2,800.0	-916.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,850.0	0.00	290.00	2,850.0	-866.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,900.0	0.00	290.00	2,900.0	-816.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
2,950.0	0.00	290.00	2,950.0	-766.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,000.0	0.00	290.00	3,000.0	-716.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,050.0	0.00	290.00	3,050.0	-666.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,100.0	0.00	290.00	3,100.0	-616.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,150.0	0.00	290.00	3,150.0	-566.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,200.0	0.00	290.00	3,200.0	-516.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,250.0	0.00	290.00	3,250.0	-466.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,300.0	0.00	290.00	3,300.0	-416.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,350.0	0.00	290.00	3,350.0	-366.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,400.0	0.00	290.00	3,400.0	-316.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,401.0	0.00	290.00	3,401.0	-315.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
Base of Salt										
3,450.0	0.00	290.00	3,450.0	-266.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,500.0	0.00	290.00	3,500.0	-216.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
3,550.0	0.00	290.00	3,550.0	-166.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,600.0	0.00	290.00	3,600.0	-116.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,650.0	0.00	290.00	3,650.0	-66.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,700.0	0.00	290.00	3,700.0	-16.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,750.0	0.00	290.00	3,750.0	34.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,800.0	0.00	290.00	3,800.0	84.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,850.0	0.00	290.00	3,850.0	134.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,900.0	0.00	290.00	3,900.0	184.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
3,950.0	0.00	290.00	3,950.0	234.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,000.0	0.00	290.00	4,000.0	284.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,050.0	0.00	290.00	4,050.0	334.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,100.0	0.00	290.00	4,100.0	384.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,150.0	0.00	290.00	4,150.0	434.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,156.0	0.00	290.00	4,156.0	440.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
Capitan										
4,200.0	0.00	290.00	4,200.0	484.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,250.0	0.00	290.00	4,250.0	534.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,300.0	0.00	290.00	4,300.0	584.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,350.0	0.00	290.00	4,350.0	634.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,400.0	0.00	290.00	4,400.0	684.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,450.0	0.00	290.00	4,450.0	734.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,500.0	0.00	290.00	4,500.0	784.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,550.0	0.00	290.00	4,550.0	834.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,600.0	0.00	290.00	4,600.0	884.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,650.0	0.00	290.00	4,650.0	934.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,700.0	0.00	290.00	4,700.0	984.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
4,750.0	0.00	290.00	4,750.0	1,034.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
4,770.0	0.00	290.00	4,770.0	1,054.0	0.0	0.0	805,418.15	586,348.28	0.00	0.00
Start Build 3.00										
4,800.0	0.90	290.00	4,800.0	1,084.0	0.1	-0.2	805,417.93	586,348.36	-0.07	3.00
4,850.0	2.40	290.00	4,850.0	1,134.0	0.6	-1.6	805,416.58	586,348.85	-0.47	3.00
4,900.0	3.90	290.00	4,899.9	1,183.9	1.5	-4.2	805,414.00	586,349.79	-1.25	3.00
4,950.0	5.40	290.00	4,949.7	1,233.7	2.9	-8.0	805,410.19	586,351.18	-2.40	3.00
4,970.0	6.00	290.00	4,969.6	1,253.6	3.6	-9.8	805,408.32	586,351.86	-2.96	3.00
Start 4830.0 hold at 4970.0 MD										
5,000.0	6.00	290.00	4,999.5	1,283.5	4.7	-12.8	805,405.38	586,352.93	-3.85	0.00
5,050.0	6.00	290.00	5,049.2	1,333.2	6.4	-17.7	805,400.46	586,354.72	-5.33	0.00
5,100.0	6.00	290.00	5,098.9	1,382.9	8.2	-22.6	805,395.55	586,356.51	-6.81	0.00
5,150.0	6.00	290.00	5,148.6	1,432.6	10.0	-27.5	805,390.64	586,358.30	-8.29	0.00
5,200.0	6.00	290.00	5,198.4	1,482.4	11.8	-32.4	805,385.73	586,360.08	-9.77	0.00
5,250.0	6.00	290.00	5,248.1	1,532.1	13.6	-37.3	805,380.82	586,361.87	-11.25	0.00
5,300.0	6.00	290.00	5,297.8	1,581.8	15.4	-42.2	805,375.91	586,363.66	-12.73	0.00
5,350.0	6.00	290.00	5,347.6	1,631.6	17.2	-47.2	805,371.00	586,365.45	-14.21	0.00
5,400.0	6.00	290.00	5,397.3	1,681.3	19.0	-52.1	805,366.09	586,367.23	-15.69	0.00
5,450.0	6.00	290.00	5,447.0	1,731.0	20.7	-57.0	805,361.17	586,369.02	-17.17	0.00
5,496.2	6.00	290.00	5,493.0	1,777.0	22.4	-61.5	805,356.63	586,370.67	-18.54	0.00
9 5/8" Intermediate Casing										
5,500.0	6.00	290.00	5,496.7	1,780.7	22.5	-61.9	805,356.26	586,370.81	-18.65	0.00
5,521.4	6.00	290.00	5,518.0	1,802.0	23.3	-64.0	805,354.16	586,371.57	-19.28	0.00
Delaware										
5,550.0	6.00	290.00	5,546.5	1,830.5	24.3	-66.8	805,351.35	586,372.60	-20.13	0.00
5,600.0	6.00	290.00	5,596.2	1,880.2	26.1	-71.7	805,346.44	586,374.38	-21.61	0.00
5,650.0	6.00	290.00	5,645.9	1,929.9	27.9	-76.6	805,341.53	586,376.17	-23.09	0.00
5,700.0	6.00	290.00	5,695.6	1,979.6	29.7	-81.5	805,336.62	586,377.96	-24.57	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)	
5,750.0	6.00	290.00	5,745.4	2,029.4	31.5	-86.4	805,331.71	586,379.75	-26.05	0.00	
5,800.0	6.00	290.00	5,795.1	2,079.1	33.3	-91.4	805,326.80	586,381.53	-27.53	0.00	
5,850.0	6.00	290.00	5,844.8	2,128.8	35.0	-96.3	805,321.88	586,383.32	-29.01	0.00	
5,900.0	6.00	290.00	5,894.5	2,178.5	36.8	-101.2	805,316.97	586,385.11	-30.49	0.00	
5,950.0	6.00	290.00	5,944.3	2,228.3	38.6	-106.1	805,312.06	586,386.90	-31.97	0.00	
6,000.0	6.00	290.00	5,994.0	2,278.0	40.4	-111.0	805,307.15	586,388.68	-33.45	0.00	
6,050.0	6.00	290.00	6,043.7	2,327.7	42.2	-115.9	805,302.24	586,390.47	-34.93	0.00	
6,100.0	6.00	290.00	6,093.4	2,377.4	44.0	-120.8	805,297.33	586,392.26	-36.41	0.00	
6,150.0	6.00	290.00	6,143.2	2,427.2	45.8	-125.7	805,292.42	586,394.05	-37.89	0.00	
6,200.0	6.00	290.00	6,192.9	2,476.9	47.6	-130.6	805,287.51	586,395.83	-39.37	0.00	
6,250.0	6.00	290.00	6,242.6	2,526.6	49.3	-135.6	805,282.59	586,397.62	-40.85	0.00	
6,300.0	6.00	290.00	6,292.3	2,576.3	51.1	-140.5	805,277.68	586,399.41	-42.33	0.00	
6,350.0	6.00	290.00	6,342.1	2,626.1	52.9	-145.4	805,272.77	586,401.20	-43.81	0.00	
6,400.0	6.00	290.00	6,391.8	2,675.8	54.7	-150.3	805,267.86	586,402.98	-45.29	0.00	
6,450.0	6.00	290.00	6,441.5	2,725.5	56.5	-155.2	805,262.95	586,404.77	-46.77	0.00	
6,500.0	6.00	290.00	6,491.3	2,775.3	58.3	-160.1	805,258.04	586,406.56	-48.25	0.00	
6,550.0	6.00	290.00	6,541.0	2,825.0	60.1	-165.0	805,253.13	586,408.35	-49.73	0.00	
6,600.0	6.00	290.00	6,590.7	2,874.7	61.9	-169.9	805,248.22	586,410.13	-51.21	0.00	
6,650.0	6.00	290.00	6,640.4	2,924.4	63.6	-174.8	805,243.31	586,411.92	-52.69	0.00	
6,700.0	6.00	290.00	6,690.2	2,974.2	65.4	-179.8	805,238.39	586,413.71	-54.17	0.00	
6,750.0	6.00	290.00	6,739.9	3,023.9	67.2	-184.7	805,233.48	586,415.50	-55.65	0.00	
6,800.0	6.00	290.00	6,789.6	3,073.6	69.0	-189.6	805,228.57	586,417.28	-57.13	0.00	
6,850.0	6.00	290.00	6,839.3	3,123.3	70.8	-194.5	805,223.66	586,419.07	-58.61	0.00	
6,900.0	6.00	290.00	6,889.1	3,173.1	72.6	-199.4	805,218.75	586,420.86	-60.09	0.00	
6,950.0	6.00	290.00	6,938.8	3,222.8	74.4	-204.3	805,213.84	586,422.65	-61.57	0.00	
7,000.0	6.00	290.00	6,988.5	3,272.5	76.2	-209.2	805,208.93	586,424.43	-63.05	0.00	
7,050.0	6.00	290.00	7,038.2	3,322.2	77.9	-214.1	805,204.02	586,426.22	-64.53	0.00	

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)	
7,100.0	6.00	290.00	7,088.0	3,372.0	79.7	-219.0	805,199.10	586,428.01	-66.01	0.00	
7,150.0	6.00	290.00	7,137.7	3,421.7	81.5	-224.0	805,194.19	586,429.80	-67.49	0.00	
7,200.0	6.00	290.00	7,187.4	3,471.4	83.3	-228.9	805,189.28	586,431.58	-68.97	0.00	
7,250.0	6.00	290.00	7,237.1	3,521.1	85.1	-233.8	805,184.37	586,433.37	-70.45	0.00	
7,300.0	6.00	290.00	7,286.9	3,570.9	86.9	-238.7	805,179.46	586,435.16	-71.93	0.00	
7,350.0	6.00	290.00	7,336.6	3,620.6	88.7	-243.6	805,174.55	586,436.95	-73.41	0.00	
7,400.0	6.00	290.00	7,386.3	3,670.3	90.5	-248.5	805,169.64	586,438.73	-74.89	0.00	
7,450.0	6.00	290.00	7,436.0	3,720.0	92.2	-253.4	805,164.73	586,440.52	-76.37	0.00	
7,500.0	6.00	290.00	7,485.8	3,769.8	94.0	-258.3	805,159.81	586,442.31	-77.85	0.00	
7,550.0	6.00	290.00	7,535.5	3,819.5	95.8	-263.3	805,154.90	586,444.10	-79.33	0.00	
7,600.0	6.00	290.00	7,585.2	3,869.2	97.6	-268.2	805,149.99	586,445.88	-80.81	0.00	
7,650.0	6.00	290.00	7,635.0	3,919.0	99.4	-273.1	805,145.08	586,447.67	-82.29	0.00	
7,700.0	6.00	290.00	7,684.7	3,968.7	101.2	-278.0	805,140.17	586,449.46	-83.77	0.00	
7,750.0	6.00	290.00	7,734.4	4,018.4	103.0	-282.9	805,135.26	586,451.25	-85.25	0.00	
7,800.0	6.00	290.00	7,784.1	4,068.1	104.8	-287.8	805,130.35	586,453.03	-86.73	0.00	
7,850.0	6.00	290.00	7,833.9	4,117.9	106.5	-292.7	805,125.44	586,454.82	-88.21	0.00	
7,900.0	6.00	290.00	7,883.6	4,167.6	108.3	-297.6	805,120.52	586,456.61	-89.69	0.00	
7,950.0	6.00	290.00	7,933.3	4,217.3	110.1	-302.5	805,115.61	586,458.40	-91.17	0.00	
8,000.0	6.00	290.00	7,983.0	4,267.0	111.9	-307.5	805,110.70	586,460.19	-92.65	0.00	
8,050.0	6.00	290.00	8,032.8	4,316.8	113.7	-312.4	805,105.79	586,461.97	-94.13	0.00	
8,100.0	6.00	290.00	8,082.5	4,366.5	115.5	-317.3	805,100.88	586,463.76	-95.61	0.00	
8,123.6	6.00	290.00	8,106.0	4,390.0	116.3	-319.6	805,098.56	586,464.61	-96.31	0.00	
Bone Spring											
8,150.0	6.00	290.00	8,132.2	4,416.2	117.3	-322.2	805,095.97	586,465.55	-97.09	0.00	
8,200.0	6.00	290.00	8,181.9	4,465.9	119.1	-327.1	805,091.06	586,467.34	-98.57	0.00	
8,250.0	6.00	290.00	8,231.7	4,515.7	120.8	-332.0	805,086.15	586,469.12	-100.05	0.00	
8,300.0	6.00	290.00	8,281.4	4,565.4	122.6	-336.9	805,081.23	586,470.91	-101.53	0.00	

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
8,350.0	6.00	290.00	8,331.1	4,615.1	124.4	-341.8	805,076.32	586,472.70	-103.01	0.00
8,400.0	6.00	290.00	8,380.8	4,664.8	126.2	-346.7	805,071.41	586,474.49	-104.49	0.00
8,450.0	6.00	290.00	8,430.6	4,714.6	128.0	-351.7	805,066.50	586,476.27	-105.97	0.00
8,500.0	6.00	290.00	8,480.3	4,764.3	129.8	-356.6	805,061.59	586,478.06	-107.45	0.00
8,550.0	6.00	290.00	8,530.0	4,814.0	131.6	-361.5	805,056.68	586,479.85	-108.93	0.00
8,600.0	6.00	290.00	8,579.7	4,863.7	133.4	-366.4	805,051.77	586,481.64	-110.41	0.00
8,650.0	6.00	290.00	8,629.5	4,913.5	135.1	-371.3	805,046.86	586,483.42	-111.89	0.00
8,700.0	6.00	290.00	8,679.2	4,963.2	136.9	-376.2	805,041.94	586,485.21	-113.37	0.00
8,750.0	6.00	290.00	8,728.9	5,012.9	138.7	-381.1	805,037.03	586,487.00	-114.85	0.00
8,800.0	6.00	290.00	8,778.7	5,062.7	140.5	-386.0	805,032.12	586,488.79	-116.33	0.00
8,850.0	6.00	290.00	8,828.4	5,112.4	142.3	-390.9	805,027.21	586,490.57	-117.81	0.00
8,900.0	6.00	290.00	8,878.1	5,162.1	144.1	-395.9	805,022.30	586,492.36	-119.29	0.00
8,950.0	6.00	290.00	8,927.8	5,211.8	145.9	-400.8	805,017.39	586,494.15	-120.77	0.00
9,000.0	6.00	290.00	8,977.6	5,261.6	147.7	-405.7	805,012.48	586,495.94	-122.25	0.00
9,050.0	6.00	290.00	9,027.3	5,311.3	149.4	-410.6	805,007.57	586,497.72	-123.73	0.00
9,100.0	6.00	290.00	9,077.0	5,361.0	151.2	-415.5	805,002.65	586,499.51	-125.21	0.00
9,150.0	6.00	290.00	9,126.7	5,410.7	153.0	-420.4	804,997.74	586,501.30	-126.69	0.00
9,200.0	6.00	290.00	9,176.5	5,460.5	154.8	-425.3	804,992.83	586,503.09	-128.17	0.00
9,250.0	6.00	290.00	9,226.2	5,510.2	156.6	-430.2	804,987.92	586,504.87	-129.65	0.00
9,300.0	6.00	290.00	9,275.9	5,559.9	158.4	-435.1	804,983.01	586,506.66	-131.13	0.00
9,350.0	6.00	290.00	9,325.6	5,609.6	160.2	-440.1	804,978.10	586,508.45	-132.61	0.00
9,400.0	6.00	290.00	9,375.4	5,659.4	162.0	-445.0	804,973.19	586,510.24	-134.09	0.00
9,450.0	6.00	290.00	9,425.1	5,709.1	163.7	-449.9	804,968.28	586,512.02	-135.57	0.00
9,500.0	6.00	290.00	9,474.8	5,758.8	165.5	-454.8	804,963.36	586,513.81	-137.05	0.00
9,550.0	6.00	290.00	9,524.5	5,808.5	167.3	-459.7	804,958.45	586,515.60	-138.53	0.00
9,553.5	6.00	290.00	9,528.0	5,812.0	167.4	-460.0	804,958.11	586,515.72	-138.63	0.00

1st Bone Spring Sand

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
9,600.0	6.00	290.00	9,574.3	5,858.3	169.1	-464.6	804,953.54	586,517.39	-140.01	0.00
9,650.0	6.00	290.00	9,624.0	5,908.0	170.9	-469.5	804,948.63	586,519.17	-141.49	0.00
9,700.0	6.00	290.00	9,673.7	5,957.7	172.7	-474.4	804,943.72	586,520.96	-142.97	0.00
9,750.0	6.00	290.00	9,723.4	6,007.4	174.5	-479.3	804,938.81	586,522.75	-144.45	0.00
9,800.0	6.00	290.00	9,773.2	6,057.2	176.3	-484.3	804,933.90	586,524.54	-145.93	0.00
Start Drop -3.00										
9,850.0	4.50	290.00	9,823.0	6,107.0	177.8	-488.6	804,929.60	586,526.10	-147.22	3.00
9,900.0	3.00	290.00	9,872.9	6,156.9	178.9	-491.6	804,926.53	586,527.22	-148.15	3.00
9,950.0	1.50	290.00	9,922.8	6,206.8	179.6	-493.5	804,924.68	586,527.89	-148.71	3.00
10,000.0	0.00	0.00	9,972.8	6,256.8	179.8	-494.1	804,924.07	586,528.12	-148.89	3.00
Start 70.0 hold at 10000.0 MD										
10,050.0	0.00	0.00	10,022.8	6,306.8	179.8	-494.1	804,924.07	586,528.12	-148.89	0.00
10,070.0	0.00	179.90	10,042.8	6,326.8	179.8	-494.1	804,924.07	586,528.12	-148.89	0.00
Start Build 11.92										
10,100.0	3.58	179.90	10,072.8	6,356.8	178.9	-494.1	804,924.07	586,527.18	-147.96	11.92
10,150.0	9.54	179.90	10,122.4	6,406.4	173.2	-494.1	804,924.08	586,521.47	-142.26	11.92
10,200.0	15.49	179.90	10,171.2	6,455.2	162.4	-494.1	804,924.10	586,510.64	-131.46	11.92
10,213.3	17.08	179.90	10,184.0	6,468.0	158.6	-494.1	804,924.10	586,506.91	-127.73	11.92
2nd Bone Spring Sand										
10,250.0	21.45	179.90	10,218.6	6,502.6	146.5	-494.0	804,924.12	586,494.81	-115.65	11.92
10,300.0	27.41	179.90	10,264.1	6,548.1	125.9	-494.0	804,924.16	586,474.13	-95.02	11.92
10,350.0	33.37	179.90	10,307.2	6,591.2	100.6	-493.9	804,924.20	586,448.85	-69.79	11.92
10,400.0	39.33	179.90	10,347.5	6,631.5	70.9	-493.9	804,924.26	586,419.23	-40.22	11.92
10,450.0	45.29	179.90	10,384.5	6,668.5	37.3	-493.8	804,924.31	586,385.58	-6.65	11.92
10,500.0	51.25	179.90	10,417.7	6,701.7	0.0	-493.8	804,924.38	586,348.28	30.58	11.92
10,550.0	57.21	179.90	10,446.9	6,730.9	-40.5	-493.7	804,924.45	586,307.73	71.04	11.92
10,600.0	63.17	179.90	10,471.8	6,755.8	-83.9	-493.6	804,924.53	586,264.37	114.32	11.92

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
10,650.0	69.13	179.90	10,492.0	6,776.0	-129.6	-493.5	804,924.61	586,218.66	159.94	11.92
10,700.0	75.09	179.90	10,507.3	6,791.3	-177.2	-493.5	804,924.69	586,171.10	207.40	11.92
10,750.0	81.05	179.90	10,517.7	6,801.7	-226.1	-493.4	804,924.77	586,122.20	256.20	11.92
10,800.0	87.01	179.90	10,522.9	6,806.9	-275.8	-493.3	804,924.86	586,072.49	305.81	11.92
10,822.0	89.63	179.90	10,523.5	6,807.5	-297.8	-493.3	804,924.90	586,050.51	327.75	11.92
Start 7443.0 hold at 10822.0 MD										
10,850.0	89.63	179.90	10,523.7	6,807.7	-325.8	-493.2	804,924.95	586,022.51	355.69	0.00
10,900.0	89.63	179.90	10,524.0	6,808.0	-375.8	-493.1	804,925.04	585,972.51	405.59	0.00
10,950.0	89.63	179.90	10,524.3	6,808.3	-425.8	-493.0	804,925.12	585,922.51	455.49	0.00
11,000.0	89.63	179.90	10,524.7	6,808.7	-475.8	-492.9	804,925.21	585,872.51	505.38	0.00
11,050.0	89.63	179.90	10,525.0	6,809.0	-525.8	-492.9	804,925.30	585,822.51	555.28	0.00
11,100.0	89.63	179.90	10,525.3	6,809.3	-575.8	-492.8	804,925.38	585,772.51	605.18	0.00
11,150.0	89.63	179.90	10,525.6	6,809.6	-625.8	-492.7	804,925.47	585,722.51	655.08	0.00
11,200.0	89.63	179.90	10,526.0	6,810.0	-675.8	-492.6	804,925.56	585,672.51	704.97	0.00
11,250.0	89.63	179.90	10,526.3	6,810.3	-725.8	-492.5	804,925.65	585,622.52	754.87	0.00
11,300.0	89.63	179.90	10,526.6	6,810.6	-775.8	-492.4	804,925.73	585,572.52	804.77	0.00
11,350.0	89.63	179.90	10,526.9	6,810.9	-825.8	-492.3	804,925.82	585,522.52	854.67	0.00
11,400.0	89.63	179.90	10,527.2	6,811.2	-875.8	-492.2	804,925.91	585,472.52	904.56	0.00
11,450.0	89.63	179.90	10,527.6	6,811.6	-925.8	-492.2	804,926.00	585,422.52	954.46	0.00
11,500.0	89.63	179.90	10,527.9	6,811.9	-975.8	-492.1	804,926.08	585,372.52	1,004.36	0.00
11,550.0	89.63	179.90	10,528.2	6,812.2	-1,025.8	-492.0	804,926.17	585,322.52	1,054.26	0.00
11,600.0	89.63	179.90	10,528.5	6,812.5	-1,075.8	-491.9	804,926.26	585,272.52	1,104.16	0.00
11,650.0	89.63	179.90	10,528.9	6,812.9	-1,125.8	-491.8	804,926.34	585,222.52	1,154.05	0.00
11,700.0	89.63	179.90	10,529.2	6,813.2	-1,175.8	-491.7	804,926.43	585,172.53	1,203.95	0.00
11,750.0	89.63	179.90	10,529.5	6,813.5	-1,225.8	-491.6	804,926.52	585,122.53	1,253.85	0.00
11,800.0	89.63	179.90	10,529.8	6,813.8	-1,275.8	-491.5	804,926.61	585,072.53	1,303.75	0.00
11,850.0	89.63	179.90	10,530.2	6,814.2	-1,325.8	-491.5	804,926.69	585,022.53	1,353.64	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
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Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
11,900.0	89.63	179.90	10,530.5	6,814.5	-1,375.8	-491.4	804,926.78	584,972.53	1,403.54	0.00
11,950.0	89.63	179.90	10,530.8	6,814.8	-1,425.8	-491.3	804,926.87	584,922.53	1,453.44	0.00
12,000.0	89.63	179.90	10,531.1	6,815.1	-1,475.7	-491.2	804,926.96	584,872.53	1,503.34	0.00
12,050.0	89.63	179.90	10,531.4	6,815.4	-1,525.7	-491.1	804,927.04	584,822.53	1,553.23	0.00
12,100.0	89.63	179.90	10,531.8	6,815.8	-1,575.7	-491.0	804,927.13	584,772.53	1,603.13	0.00
12,150.0	89.63	179.90	10,532.1	6,816.1	-1,625.7	-490.9	804,927.22	584,722.54	1,653.03	0.00
12,200.0	89.63	179.90	10,532.4	6,816.4	-1,675.7	-490.8	804,927.30	584,672.54	1,702.93	0.00
12,250.0	89.63	179.90	10,532.7	6,816.7	-1,725.7	-490.8	804,927.39	584,622.54	1,752.82	0.00
12,300.0	89.63	179.90	10,533.1	6,817.1	-1,775.7	-490.7	804,927.48	584,572.54	1,802.72	0.00
12,350.0	89.63	179.90	10,533.4	6,817.4	-1,825.7	-490.6	804,927.57	584,522.54	1,852.62	0.00
12,400.0	89.63	179.90	10,533.7	6,817.7	-1,875.7	-490.5	804,927.65	584,472.54	1,902.52	0.00
12,450.0	89.63	179.90	10,534.0	6,818.0	-1,925.7	-490.4	804,927.74	584,422.54	1,952.41	0.00
12,500.0	89.63	179.90	10,534.4	6,818.4	-1,975.7	-490.3	804,927.83	584,372.54	2,002.31	0.00
12,550.0	89.63	179.90	10,534.7	6,818.7	-2,025.7	-490.2	804,927.92	584,322.54	2,052.21	0.00
12,600.0	89.63	179.90	10,535.0	6,819.0	-2,075.7	-490.2	804,928.00	584,272.55	2,102.11	0.00
12,650.0	89.63	179.90	10,535.3	6,819.3	-2,125.7	-490.1	804,928.09	584,222.55	2,152.00	0.00
12,700.0	89.63	179.90	10,535.6	6,819.6	-2,175.7	-490.0	804,928.18	584,172.55	2,201.90	0.00
12,750.0	89.63	179.90	10,536.0	6,820.0	-2,225.7	-489.9	804,928.26	584,122.55	2,251.80	0.00
12,800.0	89.63	179.90	10,536.3	6,820.3	-2,275.7	-489.8	804,928.35	584,072.55	2,301.70	0.00
12,850.0	89.63	179.90	10,536.6	6,820.6	-2,325.7	-489.7	804,928.44	584,022.55	2,351.59	0.00
12,900.0	89.63	179.90	10,536.9	6,820.9	-2,375.7	-489.6	804,928.53	583,972.55	2,401.49	0.00
12,950.0	89.63	179.90	10,537.3	6,821.3	-2,425.7	-489.5	804,928.61	583,922.55	2,451.39	0.00
13,000.0	89.63	179.90	10,537.6	6,821.6	-2,475.7	-489.5	804,928.70	583,872.55	2,501.29	0.00
13,050.0	89.63	179.90	10,537.9	6,821.9	-2,525.7	-489.4	804,928.79	583,822.56	2,551.18	0.00
13,100.0	89.63	179.90	10,538.2	6,822.2	-2,575.7	-489.3	804,928.88	583,772.56	2,601.08	0.00
13,150.0	89.63	179.90	10,538.5	6,822.5	-2,625.7	-489.2	804,928.96	583,722.56	2,650.98	0.00
13,200.0	89.63	179.90	10,538.9	6,822.9	-2,675.7	-489.1	804,929.05	583,672.56	2,700.88	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
13,250.0	89.63	179.90	10,539.2	6,823.2	-2,725.7	-489.0	804,929.14	583,622.56	2,750.77	0.00
13,300.0	89.63	179.90	10,539.5	6,823.5	-2,775.7	-488.9	804,929.22	583,572.56	2,800.67	0.00
13,350.0	89.63	179.90	10,539.8	6,823.8	-2,825.7	-488.8	804,929.31	583,522.56	2,850.57	0.00
13,400.0	89.63	179.90	10,540.2	6,824.2	-2,875.7	-488.8	804,929.40	583,472.56	2,900.47	0.00
13,450.0	89.63	179.90	10,540.5	6,824.5	-2,925.7	-488.7	804,929.49	583,422.56	2,950.36	0.00
13,500.0	89.63	179.90	10,540.8	6,824.8	-2,975.7	-488.6	804,929.57	583,372.57	3,000.26	0.00
13,550.0	89.63	179.90	10,541.1	6,825.1	-3,025.7	-488.5	804,929.66	583,322.57	3,050.16	0.00
13,600.0	89.63	179.90	10,541.5	6,825.5	-3,075.7	-488.4	804,929.75	583,272.57	3,100.06	0.00
13,650.0	89.63	179.90	10,541.8	6,825.8	-3,125.7	-488.3	804,929.84	583,222.57	3,149.95	0.00
13,700.0	89.63	179.90	10,542.1	6,826.1	-3,175.7	-488.2	804,929.92	583,172.57	3,199.85	0.00
13,750.0	89.63	179.90	10,542.4	6,826.4	-3,225.7	-488.1	804,930.01	583,122.57	3,249.75	0.00
13,800.0	89.63	179.90	10,542.7	6,826.7	-3,275.7	-488.1	804,930.10	583,072.57	3,299.65	0.00
13,850.0	89.63	179.90	10,543.1	6,827.1	-3,325.7	-488.0	804,930.18	583,022.57	3,349.54	0.00
13,900.0	89.63	179.90	10,543.4	6,827.4	-3,375.7	-487.9	804,930.27	582,972.57	3,399.44	0.00
13,950.0	89.63	179.90	10,543.7	6,827.7	-3,425.7	-487.8	804,930.36	582,922.58	3,449.34	0.00
14,000.0	89.63	179.90	10,544.0	6,828.0	-3,475.7	-487.7	804,930.45	582,872.58	3,499.24	0.00
14,050.0	89.63	179.90	10,544.4	6,828.4	-3,525.7	-487.6	804,930.53	582,822.58	3,549.13	0.00
14,100.0	89.63	179.90	10,544.7	6,828.7	-3,575.7	-487.5	804,930.62	582,772.58	3,599.03	0.00
14,150.0	89.63	179.90	10,545.0	6,829.0	-3,625.7	-487.4	804,930.71	582,722.58	3,648.93	0.00
14,200.0	89.63	179.90	10,545.3	6,829.3	-3,675.7	-487.4	804,930.80	582,672.58	3,698.83	0.00
14,250.0	89.63	179.90	10,545.7	6,829.7	-3,725.7	-487.3	804,930.88	582,622.58	3,748.72	0.00
14,300.0	89.63	179.90	10,546.0	6,830.0	-3,775.7	-487.2	804,930.97	582,572.58	3,798.62	0.00
14,350.0	89.63	179.90	10,546.3	6,830.3	-3,825.7	-487.1	804,931.06	582,522.58	3,848.52	0.00
14,400.0	89.63	179.90	10,546.6	6,830.6	-3,875.7	-487.0	804,931.14	582,472.59	3,898.42	0.00
14,450.0	89.63	179.90	10,546.9	6,830.9	-3,925.7	-486.9	804,931.23	582,422.59	3,948.31	0.00
14,500.0	89.63	179.90	10,547.3	6,831.3	-3,975.7	-486.8	804,931.32	582,372.59	3,998.21	0.00
14,550.0	89.63	179.90	10,547.6	6,831.6	-4,025.7	-486.7	804,931.41	582,322.59	4,048.11	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
14,600.0	89.63	179.90	10,547.9	6,831.9	-4,075.7	-486.7	804,931.49	582,272.59	4,098.01	0.00
14,650.0	89.63	179.90	10,548.2	6,832.2	-4,125.7	-486.6	804,931.58	582,222.59	4,147.90	0.00
14,700.0	89.63	179.90	10,548.6	6,832.6	-4,175.7	-486.5	804,931.67	582,172.59	4,197.80	0.00
14,750.0	89.63	179.90	10,548.9	6,832.9	-4,225.7	-486.4	804,931.76	582,122.59	4,247.70	0.00
14,800.0	89.63	179.90	10,549.2	6,833.2	-4,275.7	-486.3	804,931.84	582,072.59	4,297.60	0.00
14,850.0	89.63	179.90	10,549.5	6,833.5	-4,325.7	-486.2	804,931.93	582,022.60	4,347.49	0.00
14,900.0	89.63	179.90	10,549.8	6,833.8	-4,375.7	-486.1	804,932.02	581,972.60	4,397.39	0.00
14,950.0	89.63	179.90	10,550.2	6,834.2	-4,425.7	-486.0	804,932.10	581,922.60	4,447.29	0.00
15,000.0	89.63	179.90	10,550.5	6,834.5	-4,475.7	-486.0	804,932.19	581,872.60	4,497.19	0.00
15,050.0	89.63	179.90	10,550.8	6,834.8	-4,525.7	-485.9	804,932.28	581,822.60	4,547.08	0.00
15,100.0	89.63	179.90	10,551.1	6,835.1	-4,575.7	-485.8	804,932.37	581,772.60	4,596.98	0.00
15,150.0	89.63	179.90	10,551.5	6,835.5	-4,625.7	-485.7	804,932.45	581,722.60	4,646.88	0.00
15,200.0	89.63	179.90	10,551.8	6,835.8	-4,675.7	-485.6	804,932.54	581,672.60	4,696.78	0.00
15,250.0	89.63	179.90	10,552.1	6,836.1	-4,725.7	-485.5	804,932.63	581,622.60	4,746.67	0.00
15,300.0	89.63	179.90	10,552.4	6,836.4	-4,775.7	-485.4	804,932.72	581,572.61	4,796.57	0.00
15,350.0	89.63	179.90	10,552.8	6,836.8	-4,825.7	-485.4	804,932.80	581,522.61	4,846.47	0.00
15,400.0	89.63	179.90	10,553.1	6,837.1	-4,875.7	-485.3	804,932.89	581,472.61	4,896.37	0.00
15,450.0	89.63	179.90	10,553.4	6,837.4	-4,925.7	-485.2	804,932.98	581,422.61	4,946.26	0.00
15,500.0	89.63	179.90	10,553.7	6,837.7	-4,975.7	-485.1	804,933.06	581,372.61	4,996.16	0.00
15,550.0	89.63	179.90	10,554.0	6,838.0	-5,025.7	-485.0	804,933.15	581,322.61	5,046.06	0.00
15,600.0	89.63	179.90	10,554.4	6,838.4	-5,075.7	-484.9	804,933.24	581,272.61	5,095.96	0.00
15,650.0	89.63	179.90	10,554.7	6,838.7	-5,125.7	-484.8	804,933.33	581,222.61	5,145.85	0.00
15,700.0	89.63	179.90	10,555.0	6,839.0	-5,175.7	-484.7	804,933.41	581,172.61	5,195.75	0.00
15,750.0	89.63	179.90	10,555.3	6,839.3	-5,225.7	-484.7	804,933.50	581,122.62	5,245.65	0.00
15,800.0	89.63	179.90	10,555.7	6,839.7	-5,275.7	-484.6	804,933.59	581,072.62	5,295.55	0.00
15,850.0	89.63	179.90	10,556.0	6,840.0	-5,325.7	-484.5	804,933.67	581,022.62	5,345.44	0.00
15,900.0	89.63	179.90	10,556.3	6,840.3	-5,375.7	-484.4	804,933.76	580,972.62	5,395.34	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
15,950.0	89.63	179.90	10,556.6	6,840.6	-5,425.7	-484.3	804,933.85	580,922.62	5,445.24	0.00
16,000.0	89.63	179.90	10,557.0	6,841.0	-5,475.7	-484.2	804,933.94	580,872.62	5,495.14	0.00
16,050.0	89.63	179.90	10,557.3	6,841.3	-5,525.7	-484.1	804,934.02	580,822.62	5,545.03	0.00
16,100.0	89.63	179.90	10,557.6	6,841.6	-5,575.7	-484.0	804,934.11	580,772.62	5,594.93	0.00
16,150.0	89.63	179.90	10,557.9	6,841.9	-5,625.7	-484.0	804,934.20	580,722.62	5,644.83	0.00
16,200.0	89.63	179.90	10,558.2	6,842.2	-5,675.7	-483.9	804,934.29	580,672.63	5,694.73	0.00
16,250.0	89.63	179.90	10,558.6	6,842.6	-5,725.7	-483.8	804,934.37	580,622.63	5,744.62	0.00
16,300.0	89.63	179.90	10,558.9	6,842.9	-5,775.7	-483.7	804,934.46	580,572.63	5,794.52	0.00
16,350.0	89.63	179.90	10,559.2	6,843.2	-5,825.7	-483.6	804,934.55	580,522.63	5,844.42	0.00
16,400.0	89.63	179.90	10,559.5	6,843.5	-5,875.7	-483.5	804,934.63	580,472.63	5,894.32	0.00
16,450.0	89.63	179.90	10,559.9	6,843.9	-5,925.7	-483.4	804,934.72	580,422.63	5,944.21	0.00
16,500.0	89.63	179.90	10,560.2	6,844.2	-5,975.6	-483.3	804,934.81	580,372.63	5,994.11	0.00
16,550.0	89.63	179.90	10,560.5	6,844.5	-6,025.6	-483.3	804,934.90	580,322.63	6,044.01	0.00
16,600.0	89.63	179.90	10,560.8	6,844.8	-6,075.6	-483.2	804,934.98	580,272.63	6,093.91	0.00
16,650.0	89.63	179.90	10,561.1	6,845.1	-6,125.6	-483.1	804,935.07	580,222.64	6,143.80	0.00
16,700.0	89.63	179.90	10,561.5	6,845.5	-6,175.6	-483.0	804,935.16	580,172.64	6,193.70	0.00
16,750.0	89.63	179.90	10,561.8	6,845.8	-6,225.6	-482.9	804,935.25	580,122.64	6,243.60	0.00
16,800.0	89.63	179.90	10,562.1	6,846.1	-6,275.6	-482.8	804,935.33	580,072.64	6,293.50	0.00
16,850.0	89.63	179.90	10,562.4	6,846.4	-6,325.6	-482.7	804,935.42	580,022.64	6,343.39	0.00
16,900.0	89.63	179.90	10,562.8	6,846.8	-6,375.6	-482.6	804,935.51	579,972.64	6,393.29	0.00
16,950.0	89.63	179.90	10,563.1	6,847.1	-6,425.6	-482.6	804,935.59	579,922.64	6,443.19	0.00
17,000.0	89.63	179.90	10,563.4	6,847.4	-6,475.6	-482.5	804,935.68	579,872.64	6,493.09	0.00
17,050.0	89.63	179.90	10,563.7	6,847.7	-6,525.6	-482.4	804,935.77	579,822.65	6,542.98	0.00
17,100.0	89.63	179.90	10,564.1	6,848.1	-6,575.6	-482.3	804,935.86	579,772.65	6,592.88	0.00
17,150.0	89.63	179.90	10,564.4	6,848.4	-6,625.6	-482.2	804,935.94	579,722.65	6,642.78	0.00
17,200.0	89.63	179.90	10,564.7	6,848.7	-6,675.6	-482.1	804,936.03	579,672.65	6,692.68	0.00
17,250.0	89.63	179.90	10,565.0	6,849.0	-6,725.6	-482.0	804,936.12	579,622.65	6,742.57	0.00

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	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)
17,300.0	89.63	179.90	10,565.3	6,849.3	-6,775.6	-481.9	804,936.21	579,572.65	6,792.47	0.00
17,350.0	89.63	179.90	10,565.7	6,849.7	-6,825.6	-481.9	804,936.29	579,522.65	6,842.37	0.00
17,400.0	89.63	179.90	10,566.0	6,850.0	-6,875.6	-481.8	804,936.38	579,472.65	6,892.27	0.00
17,450.0	89.63	179.90	10,566.3	6,850.3	-6,925.6	-481.7	804,936.47	579,422.65	6,942.16	0.00
17,500.0	89.63	179.90	10,566.6	6,850.6	-6,975.6	-481.6	804,936.55	579,372.66	6,992.06	0.00
17,550.0	89.63	179.90	10,567.0	6,851.0	-7,025.6	-481.5	804,936.64	579,322.66	7,041.96	0.00
17,600.0	89.63	179.90	10,567.3	6,851.3	-7,075.6	-481.4	804,936.73	579,272.66	7,091.86	0.00
17,650.0	89.63	179.90	10,567.6	6,851.6	-7,125.6	-481.3	804,936.82	579,222.66	7,141.75	0.00
17,700.0	89.63	179.90	10,567.9	6,851.9	-7,175.6	-481.3	804,936.90	579,172.66	7,191.65	0.00
17,750.0	89.63	179.90	10,568.3	6,852.3	-7,225.6	-481.2	804,936.99	579,122.66	7,241.55	0.00
17,800.0	89.63	179.90	10,568.6	6,852.6	-7,275.6	-481.1	804,937.08	579,072.66	7,291.45	0.00
17,850.0	89.63	179.90	10,568.9	6,852.9	-7,325.6	-481.0	804,937.17	579,022.66	7,341.34	0.00
17,900.0	89.63	179.90	10,569.2	6,853.2	-7,375.6	-480.9	804,937.25	578,972.66	7,391.24	0.00
17,950.0	89.63	179.90	10,569.5	6,853.5	-7,425.6	-480.8	804,937.34	578,922.67	7,441.14	0.00
18,000.0	89.63	179.90	10,569.9	6,853.9	-7,475.6	-480.7	804,937.43	578,872.67	7,491.04	0.00
18,050.0	89.63	179.90	10,570.2	6,854.2	-7,525.6	-480.6	804,937.51	578,822.67	7,540.93	0.00
18,100.0	89.63	179.90	10,570.5	6,854.5	-7,575.6	-480.6	804,937.60	578,772.67	7,590.83	0.00
18,150.0	89.63	179.90	10,570.8	6,854.8	-7,625.6	-480.5	804,937.69	578,722.67	7,640.73	0.00
18,200.0	89.63	179.90	10,571.2	6,855.2	-7,675.6	-480.4	804,937.78	578,672.67	7,690.63	0.00
18,250.0	89.63	179.90	10,571.5	6,855.5	-7,725.6	-480.3	804,937.86	578,622.67	7,740.52	0.00
18,265.0	89.63	179.90	10,571.6	6,855.6	-7,740.6	-480.3	804,937.89	578,607.67	7,755.49	0.00

TD at 18265.0 - 5 1/2" Production Casing

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	Database:	EDM 5000.1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,901.0	1,901.0	13 3/8" Surface Casing	13-3/8	17-1/2	
18,265.0	10,571.6	5 1/2" Production Casing	5-1/2	8-3/4	
120.0	120.0	20" Conductor	20	26	
5,496.2	5,493.0	9 5/8" Intermediate Casing	9-5/8	12-1/4	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,156.0	4,156.0	Capitan		0.00	
5,521.4	5,518.0	Delaware		0.00	
3,401.0	3,401.0	Base of Salt		0.00	
8,123.6	8,106.0	Bone Spring		0.00	
9,553.5	9,528.0	1st Bone Spring Sand		0.00	
10,213.3	10,184.0	2nd Bone Spring Sand		0.00	
2,071.0	2,071.0	Top of Salt		0.00	
1,876.0	1,876.0	Rustler		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
4,770.0	4,770.0	0.0	0.0	Start Build 3.00	
4,970.0	4,969.6	3.6	-9.8	Start 4830.0 hold at 4970.0 MD	
9,800.0	9,773.2	176.3	-484.3	Start Drop -3.00	
10,000.0	9,972.8	179.8	-494.1	Start 70.0 hold at 10000.0 MD	
10,070.0	10,042.8	179.8	-494.1	Start Build 11.92	
10,822.0	10,523.5	-297.8	-493.3	Start 7443.0 hold at 10822.0 MD	
18,265.0	10,571.6	-7,740.6	-480.3	TD at 18265.0	

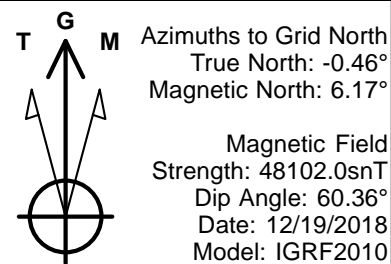


Morcor Engineering
Morcor Standard Plan

Company:	Caza Operating LLC	Local Co-ordinate Reference:	Well Talon 5-8 State Fed Com 5H
Project:	Talon 5-8 State Fed Com 5H	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Talon 5-8 State Fed Com 5H	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Well:	Talon 5-8 State Fed Com 5H	North Reference:	Grid
Wellbore:	Talon 5-8 State Fed Com 5H	Survey Calculation Method:	Minimum Curvature
Design:	190412 Talon 5-8 State Fed Com 5H	Database:	EDM 5000.1 Single User Db

Checked By: _____	Approved By: _____	Date: _____
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Project: Talon 5-8 State Fed Com 5H
 Site: Talon 5-8 State Fed Com 5H
 Well: Talon 5-8 State Fed Com 5H
 Wellbore: Talon 5-8 State Fed Com 5H
 Design: 190412 Talon 5-8 State Fed Com 5H

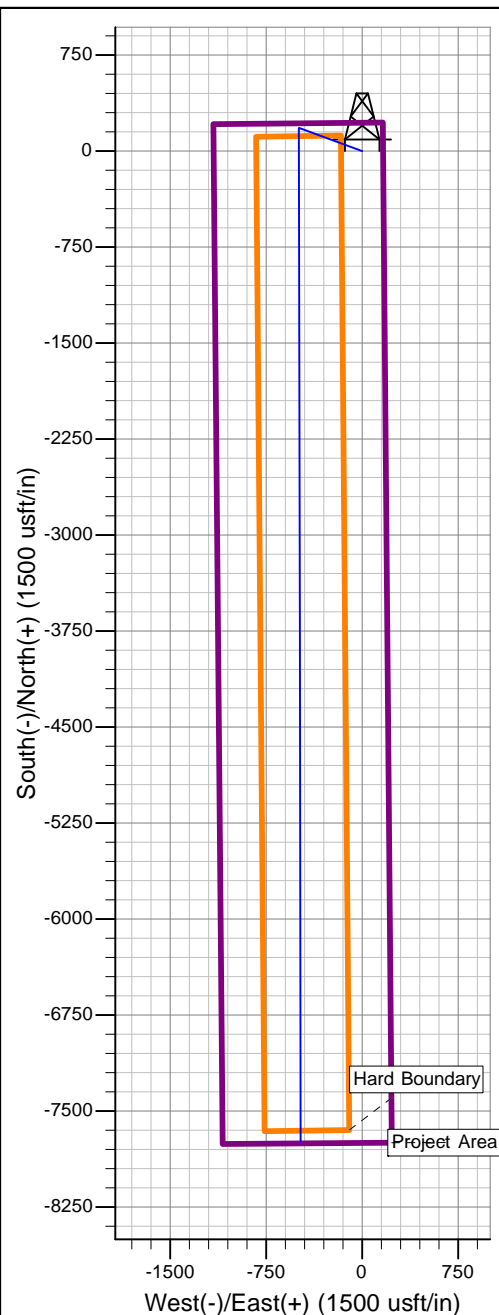
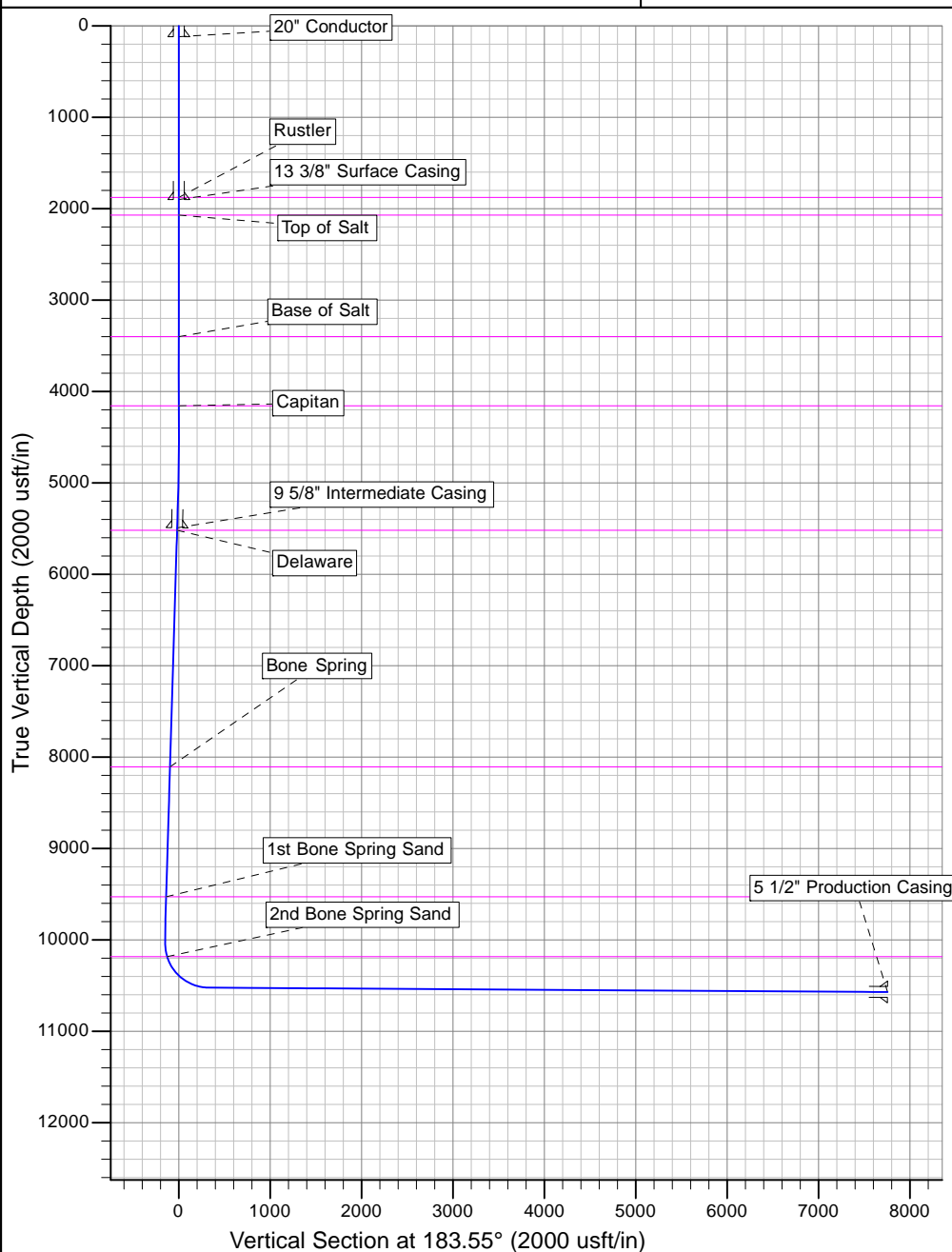


CASING DETAILS

TVD	MD	Name	Size
120.0	120.0	20" Conductor	20
1901.0	1901.0	13 3/8" Surface Casing	13-3/8
5493.0	5496.2	9 5/8" Intermediate Casing	9-5/8
10571.6	18265.0	5 1/2" Production Casing	5-1/2

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
1876.0	1876.0	Rustler	0.00	
2071.0	2071.0	Top of Salt	0.00	
3401.0	3401.0	Base of Salt	0.00	
4156.0	4156.0	Capitan	0.00	
5518.0	5521.4	Delaware	0.00	
8106.0	8123.6	Bone Spring	0.00	
9528.0	9553.5	1st Bone Spring Sand	0.00	
10184.0	10213.3	2nd Bone Spring Sand	0.00	



Design Plan, Operating Plan and Maintenance Plan, and Closure Plan for the OCD form C-144

Design Plan:

Fluid and cuttings coming from drilling operations will pass over the shale shaker with the cuttings going to the haul off bin and the cleaned fluid returning to the working steel pits.

Equipment Includes:

- 1-670bbl steel working pit
- 2-100bbl steel working suction pits
- 2-500bbl steel tanks
- 2-20yd³ steel haul off bins
- 2-pumps (HHF-1600)
- 2-Shale shakers
- 1-Centrifuge
- 1-Desilter/Desander

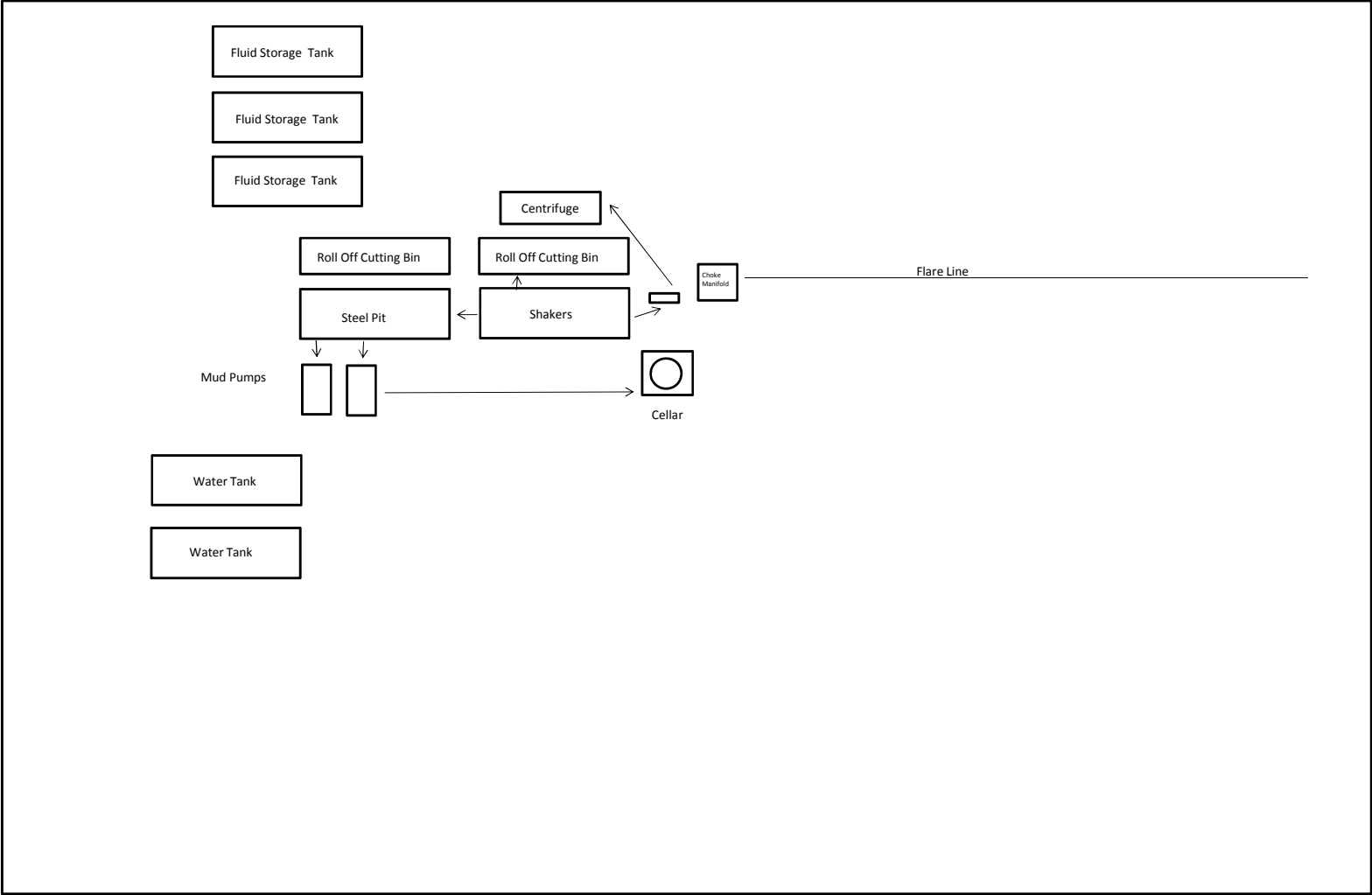
Operating and Maintenance Plan:

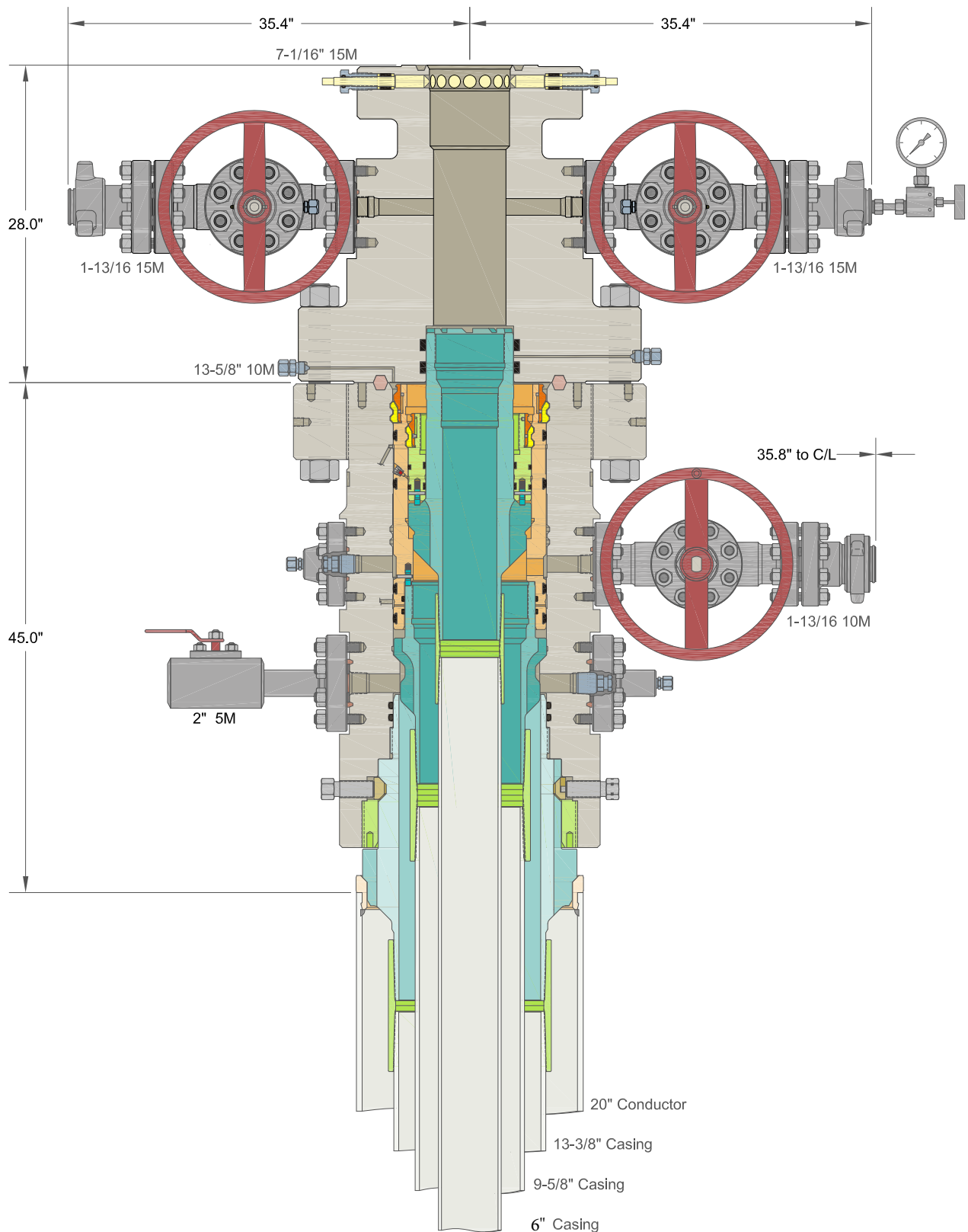
Inspection to occur every tour for proper operation of system and individual components. If any problems are found they will be repaired and/or corrected immediately.

Closure Plan:

All haul off bins containing cuttings will be removed from location and hauled to R-360 (NM-01-0006) disposal site located 30 miles east of Carlsbad.

Closed Loop Diagram Design Plan





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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



APD ID: 10400039289

Submission Date: 04/12/2019

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

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? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD 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:

Describe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:



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

Bond Info Data Report

05/20/2020

APD ID: 10400039289

Submission Date: 04/12/2019

Highlighted data
reflects the most
recent changes

Operator Name: CAZA OPERATING LLC

Well Name: TALON 5-8 STATE FED COM

Well Number: 5H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

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: