

Form 3160-3
(June 2015)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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. NMNM131588
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 checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator CENTENNIAL RESOURCE PRODUCTION LLC [372165]		8. Lease Name and Well No. MOZZARELLA FEDERAL COM [326979] 503H
3a. Address 1001 17th Street, Suite 1800, Denver, CO 80202	3b. Phone No. (include area code) (720) 499-1400	9. API Well No. 30-025-50228
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENW / 804 FNL / 2149 FWL / LAT 32.41117 / LONG -103.698415 At proposed prod. zone NENW / 100 FNL / 2130 FWL / LAT 32.442114 / LONG -103.698509		10. Field and Pool, or Exploratory [5695] 2ND BONESPRING SAND/BILBREY BAS
14. Distance in miles and direction from nearest town or post office* 44 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 8/T22S/R32E/NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 100 feet	16. No of acres in lease	12. County or Parish LEA
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30 feet	17. Spacing Unit dedicated to this well 320.0	13. State NM
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3700 feet	19. Proposed Depth 10600 feet / 20783 feet	20. BLM/BIA Bond No. in file FED: NMB001841
22. Approximate date work will start* 06/01/2022		23. Estimated duration 45 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) SARAH FERREYROS / Ph: (720) 499-1400	Date 12/14/2020
Title Sr. Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 03/04/2022
Title Assistant Field Manager Lands & Minerals Hobbs Field Station		

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.

NGMP Rec 05/11/2022

SL

(Continued on page 2)



Approval Date: 03/04/2022

KZ
06/08/2022

*(Instructions on page 2)

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Centennial Resources
LEASE NO.:	NMNM131588
LOCATION:	Section 8, T.22 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Mozzarella Fed Com 503H
SURFACE HOLE FOOTAGE:	804'/N & 2149'/W
BOTTOM HOLE FOOTAGE:	100'/N & 2130'/W

COA

H2S	<input type="radio"/> Yes	<input checked="" type="radio"/> No	
Potash	<input type="radio"/> None	<input checked="" 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 checked="" 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

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **750** 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

24 hours in the Potash Area 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.

Intermediate casing must be kept 1/3rd fluid filled to meet BLM minimum collapse requirement.

- 2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

- ❖ In Secretary Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

- 3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **500 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. **Operator is approved 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.

ZS021422



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

Operator Certification Data Report

03/08/2022

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: SARAH FERREYROS

Signed on: 12/15/2021

Title: Sr. Regulatory Analyst

Street Address: 1001 17th Street, Suite 1800

City: Denver

State: CO

Zip: 80202

Phone: (720)499-1454

Email address: Sarah.Ferreyros@cdevinc.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

03/08/2022

APD ID: 10400065773

Submission Date: 12/14/2020

Highlighted data
reflects the most
recent changes

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400065773

Tie to previous NOS? N

Submission Date: 12/14/2020

BLM Office: Carlsbad

User: SARAH FERREYROS

Title: Sr. Regulatory Analyst

Federal/Indian APD: FED

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

Lease number: NMNM131588

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? Y

Permitting Agent? NO

APD Operator: CENTENNIAL RESOURCE PRODUCTION LLC

Operator letter of designation:

Operator Info

Operator Organization Name: CENTENNIAL RESOURCE PRODUCTION LLC

Operator Address: 1001 17th Street, Suite 1800

Zip: 80202

Operator PO Box:

Operator City: Denver

State: CO

Operator Phone: (720)499-1400

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: MOZZARELLA FEDERAL COM

Well Number: 503H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: 2ND BONESPRING SAND Pool Name: BILBREY BASIN; BONE SPRING

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

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** N**New surface disturbance?****Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:**
MOZZARELLA FED 8 NENW**Number:** 1**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:** 44 Miles**Distance to nearest well:** 30 FT**Distance to lease line:** 100 FT**Reservoir well spacing assigned acres Measurement:** 320 Acres**Well plat:** Mozzarella_Federal_Com_503H_C_102_Plat_20210929163321.pdf

Mozzarella_Federal_Com_503H_Lease_Plat_20210930123344.pdf

Well work start Date: 06/01/2022**Duration:** 45 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 23782**Reference Datum:** GROUND LEVEL

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	804	FNL	2149	FWL	22S	32E	8	Aliquot NENW	32.41117	- 103.698415	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 69373	3700	0	0	N
KOP Leg #1	100	FSL	2130	FWL	22S	32E	5	Aliquot SESW	32.413654	- 103.698479	LEA	NEW MEXI CO	NEW MEXI CO	S	STATE	- 6327	10101	10027	Y

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1	804	FNL	2149	FWL	22S	32E	8	Aliquot NENW	32.41117	-103.698415	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 69373	1700	2000	2000	N
PPP Leg #1-2	2632	FNL	2130	FWL	22S	32E	5	Aliquot SENW	32.420637	-103.698487	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 131588	-6889	12600	10589	Y
PPP Leg #1-3	0	FSL	2133	FWL	21S	32E	32	Aliquot SESW	32.427869	-103.698494	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6900	15200	10600	Y
EXIT Leg #1	100	FNL	2130	FWL	21S	32E	32	Aliquot NENW	32.442114	-103.698509	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6900	20783	10600	Y
BHL Leg #1	100	FNL	2130	FWL	21S	32E	32	Aliquot NENW	32.442114	-103.698509	LEA	NEW MEXICO	NEW MEXICO	S	STATE	-6900	20783	10600	Y



Drilling Plan Data Report

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

03/08/2022

APD ID: 10400065773

Submission Date: 12/14/2020

Highlighted data
reflects the most
recent changes

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

[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
1174291	RUSTLER	3468	720	720	SANDSTONE	NONE	N
1174292	SALADO	2302	1166	1166	ANHYDRITE, SALT	USEABLE WATER	N
7869469	CASTILE	65	3403	3403	ANHYDRITE, SALT	NONE	N
1174293	BELL CANYON	-1303	4771	4771	SANDSTONE	NATURAL GAS, OIL	N
1174295	CHERRY CANYON	-2134	5602	5602	SANDSTONE	NATURAL GAS, OIL	N
1174296	BRUSHY CANYON	-3474	6942	6942	SANDSTONE	NATURAL GAS, OIL	N
1174297	BONE SPRING LIME	-5175	8643	8643	OTHER : Carbonate	NATURAL GAS, OIL	N
1174298	AVALON	-5367	8835	8835	SHALE	CO2, NATURAL GAS, OIL	N
1174299	BONE SPRING 1ST	-6284	9752	9752	SANDSTONE	NATURAL GAS, OIL	N
1174301	BONE SPRING 2ND	-6862	10330	10330	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 10700

Equipment: The BOP and related equipment will meet or exceed the requirements of a 5M-psi system as set forth in On Shore Order No. 2. See attached BOP Schematic. A. Casinghead: 13 5/8 5,000 psi SOW x 13 5,000 psi WP Intermediate Spool: 13 5,000 psi WP x 11 5,000 psi WP Tubinghead: 11 5,000 psi WP x 7 1/16" 15,000 psi WP B. Minimum Specified Pressure Control Equipment Annular preventer One Pipe ram, One blind ram Drilling spool, or blowout preventer with 2 side outlets. Choke side will be a 3-inch minimum diameter, kill line shall be at least 2-inch diameter 3 inch diameter choke line 2 3 inch choke line valves 2 inch kill line 2 chokes with 1 remotely controlled from rig floor (see Figure 2) 2 2 inch kill line valves and a check valve Upper kelly cock valve with handle available When the expected pressures approach working pressure of the system, 1 remote kill line tested to stack pressure (which shall run to the outer edge of the substructure and be unobstructed) Lower kelly cock valve with handle available Safety valve(s) and subs to fit all drill string connections in use Inside BOP or float sub available Pressure gauge on choke manifold All BOPE connections subjected to well pressure shall be flanged, welded, or clamped Fill-up line above the uppermost preventer. C. Auxiliary Equipment Audio and visual mud monitoring equipment shall be placed to detect volume changes indicating loss or gain of circulating fluid volume. (OOS 1, III.C.2) Gas Buster will be used below intermediate casing setting depth. Upper and lower kelly cocks with handles, safety

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

and subs to fit all drill string connections and a pressure gauge installed on choke manifold.

Requesting Variance? YES

Variance request: Flex hose, well control and offline cement variances, see attachments in section 8.

Testing Procedure: The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed b. whenever any seal subject to test pressure is broken c. following related repairs d. at 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachment:

HP_10M_Choke_Manifold_20201125120329.pdf

BOP Diagram Attachment:

CDEV_Well_Control_Plan_Bonesprings_20201125120432.pdf

HP_BOP_Schematic_CoFlex_Choke_10K_20201125120537.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	3700	3580	120	H-40	94	OTHER - weld						
2	SURFACE	17.5	13.375	NEW	API	N	0	750	0	750	3700	2950	750	J-55	54.5	OTHER - BTC	3.05	41.92	DRY	20.87	DRY	20.87
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4700	0	4669	3468	-969	4700	J-55	40	LT&C	1.5	6.06	DRY	2.77	DRY	3.35
4	PRODUCTION	8.75	5.5	NEW	API	N	0	11001	0	10600	3468	-6900	11001	P-110	20	OTHER - TCBC-HT	1.82	8.5	DRY	3	DRY	3
5	PRODUCTION	8.5	5.5	NEW	API	N	11001	20783	10600	10600	-6900	-6900	9782	P-110	20	OTHER - TCBC-HT	1.82	8.5	DRY	3	DRY	3

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**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):**

CASING_ASSUMPTIONS_WORKSHEET_20211202134423.pdf

Casing ID: 3 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**CASING_ASSUMPTIONS_WORKSHEET_20201101222024.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Casing Attachments

Casing ID: 4 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CASING_ASSUMPTIONS_WORKSHEET_20201101221404.pdf

Technical_Data_Sheet_TCBCHT_5.5in_x_20_P110RY_20211202134202.pdf

Casing ID: 5 String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

CASING_ASSUMPTIONS_WORKSHEET_20201101221651.pdf

Technical_Data_Sheet_TCBCHT_5.5in_x_20_P110RY_20211202134216.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
PRODUCTION	Lead		0	0	0	0	0	0	0	0	0

CONDUCTOR	Lead		0	120	121	1.49	12.9	181	0	Grout	Bentonite 4% BWOC, Cellophane #/sx, CaCl2 2% BWOC.
-----------	------	--	---	-----	-----	------	------	-----	---	-------	--

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	250	200	1.74	13.5	347	100	Class C Premium	Premium Gel Bentonite 4%, C-45 Econolite 0.25%, Phenoseal 0.25#/sk, CaCl 1%, Defoamer C-41P 0.75%
SURFACE	Tail		250	750	518	1.34	14.8	695	100	Class C Premium	C-45 Econolite 0.10%, CaCl 1.0%
INTERMEDIATE	Lead		0	4200	983	3.44	10.7	3381	150	TX Lightweight	Salt 1.77/sk, C-45 Econolite 2.25%, STE 6.00%, Citric Acid 0.18%, C-19 0.10%, CSA-1000 0.20%, C-530P 0.30%, CTB-15 LCM 7#/sk, Gyp Seal 8#/sk
INTERMEDIATE	Tail		4200	4700	141	1.33	14.8	188	20	Class C Premium	C-45 Econolite 0.10%, Citric acid 0.05%, C503P 0.25%
PRODUCTION	Lead		0	1017 1	994	3.41	10.6	3390	30	TXI Lightweight	Salt 8.98#/sk, STE 6.00%, Citric acid 0.20%, CSA-1000 0.23%, C47B 0.10%, C-503P 0.30%
PRODUCTION	Tail		1017 1	2078 3	2618	1.24	14.2	3247	25	50:25:25 Class H: Poz: CPO18	Citric acid 0.03%, CSA-1000 0.05%, C47B 0.25%, C-503P 0.30%

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 quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a diesel emulsified brine fluid to inhibit salt washout and prevent severe fluid losses. The production hole will employ oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Circulating Medium Table

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H

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	750	WATER-BASED MUD	8.6	9.5							
750	4700	SALT SATURATED	9	10							
4700	20783	OTHER : Brine/OBM	9	11							

Section 6 - Test, Logging, Coring

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

DIRECTIONAL SURVEY, GAMMA RAY LOG,

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 6063

Anticipated Surface Pressure: 3730

Anticipated Bottom Hole Temperature(F): 170

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:

H2S_Plan_Mozzarella_Federal_Com_503H_20201125140215.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Mozzarella_Federal_Com_503H__Plan_1_09_16_21_AC_Report_20210930130012.pdf

Mozzarella_Federal_Com_503H__Plan_1_09_16_21_20210930130024.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

CRD_Batch_Setting_Procedures_20201101230021.pdf

GEOPROG_Mozzarella_Fed_Com_503H_PRELIM_20201125140509.pdf

Mozzarella_Fed_Com_503H_Drilling_Plan_20201125140823.pdf

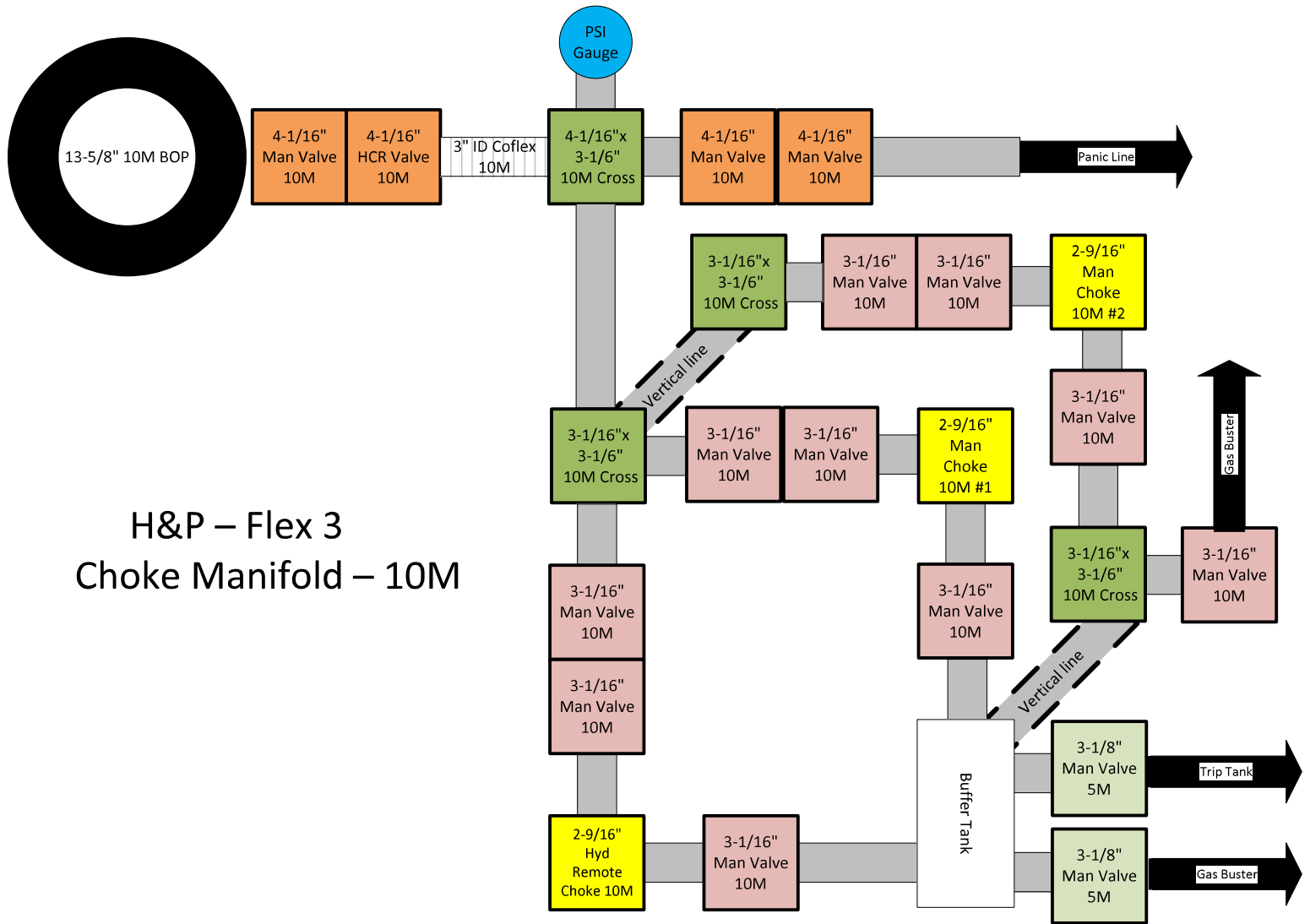
Mozzarella_Fed_Com_503H_WBD__Proposed__20211215142551.pdf

Other Variance attachment:

HP_Flex_Hose_Specs_Continental_Hose_SN_67255_20201125141324.pdf

CDEV_Well_Control_Plan_Bonesprings_20210930130833.pdf

Mozzarella_Federal_Com_503H_Offline_Cementing_Procedure_20210930132013.pdf



Centennial Resource Development - Well Control Plan

A. Component and Preventer Compatibility Table

Component	OD (inches)	Preventer	RWP
Drillpipe	5	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Heavyweight Drillpipe	5	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Drill collars and MWD tools	6 ¾	Annular	5M
Mud Motor	6 ¾	Annular	5M
Production Casing	5-1/2	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
All	0 – 13 5/8	Annular	5M
Open-hole	-	Blind rams	10M

VBR = Variable Bore Rams

RWP = Rated Working Pressure

MWD = Measurement While Drilling (directional tools)

B. Well Control Procedures

I. General Procedures While Drilling:

1. Sound alarm (alert crew).
2. Space out drill-string.
3. Shut down pumps and stop rotary.
4. Open HCR
5. Shut-in well – utilizing upper VBRs.
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record
 - I. Shut-in drillpipe pressure (SIDPP) and shut-in casing pressure (SCIP).
 - II. Pit gain
 - III. Time
11. Regroup, identify forward plan

II. General Procedure While Tripping

1. Sound alarm (alert crew).
2. Stab full opening safety valve and close
3. Space out drillstring.
4. Open HCR
5. Shut-in well – utilizing upper VBRs
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
11. Regroup and identify forward plan.

III. General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out string.
4. Open HCR
5. Shut-in well – utilizing upper VBRs.
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
11. Regroup and identify forward plan.

IV. General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Open HCR
3. Shut-in with blind rams
4. Close choke
5. Confirm shut-in
6. Notify rig manager and Centennial company representative.
7. Call Centennial drilling engineer
8. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
9. Regroup and identify forward plan.

V. General Procedures While Pulling BHA Thru BOP Stack**1. Prior to pulling last joint of drillpipe thru stack:**

- I. Perform flow check, if flowing
 - a. Sound alarm, alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drillstring with tool joint just beneath the upper pipe ram.
 - d. Open HCR
 - e. Shut-in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut-in
 - h. Notify rig manager and Centennial company representative.
 - i. Call Centennial drilling engineer
 - j. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- II. Regroup and identify forward plan

2. With BHA in the BOP stack and compatible ram preventer and pipe combo immediately available:

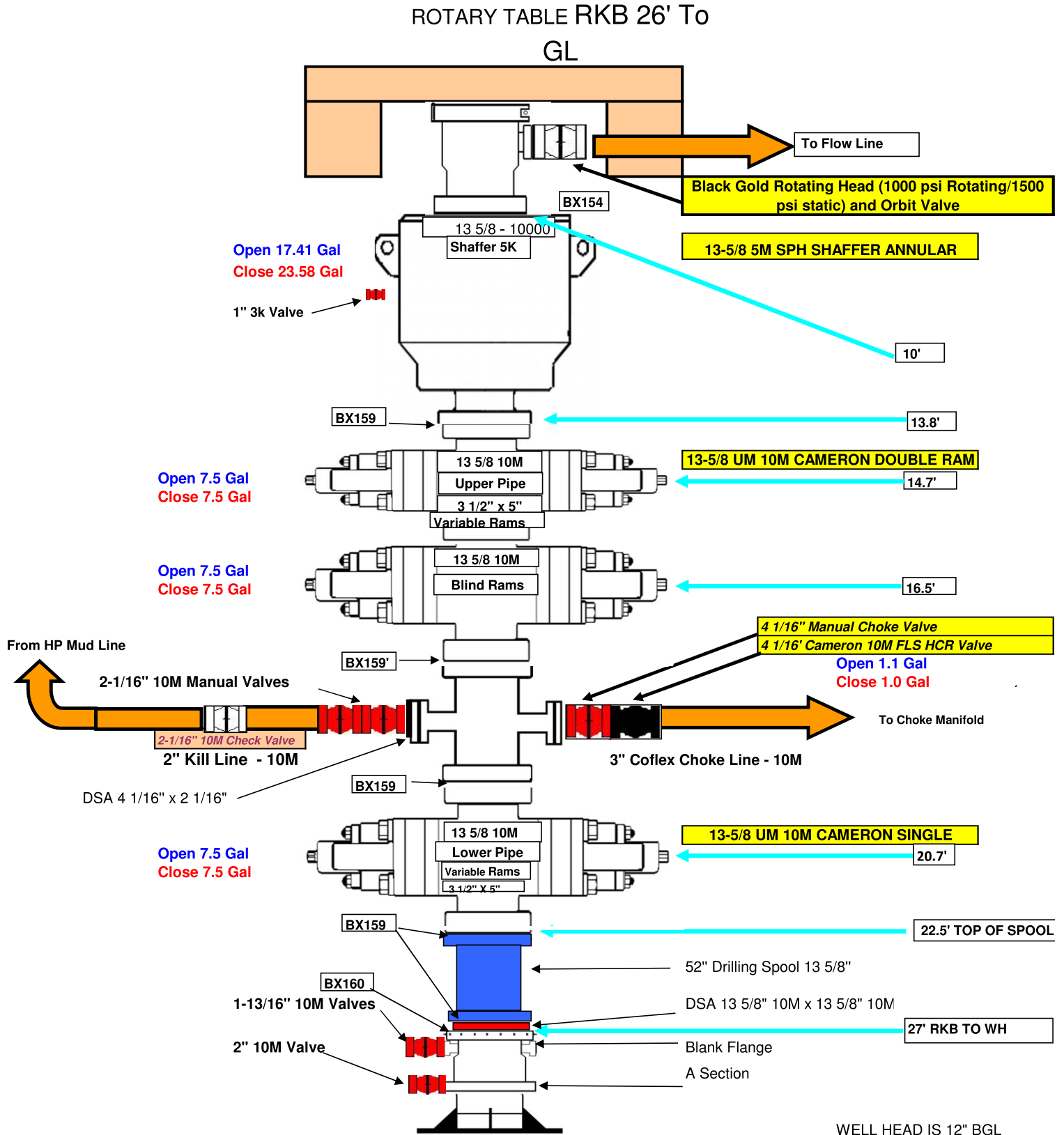
- a. Sound alarm, alert crew
- b. Stab full opening safety valve and close
- c. Space out drillstring with tool joint just beneath the upper pipe ram.
- d. Open HCR
- e. Shut-in utilizing upper VBRs
- f. Close choke
- g. Confirm shut-in
- h. Notify rig manager and Centennial company representative.
- i. Call Centennial drilling engineer
- j. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- II. Regroup and identify forward plan

3. With BHA in the BOP stack and no compatible ram preventer and pipe combo immediately available:

- I. Sound alarm, alert crew.
- II. If possible to pick up high enough, pull string clear of the stack and follow Open Hole (III) scenario.
- III. If impossible to pick up high enough to pull the string clear of the stack:
 - a. Stab crossover, make up one joint/stand of drill pipe and full opening safety valve and close.
 - b. Space out drillstring with tool joint just beneath the upper pipe ram.
 - c. Open HCR
 - d. Shut-in utilizing upper VBRs.
 - e. Close choke
 - f. Confirm shut-in
 - g. Notify rig manager and Centennial company representative.
 - h. Call Centennial drilling engineer
 - i. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- IV. Regroup and identify forward plan.

**** If annular is used to shut-in well and pressure builds to OR is expected to get to 50% of RWP, confirm space-out and swap to upper VBRs for shut-in.**

H&P-Flex3



CASING ASSUMPTIONS WORKSHEET:Centralizer Program:

Surface: - 3 welded bow spring centralizers, one on each of the bottom 3 joints, plus one on the shoe joint (4 minimum)
 - No Cement baskets will be run

Production: - 1 welded bow spring centralizer on a stop ring 6' above float shoe
 - 1 centralizer every other joint to the top of the tail cement
 - 1 centralizer every 4 joints to 500' below the top of the lead cement
 - The actual number and placement of centralizers will be determined from hole deviation and potential production zones. Centralizers will be run for maximum practical standoff and through all potential productive zones.

- All casing strings below the conductor shall be tested, prior to drilling out the casing shoe, to 0.22 psi/ft of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the internal yield pressure of the casing. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken.

No freshly hard banded pipe will be rotated in the surface casing

- CENTENNIAL RESOURCE DEVELOPMENT will not employ an air-drill rig for the surface casing. The casing shoe will be tested by drilling 5'-10' out from under the shoe and pressure testing to the maximum expected mud weight equivalent as shown in the mud program listed in the drilling plan.

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Size	5.5
Grade	P110 RY
Weight	20

TCBC-HT

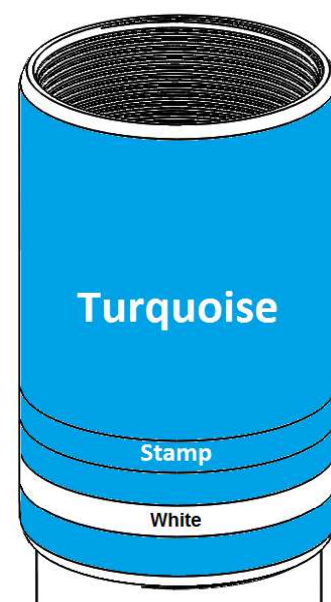
SeAH Steel

Coupling and Pipe Dimensions (in)						
	Outer Diameter	Inner Diameter	Coupling Length	Make-up Loss	Wall Thickness	Drift Diameter
Coupling	6.300	5.383				
Pipe		4.778	8.250	4.125	0.361	4.653
Pin		4.778				

Torque Values (ft-lbs)				
Field End Make-Up			Max. Working Torque ¹	Yield Torque
Minimum	Optimum ²	Maximum		
10,000	13,500	18,500	22,250	25,200

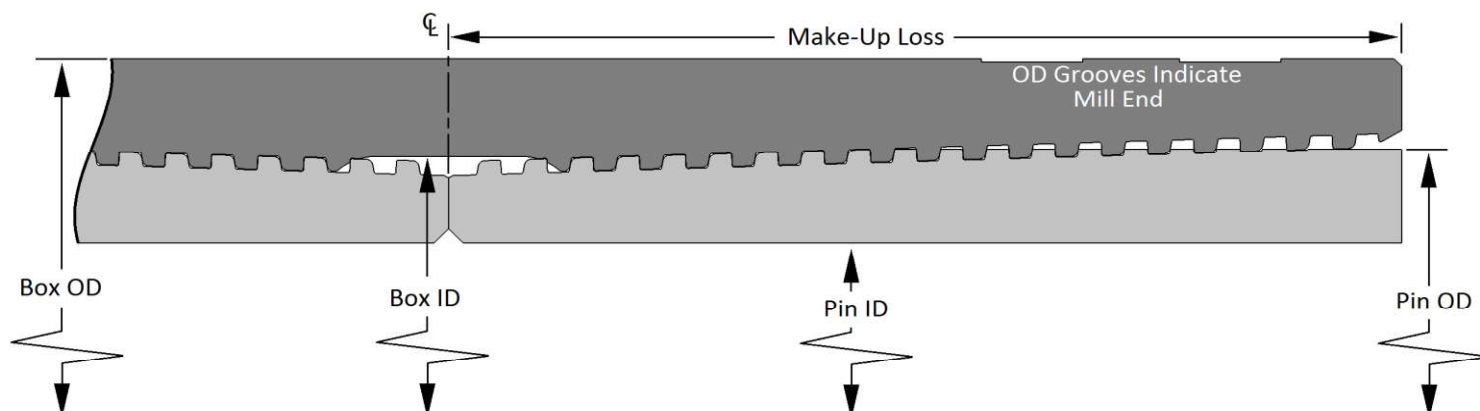
Yield Stress (x1000 lbs.)	
Tensile	Compressive
100%	100%

Maximum Pressure (psi)	
Internal	External
100%	100%



¹ Max. Working Torque value is not to be exceeded during operation.

² If Optimum Torque does not meet the Base of Triangle Stamp, M/U to the Base of Triangle.



*Data are for information purposes only. Though HIS has made efforts to ensure accuracy, HIS makes no warranty for loss or damage due to its use.

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Rev 0

19996 Hickory Twig Way Spring, TX 77388

Phone: (281) 602-7550

Fax: (281) 602-7557



5.5" 20# .361" P-110 Restricted Yield (RY)

Dimensions (Nominal)

Outside Diameter	5.500	in.
Wall	0.361	in.
Inside Diameter	4.778	in.
Drift	4.653	in.
Weight, T&C	20.000	lbs/ft
Weight, PE	19.830	lbs/ft

Performance Properties (Minimum)

Minimum Yield Strength	110000	psi
Maximum Yield Strength	125000	psi
Collapse, PE	11100	psi
Internal Yield Pressure		
PE	12630	psi
LTC	12360	psi
BTC	12360	psi
Yield Strength, Pipe Body	641	1000 lbs
Joint Strength		
LTC	548	1000 lbs
BTC	667	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

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TCBC-HT

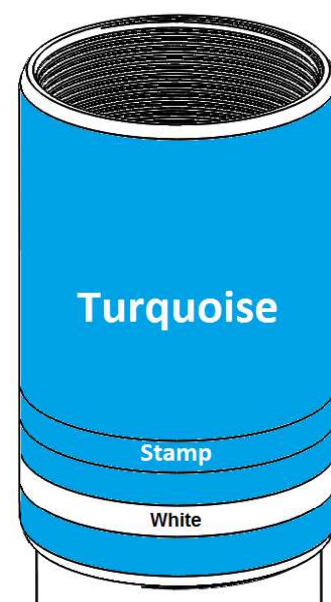
SeAH Steel

Coupling and Pipe Dimensions (in)						
	Outer Diameter	Inner Diameter	Coupling Length	Make-up Loss	Wall Thickness	Drift Diameter
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Torque Values (ft-lbs)				
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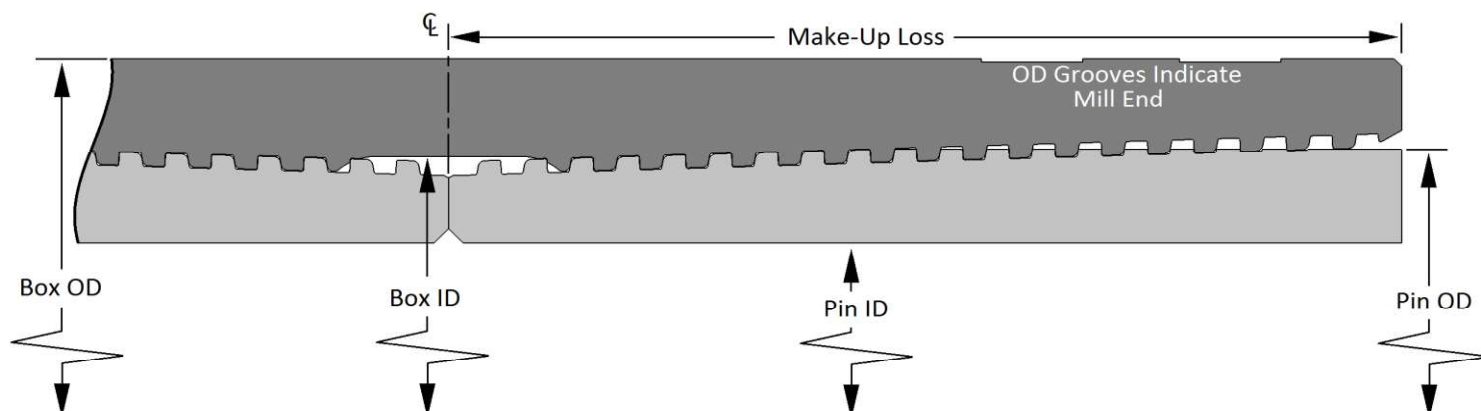
Yield Stress (x1000 lbs.)	
Tensile	Compressive
100%	100%

Maximum Pressure (psi)	
Internal	External
100%	100%



¹ Max. Working Torque value is not to be exceeded during operation.

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Wall	0.361	in.
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Drift	4.653	in.
Weight, T&C	20.000	lbs/ft
Weight, PE	19.830	lbs/ft

Performance Properties (Minimum)

Minimum Yield Strength	110000	psi
Maximum Yield Strength	125000	psi
Collapse, PE	11100	psi
Internal Yield Pressure		
PE	12630	psi
LTC	12360	psi
BTC	12360	psi
Yield Strength, Pipe Body	641	1000 lbs
Joint Strength		
LTC	548	1000 lbs
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HYDROGEN SULFIDE CONTINGENCY PLAN

Mozzarella Federal Com 503H

Section 8

T 22S R 32E

Lea County, NM

Initial Date: 3/4/18

Revision Date:

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Page 6: Drill Site Location Setup

Page 7: Toxicity of Various Gases

Page 10: H₂S Required Equipment

Page 11: Determination of Radius of Exposure

Page 12: Emergency Contact List

INTRODUCTION

This plan specifies precautionary measures, safety equipment, emergency procedures, responsibilities, duties, and the compliance status pertaining to the production operations of Hydrogen Sulfide producing wells on:

Centennial Resource Development, Inc.

This plan will be in full effect prior to and continuing with all drilling operations for all wells producing potential Hydrogen Sulfide on the

Mozzarella Federal Com 503H

This plan was developed in response to the potential hazards involved when producing formations that may contain Hydrogen Sulfide (H₂S) It has been written in compliance with current New Mexico Oil Conservation Division Rule 118 and Bureau of Land Management 43 CFR 3160 Onshore Order No. 6.

All personnel shall receive proper H₂S training in accordance with Onshore Order III.C.3.a

This plan shall require the full cooperation and efforts of all individuals participating in the production of potential H₂S wells.

Each individual is required to know their assigned responsibilities and duties in regard to normal production operations and emergency procedures.

Each person should thoroughly understand and be able to use all safety related equipment on the production facility.

Each person should become familiar with the location of all safety equipment and become involved in ensuring that all equipment is properly stored, easily accessible, and routinely maintained.

An ongoing training program will remain in effect with regular training, equipment inspections, and annual certifications for all personnel.

Centennial Resource Development, Inc. shall make every reasonable effort to provide all possible safeguards to protect all personnel, both on this location and in the immediate vicinity, from the harmful effects of H₂S exposure, if a release to the atmosphere should occur.

DIRECTIONS TO LOCATION

Mozzarella Federal Com 503H

Section 8

T 22S R 32E

Lea County, NM

PROCEED IN A EASTERLY, THEN NORTHEASTERLY, THEN EASTERLY DIRECTION FROM CARLSBAD, NEW MEXICO ALONG U.S. HIGHWAY 62 APPROXIMATELY 31.1 MILES TO THE JUNCTION OF THIS ROAD AND CAMPBELL ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY, THEN SOUTHEASTERLY, THEN SOUTHERLY DIRECTION APPROXIMATELY 9.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN NORTHERLY, THEN EASTERLY DIRECTION APPROXIMATELY 1.6 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 1.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHERLY DIRECTION APPROXIMATELY 0.2 MILES TO THE BEGINNING OF THE PROPOSED ACCESS ROAD "A" TO THE SOUTHWEST; FOLLOW ROAD FLAGS IN A SOUTHWESTERLY, THEN SOUTHERLY, THEN NORTHEASTERLY, THEN EASTERLY, THEN NORTHERLY, THEN EASTERLY DIRECTION APPROXIMATELY 3,292' TO THE PROPOSED LOCATION.

TOTAL DISTANCE FROM CARLSBAD, NEW MEXICO TO THE PROPOSED WELL LOCATION IS APPROXIMATELY 43.8 MILES.

SAFE BRIEFING AREAS

Two areas will be designated as “SAFE BRIEFING AREAS”.

The Primary Safe Briefing Area

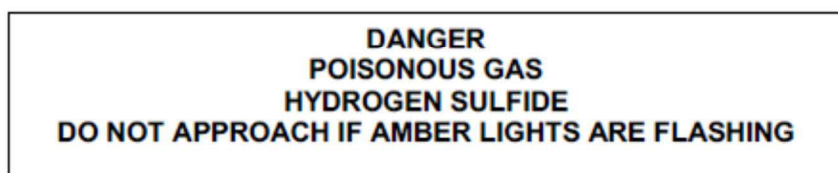
If the Primary Safe Briefing Area cannot be used due to wind conditions; the designated secondary safe briefing area will be used.

These two areas are so designated for accessibility reasons related to self-contained safe breathing air device locations, evacuation muster point utility, and for ease of overall communication, organizational support, as well as the all-important prevailing wind directions. Drawings of the facility denoting these locations are included on Page 15.

If H₂S is detected in concentrations equal to or in excess of 15 PPM, all personnel not assigned emergency duties are to assemble in the appropriate “SAFE BRIEFING AREA” for instructions.

Wind Direction Indicators: A windsock, shall be positioned, allowing the wind direction to be observed from anywhere on the charted facility location.

Warning-DANGER SIGNS for Approaching Traffic: All signs shall also be illuminated under conditions of poor visibility.



An amber strobe light system will be activated for H₂S concentrations of 10 PPM or greater and an audible alarm will sound when H₂S exceeds 15 ppm, and. This condition will exist until the all clear is given.

DRILL SITE LOCATION:

1. The drilling rig should be situated on location such that the prevailing winds blow across the rig toward the reserve pit or at right angles to a line from the rig to the reserve pit.
2. The entrance to the location should be designated so that it can be barricaded if Hydrogen Sulfide emergency conditions arise. An auxiliary exit (or entrance) should be available in case of a catastrophe; a shift in wind direction would not preclude escape from the location. Appropriate warning signs and flags should be placed at all location entrances.
3. Once H2S safety procedures are established on location, no beards or facial hair, which will interfere with face seal or mask, will be allowed on location.
4. A minimum of two BRIEFING AREAS will be established, no less than 250 feet from the wellhead and in such location that at least one area will be up-wind from the well at all times. Upon recognition of an emergency situation, all personnel should assemble at the designated briefing areas for instructions.
5. A safety equipment trailer will be station at one of the briefing areas.
6. Windsocks will be installed and wind streamers (6 to 8 feet above ground level) placed at the location entrance. Windsocks shall be illuminated for nighttime operations. Personnel should develop wind direction consciousness.
7. The mud-logging trailer will be located so as to minimize the danger from the gas that breaks out of the drilling fluid.
8. Shale shaker mud tanks will be located so as to minimize the danger from gas that breaks out of the drilling fluid.
9. Electric power plant(s) will be located as far from the well bore as practical so that it may be used under conditions where it otherwise would have to be shut down.
10. When approaching depth where Hydrogen Sulfide may be encountered, appropriate warning signs will be posted on all access roads to the location and at the foot of all stairways to the derrick floor.
11. Appropriate smoking areas will be designated, and smoking will be prohibited elsewhere.

The table below lists various poisonous gases and the concentrations at which they become dangerous.

TOXICITY OF VARIOUS GASES

TOXICITY OF GASES (Taken from API RP-49 September 1974 – Re-issued August 1978)					
Common Name	Chemical Formula	Gravity (Air = 1)	Threshold 1 Limit	Hazardous 2 Limit	Lethal 3 Limit
Hydrogen Sulfide	H ₂ S	1.18	10 ppm	250 ppm/1hr	600 ppm
Sulfur Dioxide	SO ₂	2.21	20 ppm	---	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/1hr	1000 ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	5%	10%
Methane	CH ₄	0.55	90000 ppm	Combustible Above 5% in Air	

1. Threshold concentration at which it is believed that all workers may repeatedly be exposed day after day, without adverse effect	2. Hazardous concentration that may cause death	3. Lethal concentration that will cause death with short-term exposure
---	---	--

Properties of Gases

The produced gas will probably be a mixture of Carbon Dioxide, Hydrogen Sulfide, and Methane.

Carbon Dioxide

Carbon Dioxide (CO₂) is usually considered inert and is commonly used to extinguish fires.

It is heavier than air (1.52 times) and it will concentrate in low areas of still air.

Humans cannot breathe air containing more than 10% CO₂ without losing consciousness. Air containing 5% CO₂ will cause disorientation in a few minutes.

Continued exposures to CO₂ after being affected will cause convulsions, coma, and respiratory failure.

The threshold limit of CO₂ is 5000 ppm.

Short-term exposure to 50,000 PPM (5%) is reasonable. This gas is colorless and odorless and can be tolerated in relatively high concentrations.

Hydrogen Sulfide

Hydrogen Sulfide (H₂S) itself is a colorless, transparent gas and is flammable. It is heavier than air and, hence, may accumulate in low places.

Although the slightest presence of H₂S in the air is normally detectable by its characteristic “rotten egg” odor, it is dangerous to rely on the odor as a means of detecting excessive concentrations because the sense of smell is rapidly lost, allowing lethal concentrations to be accumulated without warning. The following table indicates the poisonous nature of Hydrogen Sulfide.

HYDROGEN SULFIDE TOXICITY			
Concentration			Effects
%H ₂ S	PPM	GR/100 SCF 1	
0.001	10	0.65	Safe for 8 hours without respirator. Obvious and unpleasant odor.
0.002	20	1.30	Burning in eyes and irritation of respiratory tract after on hour.
0.01	100	6.48	Kills smell in 3 to 15 minutes; may sting eyes and throat.
0.02	200	12.96	Kills smell shortly; stings eyes and throat.
0.05	500	32.96	Dizziness; breathing ceases in a few minutes; need prompt artificial respiration.
0.07	700	45.92	Unconscious quickly; death will result if not rescued promptly
0.10	1000	64.80	DEATH!
Note: 1 grain per 100 cubic feet			

Sulfur Dioxide

Sulfur Dioxide is a colorless, transparent gas and is non-flammable.

Sulfur Dioxide (SO₂) is produced during the burning of H₂S. Although SO₂ is heavier than air, it will be picked up by a breeze and carried downwind at elevated temperatures. Since Sulfur Dioxide is extremely irritating to the eyes and mucous membranes of the upper respiratory tract, it has exceptionally good warning powers in this respect. The following table indicates the toxic nature of the gas.

SULFUR DIOXIDE TOXICITY		
Concentration		Effects
%SO ₂	PPM	
0.0005	3 to 5	Pungent odor-normally a person can detect SO ₂ in this range.
0.0012	12	Throat irritation, coughing, and constriction of the chest tearing and smarting of eyes.
0.15	150	So irritating that it can only be endured for a few minutes.
0.05	500	Causes a sense of suffocation, even with first breath.

H₂S REQUIRED EQUIPMENT LIST**RESPIRATORY SAFETY SYSTEMS**

- Working cascade system available on rig floor and pit system & 750' of air line hose
- Four (4) breathing air manifolds
- Four (4) 30-minute rescue packs
- Five (5) work/Escape units
- Five (5) escape units
- One (1) filler hose for the work/escape/rescue units

DETECTION AND ALARM SYSTEM

- 4 channel H₂S monitor
- 4 wireless H₂S monitors
- H₂S alarm system (Audible/Red strobe)
- Personal gas monitor for each person on location
- Gas sample tubes

WELL CONTROL EQUIPMENT

- Flare line with remote ignitor and backup flare gun, placed 150' from wellhead
- Choke manifold with remotely operated choke
- Mud gas separator

VISUAL WARNING SYSTEMS

- One color code condition sign will be placed at each entrance reflecting possible conditions at the site
- A colored condition flag will be on display, reflecting current condition at the site at the time
- At least 4 wind socks placed on location, visible at all angles and locations

MUD PROGRAM

- Mud will contain sufficient weight and additives to control and minimize H₂S

METALLURGY

- All drill strings, casing, tubing, wellhead, BOP, spools, kill lines, choke manifold and lines, and valves shall be suitable for anticipated H₂S volume and pressure

COMMUNICATION

- Cell phones, intercoms, and satellite phones will be available on location

ADDITIONAL SAFETY RELATED ITEMS

- Stretcher
- 2 OSHA full body harness
- 20# class ABC fire extinguisher

DETERMINATION OF RADIUS OF EXPOSURE

Potentially hazardous volume means a volume of gas of such H₂S concentration and flow rate that it may result in radius of exposure-calculated ambient concentrations of 100 ppm H₂S at any occupied residence, school, church, park, school bus stop, place of business or other area where the public could reasonably be expected to frequent, or 500 ppm H₂S at any Federal, State, County or municipal road or highway.

Currently there are no residence located within the ROE

Radius of exposure means the calculation resulting from using the Pasquill -Gifford derived equation, or by such other method(s) that may be approved by the authorized officer. Advanced Fire and Safety has provided the Pasquill-Gifford formula in excel format for simple calculations.

NEW MEXICO OIL & GAS CONSERVATION DIVISION 118

Mozzarella Federal Com 503H

H₂S Concentration- 100 PPM

Maximum Escape Volume- 5000 MCF/Day

100 PPM Radius of Exposure - 65
(Formula= $1.589 \times (100/1000000) \times (5000 \times 1000)^{.6258}$)

500 PPM Radius of Exposure - 30
Formula= $.4546 \times (100/1000000) \times (5000 \times 1000)^{.6258}$

EMERGENCY CONTACT LIST

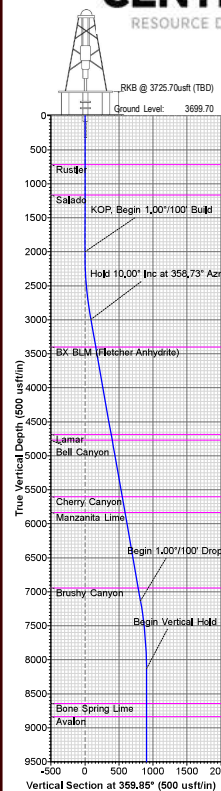
911 is available in the area			
NAME	POSITION	COMPANY	NUMBER
Centennial Contacts			
Ronny Hise	<u>Drilling Engineer</u>	CDEV	432-770-4786
Jason Fitzgerald	<u>Superintendent</u>	CDEV	318-347-3916
TBD	<u>Field Superintendent</u>	CDEV	432-287-3003
Brett Thompson	<u>Drilling Manager</u>	CDEV	720-656-7027
Derrick Melton	<u>HSE Manager</u>	CDEV	432-296-8720
Drilling Office	<u>Drilling Supervisor</u>	CDEV	432-538-3343
Local Emergency Response			
Fire Department			575-395-2511
Jal Community Hospital			505-395-2511
State Police			505-827-9000
Lea County Sheriff			575-396-3611
Safety Contractor			
Advanced Safety	<u>Office</u>	Advanced Safety	833-296-3913
Joe Gadway	<u>Permian Supervisor</u>	Advanced Safety	318-446-3716
Clint Hudson	<u>Operations Manager</u>	Advanced Safety	337-552-8330
Well Control Company			
Wild Well Control			866-404-9564
Contractors			
Tommy E Lee	<u>Pump Trucks</u>		432-813-7140
Paul Smith	<u>Drilling Fluids</u>	<u>Momentum</u>	307-258-6254
Compass Coordinators	<u>Cement</u>	<u>Compass</u>	432-561-5970



Project: Lea County, NM (NAD83 - UTM Zone 13)
 Site: Mozzarella Federal Com
 Well: 503H
 Wellbore: OH
 Design: Plan 1 09-16-21
 Rig: TBD



Compass rose showing Azimuths to True North (Magnetic North: 6.50°).
 Magnetic Field Strength: 47837.6nT
 Dip Angle: 60.09°
 Date: 11/15/2021
 Model: MVHD



WELL DETAILS									
	+N-S	+E-W	Ground Level	North	East	Latitude	Longitude		
	0.00	0.00	11767553.44	2041972.35	32° 24' 40.21134 N	103° 41' 54.29228 W			

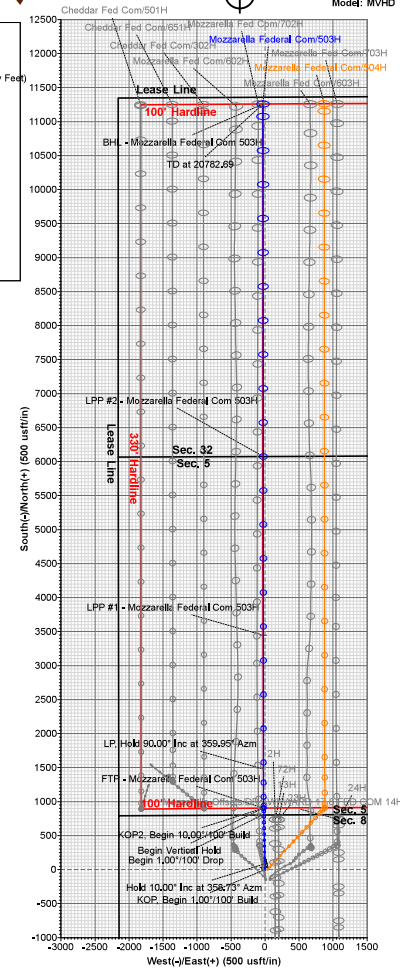
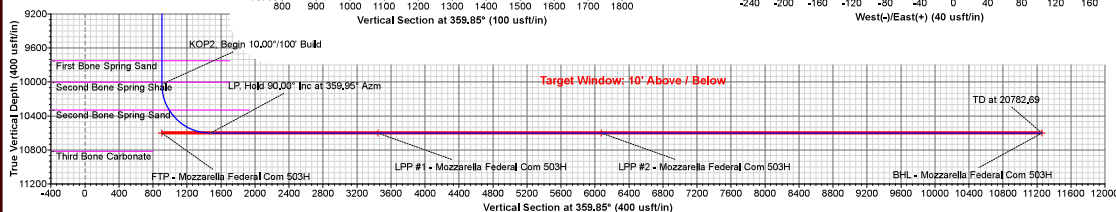
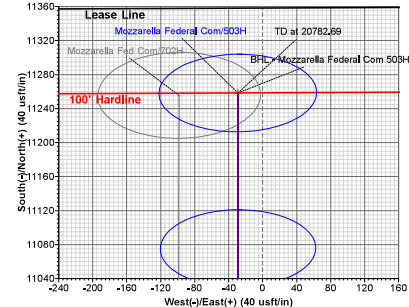
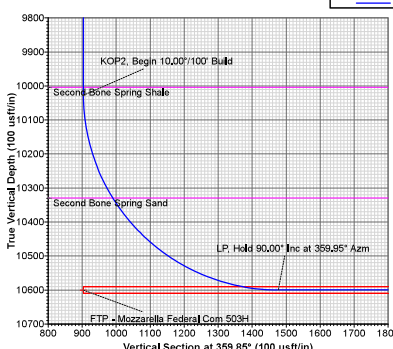
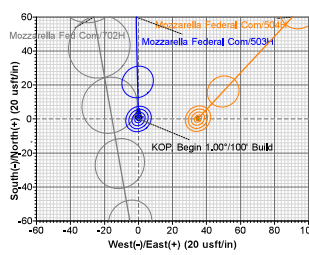
SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dist	TFace	VFace
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00
3	3000.00	10.00	358.73	2994.93	87.02	-1.53	1.00	358.73	87.03
4	7203.19	10.00	358.73	7194.27	816.72	-18.09	0.00	0.00	816.77
5	8203.19	0.00	0.00	8129.20	903.75	-20.02	1.00	180.00	903.79
6	10101.03	0.00	0.00	10027.04	903.75	-20.02	0.00	0.00	903.79
7	11001.03	90.00	359.95	10600.00	1476.70	-20.53	10.00	359.95	1476.75
8	20782.69	90.00	359.95	10600.00	11258.35	-29.24	0.00	0.00	11258.39

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	North	East	Latitude	Longitude		
BHL - Mozzarella Federal Com 503H	10600.00	11258.35	-29.24	11778808.18	2041806.04	32° 26' 31.61040 N	103° 41' 54.632674 W		
FTP - Mozzarella Federal Com 503H	10600.00	903.75	-20.02	11788456.68	2041941.33	32° 24' 49.15376 N	103° 41' 54.525791 W		
LPP #1 - Mozzarella Federal Com 503H	10600.00	3444.46	-22.28	11770996.63	2041988.14	32° 25' 14.20360 N	103° 41' 54.532065 W		
LPP #2 - Mozzarella Federal Com 503H	10600.00	6075.69	-24.61	11773627.07	2041873.77	32° 25' 40.329210 N	103° 41' 54.579338 W		

Map System: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone Name: Zone 13N (108 W to 102 W)
 Universal Transverse Mercator (US Survey Feet)
 Local Origin: Well 503H, True North
 Latitude: 32° 24' 40.21134 N
 Longitude: 103° 41' 54.29228 W
 Grid East: 2041972.35
 Grid North: 11767553.44
 Scale Factor: 1.000
 Geomagnetic Model: MVHD
 Sample Date: 15-Nov-21
 Magnetic Declination: 6.50°
 Dip Angle from Horizontal: 60.09°
 Magnetic Field Strength: 47837.57581032nT
 To convert a Magnetic Direction to a Grid Direction, Add 5.50°
 To convert a Magnetic Direction to a True Direction, Add 6.50° East
 To convert a True Direction to a Grid Direction, Subtract 0.70°

LEGEND

- 302H, OH, Plan 1 09-08-21 VO
- DR AWKWARD 17 8 FED COM 23H, OH, Plan 1 VO
- 702H, OH, Plan 1 VO
- 603H, OH, 67731, Surveys (H&P 313) VO
- 501H, OH, Plan 1 09-08-21 VO
- DR AWKWARD 17 8 FED COM 24H, OH, Plan 1 VO
- 604H, OH, 67825, Surveys (H&P 313) VO
- 703H, OH, Plan 1 VO
- DR AWKWARD 17 8 FED COM 72H, OH, Plan 1 VO
- 602H, OH, 67730, Surveys (H&P 313) VO
- DR AWKWARD 17 8 FED COM 2H, OH, Plan 1 VO
- 504H, OH, Plan 1 09-16-21 VO
- 651H, OH, Plan 1 09-08-21 VO
- DR AWKWARD 17 8 FED COM 14H, OH, Plan 1 VO
- 505H, OH, Plan 2 08-25-21 VO
- DR AWKWARD 17 8 FED COM 13H, OH, Plan 1 VO
- Plan 1 09-16-21



Date: 14-24, September 15 2021



Centennial Resources Development, Inc.

**Lea County, NM (NAD83 - UTM Zone 13)
Mozzarella Federal Com
503H**

OH

Plan: Plan 1 09-16-21

Standard Planning Report

15 September, 2021





Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 503H
Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Project	Lea County, NM (NAD83 - UTM Zone 13)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		Using geodetic scale factor

Site	Mozzarella Federal Com		
Site Position:		Northing:	11,767,553.44 usft
From:	Map	Easting:	2,041,972.35 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 24' 40.211134 N
		Longitude:	103° 41' 54.292228 W

Well	503H		
Well Position	+N/-S	0.00 usft	Northing: 11,767,553.44 usft
	+E/-W	0.00 usft	Easting: 2,041,972.35 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	Ground Level: 3,699.70 usft
			Latitude: 32° 24' 40.211134 N
			Longitude: 103° 41' 54.292228 W

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	11/15/2021	6.50	60.09	47,837.57581032

Design	Plan 1 09-16-21			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.85

Plan Survey Tool Program	Date	9/15/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,782.69	Plan 1 09-16-21 (OH)	MWD+IFR1+MS
				OWSG MWD + IFR1 + Multi-St

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,000.00	10.00	358.73	2,994.93	87.02	-1.93	1.00	1.00	0.00	358.73	
7,203.19	10.00	358.73	7,134.27	816.72	-18.09	0.00	0.00	0.00	0.00	
8,203.19	0.00	0.00	8,129.20	903.75	-20.02	1.00	-1.00	0.00	180.00	
10,101.03	0.00	0.00	10,027.04	903.75	-20.02	0.00	0.00	0.00	0.00	
11,001.03	90.00	359.95	10,600.00	1,476.70	-20.53	10.00	10.00	-0.01	359.95	
20,782.69	90.00	359.95	10,600.00	11,258.35	-29.24	0.00	0.00	0.00	0.00	BHL - Mozzarella Fed



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 503H
Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
719.70	0.00	0.00	719.70	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,165.70	0.00	0.00	1,165.70	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 1.00°/100' Build									
2,100.00	1.00	358.73	2,099.99	0.87	-0.02	0.87	1.00	1.00	0.00
2,200.00	2.00	358.73	2,199.96	3.49	-0.08	3.49	1.00	1.00	0.00
2,300.00	3.00	358.73	2,299.86	7.85	-0.17	7.85	1.00	1.00	0.00
2,400.00	4.00	358.73	2,399.68	13.95	-0.31	13.95	1.00	1.00	0.00
2,500.00	5.00	358.73	2,499.37	21.80	-0.48	21.80	1.00	1.00	0.00
2,600.00	6.00	358.73	2,598.90	31.38	-0.70	31.38	1.00	1.00	0.00
2,700.00	7.00	358.73	2,698.26	42.70	-0.95	42.70	1.00	1.00	0.00
2,800.00	8.00	358.73	2,797.40	55.75	-1.24	55.75	1.00	1.00	0.00
2,900.00	9.00	358.73	2,896.30	70.52	-1.56	70.53	1.00	1.00	0.00
3,000.00	10.00	358.73	2,994.93	87.02	-1.93	87.03	1.00	1.00	0.00
Hold 10.00° Inc at 358.73° Azm									
3,100.00	10.00	358.73	3,093.41	104.38	-2.31	104.39	0.00	0.00	0.00
3,200.00	10.00	358.73	3,191.89	121.74	-2.70	121.75	0.00	0.00	0.00
3,300.00	10.00	358.73	3,290.37	139.11	-3.08	139.11	0.00	0.00	0.00
3,400.00	10.00	358.73	3,388.85	156.47	-3.47	156.47	0.00	0.00	0.00
3,414.06	10.00	358.73	3,402.70	158.91	-3.52	158.92	0.00	0.00	0.00
BX BLM (Fletcher Anhydrite)									
3,500.00	10.00	358.73	3,487.33	173.83	-3.85	173.84	0.00	0.00	0.00
3,600.00	10.00	358.73	3,585.82	191.19	-4.24	191.20	0.00	0.00	0.00
3,700.00	10.00	358.73	3,684.30	208.55	-4.62	208.56	0.00	0.00	0.00
3,800.00	10.00	358.73	3,782.78	225.91	-5.00	225.92	0.00	0.00	0.00
3,900.00	10.00	358.73	3,881.26	243.27	-5.39	243.28	0.00	0.00	0.00
4,000.00	10.00	358.73	3,979.74	260.63	-5.77	260.64	0.00	0.00	0.00
4,100.00	10.00	358.73	4,078.22	277.99	-6.16	278.01	0.00	0.00	0.00
4,200.00	10.00	358.73	4,176.70	295.35	-6.54	295.37	0.00	0.00	0.00
4,300.00	10.00	358.73	4,275.18	312.71	-6.93	312.73	0.00	0.00	0.00
4,400.00	10.00	358.73	4,373.66	330.07	-7.31	330.09	0.00	0.00	0.00
4,500.00	10.00	358.73	4,472.14	347.43	-7.70	347.45	0.00	0.00	0.00
4,600.00	10.00	358.73	4,570.62	364.79	-8.08	364.81	0.00	0.00	0.00
4,700.00	10.00	358.73	4,669.10	382.15	-8.47	382.17	0.00	0.00	0.00
4,715.84	10.00	358.73	4,684.70	384.90	-8.53	384.92	0.00	0.00	0.00
Lamar									
4,800.00	10.00	358.73	4,767.58	399.51	-8.85	399.54	0.00	0.00	0.00
4,803.16	10.00	358.73	4,770.70	400.06	-8.86	400.08	0.00	0.00	0.00
Bell Canyon									
4,900.00	10.00	358.73	4,866.07	416.87	-9.24	416.90	0.00	0.00	0.00
5,000.00	10.00	358.73	4,964.55	434.23	-9.62	434.26	0.00	0.00	0.00
5,100.00	10.00	358.73	5,063.03	451.60	-10.00	451.62	0.00	0.00	0.00
5,200.00	10.00	358.73	5,161.51	468.96	-10.39	468.98	0.00	0.00	0.00
5,300.00	10.00	358.73	5,259.99	486.32	-10.77	486.34	0.00	0.00	0.00
5,400.00	10.00	358.73	5,358.47	503.68	-11.16	503.70	0.00	0.00	0.00
5,500.00	10.00	358.73	5,456.95	521.04	-11.54	521.07	0.00	0.00	0.00
5,600.00	10.00	358.73	5,555.43	538.40	-11.93	538.43	0.00	0.00	0.00
5,646.98	10.00	358.73	5,601.70	546.55	-12.11	546.58	0.00	0.00	0.00
Cherry Canyon									
5,700.00	10.00	358.73	5,653.91	555.76	-12.31	555.79	0.00	0.00	0.00



Planning Report



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Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,800.00	10.00	358.73	5,752.39	573.12	-12.70	573.15	0.00	0.00	0.00
5,883.58	10.00	358.73	5,834.70	587.63	-13.02	587.66	0.00	0.00	0.00
Manzanita Lime									
5,900.00	10.00	358.73	5,850.87	590.48	-13.08	590.51	0.00	0.00	0.00
6,000.00	10.00	358.73	5,949.35	607.84	-13.47	607.87	0.00	0.00	0.00
6,100.00	10.00	358.73	6,047.83	625.20	-13.85	625.23	0.00	0.00	0.00
6,200.00	10.00	358.73	6,146.32	642.56	-14.24	642.60	0.00	0.00	0.00
6,300.00	10.00	358.73	6,244.80	659.92	-14.62	659.96	0.00	0.00	0.00
6,400.00	10.00	358.73	6,343.28	677.28	-15.00	677.32	0.00	0.00	0.00
6,500.00	10.00	358.73	6,441.76	694.64	-15.39	694.68	0.00	0.00	0.00
6,600.00	10.00	358.73	6,540.24	712.00	-15.77	712.04	0.00	0.00	0.00
6,700.00	10.00	358.73	6,638.72	729.36	-16.16	729.40	0.00	0.00	0.00
6,800.00	10.00	358.73	6,737.20	746.73	-16.54	746.77	0.00	0.00	0.00
6,900.00	10.00	358.73	6,835.68	764.09	-16.93	764.13	0.00	0.00	0.00
7,000.00	10.00	358.73	6,934.16	781.45	-17.31	781.49	0.00	0.00	0.00
7,007.65	10.00	358.73	6,941.70	782.78	-17.34	782.82	0.00	0.00	0.00
Brushy Canyon									
7,100.00	10.00	358.73	7,032.64	798.81	-17.70	798.85	0.00	0.00	0.00
7,200.00	10.00	358.73	7,131.12	816.17	-18.08	816.21	0.00	0.00	0.00
7,203.19	10.00	358.73	7,134.27	816.72	-18.09	816.77	0.00	0.00	0.00
Begin 1.00°/100' Drop									
7,300.00	9.03	358.73	7,229.74	832.72	-18.45	832.77	1.00	-1.00	0.00
7,400.00	8.03	358.73	7,328.63	847.55	-18.78	847.60	1.00	-1.00	0.00
7,500.00	7.03	358.73	7,427.77	860.66	-19.07	860.71	1.00	-1.00	0.00
7,600.00	6.03	358.73	7,527.12	872.03	-19.32	872.08	1.00	-1.00	0.00
7,700.00	5.03	358.73	7,626.65	881.67	-19.53	881.72	1.00	-1.00	0.00
7,800.00	4.03	358.73	7,726.34	889.57	-19.71	889.62	1.00	-1.00	0.00
7,900.00	3.03	358.73	7,826.15	895.73	-19.84	895.78	1.00	-1.00	0.00
8,000.00	2.03	358.73	7,926.05	900.14	-19.94	900.19	1.00	-1.00	0.00
8,100.00	1.03	358.73	8,026.01	902.82	-20.00	902.87	1.00	-1.00	0.00
8,200.00	0.03	358.73	8,126.01	903.74	-20.02	903.79	1.00	-1.00	0.00
8,203.19	0.00	0.00	8,129.20	903.75	-20.02	903.79	1.00	-1.00	0.00
Begin Vertical Hold									
8,300.00	0.00	0.00	8,226.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,400.00	0.00	0.00	8,326.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,500.00	0.00	0.00	8,426.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,600.00	0.00	0.00	8,526.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,700.00	0.00	0.00	8,626.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,716.69	0.00	0.00	8,642.70	903.75	-20.02	903.79	0.00	0.00	0.00
Bone Spring Lime									
8,800.00	0.00	0.00	8,726.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,900.00	0.00	0.00	8,826.01	903.75	-20.02	903.79	0.00	0.00	0.00
8,908.69	0.00	0.00	8,834.70	903.75	-20.02	903.79	0.00	0.00	0.00
Avalon									
9,000.00	0.00	0.00	8,926.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,100.00	0.00	0.00	9,026.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,200.00	0.00	0.00	9,126.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,300.00	0.00	0.00	9,226.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,400.00	0.00	0.00	9,326.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,500.00	0.00	0.00	9,426.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,600.00	0.00	0.00	9,526.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,700.00	0.00	0.00	9,626.01	903.75	-20.02	903.79	0.00	0.00	0.00
9,800.00	0.00	0.00	9,726.01	903.75	-20.02	903.79	0.00	0.00	0.00



Planning Report



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Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,825.69	0.00	0.00	9,751.70	903.75	-20.02	903.79	0.00	0.00	0.00
First Bone Spring Sand									
9,900.00	0.00	0.00	9,826.01	903.75	-20.02	903.79	0.00	0.00	0.00
10,000.00	0.00	0.00	9,926.01	903.75	-20.02	903.79	0.00	0.00	0.00
10,077.69	0.00	0.00	10,003.70	903.75	-20.02	903.79	0.00	0.00	0.00
Second Bone Spring Shale									
10,100.00	0.00	0.00	10,026.01	903.75	-20.02	903.79	0.00	0.00	0.00
10,101.03	0.00	0.00	10,027.04	903.75	-20.02	903.79	0.00	0.00	0.00
KOP2, Begin 10.00°/100° Build									
10,200.00	9.90	359.95	10,125.51	912.27	-20.03	912.32	10.00	10.00	0.00
10,300.00	19.90	359.95	10,222.03	937.95	-20.05	937.99	10.00	10.00	0.00
10,400.00	29.90	359.95	10,312.62	979.99	-20.09	980.04	10.00	10.00	0.00
10,419.90	31.89	359.95	10,329.70	990.21	-20.10	990.26	10.00	10.00	0.00
Second Bone Spring Sand									
10,500.00	39.90	359.95	10,394.54	1,037.13	-20.14	1,037.18	10.00	10.00	0.00
10,600.00	49.90	359.95	10,465.29	1,107.62	-20.20	1,107.67	10.00	10.00	0.00
10,700.00	59.90	359.95	10,522.72	1,189.33	-20.28	1,189.38	10.00	10.00	0.00
10,800.00	69.90	359.95	10,565.09	1,279.77	-20.36	1,279.82	10.00	10.00	0.00
10,900.00	79.90	359.95	10,591.11	1,376.19	-20.44	1,376.24	10.00	10.00	0.00
11,000.00	89.90	359.95	10,600.00	1,475.67	-20.53	1,475.72	10.00	10.00	0.00
11,001.03	90.00	359.95	10,600.00	1,476.70	-20.53	1,476.75	10.00	10.00	0.00
LP, Hold 90.00° Inc at 359.95° Azm									
11,100.00	90.00	359.95	10,600.00	1,575.67	-20.62	1,575.72	0.00	0.00	0.00
11,200.00	90.00	359.95	10,600.00	1,675.67	-20.71	1,675.72	0.00	0.00	0.00
11,300.00	90.00	359.95	10,600.00	1,775.67	-20.80	1,775.72	0.00	0.00	0.00
11,400.00	90.00	359.95	10,600.00	1,875.67	-20.89	1,875.72	0.00	0.00	0.00
11,500.00	90.00	359.95	10,600.00	1,975.67	-20.98	1,975.72	0.00	0.00	0.00
11,600.00	90.00	359.95	10,600.00	2,075.67	-21.07	2,075.72	0.00	0.00	0.00
11,700.00	90.00	359.95	10,600.00	2,175.67	-21.15	2,175.72	0.00	0.00	0.00
11,800.00	90.00	359.95	10,600.00	2,275.67	-21.24	2,275.72	0.00	0.00	0.00
11,900.00	90.00	359.95	10,600.00	2,375.67	-21.33	2,375.72	0.00	0.00	0.00
12,000.00	90.00	359.95	10,600.00	2,475.67	-21.42	2,475.72	0.00	0.00	0.00
12,100.00	90.00	359.95	10,600.00	2,575.67	-21.51	2,575.72	0.00	0.00	0.00
12,200.00	90.00	359.95	10,600.00	2,675.67	-21.60	2,675.72	0.00	0.00	0.00
12,300.00	90.00	359.95	10,600.00	2,775.67	-21.69	2,775.72	0.00	0.00	0.00
12,400.00	90.00	359.95	10,600.00	2,875.67	-21.78	2,875.71	0.00	0.00	0.00
12,500.00	90.00	359.95	10,600.00	2,975.67	-21.87	2,975.71	0.00	0.00	0.00
12,600.00	90.00	359.95	10,600.00	3,075.67	-21.96	3,075.71	0.00	0.00	0.00
12,700.00	90.00	359.95	10,600.00	3,175.67	-22.04	3,175.71	0.00	0.00	0.00
12,800.00	90.00	359.95	10,600.00	3,275.67	-22.13	3,275.71	0.00	0.00	0.00
12,900.00	90.00	359.95	10,600.00	3,375.67	-22.22	3,375.71	0.00	0.00	0.00
13,000.00	90.00	359.95	10,600.00	3,475.67	-22.31	3,475.71	0.00	0.00	0.00
13,100.00	90.00	359.95	10,600.00	3,575.67	-22.40	3,575.71	0.00	0.00	0.00
13,200.00	90.00	359.95	10,600.00	3,675.67	-22.49	3,675.71	0.00	0.00	0.00
13,300.00	90.00	359.95	10,600.00	3,775.67	-22.58	3,775.71	0.00	0.00	0.00
13,400.00	90.00	359.95	10,600.00	3,875.67	-22.67	3,875.71	0.00	0.00	0.00
13,500.00	90.00	359.95	10,600.00	3,975.67	-22.76	3,975.71	0.00	0.00	0.00
13,600.00	90.00	359.95	10,600.00	4,075.67	-22.85	4,075.71	0.00	0.00	0.00
13,700.00	90.00	359.95	10,600.00	4,175.67	-22.94	4,175.71	0.00	0.00	0.00
13,800.00	90.00	359.95	10,600.00	4,275.67	-23.02	4,275.71	0.00	0.00	0.00
13,900.00	90.00	359.95	10,600.00	4,375.67	-23.11	4,375.71	0.00	0.00	0.00
14,000.00	90.00	359.95	10,600.00	4,475.67	-23.20	4,475.71	0.00	0.00	0.00
14,100.00	90.00	359.95	10,600.00	4,575.67	-23.29	4,575.71	0.00	0.00	0.00



Planning Report



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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,200.00	90.00	359.95	10,600.00	4,675.67	-23.38	4,675.71	0.00	0.00	0.00
14,300.00	90.00	359.95	10,600.00	4,775.67	-23.47	4,775.71	0.00	0.00	0.00
14,400.00	90.00	359.95	10,600.00	4,875.67	-23.56	4,875.71	0.00	0.00	0.00
14,500.00	90.00	359.95	10,600.00	4,975.67	-23.65	4,975.71	0.00	0.00	0.00
14,600.00	90.00	359.95	10,600.00	5,075.67	-23.74	5,075.71	0.00	0.00	0.00
14,700.00	90.00	359.95	10,600.00	5,175.67	-23.83	5,175.71	0.00	0.00	0.00
14,800.00	90.00	359.95	10,600.00	5,275.67	-23.91	5,275.71	0.00	0.00	0.00
14,900.00	90.00	359.95	10,600.00	5,375.67	-24.00	5,375.71	0.00	0.00	0.00
15,000.00	90.00	359.95	10,600.00	5,475.67	-24.09	5,475.71	0.00	0.00	0.00
15,100.00	90.00	359.95	10,600.00	5,575.67	-24.18	5,575.71	0.00	0.00	0.00
15,200.00	90.00	359.95	10,600.00	5,675.67	-24.27	5,675.71	0.00	0.00	0.00
15,300.00	90.00	359.95	10,600.00	5,775.67	-24.36	5,775.71	0.00	0.00	0.00
15,400.00	90.00	359.95	10,600.00	5,875.67	-24.45	5,875.71	0.00	0.00	0.00
15,500.00	90.00	359.95	10,600.00	5,975.67	-24.54	5,975.71	0.00	0.00	0.00
15,600.00	90.00	359.95	10,600.00	6,075.67	-24.63	6,075.71	0.00	0.00	0.00
15,700.00	90.00	359.95	10,600.00	6,175.67	-24.72	6,175.71	0.00	0.00	0.00
15,800.00	90.00	359.95	10,600.00	6,275.67	-24.80	6,275.71	0.00	0.00	0.00
15,900.00	90.00	359.95	10,600.00	6,375.67	-24.89	6,375.71	0.00	0.00	0.00
16,000.00	90.00	359.95	10,600.00	6,475.67	-24.98	6,475.71	0.00	0.00	0.00
16,100.00	90.00	359.95	10,600.00	6,575.67	-25.07	6,575.71	0.00	0.00	0.00
16,200.00	90.00	359.95	10,600.00	6,675.67	-25.16	6,675.71	0.00	0.00	0.00
16,300.00	90.00	359.95	10,600.00	6,775.67	-25.25	6,775.71	0.00	0.00	0.00
16,400.00	90.00	359.95	10,600.00	6,875.67	-25.34	6,875.71	0.00	0.00	0.00
16,500.00	90.00	359.95	10,600.00	6,975.67	-25.43	6,975.71	0.00	0.00	0.00
16,600.00	90.00	359.95	10,600.00	7,075.67	-25.52	7,075.71	0.00	0.00	0.00
16,700.00	90.00	359.95	10,600.00	7,175.67	-25.61	7,175.71	0.00	0.00	0.00
16,800.00	90.00	359.95	10,600.00	7,275.67	-25.70	7,275.71	0.00	0.00	0.00
16,900.00	90.00	359.95	10,600.00	7,375.67	-25.78	7,375.71	0.00	0.00	0.00
17,000.00	90.00	359.95	10,600.00	7,475.67	-25.87	7,475.71	0.00	0.00	0.00
17,100.00	90.00	359.95	10,600.00	7,575.67	-25.96	7,575.71	0.00	0.00	0.00
17,200.00	90.00	359.95	10,600.00	7,675.67	-26.05	7,675.71	0.00	0.00	0.00
17,300.00	90.00	359.95	10,600.00	7,775.67	-26.14	7,775.71	0.00	0.00	0.00
17,400.00	90.00	359.95	10,600.00	7,875.67	-26.23	7,875.71	0.00	0.00	0.00
17,500.00	90.00	359.95	10,600.00	7,975.67	-26.32	7,975.71	0.00	0.00	0.00
17,600.00	90.00	359.95	10,600.00	8,075.67	-26.41	8,075.71	0.00	0.00	0.00
17,700.00	90.00	359.95	10,600.00	8,175.67	-26.50	8,175.71	0.00	0.00	0.00
17,800.00	90.00	359.95	10,600.00	8,275.67	-26.59	8,275.71	0.00	0.00	0.00
17,900.00	90.00	359.95	10,600.00	8,375.67	-26.67	8,375.71	0.00	0.00	0.00
18,000.00	90.00	359.95	10,600.00	8,475.67	-26.76	8,475.71	0.00	0.00	0.00
18,100.00	90.00	359.95	10,600.00	8,575.67	-26.85	8,575.71	0.00	0.00	0.00
18,200.00	90.00	359.95	10,600.00	8,675.67	-26.94	8,675.71	0.00	0.00	0.00
18,300.00	90.00	359.95	10,600.00	8,775.67	-27.03	8,775.71	0.00	0.00	0.00
18,400.00	90.00	359.95	10,600.00	8,875.67	-27.12	8,875.71	0.00	0.00	0.00
18,500.00	90.00	359.95	10,600.00	8,975.67	-27.21	8,975.71	0.00	0.00	0.00
18,600.00	90.00	359.95	10,600.00	9,075.67	-27.30	9,075.71	0.00	0.00	0.00
18,700.00	90.00	359.95	10,600.00	9,175.67	-27.39	9,175.71	0.00	0.00	0.00
18,800.00	90.00	359.95	10,600.00	9,275.67	-27.48	9,275.71	0.00	0.00	0.00
18,900.00	90.00	359.95	10,600.00	9,375.67	-27.56	9,375.71	0.00	0.00	0.00
19,000.00	90.00	359.95	10,600.00	9,475.67	-27.65	9,475.71	0.00	0.00	0.00
19,100.00	90.00	359.95	10,600.00	9,575.67	-27.74	9,575.71	0.00	0.00	0.00
19,200.00	90.00	359.95	10,600.00	9,675.67	-27.83	9,675.71	0.00	0.00	0.00
19,300.00	90.00	359.95	10,600.00	9,775.67	-27.92	9,775.70	0.00	0.00	0.00
19,400.00	90.00	359.95	10,600.00	9,875.67	-28.01	9,875.70	0.00	0.00	0.00
19,500.00	90.00	359.95	10,600.00	9,975.67	-28.10	9,975.70	0.00	0.00	0.00



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 503H
Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,600.00	90.00	359.95	10,600.00	10,075.67	-28.19	10,075.70	0.00	0.00	0.00	
19,700.00	90.00	359.95	10,600.00	10,175.67	-28.28	10,175.70	0.00	0.00	0.00	
19,800.00	90.00	359.95	10,600.00	10,275.67	-28.37	10,275.70	0.00	0.00	0.00	
19,900.00	90.00	359.95	10,600.00	10,375.67	-28.45	10,375.70	0.00	0.00	0.00	
20,000.00	90.00	359.95	10,600.00	10,475.67	-28.54	10,475.70	0.00	0.00	0.00	
20,100.00	90.00	359.95	10,600.00	10,575.67	-28.63	10,575.70	0.00	0.00	0.00	
20,200.00	90.00	359.95	10,600.00	10,675.67	-28.72	10,675.70	0.00	0.00	0.00	
20,300.00	90.00	359.95	10,600.00	10,775.67	-28.81	10,775.70	0.00	0.00	0.00	
20,400.00	90.00	359.95	10,600.00	10,875.67	-28.90	10,875.70	0.00	0.00	0.00	
20,500.00	90.00	359.95	10,600.00	10,975.66	-28.99	10,975.70	0.00	0.00	0.00	
20,600.00	90.00	359.95	10,600.00	11,075.66	-29.08	11,075.70	0.00	0.00	0.00	
20,700.00	90.00	359.95	10,600.00	11,175.66	-29.17	11,175.70	0.00	0.00	0.00	
20,782.69	90.00	359.95	10,600.00	11,258.35	-29.24	11,258.39	0.00	0.00	0.00	
TD at 20782.69										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BHL - Mozzarella Federæ	0.00	359.95	10,600.00	11,258.35	-29.24	11,778,808.18	2,041,806.04	32° 26' 31.610840 N	103° 41' 54.632874 W	
- plan hits target center										
- Rectangle (sides W0.00 H10,354.61 D20.00)										
FTP - Mozzarella Federæ	0.00	0.00	10,600.00	903.75	-20.02	11,768,456.68	2,041,941.33	32° 24' 49.153576 N	103° 41' 54.525791 W	
- plan misses target center by 237.33usft at 10551.47usft MD (10432.49 TVD, 1071.87 N, -20.17 E)										
- Point										
LPP #2 - Mozzarella Fec	0.00	0.00	10,600.00	6,075.69	-24.61	11,773,627.07	2,041,873.77	32° 25' 40.329210 N	103° 41' 54.579238 W	
- plan misses target center by 0.01usft at 15600.02usft MD (10600.00 TVD, 6075.69 N, -24.63 E)										
- Point										
LPP #1 - Mozzarella Fec	0.00	0.00	10,600.00	3,444.46	-22.28	11,770,996.63	2,041,908.14	32° 25' 14.293580 N	103° 41' 54.552095 W	
- plan misses target center by 0.01usft at 12968.79usft MD (10600.00 TVD, 3444.46 N, -22.28 E)										
- Point										



Planning Report



Database:	USA Compass	Local Co-ordinate Reference:	Well 503H
Company:	Centennial Resources Development, Inc.	TVD Reference:	RKB @ 3725.70usft (TBD)
Project:	Lea County, NM (NAD83 - UTM Zone 13)	MD Reference:	RKB @ 3725.70usft (TBD)
Site:	Mozzarella Federal Com	North Reference:	True
Well:	503H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1 09-16-21		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
719.70	719.70	Rustler		0.00	359.85	
1,165.70	1,165.70	Salado		0.00	359.85	
3,414.06	3,402.70	BX BLM (Fletcher Anhydrite)		0.00	359.85	
4,715.84	4,684.70	Lamar		0.00	359.85	
4,803.16	4,770.70	Bell Canyon		0.00	359.85	
5,646.98	5,601.70	Cherry Canyon		0.00	359.85	
5,883.58	5,834.70	Manzanita Lime		0.00	359.85	
7,007.65	6,941.70	Brushy Canyon		0.00	359.85	
8,716.69	8,642.70	Bone Spring Lime		0.00	359.85	
8,908.69	8,834.70	Avalon		0.00	359.85	
9,825.69	9,751.70	First Bone Spring Sand		0.00	359.85	
10,077.69	10,003.70	Second Bone Spring Shale		0.00	359.85	
10,419.90	10,329.70	Second Bone Spring Sand		0.00	359.85	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2,000.00	2,000.00	0.00	0.00	KOP, Begin 1.00°/100' Build	
3,000.00	2,994.93	87.02	-1.93	Hold 10.00° Inc at 358.73° Azm	
7,203.19	7,134.27	816.72	-18.09	Begin 1.00°/100' Drop	
8,203.19	8,129.20	903.75	-20.02	Begin Vertical Hold	
10,101.03	10,027.04	903.75	-20.02	KOP2, Begin 10.00°/100' Build	
11,001.03	10,600.00	1,476.70	-20.53	LP, Hold 90.00° Inc at 359.95° Azm	
20,782.69	10,600.00	11,258.35	-29.24	TD at 20782.69	

Centennial Resource Development New Mexico Multi-Well Pad Drilling Batch Setting Procedures

➤ Avalon and Bone Springs Formations

13-3/8" Surface Casing - CRD intends to preset 13-3/8" casing to a depth approved in the APD. 17-1/2" Surface Holes will be batch drilled by a Surface Preset rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Surface Preset Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing to depth approved in APD.
3. Cement 13-3/8" casing with cement to surface and floats holding.
4. Cut / Dress 20" Conductor and 13-3/8" casing as needed, weld on Cameron Multi-bowl system with baseplate supported by 20" conductor ([see Illustration 1-1 Below](#)). Weld performed per Cameron weld procedure.
5. Test Weld to 70% of 13-3/8" casing collapse or ~ 790psi.
6. Install nightcap with Pressure Gauge on wellhead. Nightcap is shown on final wellhead Stack up [Illustration #2-2 page 3](#).
7. Skid Rig to adjacent well to drill Surface hole.
8. Surface casing test will be performed by the Big Rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is greater - not to exceed 70% casing burst.

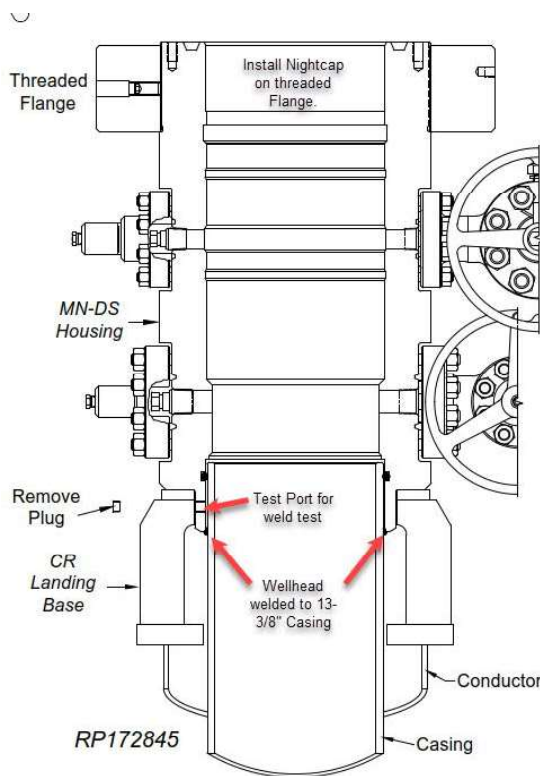


Illustration 1-1

- Intermediate and Production Casing – For all subsequent Intermediate and Production Casing Strings, the Big Rig will remove the nightcap and install and test BOPE. Prior to drill out the 13-3/8" Casing will be tested to 0.22psi/ft or 1500psi whichever is greater. The well will be drilled below 13-3/8" to its intended final TD in the Avalon or Bonesprings formations. Batch drilling will not be executed for casing strings below the 13-3/8". Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings. The

➤ Wolfcamp Formations

13-3/8" Surface Casing - CRD intends to preset 13-3/8" casing to a depth approved in the APD. Surface Holes will be batch set by a Surface Preset rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill 17-1/2" Surface hole to Approved Depth with Surface Preset Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land 13-3/8" 54.5# J55 BTC casing to depth approved in APD.
3. Cement 13-3/8" casing with cement to surface and floats holding.
4. Cut / Dress 20" Conductor and 13-3/8" casing as needed, weld on Cameron Multi-bowl system with baseplate supported by 20" conductor ([see Illustration 1-1](#)). Weld performed per Cameron weld procedure.
5. Test Weld to 70% of 13-3/8" casing collapse or ~ 790psi.
6. Install nightcap with Pressure Gauge on wellhead. Nightcap is shown on final wellhead Stack up [Illustration #2-2 on page 3](#).
7. Subsequent casing test will be performed by the Big Rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is greater - not to exceed 70% casing burst.

Intermediate Casing – CRD intends to Batch set all intermediate casing strings to a depth approved in the APD, typically set 100' above KOP in the 3rd Bonesprings Carbonate. For the last intermediate section drilled on pad, the associated production interval will immediately follow. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Big Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 10000 psi for 15 minutes. Nightcap shown on final wellhead stack up [illustration 2-2 on page 3](#).
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

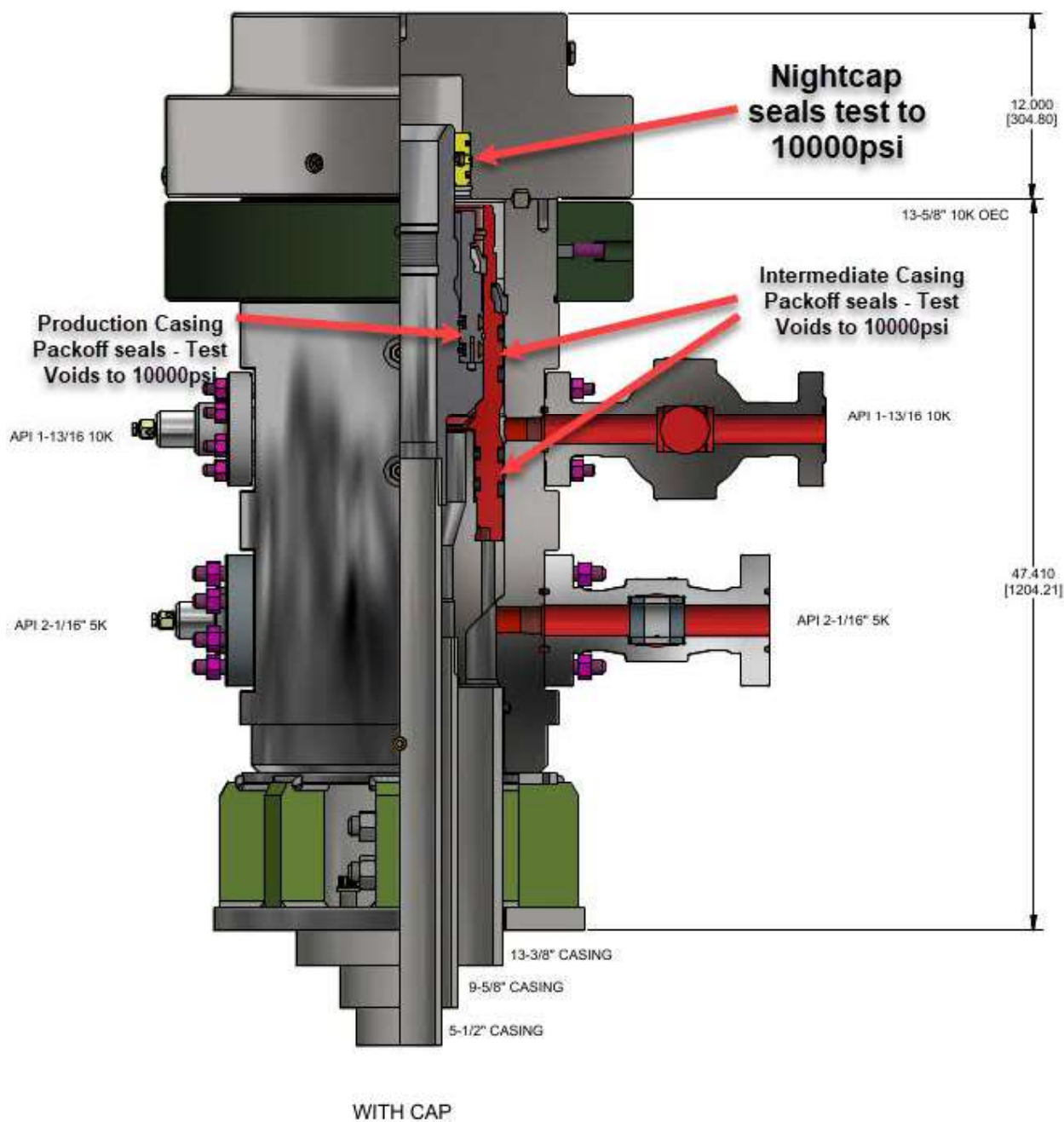



Illustration 2-2

Production Casing – CRD intends to Batch set all Production casings, except for the last intermediate hole. In this case the production interval will immediately follow the intermediate section on that well. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.


1. Big Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.

5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run 5-1/2" Production Casing.
6. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
7. Cement 5-1/2" Production string to surface with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 10000psi for 15 minutes.
9. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 10000psi for 30 minutes per [illustration 2-2 page 3](#).
11. Skid rig to adjacent well on pad to drill production hole.

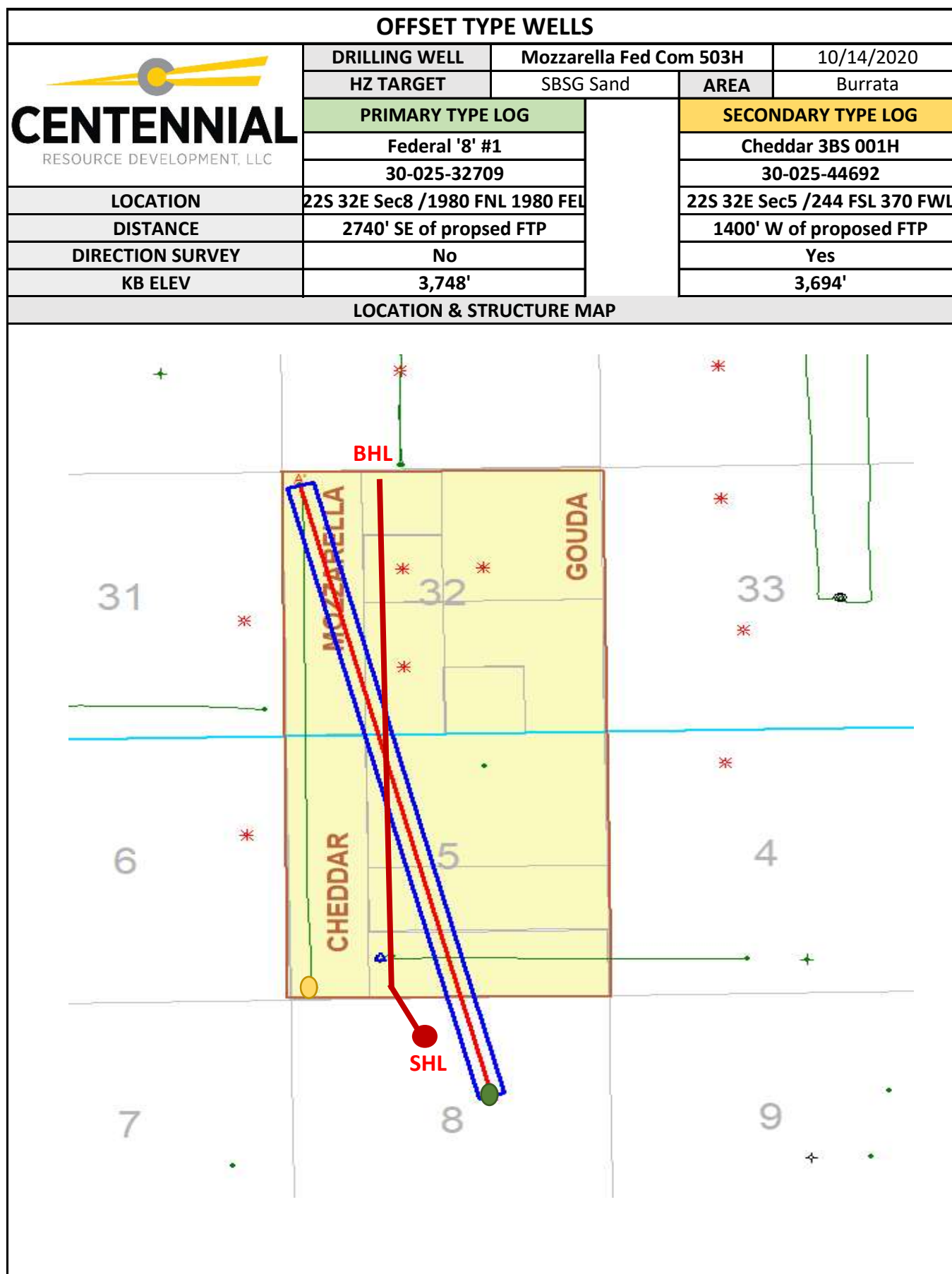
GEOLOGIC PROG

			WELL NAME		Mozzarella Fed Com 503H		10/14/2020	
			AREA		Burrata		API	
			HZ TARGET		SBSG Sand		WI %	
			LAT LENGTH		9,500		AFE#	
			TRRC PERMIT				COUNTY	
	TWNP	RNG	SECTION	FOOTAGE		COMMENT		
SHL	22S	32E	8	804 FNL 2159 FWL		Off lease drill S to N		
FTP/PP	22S	32E	5	100 FSL 1531 FWL				
LTP	21S	35E	32	100 FNL 1531 FWL				
BHL	21S	35E	32	100 FNL 1531 FWL				
			GROUND LEVEL	3,700'	RIG KB	26'	KB ELEV	3,726'
GEOLOGIST	Isabel Harper		isabel.harper@cdevinc.com			(303) 589-8841		
LOGGING			No open hole logging. MWD GR from drill out of surface casing to TD.					
MUDLOGGING			None					
FORMATION			TVD	SSTVD	THICKNESS	FINAL MD	FINAL TVD	DELTA
Rustler			720'	3,006'	446'			
Salado			1,166'	2,560'	2,237'			
BX BLM (Fletcher Anhydrite)			3,403'	323'	1,282'			
Lamar			4,685'	-959'	86'			
Bell Canyon			4,771'	-1,045'	831'			
Cherry Canyon			5,602'	-1,876'	233'			
Manzanita Lime			5,835'	-2,109'	1,107'			
Brushy Canyon			6,942'	-3,216'	1,701'			
Bone Spring Lime			8,643'	-4,917'	192'			
Avalon			8,835'	-5,109'	917'			
First Bone Spring Sand			9,752'	-6,026'	252'			
Second Bone Spring Shale			10,004'	-6,278'	326'			
Second Bone Spring Sand			10,330'	-6,604'	486'			
Third Bone Carbonate			10,816'	-7,090'	600'			
Third Bone Spring Sand			11,416'	-7,690'	414'			
Wolfcamp			11,830'	-8,104'				
HZ TARGET AT 0' VS			10,600'	-6,874'				
TARGET: KBTVD = 10600' at 0' VS, INC = 90.0 deg Target Window +10/-10'								
COMMENT:								

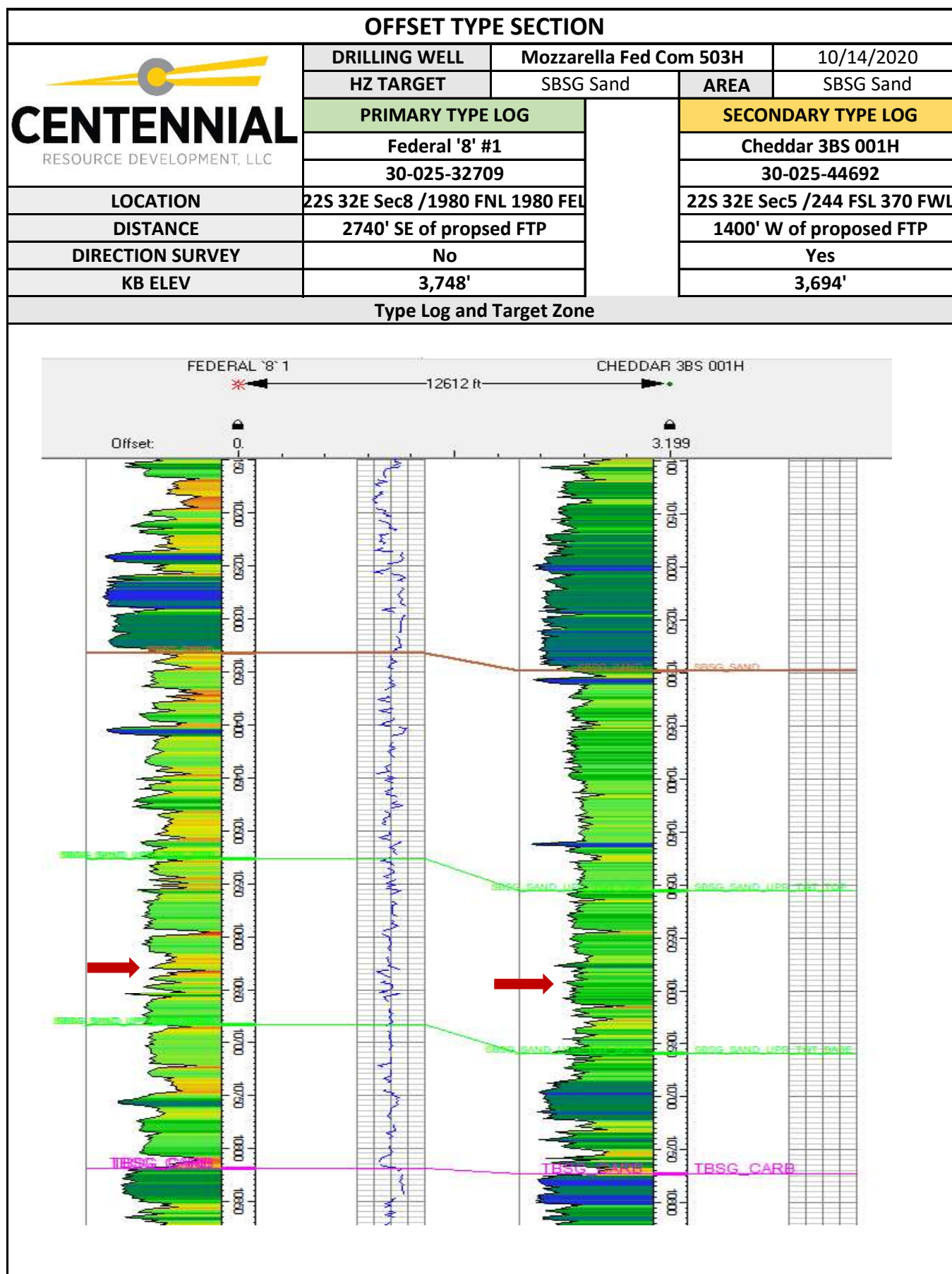
GEOLOGIC PROG

OFFSET TYPE WELLS						
<div></div>	DRILLING WELL		Mozzarella Fed Com 503H		10/14/2020	
	HZ TARGET		SBSG Sand		AREA	Burrata
	PRIMARY TYPE LOG				SECONDARY TYPE LOG	
	Federal '8' #1				Cheddar 3BS 001H	
	30-025-32709				30-025-44692	
	22S 32E Sec8 /1980 FNL 1980 FEL				22S 32E Sec5 /244 FSL 370 FWL	
	2740' SE of propsed FTP				1400' W of proposed FTP	
	No				Yes	
	3,748'				3,694'	
FORMATION	TVD	SSTVD	DELTA	TVD	SSTVD	DELTA
Rustler	722'	3,026'	446'	745'	2,949'	479'
Salado	1,168'	2,580'	2,237'	1,224'	2,470'	2,154'
BX BLM (Fletcher Anhydrite)	3,405'	343'	1,282'	3,378'	316'	1,245'
Lamar	4,687'	-939'	86'	4,623'	-929'	112'
Bell Canyon	4,773'	-1,025'	831'	4,735'	-1,041'	792'
Cherry Canyon	5,604'	-1,856'	233'	5,527'	-1,833'	226'
Manzanita Lime	5,837'	-2,089'	1,107'	5,753'	-2,059'	1,105'
Brushy Canyon	6,944'	-3,196'	1,701'	6,858'	-3,164'	1,726'
Bone Spring Lime	8,645'	-4,897'	192'	8,584'	-4,890'	152'
Avalon	8,837'	-5,089'	917'	8,736'	-5,042'	914'
First Bone Spring Sand	9,754'	-6,006'	252'	9,650'	-5,956'	238'
Second Bone Spring Shale	10,006'	-6,258'	326'	9,888'	-6,194'	400'
Second Bone Spring Sand	10,332'	-6,584'	486'	10,288'	-6,594'	477'
Third Bone Carbonate	10,818'	-7,070'	600'	10,765'	-7,071'	
Third Bone Spring Sand	11,418'	-7,670'	414'	11,275'	-7,581'	
Wolfcamp	11,832'	-8,084'				
TGT Top	10,527'	-6,779'	157'	10,496'	-6,802'	154'
TGT Base	10,684'	-6,936'		10,650'	-6,956'	
Comments						

GEOLOGIC PROG




GEOLOGIC PROG



GEOLOGIC PROG

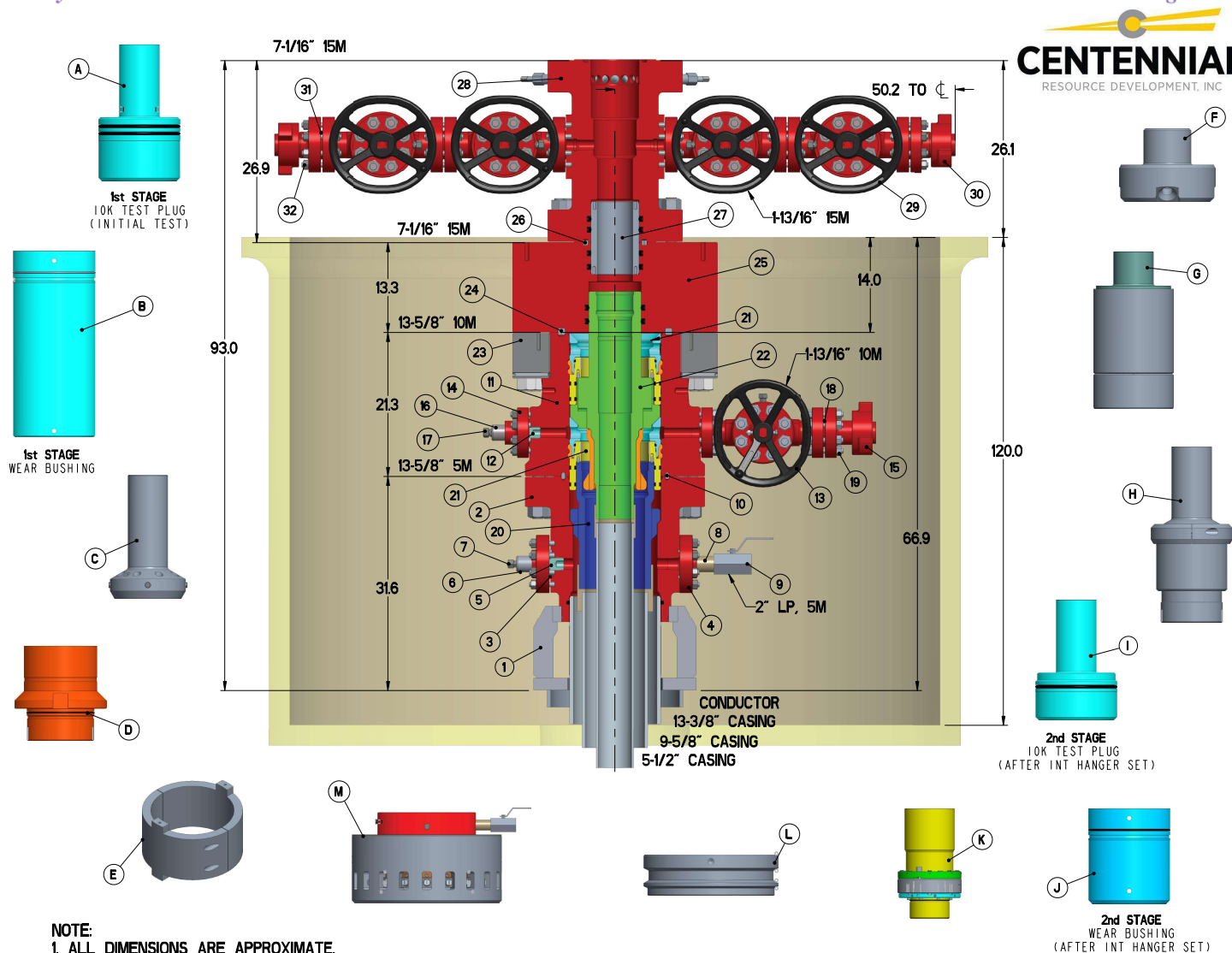
GEOPHYSICAL DATA
POTENTIAL GEOHAZARDS
SEISMIC DISPLAYS

GEOLOGIC PROG

MUD LOG DISTRIBUTION DETAILS				
	WELL NAME	Mozzarella Fed Com 503H		10/14/2020
	AREA	Burrata	API	
	HZ TARGET	SBSG Sand	WI %	
	LAT LENGTH	9500	AFE#	
	TRRC PERMIT		COUNTY	Lea
GEOLOGIST	Isabel Harper	isabel.harper@cdevinc.com		(303) 589-8841
Mud Logging Company				
None				
Contact 1	email		phone	
Contact 2	email		phone	
Contact 3	email		phone	
Daily distribution data requirements and protocol				
<p>geodata@cdevinc.com; joe.woodske@cdevinc.com; Andrew.Welshhans@cdevinc.com; Nick.Daniele@cdevinc.com; Dawn.Billesbach@cdevinc.com; Isabel.Harper@cdevinc.com; Ronny.Hise@cdevinc.com; Liam.Kaltenback@cdevinc.com</p>				
Daily email distribution list				
<p>geodata@cdevinc.com; joe.woodske@cdevinc.com; Andrew.Welshhans@cdevinc.com; Nick.Daniele@cdevinc.com; Dawn.Billesbach@cdevinc.com; Isabel.Harper@cdevinc.com; Ronny.Hise@cdevinc.com; Liam.Kaltenback@cdevinc.com</p>				
Final distribution list				
Contact Information	Reports	Hard Copies	Digital data	Cuttings
Centennial Resource Development, c/o Joe Woodske, 1001 17th street, Suite 1800,	email final set	Digital Copies Only	email final set	
SCAL, Inc., 2613 South County Road 1257, Midland, TX 79706				No Dried Samples to be Collected
MWD Only: Centennial Resource Development, c/o Sarah Ferreyros, 1001 17th street, Suite 1800, Denver, CO, 80202	email final set	2 copies of the 5" MD vertical logs 2 copies of the 5" horizontal logs	email final set	
Project Geologist:	Isabel Harper		Production:	Brandon Morin
Operations Geologist:	Joe Woodske		Surface Land:	Bailey Joplin
Drilling:	Ronny Hise		Mineral Land:	Taylor Thoreson

Mozzarella Fed Com 503H**Centennial Drilling Plan for 3-Casing String Bone Springs Formation****13-3/8" x 9-5/8" x 5-1/2" Casing Design**

1. Drill 17-1/2" surface hole to Total Depth with Spudder Rig and perform wellbore cleanup cycles.
2. Run and land 13-3/8" casing to Depth.
3. Cement 13-3/8" casing – cement to surface.
4. Cut / Dress Conductor and 13-3/8" casing as needed, weld on Multi-bowl system with baseplate supported by 20" conductor.
5. Test Weld to 70% of 13-3/8" casing collapse. Place nightcap with Pressure Gauge on wellhead and test seals to 70% of Casing Collapse.
6. Bleed Pressure if necessary and remove nightcap. Nipple up and test BOPE with test plug per Onshore Order 2.
7. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
8. Install wear bushing then drill out 13-3/8" shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
9. Drill 12-1/4" Intermediate hole to 9-5/8" casing point.
10. Remove wear bushing then run and land 9-5/8" Intermediate Casing with mandrel hanger in wellhead.
11. Cement 9-5/8 casing – cement to surface.
12. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
13. Install pack-off and test to 5000 psi for 15 minutes.
 - a. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
14. Install wear bushing then drill out 9-5/8" shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
15. Drill 8-3/4" Vertical hole to KOP – Trip out for Curve BHA.
16. Drill 8-3/4" Curve, landing in production interval – Trip for Lateral BHA.
17. Drill 8-1/2" Lateral to Permitted BHL, perform cleanup cycles and trip out to run 5-1/2" Production Casing.
18. Remove wear bushing then run 5-1/2" production casing to TD landing casing mandrel in wellhead.
19. Cement 5-1/2" Production string to surface.
20. Run in with wash tool and wash wellhead area – install pack-off and test to 5000psi for 15 minutes.
21. Install BPV in 5-1/2" mandrel hanger – Nipple down BOPE and install nightcap.
22. Test nightcap void to 5000psi for 30 minutes.



NOTE:

1. ALL DIMENSIONS ARE APPROXIMATE.

ITEM	PARTS DESCRIPTION	PART NUMBERS
1	LANDING BASE ASSEMBLY 24.00 X 18.00 X 175	LB-1338CSGX24-03
2	CASING HEAD CC-22 13-5/8 5M X 13-3/8 SOW	CC-CH135X1338SOWSV-00-2
3	RING GASKET OVAL R-24	RG-R24MS
4	COMPANION FLANGE 2-1/16 5000 X 2 LP	CF-25X2LP-2-00-05
5	VALVE REMOVAL PLUG 10000 PSI	VRP-1900-6A-DD-05
6	BULLPLUG 2 LP X 1/2 LP	BP-2X12XXH
7	GREASE FITTING 1/2 NPT	GF-12-4140
8	NIPPLE SEAMLESS 2 NPTX 2 NPT X 6.00	NIP-2X6XXH
9	BALL VALVE 2 LP 5000 PSI	B/V-25-CS-05
10	RING GASKET BX-160	RG-BX160MS
11	INTERMEDIATE HEAD CFB-T 13-5/8 5M X 13-5/8 10M RSF	CFB-HT135X1310SV-00-2
12	VALVE REMOVAL PLUG 10000 PSI	VRP-1660-6A-DD-05
13	GATE VALVE 1-13/16 10000 FLANGED	175G-525B100-LE-05
14	COMPANION FLANGE 1-13/16 10M X 2 LP	CF-13410X2LP-2-05
15	FLANGE ADAPTER 1-13/16 10M X 2 FIG 1502	AF-13410X21502-01-2-05
16	BULLPLUG 2 LP X 1/2 LP	BP-2X12XXH
17	GREASE FITTING 1/2 NPT	GF-12-4140
18	RING GASKET BX-151	RG-BX151MS
19	STUD AND NUT SET 3/4 10UNC X 5-1/4 FULL	S-B7-34X514 / N-2H-34
20	CSG HGR MANDREL CFB 13-5/8 X 9-5/8 PIN BTM	CFB-CHL13X958LC-04
21	PACKOFF BUSHING CFB 13-5/8 X 11500	CFB-PB13X11050-01-2
22	CSG HGR CFB 13-5/8 X 5-1/2 PIN BTM	CFB-CHU13X512TCBCBPV-00-2
23	THREADED FLANGE RING RSF 13-5/8 10M	RSF-TF1310X1950A-00-2
24	RING GASKET BX-159	RG-BX159MS
25	PACKOFF FLANGE FS 13-5/8 10M X 7-1/16 15M	FS-AF1310X715X758X7-00-3

26	RING GASKET BX-156	RG-BX156MS
27	SEAL-OFF NIPPLE SLICK OD 7.07 X 5.25	SN-707X525-00-3
28	TBG HEAD CTCM-15 7-1/16 15M X 7-1/16 15M	CTCM-TH715X715SVF57-00-2
29	GATE VALVE 1-13/16 15000 FLANGED	175G-525B150-T25-3-05
30	ADAPTER FLANGE 1-13/16 15M X 2 FIG 1502	AF-13415X21502-01-3-05
31	RING GASKET BX-151	RG-BX151MS
32	STUD AND NUT SET 7/8 9UNC X 6	S-B7-78X6-BSL1 / N-2H-78-BSL1

ITEM	RENTAL TOOLS - PARTS DESCRIPTION	PART NUMBERS
A	RENTAL TEST PLUG CFB 13-5/8 X 4-1/2 IF	L-CFB-TP13X412IF-03
B	RENTAL BORE PROTECTOR CFB 13-5/8	L-CFB-BP13X12053-3075-01
C	RENTAL RETRIEVING TOOL 13-5/8 X 4-1/2 IF	L-CC-RT13-00
D	RENTAL RUNNING TOOL CFB 13-5/8	L-CFB-RT9750AX958BC-00
E	RENTAL TORQUE SLEEVE CFB 13.44X 11.62 X 9.12	L-CFB-RT-TS13-00
F	RENTAL WASH-OUT TOOL 13-5/8 X 4-1/2 IF	L-MW-WT13X412-00
G	RENTAL WASHOUT TOOL CFB 13-5/8 X4-1/2 IF	L-CFB-WT13X412IF-01
H	RENTAL RUNNING AND RETRIEVING TOOL CFB	L-CFB-RT10125AX412IF-00
I	RENTAL TEST PLUG CFB 13-5/8 4-1/2 IF	L-CFB-TP13X412IF-04
J	RENTAL BORE PROTECTOR CFB 13-5/8	L-CFB-BP13X9056-1575-00
K	RENTAL RUNNING TOOL CFB-RT-TT FOR 11 / 13 HGR	CFB-RT-TT512AX512TCBC-00
L	RENTAL THREADED SHOULDER RING RSF	L-RSF-SR1310BX-00-2
M	RSF CAPPING FLANGE	RSF-CF1310BX0ECX9CPX2LP-00

CENTENNIAL RESOURCE PRODUCTION, LLC
 13-3/8" X 9-5/8" X 5-1/2", 15M
 CFB-T WELLHEAD SYSTEM
 QUOTE: HOU - 151185

DWN	CB	12/16/19
CHK		
APPR		
BY	DATE	



Worldwide Expertise - Global Strength

DRAWING NUMBER
 WH-20235

CENTENNIAL

Proposed Drilling Program

Well : Mozzarella Fed Com 503H

APD : BLM 10K Wellhead (5K Test)

Area : Burrata

FM tgt : 2nd BSS

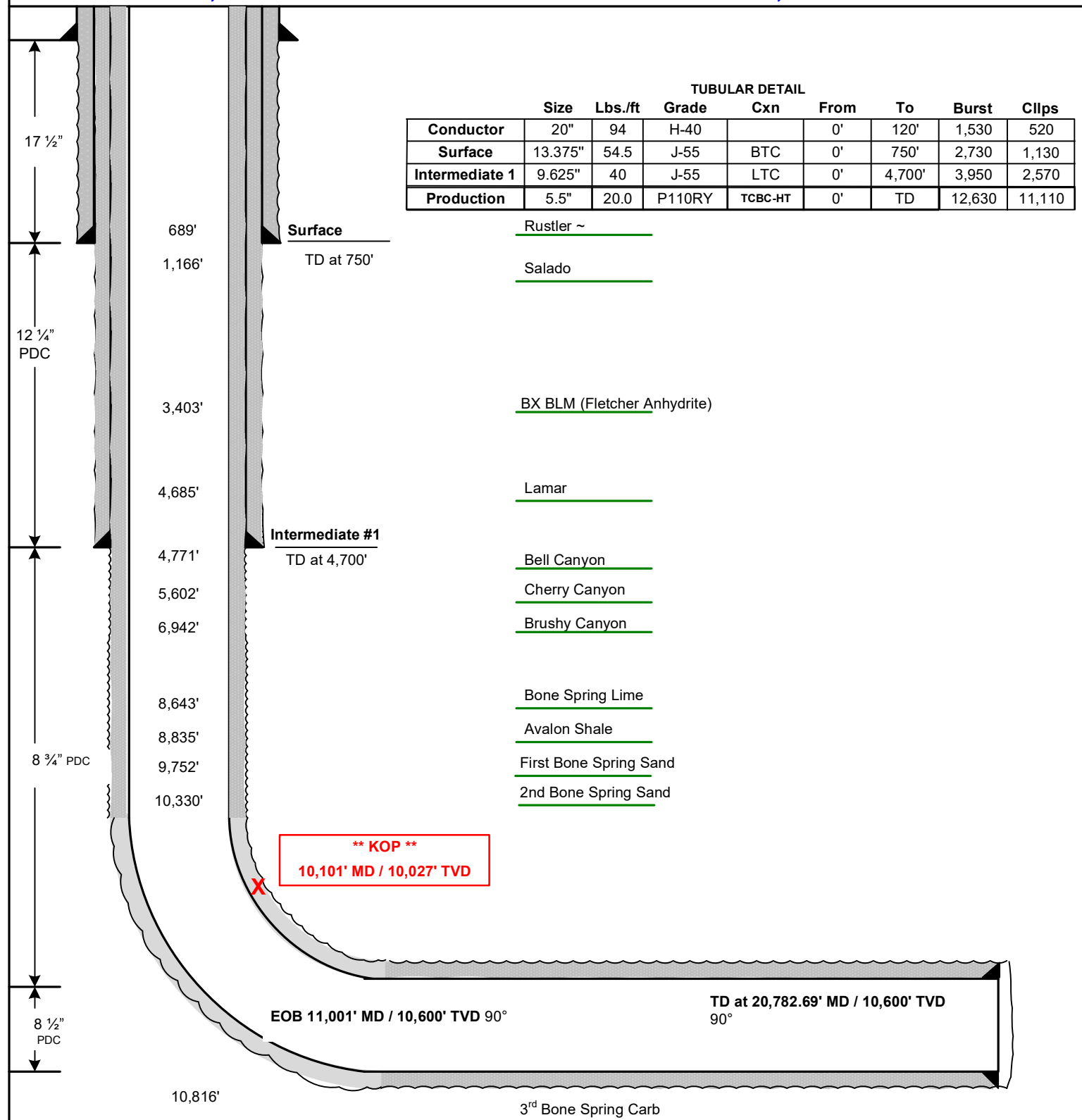
County : Lea

State : NM

Location : Lot C Section 8, T22S, R32E; 804' FNL & 2,159' FWL

BHL : Lot C, Section 32, T21S, R32E; 100' FNL & 1,531' FWL


KB Elev : 3,725.7 ft AMSL KB : 26 ft AGL GL Elev : 3,699.7 ft MSL





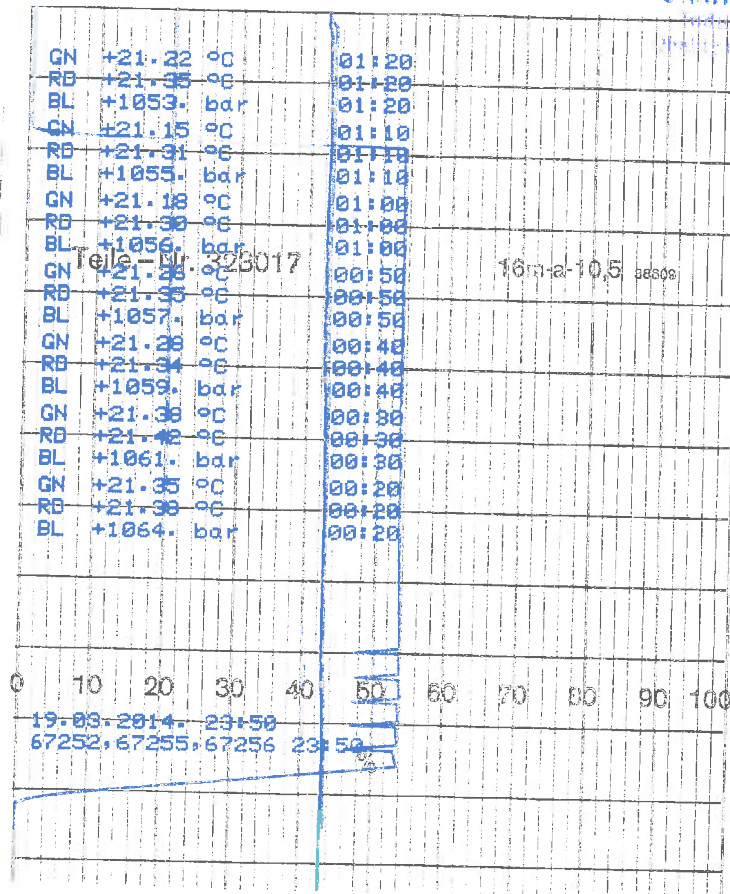
ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014 Page: 9 / 113
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 504	
PURCHASER: ContiTech Oil & Marine Corp.			P.O. N°: 4500409659		
CONTITECH RUBBER order N°: 538236		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 67255		NOMINAL / ACTUAL LENGTH: 10,67 m / 10,77 m			
W.P. 68,9 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature					
See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		9251 9254		AISI 4130	
4 1/16" 10K API b.w. Flange end				AISI 4130	
Not Designed For Well Testing				API Spec 16 C	
				Temperature rate:"B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
20. March 2014.				ContiTech Rubber Industrial Kft. Quality Control Dept. (1)  	

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1/1





CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 15 / 113

ContiTech

Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St. steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

Centennial Resource Development - Well Control Plan

A. Component and Preventer Compatibility Table

Component	OD (inches)	Preventer	RWP
Drillpipe	5	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Heavyweight Drillpipe	5	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
Drill collars and MWD tools	6 ¾	Annular	5M
Mud Motor	6 ¾	Annular	5M
Production Casing	5-1/2	Upper VBR: 3.5 – 5.5 Lower VBR: 3.5 – 5.5	10M
All	0 – 13 5/8	Annular	5M
Open-hole	-	Blind rams	10M

VBR = Variable Bore Rams

RWP = Rated Working Pressure

MWD = Measurement While Drilling (directional tools)

B. Well Control Procedures

I. General Procedures While Drilling:

1. Sound alarm (alert crew).
2. Space out drill-string.
3. Shut down pumps and stop rotary.
4. Open HCR
5. Shut-in well – utilizing upper VBRs.
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record
 - I. Shut-in drillpipe pressure (SIDPP) and shut-in casing pressure (SCIP).
 - II. Pit gain
 - III. Time
11. Regroup, identify forward plan

II. General Procedure While Tripping

1. Sound alarm (alert crew).
2. Stab full opening safety valve and close
3. Space out drillstring.
4. Open HCR
5. Shut-in well – utilizing upper VBRs
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
11. Regroup and identify forward plan.

III. General Procedure While Running Casing

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out string.
4. Open HCR
5. Shut-in well – utilizing upper VBRs.
6. Close choke
7. Confirm shut-in.
8. Notify rig manager and Centennial company representative.
9. Call Centennial drilling engineer
10. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
11. Regroup and identify forward plan.

IV. General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Open HCR
3. Shut-in with blind rams
4. Close choke
5. Confirm shut-in
6. Notify rig manager and Centennial company representative.
7. Call Centennial drilling engineer
8. Read and record:
 - I. SIDPP AND SICP
 - II. Pit gain
 - III. Time
9. Regroup and identify forward plan.

V. General Procedures While Pulling BHA Thru BOP Stack**1. Prior to pulling last joint of drillpipe thru stack:**

- I. Perform flow check, if flowing
 - a. Sound alarm, alert crew
 - b. Stab full opening safety valve and close
 - c. Space out drillstring with tool joint just beneath the upper pipe ram.
 - d. Open HCR
 - e. Shut-in utilizing upper VBRs
 - f. Close choke
 - g. Confirm shut-in
 - h. Notify rig manager and Centennial company representative.
 - i. Call Centennial drilling engineer
 - j. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- II. Regroup and identify forward plan

2. With BHA in the BOP stack and compatible ram preventer and pipe combo immediately available:

- a. Sound alarm, alert crew
- b. Stab full opening safety valve and close
- c. Space out drillstring with tool joint just beneath the upper pipe ram.
- d. Open HCR
- e. Shut-in utilizing upper VBRs
- f. Close choke
- g. Confirm shut-in
- h. Notify rig manager and Centennial company representative.
- i. Call Centennial drilling engineer
- j. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- II. Regroup and identify forward plan

3. With BHA in the BOP stack and no compatible ram preventer and pipe combo immediately available:

- I. Sound alarm, alert crew.
- II. If possible to pick up high enough, pull string clear of the stack and follow Open Hole (III) scenario.
- III. If impossible to pick up high enough to pull the string clear of the stack:
 - a. Stab crossover, make up one joint/stand of drill pipe and full opening safety valve and close.
 - b. Space out drillstring with tool joint just beneath the upper pipe ram.
 - c. Open HCR
 - d. Shut-in utilizing upper VBRs.
 - e. Close choke
 - f. Confirm shut-in
 - g. Notify rig manager and Centennial company representative.
 - h. Call Centennial drilling engineer
 - i. Read and record:
 - i. SIDPP and SICP
 - ii. Pit gain
 - iii. Time
- IV. Regroup and identify forward plan.

**** If annular is used to shut-in well and pressure builds to OR is expected to get to 50% of RWP, confirm space-out and swap to upper VBRs for shut-in.**

Mozzarella Federal Com 503H

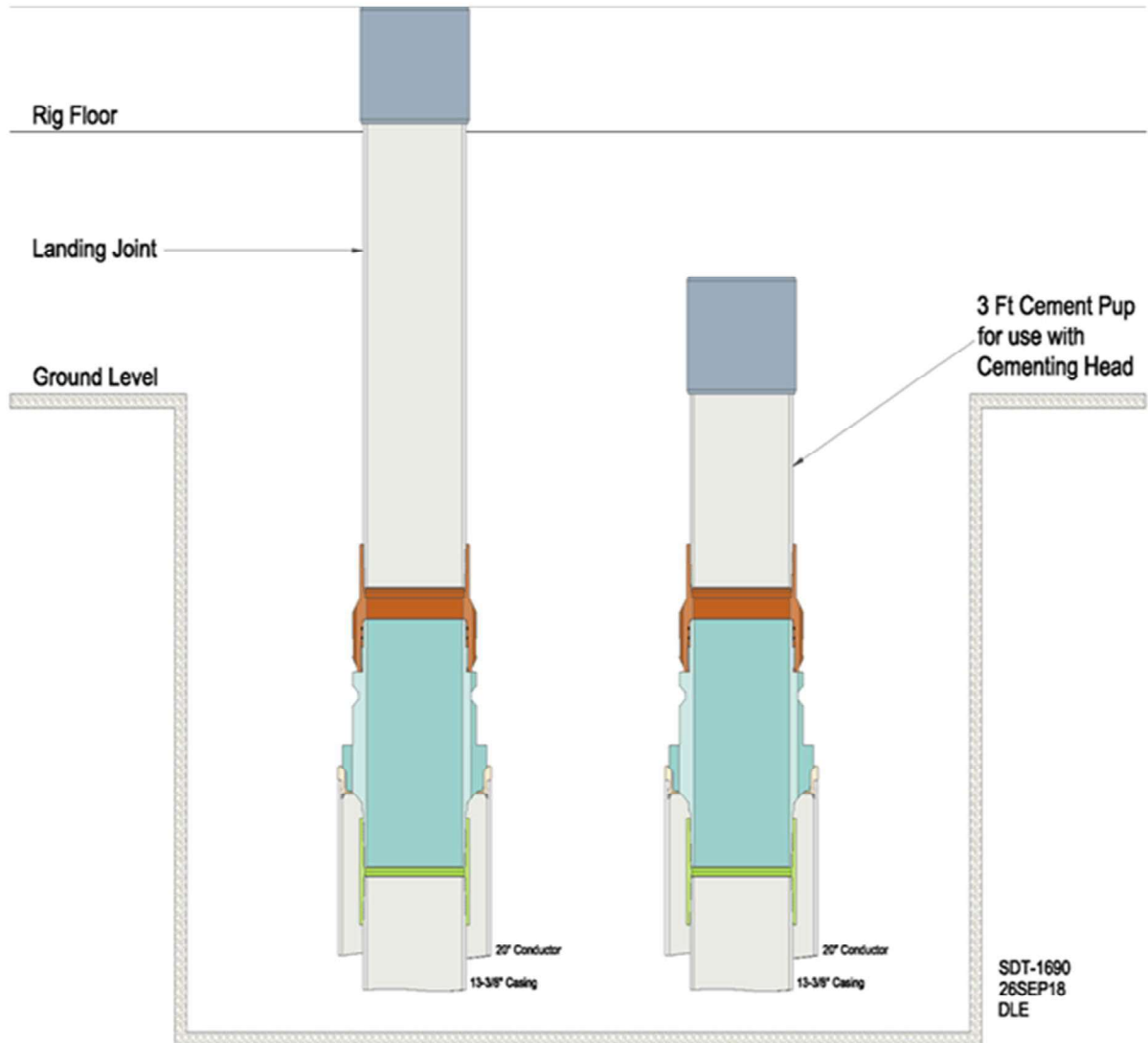
Centennial Offline Cementing Procedure

13-3/8" & 9-5/8" Casing

1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
 - a. If well is not static use the casing outlet valves to kill well
 - b. Drillers method will be used in well control event
 - c. High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d. Kill mud will be circulated once influx is circulated out of hole
 - e. Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.
17. Will only offline surface and intermediate casing.

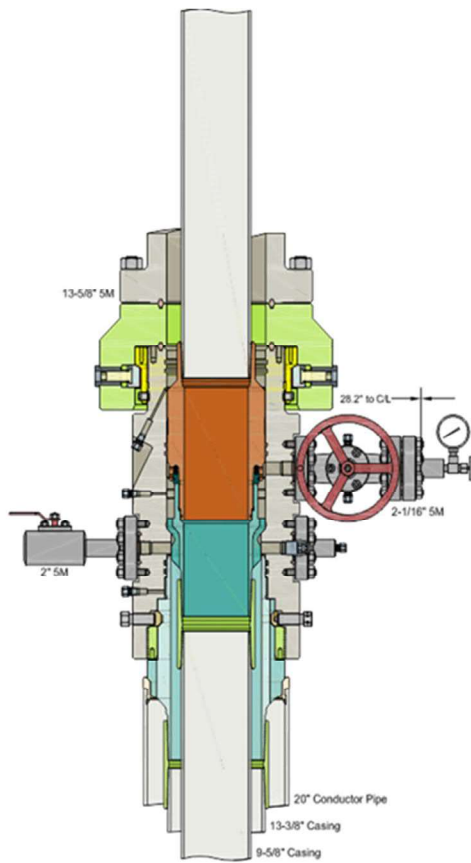
13 3/8" Surface job

CFL Off-Line Cementing Tool

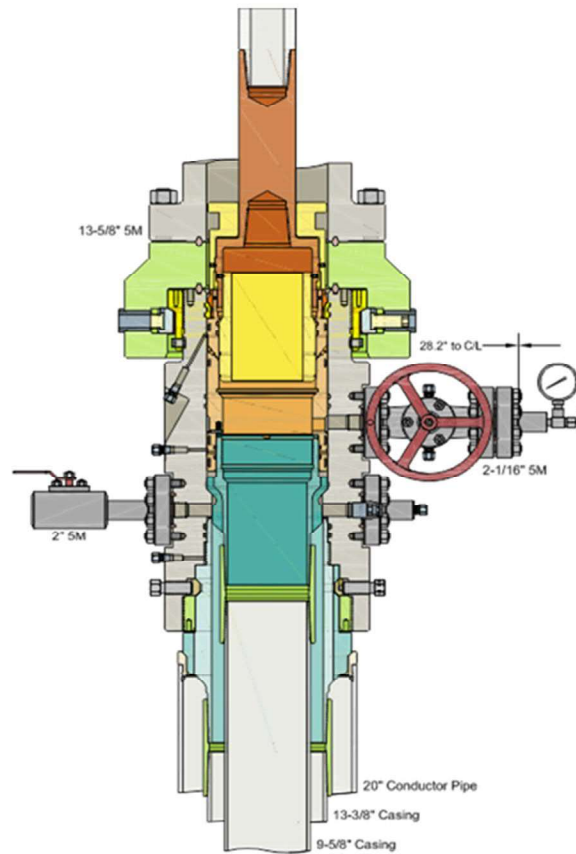




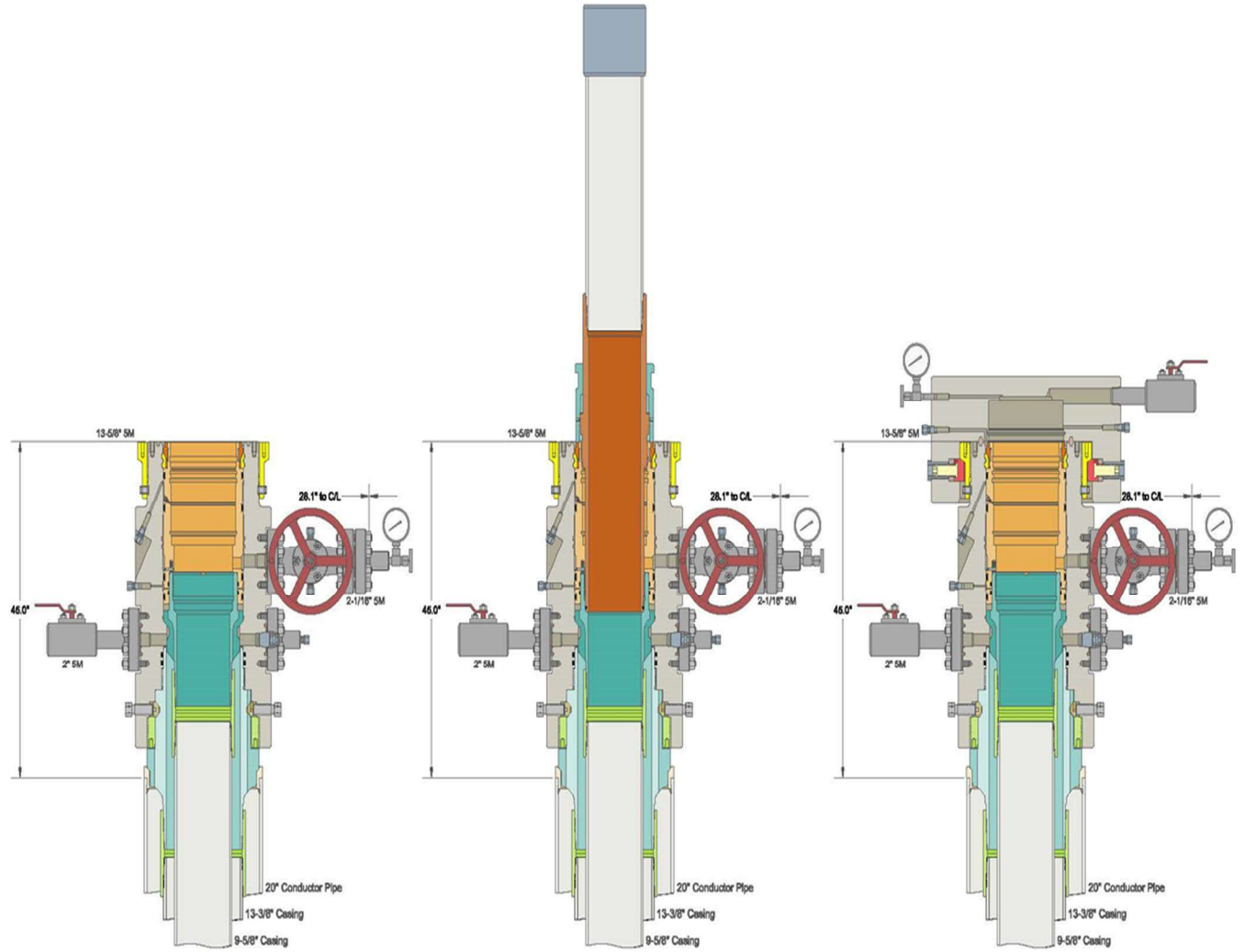
9 5/8" Intermediate Job



Run 9-5/8" Casing
Land Casing on 9-5/8" Mandrel Hanger
Cement 9-5/8" Casing
Retrieve Running Tool



Run 13-5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool





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

SUPO Data Report

03/08/2022

APD ID: 10400065773

Submission Date: 12/14/2020

Highlighted data
reflects the most
recent changes

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Mozzarella_Federal_Com_503H_Existing_Roads_20201125142000.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Mozzarella_Federal_Com_503H_Access_Roads_20201125142657.pdf

New road type: COLLECTOR

Length: 3597

Feet

Width (ft.): 30

Max slope (%): 2

Max grade (%): 8

Army Corp of Engineers (ACOE) permit required? N

ACOE Permit Number(s):

New road travel width: 20

New road access erosion control: Drainage and erosion will be constantly monitored to prevent compromising the road integrity, and to protect the surrounding native topography.

New road access plan or profile prepared? N

New road access plan attachment:

Access road engineering design? N

Access road engineering design attachment:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Turnout?** N**Access surfacing type:** OTHER**Access topsoil source:** ONSITE**Access surfacing type description:** Caliche**Access onsite topsoil source depth:** 4**Offsite topsoil source description:****Onsite topsoil removal process:** Equipment will be used to strip 4 inches in depth and stockpile, utilizing berms for run-off.**Access other construction information:****Access miscellaneous information:** Caliche will be hauled from the existing BLM pit located in the SW/4, NE/4, Sec 4, T22S, R32E}. Pit has been identified for use in the attached exhibit.**Number of access turnouts:****Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT**Drainage Control comments:** Will be monitored and repaired as necessary.**Road Drainage Control Structures (DCS) description:** Drainage and erosion will be constantly monitored to prevent compromising the road integrity, and to protect the surrounding native topography.**Road Drainage Control Structures (DCS) attachment:**

Access Additional Attachments

Additional Attachment(s):

Mozzerella_Caliche_Route_20201125144224.pdf

Section 3 - Location of Existing Wells

Existing Wells Map? YES**Attach Well map:**

Mozzarella_Federal_Com_503H_Well_Proximity_Map_20201125150225.pdf

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

Submit or defer a Proposed Production Facilities plan? SUBMIT**Production Facilities description:** Production facility will be located on the NE/4 NW/4 of Sec. 8, T22S-R32E, off pad on the west side of the drilling pad, where oil and gas sales will take place. Facility pad is 200' x 500'.**Production Facilities map:**

Mozzarella_Federal_Com_CTB_20201125152717.pdf

Mozzarella_Federal_Com_CTB_Layout_20201125152729.pdf

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Section 5 - Location and Types of Water Supply****Water Source Table****Water source type:** GW WELL**Water source use type:** STIMULATION**Source latitude:****Source longitude:****Source datum:****Water source permit type:** PRIVATE CONTRACT**Water source transport method:** PIPELINE**Source land ownership:** FEDERAL**Source transportation land ownership:** FEDERAL**Water source volume (barrels):** 450000**Source volume (acre-feet):** 58.00189335**Source volume (gal):** 18900000**Water source and transportation map:**

Mozzerella_Water_Route_20201125153240.pdf

Water source comments: Temporary surface lines will be used to transport water for drilling and completion operations from private pit to Mozzarella development. Existing frac ponds in Sec 6-T22S-R32E will be utilized for fresh water and the source location for recycled water is tbd.

New water well? N**New Water Well Info****Well latitude:****Well Longitude:****Well datum:****Well target aquifer:****Est. depth to top of aquifer(ft):****Est thickness of aquifer:****Aquifer comments:****Aquifer documentation:****Well depth (ft):****Well casing type:****Well casing outside diameter (in.):****Well casing inside diameter (in.):****New water well casing?****Used casing source:****Drilling method:****Drill material:****Grout material:****Grout depth:****Casing length (ft.):****Casing top depth (ft.):**

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Well Production type:****Completion Method:****Water well additional information:****State appropriation permit:****Additional information attachment:**

Section 6 - Construction Materials

Using any construction materials: YES**Construction Materials description:** Caliche will be hauled from the existing pit located in the SW/4, Sec 4, T22S, R32E.**Construction Materials source location attachment:**

Mozzerella_Caliche_Route_20201125153730.pdf

Mozzerella_Water_Route_20201125153736.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING**Waste content description:** Brine water based drilling fluid.**Amount of waste:** 1500 barrels**Waste disposal frequency :** Monthly**Safe containment description:** Steel tanks with plastic-lined containment berms.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to approved facility.**Waste type:** DRILLING**Waste content description:** Drill Cuttings**Amount of waste:** 1500 barrels**Waste disposal frequency :** Monthly**Safe containment description:** Steel tanks**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to approved facility.

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Waste type:** DRILLING**Waste content description:** Fresh water based drilling fluid.**Amount of waste:** 1500 barrels**Waste disposal frequency :** Weekly**Safe containment description:** Steel tanks with plastic-lined containment berms**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to approved facility.**Waste type:** SEWAGE**Waste content description:** Grey water/Human waste**Amount of waste:** 5000 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Approved waste storage tanks with containment**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to approved facility.**Waste type:** GARBAGE**Waste content description:** General trash/garbage**Amount of waste:** 5000 pounds**Waste disposal frequency :** Weekly**Safe containment description:** Enclosed trash trailer.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to approved facility.**Reserve Pit****Reserve Pit being used?** NO**Temporary disposal of produced water into reserve pit?** NO

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Reserve pit length (ft.)****Reserve pit width (ft.)****Reserve pit depth (ft.)****Reserve pit volume (cu. yd.)****Is at least 50% of the reserve pit in cut?****Reserve pit liner****Reserve pit liner specifications and installation description**

Cuttings Area

Cuttings Area being used? NO**Are you storing cuttings on location?** Y**Description of cuttings location** Waste stored in steel tanks. Hauled off to a commercial approved facility.**Cuttings area length (ft.)****Cuttings area width (ft.)****Cuttings area depth (ft.)****Cuttings area volume (cu. yd.)****Is at least 50% of the cuttings area in cut?****WCuttings area liner****Cuttings area liner specifications and installation description**

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: N**Ancillary Facilities attachment:****Comments:**

Section 9 - Well Site Layout

Well Site Layout Diagram:

Mozzarella_Federal_Com_Location_Layout_20201125154926.pdf

Mozzarella_Federal_Com_Rig_Layout_20201125155109.pdf

Comments:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: MOZZARELLA FED 8 NENW

Multiple Well Pad Number: 1

Recontouring attachment:

Mozzarella_Federal_Com_503H_Reclamation_Plat_20201125155607.pdf

Drainage/Erosion control construction: Culverts will be installed on an as needed basis.

Drainage/Erosion control reclamation: Water breaks will be added if needed, to prevent unnatural erosion and loss of vegetation.

Well pad proposed disturbance (acres): 8.37

Road proposed disturbance (acres): 6.299

Powerline proposed disturbance (acres): 0

Pipeline proposed disturbance (acres): 0

Other proposed disturbance (acres): 1.707

Total proposed disturbance: 16.376

Well pad interim reclamation (acres): 0

Road interim reclamation (acres): 4.648

Powerline interim reclamation (acres): 0

Pipeline interim reclamation (acres): 0

Other interim reclamation (acres): 0

Total interim reclamation: 4.648

Well pad long term disturbance (acres): 8.37

Road long term disturbance (acres): 1.651

Powerline long term disturbance (acres): 0

Pipeline long term disturbance (acres): 0

Other long term disturbance (acres): 0

Total long term disturbance: 10.020999999999999

Disturbance Comments:

Reconstruction method: This pad will not be reclaimed as it is a drill island.

Topsoil redistribution: Topsoil will be stock piled along the north fill slope and south edge of the borrow area. Topsoil along the south edge of borrow area will be redistributed over the borrow area at this is a drill island and will not be reclaimed.

Soil treatment: Native soil will be used in the initial construction of the well pad. Pad will be compacted using fresh water, dust control measures will be implemented as needed.

Existing Vegetation at the well pad: Surface disturbance will be limited to well site surveyed and extending south to borrow deficit quantities. Topsoil will be stored along the north edge of pad site and south edge of borrow area.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Will be windrowed to the edge of the disturbance and be utilized as a barrier from water run-off.

Existing Vegetation Community at other disturbances attachment:

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary

Total pounds/Acre:

Seed Type

Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

Phone:

Email:

Seedbed prep: Prepare a 3-5 inch deep seedbed, with the top 3-4 inches consisting of topsoil.

Seed BMP: Seeding will be done in the proper season and monitored for the re-establishment of native vegetation.

Seed method: Broadcast

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: Spray for noxious weeds and bare ground as needed.

Weed treatment plan attachment:

Monitoring plan description: All disturbed areas will be closely monitored for any primary or secondary noxious weeds.

Monitoring plan attachment:

Success standards: No primary or secondary noxious weed will be allowed. Vegetation will be returned to its native standard.

Pit closure description: No open pits will be constructed.

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC**Well Name:** MOZZARELLA FEDERAL COM**Well Number:** 503H**Pit closure attachment:**

Section 11 - Surface Ownership

Disturbance type: WELL PAD**Describe:****Surface Owner:** BUREAU OF LAND MANAGEMENT**Other surface owner description:****BIA Local Office:****BOR Local Office:****COE Local Office:****DOD Local Office:****NPS Local Office:****State Local Office:****Military Local Office:****USFWS Local Office:****Other Local Office:****USFS Region:****USFS Forest/Grassland:****USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? N**Use APD as ROW?****ROW Type(s):**

ROW Applications

SUPO Additional Information:**Use a previously conducted onsite?** Y

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Previous Onsite information: Onsite conducted by Paul Murphy on 10/18/18. Drill Island facilities.

Other SUPO Attachment

Mozzarella_Federal_Com_503H_504H_SUPO_20201214123536.pdf

LEA COUNTY, NM
KEITH MANES, COUNTY CLERK
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01/09/2019 03:24 PM
BY ANGELA BEAUCHAMP

EXHIBIT C**MEMORANDUM OF SURFACE USE AND COMPENSATION AGREEMENT**

For good and valuable consideration, Quail Ranch, LLC, whose address is One Concho Center, 600 West Illinois Avenue, Midland, Texas 79701 ("**Surface Owner**"), and Centennial Resource Production, LLC, a Delaware limited liability company, whose address is 1001 17th Street, Suite 1800, Denver, CO 80202, ("**Operator**"), have entered into that certain Surface Use and Compensation Agreement dated to be effective as of November 10, 2018 ("**Agreement**"), for the purpose of setting forth certain terms and conditions under which Operator can conduct various surface uses and/or operations in, on and under the following described lands owned by Surface Owner in Lea County, New Mexico (the "**Subject Lands**"), to-wit:

All of Section 15, All off Section 16, the North ½ of Section 21 and the East ½ of the Southeast ¼ and the West ½ of the Southwest ¼ of Section 21, All of Section 22, the Northwest ¼ of Section 27, The North ½ and Southwest ¼ of the Northeast ¼ of Section 27 and the North ½ of the Southwest ¼ of Section 27, all in Township 24 South, Range 34 East, N.M.P.M., Lea County, New Mexico

The Agreement is for a term beginning on the Effective Date, being November 10, 2018, and as long thereafter as Operator conducts oil and gas operations on the Subject Lands or any portion thereof with no cessation of such oil and gas operations of more than one hundred eighty (180) consecutive days. The Agreement, with all of its terms, covenants, and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement, which, by its express terms, shall run with the land and is binding upon the respective heirs, successors, assigns and personal representatives of Surface Owner and Operator. An original of the Agreement is maintained in the files of both Surface Owner and Operator at their respective addresses set forth above.

This Memorandum is signed as of the date of acknowledgment of the signatures of Surface Owner and Operator's authorized officer below but is effective for all purposes as of the effective date of the Agreement, as stated above.

SURFACE OWNER:**QUAIL RANCH, LLC**By: 

Christopher Boehler
Attorney-In-Fact

OPERATOR:**CENTENNIAL RESOURCE
PRODUCTION, LLC**By: 

Sean Marshall
VP of Land

BT

SUR2199

LEA COUNTY, NM
 KEITH MANES, COUNTY CLERK
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 01/09/2019 03:24 PM
 BY ANGELA BEAUCHAMP

ACKNOWLEDGMENTS

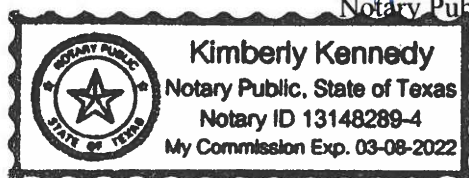
STATE OF TEXAS §
 §
 COUNTY OF MIDLAND §

This instrument was acknowledged before me on this 18th day of December, 2018, by Christopher Boehler, as Attorney-In-Fact for QUAIL RANCH, LLC, a Delaware limited liability company, on behalf of said limited liability company.

Kimberly Kennedy
 Notary Public-State of Texas

My commission expires:

3/8/2022

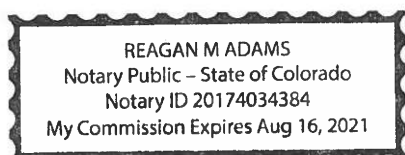


STATE OF DENVER §
 §
 COUNTY OF COLORADO §

This instrument was acknowledged before me on this 12th day of November, 2018, by Sean Marshall, as Vice President of Land] for Centennial Resource Production, LLC, a Delaware limited liability company, on behalf of said company.

Reagan M Adams
 Notary Public-State of Colorado

My commission expires:



MOZZARELLA FEDERAL COM 503H & 504H

SURFACE USE PLAN

EXISTING ROADS (ROAD PLATS ATTACHED AS PLAT #1)

- The operator will improve or maintain existing road in a condition the same as or better than before operations begin. The operator will repair potholes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or the dust suppression chemicals on roadways.

DIRECTIONS (PLAT ATTACHED AS PLAT #2)

- PROCEED IN A EASTERLY, THEN NORTHEASTERLY, THEN EASTERLY DIRECTION FROM CARLSBAD, NEW MEXICO ALONG U.S. HIGHWAY 62 APPROXIMATELY 31.1 MILES TO THE JUNCTION OF THIS ROAD AND CAMPBELL ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY, THEN SOUTHEASTERLY, THEN SOUTHERLY DIRECTION APPROXIMATELY 9.0 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE EAST; TURN LEFT AND PROCEED IN AN EASTERLY, THEN NORTHERLY, THEN EASTERLY DIRECTION APPROXIMATELY 1.6 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTH; TURN RIGHT AND PROCEED IN A SOUTHERLY DIRECTION APPROXIMATELY 1.3 MILES TO THE JUNCTION OF THIS ROAD AND AN EXISTING ROAD TO THE SOUTHWEST; TURN RIGHT AND PROCEED IN A SOUTHWESTERLY, THEN SOUTHERLY DIRECTION APPROXIMATELY 0.2 MILES TO THE BEGINNING OF THE

PROPOSED ACCESS ROAD "a" TO THE SOUTHWEST; FOLLOW ROAD FLAGS IN A SOUTHWESTERLY, THEN SOUTHERLY, THEN NORTHEASTERLY, THEN EASTERLY, THEN NORTHERLY, THEN EASTERLY DIRECTION APPROXIMATELY 3,292' TO THE PROPOSED LOCATION.

NEW OR RECONSTRUCTED ACCESS ROADS (WELL PLAT ATTACHED AS PLAT #3)

- There will be approximately 3,597.41' of new road construction for the well pad and facilities.
- Road Width: The access roads shall have a driving surface that creates the smallest possible surface disturbance and does not exceed 30'. (see "Access Road ROW" plat attached)
- Maximum Grade: 8%
- Crown Design: Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2%. The road shall conform to cross section and plans for typical road construction found in the BLM Gold Book.
- Ditch Design: Ditching will be constructed on both sides of road.
- Cattle guards: None suggested.
- Major Cuts and Fills: 2:1 during drilling and completions. Cuts and fills taken back to 3:1 at interim.
- Type of surfacing Material: Caliche.

LOCATION OF EXISTING WELLS (DIAGRAM & SPREADSHEET ATTACHED AS PLAT #4)

- 1-mile radius map and well details attached.

LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES (WORK AREA DETAIL MAP ATTACHED AS PLAT #5)

- Facilities:
 - o Production facility will be located on the NE ¼ NW ¼ of Sec. 8, T22S-R32E, off pad on the west side of the drilling pad, where oil

and gas sales will take place. The facility is approximately 500' x 200'.

- We will tie into the existing pipeline, west of the pad.
- Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting and nesting.
- Facility will have a secondary containment 1.5 times the holding capacity of largest storage tank.
- All above ground structures will be painted non-reflective shale green for blending with the environment.
- The tank battery will be connected to the existing water gathering system in the field for permanent water disposal.

LOCATION OF PROPOSED ROW (WELL PLAT ATTACHED AS PLAT #6)

- Pipelines: 1 – buried SWD pipeline <12 ¾" OD , approximately 1,185', will be laid from the CTB in Section 8, going West to an existing SWD line that runs along the East line of section 6-T22S-R32E.
 - A ROW will be required for these pipelines.
 - All construction activity will be confined to the approved ROW.
 - Pipeline will run parallel to the road and will stay within approved ROW.
- Powerlines: A powerline, will be installed from the well location to an existing PME located within section 6-T22S-R32E, approximately 3,962'.
 - A ROW will be required for this OHE line.
 - All construction activity will be confined to the approved ROW.
 - Powerline will run parallel to the road and will stay within approved ROW.

LOCATION AND TYPES OF WATER (WORK AREA DETAILED MAP ATTACHED AS PLAT #7)

- Existing frac ponds in Sec 6, T22S-R32E will be utilized for fresh water and the source for recycled water is TBD.
- Fresh water will be obtained from a BLM water source known as the Jerrah #1.

- Temporary expanding water surface line will be used to transport water for drilling and completion operations from the pipeline to the Mozzarella location along existing lease road a total of approx. 11,500' from the well location to the existing frac pond in Sec 6.
 - o Fresh water line will run parallel to the existing lease road, then north within an existing pipeline right of way.
 - o A BLM ROW will be required for the water transfer line.

CONSTRUCTION MATERIAL

- Caliche will be hauled from the existing BLM pit located in {SW4 NE4, Sec 4, T22S, R32E}. Pit has been identified for use in the attached exhibit.
- Any native caliche on the proposed site can be used by "flipping" the location and using all native soils.
 - o Notification shall be given to the BLM two working days prior to commencing construction of access road and /or well pad.

METHODS FOR HANDLING WASTE

- Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.
- Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.
- Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.
- After drilling and completion operations, trash, chemicals, salts frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.
- The well will be drilled utilizing a closed loop system. Drill cuttings will be properly disposed of into steel tank and taken to an NMOCD approved disposal facility.

ANCILLARY FACILITIES

- None

WELL SITE LAYOUT (WELL SITE PLAT ATTACHED AS PLAT #8)

- Well Site Plat
 - o Exterior well pad dimensions are 595' x 550'.
 - o Interior well pad dimensions from point of entry (well head) of the westernmost well are N-200', S-350', W-270', E-325'. The length to the east includes 30' spacing for next well on multi-well pad (two wells). Total disturbance area needed for construction of well pad will be 7.51 acres.
 - o Top soil placement is on the south side of pad. Interim reclamation is planned to be completed upon completion of well and evaluation of best management practices. (Reclamation plat attached.

PROPOSED PAD CUT & FILL (PLAT ATTACHED AS PLAT #9)

- Cut and fill: will be minimal.

RIG LAYOUT (ATTACHED AS PLAT #10)

PLANS FOR SURFACE RECLAMATION (RECLAMATION PLAT ATTACHED AS PLAT #11)

Reclamation Objectives

- The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.
- The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

- The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.
- If circumstances allow, interim reclamation and/or final reclamation actions will be completed. We will gain written permission from the BLM if more time is needed.

Reclamation will be performed by using the following procedures:

Interim Reclamation Procedures

- Within 6 months, Centennial will contact BLM Surface Management Specialists to devise the best strategies to reduce the size of the location. Current plans for interim reclamation include reducing the pad size to approximately 3.989 acres from the proposed size of 4.870 acres. the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not require for production. A plan will be submitted showing where interim reclamation will be completed to allow for safe operations, protection of the environment outside of drilled well, and following best Management practices found in the BLM "Gold Book".
- In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to res-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Notice: Constructed slopes may be much steeper during drilling but will be recontoured to the above ratios during interim reclamation.
- Topsoil will be evenly re-spread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture (BLM#2), free of noxious weeds, will be used.

- Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
- The interim reclamation will be monitored periodically to ensure that vegetation has reestablished.

Final Reclamation (well pad, buried pipelines, and powerlines, etc.)

- Prior to final reclamation procedures, the well pad, road and surrounding area will be cleared of material, trash, and equipment.
- All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- All disturbed areas, including roads, pipelines, pads, production facilities and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
- After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM seed mixture (BLM #2), free of noxious weeds.
- Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding areas.

SURFACE OWNERSHIP

- Well pad and all other infrastructure is on BLM surface.

OTHER INFORMATION

- On-site performed by BLM NRS Paul Murphy 4/25/19
- Erosion / Drainage: Drainage control system shall be constructed on the entire length of road using any of the following: ditches, side hill out-sloping and in-sloping, lead-off ditched, culvert installation, or low water crossings.
- Enclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation, or low water crossings.

- Enclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until backfilling takes place.
- Terrain: Landscape is flat
- Soil: Sandy loam
- Vegetation: Vegetation present in surrounding area includes mesquite, shrubs, and grass (needle-grass, burro grass, dropseed).
- Wildlife: No wildlife observed, but it is likely that deer, rabbits, coyotes and rodents pass through the area.
- Surface Water: No surface water concerns.
- Cave Karst: Low Karst area with no cave or visual signs of caves found.
- Watershed Protection: The entire perimeter of the well pad will be bermed to prevent oil, salt and other chemical contaminants from leaving the well pad.



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

PWD Data Report

03/08/2022

APD ID: 10400065773

Submission Date: 12/14/2020

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

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: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

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: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number:

Injection well name:

Assigned injection well API number?

Injection well API number:

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Other PWD discharge volume (bbl/day):

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

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

03/08/2022

APD ID: 10400065773

Submission Date: 12/14/2020

Highlighted data
reflects the most
recent changes

Operator Name: CENTENNIAL RESOURCE PRODUCTION LLC

Well Name: MOZZARELLA FEDERAL COM

Well Number: 503H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001841

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720

District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 746-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-50228		² Pool Code 5695	³ Pool Name Bilbrey Basin; Bone Spring
⁴ Property Code 326979	⁵ Property Name MOZZARELLA FEDERAL COM		⁶ Well Number 503H
⁷ OGRID No. 372165	⁸ Operator Name CENTENNIAL RESOURCE PRODUCTION, LLC		⁹ Elevation 3699.7'

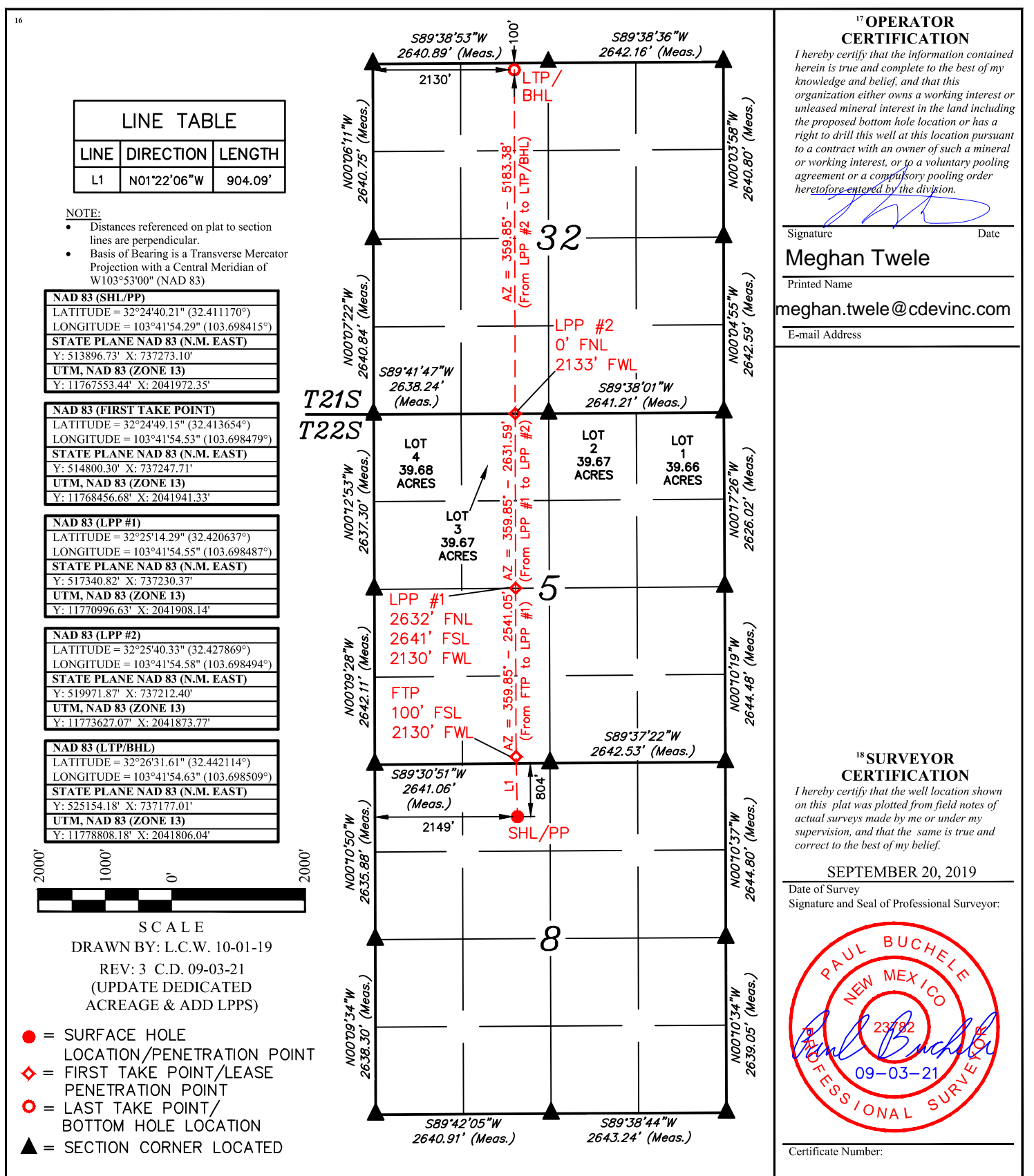
¹⁰Surface Location

UL or lot no. C	Section 8	Township 22S	Range 32E	Lot Idn	Feet from the 804	North/South line NORTH	Feet from the 2149	East/West line WEST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. C	Section 32	Township 21S	Range 32E	Lot Idn	Feet from the 100	North/South line NORTH	Feet from the 2130	East/West line WEST	County LEA
¹² Dedicated Acres 639.34		¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.			

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



State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Centennial Resource Prod, LLC **OGRID:** 372165 **Date:** 3/10/2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Mozzarella Fed Com 503H	30-025-50228	C-8-22S-32E	804FNL&2149FWL	2400 BBL/D	2400 MCF/D	14,400 BBL/D
Mozzarella Fed Com 504H		C-8-22S-32E	804FNL&2184FWL	2400 BBL/D	2400 MCF/D	14,400 BBL/D

IV. Central Delivery Point Name: Mozzarella CDP [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Mozzarella Fed Com 503H	30-025-50228	1/29/2023	2/06/2023	4/1/2023	4/16/2023	4/16/2023
Mozzarella Fed Com 504H		2/12/2023	2/20/2023	4/1/2023	4/16/2023	4/16/2023

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

■ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

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I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: <i>Stewart MacCallum</i>
Printed Name: Stewart MacCallum
Title: Director of Marketing
E-mail Address: Stewart.MacCallum@cdevinc.com
Date: 5/11/2022
Phone: (720) 499-1458
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

Centennial Resource Production, LLC (372165)

Natural Gas Management Plan Descriptions**VI. Separation Equipment:**

Centennial utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations. Our goal is to maintain 5 minutes of retention time in the test vessel and 20 minutes in the heater treater at peak production rates. The gas produced is routed from the separator to the gas sales line.

VII. Operational Practices:*Drilling*

During Centennial's drilling operations it is uncommon for venting or flaring to occur. If flaring is needed due to safety concerns, gas will be routed to a flare and volumes will be estimated.

Flowback

During completion/recompletion flowback operations, after separation flowback begins and as soon as it is technically feasible, Centennial routes gas through a permanent separator and the controlled facility where the gas is either sold or flared through a high-pressure flare if needed.

Production

Per 19.15.27.8.D, Centennial's facilities are designed to minimize waste. Our produced gas will only be vented or flared in an emergency or malfunction situation, except as allowed for normal operations noted in 19.15.27.8.D(2) & (4). All gas that is flared is metered. All gas that may be vented will be estimated.

Performance Standards

Centennial utilizes a production forecast from our Reservoir Engineering team to appropriately size each permanent, 3-phase separator and heater treater utilized for production operations.

All of Centennial's permanent storage tanks associated with production operations which are routed to a flare or control device are equipped with an automatic gauging system.

All of Centennial's flare stacks, both currently installed and for future installation, are:

- 1) Appropriately sized and designed to ensure proper combustion efficiency.
- 2) Equipped with an automatic ignitor or continuous pilot.
- 3) Anchored and located at least 100 feet from the well and storage tanks.

Centennial's field operations and HSE teams have implemented an AVO inspection schedule that adheres to the requirements of 19.15.27.8.E(5).

All of our operations and facilities are designed to minimize waste. We routinely employ the following methods and practices:

- Closed-loop systems
- Enclosed and properly sized tanks

Centennial Resource Production, LLC (372165)

- Vapor recovery units to maximize recovery of low-pressure gas streams and potential unauthorized emissions
- Low-emitting or electric engines whenever practical
- Combustors and flare stacks in the event of a malfunction or emergency
- Routine facility inspections to identify leaking components, functioning control devices, such as flares and combustors, and repair / replacement of malfunctioning components where applicable

Measurement or estimation

Centennial measures or estimates the volumes of natural gas vented, flared and/or beneficially used for all of our drilling, completing and producing wells. We utilize accepted industry standards and methodology which can be independently verified. Annual GOR testing is completed on our wells and will be submitted as required by the OCD. None of our equipment is designed to allow diversion around metering elements except during inspection, maintenance and repair operations.

VIII. Best Management Practices:

Centennial utilizes the following BMPs to minimize venting during active and planned maintenance activities:

- Use a closed-loop process wherever possible during planned maintenance activities, such as blowdowns, liquid removal, and work over operations.
- Employ low-emitting or electric engines for equipment, such as compressors
- Adhere to a strict preventative maintenance program which includes routine facility inspections, identification of component malfunctions, and repairing or replacing components such as hatches, seals, valves, etc. where applicable
- Utilize vapor recovery units (VRU's) to maximize recovery of volumes of low-pressure gas streams and potential unauthorized emissions
- Route low pressure gas and emissions streams to a combustion device to prevent venting where necessary

District I

1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 104488

CONDITIONS

Operator: CENTENNIAL RESOURCE PRODUCTION, LLC 1001 17th Street, Suite 1800 Denver, CO 80202	OGRID: 372165
	Action Number: 104488
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	6/8/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	6/8/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	6/8/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	6/8/2022