Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NMNM119271

6. If Indian, Allotee or Tribe Name:

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

7. If Unit or CA Agreement, Name and No.: NMNM 138686

8. Lease Name and Well No.: HARROUN RANCH FED COM 5H

2. Name of Operator: BTA OIL PRODUCERS LLC

9. API Well No.: 30 015 46976

3a. Address: 104 S. Pecos, Midland, TX 79701

3b. Phone No. *(include area code)*: (432) 682-3753

10. Field and Pool, or Exploratory: BOBCAT DRAW/BOBCAT DRAW; UPPE

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface: SESE / 310 FSL / 765 FEL / LAT 32.284072 / LONG -104.000954

At proposed prod. zone: NENE / 50 FNL / 330 FEL / LAT 32.312319 / LONG -104.999286

11. Sec., T. R. M. or Blk. and Survey or Area: SEC 20/T23S/R29E/NMP

14. Distance in miles and direction from nearest town or post office*: 5 miles

12. County or Parish: EDDY

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 310 feet

16. No of acres in lease: 160

17. Spacing Unit dedicated to this well: 640.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 1000 feet

19. Proposed Depth: 10952 feet / 21173 feet

20. BLM/BIA Bond No. in file: FED: NMB001711

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3019 feet

22. Approximate date work will start*: 03/29/2020

23. Estimated duration: 30 days

24. Attachments

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

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

25. Signature: (Electronic Submission)

Name *(Printed/Typed)*: Sammy Hajar / Ph: (432) 682-3753

Date: 09/30/2019

Title: Regulatory Analyst

Approved by *(Signature)*: (Electronic Submission)

Name *(Printed/Typed)*: Cody Layton / Ph: (575) 234-5959

Date: 03/04/2020

Title: Assistant Field Manager Lands & Minerals

Office: Carlsbad Field Office

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

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

APPROVED WITH CONDITIONS

Approval Date: 03/04/2020

(Continued on page 2)

*(Instructions on page 2)

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
3001546976		PURPLE SAGE ; WOLFCAMP

Property Code	Property Name	Well Number
328097	HARROUN RANCH FED COM	5H

OGRID No.	Operator Name	Elevation
260297	BTA OIL PRODUCERS, LLC	3019'

Surface Location

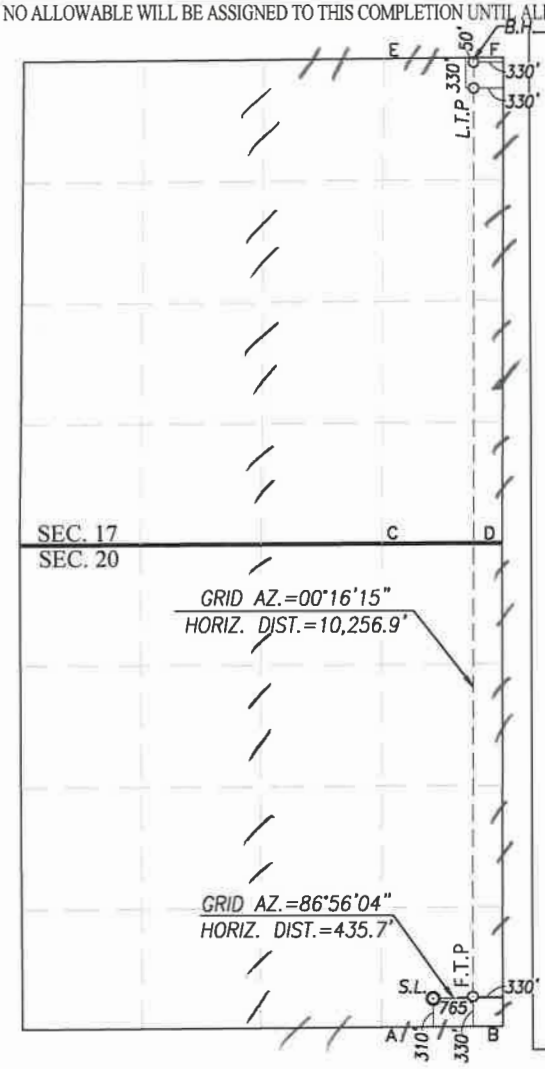
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	20	23-S	29-E		310	SOUTH	765	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	17	23-S	29-E		50	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
640			

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



SCALE: 1"=2000'

BOTTOM HOLE LOCATION
NAD 83 NME
Y= 477515.0 N
X= 644535.8 E
LAT.=32.312319° N
LONG.=103.999286° W

BOTTOM HOLE LOCATION
NAD 27 NME
Y= 477455.3 N
X= 603352.8 E
LAT.=32.312198° N
LONG.=103.998794° W

LAST TAKE POINT
NAD 83 NME
Y= 477235.0 N
X= 644534.5 E
LAT.=32.311550° N
LONG.=103.999293° W

LAST TAKE POINT
NAD 27 NME
Y= 477175.4 N
X= 603351.5 E
LAT.=32.311428° N
LONG.=103.998801° W

CORNER COORDINATES TABLE
NAD 27 NME
A - Y= 466863.5 N, X= 602303.2 E
B - Y= 466873.6 N, X= 603633.4 E
C - Y= 472185.4 N, X= 602319.5 E
D - Y= 472190.0 N, X= 603643.0 E
E - Y= 477496.2 N, X= 602367.2 E
F - Y= 477508.4 N, X= 603683.2 E

CORNER COORDINATES TABLE
NAD 83 NME
A - Y= 466922.9 N, X= 643486.5 E
B - Y= 466933.0 N, X= 644816.7 E
C - Y= 472245.0 N, X= 643502.6 E
D - Y= 472249.5 N, X= 644826.1 E
E - Y= 477555.8 N, X= 643550.1 E
F - Y= 477568.0 N, X= 644866.1 E

FIRST TAKE POINT
NAD 83 NME
Y= 467260.4 N
X= 644487.3 E
LAT.=32.284132° N
LONG.=103.999546° W

FIRST TAKE POINT
NAD 27 NME
Y= 467201.0 N
X= 603304.1 E
LAT.=32.284010° N
LONG.=103.999055° W

GEODETIC COORDINATES
NAD 83 NME
SURFACE LOCATION
Y= 467237.2 N
X= 644052.3 E
LAT.=32.284072° N
LONG.=104.000954° W

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y= 467177.7 N
X= 602869.1 E
LAT.=32.283950° N
LONG.=104.000463° W

OPERATOR CERTIFICATION

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

Signature — Date: 9/30/2019

Sammy Hajar
Printed Name

SHAJAR@BTAOIL.COM
E-mail Address

SURVEYOR CERTIFICATION

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

NOVEMBER 6, 2014
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J Eidson 09/30/2019

Certificate Number — Gary G. Eidson 12641, Ronald J. Eidson 3239

ACK REL. W.O.: 16130837 JWSC W.O.: 19.13.1080

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1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: 9/23/2019

☒ Original
☐ Amended - Reason for Amendment:

Operator & OGRID No.: 260297

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
HARROUN RANCH FED COM 5H		SEC 20 ; 23S ; 29E	310 FSL 765 FEL	2000	Flared	Battery Connected To ETP System

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Gas Transporter and will be connected to Gas Transporter low/high pressure gathering system located in EDDY County, New Mexico. It will require 0 ' of pipeline to (ETP) connect the facility to low/high pressure gathering system. Operator provides (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Gas Transporter Processing Plant located in Sec._____, Twn._____, Rng._____, _____ County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

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

Alternatives to Reduce Flaring

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

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

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**BTA Oil Producers**
LEASE NO.:	**NMNM119271**
WELL NAME & NO.:	HARROUN RANCH FED COM 5H
SURFACE HOLE FOOTAGE:	310'/S & 765'/E
BOTTOM HOLE FOOTAGE	50'/N & 330'/E
LOCATION:	Section 20, T.23 S., R.29 E., NMP
COUNTY:	Eddy County, New Mexico

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ 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

Casing Design:

1. The **10-3/4** inch surface casing shall be set at approximately **400** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The **7-5/8** inch intermediate casing shall be set at approximately **10448** feet. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- 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.**
  Excess cement calculates to -17%, additional cement might be required.

Option 2:

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

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
   Excess cement calculates to 16%, additional cement might be required.

b. Second stage above DV tool:

   - Cement to surface. If cement does not circulate, contact the appropriate BLM office.

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

- ❖ In Medium Cave/Karst 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 **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

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

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

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

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.

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: 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.

    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.

OTA01262020

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BTA Oil Producers LLC
LEASE NO.:	NMNM119271
COUNTY:	Eddy County, NM

Wells:
Harroun Ranch Fed Com 5H
Surface Hole Location: 310' FSL & 765' FEL, Section 20, T. 23 S., R. 29 E.
Bottom Hole Location: 330' FNL & 330' FEL, Section 17, T. 23 S, R 29 E.

Harroun Ranch Fed Com 6H
Surface Hole Location: 321' FSL & 793' FEL, Section 20, T. 23 S., R. 29 E.
Bottom Hole Location: 50' FNL & 1155' FEL, Section 17, T. 23 S, R 29 E.

Harroun Ranch 20702 20-17 Federal Com 7H
Surface Hole Location: 333' FSL & 821' FEL, Section 20, T. 23 S., R. 29 E.
Bottom Hole Location: 100' FNL & 1980' FEL, Section 17, T. 23 S, R 29 E.

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Watershed
- Cave/Karst

☐ **Construction**
- Notification
- Topsoil
- Closed Loop System
- Federal Mineral Material Pits
- Well Pads
- Roads

☐ **Road Section Diagram**
☒ **Production (Post Drilling)**
- Well Structures & Facilities
- Pipelines
- Electric Lines

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See information below discussing NAGPRA.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

SPECIAL REQUIREMENT(S)

Watershed:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Cave/Karst:

Construction Mitigation

In order to mitigate the impacts from construction activities on cave and karst resources, the following Conditions of Approval will apply to this APD or project:

General Construction:

- No blasting
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no additional construction shall occur until clearance has been issued by the Authorized Officer.
- All linear surface disturbance activities will avoid sinkholes and other karst features to lessen the possibility of encountering near surface voids during construction, minimize changes to runoff, and prevent untimely leaks and spills from entering the karst drainage system.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Pad Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised (i.e. an access road crossing the berm cannot be lower than the berm height).
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Road Construction:

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

Buried Pipeline/Cable Construction:

- Rerouting of the buried line(s) may be required if a subsurface void is encountered during construction to minimize the potential subsidence/collapse of the feature(s) as well as the possibility of leaks/spills entering the karst drainage system.

Powerline Construction:

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- Special restoration stipulations or realignment may be required if subsurface voids are encountered.

Surface Flowlines Installation:

- Flowlines will be routed around sinkholes and other karst features to minimize the possibility of leaks/spills from entering the karst drainage system.

Drilling Mitigation

Federal regulations and standard Conditions of Approval applied to all APDs require that adequate measures are taken to prevent contamination to the environment. Due to the extreme sensitivity of the cave and karst resources in this project area, the following additional Conditions of Approval will be added to this APD.

To prevent cave and karst resource contamination the following will be required:

- Closed loop system using steel tanks - all fluids and cuttings will be hauled off-site and disposed of properly at an authorized site
- Rotary drilling with fresh water where cave or karst features are expected to prevent contamination of freshwater aquifers.

- Directional drilling is only allowed at depths greater than 100 feet below the cave occurrence zone to prevent additional impacts resulting from directional drilling.
- Lost circulation zones will be logged and reported in the drilling report so BLM can assess the situation and work with the operator on corrective actions.
- Additional drilling, casing, and cementing procedures to protect cave zones and fresh water aquifers. See drilling COAs.

Production Mitigation
In order to mitigate the impacts from production activities and due to the nature of karst terrane, the following Conditions of Approval will apply to this APD:

- Tank battery locations and facilities will be bermed and lined with a 20 mil thick permanent liner that has a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.
- Development and implementation of a leak detection system to provide an early alert to operators when a leak has occurred.
- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Residual and Cumulative Mitigation
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be taken to correct the problem to the BLM's approval.

Plugging and Abandonment Mitigation
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

V. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

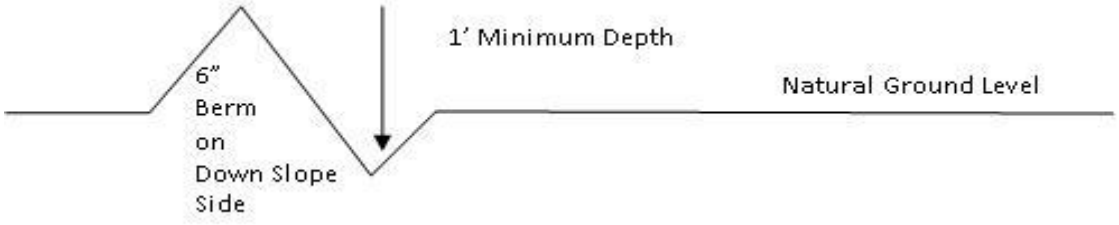
Turnouts

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

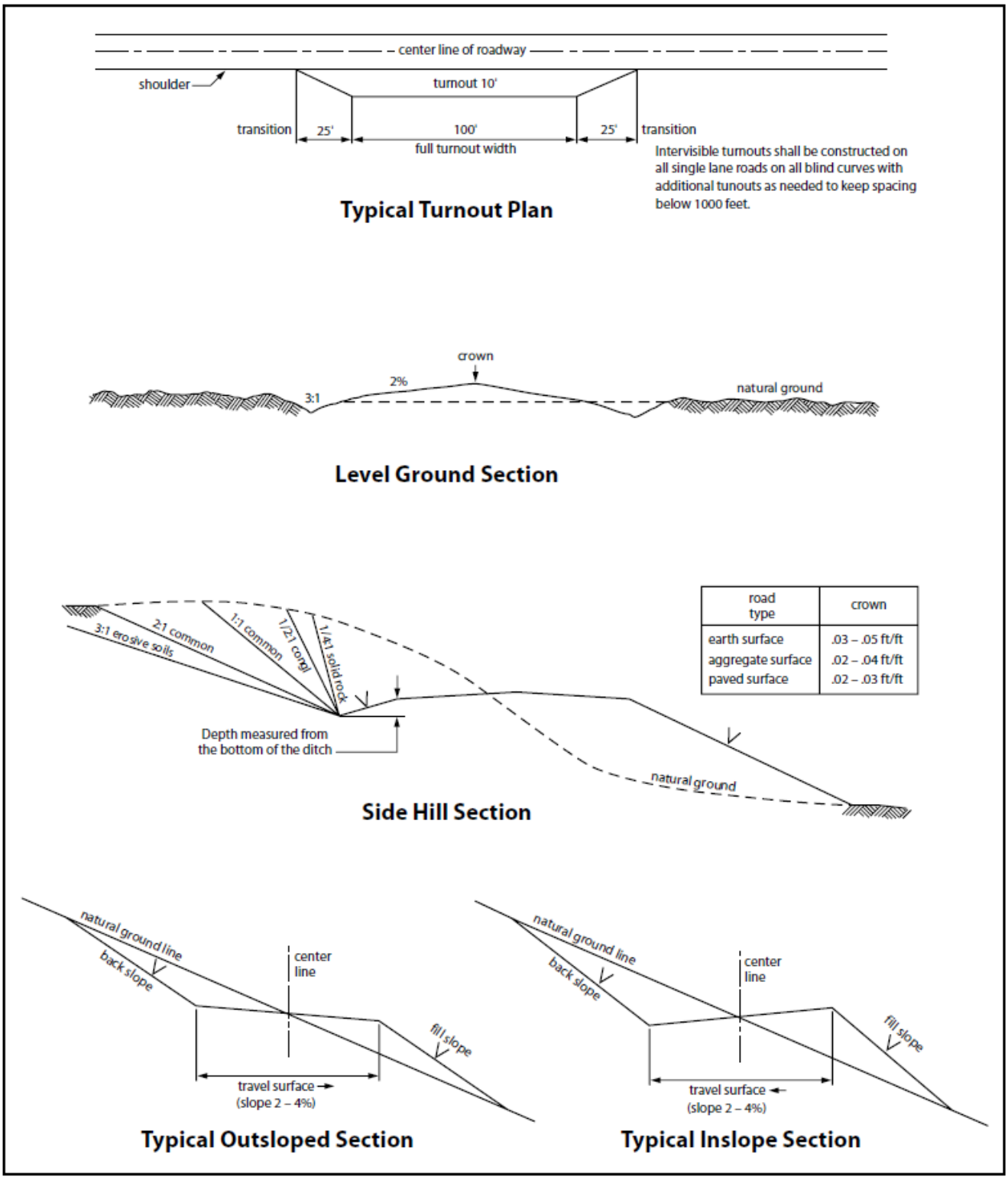


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

VIII. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

Operator Certification Data Report

04/02/2020

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: Sammy Hajar **Signed on:** 09/30/2019

Title: Regulatory Analyst

Street Address: 104 S. Pecos

City: Midland **State:** TX **Zip:** 79701

Phone: (432)682-3753

Email address: shajar@btaoil.com

Field Representative

Representative Name:

Street Address: 104 S. Pecos

City: Midland **State:** TX **Zip:** 79701

Phone: (432)682-3753

Email address: shajar@btaoil.com

APD ID: 10400047899
Submission Date: 09/30/2019
Operator Name: BTA OIL PRODUCERS LLC
Well Name: HARROUN RANCH FED COM
Well Number: 5H
Well Type: OTHER
Well Work Type: Drill

Highlighted data reflects the most recent changes

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Section 1 - General

APD ID: 10400047899
Tie to previous NOS?
Submission Date: 09/30/2019
BLM Office: CARLSBAD
User: Sammy Hajar
Title: Regulatory Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM119271
Lease Acres: 160
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? YES
Federal or Indian agreement: FEDERAL
Agreement number: NMNM138686
Agreement name:
Keep application confidential? Y
Permitting Agent? NO
APD Operator: BTA OIL PRODUCERS LLC
Operator letter of designation:

Operator Info

Operator Organization Name: BTA OIL PRODUCERS LLC
Operator Address: 104 S. Pecos
Zip: 79701
Operator PO Box:
Operator City: Midland
State: TX
Operator Phone: (432)682-3753
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: HARROUN RANCH FED COM
Well Number: 5H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: BOBCAT DRAW
Pool Name: BOBCAT DRAW; UPPER WOLFCAMP
Is the proposed well in an area containing other mineral resources? NONE

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Is the proposed well in an area containing other mineral resources? NONE

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

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** HARROUN RANCH FED COM **Number:** 5H & 6H

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

Well Work Type: Drill

Well Type: OTHER

Describe Well Type: GAS WELL

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 5 Miles **Distance to nearest well:** 1000 FT **Distance to lease line:** 310 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: Harroun_Ranch_Fed_Com_5H__C102_20190930153902.pdf

Well work start Date: 03/29/2020 **Duration:** 30 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NGVD29

Survey number: **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	310	FSL	765	FEL	23S	29E	20	Aliquot SESE	32.284072	-104.000954	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 119271	3019	0	0	Y
KOP Leg #1	330	FSL	330	FEL	23S	29E	20	Aliquot SESE	32.284132	-104.999546	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7456	10499	10475	Y
PPP Leg #1-1	330	FSL	330	FEL	23S	29E	20	Aliquot SESE	32.284132	-104.999546	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7053	10097	10072	Y

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
EXIT Leg #1	330	FNL	330	FEL	23S	29E	17	Aliquot NENE	32.31155	-104.999293	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7933	20893	10952	Y
BHL Leg #1	50	FNL	330	FEL	23S	29E	17	Aliquot NENE	32.312319	-104.999286	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-7933	21173	10952	Y

APD ID: 10400047899 **Submission Date:** 09/30/2019

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Well Type: OTHER **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
545431	QUATERNARY	3019	0	0	ALLUVIUM	NONE	N
545432	RUSTLER	2682	337	337	ANHYDRITE	NONE	N
545433	TOP SALT	2552	467	467	SALT	NONE	N
545434	BASE OF SALT	282	2737	2737	SALT	NONE	N
545435	DELAWARE	67	2952	2952	LIMESTONE	NATURAL GAS, OIL	N
545437	CHERRY CANYON	-763	3782	3782	SANDSTONE	NATURAL GAS, OIL	N
545438	BRUSHY CANYON	-1968	4987	4987	SANDSTONE	NATURAL GAS, OIL	N
545439	BONE SPRING LIME	-3633	6652	6652	LIMESTONE	NATURAL GAS, OIL	N
545440	FIRST BONE SPRING SAND	-4658	7677	7677	SANDSTONE	CO2, NATURAL GAS, OIL	N
545441	BONE SPRING 2ND	-5423	8442	8442	SANDSTONE	NATURAL GAS, OIL	N
545442	BONE SPRING 3RD	-6544	9563	9563	SANDSTONE	CO2, NATURAL GAS, OIL	N
545443	WOLFCAMP	-7053	10072	10072	SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 11000

Equipment: The blowout preventer equipment (BOP) shown in Exhibit A will consist of a (5M system) double ram type (5,000 psi WP) preventer and a bag-type (Hydril) preventer (5000 psi WP). Both units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 5" drill pipe rams on bottom. The BOPs will be installed on the 10-3/4" surface casing and utilized continuously until total depth is reached. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. A remote kill line will be used for the 5M system as per onshore order #2. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines, and choke manifold having a 5,000 psi WP rating. The 5M annular will be tested as per BLM drilling Operations Order No. 2.

Requesting Variance? NO

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Variance request:

Testing Procedure: Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily drillers log. All BOPs and associated equipment will be tested as per BLM drilling Operations Order No. 2.

Choke Diagram Attachment:

Choke_Hose___Test_Chart_and_Specs_20190723082742.pdf

5M_choke_mannifold_20190723082749.pdf

BOP Diagram Attachment:

5M_BOP_diagram_20190723082754.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	SURFACE	14.75	10.75	NEW	API	N	0	500	0	500	3019	2519	500	J-55	40.5	ST&C	7.3	14.5	DRY	20.7	DRY	31.1
2	PRODUCTION	6.75	5.5	NEW	API	Y	0	10248	0	10224	3018	-7205	10248	P-110	20	BUTT	1.5	1.7	DRY	3.3	DRY	3.1
3	INTERMEDIATE	9.875	7.625	NEW	API	N	0	10448	0	10424	3018	-7405	10448	P-110	29.7	BUTT	1.9	1.9	DRY	3.1	DRY	3
4	PRODUCTION	6.75	5.0	NEW	API	Y	10248	21173	10224	10952	-7206	-7933	10925	P-110	18	BUTT	1.7	1.7	DRY	1.6	DRY	1.5

Casing Attachments

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Harroun_Ranch_Fed_Com_5H_Casing_Assumption_20190930123225.JPG

Casing ID: 2 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

5.5_tapered_string_spec_20190930151650.jpg

Harroun_Ranch_Fed_Com_5H_Casing_Assumption_20190930123247.JPG

Casing Design Assumptions and Worksheet(s):

Harroun_Ranch_Fed_Com_5H_Casing_Assumption_20190930152916.JPG

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

Inspection Document:

Spec Document:

Tapered String Spec:

vaca_draw_5.5_tapered_string_spec_20190723093759.JPG

Casing Design Assumptions and Worksheet(s):

Harroun_Ranch_Fed_Com_5H_Casing_Assumption_20190930123236.JPG

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Casing Attachments

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

5_tapered_string_spec_20190930151627.jpg

Casing Design Assumptions and Worksheet(s):

Harroun_Ranch_Fed_Com_5H_Casing_Assumption_20190930123206.JPG

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	255	160	1.8	13.5	288	100	Class C	2% CaCl2
SURFACE	Tail		255	500	200	1.34	14.8	268	100	Class C	2% CaCl2
INTERMEDIATE	Lead	2952	0	2525	405	2.19	12.7	886.95	50	Class C	0.5% CaCl2
INTERMEDIATE	Tail		2525	2952	150	1.33	14.8	199.5	50	Class C	1% CaCl2
INTERMEDIATE	Lead		2952	8560	525	2.64	10.5	1386	15	Class H	0.5% CaCl2
INTERMEDIATE	Tail		8560	10448	400	1.19	15.6	476	15	Class H	1% CaCl2
PRODUCTION	Lead		9245	10248	0	0	0	0		Class H	n/a
PRODUCTION	Lead		10248	21173	1135	1.27	14.8	1441.45	10	Class H	0.1% Fluid Loss

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	500	OTHER : FW SPUD	8.3	8.4							
500	10424	OTHER : DBE	9	9.4							
10424	10952	OIL-BASED MUD	11	12.5							

Section 6 - Test, Logging, Coring

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

Drill Stem Tests will be based on geological sample shows.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG,GAMMA RAY LOG,CEMENT BOND LOG,

Coring operation description for the well:

None planned

Operator Name: BTA OIL PRODUCERS LLC

Well Name: HARROUN RANCH FED COM **Well Number:** 5H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7119 **Anticipated Surface Pressure:** 4750

Anticipated Bottom Hole Temperature(F): 168

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BTA_Oil_Producers_LLC___EMERGENCY_CALL_LIST_20190723161502.pdf

H2S_Equipment_Schematic_20190723161502.pdf

H2S_Plan_20190723161502.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Harroun_Ranch_Fed_Com_5H_Gas_Capture_Plan_20190924073838.pdf

Harroun_Ranch_05H_Wall_plot_20190930114523.pdf

Harroun_Ranch_05H_directional_plan_20190930114523.pdf

Other proposed operations facets description:

After speaking to Cathy Queen BLM, AFMSS has been having technical difficulties.She stated to send in Directional Plans via email when the adjudicators ask for it due to file corruption upon upload. If Directional Plans are needed during COA/Approval process, Please send an email to SHAJAR@BTAOIL.COM

This APD is for a previously permitted and accepted well of the same name, that expired.

Other proposed operations facets attachment:

Other Variance attachment:

Casing_Head_Running_Procedure_20190723163249.pdf

Multi_Bowl_Diagram__3_STRING_10_34_SOW_20190723163249.pdf

Continental

ContiTech

CONTITECH RUBBER Industrial Kft.	No:QC-DB- 599/ 2014
	Page: 16 / 176

Rig 94 Asset 24455

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE

CERT. N°: 1592

PURCHASER:	ContiTech Oil & Marine Corp.	P.O. N°:	4500461753
CONTITECH ORDER N°:	539225	HOSE TYPE:	3" ID Choke & Kill Hose
HOSE SERIAL N°:	68547	NOMINAL / ACTUAL LENGTH:	7,62 m / 7,66 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 Min.

↑ 50 MPa

COUPLINGS Type	Serial N°		Quality	Heat N°
3" coupling with	2574	5533	AISI 4130	A1582N H8672
4 1/16" 10K API Swivel Flange end			AISI 4130	58855
Hub			AISI 4130	A1199N A1423N

Not Designed For Well Testing **API Spec 16 C**

Fire Rated **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.

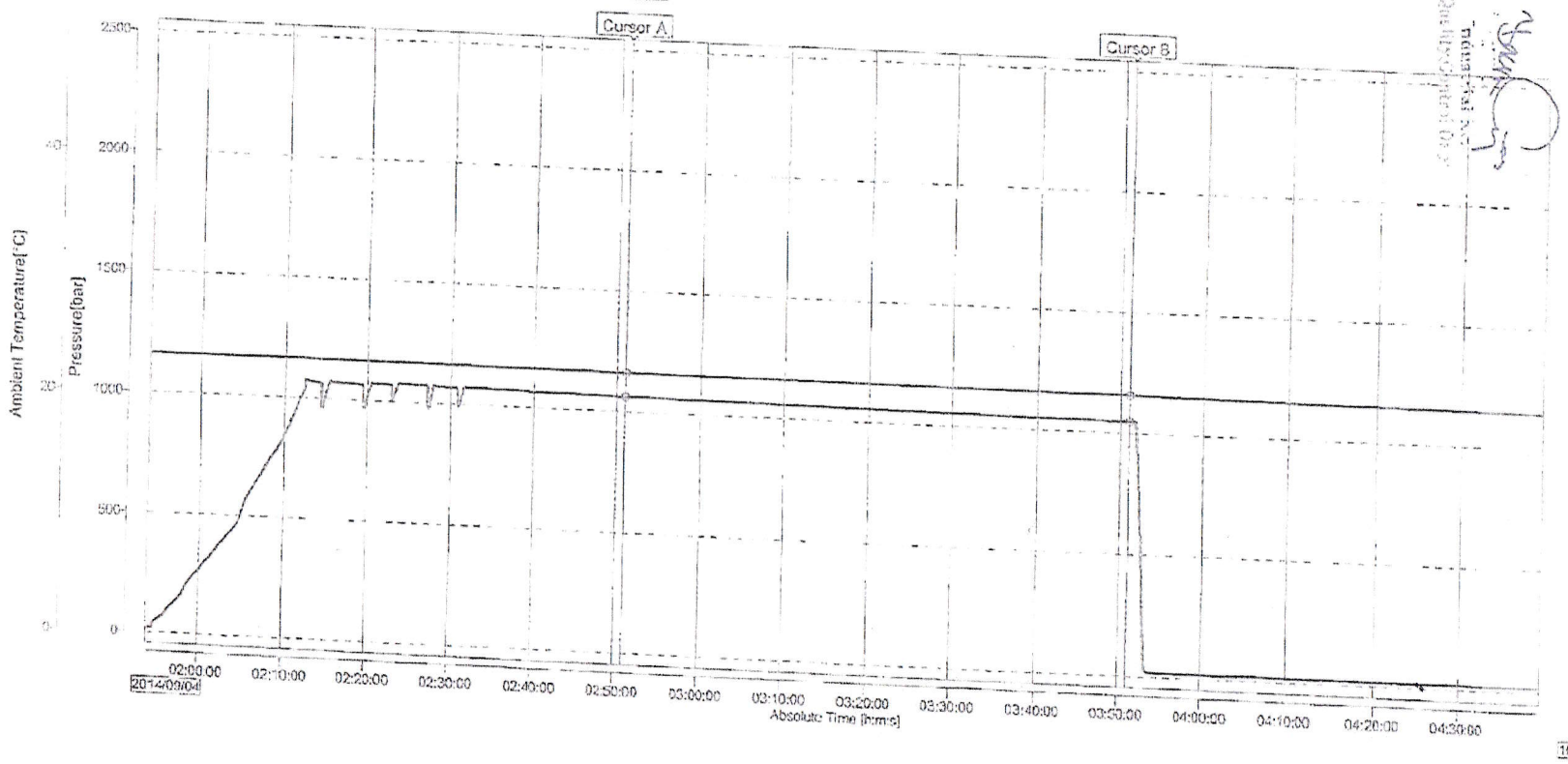
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.

Date:	Inspector	Quality Control
04. September 2014.		ContiTech Rubber Industrial Kft. Quality Control Dept.

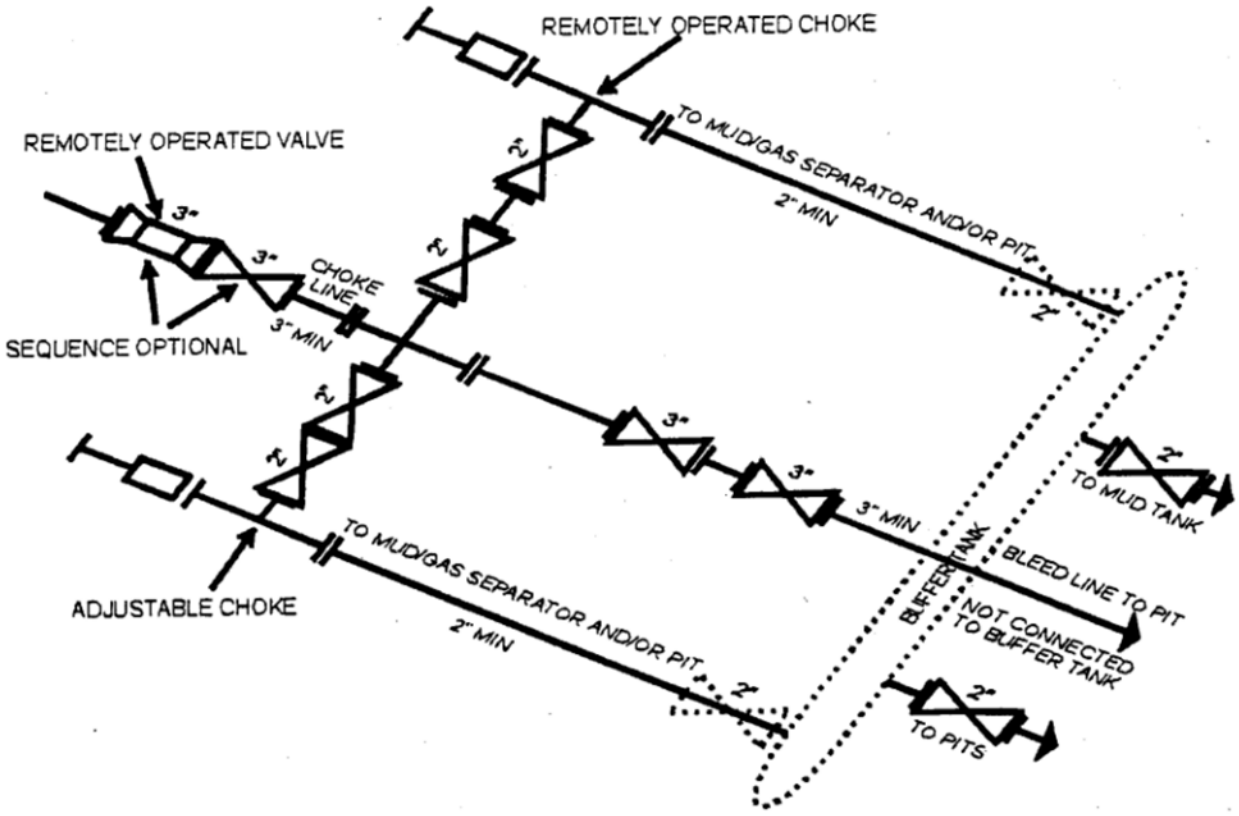
File Name	: 000220_68543,68545+547.GEV,....,000236_68543,68545+547.GEV
File Message	: 68543,68545,68547
Device Type	: GX10
Serial No.	: S5P606399
Data Count	: 9946
Print Group	: Press-Temp
Print Range	: 2014/09/04 01:53:54.000 - 2014/09/04 04:39:39.000
Comment	:

Sampling Int.	: 1.000 sec
Start Time	: 2014/09/04 01:53:54.000
Stop Time	: 2014/09/04 04:39:39.000

	Cursor A	Cursor B	Difference
Data No.	3432	7032	3600
Absolute Time	2014/09/04 02:51:06.000	2014/09/04 03:51:06.000	01:00:00.000
Tag Comment	Value A	Value B	Value B-A
Pressure[bar]	1062.96	1048.57	-14.39
Ambient Temperature[°C]	23.24	23.14	-0.10



ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No. 1588, 1590, 1592



5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Harroun #5H
TVD: 10952
MD: 21173

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	500	0	500	No	40.5	J-55	STC	7.3	14.5	31.1	20.7	Dry	8.3
9 7/8	7 5/8	0	10448	0	10424	No	29.7	P110	Buttress	1.9	1.9	3.0	3.1	Dry	9.4
6 3/4	5 1/2	0	10248	0	10224	Yes	20	P110	Buttress	1.5	1.7	3.1	3.3	Dry	12.5
6 3/4	5	10248	21173	10224	10952	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	12.5

*7 5/8" has DV Tool @ 2952'

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Harroun Ranch 20702 20-17 #6H
TVD: 10768
MD: 21151

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1050	0	1050	No	40.5	J-55	STC	3.5	6.9	14.8	9.9	Dry	8.3
9 7/8	7 5/8	0	10260	0	10232	No	29.7	P110	Buttress	1.9	1.9	3.1	3.2	Dry	9.4
6 3/4	5 1/2	0	10060	0	10032	Yes	20	P110	Buttress	1.5	1.7	3.2	3.3	Dry	13
6 3/4	5	10060	21151	10032	10768	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	13

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Midland, TX 79701

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14 3/4	10 3/4	0	1050	0	1050	No	40.5	J-55	STC	3.5	6.9	14.8	9.9	Dry	8.3
9 7/8	7 5/8	0	10260	0	10232	No	29.7	P110	Buttress	1.9	1.9	3.1	3.2	Dry	9.4
6 3/4	5 1/2	0	10060	0	10032	Yes	20	P110	Buttress	1.5	1.7	3.2	3.3	Dry	13
6 3/4	5	10060	21151	10032	10768	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	13

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Midland, TX 79701

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Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1050	0	1050	No	40.5	J-55	STC	3.5	6.9	14.8	9.9	Dry	8.3
9 7/8	7 5/8	0	10260	0	10232	No	29.7	P110	Buttress	1.9	1.9	3.1	3.2	Dry	9.4
6 3/4	5 1/2	0	10060	0	10032	Yes	20	P110	Buttress	1.5	1.7	3.2	3.3	Dry	13
6 3/4	5	10060	21151	10032	10768	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	13

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Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	1050	0	1050	No	40.5	J-55	STC	3.5	6.9	14.8	9.9	Dry	8.3
9 7/8	7 5/8	0	10260	0	10232	No	29.7	P110	Buttress	1.9	1.9	3.1	3.2	Dry	9.4
6 3/4	5 1/2	0	10060	0	10032	Yes	20	P110	Buttress	1.5	1.7	3.2	3.3	Dry	13
6 3/4	5	10060	21151	10032	10768	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	13

*7 5/8" has DV Tool @ 2865

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Harroun #5H
TVD: 10952
MD: 21173

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	500	0	500	No	40.5	J-55	STC	7.3	14.5	31.1	20.7	Dry	8.3
9 7/8	7 5/8	0	10448	0	10424	No	29.7	P110	Buttress	1.9	1.9	3.0	3.1	Dry	9.4
6 3/4	5 1/2	0	10248	0	10224	Yes	20	P110	Buttress	1.5	1.7	3.1	3.3	Dry	12.5
6 3/4	5	10248	21173	10224	10952	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	12.5

*7 5/8" has DV Tool @ 2952'

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Harroun #5H
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MD: 21173

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	500	0	500	No	40.5	J-55	STC	7.3	14.5	31.1	20.7	Dry	8.3
9 7/8	7 5/8	0	10448	0	10424	No	29.7	P110	Buttress	1.9	1.9	3.0	3.1	Dry	9.4
6 3/4	5 1/2	0	10248	0	10224	Yes	20	P110	Buttress	1.5	1.7	3.1	3.3	Dry	12.5
6 3/4	5	10248	21173	10224	10952	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	12.5

*7 5/8" has DV Tool @ 2952'

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104 S Pecos
Midland, TX 79701

WELL: Harroun #5H
TVD: 10952
MD: 21173

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	500	0	500	No	40.5	J-55	STC	7.3	14.5	31.1	20.7	Dry	8.3
9 7/8	7 5/8	0	10448	0	10424	No	29.7	P110	Buttress	1.9	1.9	3.0	3.1	Dry	9.4
6 3/4	5 1/2	0	10248	0	10224	Yes	20	P110	Buttress	1.5	1.7	3.1	3.3	Dry	12.5
6 3/4	5	10248	21173	10224	10952	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	12.5

*7 5/8" has DV Tool @ 2952'

BTA Oil Producers, LLC
104 S Pecos
Midland, TX 79701

WELL: Harroun #5H
TVD: 10952
MD: 21173

DRILLING PLAN

Casing Program

Hole Size	Csg.Size	From (MD)	To (MD)	From (TVD)	To (TVD)	Tapered String	Weight (lbs)	Grade	Conn.	Collapse	Burst	Body Tension	Joint Tension	Dry/ Buoyant	Mud Weight (ppg)
14 3/4	10 3/4	0	500	0	500	No	40.5	J-55	STC	7.3	14.5	31.1	20.7	Dry	8.3
9 7/8	7 5/8	0	10448	0	10424	No	29.7	P110	Buttress	1.9	1.9	3.0	3.1	Dry	9.4
6 3/4	5 1/2	0	10248	0	10224	Yes	20	P110	Buttress	1.5	1.7	3.1	3.3	Dry	12.5
6 3/4	5	10248	21173	10224	10952	Yes	18	P110	Buttress	1.7	1.7	1.5	1.6	Dry	12.5

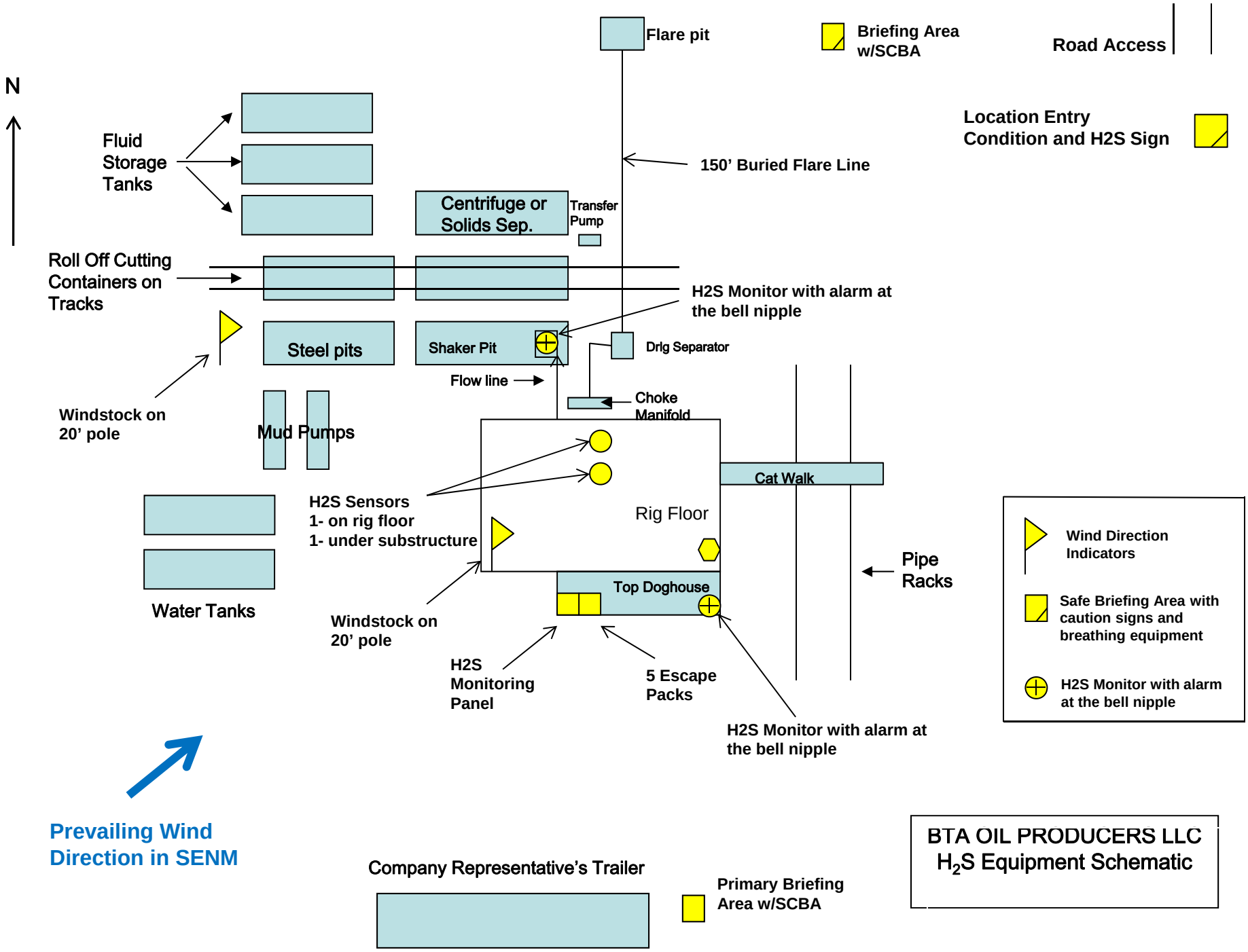
*7 5/8" has DV Tool @ 2952'

EMERGENCY CALL LIST

	OFFICE	MOBILE
BTA Oil Producers LLC OFFICE	432-682-3753	
BEN GRIMES, Operations	432-682-3753	432-559-4309
NICK EATON, Drilling	432-682-3753	432-260-7841
TRACE WOHLFAHRT, Completions	432-682-3753	

EMERGENCY RESPONSE NUMBERS

	OFFICE
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451


N
Flare pit
Briefing Area w/SCBA
Road Access
Location Entry Condition and H2S Sign
Fluid Storage Tanks
150' Buried Flare Line
Centrifuge or Solids Sep.
Transfer Pump
Roll Off Cutting Containers on Tracks
H2S Monitor with alarm at the bell nipple
Steel pits
Shaker Pit
Drlg Separator
Flow line
Choke Manifold
Windstock on 20' pole
Mud Pumps
Cat Walk
H2S Sensors
1- on rig floor
1- under substructure
Rig Floor
Pipe Racks
Water Tanks
Top Doghouse
Windstock on 20' pole
H2S Monitoring Panel
5 Escape Packs
H2S Monitor with alarm at the bell nipple
Wind Direction Indicators
Safe Briefing Area with caution signs and breathing equipment
H2S Monitor with alarm at the bell nipple
Prevailing Wind Direction in SENM
Company Representative's Trailer
Primary Briefing Area w/SCBA
BTA OIL PRODUCERS LLC
H_2S Equipment Schematic

BTA OIL PRODUCERS LLC

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

a. The hazards and characteristics of hydrogen sulfide (H_2S).
b. The proper use and maintenance of personal protective equipment and life support systems.
c. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
d. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

a. The effects of H2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
b. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
c. The contents and requirements of the H_2S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

2. H_2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S. If H2S greater than 100 ppm is encountered in the gas stream we will shut in and install H2S equipment.

a. Well Control Equipment:
Flare line.
Choke manifold with remotely operated choke.
Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.
b. Protective equipment for essential personnel:
Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
c. H2S detection and monitoring equipment:

2 - portable H2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.

d. Visual warning systems:
Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

e. Mud Program:
The mud program has been designed to minimize the volume of H2S circulated to the surface.

f. Metallurgy:
All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

g. Communication:
Company vehicles equipped with cellular telephone.

W A R N I N G

YOU ARE ENTERING AN H_2S AREA
AUTHORIZED PERSONNEL ONLY

1. ***BEARDS OR CONTACT LENSES NOT ALLOWED***
2. ***HARD HATS REQUIRED***
3. ***SMOKING IN DESIGNATED AREAS ONLY***
4. ***BE WIND CONSCIOUS AT ALL TIMES***
5. ***CK WITH BTA OIL PRODUCERS LLC FOREMAN AT MAIN OFFICE***

BTA OIL PRODUCERS LLC

1-432-682-3753

BTA Oil Producers, LLC

Azimuths to Grid North
True North: -0.18°
Magnetic North: 7.77°

Magnetic Field
Strength: 48806.7nT
Dip Angle: 60.22°
Date: 12/31/2009
Model: IGRF200510

WELL DETAILS: Harroun Ranch #5H

Ground Level Ground Level: 3019.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude
0.0	0.0	467237.13	644052.37	32° 17' 2.657 N	104° 0' 3.435 W

SITE DETAILS: Harroun Ranch

Site Centre Northing: 467070.67
Easting: 639729.00

Positional Uncertainity: 0.0
Convergence: 0.17
Local North: Grid

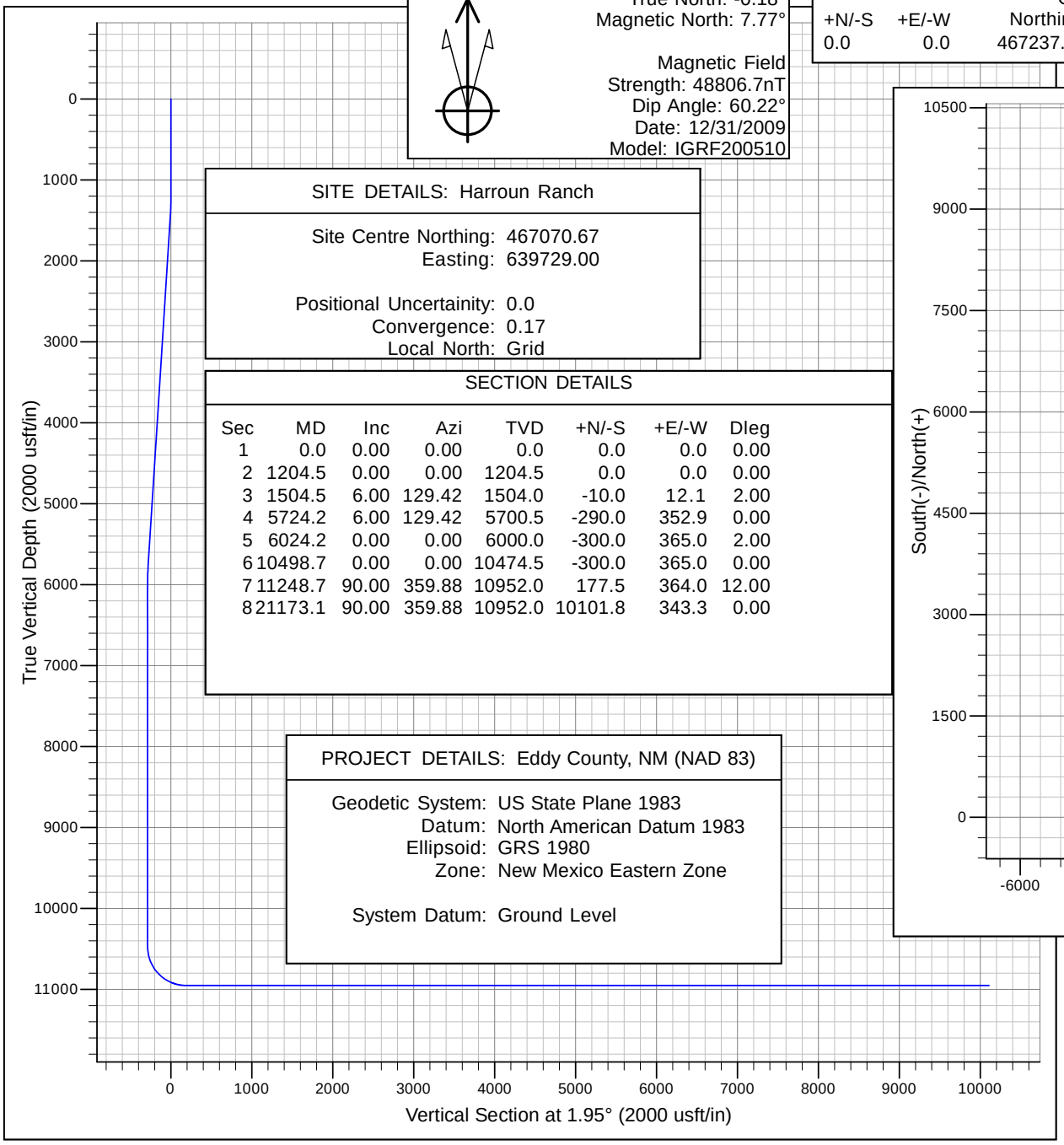
SECTION DETAILS

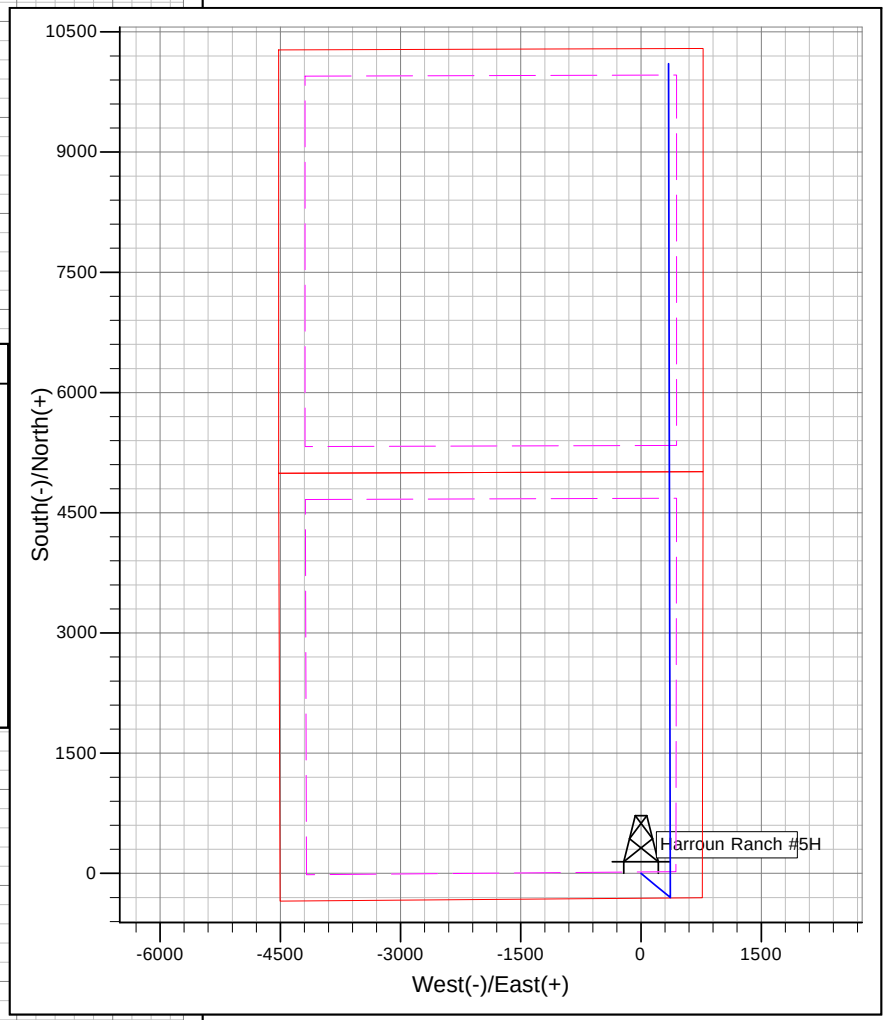
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00
2	1204.5	0.00	0.00	1204.5	0.0	0.0	0.00
3	1504.5	6.00	129.42	1504.0	-10.0	12.1	2.00
4	5724.2	6.00	129.42	5700.5	-290.0	352.9	0.00
5	6024.2	0.00	0.00	6000.0	-300.0	365.0	2.00
6	10498.7	0.00	0.00	10474.5	-300.0	365.0	0.00
7	11248.7	90.00	359.88	10952.0	177.5	364.0	12.00
8	21173.1	90.00	359.88	10952.0	10101.8	343.3	0.00

PROJECT DETAILS: Eddy County, NM (NAD 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Ground Level





BTA Oil Producers, LLC

Eddy County, NM (NAD 83)
Harroun Ranch
Harroun Ranch #5H

Wellbore #1

Plan: Design #1

Standard Planning Report - Geographic

24 September, 2019

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project Eddy County, NM (NAD 83)

Map System:	US State Plane 1983	**System Datum:**	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site Harroun Ranch

Site Position:		**Northing:**	467,070.67 usft	**Latitude:**	32° 17' 1.140 N
From:	Map	**Easting:**	639,729.01 usft	**Longitude:**	104° 0' 53.805 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.17 °

Well Harroun Ranch #5H

Well Position	**+N/-S**	0.0 usft	**Northing:**	467,237.13 usft	**Latitude:**	32° 17' 2.657 N
	+E/-W	0.0 usft	**Easting:**	644,052.37 usft	**Longitude:**	104° 0' 3.435 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,019.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.95	60.22	48,806.66058262

Design Design #1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	1.95

Plan Survey Tool Program **Date** 7/10/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	21,173.1	Design #1 (Wellbore #1)		

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,204.5	0.00	0.00	1,204.5	0.0	0.0	0.00	0.00	0.00	0.00	
1,504.5	6.00	129.42	1,504.0	-10.0	12.1	2.00	2.00	0.00	129.42	
5,724.2	6.00	129.42	5,700.5	-290.0	352.9	0.00	0.00	0.00	0.00	
6,024.2	0.00	0.00	6,000.0	-300.0	365.0	2.00	-2.00	0.00	180.00	
10,498.7	0.00	0.00	10,474.5	-300.0	365.0	0.00	0.00	0.00	0.00	
11,248.7	90.00	359.88	10,952.0	177.5	364.0	12.00	12.00	0.00	359.88	
21,173.1	90.00	359.88	10,952.0	10,101.8	343.3	0.00	0.00	0.00	0.00	Harroun Ranch #5H E

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
100.0	0.00	0.00	100.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
200.0	0.00	0.00	200.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
300.0	0.00	0.00	300.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
400.0	0.00	0.00	400.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
500.0	0.00	0.00	500.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
600.0	0.00	0.00	600.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
700.0	0.00	0.00	700.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
800.0	0.00	0.00	800.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
900.0	0.00	0.00	900.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
1,204.5	0.00	0.00	1,204.5	0.0	0.0	467,237.13	644,052.37	32° 17' 2.657 N	104° 0' 3.435 W
1,300.0	1.91	129.42	1,300.0	-1.0	1.2	467,236.12	644,053.60	32° 17' 2.647 N	104° 0' 3.421 W
1,400.0	3.91	129.42	1,399.8	-4.2	5.2	467,232.90	644,057.52	32° 17' 2.615 N	104° 0' 3.375 W
1,500.0	5.91	129.42	1,499.5	-9.7	11.8	467,227.46	644,064.13	32° 17' 2.561 N	104° 0' 3.299 W
1,504.5	6.00	129.42	1,504.0	-10.0	12.1	467,227.16	644,064.49	32° 17' 2.558 N	104° 0' 3.294 W
1,600.0	6.00	129.42	1,598.9	-16.3	19.8	467,220.83	644,072.20	32° 17' 2.496 N	104° 0' 3.205 W
1,700.0	6.00	129.42	1,698.4	-22.9	27.9	467,214.19	644,080.28	32° 17' 2.430 N	104° 0' 3.111 W
1,800.0	6.00	129.42	1,797.8	-29.6	36.0	467,207.55	644,088.35	32° 17' 2.364 N	104° 0' 3.017 W
1,900.0	6.00	129.42	1,897.3	-36.2	44.1	467,200.92	644,096.43	32° 17' 2.298 N	104° 0' 2.923 W
2,000.0	6.00	129.42	1,996.7	-42.9	52.1	467,194.28	644,104.50	32° 17' 2.232 N	104° 0' 2.830 W
2,100.0	6.00	129.42	2,096.2	-49.5	60.2	467,187.64	644,112.58	32° 17' 2.166 N	104° 0' 2.736 W
2,200.0	6.00	129.42	2,195.6	-56.1	68.3	467,181.01	644,120.65	32° 17' 2.100 N	104° 0' 2.642 W
2,300.0	6.00	129.42	2,295.1	-62.8	76.4	467,174.37	644,128.73	32° 17' 2.034 N	104° 0' 2.548 W
2,400.0	6.00	129.42	2,394.5	-69.4	84.4	467,167.73	644,136.80	32° 17' 1.968 N	104° 0' 2.454 W
2,500.0	6.00	129.42	2,494.0	-76.0	92.5	467,161.10	644,144.88	32° 17' 1.902 N	104° 0' 2.360 W
2,600.0	6.00	129.42	2,593.5	-82.7	100.6	467,154.46	644,152.95	32° 17' 1.836 N	104° 0' 2.267 W
2,700.0	6.00	129.42	2,692.9	-89.3	108.7	467,147.82	644,161.02	32° 17' 1.770 N	104° 0' 2.173 W
2,800.0	6.00	129.42	2,792.4	-95.9	116.7	467,141.19	644,169.10	32° 17' 1.704 N	104° 0' 2.079 W
2,900.0	6.00	129.42	2,891.8	-102.6	124.8	467,134.55	644,177.17	32° 17' 1.639 N	104° 0' 1.985 W
3,000.0	6.00	129.42	2,991.3	-109.2	132.9	467,127.91	644,185.25	32° 17' 1.573 N	104° 0' 1.891 W
3,100.0	6.00	129.42	3,090.7	-115.9	141.0	467,121.28	644,193.32	32° 17' 1.507 N	104° 0' 1.797 W
3,200.0	6.00	129.42	3,190.2	-122.5	149.0	467,114.64	644,201.40	32° 17' 1.441 N	104° 0' 1.704 W
3,300.0	6.00	129.42	3,289.6	-129.1	157.1	467,108.00	644,209.47	32° 17' 1.375 N	104° 0' 1.610 W
3,400.0	6.00	129.42	3,389.1	-135.8	165.2	467,101.37	644,217.55	32° 17' 1.309 N	104° 0' 1.516 W
3,500.0	6.00	129.42	3,488.5	-142.4	173.3	467,094.73	644,225.62	32° 17' 1.243 N	104° 0' 1.422 W
3,600.0	6.00	129.42	3,588.0	-149.0	181.3	467,088.09	644,233.70	32° 17' 1.177 N	104° 0' 1.328 W
3,700.0	6.00	129.42	3,687.4	-155.7	189.4	467,081.46	644,241.77	32° 17' 1.111 N	104° 0' 1.235 W
3,800.0	6.00	129.42	3,786.9	-162.3	197.5	467,074.82	644,249.85	32° 17' 1.045 N	104° 0' 1.141 W
3,900.0	6.00	129.42	3,886.3	-169.0	205.6	467,068.18	644,257.92	32° 17' 0.979 N	104° 0' 1.047 W
4,000.0	6.00	129.42	3,985.8	-175.6	213.6	467,061.55	644,265.99	32° 17' 0.913 N	104° 0' 0.953 W
4,100.0	6.00	129.42	4,085.2	-182.2	221.7	467,054.91	644,274.07	32° 17' 0.847 N	104° 0' 0.859 W
4,200.0	6.00	129.42	4,184.7	-188.9	229.8	467,048.27	644,282.14	32° 17' 0.782 N	104° 0' 0.765 W
4,300.0	6.00	129.42	4,284.1	-195.5	237.9	467,041.64	644,290.22	32° 17' 0.716 N	104° 0' 0.672 W
4,400.0	6.00	129.42	4,383.6	-202.1	245.9	467,035.00	644,298.29	32° 17' 0.650 N	104° 0' 0.578 W
4,500.0	6.00	129.42	4,483.0	-208.8	254.0	467,028.36	644,306.37	32° 17' 0.584 N	104° 0' 0.484 W
4,600.0	6.00	129.42	4,582.5	-215.4	262.1	467,021.73	644,314.44	32° 17' 0.518 N	104° 0' 0.390 W
4,700.0	6.00	129.42	4,681.9	-222.1	270.2	467,015.09	644,322.52	32° 17' 0.452 N	104° 0' 0.296 W
4,800.0	6.00	129.42	4,781.4	-228.7	278.2	467,008.45	644,330.59	32° 17' 0.386 N	104° 0' 0.203 W
4,900.0	6.00	129.42	4,880.9	-235.3	286.3	467,001.82	644,338.67	32° 17' 0.320 N	104° 0' 0.109 W
5,000.0	6.00	129.42	4,980.3	-242.0	294.4	466,995.18	644,346.74	32° 17' 0.254 N	104° 0' 0.015 W
5,100.0	6.00	129.42	5,079.8	-248.6	302.5	466,988.54	644,354.82	32° 17' 0.188 N	103° 59' 59.921 W
5,200.0	6.00	129.42	5,179.2	-255.2	310.5	466,981.91	644,362.89	32° 17' 0.122 N	103° 59' 59.827 W

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.0	6.00	129.42	5,278.7	-261.9	318.6	466,975.27	644,370.96	32° 17' 0.056 N	103° 59' 59.733 W
5,400.0	6.00	129.42	5,378.1	-268.5	326.7	466,968.63	644,379.04	32° 16' 59.990 N	103° 59' 59.640 W
5,500.0	6.00	129.42	5,477.6	-275.2	334.8	466,962.00	644,387.11	32° 16' 59.925 N	103° 59' 59.546 W
5,600.0	6.00	129.42	5,577.0	-281.8	342.8	466,955.36	644,395.19	32° 16' 59.859 N	103° 59' 59.452 W
5,700.0	6.00	129.42	5,676.5	-288.4	350.9	466,948.72	644,403.26	32° 16' 59.793 N	103° 59' 59.358 W
5,724.2	6.00	129.42	5,700.5	-290.0	352.9	466,947.12	644,405.22	32° 16' 59.777 N	103° 59' 59.335 W
5,800.0	4.48	129.42	5,776.0	-294.4	358.2	466,942.72	644,410.57	32° 16' 59.733 N	103° 59' 59.273 W
5,900.0	2.48	129.42	5,875.8	-298.3	362.9	466,938.86	644,415.26	32° 16' 59.695 N	103° 59' 59.219 W
6,000.0	0.48	129.42	5,975.8	-299.9	364.9	466,937.22	644,417.26	32° 16' 59.678 N	103° 59' 59.195 W
6,024.2	0.00	0.00	6,000.0	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,100.0	0.00	0.00	6,075.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,200.0	0.00	0.00	6,175.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,300.0	0.00	0.00	6,275.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,400.0	0.00	0.00	6,375.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,500.0	0.00	0.00	6,475.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,600.0	0.00	0.00	6,575.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,700.0	0.00	0.00	6,675.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,800.0	0.00	0.00	6,775.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
6,900.0	0.00	0.00	6,875.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,000.0	0.00	0.00	6,975.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,100.0	0.00	0.00	7,075.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,200.0	0.00	0.00	7,175.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,300.0	0.00	0.00	7,275.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,400.0	0.00	0.00	7,375.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,500.0	0.00	0.00	7,475.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,600.0	0.00	0.00	7,575.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,700.0	0.00	0.00	7,675.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,800.0	0.00	0.00	7,775.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
7,900.0	0.00	0.00	7,875.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,000.0	0.00	0.00	7,975.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,100.0	0.00	0.00	8,075.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,200.0	0.00	0.00	8,175.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,300.0	0.00	0.00	8,275.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,400.0	0.00	0.00	8,375.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,500.0	0.00	0.00	8,475.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,600.0	0.00	0.00	8,575.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,700.0	0.00	0.00	8,675.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,800.0	0.00	0.00	8,775.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
8,900.0	0.00	0.00	8,875.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,000.0	0.00	0.00	8,975.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,100.0	0.00	0.00	9,075.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,200.0	0.00	0.00	9,175.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,300.0	0.00	0.00	9,275.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,400.0	0.00	0.00	9,375.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,500.0	0.00	0.00	9,475.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,600.0	0.00	0.00	9,575.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,700.0	0.00	0.00	9,675.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,800.0	0.00	0.00	9,775.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
9,900.0	0.00	0.00	9,875.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,000.0	0.00	0.00	9,975.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,100.0	0.00	0.00	10,075.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,200.0	0.00	0.00	10,175.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,300.0	0.00	0.00	10,275.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,400.0	0.00	0.00	10,375.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,498.7	0.00	0.00	10,474.5	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,500.0	0.15	359.88	10,475.8	-300.0	365.0	466,937.15	644,417.34	32° 16' 59.678 N	103° 59' 59.195 W
10,600.0	12.15	359.88	10,575.0	-289.3	365.0	466,947.85	644,417.32	32° 16' 59.784 N	103° 59' 59.194 W
10,700.0	24.15	359.88	10,669.9	-258.2	364.9	466,978.94	644,417.25	32° 17' 0.091 N	103° 59' 59.194 W
10,800.0	36.15	359.88	10,756.2	-208.1	364.8	467,029.07	644,417.15	32° 17' 0.587 N	103° 59' 59.193 W
10,900.0	48.15	359.88	10,830.2	-141.1	364.7	467,096.05	644,417.01	32° 17' 1.250 N	103° 59' 59.193 W
11,000.0	60.15	359.88	10,888.7	-60.2	364.5	467,176.95	644,416.84	32° 17' 2.051 N	103° 59' 59.192 W
11,100.0	72.15	359.88	10,929.0	31.1	364.3	467,268.24	644,416.65	32° 17' 2.954 N	103° 59' 59.191 W
11,200.0	84.15	359.88	10,949.5	128.8	364.1	467,365.92	644,416.45	32° 17' 3.921 N	103° 59' 59.189 W
11,248.7	90.00	359.88	10,952.0	177.5	364.0	467,414.58	644,416.35	32° 17' 4.402 N	103° 59' 59.189 W
11,300.0	90.00	359.88	10,952.0	228.7	363.9	467,465.83	644,416.24	32° 17' 4.909 N	103° 59' 59.188 W
11,400.0	90.00	359.88	10,952.0	328.7	363.7	467,565.82	644,416.03	32° 17' 5.899 N	103° 59' 59.187 W
11,500.0	90.00	359.88	10,952.0	428.7	363.5	467,665.81	644,415.82	32° 17' 6.888 N	103° 59' 59.186 W
11,600.0	90.00	359.88	10,952.0	528.7	363.3	467,765.80	644,415.62	32° 17' 7.878 N	103° 59' 59.185 W
11,700.0	90.00	359.88	10,952.0	628.7	363.1	467,865.79	644,415.41	32° 17' 8.867 N	103° 59' 59.183 W
11,800.0	90.00	359.88	10,952.0	728.7	362.9	467,965.79	644,415.20	32° 17' 9.857 N	103° 59' 59.182 W
11,900.0	90.00	359.88	10,952.0	828.7	362.7	468,065.78	644,414.99	32° 17' 10.846 N	103° 59' 59.181 W
12,000.0	90.00	359.88	10,952.0	928.7	362.4	468,165.77	644,414.78	32° 17' 11.836 N	103° 59' 59.180 W
12,100.0	90.00	359.88	10,952.0	1,028.7	362.2	468,265.76	644,414.58	32° 17' 12.825 N	103° 59' 59.179 W
12,200.0	90.00	359.88	10,952.0	1,128.7	362.0	468,365.75	644,414.37	32° 17' 13.815 N	103° 59' 59.177 W
12,300.0	90.00	359.88	10,952.0	1,228.7	361.8	468,465.75	644,414.16	32° 17' 14.804 N	103° 59' 59.176 W
12,400.0	90.00	359.88	10,952.0	1,328.7	361.6	468,565.74	644,413.95	32° 17' 15.794 N	103° 59' 59.175 W
12,500.0	90.00	359.88	10,952.0	1,428.7	361.4	468,665.73	644,413.74	32° 17' 16.784 N	103° 59' 59.174 W
12,600.0	90.00	359.88	10,952.0	1,528.7	361.2	468,765.72	644,413.53	32° 17' 17.773 N	103° 59' 59.173 W
12,700.0	90.00	359.88	10,952.0	1,628.7	361.0	468,865.71	644,413.33	32° 17' 18.763 N	103° 59' 59.171 W
12,800.0	90.00	359.88	10,952.0	1,728.7	360.8	468,965.71	644,413.12	32° 17' 19.752 N	103° 59' 59.170 W
12,900.0	90.00	359.88	10,952.0	1,828.7	360.6	469,065.70	644,412.91	32° 17' 20.742 N	103° 59' 59.169 W
13,000.0	90.00	359.88	10,952.0	1,928.7	360.4	469,165.69	644,412.70	32° 17' 21.731 N	103° 59' 59.168 W
13,100.0	90.00	359.88	10,952.0	2,028.7	360.2	469,265.68	644,412.49	32° 17' 22.721 N	103° 59' 59.167 W
13,200.0	90.00	359.88	10,952.0	2,128.7	359.9	469,365.67	644,412.29	32° 17' 23.710 N	103° 59' 59.165 W
13,300.0	90.00	359.88	10,952.0	2,228.7	359.7	469,465.67	644,412.08	32° 17' 24.700 N	103° 59' 59.164 W
13,400.0	90.00	359.88	10,952.0	2,328.7	359.5	469,565.66	644,411.87	32° 17' 25.689 N	103° 59' 59.163 W
13,500.0	90.00	359.88	10,952.0	2,428.7	359.3	469,665.65	644,411.66	32° 17' 26.679 N	103° 59' 59.162 W
13,600.0	90.00	359.88	10,952.0	2,528.7	359.1	469,765.64	644,411.45	32° 17' 27.668 N	103° 59' 59.161 W
13,700.0	90.00	359.88	10,952.0	2,628.7	358.9	469,865.63	644,411.24	32° 17' 28.658 N	103° 59' 59.159 W
13,800.0	90.00	359.88	10,952.0	2,728.7	358.7	469,965.62	644,411.04	32° 17' 29.647 N	103° 59' 59.158 W
13,900.0	90.00	359.88	10,952.0	2,828.7	358.5	470,065.62	644,410.83	32° 17' 30.637 N	103° 59' 59.157 W
14,000.0	90.00	359.88	10,952.0	2,928.7	358.3	470,165.61	644,410.62	32° 17' 31.626 N	103° 59' 59.156 W
14,100.0	90.00	359.88	10,952.0	3,028.7	358.1	470,265.60	644,410.41	32° 17' 32.616 N	103° 59' 59.155 W
14,200.0	90.00	359.88	10,952.0	3,128.7	357.9	470,365.59	644,410.20	32° 17' 33.605 N	103° 59' 59.153 W
14,300.0	90.00	359.88	10,952.0	3,228.7	357.7	470,465.58	644,410.00	32° 17' 34.595 N	103° 59' 59.152 W
14,400.0	90.00	359.88	10,952.0	3,328.7	357.4	470,565.58	644,409.79	32° 17' 35.584 N	103° 59' 59.151 W
14,500.0	90.00	359.88	10,952.0	3,428.7	357.2	470,665.57	644,409.58	32° 17' 36.574 N	103° 59' 59.150 W
14,600.0	90.00	359.88	10,952.0	3,528.7	357.0	470,765.56	644,409.37	32° 17' 37.563 N	103° 59' 59.149 W
14,700.0	90.00	359.88	10,952.0	3,628.7	356.8	470,865.55	644,409.16	32° 17' 38.553 N	103° 59' 59.147 W
14,800.0	90.00	359.88	10,952.0	3,728.7	356.6	470,965.54	644,408.96	32° 17' 39.542 N	103° 59' 59.146 W
14,900.0	90.00	359.88	10,952.0	3,828.7	356.4	471,065.54	644,408.75	32° 17' 40.532 N	103° 59' 59.145 W
15,000.0	90.00	359.88	10,952.0	3,928.7	356.2	471,165.53	644,408.54	32° 17' 41.521 N	103° 59' 59.144 W
15,100.0	90.00	359.88	10,952.0	4,028.7	356.0	471,265.52	644,408.33	32° 17' 42.511 N	103° 59' 59.143 W
15,200.0	90.00	359.88	10,952.0	4,128.7	355.8	471,365.51	644,408.12	32° 17' 43.500 N	103° 59' 59.141 W
15,300.0	90.00	359.88	10,952.0	4,228.7	355.6	471,465.50	644,407.91	32° 17' 44.490 N	103° 59' 59.140 W
15,400.0	90.00	359.88	10,952.0	4,328.7	355.4	471,565.50	644,407.71	32° 17' 45.479 N	103° 59' 59.139 W
15,500.0	90.00	359.88	10,952.0	4,428.7	355.2	471,665.49	644,407.50	32° 17' 46.469 N	103° 59' 59.138 W
15,600.0	90.00	359.88	10,952.0	4,528.7	354.9	471,765.48	644,407.29	32° 17' 47.458 N	103° 59' 59.137 W
15,700.0	90.00	359.88	10,952.0	4,628.7	354.7	471,865.47	644,407.08	32° 17' 48.448 N	103° 59' 59.135 W
15,800.0	90.00	359.88	10,952.0	4,728.7	354.5	471,965.46	644,406.87	32° 17' 49.437 N	103° 59' 59.134 W

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,900.0	90.00	359.88	10,952.0	4,828.7	354.3	472,065.45	644,406.67	32° 17' 50.427 N	103° 59' 59.133 W
16,000.0	90.00	359.88	10,952.0	4,928.7	354.1	472,165.45	644,406.46	32° 17' 51.416 N	103° 59' 59.132 W
16,100.0	90.00	359.88	10,952.0	5,028.7	353.9	472,265.44	644,406.25	32° 17' 52.406 N	103° 59' 59.131 W
16,200.0	90.00	359.88	10,952.0	5,128.7	353.7	472,365.43	644,406.04	32° 17' 53.395 N	103° 59' 59.129 W
16,300.0	90.00	359.88	10,952.0	5,228.7	353.5	472,465.42	644,405.83	32° 17' 54.385 N	103° 59' 59.128 W
16,400.0	90.00	359.88	10,952.0	5,328.7	353.3	472,565.41	644,405.62	32° 17' 55.374 N	103° 59' 59.127 W
16,500.0	90.00	359.88	10,952.0	5,428.7	353.1	472,665.41	644,405.42	32° 17' 56.364 N	103° 59' 59.126 W
16,600.0	90.00	359.88	10,952.0	5,528.7	352.9	472,765.40	644,405.21	32° 17' 57.353 N	103° 59' 59.125 W
16,700.0	90.00	359.88	10,952.0	5,628.7	352.7	472,865.39	644,405.00	32° 17' 58.343 N	103° 59' 59.123 W
16,800.0	90.00	359.88	10,952.0	5,728.7	352.4	472,965.38	644,404.79	32° 17' 59.332 N	103° 59' 59.122 W
16,900.0	90.00	359.88	10,952.0	5,828.7	352.2	473,065.37	644,404.58	32° 18' 0.322 N	103° 59' 59.121 W
17,000.0	90.00	359.88	10,952.0	5,928.7	352.0	473,165.37	644,404.38	32° 18' 1.311 N	103° 59' 59.120 W
17,100.0	90.00	359.88	10,952.0	6,028.7	351.8	473,265.36	644,404.17	32° 18' 2.301 N	103° 59' 59.119 W
17,200.0	90.00	359.88	10,952.0	6,128.7	351.6	473,365.35	644,403.96	32° 18' 3.290 N	103° 59' 59.118 W
17,300.0	90.00	359.88	10,952.0	6,228.7	351.4	473,465.34	644,403.75	32° 18' 4.280 N	103° 59' 59.116 W
17,400.0	90.00	359.88	10,952.0	6,328.7	351.2	473,565.33	644,403.54	32° 18' 5.269 N	103° 59' 59.115 W
17,500.0	90.00	359.88	10,952.0	6,428.7	351.0	473,665.33	644,403.33	32° 18' 6.259 N	103° 59' 59.114 W
17,600.0	90.00	359.88	10,952.0	6,528.7	350.8	473,765.32	644,403.13	32° 18' 7.248 N	103° 59' 59.113 W
17,700.0	90.00	359.88	10,952.0	6,628.7	350.6	473,865.31	644,402.92	32° 18' 8.238 N	103° 59' 59.112 W
17,800.0	90.00	359.88	10,952.0	6,728.7	350.4	473,965.30	644,402.71	32° 18' 9.227 N	103° 59' 59.110 W
17,900.0	90.00	359.88	10,952.0	6,828.7	350.2	474,065.29	644,402.50	32° 18' 10.217 N	103° 59' 59.109 W
18,000.0	90.00	359.88	10,952.0	6,928.7	350.0	474,165.28	644,402.29	32° 18' 11.206 N	103° 59' 59.108 W
18,100.0	90.00	359.88	10,952.0	7,028.7	349.7	474,265.28	644,402.09	32° 18' 12.196 N	103° 59' 59.107 W
18,200.0	90.00	359.88	10,952.0	7,128.7	349.5	474,365.27	644,401.88	32° 18' 13.185 N	103° 59' 59.106 W
18,300.0	90.00	359.88	10,952.0	7,228.7	349.3	474,465.26	644,401.67	32° 18' 14.175 N	103° 59' 59.104 W
18,400.0	90.00	359.88	10,952.0	7,328.7	349.1	474,565.25	644,401.46	32° 18' 15.164 N	103° 59' 59.103 W
18,500.0	90.00	359.88	10,952.0	7,428.7	348.9	474,665.24	644,401.25	32° 18' 16.154 N	103° 59' 59.102 W
18,600.0	90.00	359.88	10,952.0	7,528.7	348.7	474,765.24	644,401.04	32° 18' 17.143 N	103° 59' 59.101 W
18,700.0	90.00	359.88	10,952.0	7,628.7	348.5	474,865.23	644,400.84	32° 18' 18.133 N	103° 59' 59.100 W
18,800.0	90.00	359.88	10,952.0	7,728.7	348.3	474,965.22	644,400.63	32° 18' 19.122 N	103° 59' 59.098 W
18,900.0	90.00	359.88	10,952.0	7,828.7	348.1	475,065.21	644,400.42	32° 18' 20.112 N	103° 59' 59.097 W
19,000.0	90.00	359.88	10,952.0	7,928.7	347.9	475,165.20	644,400.21	32° 18' 21.101 N	103° 59' 59.096 W
19,100.0	90.00	359.88	10,952.0	8,028.7	347.7	475,265.20	644,400.00	32° 18' 22.091 N	103° 59' 59.095 W
19,200.0	90.00	359.88	10,952.0	8,128.7	347.5	475,365.19	644,399.80	32° 18' 23.080 N	103° 59' 59.094 W
19,300.0	90.00	359.88	10,952.0	8,228.7	347.2	475,465.18	644,399.59	32° 18' 24.070 N	103° 59' 59.092 W
19,400.0	90.00	359.88	10,952.0	8,328.7	347.0	475,565.17	644,399.38	32° 18' 25.059 N	103° 59' 59.091 W
19,500.0	90.00	359.88	10,952.0	8,428.7	346.8	475,665.16	644,399.17	32° 18' 26.049 N	103° 59' 59.090 W
19,600.0	90.00	359.88	10,952.0	8,528.7	346.6	475,765.16	644,398.96	32° 18' 27.038 N	103° 59' 59.089 W
19,700.0	90.00	359.88	10,952.0	8,628.7	346.4	475,865.15	644,398.75	32° 18' 28.028 N	103° 59' 59.088 W
19,800.0	90.00	359.88	10,952.0	8,728.7	346.2	475,965.14	644,398.55	32° 18' 29.017 N	103° 59' 59.086 W
19,900.0	90.00	359.88	10,952.0	8,828.7	346.0	476,065.13	644,398.34	32° 18' 30.007 N	103° 59' 59.085 W
20,000.0	90.00	359.88	10,952.0	8,928.7	345.8	476,165.12	644,398.13	32° 18' 30.996 N	103° 59' 59.084 W
20,100.0	90.00	359.88	10,952.0	9,028.7	345.6	476,265.11	644,397.92	32° 18' 31.986 N	103° 59' 59.083 W
20,200.0	90.00	359.88	10,952.0	9,128.7	345.4	476,365.11	644,397.71	32° 18' 32.975 N	103° 59' 59.082 W
20,300.0	90.00	359.88	10,952.0	9,228.7	345.2	476,465.10	644,397.51	32° 18' 33.965 N	103° 59' 59.080 W
20,400.0	90.00	359.88	10,952.0	9,328.7	345.0	476,565.09	644,397.30	32° 18' 34.954 N	103° 59' 59.079 W
20,500.0	90.00	359.88	10,952.0	9,428.7	344.7	476,665.08	644,397.09	32° 18' 35.944 N	103° 59' 59.078 W
20,600.0	90.00	359.88	10,952.0	9,528.7	344.5	476,765.07	644,396.88	32° 18' 36.933 N	103° 59' 59.077 W
20,700.0	90.00	359.88	10,952.0	9,628.7	344.3	476,865.07	644,396.67	32° 18' 37.923 N	103° 59' 59.076 W
20,800.0	90.00	359.88	10,952.0	9,728.7	344.1	476,965.06	644,396.47	32° 18' 38.912 N	103° 59' 59.074 W
20,900.0	90.00	359.88	10,952.0	9,828.7	343.9	477,065.05	644,396.26	32° 18' 39.902 N	103° 59' 59.073 W
21,000.0	90.00	359.88	10,952.0	9,928.7	343.7	477,165.04	644,396.05	32° 18' 40.891 N	103° 59' 59.072 W
21,100.0	90.00	359.88	10,952.0	10,028.7	343.5	477,265.03	644,395.84	32° 18' 41.881 N	103° 59' 59.071 W
21,173.1	90.00	359.88	10,952.0	10,101.8	343.3	477,338.17	644,395.69	32° 18' 42.605 N	103° 59' 59.070 W

Database:	Old	**Local Co-ordinate Reference:**	Well Harroun Ranch #5H
Company:	BTA Oil Producers, LLC	**TVD Reference:**	GL @ 3019.0usft (Original Well Elev)
Project:	Eddy County, NM (NAD 83)	**MD Reference:**	GL @ 3019.0usft (Original Well Elev)
Site:	Harroun Ranch	**North Reference:**	Grid
Well:	Harroun Ranch #5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Harroun Ranch #5H BHl - plan hits target center - Point	0.00	0.07	10,952.0	10,101.8	343.3	477,338.17	644,395.69	32° 18' 42.605 N	103° 59' 59.070 W