NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 08 2018
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Form 3160-3
(March 2012)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NMNM114979

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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

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

8. Lease Name and Well No. MESQUITE VERDE SWD 3 320714

2. Name of Operator MESQUITE SWD INCORPORATED 161968

9. API Well No. 30-015-44676

3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
602 S Canyon Street Carlsbad NM 88221	(575)887-0980	SWD / DEVONIAN

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

At surface SESW / 1030 FSL / 2635 FWL / LAT 32.212947 / LONG -103.731544

At proposed prod. zone SESW / 1030 FSL / 2635 FWL / LAT 32.212947 / LONG -103.731544

11. Sec., T. R. M. or Blk. and Survey or Area SEC 13 / T24S / R31E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
22 miles	LEA Eddy	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
1030 feet	640	0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
2335 feet	18010 feet / 18010 feet	FED: NMB000612

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3597 feet	12/1/2017	45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature	Name (Printed/Typed)	Date
(Electronic Submission)	Melanie Wilson / Ph: (575)914-1461	10/10/2017

Title: Regulatory Analyst

Approved by (Signature)	Name (Printed/Typed)	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	01/23/2018

Title	Office
Supervisor Multiple Resources	CARLSBAD

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

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

(Continued on page 2)

*(Instructions on page 2)

CONFIDENTIAL

APPROVED WITH CONDITIONS

Approval Date: 01/23/2018

RWP 2-9-18

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the field or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances from subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396, 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of Federal and Indian Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications.
Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

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Additional Operator Remarks

Location of Well

1. SHL: SESW / 1030 FSL / 2635 FWL / TWSP: 24S / RANGE: 31E / SECTION: 13 / LAT: 32.212947 / LONG: -103.731544 (TVD: 0 feet, MD: 0 feet)
   BHL: SESW / 1030 FSL / 2635 FWL / TWSP: 24S / RANGE: 31E / SECTION: 13 / LAT: 32.212947 / LONG: -103.7 TVD: 18010 feet, MD: 18010 feet)

BLM Point of Contact

Name: Deborah McKinney
Title: Legal Instruments Examiner
Phone: 5752345931
Email: dmckinne@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Mesquite SWD Inc**
LEASE NO.:	**NM114979**
WELL NAME & NO.:	**3 – Mesa Verde SWD**
SURFACE HOLE FOOTAGE:	**1030'/S & 2635'/W**
BOTTOM HOLE FOOTAGE	**Same as above**
LOCATION:	**Sec. 13, T. 24 S, R. 31 E**
COUNTY:	**Eddy County,NEW MEXICO**

[redacted]

H2S	○ Yes	◉ No	
Potash	○ None	◉ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

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

B. CASING

1. The **20** inch surface casing shall be set at approximately **850** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

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

2. The minimum required fill of cement behind the **13-3/8** inch **1st** intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

3. The minimum required fill of cement behind the **9-5/8** inch production casing is:
   - Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

Operator shall filled 1/3rd of production liner with fluid while drilling to maintain collapse safety factor.

4. The minimum required fill of cement behind the **7** inch production liner is:
   - Cement should tie-back 100' into the previous casing. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13-3/8** intermediate casing shoe shall be **5000 (5M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **10,000 (10M)** psi.

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)

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

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

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

A. CASING

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

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

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. **On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.**

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. 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.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin

after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

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. 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.

f. 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. This test shall be performed prior to the test at full stack pressure.

g. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 01122018

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mesquite SWD Inc
LEASE NO.:	NM114979
WELL NAME & NO.:	3 – Mesa Verde SWD
SURFACE HOLE FOOTAGE:	1030'/S & 2635'/W
BOTTOM HOLE FOOTAGE	Same as above
LOCATION:	Section 13, T. 24 S., R. 31 E.
COUNTY:	Eddy County, New Mexico

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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.

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☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Lesser Prairie-Chicken Timing Stipulations
- Ground-level Abandoned Well Marker
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☐ **Construction**
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- Topsoil
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- Federal Mineral Material Pits
- Well Pads
- Roads

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

☐ **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 and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator 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 shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

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.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

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. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Watershed/Water Quality:
For all proposed actions; the entire perimeter of the SWD Pad site will be bermed to prevent oil, salt, and other chemical contaminants from leaving the 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. (Any access road crossing the berm cannot be lower than the berm height.)

VI. 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.

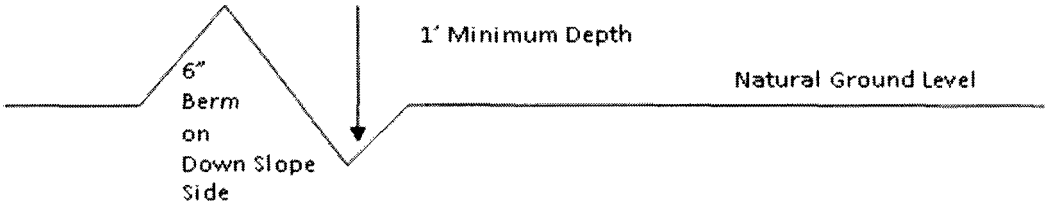
Ditching
Ditching shall be required on both sides of the road.

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:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ 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

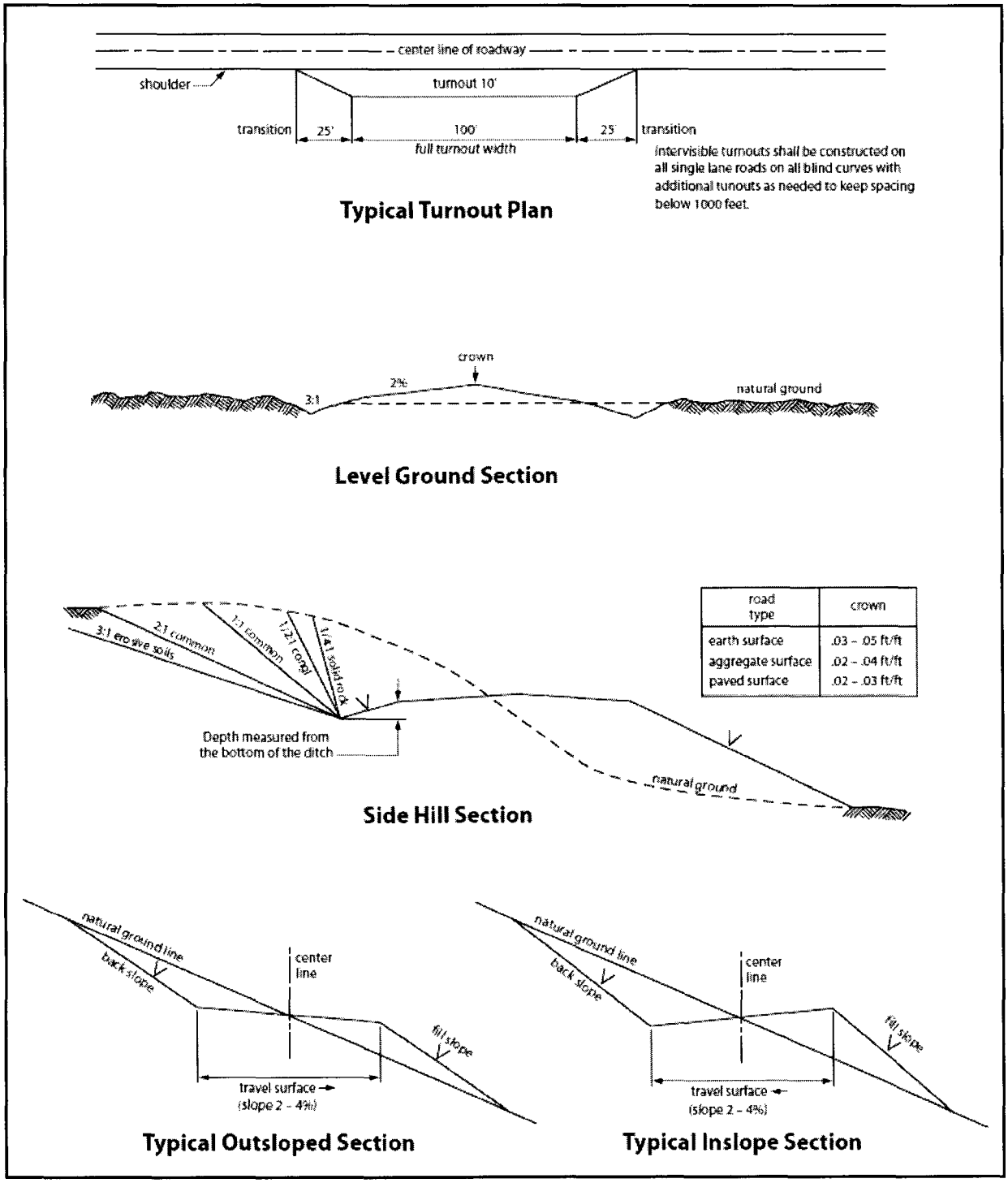


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. 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).

VIII. 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).

IX. 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.

(Insert Seed Mixture Here)

AFMSS

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

Operator Certification Data Report

01/23/2018

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: Melanie Wilson **Signed on:** 06/20/2017

Title: Regulatory Analyst

Street Address: 106 W. Riverside Drive

City: Calsbad **State:** NM **Zip:** 88220

Phone: (575)914-1461

Email address: mjp1692@gmail.com

Field Representative

Representative Name: Riley Neatherlin

Street Address: PO Box 1479

City: Carlsbad **State:** NM **Zip:** 88220

Phone: (575)702-7288

Email address: rgneatherlin@gmail.com

AFMSS

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

Application Data Report
01/23/2018

APD ID: 10400023153
Submission Date: 10/10/2017
Operator Name: MESQUITE SWD INCORPORATED
Well Name: MESA VERDE SWD
Well Number: 3
Well Type: INJECTION - DISPOSAL
Well Work Type: Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400023153
Tie to previous NOS?
Submission Date: 10/10/2017
BLM Office: CARLSBAD
User: Melanie Wilson
Title: Regulatory Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM114979
Lease Acres: 640
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? YES
Permitting Agent? NO
APD Operator: MESQUITE SWD INCORPORATED
Operator letter of designation:

Operator Info

Operator Organization Name: MESQUITE SWD INCORPORATED
Operator Address: 602 S Canyon Street
Zip: 88221
Operator PO Box: PO Box 1479
Operator City: Carlsbad
State: NM
Operator Phone: (575)887-0980
Operator Internet Address: mjp1692@gmail.com

Section 2 - Well Information

Well in Master Development Plan? NO
Mater Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: MESA VERDE SWD
Well Number: 3
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: SWD
Pool Name: DEVONIAN
Is the proposed well in an area containing other mineral resources? POTASH

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: VERTICAL **Number of Legs:**

Well Work Type: Drill

Well Type: INJECTION - DISPOSAL

Describe Well Type:

Well sub-Type: INJECTION - DISPOSAL

Describe sub-type:

Distance to town: 22 Miles **Distance to nearest well:** 2335 FT **Distance to lease line:** 1030 FT

Reservoir well spacing assigned acres Measurement: 0 Acres

Well plat: Mesa_Verde_SWD_3_C102_20171010094319.pdf

Well work start Date: 12/01/2017 **Duration:** 45 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	1030	FSL	2635	FWL	24S	31E	13	Aliquot SESW	32.212947	-103.731544	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 114979	3597	0	0
BHL Leg #1	1030	FSL	2635	FWL	24S	31E	13	Aliquot SESW	32.212947	-103.731544	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 114979	-14413	18010	18010

APD ID: 10400023153 **Submission Date:** 10/10/2017

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Well Type: INJECTION - DISPOSAL **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
1	UNKNOWN	3597	0	0		NONE	No
2	RUSTLER	2694	850	850		NONE	No
3	SALADO	2364	1180	1180		NONE	No
4	TOP SALT	1159	2385	2385		NONE	No
5	BASE OF SALT	-773	4370	4370		NONE	No
6	LAMAR	-1044	4588	4588		NATURAL GAS,OIL	No
7	BONE SPRING	-4803	8400	8400		NATURAL GAS,OIL	No
8	WOLFCAMP	-7621	11165	11165		NATURAL GAS,OIL	No
9	STRAWN	-9903	13500	13500		NATURAL GAS,OIL	No
10	MORROW	-10718	14315	14315		NATURAL GAS,OIL	No
11	MISSISSIPPIAN	-12553	16150	16150		NATURAL GAS,OIL	No
12	DEVONIAN	-13023	16620	16620		NONE	No

Section 2 - Blowout Prevention

Pressure Rating (PSI): 10M **Rating Depth:** 19000

Equipment: A 10M system will be installed according to Onshore Order #2 consisting of an Annular Preventer, BOP with two rams and a blind ram. BOP will be equipped with 2 side outlets (choke side shall be a minimum 3" line, and kill side will be a minimum 2" line). Kill line will be installed with (2) valves and a check valve (2" min) of proper pressure rating for the system. Remote kill line (2' min) will be installed and ran to the outer edge of the substructure and be unobstructed. A manual and hydraulic valve (3" min) will be installed on the choke line, 3 chokes will be used with one being remotely controlled. Fill up line will be installed above the uppermost preventer. Pressure gauge of proper pressure rating will be installed on choke manifold. Upper and lower kelly cocks will be utilized with handles readily available in plain sight. A float sub will be available at all times. All connections subject to well pressure will be flanged, welded, or clamped.

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Requesting Variance? YES

Variance request: Flex hose variance

Testing Procedure: BOP and BOPE shall be installed, used, maintained, and tested in a manner necessary to assure well control and shall be in place and operational prior to drilling the surface casing shoe, unless otherwise stated by APD. The Annular shall be functionally operated at least weekly, and, pipe and blind rams shall be activated each trip. • The surface (20") BOP/BOPE pressure test will be made to hold 250 psi low, and 2000 psi high, • The first intermediate (13 3/8") BOP/BOPE pressure tests will be made to hold 250 psi low, and 5000 psi high, before drilling out the 1st intermediate shoe. • The second intermediate (9 5/8") BOP/BOPE pressure tests will be made to hole 250 psi low, and 10,000 psi high, before drilling out the 2nd intermediate shoe.

Choke Diagram Attachment:

Mesa_Verde_SWD_3_Flex_Hose_Data_20171009164911.pdf

BOP Diagram Attachment:

Mesa_Verde_SWD_3_10M_BOP___Chk_Manifold_20171009164937.pdf

Mesa_Verde_SWD_3_2M_3M_BOP_20171009165046.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	26	20.0	NEW	API	N	0	850	0	850			850	K-55	94	BUTT	1.29	4.6	DRY	15	DRY	15
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	4510	0	4510			4510	HCP-110	68	BUTT	1.32	1.24	DRY	7.23	DRY	7.44
3	PRODUCTION	12.25	9.625	NEW	API	N	0	12100	0	12100			12100	P-110	53.5	BUTT	1.28	1.18	DRY	3.29	DRY	3.4
4	LINER	8.5	7.625	NEW	API	N	11600	16620	11600	16620			5020	P-110	39	FJ	1.23	1.27	BUOY	4.01	BUOY	5.35

Casing Attachments

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mesa_Verde_SWD_3_Surf_Csg_Specs_20171010140753.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mesa_Verde_SWD_3_Csg_Program_20171010134951.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mesa_Verde_SWD_3_Csg_Program_20171010135003.pdf

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Casing Attachments

Casing ID: 4 **String Type:**LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Mesa_Verde_SWD_3_7.625_Liner_Specs_20171010134920.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	850	1125	1.91	12.9	2149	100	Class C	35/65 Poz/C + 5% (BWOW) PF44 Salt + 6% PF20 Bentonite + 3 pps PF42 Kol-Seal + .4 pps PF45 Defoamer + .125 pps PF29 Cellophane
SURFACE	Tail		0	850	200	1.34	14.8	268	100	Class C	2% PF1 Calcium
INTERMEDIATE	Lead		0	4510	2115	1.91	12.9	4040	50	Class C	35/65 Poz/C + 5% (BWOW) PF44 Salt + 6% PF20 Bentonite + .3% PF13 Retarder + 3 pps PF42 Kol-Seal + .4 pps PF45 Defoamer + .125 pps PF29 Cellophane
INTERMEDIATE	Tail		0	4510	200	1.33	14.8	266	50	Class C	.3% PF13 Retarder
PRODUCTION	Lead		0	12100	1650	2.47	11.9	4076	30	Class H	50/50 Poz/H + 5% (BWOW) PF44 Salt + 10% PF20 Bentonite + .4% PF153 Antisettleing Agent + .2% PF813 Retarder + 3 pps PF42 Kol-Seal + .4 pps PF45

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Defoamer
PRODUCTION	Tail		0	12100	400	1.19	15.6	476	30	Class H	.3% PF13 Retarder + .3% PF606 Fluid Loss + .4 pps PF45 Defoamer
LINER	Lead		11600	16620	380	1.33	14.2	505	30	Class H	50/50 Poz/H + 3% PF44 (BWOW) (Salt) + 2% PF20 Bentonite + 1.2% PF606 Fluid Loss + .3% PF65 Dispersant + .14% PF813 Retarder + .1% PF153 Antisettling Agent + .4 pps PF45 Defoamer

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	850	SPUD MUD	8.4	9							

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

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
850	4510	SALT SATURATED	9.8	10.2							
4510	12100	SALT SATURATED	9	9.4							
12100	16620	SALT SATURATED	12	13.5							
16620	18010	OTHER : FRESH WATER	8.4	8.6							

Section 6 - Test, Logging, Coring

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

None planned

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

CBL,CNL,DIL,EL,FDC,GR,MUDLOG

Coring operation description for the well:

None planned

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 8424 **Anticipated Surface Pressure:** 4461.8

Anticipated Bottom Hole Temperature(F): 270

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:

Mesa_Verde_SWD_3_H2S_Plan_20171009182818.pdf

Mesa_Verde_SWD_3_H2S_Plan_Rig_Layout_20171009182834.pdf

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

Mesquite SWD, Inc.
Mesa Verde SWD #3
Flex Hose Data

Midwest Hose
& Specialty, Inc.

Internal Hydrostatic Test Certificate

General Information		Hose Specifications	
Customer	PRECISION DRILLING	Hose Assembly Type	Choke & Kill
MWH Sales Representative	TYLER HILL	Certification	API 7K
Date Assembled	8/19/2014	Hose Grade	MUD
Location Assembled	OKC	Hose Working Pressure	10000
Sales Order #	268122	Hose Lot # and Date Code	7448-07/11
Customer Purchase Order #	245230	Hose I.D. (Inches)	3"
Assembly Serial # (Pick Ticket #)	268122-2	Hose O.D. (Inches)	5.36"
Hose Assembly Length	36'	Armor (yes/no)	YES

Fittings			
End A		End B	
Stem (Part and Revision #)	R3.0X64WB	Stem (Part and Revision #)	R3.0X64WB
Stem (Heat #)	MM141420	Stem (Heat #)	MM141420
Ferrule (Part and Revision #)	RF3.0	Ferrule (Part and Revision #)	RF3.0
Ferrule (Heat #)	J0965	Ferrule (Heat #)	J0965
Connection (Part #)	4 1/16 10K	Connection (Part #)	4 1/16 10K
Connection (Heat #)		Connection (Heat #)	
Dies Used	5.37"	Dies Used	5.45

Hydrostatic Test Requirements		
Test Pressure (psi)	15,000	Hose assembly was tested with ambient water temperature.
Test Pressure Hold Time (minutes)	15 1/2	

Date Tested	Tested By	Approved By
8/19/2014	Charles Ash	Ryan Adams

Midwest Hose & Specialty, Inc.

Internal Hydrostatic Test Graph

August 19, 2014

Customer: Precision Drilling

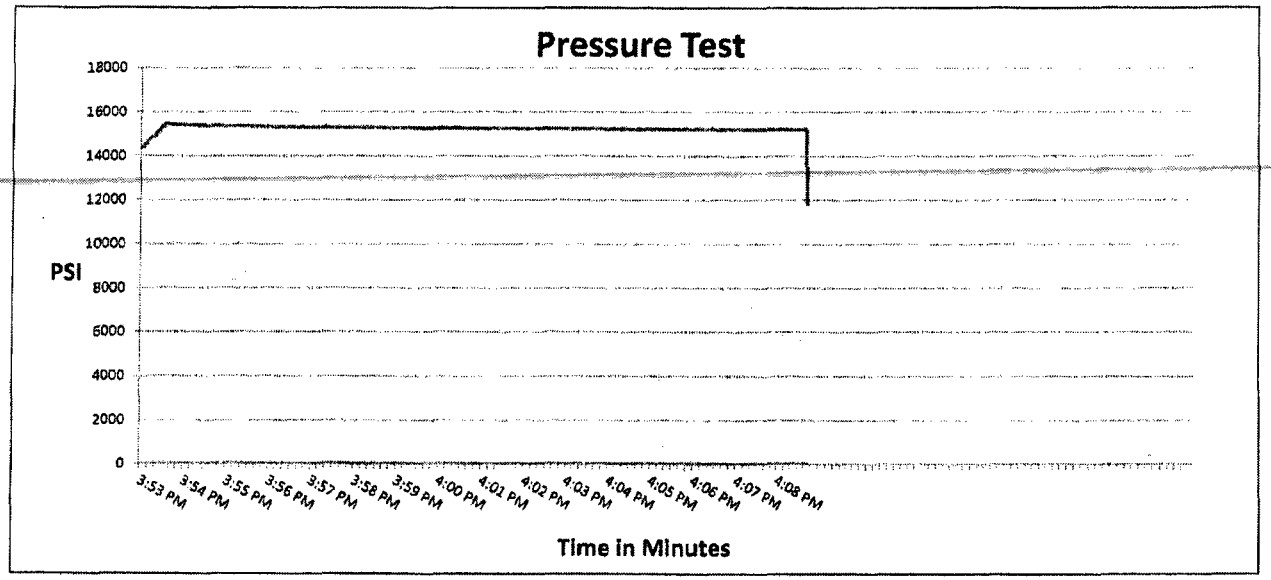
Pick Ticket #: 268122

Hose Specifications

Hose Type	Length
Ck	36'
I.D.	**O.D.**
3"	4.79"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	**Final O.D.**
5.37"	5.36"
Hose Serial #	**Hose Assembly Serial #**
7448	268122-2



Test Pressure	Time Held at Test Pressure	Actual Burst Pressure	Peak Pressure
15000 PSI	15 2/4 Minutes		15556 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: *Charles Ash*

Approved By: *Ryan Adams*

Midwest Hose
& Specialty, Inc.

Certificate of Conformity

Customer:	**PRECISION DRILLING**	*Customer P.O.#*	**245230**
Sales Order #	**268122**	*Date Assembled:*	**8/19/2014**

Specifications

Hose Assembly Type:	**Choke & Kill**		
Assembly Serial #	**268122-2**	*Hose Lot # and Date Code*	**7448-07/11**
Hose Working Pressure (psi)	**10000**	*Test Pressure (psi)*	**15000**

We hereby certify that the above material supplied for the referenced purchase order to be true according to the requirements of the purchase order and current industry standards.

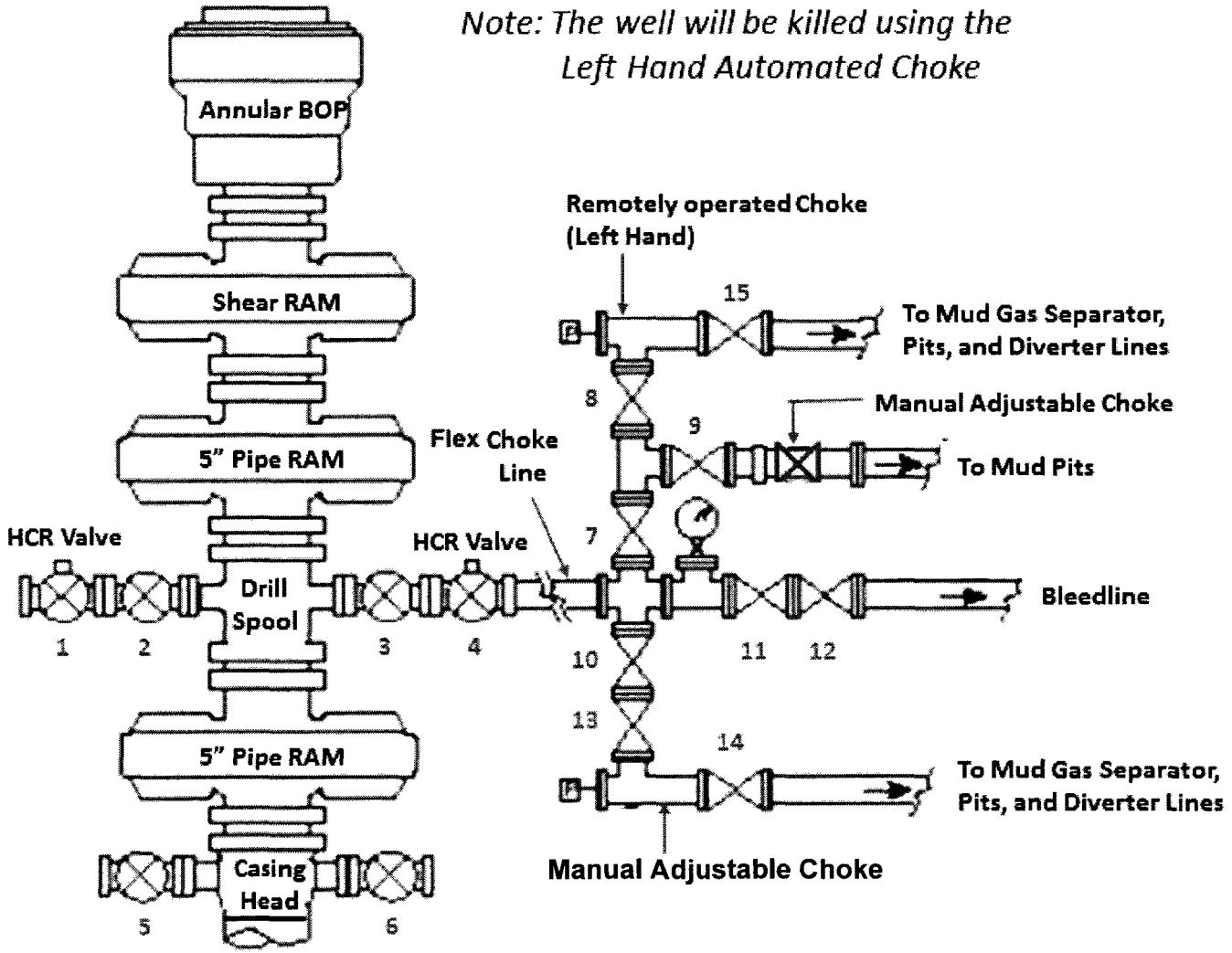
Supplier:
Midwest Hose & Specialty, Inc.
3312 S I-35 Service Rd
Oklahoma City, OK 73129

Comments:

Approved By	***Date***
	8/20/2014

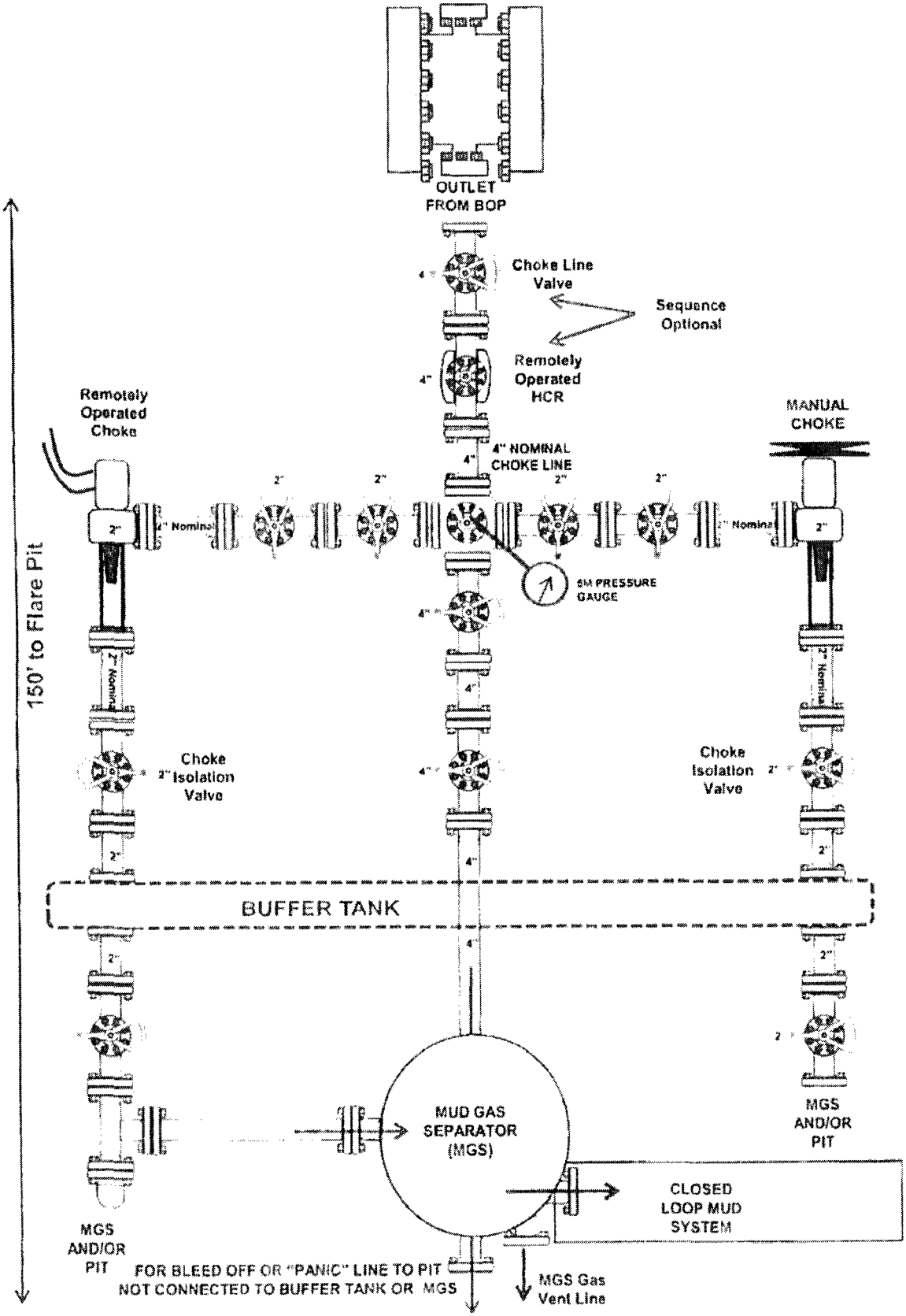
Mesquite SWD, Inc.
Mesa Verde SWD #3

10M BOP/BOPE/Choke Diagram

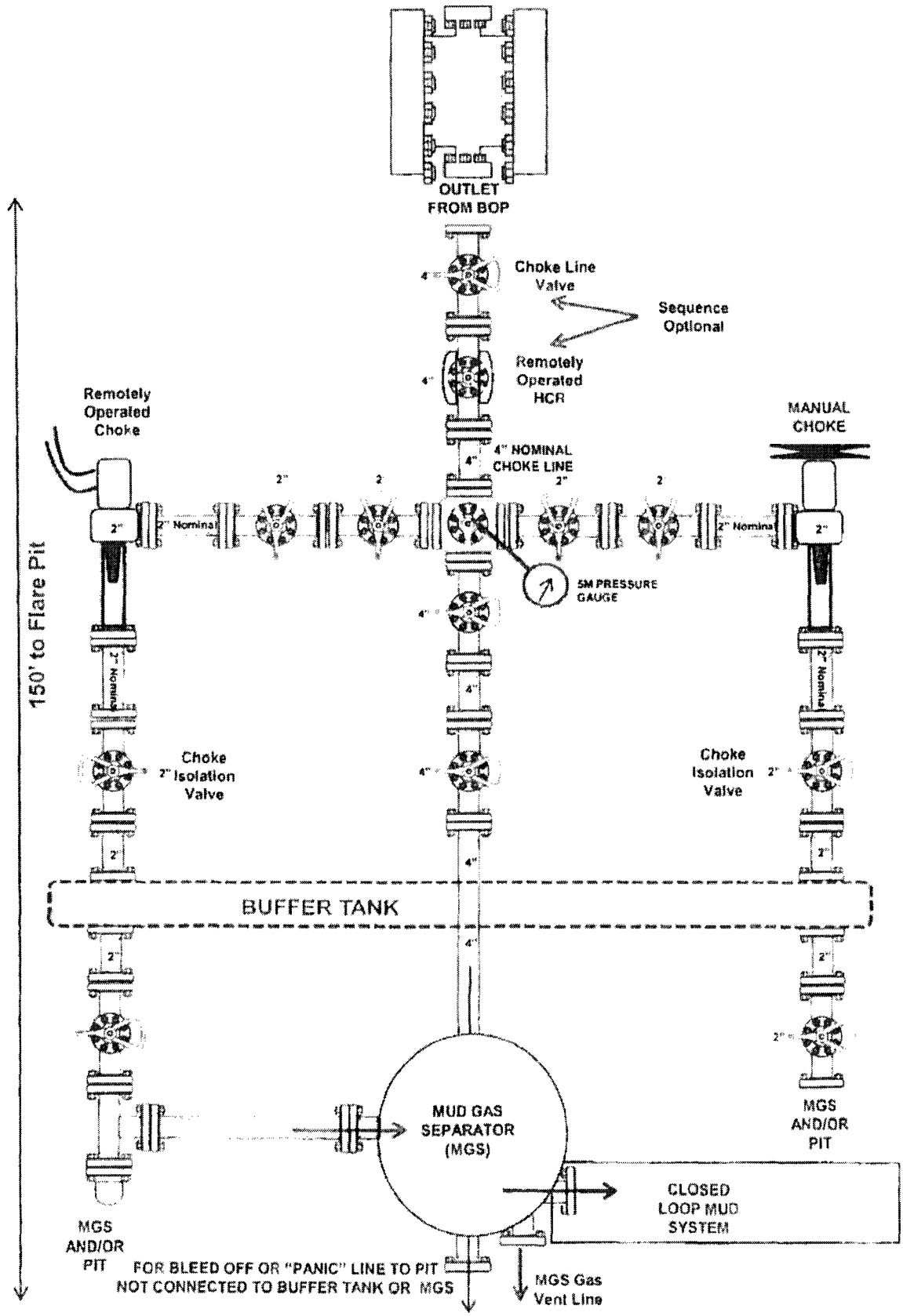


Mesquite SWD, Inc.
Mesa Verde SWD #3

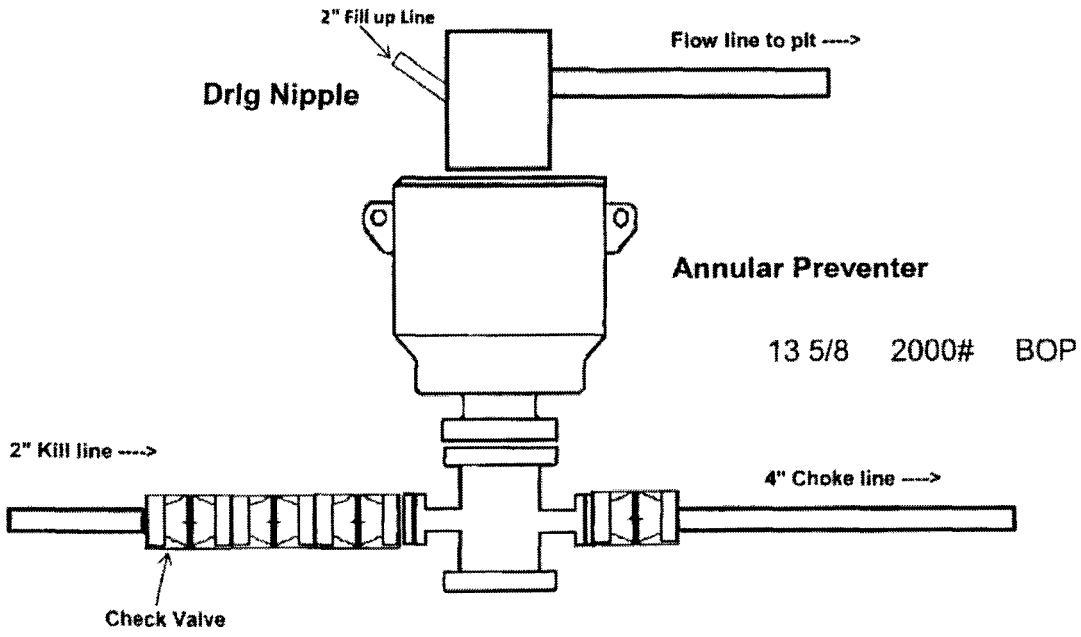
2M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



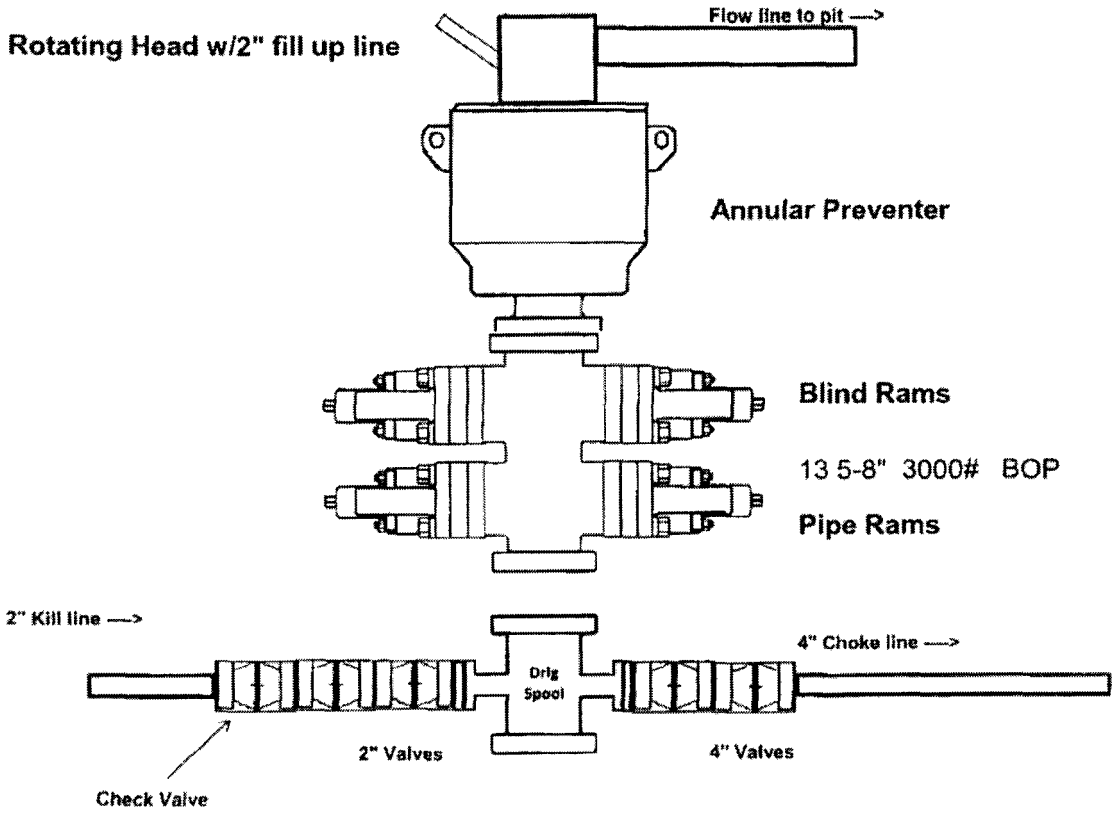
3M Choke Manifold Equipment (WITH MGS + CLOSED LOOP)



2,000 psi BOP Schematic



3,000 psi BOP Schematic



SIZE O.D. (in)	NOMINAL WEIGHT (lb/ft)	WALL THICKNESS (in)	INSIDE DIAMETER (in)	DRIFT DIAMETER (in)	PIPE BODY YIELD STRENGTH (1000 lb)								
					H-40	J-55 K-55	C-75	L-80 N-80	-90	C-95	P-110	-125	-140
16	65.00	0.375	15.250	15.062	736 *	1,012	1,381	1,473	1,657	1,749	2,025	2,301	2,577
	75.00	0.438	15.124	14.936	857	1,178 *	1,606	1,713	1,927	2,034	2,355	2,677	2,998
	84.00	0.495	15.010	14.822	964	1,326 *	1,808	1,929	2,170	2,291	2,652	3,014	3,376
	109.00	0.656	14.688	14.500	1,265	1,739	2,372	2,530	2,846	3,004	3,478	3,953	4,427
	118.00	0.715	14.570	14.382	1,373	1,888	2,575	2,747	3,090	3,262	3,777	4,292	4,807
	128.00	0.781	14.438	14.250	1,494	2,054	2,801	2,987	3,361	3,547	4,108	4,668	5,228
	146.00	0.906	14.188	14.000	1,718	2,363	3,222	3,437	3,867	4,081	4,726	5,370	6,015
18-5/8	87.50	0.435	17.755	17.567	994 *	1,367 *	1,864	1,989	2,237	2,362	2,734	3,107	3,480
	96.50	0.486	17.653	17.465	1,108	1,523	2,077	2,216	2,493	2,631	3,046	3,462	3,877
	109.35	0.563	17.499	17.311	1,278	1,757	2,396	2,556	2,875	3,035	3,514	3,993	4,473
	112.00	0.579	17.467	17.279	1,313	1,805	2,462	2,626	2,954	3,118	3,611	4,103	4,596
	139.00	0.720	17.185	16.997	1,620	2,228	3,038	3,240	3,645	3,848	4,455	5,063	5,670
20	94.00	0.438	19.124	18.936	1,077 *	1,480 *	2,019	2,153	2,423	2,557	2,961	3,365	3,768
	106.50	0.500	19.000	18.812	1,225	1,685 *	2,297	2,450	2,757	2,910	3,369	3,829	4,288
	133.00	0.635	18.730	18.542	1,545	2,125 *	2,897	3,091	3,477	3,670	4,249	4,829	5,408
	169.00	0.812	18.376	18.188	1,958	2,692	3,671	3,916	4,405	4,650	5,384	6,119	6,853

* API Size, Weight, & Grade

Yield Strength
16 - 20

Casing Program

Hole Size	Casing Interval		Casing Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
26"	0	850	20"	94	K-55	BTC	1.29	4.60	15.00	15.00
17 1/2"	0	4510	13 3/8"	68	HCP-110	BTC	1.32	1.24	7.23	7.44
12 1/4"	0	11650	9 5/8"	53.5	P-110	BTC	1.28	1.18	3.29	3.4
8 1/2"	11415	16935	7 5/8"	39	SM-125TT	VAM-SLIJ-II	1.23	1.27	4.01	5.35
6 1/2"	Open Hole									

Casing Program

Hole Size	Casing Interval		Casing Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
	From	To								
26"	0	850	20"	94	K-55	BTC	1.29	4.60	15.00	15.00
17 1/2"	0	4510	13 3/8"	68	HCP-110	BTC	1.32	1.24	7.23	7.44
12 1/4"	0	11650	9 5/8"	53.5	P-110	BTC	1.28	1.18	3.29	3.4
8 1/2"	11415	16935	7 5/8"	39	SM-125TT	VAM-SLIJ-II	1.23	1.27	4.01	5.35
6 1/2"	Open Hole									

U. S. Steel Tubular Products

10/6/2017 1:47:08 PM

7.625" 39.00lbs/ft (0.500" Wall) P110 HC USS-LIBERTY FJM®

MECHANICAL PROPERTIES	Pipe	USS-LIBERTY FJM®	
Minimum Yield Strength	110,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	125,000	--	psi
DIMENSIONS	**Pipe**	**USS-LIBERTY FJM®**	
Outside Diameter	7.625	7.625	in.
Wall Thickness	0.500	--	in.
Inside Diameter	6.625	6.539	in.
Standard Drift	6.500	6.500	in.
Alternate Drift	--	--	in.
Nominal Linear Weight, T&C	39.00	--	lbs/ft
Plain End Weight	38.08	--	lbs/ft
Critical Area	11.192	6.665	sq. in.
Joint Efficiency	--	59.5	%
Minimum Collapse Pressure	12,180	12,180	psi
External Pressure Leak Resistance	--	12,180	psi
Minimum Internal Yield Pressure	12,640	12,640	psi
Minimum Pipe Body Yield Strength	1,231,000	--	lbs
Joint Strength	--	733,000	lbs
Compression Rating	--	733,000	lbs
Reference Length	--	12,843	ft
Maximum Uniaxial Bend Rating	--	39.4	deg/100 ft
Make-Up Loss	--	4.75	in.
Minimum Make-Up Torque	--	14,700	ft-lbs
Maximum Make-Up Torque	--	20,750	ft-lbs

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Compressive & Tensile Connection Efficiencies are calculated by dividing the connection critical area by the pipe body area.
3. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
4. USS-LIBERTY FJM™ connections are optimized for each combination of OD and wall thickness and cannot be interchanged.
5. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
6. Reference length is calculated by joint strength divided by nominal plain end weight with 1.5 safety factor.
7. Connection external pressure leak resistance has been verified to 100% API pipe body collapse pressure following the guidelines of API 5C5 Cal III.

U. S. Steel Tubular Products
10343 Sam Houston Park Dr., #120
Houston, TX 77064

1-877-893-9461
connections@uss.com
www.usstubular.com

Hydrogen Sulfide Drilling Operations Plan

Mesquite SWD, Inc.
Mesa Verde SWD #3
1030' FSL & 2635' FWL
Section 13 – T24S – R31E
Lea County, New Mexico

1. H2S Detection and Alarm Systems
    A. H2S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
2. Windsock and/or wind streamers
    A. Windsock at mudpit area should be high enough to be visible.
    B. Windsock at briefing area should be high enough to be visible.
3. Condition Flags and Signs
    A. Warning sign on access road to location.
    B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H2S present in dangerous concentration. Only emergency personnel admitted to location.
4. Well control equipment
    A. See "Pressure Control Equipment"
5. Communication
    A. While working under masks chalkboards will be used for communication.
    B. Hand signals will be used where chalk board is inappropriate.
    C. Two way radio will be used to communicate off location in case emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
6. Drillstem testing is not anticipated.
7. Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
8. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary

Mesquite SWD, Inc.
Deep Purple SWD #1
1310' FSL & 1310' FWL
Section 30, T22S, R32E
Lea County, New Mexico

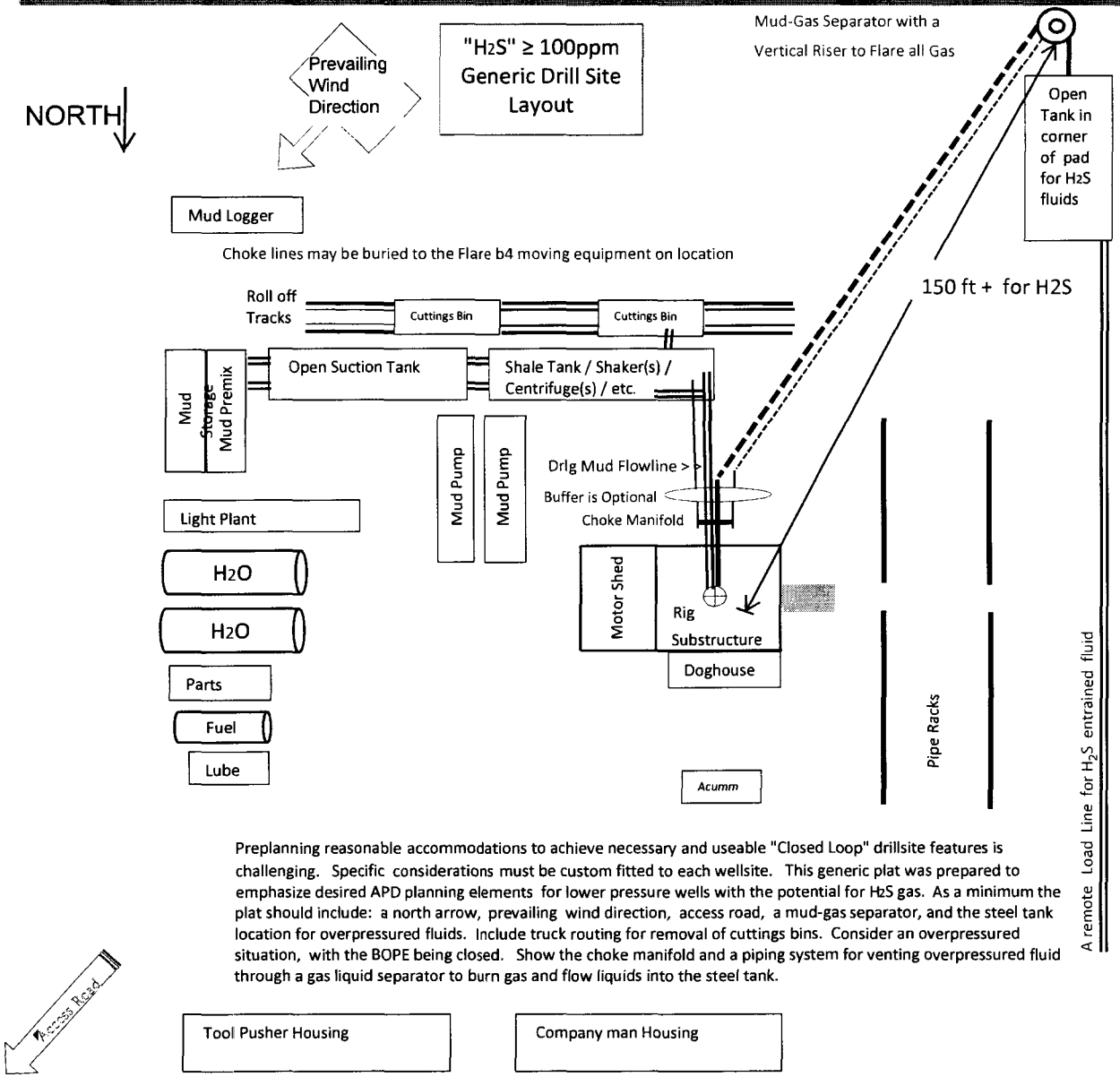
Emergency Contact List

Mesquite SWD, Inc.	575-706-1840
Clay Wilson	575-706-1840
Riley Neatherlin	575-706-7288
Kay Havenor	575-626-4518

EMERGENCY RESPONSE NUMBERS

State Police	575-748-9718
State Police Lea Co.	575-392-5588
Eddy County Sheriff	575-746-2701
Lea County Sheriff	575-396-3611
Emergency Medical Services	911 or 575-746-2701
Artesia Fire and Ambulance	575-746-5050
Maljamar Fire and Ambulance	575-674-4100
Artesia General Hospital 702 N. 13th St. Artesia	575-748-3333
Carlsbad Medical Center 2430 West Pierce Street	575-887-4100
Lea County Emergency Response	575-396-8602
Lea County Ambulance Eunice	911 or 575-396-8602
Carlsbad Police Department	575-885-2111
Eddy County Emergency Management	575-887-9511
Carlsbad Fire Department	575-885-3125

Note: squares are to represent approximately 07 ft x 07 ft areas



Preplanning reasonable accommodations to achieve necessary and useable "Closed Loop" drillsite features is challenging. Specific considerations must be custom fitted to each wellsite. This generic plat was prepared to emphasize desired APD planning elements for lower pressure wells with the potential for H2S gas. As a minimum the plat should include: a north arrow, prevailing wind direction, access road, a mud-gas separator, and the steel tank location for overpressured fluids. Include truck routing for removal of cuttings bins. Consider an overpressured situation, with the BOPE being closed. Show the choke manifold and a piping system for venting overpressured fluid through a gas liquid separator to burn gas and flow liquids into the steel tank.

For a vertical gas vent or flare to be 150ft from the wellbore, the well needs to be centered in a square 250ft min on a side. To be 100ft from the wellbore, the well needs to be centered in a square 150ft min on a side.

Mesquite SWD, Inc.
Mesa Verde SWD #3
Section 13-T24S-R31E
Eddy County, NM

APD ID: 10400023153 **Submission Date:** 10/10/2017

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Well Type: INJECTION - DISPOSAL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Mesa_Verde_SWD_3_Existing_Roads_20171010095426.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

Mesa_Verde_SWD_3_Access_Road_20171010095459.pdf

New road type: RESOURCE

Length: 2624 Feet **Width (ft.):** 14

Max slope (%): 2 **Max grade (%):** 2

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 10

New road access erosion control: Road construction requirements and regular maintenance would alleviate potential impacts to the access road from water erosion damage.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Access surfacing type: OTHER

Access topsoil source: BOTH

Access surfacing type description: Native Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description: Material will be obtained from BLM caliche pit in Section 4-T24S-R31E or Section 24-T24S-R30E

Onsite topsoil removal process: The top 6 inches of topsoil is pushed off and stockpiled along the side of the location. An approximate 160' X 160' area is used within the proposed well site to remove caliche. Subsoil is removed and stockpiled within the pad site to build the location and road. Then subsoil is pushed back in the hole and caliche is spread accordingly across proposed access road.

Access other construction information:

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: OTHER

Drainage Control comments: Proposed access road will be crowned and ditched and constructed of 6 inch rolled and compacted caliche. Water will be diverted where necessary to avoid ponding, maintain good drainage, and to be consistent with local drainage patterns.

Road Drainage Control Structures (DCS) description: The ditches will be 1' deep with 3:1 slopes.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Mesa_Verde_SWD_3_1_Mile_Map_20171010095941.pdf

Mesa_Verde_SWD_3_1_Mile_Data_20171010142905.pdf

Existing Wells description: A spreadsheet listing all wells within a one mile radius is attached.

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

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Six 750 bbl fiberglass injection tanks, four 500 bbls steel oil tanks, injection pumps. two desanders, and two gun barrels. All produced water will be piped to facility.

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: INTERMEDIATE/PRODUCTION CASING **Water source type:** OTHER

Describe type: Brine water

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 50000 **Source volume (acre-feet):** 6.444655

Source volume (gal): 2100000

Water source use type: OTHER, SURFACE CASING **Water source type:** OTHER

Describe type:

Source latitude: **Source longitude:**

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 2000 **Source volume (acre-feet):** 0.25778618

Source volume (gal): 84000

Water source use type: SURFACE CASING **Water source type:** OTHER

Describe type: Fresh water

Source latitude: **Source longitude:**

Source datum:

Water source permit type:

Source land ownership:

Water source transport method:

Source transportation land ownership:

Water source volume (barrels): 15000 **Source volume (acre-feet):** 1.9333965

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Source volume (gal): 630000

Water source use type: SURFACE CASING **Water source type:** OTHER

Describe type: Fresh water

Source latitude: **Source longitude:**

Source datum:

Water source permit type:

Source land ownership:

Water source transport method:

Source transportation land ownership:

Water source volume (barrels): 0 **Source volume (acre-feet):** 0

Source volume (gal): 0

Water source and transportation map:

Mesa_Verde_SWD_3_Water_Source_Map_20171010145807.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Section 6 - Construction Materials

Construction Materials description: On site caliche will be used for construction if sufficient. In the event insufficient quantities of caliche are available onsite, caliche will be trucked in from BLM's caliche pit in Section 1-T23S-R31E or BLM's caliche pit in Section 12-T22S-R31E.
Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drilling fluids and cuttings

Amount of waste: 3900 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling fluids will be stored safely and disposed of properly

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE
Disposal type description:

Disposal location description: Cuttings will be hauled to R360's facility on US 62/180 at Halfway, NM.

Waste type: SEWAGE

Waste content description: Human waste and grey water

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste material will be stored safely and disposed of properly.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Waste type: GARBAGE

Waste content description: Miscellaneous trash

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Trash produced during drilling and completion operations will be collected in a trash container and disposed of properly
Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Description of cuttings location Cuttings will be stored in roll off bins and hauled to R360 on US 62/180 near Halfway.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Mesa_Verde_SWD_3_Rig_Layout_20171010103440.pdf

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:**

Multiple Well Pad Number:

Recontouring attachment:

Drainage/Erosion control construction: During construction proper erosion control methods will be used to control erosion, runoff and siltation of the surrounding area.

Drainage/Erosion control reclamation: Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

Well pad proposed disturbance (acres):

Road proposed disturbance (acres):

Powerline proposed disturbance (acres):

Pipeline proposed disturbance (acres):

Other proposed disturbance (acres):

Total proposed disturbance:

Well pad interim reclamation (acres): 5.05

Road interim reclamation (acres): 0.84

Powerline interim reclamation (acres):

Pipeline interim reclamation (acres): 0

Other interim reclamation (acres): 0

Total interim reclamation: 5.89

Well pad long term disturbance (acres): 3.67

Road long term disturbance (acres): 0.84

Powerline long term disturbance (acres):

Pipeline long term disturbance (acres): 0

Other long term disturbance (acres): 0

Total long term disturbance: 4.51

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations

Soil treatment: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

Existing Vegetation at the well pad: The historic climax plant community is a grassland dominated by black grama, dropseeds, and blue stems with sand sage and shinnery oak distributed evenly throughout. Current landscape displays *mesquite, shinnery oak, yucca, desert sage, fourwing saltbush, snakeweed, and bunch grasses*

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: Refer to "Existing Vegetation at the well pad'

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary	
Seed Type	**Pounds/Acre**

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: No invasive species present. Standard regular maintenance to maintain a clear location and road.
Weed treatment plan attachment:

Monitoring plan description: Identify areas supporting weeds prior to construction; prevent the introduction and spread of weeds from construction equipment during construction; and contain weed seeds and propagules by preventing segregated topsoil from being spread to adjacent areas. No invasive species present. Standard regular maintenance to maintain a clear location and road.
Monitoring plan attachment:

Success standards: To maintain all disturbed areas as per Gold Book standards

Pit closure description: N/A

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: MESQUITE SWD INCORPORATED

Well Name: MESA VERDE SWD **Well Number:** 3

Section 12 - Other Information

Right of Way needed? YES **Use APD as ROW?** YES

ROW Type(s): 281001 ROW - ROADS

ROW Applications

SUPO Additional Information:

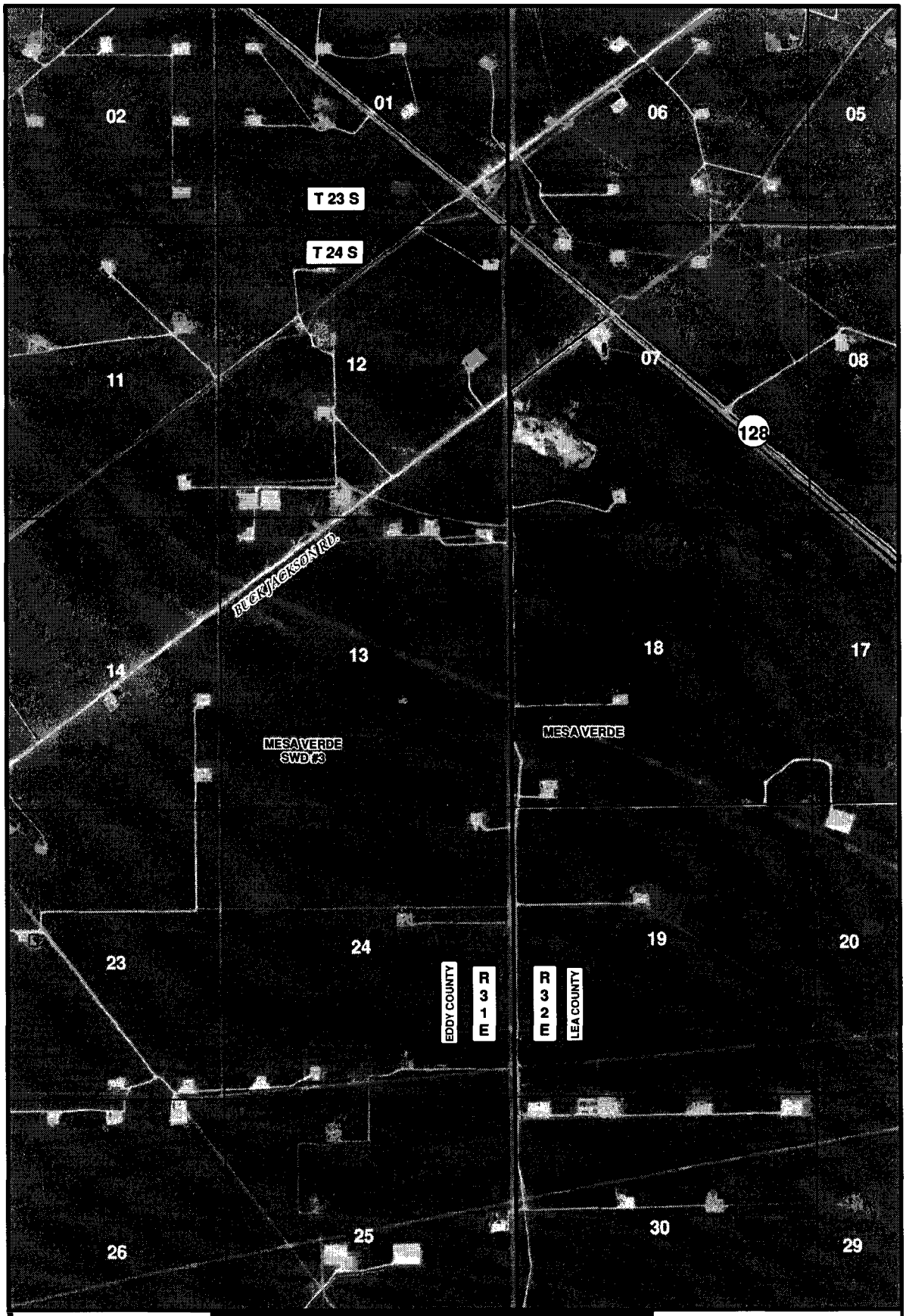
Use a previously conducted onsite? YES

Previous Onsite information: Onsite conducted September 28, 2017. Fernando Banos (BLM); Riley Neatherlin & Todd Suter (Mesquite SWD) and Charlie (Harcrow Surveying)

Other SUPO Attachment

Mesa_Verde_SWD_3_SUP_20171010101858.pdf

Mesa_Verde_SWD_3_Well_Pad_Layout_20171010102549.pdf



LEGEND

- WELL
- WELLPAD
- EXISTING
- PROPOSED

MESA VERDE SWD #3 ACCESS ROAD

SECTION: 13 & 18	TOWNSHIP: 24 S.	RANGE: 31 & 32 E.
STATE: NEW MEXICO	COUNTY: EDDY/LEA	SURVEY: N.M.P.M
W.O. # 17-1235		LEASE: MESA VERDE

0 2,500 5,000 FEET

0 0.125 0.25 0.5 Miles

1 IN = 2,000 FT

PIPELINE OVERVIEW IMAGERY 10/9/2017 V.D.

MESQUITE SWD

N

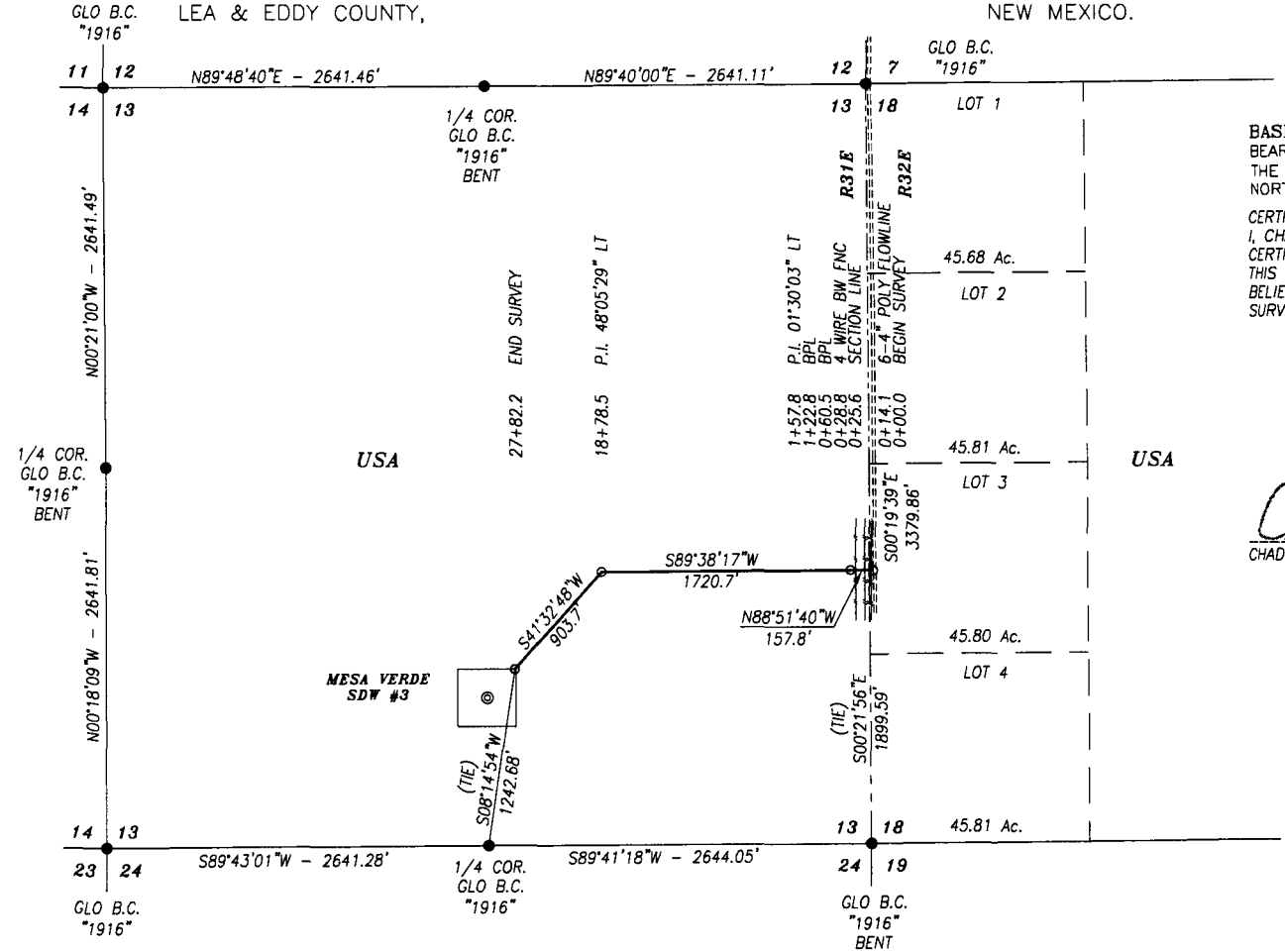
HARCROW SURVEYING, LLC.
2314 W. MAIN ST. ARTESIA, NM 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com

ACCESS ROAD PLAT
MESQUITE SWD

MESA VERDE SWD #3 ACCESS ROAD IN

SECTION 18, TOWNSHIP 24 SOUTH, RANGE 32 EAST, N.M.P.M.,
SECTION 13, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.,

LEA & EDDY COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 2782.2 FEET OR 168.62 RODS OR 0.527 MILES IN LENGTH CROSSING USA LAND IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 32 EAST, LE COUNTY, NEW MEXICO AND SECTION 13, TOWNSHIP 24 SOUTH, RANGE 31 EAST, EDDY COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

CERTIFICATION
I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow — 10/10/17
CHAD HARCROW N.M.P.S. NO. 17777 — DATE

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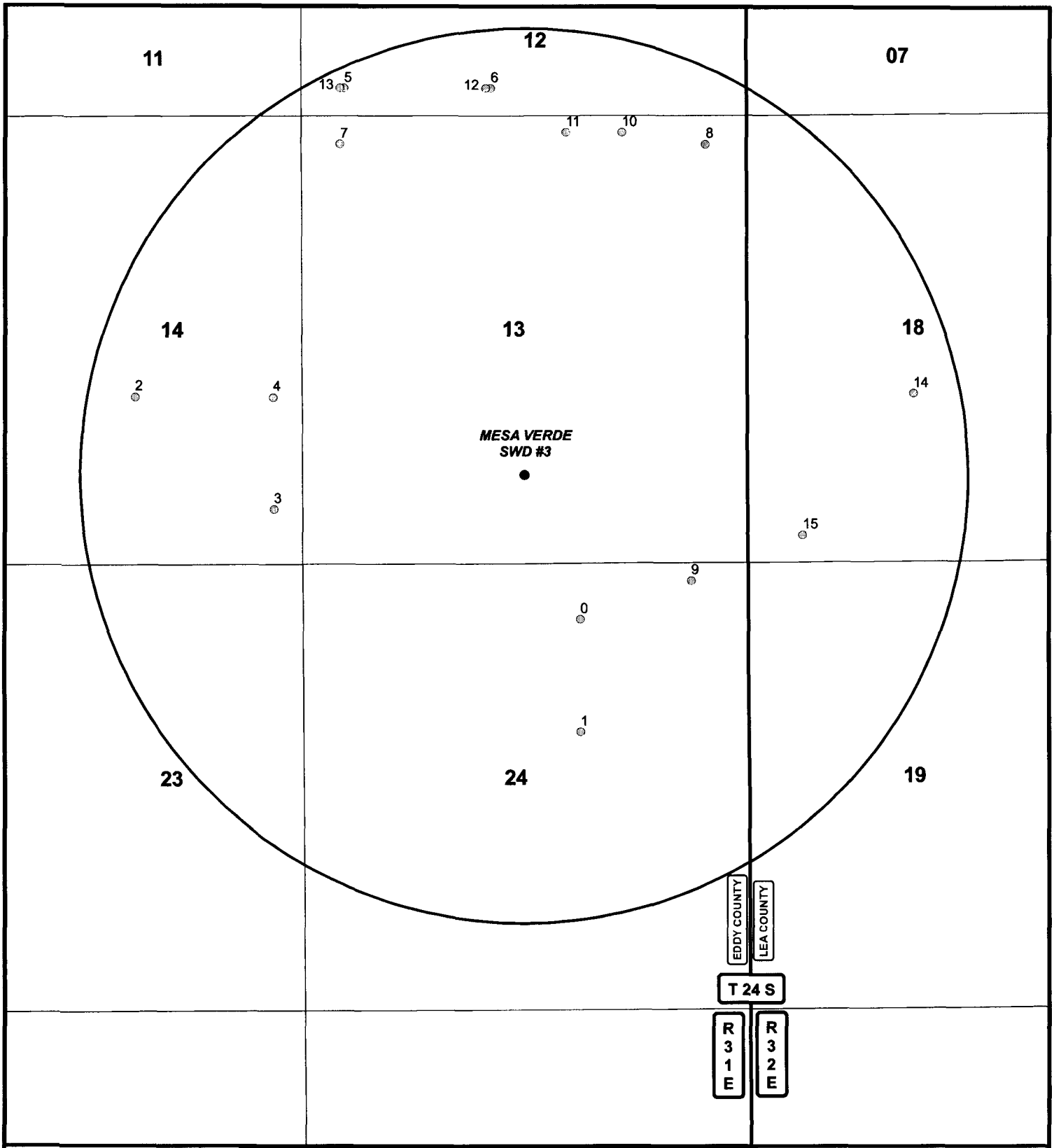
1000 0 1000 2000 FEET
SCALE: 1"=1000'

MESQUITE SWD

SURVEY OF A PROPOSED ROAD LOCATED IN SECTION 18, TOWNSHIP 24 SOUTH, RANGE 32 EAST, AND SECTION 13, TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM, EDDY/LEA COUNTY, NEW MEXICO

SURVEY DATE: SEPTEMBER 28, 2017		
DRAFTING DATE: OCTOBER 9, 2017		PAGE 1 OF 1
APPROVED BY: CH	DRAWN BY: VD	FILE: 17-1235



LEGEND

- WELL
- WELLS WITHIN 1 MI.
- 1 MI. BUFFER

MESA VERDE SWD #3

SEC: 13	TWP: 24 S.	RGE: 31 E.	ELEV: 3597.3'
STATE: NEW MEXICO	COUNTY: EDDY	1030' FSL & 2635' FWL	
W.O. # 17-1225	LEASE: MESA VERDE	SURVEY: N.M.P.M	

0 2,500 FEET

0 0.1 0.2 0.4 Miles

1 IN = 1,500 FT

1 MILE MAP 10/05/2017 AI

MESQUITE SWD

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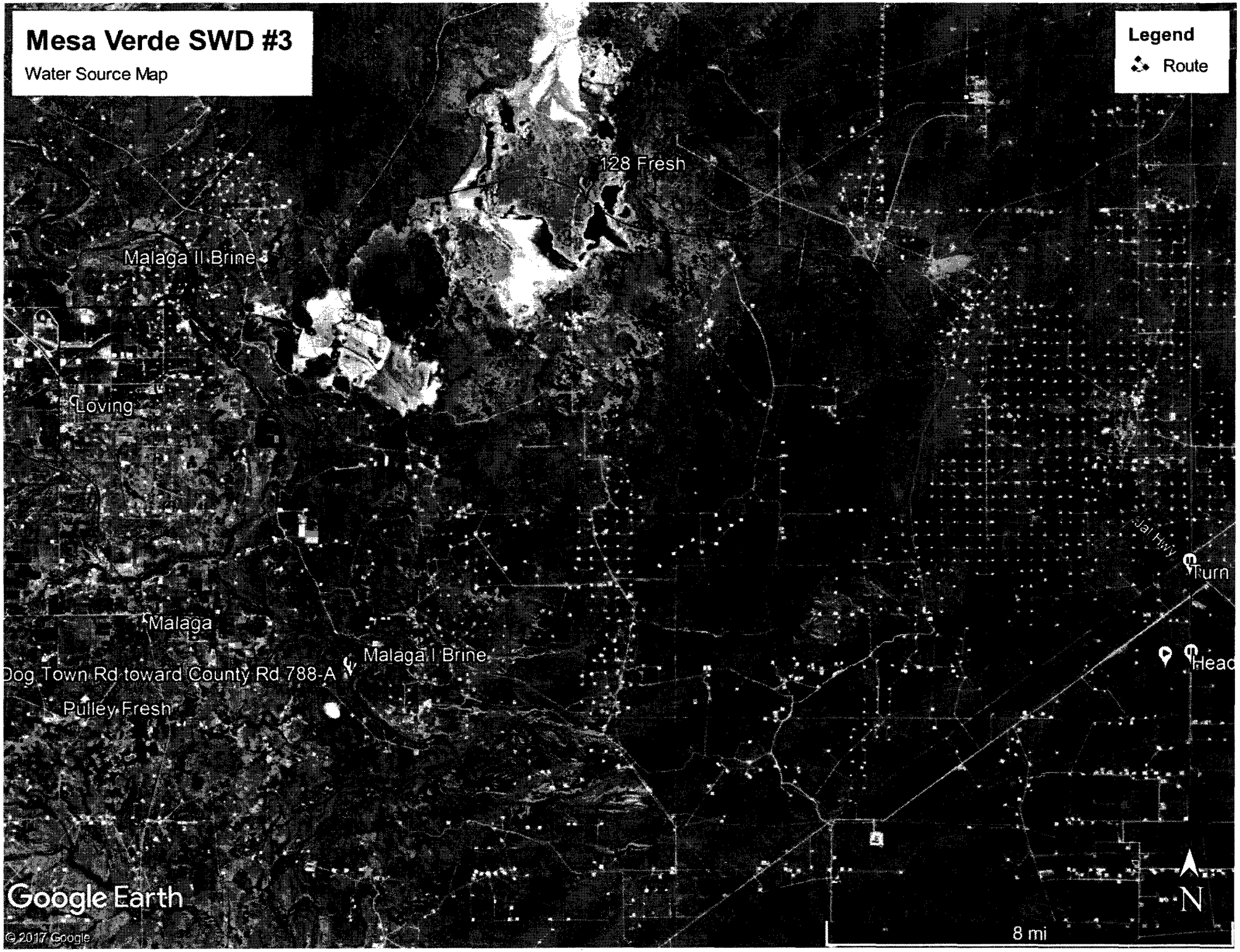
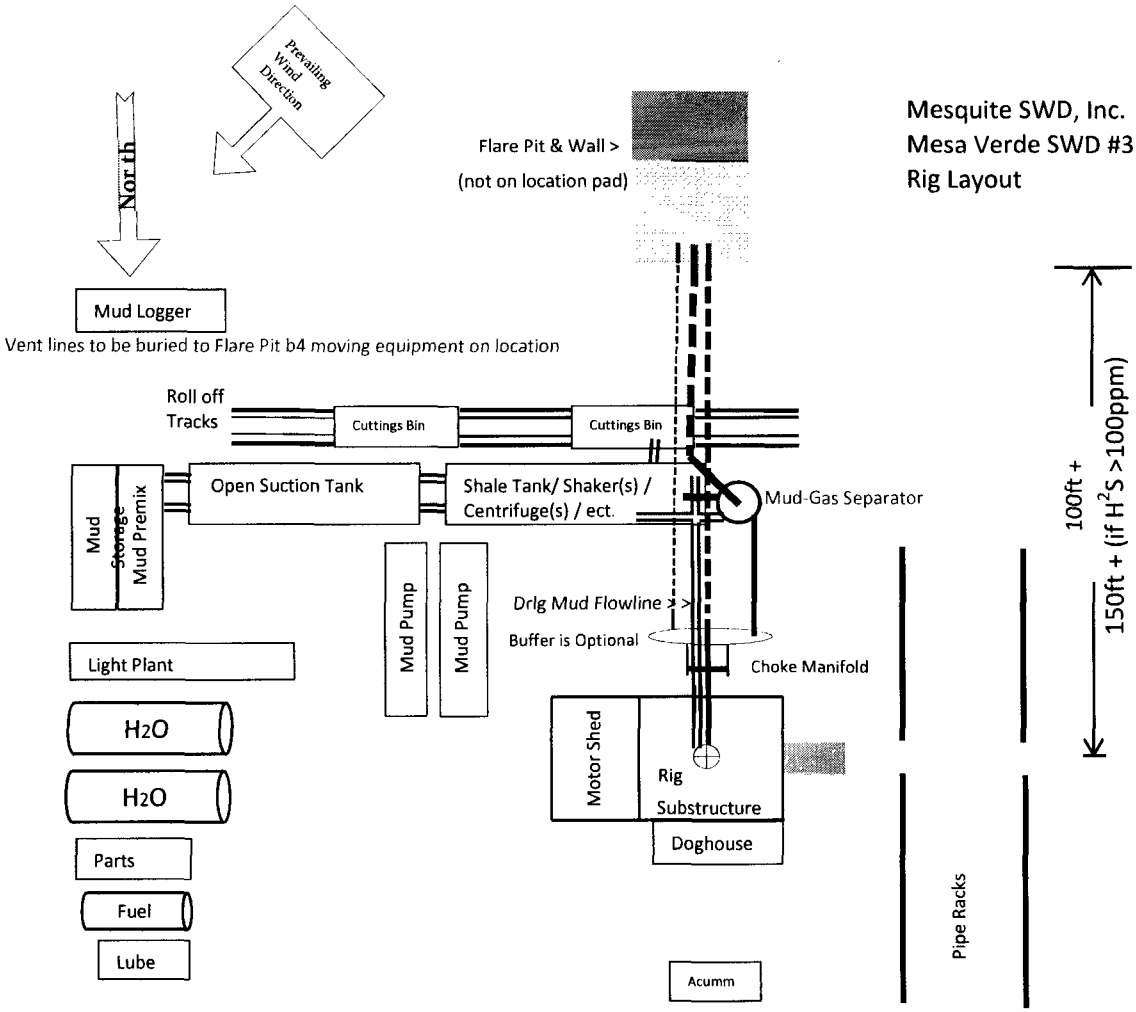
MESA VERDE SWD #3

FID	Shape *	API	OPERATOR	RANGE	SECTION	TOWNSHIP	WELL_NAME	COMPL_STAT	EW_CD	FTG_EW	FTG_NS	LATITUDE	LONGITUDE	NS_CD
0	Point	3001505853	TEXACO EXPLORATION & PRODUCTION INC	31E	24	24.0S	HEFLIN FED 001	Plugged	E	1980	660	32.208268	-103.729416	N
1	Point	3001527972	EOG Y RESOURCES, INC.	31E	24	24.0S	HARACZ AMO FEDERAL 006	Plugged	E	1980	1980	32.20464	-103.72942	N
2	Point	3001529603	DEVON SFS OPERATING INC	31E	14	24.0S	HEAVY METAL 14 FEDERAL 001	Plugged	E	1980	1980	32.215529	-103.746485	S
3	Point	3001537365	EOG Y RESOURCES, INC.	31E	14	24.0S	PETROGULF BJT FEDERAL 001H	Active	E	330	660	32.211878	-103.741161	S
4	Point	3001537367	EOG Y RESOURCES, INC.	31E	14	24.0S	PETROGULF BJT FEDERAL 002H	Active	E	330	1980	32.215507	-103.741171	S
5	Point	3001537605	COG OPERATING LLC	31E	12	24.0S	SEABISCUIT FEDERAL COM 001H	Plugged	W	530	330	32.225529	-103.738396	S
6	Point	3001537607	COG OPERATING LLC	31E	12	24.0S	SEABISCUIT FEDERAL COM 002H	New (Not drilled or compl)	W	2260	330	32.22551	-103.732774	S
7	Point	3001539191	COG PRODUCTION, LLC	31E	13	24.0S	CANVASBACK 13 FEDERAL 001H	New (Not drilled or compl)	W	480	330	32.223715	-103.738561	N
8	Point	3001540538	COG PRODUCTION, LLC	31E	13	24.0S	CANVASBACK 13 FEDERAL 002H	New (Not drilled or compl)	E	480	330	32.223668	-103.724526	N
9	Point	3001540963	EOG Y RESOURCES, INC.	31E	24	24.0S	HARACZ AMO FEDERAL 010H	New (Not drilled or compl)	E	660	200	32.209502	-103.725136	N
10	Point	3001541529	COG PRODUCTION, LLC	31E	13	24.0S	CANVASBACK 13 FEDERAL 003H	New (Not drilled or compl)	E	1470	190	32.224064	-103.727742	N
11	Point	3001541552	COG PRODUCTION, LLC	31E	13	24.0S	CANVASBACK 13 FEDERAL 004H	New (Not drilled or compl)	E	2130	190	32.224071	-103.729886	N
12	Point	3001541563	COG OPERATING LLC	31E	12	24.0S	SEABISCUIT FEDERAL COM 004H	New (Not drilled or compl)	W	2200	330	32.225511	-103.732969	S
13	Point	3001541620	COG OPERATING LLC	31E	12	24.0S	HOOFPRINT FEDERAL COM 001H	New (Not drilled or compl)	W	480	330	32.225529	-103.738558	S
14	Point	3002533626	OXY USA INC	32E	18	24.0S	DIAGA 18 FEDERAL 001	Active	W	1980	1980	32.215544	-103.716545	S
15	Point	3002539742	COG PRODUCTION, LLC	32E	18	24.0S	GOLDENEYE 18 FEDERAL COM 001	New (Not drilled or compl)	W	660	330	32.210971	-103.720848	S


Mesa Verde SWD #3
Water Source Map
Legend
Route
128 Fresh
Malaga II Brine
Loving
Malaga
Malaga I Brine
Dog Town Rd toward County Rd 788-A
Pulley Fresh
Jal Hwy
Turn
Google Earth
© 2017 Google
8 mi
N

Mesquite SWD, Inc.
Mesa Verde SWD #3
Rig Layout



Preplanning reasonable accommodations to achieve necessary and useable "Closed Loop" drillsite features is challenging. Specific considerations must be custom fitted to each well site. This generic plat was prepared to emphasize desired planning elements for some APDs. As a minimum the location plat should show: a north arrow, prevailing wind direction, access road and flare pit location. Include truck routing for removal of cuttings bins . Consider an overpressured situation, with the BOPE & mud flowline being closed. Show locations for choke manifold, mud gas separator, and a piping system to vent overpressured fluid and all gas to the flare pit.

Tool Pusher Housing

Company man Housing

Surface Use & Operating Plan

Mesa Verde SWD #3

- Surface Tenant: Richardson Cattle Company, PO Box 487, Carlsbad, NM 88221-0487. Twin Wells Allotment No. 77042.
- New Road: 2624' of new road
- Facilities: SWD facilities will be installed on well pad

- **Well Site Information**
  V Door: West
  Topsoil: East
  Interim Reclamation: East side – 150' x 400'

Notes

Onsite: On-site was done by Fernando Banos (BLM); Riley Neatherlin and Todd Suter (Mesquite SWD, Inc.) and Harcrow Surveying on September 28, 2017.

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

A. The well site survey and elevation plat for the proposed well is attached with this application. It was staked by Harcrow Surveying, Artesia, NM.

B. All roads to the location are shown on the Access Road attachment. The existing lease roads are illustrated in green and are adequate for travel during drilling and disposal operations. Upgrading existing roads prior to drilling the well will be done where necessary. Proposed new access road is shown in red on the Access Road attachment and is shown in detail on the Access Road Detail attachment.

C. Directions to location: See 600 x 600 plat

D. Based on current road maintenance performed on other roads serving existing wells, we anticipate maintaining the lease roads leading to the proposed well pad at least once a year on dry conditions and twice a year in wetter conditions.

2. Proposed Access Road:

The Existing Road Map shows that 2624' of new access road will be required for this location. If any road is required it will be constructed as follows:

The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.

A. The average grade will be less than 1%.

B. No turnouts are planned.

C. No cattleguard, culvert, gates, low water crossings or fence cuts are necessary.

D. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit.

3. Location of Existing Well:

The One-Mile Radius Map shows existing wells within a one-mile radius of the proposed wellbore.

4. Location of Existing and/or Proposed Facilities:

A. There are currently no water disposal facilities at this well site.

B. Upon successfully completion of this SWD well, we plan to install a disposal facility consisting of two desanders, two gun barrels, four oil tanks and six injection tanks.

C. We plan to bring produced water to this facility via a buried pipeline, which will be permitted under separate ROW.

D. Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from the nearest BLM approved caliche pit in Section 1-T23S-R31E. Alternate source will be the BLM caliche pit in Section 12-T22S-R31E. Any additional construction materials will be purchased from contractors.

1) It will be necessary to run electric power to the facility. Power will be provided by Xcel Energy and ROW for powerlines to well location is requested. The power line route is shown in the Power Line Map attached.

2) If completion of the well is successful, rehabilitation plans will include the following:

- The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from a private source. Fresh water will come from Mesquite SWD, Inc.'s 128 Fresh water well in Section 31-T22S-R30E and the alternate source is Mesquite SWD, Inc.'s Pulley Fresh water well in Section 26-T24S-R28E. Brine water will come from Mesquite SWD, Inc.'s Malaga I Brine Station in Section 12-T23S-R28E and the alternate source is Mesquite SWD, Inc.'s Malaga II Brine Station in Section 20-T24S-R29E. No water well will be drilled on the location.

6. Source of Construction Materials and Location "Turn-Over" Procedure:

Obtaining caliche: One primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

A. Equipment that is needed to construct the proposed location will be as follows: Two dozers to flip the site for caliche and to move topsoil, one blade to level the surface, one

morograder to roll and compact this site, one backhoe to dig the cellar, one water truck to water location and dust abatement and two dump trucks to haul surface material. If caliche is not available onsite and have to haul caliche from a private pit, in addition to equipment mentioned above we will have 10 belly dumps and one front end loader.

B. The time line to complete construction will be approximately 10 days.

C. The top 6 inches of topsoil is pushed off and stockpiled along the south side of the location. Maximum height of the topsoil stock pile will be 3'.

D. An approximate 160' X 160' area is used within the proposed well site to remove caliche.

E. Subsoil is removed and stockpiled within the surveyed well pad.

F. When caliche is found, material will be stock piled within the pad site to build the location and road.

G. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.

H. There will be no interim reclamation. Once well is drilled, the stock piled top soil will be seeded in place.

I. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from the BLM caliche pit in Section 1-T23S-R31E or the BLM caliche pit in Section 12-T22S-R31E.

7. Methods of Handling Water Disposal:

A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

B. Drilling fluids will be contained in steel mud pits and taken to R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility. R360's disposal site located at 4507 West Carlsbad Highway, Hobbs, NM 88240.

D. This is a commercial SWD, therefore no water will be produced from this well.

E. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill-Lea Landfill LLC. Located at Mile Marker 64, Highway 62-180 East, P O Box 3247, Carlsbad, NM 88221. No toxic waste or hazardous chemicals will be produced by this operation.

F. Human waste and grey water will need to be properly contained and disposed of. Proper disposal and elimination of waste and grey water may include but are not limited to portable septic systems and/or portable waste gathering systems (i.e. portable toilets).

G. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

9. Well Site Layout:

A. The drill pad layout, with elevations staked by Harcrow Surveying, is shown in the Elevation Plat. Dimensions of the pad and pits are shown on the Rig Layout. V door direction is southwest. Topsoil, if available, will be stockpiled on the southeast side of location, per BLM specifications. No major cuts will be required.

B. The Rig Layout Closed-Loop exhibit shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

10. Plans for Restoration of the Surface:

A. No Interim Reclamation is planned as proposed facilities will require use of the entire well pad. Should IR be possible, it will take place within six months after the well has been completed. The pad will be downsized by reclaiming the areas not needed for disposal operations. The portions of the pad that are not needed for disposal operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.

B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recountoured to reflect its surroundings as

much as possible within six months. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be re-seeded with a BLM approved mixture and re-vegetated as per BLM orders. When required by BLM, the well pad site will be restored to match pre-construction grades.

11. Surface Ownership:

A. The surface is owned U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.

B. The surface tenant is Richardson Cattle Company, PO Box 487, Carlsbad, NM 88221-0487. Twin Wells Allotment No. 77042.

C. The proposed road routes and surface location will be restored as directed by the BLM.

12. Other Information:

A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.

B. There is no permanent or live water in the immediate area.

C. There are no dwellings within 2 miles of this location.

D. If needed, a Cultural Resources Examination is being prepared by Boone Arch Services of NM, LLC., 2030 North Canal, Carlsbad, New Mexico, 88220, phone # 575-885-1352 and the results will be forwarded to your office in the near future. Otherwise, **Mesquite SWD, Inc. will be participating in the Permian Basin MOA Program.**

13. Bond Coverage:

Bond Coverage is Statewide Bonds # NMB000612.

15. Operator's Representative:

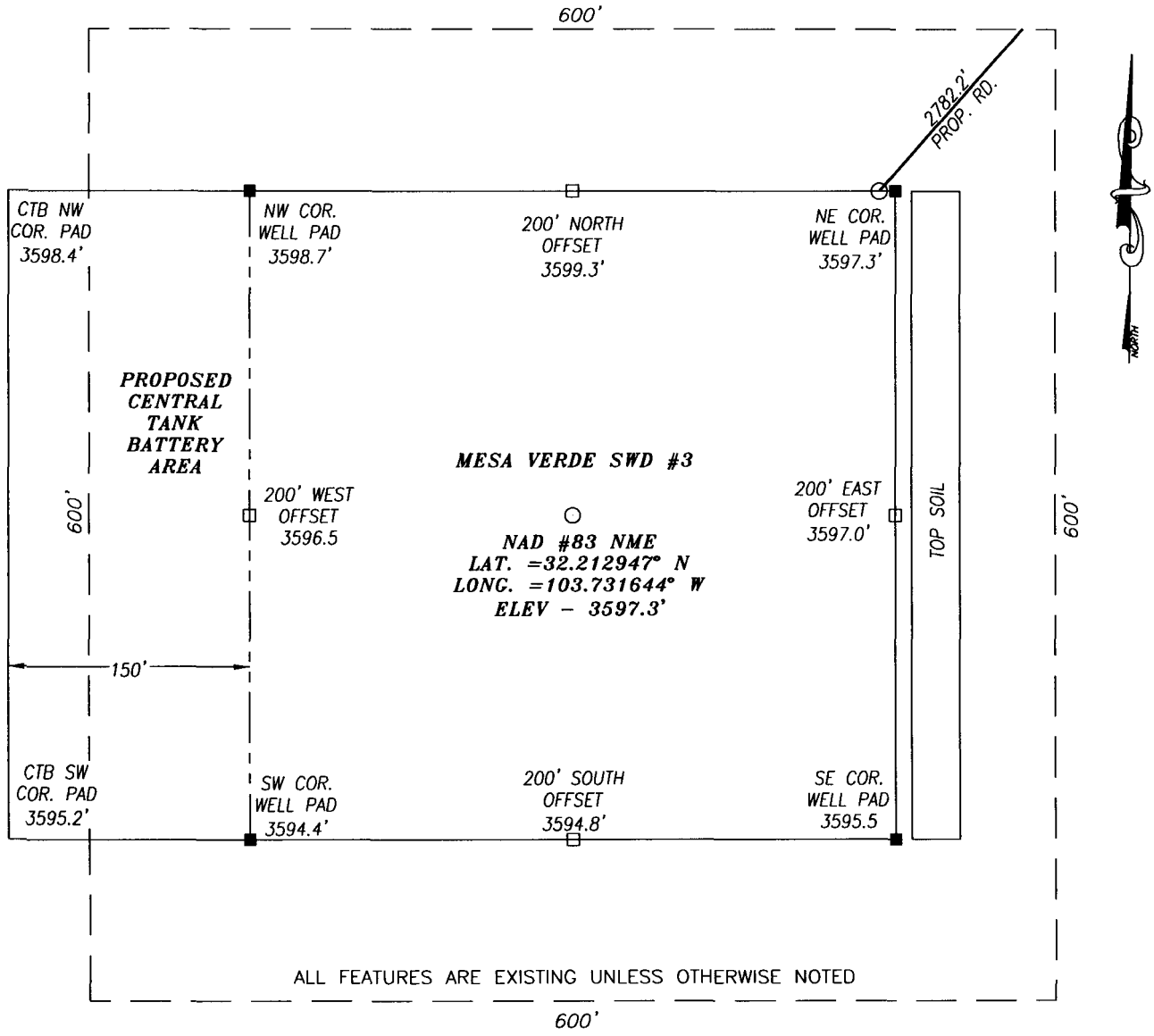
The Mesquite SWD, Inc. representative responsible for assuring compliance with the surface use plan is as follows:

Riley Neatherlin
Production Manager
Mesquite SWD, Inc.
602 S Canyon Street
Carlsbad, NM 88220
Phone (575) 706-7288

Sheryl Baker
Drilling Manager
Mesquite SWD, Inc.
602 S Canyon Street
Carlsbad, NM 88220
Phone (575) 200-0227

SECTION 13, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M.,

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

DIRECTIONS TO LOCATION:
BEGINNING AT THE INTERSECTION OF HWY. 128 AND BUCK JACKSON RD. GO SOUTHWEST ON BUCK JACKSON RD. FOR APPROX. 0.4 MI.; THEN TURN LEFT (SOUTH) AND GO APPROX. 1.2 MI. TO A PROPOSED ROAD TO THE RIGHT (WEST); THE PROPOSED SWD LIES APPROX. 0.5 MI. WESTSOUTHWEST.

100 0 100 200 Feet

Scale: 1"=100'

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Texas Firm No. 10194089
c.harcrow@harcrowsurveying.com

MESQUITE SWD

MESA VERDE SWD #3
LOCATED 1030 FEET FROM THE SOUTH LINE AND 2635 FEET FROM THE WEST LINE OF SECTION 13, TOWNSHIP 24 SOUTH, RANGE 31 EAST, N.M.P.M., COUNTY, NEW MEXICO

SURVEY DATE: 09/28/2017		PAGE: 1 OF 1
DRAFTING DATE: 10/05/2017		
APPROVED BY: CH	DRAWN BY: AI	FILE: 17-1225

AFMSS

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

PWD Data Report

01/23/2018

Section 1 - General

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

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner:

PWD disturbance (acres):

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

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

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

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

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

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

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

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

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

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

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

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

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

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

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

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

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

01/23/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000612

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Apache Corporation

Project: Eddy County, NM (NAD 83 NME)
Site: Palmillo 14-15 State
Well: 206H
Wellbore: OH
Design: Plan 2 02-01-18
Rig: H&P 482

PHOENIX TECHNOLOGY SERVICES

Azimuths to Grid North
True North: -0.10°
Magnetic North: 7.34°

Magnetic Field
Strength: 48139.7snT
Dip Angle: 60.47°
Date: 1/31/2018
Model: HDGM

WELL DETAILS

Ground Level 3434.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	603519.90	596843.90	32° 39' 32.37580 N	104° 9' 10.69828 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2	6847.10	0.00	0.00	6847.10	0.00	0.00	0.00	0.00	0.00		KOP, Begin 10.00°/100' Build
3	7761.95	93.48	264.26	7419.00	-80.79	-804.74	10.00	264.26	805.88		LP, Hold 93.48° Inc, Begin 2.00°/100' Turn
4	8040.19	93.48	269.43	7403.29	-74.96	-862.03	2.00	89.84	863.41		Hold 269.43° Azm
5	11055.54	93.48	269.43	7220.00	-104.67	-3871.65	0.00	0.00	3873.00	T1v2 - Palmillo 14-15 State 206H	Begin 2.00°/100' Drop
6	11152.07	91.55	269.43	7215.76	-105.82	-3968.08	2.00	-179.79	3969.42		Hold 91.55° Inc
7	11253.69	91.55	269.43	7213.00	-106.84	-4069.66	0.00	0.00	4071.00	T2v1 - Palmillo 14-15 State 206H	Begin 2.00°/100' Drop
8	11320.43	90.22	269.43	7211.97	-107.31	-4136.38	2.00	179.93	4137.72		Hold 90.22° Inc
9	13136.85	90.22	269.43	7205.00	-125.40	-5952.70	0.00	0.00	5954.02	BHL - Palmillo 14-15 State 206H	TD at 13136.85

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

Local Origin: Well 206H, Grid North

Latitude: 32° 39' 32.37580 N
Longitude: 104° 9' 10.69828 W

Grid East: 596843.90
Grid North: 603519.90
Scale Factor: 1.000

Geomagnetic Model: HDGM
Sample Date: 31-Jan-18
Magnetic Declination: 7.43°
Dip Angle from Horizontal: 60.47°
Magnetic Field Strength: 48139.70000000nT

To convert a Magnetic Direction to a Grid Direction, Add 7.34°
To convert a Magnetic Direction to a True Direction, Add 7.43° East
To convert a True Direction to a Grid Direction, Subtract 0.10°

DESIGN TARGET DETAILS

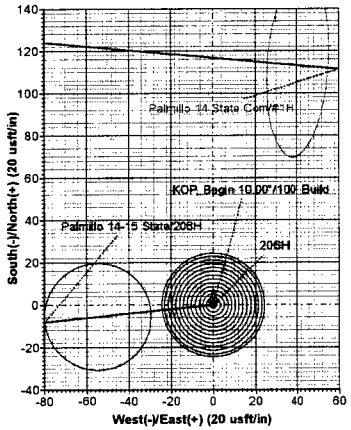
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL - Palmillo 14-15 State 206H	7205.00	-125.40	-5952.70	603394.50	590891.20	32° 39' 31.22982 N	104° 10' 20.33383 W
T2v1 - Palmillo 14-15 State 206H	7213.00	-106.84	-4069.66	603413.26	592774.24	32° 39' 31.38646 N	104° 9' 58.30605 W
T1v2 - Palmillo 14-15 State 206H	7220.00	-104.67	-3871.65	603415.23	592972.25	32° 39' 31.40289 N	104° 9' 55.98980 W
FTP - Palmillo 14-15 State 206H	7419.00	-12.00	-561.00	603507.90	596282.90	32° 39' 32.26643 N	104° 9' 17.26094 W

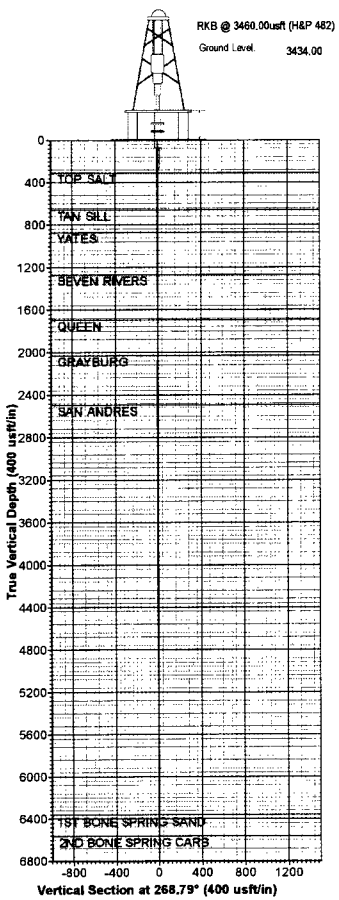
FORMATION TOP DETAILS

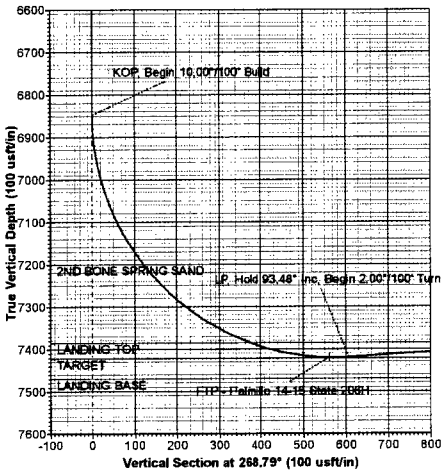
TVDPath	MDPath	Formation	DipAngle	DipDir
310.00	310.00	TOP SALT		
659.00	659.00	TAN SILL		
870.00	870.00	YATES		
1270.00	1270.00	SEVEN RIVERS		
1695.00	1695.00	QUEEN		
2030.00	2030.00	GRAYBURG		
2495.00	2495.00	SAN ANDRES		
6362.00	6362.00	1ST BONE SPRING SAND		
6565.00	6565.00	2ND BONE SPRING CARB		
7200.00	7227.29	2ND BONE SPRING SAND		
7385.00	7545.63	LANDING TOP		

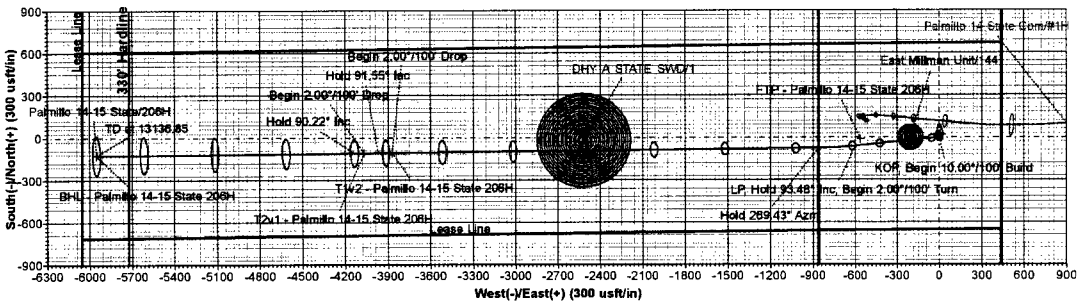
LEGEND

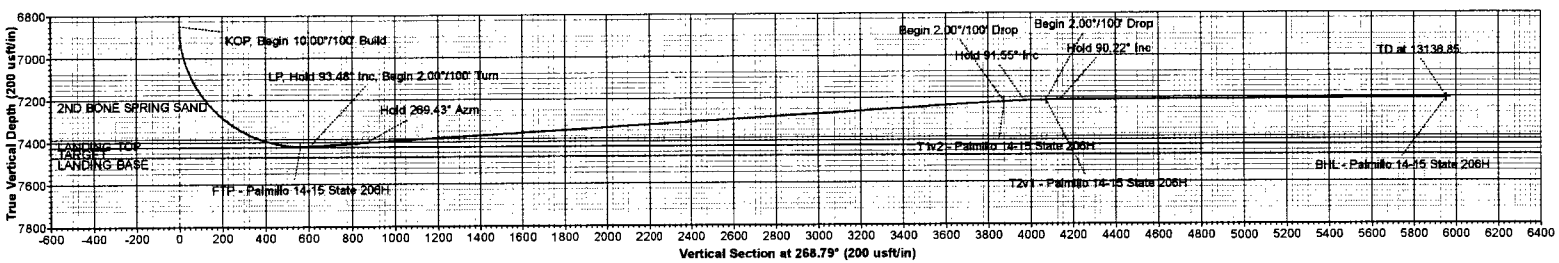
- 1, OH, Surveys V0
- 144, OH, Surveys V0
- #1H, WB1/Job #1411057, Surveys (Pioneer 28) V0
- 205H, OH, Plan 2 02-01-18 V0
- 207H, OH, Plan 2 02-01-18 V0
- Plan 2 02-01-18

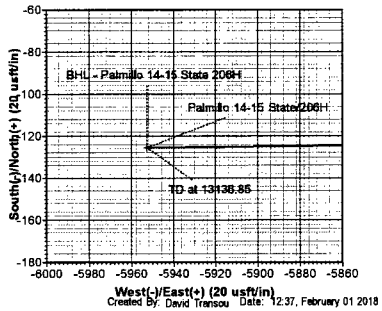












Created By: David Transou Date: 12:37, February 01 2018

Apache Corporation

Eddy County, NM (NAD 83 NME)
Palmillo 14-15 State
206H

OH

Plan: Plan 2 02-01-18

Standard Planning Report

01 February, 2018

Database:	USA Compass	Local Co-ordinate Reference:	Well 206H
Company:	Apache Corporation	TVD Reference:	RKB @ 3460.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	RKB @ 3460.00usft (H&P 482)
Site:	Palmillo 14-15 State	North Reference:	Grid
Well:	206H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

Project Eddy County, NM (NAD 83 NME)

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

Site Palmillo 14-15 State

Site Position:		**Northing:**	601,823.50 usft	**Latitude:**	32° 39' 15.60896 N
From:	Map	**Easting:**	595,664.40 usft	**Longitude:**	104° 9' 24.52874 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.10 °

Well 206H

Well Position	**+N/-S**	1,696.40 usft	**Northing:**	603,519.90 usft	**Latitude:**	32° 39' 32.37580 N
	+E/-W	1,179.50 usft	**Easting:**	596,843.90 usft	**Longitude:**	104° 9' 10.69828 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	3,434.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/31/2018	7.43	60.47	48,139.70000000

Design Plan 2 02-01-18

Audit Notes:			
Version:	**Phase:**	PLAN	**Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	268.79

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6,847.10	0.00	0.00	6,847.10	0.00	0.00	0.00	0.00	0.00	0.00	
7,781.95	93.48	264.26	7,419.00	-60.79	-604.74	10.00	10.00	0.00	264.26	
8,040.19	93.48	269.43	7,403.29	-74.96	-862.03	2.00	0.00	2.00	89.84	
11,055.54	93.48	269.43	7,220.00	-104.67	-3,871.65	0.00	0.00	0.00	0.00	T1v2 - Palmillo 14-'
11,152.07	91.55	269.43	7,215.76	-105.62	-3,968.08	2.00	-2.00	-0.01	-179.79	
11,253.69	91.55	269.43	7,213.00	-106.64	-4,069.66	0.00	0.00	0.00	0.00	T2v1 - Palmillo 14-'
11,320.43	90.22	269.43	7,211.97	-107.31	-4,136.38	2.00	-2.00	0.00	179.93	
13,136.85	90.22	269.43	7,205.00	-125.40	-5,952.70	0.00	0.00	0.00	0.00	BHL - Palmillo 14-1

Database:	USA Compass	Local Co-ordinate Reference:	Well 206H
Company:	Apache Corporation	TVD Reference:	RKB @ 3460.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	RKB @ 3460.00usft (H&P 482)
Site:	Palmillo 14-15 State	North Reference:	Grid
Well:	206H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310.00	0.00	0.00	310.00	0.00	0.00	0.00	0.00	0.00	0.00
TOP SALT									
659.00	0.00	0.00	659.00	0.00	0.00	0.00	0.00	0.00	0.00
TAN SILL									
870.00	0.00	0.00	870.00	0.00	0.00	0.00	0.00	0.00	0.00
YATES									
1,270.00	0.00	0.00	1,270.00	0.00	0.00	0.00	0.00	0.00	0.00
SEVEN RIVERS									
1,695.00	0.00	0.00	1,695.00	0.00	0.00	0.00	0.00	0.00	0.00
QUEEN									
2,030.00	0.00	0.00	2,030.00	0.00	0.00	0.00	0.00	0.00	0.00
GRAYBURG									
2,495.00	0.00	0.00	2,495.00	0.00	0.00	0.00	0.00	0.00	0.00
SAN ANDRES									
6,362.00	0.00	0.00	6,362.00	0.00	0.00	0.00	0.00	0.00	0.00
1ST BONE SPRING SAND									
6,565.00	0.00	0.00	6,565.00	0.00	0.00	0.00	0.00	0.00	0.00
2ND BONE SPRING CARB									
6,847.10	0.00	0.00	6,847.10	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 10.00°/100' Build									
6,900.00	5.29	264.26	6,899.93	-0.24	-2.43	2.43	10.00	10.00	0.00
7,000.00	15.29	264.26	6,998.19	-2.03	-20.18	20.22	10.00	10.00	0.00
7,100.00	25.29	264.26	7,091.87	-5.49	-54.64	54.74	10.00	10.00	0.00
7,200.00	35.29	264.26	7,178.11	-10.53	-104.76	104.96	10.00	10.00	0.00
7,227.29	38.02	264.26	7,200.00	-12.16	-120.97	121.20	10.00	10.00	0.00
2ND BONE SPRING SAND									
7,300.00	45.29	264.26	7,254.29	-16.99	-169.02	169.34	10.00	10.00	0.00
7,400.00	55.29	264.26	7,318.10	-24.67	-245.47	245.93	10.00	10.00	0.00
7,500.00	65.29	264.26	7,367.60	-33.35	-331.77	332.40	10.00	10.00	0.00
7,545.63	69.85	264.26	7,385.00	-37.57	-373.73	374.44	10.00	10.00	0.00
LANDING TOP									
7,600.00	75.29	264.26	7,401.28	-42.75	-425.33	426.13	10.00	10.00	0.00
7,700.00	85.29	264.26	7,418.12	-52.60	-523.27	524.27	10.00	10.00	0.00
7,781.95	93.48	264.26	7,419.00	-60.79	-604.74	605.89	10.00	10.00	0.00
LP, Hold 93.48° Inc, Begin 2.00°/100' Turn									
7,800.00	93.49	264.62	7,417.90	-62.53	-622.67	623.85	2.00	0.01	2.00
7,900.00	93.49	266.63	7,411.82	-70.15	-722.19	723.51	2.00	0.00	2.00
8,000.00	93.49	268.63	7,405.73	-74.28	-821.91	823.30	2.00	0.00	2.00
8,040.19	93.48	269.43	7,403.29	-74.96	-862.02	863.41	2.00	0.00	2.00
Hold 269.43° Azm									
8,100.00	93.48	269.43	7,399.65	-75.55	-921.72	923.11	0.00	0.00	0.00
8,200.00	93.48	269.43	7,393.58	-76.53	-1,021.53	1,022.92	0.00	0.00	0.00
8,300.00	93.48	269.43	7,387.50	-77.52	-1,121.34	1,122.72	0.00	0.00	0.00
8,400.00	93.48	269.43	7,381.42	-78.50	-1,221.15	1,222.53	0.00	0.00	0.00
8,500.00	93.48	269.43	7,375.34	-79.49	-1,320.96	1,322.34	0.00	0.00	0.00
8,600.00	93.48	269.43	7,369.26	-80.47	-1,420.77	1,422.15	0.00	0.00	0.00
8,700.00	93.48	269.43	7,363.18	-81.46	-1,520.58	1,521.96	0.00	0.00	0.00
8,800.00	93.48	269.43	7,357.10	-82.44	-1,620.39	1,621.77	0.00	0.00	0.00
8,900.00	93.48	269.43	7,351.03	-83.43	-1,720.20	1,721.58	0.00	0.00	0.00
9,000.00	93.48	269.43	7,344.95	-84.42	-1,820.01	1,821.39	0.00	0.00	0.00
9,100.00	93.48	269.43	7,338.87	-85.40	-1,919.82	1,921.19	0.00	0.00	0.00
9,200.00	93.48	269.43	7,332.79	-86.39	-2,019.63	2,021.00	0.00	0.00	0.00

Database:	USA Compass	Local Coordinate Reference:	Well 206H
Company:	Apache Corporation	TVD Reference:	RKB @ 3460.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	RKB @ 3460.00usft (H&P 482)
Site:	Palmillo 14-15 State	North Reference:	Grid
Well:	206H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,300.00	93.48	269.43	7,326.71	-87.37	-2,119.44	2,120.81	0.00	0.00	0.00
9,400.00	93.48	269.43	7,320.63	-88.36	-2,219.25	2,220.62	0.00	0.00	0.00
9,500.00	93.48	269.43	7,314.55	-89.34	-2,319.06	2,320.43	0.00	0.00	0.00
9,600.00	93.48	269.43	7,308.48	-90.33	-2,418.87	2,420.24	0.00	0.00	0.00
9,700.00	93.48	269.43	7,302.40	-91.31	-2,518.68	2,520.05	0.00	0.00	0.00
9,800.00	93.48	269.43	7,296.32	-92.30	-2,618.49	2,619.86	0.00	0.00	0.00
9,900.00	93.48	269.43	7,290.24	-93.28	-2,718.30	2,719.67	0.00	0.00	0.00
10,000.00	93.48	269.43	7,284.16	-94.27	-2,818.11	2,819.47	0.00	0.00	0.00
10,100.00	93.48	269.43	7,278.08	-95.25	-2,917.92	2,919.28	0.00	0.00	0.00
10,200.00	93.48	269.43	7,272.00	-96.24	-3,017.73	3,019.09	0.00	0.00	0.00
10,300.00	93.48	269.43	7,265.93	-97.22	-3,117.54	3,118.90	0.00	0.00	0.00
10,400.00	93.48	269.43	7,259.85	-98.21	-3,217.35	3,218.71	0.00	0.00	0.00
10,500.00	93.48	269.43	7,253.77	-99.19	-3,317.16	3,318.52	0.00	0.00	0.00
10,600.00	93.48	269.43	7,247.69	-100.18	-3,416.98	3,418.33	0.00	0.00	0.00
10,700.00	93.48	269.43	7,241.61	-101.16	-3,516.79	3,518.14	0.00	0.00	0.00
10,800.00	93.48	269.43	7,235.53	-102.15	-3,616.60	3,617.94	0.00	0.00	0.00
10,900.00	93.48	269.43	7,229.45	-103.13	-3,716.41	3,717.75	0.00	0.00	0.00
11,000.00	93.48	269.43	7,223.38	-104.12	-3,816.22	3,817.56	0.00	0.00	0.00
11,055.54	93.48	269.43	7,220.00	-104.67	-3,871.65	3,873.00	0.00	0.00	0.00
Begin 2.00°/100' Drop									
11,100.00	92.60	269.43	7,217.64	-105.11	-3,916.05	3,917.39	2.00	-2.00	-0.01
11,152.07	91.55	269.43	7,215.76	-105.62	-3,968.08	3,969.42	2.00	-2.00	-0.01
Hold 91.55° Inc									
11,200.00	91.55	269.43	7,214.46	-106.10	-4,015.99	4,017.33	0.00	0.00	0.00
11,253.69	91.55	269.43	7,213.00	-106.64	-4,069.66	4,071.00	0.00	0.00	0.00
Begin 2.00°/100' Drop									
11,300.00	90.63	269.43	7,212.12	-107.10	-4,115.95	4,117.30	2.00	-2.00	0.00
11,320.43	90.22	269.43	7,211.97	-107.31	-4,136.38	4,137.73	2.00	-2.00	0.00
Hold 90.22° Inc									
11,400.00	90.22	269.43	7,211.66	-108.10	-4,215.95	4,217.29	0.00	0.00	0.00
11,500.00	90.22	269.43	7,211.28	-109.09	-4,315.94	4,317.28	0.00	0.00	0.00
11,600.00	90.22	269.43	7,210.89	-110.09	-4,415.94	4,417.28	0.00	0.00	0.00
11,700.00	90.22	269.43	7,210.51	-111.09	-4,515.93	4,517.27	0.00	0.00	0.00
11,800.00	90.22	269.43	7,210.13	-112.08	-4,615.93	4,617.26	0.00	0.00	0.00
11,900.00	90.22	269.43	7,209.74	-113.08	-4,715.92	4,717.26	0.00	0.00	0.00
12,000.00	90.22	269.43	7,209.36	-114.08	-4,815.91	4,817.25	0.00	0.00	0.00
12,100.00	90.22	269.43	7,208.98	-115.07	-4,915.91	4,917.24	0.00	0.00	0.00
12,200.00	90.22	269.43	7,208.59	-116.07	-5,015.90	5,017.23	0.00	0.00	0.00
12,300.00	90.22	269.43	7,208.21	-117.06	-5,115.90	5,117.23	0.00	0.00	0.00
12,400.00	90.22	269.43	7,207.83	-118.06	-5,215.89	5,217.22	0.00	0.00	0.00
12,500.00	90.22	269.43	7,207.44	-119.06	-5,315.89	5,317.21	0.00	0.00	0.00
12,600.00	90.22	269.43	7,207.06	-120.05	-5,415.88	5,417.21	0.00	0.00	0.00
12,700.00	90.22	269.43	7,206.68	-121.05	-5,515.87	5,517.20	0.00	0.00	0.00
12,800.00	90.22	269.43	7,206.29	-122.04	-5,615.87	5,617.19	0.00	0.00	0.00
12,900.00	90.22	269.43	7,205.91	-123.04	-5,715.86	5,717.19	0.00	0.00	0.00
13,000.00	90.22	269.43	7,205.53	-124.04	-5,815.86	5,817.18	0.00	0.00	0.00
13,100.00	90.22	269.43	7,205.14	-125.03	-5,915.85	5,917.17	0.00	0.00	0.00
13,136.85	90.22	269.43	7,205.00	-125.40	-5,952.70	5,954.02	0.00	0.00	0.00
TD at 13136.85									

Database:	USA Compass	Local Coordinate Reference:	Well 206H
Company:	Apache Corporation	TVD Reference:	RKB @ 3460.00usft (H&P 482)
Project:	Eddy County, NM (NAD 83 NME)	MD Reference:	RKB @ 3460.00usft (H&P 482)
Site:	Palmillo 14-15 State	North Reference:	Grid
Well:	206H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 2 02-01-18		

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
BHL - Palmillo 14-15 S - plan hits target center - Point	0.00	0.00	7,205.00	-125.40	-5,952.70	603,394.50	590,891.20	32° 39' 31.22962 N	104° 10' 20.33363 W
T2v1 - Palmillo 14-15 - plan hits target center - Point	0.00	0.00	7,213.00	-106.64	-4,069.66	603,413.26	592,774.24	32° 39' 31.38646 N	104° 9' 58.30605 W
T1v2 - Palmillo 14-15 - plan hits target center - Point	0.00	0.00	7,220.00	-104.67	-3,871.65	603,415.24	592,972.25	32° 39' 31.40289 N	104° 9' 55.98980 W
FTP - Palmillo 14-15 S - plan misses target center by 44.18usft at 7733.51usft MD (7419.90 TVD, -55.95 N, -556.57 E) - Point	0.00	0.00	7,419.00	-12.00	-561.00	603,507.90	596,282.90	32° 39' 32.26644 N	104° 9' 17.26094 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
310.00	310.00	TOP SALT			
659.00	659.00	TAN SILL			
870.00	870.00	YATES			
1,270.00	1,270.00	SEVEN RIVERS			
1,695.00	1,695.00	QUEEN			
2,030.00	2,030.00	GRAYBURG			
2,495.00	2,495.00	SAN ANDRES			
6,362.00	6,362.00	1ST BONE SPRING SAND			
6,565.00	6,565.00	2ND BONE SPRING CARB			
7,227.29	7,200.00	2ND BONE SPRING SAND			
7,545.63	7,385.00	LANDING TOP			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
6,847.10	6,847.10	0.00	0.00	KOP, Begin 10.00°/100' Build
7,781.95	7,419.00	-60.79	-604.74	LP, Hold 93.48° Inc, Begin 2.00°/100' Turn
8,040.19	7,403.29	-74.96	-862.02	Hold 269.43° Azm
11,055.54	7,220.00	-104.67	-3,871.65	Begin 2.00°/100' Drop
11,152.07	7,215.76	-105.62	-3,968.08	Hold 91.55° Inc
11,253.69	7,213.00	-106.64	-4,069.66	Begin 2.00°/100' Drop
11,320.43	7,211.97	-107.31	-4,136.38	Hold 90.22° Inc
13,136.85	7,205.00	-125.40	-5,952.70	TD at 13136.85