PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Matador Production Company**
LEASE NO.:	**NMNM-113422**
WELL NAME & NO.:	**Dr. Ireland Federal 211H**
SURFACE HOLE FOOTAGE:	**0511' FSL & 0341' FWL**
BOTTOM HOLE FOOTAGE	**0240' FNL & 0990' FWL**
LOCATION:	**Section 19, T. 23 S., R 35 E., NMPM**
COUNTY:	**County, New Mexico**

A. DRILLING OPERATIONS 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) 3933612

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. 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 is located, this does not include the dog house or stairway area.

4. **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.**

B. **CASING**

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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.

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

Possible water flows in the Salado.
Possible lost circulation in the Red Beds, Rustler, Yates, and Delaware.
Abnormal pressures may be encountered when penetrating the 3rd Bone Spring Sandstone and all subsequent formations.

1. The **13-3/8** 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. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 is to include the**

lead cement slurry.

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.

2. The minimum required fill of cement behind the **9-5/8** inch 1st intermediate casing is:

☐ Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the **7-5/8 X 7** inch 2nd intermediate casing is:

☐ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

4. The minimum required fill of cement behind the **5-1/2 X 4-1/2** inch production casing is:

☐ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

5. 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.

C. 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 53.

2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** 1st intermediate casing shoe shall be psi.

5. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7-5/8 X 7** 2nd intermediate casing shoe shall be psi. **10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

<u>If multibowl options is utilized:</u>

6. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be psi.**
    a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
    b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
    c. **Manufacturer representative shall install the test plug for the initial BOP test.**
    d. **Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.**
    e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

7. The appropriate BLM office shall be notified a minimum of 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).

    a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    b. 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.

    c. The results of the test shall be reported to the appropriate BLM office.

    d. 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.**

    e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

f. 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.

D. 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.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. 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.

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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)

- The entirety of the well pads would be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pads. Topsoil should not be used to construct the berm. No water flow from the uphill side(s) of the pads should be allowed to enter the well pads. The berm should be maintained through the life of the wells and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pads or facilities during the life of the project would be quickly corrected and proper measures would be taken to prevent future erosion.

Measures to minimize or eliminate impacts to wildlife are described in COAs (BLM 1997:Appendix 2)
for closed loop systems. Special mitigation includes the following:

- For portions of the project being constructed during the nesting season (March 1–August 31), the operator could conduct pre-construction nest surveys up to 2 weeks prior of vegetation removal and avoidance buffers around any occupied nest could be established (distances to be specified by the BLM) to ensure compliance with the MBTA.
- Similarly, unoccupied raptor nests would be removed by Matador, in consultation with a biologist, outside the breeding season. The BLM may require pre-construction surveys of potential burrowing owl burrows to identify occupied colonies and establish avoidance buffer, (distance to be specified by the BLM) until the young have fledged. The BLM may require a biological monitor during construction near occupied burrows. To lessen the likelihood of burrow occupation, Matador would work with a biologist to collapse suitable *burrows outside the migratory bird breeding season (March–August).*
- NMDGF trenching guidelines (NMDGF 2003) would be followed in order to prevent accidental Texas horned lizard mortality caused by entrapment.
- The operator would instruct personnel working on the construction of the project to avoid intentionally harassing all animals.

Livestock Watering Requirement
Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

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.

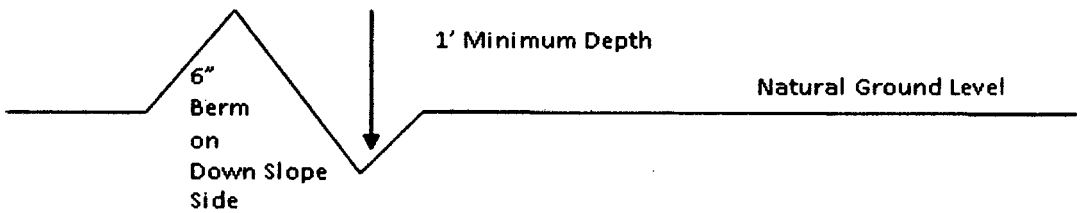
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

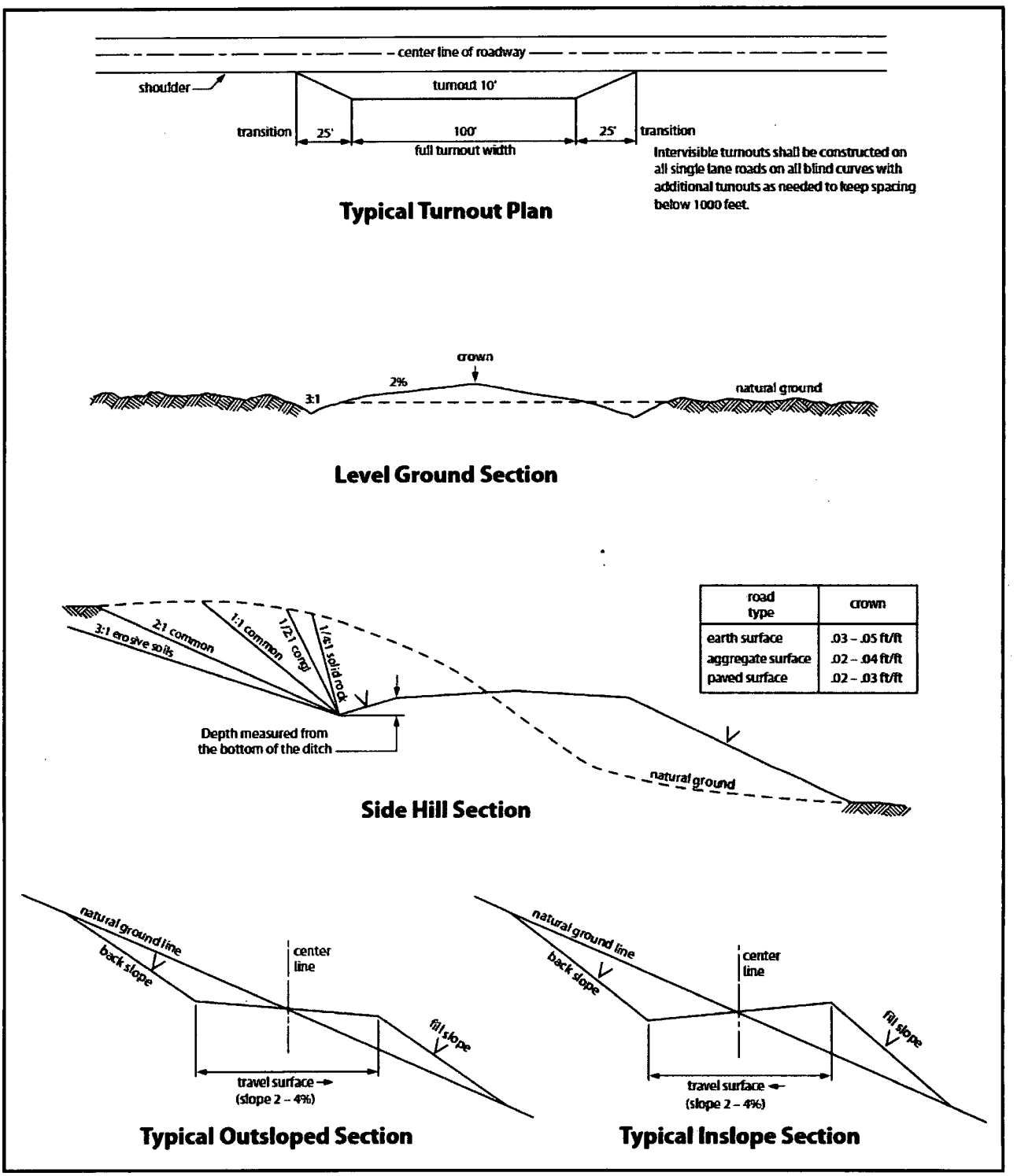


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

Seed Mixture 1 for Loamy Sites

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

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

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

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

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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)

- The entirety of the well pads would be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pads. Topsoil should not be used to construct the berm. No water flow from the uphill side(s) of the pads should be allowed to enter the well pads. The berm should be maintained through the life of the wells and after interim reclamation has been completed.
- Any water erosion that may occur due to the construction of the well pads or facilities during the life of the project would be quickly corrected and proper measures would be taken to prevent future erosion.

Measures to minimize or eliminate impacts to wildlife are described in COAs (BLM 1997:Appendix 2)
for closed loop systems. Special mitigation includes the following:

- For portions of the project being constructed during the nesting season (March 1–August 31), the operator could conduct pre-construction nest surveys up to 2 weeks prior of vegetation removal and avoidance buffers around any occupied nest could be established (distances to be specified by the BLM) to ensure compliance with the MBTA.
- Similarly, unoccupied raptor nests would be removed by Matador, in consultation with a biologist, outside the breeding season. The BLM may require pre-construction surveys of potential burrowing owl burrows to identify occupied colonies and establish avoidance buffer, (distance to be specified by the BLM) until the young have fledged. The BLM may require a biological monitor during construction near occupied burrows. To lessen the likelihood of burrow occupation, Matador would work with a biologist to collapse suitable burrows outside the migratory bird breeding season (March–August).
- NMDGF trenching guidelines (NMDGF 2003) would be followed in order to prevent accidental Texas horned lizard mortality caused by entrapment.
- The operator would instruct personnel working on the construction of the project to avoid intentionally harassing all animals.

Livestock Watering Requirement
Structures that provide water to livestock, such as windmills, pipelines, drinking troughs, and earthen reservoirs, will be avoided by moving the proposed action.

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

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.

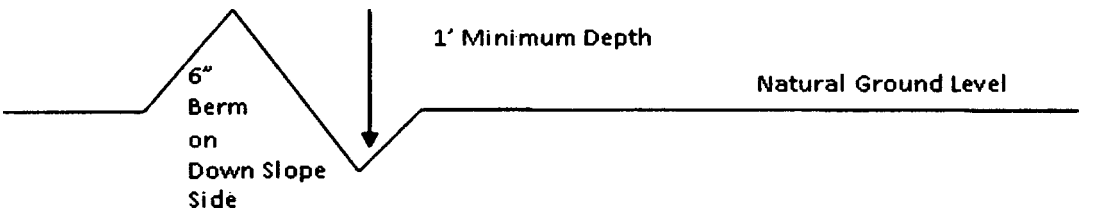
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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:

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

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

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

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

Construction Steps

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

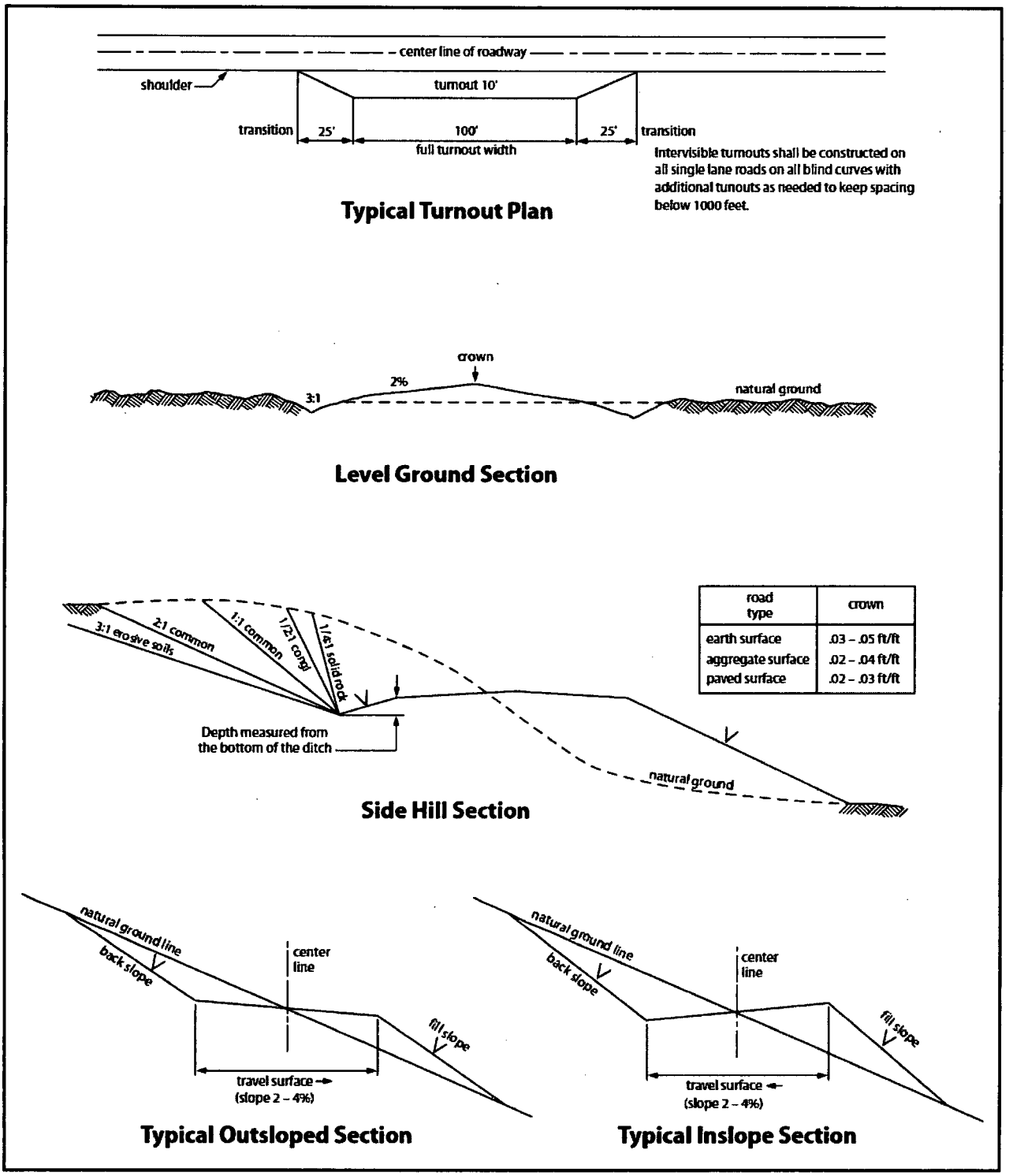


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

Seed Mixture 1 for Loamy Sites

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

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

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

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

Hydrogen Sulfide Drilling

Operations Plan

Matador Resources

1 H2S safety instructions to the following:

- Characteristics of H2S
- Physical effects and hazards
- Principal and operation of H2S detectors, warning system and briefing areas
- Evacuation procedures, routes and first aid
- Proper use of safety equipment & life support systems
- Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30min pressure demand air packs

2 H2S Detection and Alarm Systems:

- H2S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure / cellar area, on the mud pits in the shale shaker area. Additional H2S detectors may be placed as deemed necessary
- An audio alarm system will be installed on the derrick floor and in the doghouse

3 Windsocks and / Wind Streamers:

- Windsocks at mud pit area should be high enough to be visible
- Windsock on the rig floor and / top of doghouse should be high enough to be visible

4 Condition Flags and Signs:

- Warning sign on access road to location
- Flags to be displayed on sign at entrance to location
    - Green Flag – Normal Safe Operation Condition
    - Yellow Flag – Potential Pressure and Danger
    - Red Flag – Danger (H2S present in dangerous concentrations) Only H2S trained personnel admitted on location

5 Well Control Equipment:

- See Exhibit E-1

6 Communication:

- While working under masks chalkboards will be used for communications

- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.

7 Drilling Stem Testing:

- No DST cores are planned at this time

8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubulars good and other mechanical equipment

9 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

11 Emergency Contacts

- See exhibit E-6

- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.47 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 100 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.65 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.47 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (9.0 ppg).

Production Casing

Collapse: DF_c=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.65 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and mud gradient in which the casing will be run above that (0.65 psi/ft) and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: 8000 psi casing test with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.
- Injection Down Casing: 9500 psi surface injection pressure plus an internal pressure gradient of 0.65 psi/ft with an external force equal to the mud gradient in which the casing will be run (0.65 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (12.5 ppg).

Casing Design Criteria and Load Case Assumptions

Surface Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.43 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.52 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.43 psi/ft), which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (8.3 ppg).

Intermediate #1 Casing

Collapse: DF_C=1.125

- Full Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.
- Cementing: Collapse force equal to the gradient of planned cement slurries to planned depths and an internal force equal to mud gradient of displacement fluid (0.43 psi/ft).

Burst: DF_b=1.125

- Pressure Test: Casing test per Onshore Oil and Gas Order No. 2 with an external force equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Gas Kick Profile: Internal burst force at the shoe will be Fracture Pressure at that depth. Surface burst pressure will be fracture gradient at setting depth less a gas gradient to equivalent height of 50 bbl kick with Drill Pipe inside casing and mud gradient with which the next hole section will be run above that (0.47 psi/ft). External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft), which is a more conservative backup force than pore pressure.
- Fracture at Shoe with 1/3 BHP at Surface: Internal burst force at the shoe will be Fracture Pressure at setting depth. Internal burst force at surface will be 1/3 of pore pressure at setting depth. External force will be equal to the mud gradient in which the casing will be run (0.52 psi/ft) which is a more conservative backup force than pore pressure.

Tensile: DF_t=1.8

- Overpull: A downward force of 100,000 lbs is applied at the shoe along with the weight of the casing string utilizing the effects of buoyancy (10.0 ppg).

Intermediate #2 Casing

Collapse: DF_C=1.125

- Partial Internal Evacuation: Collapse force equal to the mud gradient in which the casing will be run (0.47 psi/ft). The effects of axial load on collapse will be considered. Internal force equal to gas gradient over half of setting depth and mud gradient with which the next hole section will be run below that (0.65 psi/ft).

Exhibit E-6: H2S Contingency Plan Emergency Contacts
Dr. Ireland Fed Com #211H
Matador Resources Company
Sec. 19, 23S, 35E
Lea County, NM

Company Office			
Matador Resources Company	(972)-371-5200		
Key Personnel			
Name	**Title**	**Office**	**Mobile**
Billy Goodwin	Vice President Drilling	972-371-5210	817-522-2928
Gary Martin	Drilling Superintendent		601-669-1774
Dee Smith	Drilling Superintendent	972-371-5447	972-822-1010
Adam Lange	Drilling Engineer	972-371-5292	214-458-0788
	Construction Superintendent		
	Construction Superintendent		

Artesia	
Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283
Carlsbad	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
New Mexico Oil Conservation Division	575-887-6544
Santa Fe	
New Mexico Emergency Response Comission (Santa Fe)	505-476-9600
New Mexico Emergency Response Comission (Santa Fe) 24 hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National	
National Emegency Response Center (Washington, D.C.)	800-424-8802
Medical	
Flight for Life- 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare- R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb- 2301 Yale Blvd S.E., D3; Albuquerque, NM	505-842-4433
SB Air Med Service- 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other		
Boots & Coots IWC	800-256-9688	or 281-931-8884
Cudd Pressure Control	432-699-0139	or 432-563-

		3356
Haliburton	575-746-2757	
B.J. Services	575-746-3569	

Company: Matador Resources
Site: Dr. Ireland Fed Com
Well: #211H
Project: Lea County, New Mexico (NAD 27)
Rig: Patterson 297

MS Energy Services.
WWW.MSENERGYSERVICES.COM

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	KOP, 1.00°/100' Build
1450.28	5.00	124.61	1449.65	-12.46	17.92	-12.62	21.83	Begin 5.00° Tangent
10150.68	5.00	124.61	10116.90	-445.62	640.84	-451.20	780.54	Begin 1.50°/100' Drop
10484.20	0.00	0.00	10450.00	-453.93	652.78	-459.61	795.10	Begin Vertical Hold
11175.44	0.00	0.00	11141.24	-453.93	652.78	-459.61	795.10	Begin 10.00°/100' Build
11975.44	80.00	359.50	11705.49	19.52	648.66	13.86	1268.56	Begin 6.00°/100' Build
12142.11	90.00	359.50	11720.00	185.33	647.21	179.68	1434.38	Begin 90.00° Lateral
16494.93	90.00	359.50	11720.00	4537.99	609.28	4532.50	5787.20	PBHL

Azimuths to Grid North
True North: -0.49°
Magnetic North: 6.40°

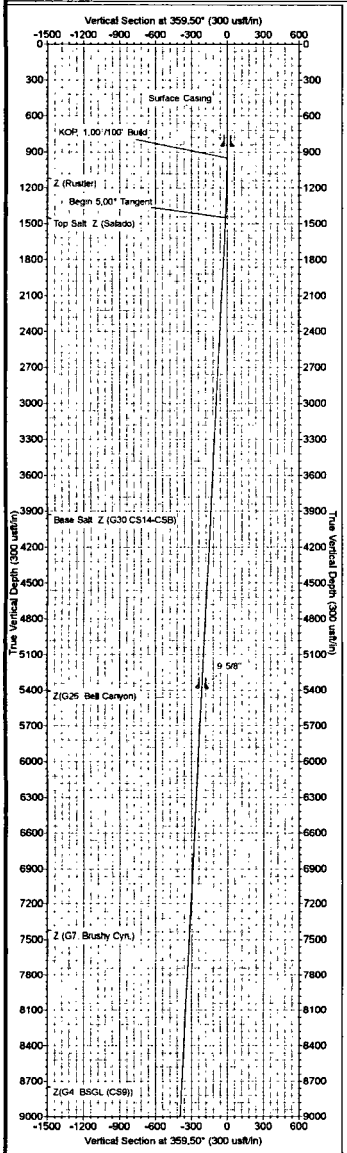
Magnetic Field
Strength: 47972.0snT
Dip Angle: 60.12°
Date: 2/1/2018
Model: BGGM2017

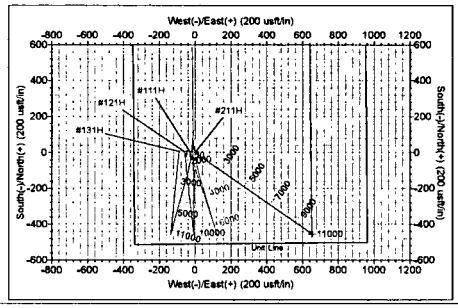
WELL DETAILS #211H

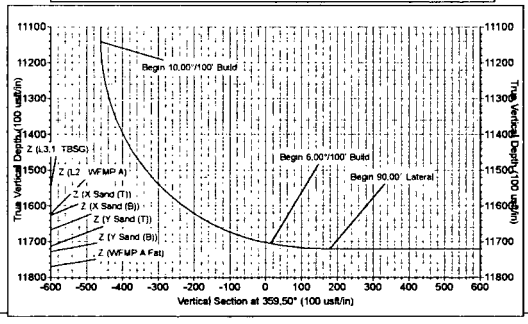
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	466296.43	3384.00 784227.79	32° 17' 2.810 N	103° 24' 46.045 W

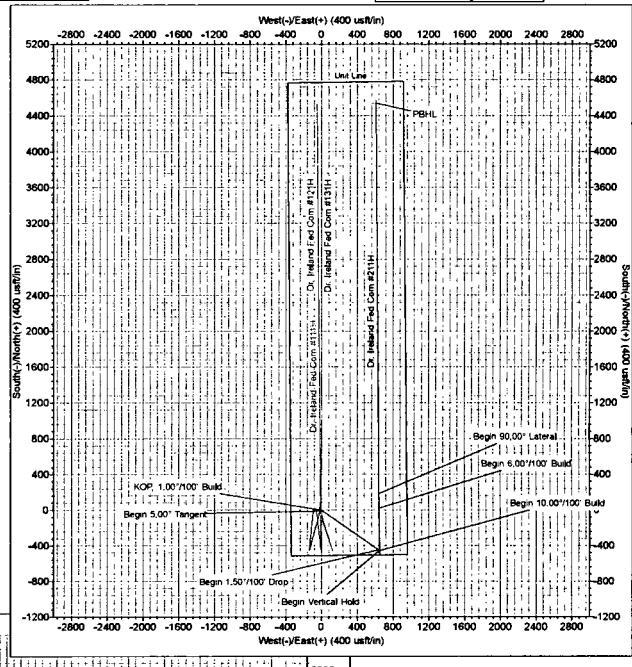
US State Plane 1927 (Exact solution)
New Mexico East 3001

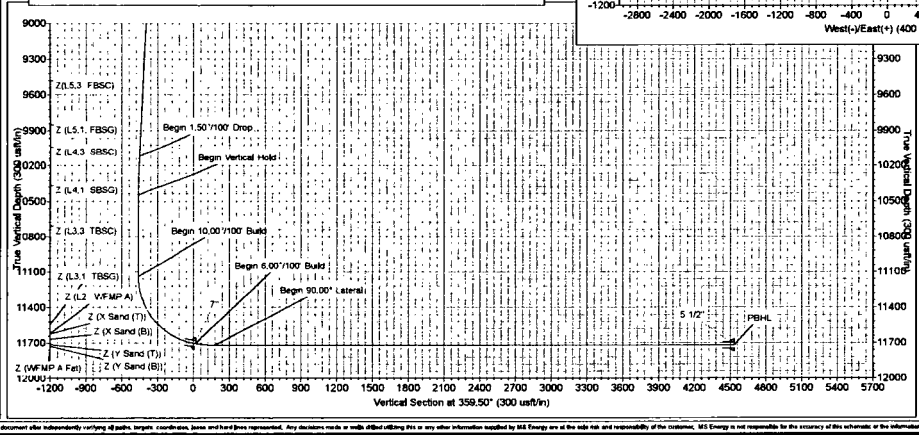
Created By: HLH
Date: 16:45, December 13 2017
Plan: Design #1











Matador Resources

Lea County, New Mexico (NAD 27)
Dr. Ireland Fed Com
#211H

Wellbore #1

Plan: Design #1

Standard Planning Report

13 December, 2017

MS Energy Services
WWW.MSENERGYSERVICES.COM

Database:	EDM Conroe	**Local Co-ordinate Reference:**	Well #211H
Company:	Matador Resources	**TVD Reference:**	WELL @ 3413.00usft (Patterson 297)
Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Lea County, New Mexico (NAD 27)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	#211H					
Well Position	**+N/-S**	468,296.43 usft	**Northing:**	468,296.43 usft	**Latitude:**	32° 17' 2.810 N
	+E/-W	784,227.78 usft	**Easting:**	784,227.78 usft	**Longitude:**	103° 24' 49.045 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,384.00 usft

Wellbore	Wellbore #1				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	BGGM2017	2/1/2018	6.89	60.12	47,972

Design	Design #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	359.50	

Plan Survey Tool Program **Date** 12/13/2017

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	16,494.93	Design #1 (Wellbore #1)	MWD	
				OWSG MWD - Standard	

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	
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,450.28	5.00	124.81	1,449.65	-12.46	17.92	1.00	1.00	0.00	124.81	
10,150.68	5.00	124.81	10,116.90	-445.62	640.84	0.00	0.00	0.00	0.00	
10,484.20	0.00	0.00	10,450.00	-453.93	652.78	1.50	-1.50	0.00	180.00	VP - Dr. Ireland Fec
11,175.44	0.00	0.00	11,141.24	-453.93	652.78	0.00	0.00	0.00	0.00	
11,975.44	80.00	359.50	11,705.49	19.52	648.66	10.00	10.00	0.00	359.50	PBHL - Dr. Ireland I
12,142.11	90.00	359.50	11,720.00	185.33	647.21	6.00	6.00	0.00	0.00	
16,494.93	90.00	359.50	11,720.00	4,537.99	609.28	0.00	0.00	0.00	0.00	PBHL - Dr. Ireland I

Database:	EDM Conroe	**Local Co-ordinate Reference:**	Well #211H
Company:	Matador Resources	**TVD Reference:**	WELL @ 3413.00usft (Patterson 297)
Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
950.00	0.00	0.00	950.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 1.00°/100' Build									
1,000.00	0.50	124.81	1,000.00	-0.12	0.18	-0.13	1.00	1.00	0.00
1,100.00	1.50	124.81	1,099.98	-1.12	1.61	-1.13	1.00	1.00	0.00
1,200.00	2.50	124.81	1,199.92	-3.11	4.48	-3.15	1.00	1.00	0.00
1,300.00	3.50	124.81	1,299.78	-6.10	8.77	-6.18	1.00	1.00	0.00
1,400.00	4.50	124.81	1,399.54	-10.08	14.50	-10.21	1.00	1.00	0.00
1,450.28	5.00	124.81	1,449.65	-12.46	17.92	-12.62	1.00	1.00	0.00
Begin 5.00° Tangent									
1,500.00	5.00	124.81	1,499.18	-14.94	21.48	-15.12	0.00	0.00	0.00
1,600.00	5.00	124.81	1,598.79	-19.92	28.64	-20.16	0.00	0.00	0.00
1,700.00	5.00	124.81	1,698.41	-24.89	35.80	-25.21	0.00	0.00	0.00
1,800.00	5.00	124.81	1,798.03	-29.87	42.96	-30.25	0.00	0.00	0.00
1,900.00	5.00	124.81	1,897.65	-34.85	50.12	-35.29	0.00	0.00	0.00
2,000.00	5.00	124.81	1,997.27	-39.83	57.28	-40.33	0.00	0.00	0.00
2,100.00	5.00	124.81	2,096.89	-44.81	64.44	-45.37	0.00	0.00	0.00
2,200.00	5.00	124.81	2,196.51	-49.79	71.60	-50.41	0.00	0.00	0.00
2,300.00	5.00	124.81	2,296.13	-54.77	78.76	-55.45	0.00	0.00	0.00
2,400.00	5.00	124.81	2,395.75	-59.74	85.92	-60.49	0.00	0.00	0.00
2,500.00	5.00	124.81	2,495.37	-64.72	93.08	-65.53	0.00	0.00	0.00
2,600.00	5.00	124.81	2,594.98	-69.70	100.24	-70.57	0.00	0.00	0.00
2,700.00	5.00	124.81	2,694.60	-74.68	107.40	-75.61	0.00	0.00	0.00
2,800.00	5.00	124.81	2,794.22	-79.66	114.56	-80.66	0.00	0.00	0.00
2,900.00	5.00	124.81	2,893.84	-84.64	121.71	-85.70	0.00	0.00	0.00
3,000.00	5.00	124.81	2,993.46	-89.62	128.87	-90.74	0.00	0.00	0.00
3,100.00	5.00	124.81	3,093.08	-94.59	136.03	-95.78	0.00	0.00	0.00
3,200.00	5.00	124.81	3,192.70	-99.57	143.19	-100.82	0.00	0.00	0.00
3,300.00	5.00	124.81	3,292.32	-104.55	150.35	-105.86	0.00	0.00	0.00
3,400.00	5.00	124.81	3,391.94	-109.53	157.51	-110.90	0.00	0.00	0.00
3,500.00	5.00	124.81	3,491.56	-114.51	164.67	-115.94	0.00	0.00	0.00
3,600.00	5.00	124.81	3,591.18	-119.49	171.83	-120.98	0.00	0.00	0.00
3,700.00	5.00	124.81	3,690.79	-124.47	178.99	-126.02	0.00	0.00	0.00
3,800.00	5.00	124.81	3,790.41	-129.45	186.15	-131.06	0.00	0.00	0.00
3,900.00	5.00	124.81	3,890.03	-134.42	193.31	-136.11	0.00	0.00	0.00
4,000.00	5.00	124.81	3,989.65	-139.40	200.47	-141.15	0.00	0.00	0.00
4,100.00	5.00	124.81	4,089.27	-144.38	207.63	-146.19	0.00	0.00	0.00
4,200.00	5.00	124.81	4,188.89	-149.36	214.79	-151.23	0.00	0.00	0.00
4,300.00	5.00	124.81	4,288.51	-154.34	221.95	-156.27	0.00	0.00	0.00
4,400.00	5.00	124.81	4,388.13	-159.32	229.11	-161.31	0.00	0.00	0.00
4,500.00	5.00	124.81	4,487.75	-164.30	236.27	-166.35	0.00	0.00	0.00
4,600.00	5.00	124.81	4,587.37	-169.27	243.43	-171.39	0.00	0.00	0.00
4,700.00	5.00	124.81	4,686.98	-174.25	250.59	-176.43	0.00	0.00	0.00
4,800.00	5.00	124.81	4,786.60	-179.23	257.75	-181.47	0.00	0.00	0.00
4,900.00	5.00	124.81	4,886.22	-184.21	264.91	-186.51	0.00	0.00	0.00

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Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,000.00	5.00	124.81	4,985.84	-189.19	272.07	-191.56	0.00	0.00	0.00
5,100.00	5.00	124.81	5,085.46	-194.17	279.23	-196.60	0.00	0.00	0.00
5,200.00	5.00	124.81	5,185.08	-199.15	286.39	-201.64	0.00	0.00	0.00
5,300.00	5.00	124.81	5,284.70	-204.12	293.55	-206.68	0.00	0.00	0.00
5,400.00	5.00	124.81	5,384.32	-209.10	300.70	-211.72	0.00	0.00	0.00
5,500.00	5.00	124.81	5,483.94	-214.08	307.86	-216.76	0.00	0.00	0.00
5,600.00	5.00	124.81	5,583.56	-219.06	315.02	-221.80	0.00	0.00	0.00
5,700.00	5.00	124.81	5,683.17	-224.04	322.18	-226.84	0.00	0.00	0.00
5,800.00	5.00	124.81	5,782.79	-229.02	329.34	-231.88	0.00	0.00	0.00
5,900.00	5.00	124.81	5,882.41	-234.00	336.50	-236.92	0.00	0.00	0.00
6,000.00	5.00	124.81	5,982.03	-238.97	343.66	-241.96	0.00	0.00	0.00
6,100.00	5.00	124.81	6,081.65	-243.95	350.82	-247.01	0.00	0.00	0.00
6,200.00	5.00	124.81	6,181.27	-248.93	357.98	-252.05	0.00	0.00	0.00
6,300.00	5.00	124.81	6,280.89	-253.91	365.14	-257.09	0.00	0.00	0.00
6,400.00	5.00	124.81	6,380.51	-258.89	372.30	-262.13	0.00	0.00	0.00
6,500.00	5.00	124.81	6,480.13	-263.87	379.46	-267.17	0.00	0.00	0.00
6,600.00	5.00	124.81	6,579.75	-268.85	386.62	-272.21	0.00	0.00	0.00
6,700.00	5.00	124.81	6,679.37	-273.83	393.78	-277.25	0.00	0.00	0.00
6,800.00	5.00	124.81	6,778.98	-278.80	400.94	-282.29	0.00	0.00	0.00
6,900.00	5.00	124.81	6,878.60	-283.78	408.10	-287.33	0.00	0.00	0.00
7,000.00	5.00	124.81	6,978.22	-288.76	415.26	-292.37	0.00	0.00	0.00
7,100.00	5.00	124.81	7,077.84	-293.74	422.42	-297.41	0.00	0.00	0.00
7,200.00	5.00	124.81	7,177.46	-298.72	429.58	-302.46	0.00	0.00	0.00
7,300.00	5.00	124.81	7,277.08	-303.70	436.74	-307.50	0.00	0.00	0.00
7,400.00	5.00	124.81	7,376.70	-308.68	443.90	-312.54	0.00	0.00	0.00
7,500.00	5.00	124.81	7,476.32	-313.65	451.06	-317.58	0.00	0.00	0.00
7,600.00	5.00	124.81	7,575.94	-318.63	458.22	-322.62	0.00	0.00	0.00
7,700.00	5.00	124.81	7,675.56	-323.61	465.38	-327.66	0.00	0.00	0.00
7,800.00	5.00	124.81	7,775.17	-328.59	472.54	-332.70	0.00	0.00	0.00
7,900.00	5.00	124.81	7,874.79	-333.57	479.70	-337.74	0.00	0.00	0.00
8,000.00	5.00	124.81	7,974.41	-338.55	486.85	-342.78	0.00	0.00	0.00
8,100.00	5.00	124.81	8,074.03	-343.53	494.01	-347.82	0.00	0.00	0.00
8,200.00	5.00	124.81	8,173.65	-348.50	501.17	-352.86	0.00	0.00	0.00
8,300.00	5.00	124.81	8,273.27	-353.48	508.33	-357.91	0.00	0.00	0.00
8,400.00	5.00	124.81	8,372.89	-358.46	515.49	-362.95	0.00	0.00	0.00
8,500.00	5.00	124.81	8,472.51	-363.44	522.65	-367.99	0.00	0.00	0.00
8,600.00	5.00	124.81	8,572.13	-368.42	529.81	-373.03	0.00	0.00	0.00
8,700.00	5.00	124.81	8,671.75	-373.40	536.97	-378.07	0.00	0.00	0.00
8,800.00	5.00	124.81	8,771.37	-378.38	544.13	-383.11	0.00	0.00	0.00
8,900.00	5.00	124.81	8,870.98	-383.35	551.29	-388.15	0.00	0.00	0.00
9,000.00	5.00	124.81	8,970.60	-388.33	558.45	-393.19	0.00	0.00	0.00
9,100.00	5.00	124.81	9,070.22	-393.31	565.61	-398.23	0.00	0.00	0.00
9,200.00	5.00	124.81	9,169.84	-398.29	572.77	-403.27	0.00	0.00	0.00
9,300.00	5.00	124.81	9,269.46	-403.27	579.93	-408.31	0.00	0.00	0.00
9,400.00	5.00	124.81	9,369.08	-408.25	587.09	-413.36	0.00	0.00	0.00
9,500.00	5.00	124.81	9,468.70	-413.23	594.25	-418.40	0.00	0.00	0.00
9,600.00	5.00	124.81	9,568.32	-418.21	601.41	-423.44	0.00	0.00	0.00
9,700.00	5.00	124.81	9,667.94	-423.18	608.57	-428.48	0.00	0.00	0.00
9,800.00	5.00	124.81	9,767.56	-428.16	615.73	-433.52	0.00	0.00	0.00
9,900.00	5.00	124.81	9,867.17	-433.14	622.89	-438.56	0.00	0.00	0.00
10,000.00	5.00	124.81	9,966.79	-438.12	630.05	-443.60	0.00	0.00	0.00
10,100.00	5.00	124.81	10,066.41	-443.10	637.21	-448.64	0.00	0.00	0.00
10,150.68	5.00	124.81	10,116.90	-445.62	640.84	-451.20	0.00	0.00	0.00
Begin 1.50°/100' Drop									

Database:	EDM Conroe	**Local Co-ordinate Reference:**	Well #211H
Company:	Matador Resources	**TVD Reference:**	WELL @ 3413.00usft (Patterson 297)
Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,200.00	4.26	124.81	10,166.06	-447.90	644.11	-453.50	1.50	-1.50	0.00
10,300.00	2.76	124.81	10,265.87	-451.39	649.14	-457.04	1.50	-1.50	0.00
10,400.00	1.26	124.81	10,365.80	-453.40	652.02	-459.07	1.50	-1.50	0.00
10,484.20	0.00	0.00	10,450.00	-453.93	652.78	-459.61	1.50	-1.50	0.00
Begin Vertical Hold									
10,500.00	0.00	0.00	10,465.80	-453.93	652.78	-459.61	0.00	0.00	0.00
10,600.00	0.00	0.00	10,565.80	-453.93	652.78	-459.61	0.00	0.00	0.00
10,700.00	0.00	0.00	10,665.80	-453.93	652.78	-459.61	0.00	0.00	0.00
10,800.00	0.00	0.00	10,765.80	-453.93	652.78	-459.61	0.00	0.00	0.00
10,900.00	0.00	0.00	10,865.80	-453.93	652.78	-459.61	0.00	0.00	0.00
11,000.00	0.00	0.00	10,965.80	-453.93	652.78	-459.61	0.00	0.00	0.00
11,100.00	0.00	0.00	11,065.80	-453.93	652.78	-459.61	0.00	0.00	0.00
11,175.44	0.00	0.00	11,141.24	-453.93	652.78	-459.61	0.00	0.00	0.00
Begin 10.00°/100' Build									
11,200.00	2.46	359.50	11,165.79	-453.40	652.78	-459.08	10.00	10.00	0.00
11,250.00	7.46	359.50	11,215.59	-449.09	652.74	-454.76	10.00	10.00	0.00
11,300.00	12.46	359.50	11,264.82	-440.44	652.66	-446.12	10.00	10.00	0.00
11,350.00	17.46	359.50	11,313.11	-427.55	652.55	-433.22	10.00	10.00	0.00
11,400.00	22.46	359.50	11,360.09	-410.49	652.40	-416.16	10.00	10.00	0.00
11,450.00	27.46	359.50	11,405.41	-389.40	652.22	-395.08	10.00	10.00	0.00
11,500.00	32.46	359.50	11,448.72	-364.44	652.00	-370.12	10.00	10.00	0.00
11,550.00	37.46	359.50	11,489.68	-335.80	651.75	-341.48	10.00	10.00	0.00
11,600.00	42.46	359.50	11,528.00	-303.71	651.47	-309.38	10.00	10.00	0.00
11,650.00	47.46	359.50	11,563.37	-268.39	651.17	-274.06	10.00	10.00	0.00
11,700.00	52.46	359.50	11,595.53	-230.13	650.83	-235.80	10.00	10.00	0.00
11,750.00	57.46	359.50	11,624.23	-189.21	650.48	-194.88	10.00	10.00	0.00
11,800.00	62.46	359.50	11,649.25	-145.94	650.10	-151.61	10.00	10.00	0.00
11,850.00	67.46	359.50	11,670.41	-100.66	649.70	-106.32	10.00	10.00	0.00
11,900.00	72.46	359.50	11,687.55	-53.70	649.29	-59.37	10.00	10.00	0.00
11,950.00	77.46	359.50	11,700.52	-5.43	648.87	-11.10	10.00	10.00	0.00
11,975.44	80.00	359.50	11,705.49	19.52	648.66	13.86	10.00	10.00	0.00
Begin 6.00°/100' Build									
12,000.00	81.47	359.50	11,709.45	43.75	648.44	38.09	6.00	6.00	0.00
12,050.00	84.47	359.50	11,715.56	93.37	648.01	87.71	6.00	6.00	0.00
12,100.00	87.47	359.50	11,719.07	143.24	647.58	137.58	6.00	6.00	0.00
12,142.11	90.00	359.50	11,720.00	185.33	647.21	179.68	6.00	6.00	0.00
Begin 90.00° Lateral									
12,200.00	90.00	359.50	11,720.00	243.22	646.71	237.57	0.00	0.00	0.00
12,300.00	90.00	359.50	11,720.00	343.22	645.83	337.57	0.00	0.00	0.00
12,400.00	90.00	359.50	11,720.00	443.21	644.96	437.57	0.00	0.00	0.00
12,500.00	90.00	359.50	11,720.00	543.21	644.09	537.57	0.00	0.00	0.00
12,600.00	90.00	359.50	11,720.00	643.20	643.22	637.57	0.00	0.00	0.00
12,700.00	90.00	359.50	11,720.00	743.20	642.35	737.57	0.00	0.00	0.00
12,800.00	90.00	359.50	11,720.00	843.20	641.48	837.57	0.00	0.00	0.00
12,900.00	90.00	359.50	11,720.00	943.19	640.61	937.57	0.00	0.00	0.00
13,000.00	90.00	359.50	11,720.00	1,043.19	639.73	1,037.57	0.00	0.00	0.00
13,100.00	90.00	359.50	11,720.00	1,143.19	638.86	1,137.57	0.00	0.00	0.00
13,200.00	90.00	359.50	11,720.00	1,243.18	637.99	1,237.57	0.00	0.00	0.00
13,300.00	90.00	359.50	11,720.00	1,343.18	637.12	1,337.57	0.00	0.00	0.00
13,400.00	90.00	359.50	11,720.00	1,443.17	636.25	1,437.57	0.00	0.00	0.00
13,500.00	90.00	359.50	11,720.00	1,543.17	635.38	1,537.57	0.00	0.00	0.00
13,600.00	90.00	359.50	11,720.00	1,643.17	634.51	1,637.57	0.00	0.00	0.00
13,700.00	90.00	359.50	11,720.00	1,743.16	633.63	1,737.57	0.00	0.00	0.00

Database:	EDM Conroe	**Local Co-ordinate Reference:**	Well #211H
Company:	Matador Resources	**TVD Reference:**	WELL @ 3413.00usft (Patterson 297)
Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.00	90.00	359.50	11,720.00	1,843.16	632.76	1,837.57	0.00	0.00	0.00
13,900.00	90.00	359.50	11,720.00	1,943.16	631.89	1,937.57	0.00	0.00	0.00
14,000.00	90.00	359.50	11,720.00	2,043.15	631.02	2,037.57	0.00	0.00	0.00
14,100.00	90.00	359.50	11,720.00	2,143.15	630.15	2,137.57	0.00	0.00	0.00
14,200.00	90.00	359.50	11,720.00	2,243.14	629.28	2,237.57	0.00	0.00	0.00
14,300.00	90.00	359.50	11,720.00	2,343.14	628.40	2,337.57	0.00	0.00	0.00
14,400.00	90.00	359.50	11,720.00	2,443.14	627.53	2,437.57	0.00	0.00	0.00
14,500.00	90.00	359.50	11,720.00	2,543.13	626.66	2,537.57	0.00	0.00	0.00
14,600.00	90.00	359.50	11,720.00	2,643.13	625.79	2,637.57	0.00	0.00	0.00
14,700.00	90.00	359.50	11,720.00	2,743.13	624.92	2,737.57	0.00	0.00	0.00
14,800.00	90.00	359.50	11,720.00	2,843.12	624.05	2,837.57	0.00	0.00	0.00
14,900.00	90.00	359.50	11,720.00	2,943.12	623.18	2,937.57	0.00	0.00	0.00
15,000.00	90.00	359.50	11,720.00	3,043.11	622.30	3,037.57	0.00	0.00	0.00
15,100.00	90.00	359.50	11,720.00	3,143.11	621.43	3,137.57	0.00	0.00	0.00
15,200.00	90.00	359.50	11,720.00	3,243.11	620.56	3,237.57	0.00	0.00	0.00
15,300.00	90.00	359.50	11,720.00	3,343.10	619.69	3,337.57	0.00	0.00	0.00
15,400.00	90.00	359.50	11,720.00	3,443.10	618.82	3,437.57	0.00	0.00	0.00
15,500.00	90.00	359.50	11,720.00	3,543.09	617.95	3,537.57	0.00	0.00	0.00
15,600.00	90.00	359.50	11,720.00	3,643.09	617.07	3,637.57	0.00	0.00	0.00
15,700.00	90.00	359.50	11,720.00	3,743.09	616.20	3,737.57	0.00	0.00	0.00
15,800.00	90.00	359.50	11,720.00	3,843.08	615.33	3,837.57	0.00	0.00	0.00
15,900.00	90.00	359.50	11,720.00	3,943.08	614.46	3,937.57	0.00	0.00	0.00
16,000.00	90.00	359.50	11,720.00	4,043.08	613.59	4,037.57	0.00	0.00	0.00
16,100.00	90.00	359.50	11,720.00	4,143.07	612.72	4,137.57	0.00	0.00	0.00
16,200.00	90.00	359.50	11,720.00	4,243.07	611.85	4,237.57	0.00	0.00	0.00
16,300.00	90.00	359.50	11,720.00	4,343.06	610.97	4,337.57	0.00	0.00	0.00
16,400.00	90.00	359.50	11,720.00	4,443.06	610.10	4,437.57	0.00	0.00	0.00
16,494.93	90.00	359.50	11,720.00	4,537.99	609.28	4,532.50	0.00	0.00	0.00
PBHL									

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
VP - Dr. Ireland Fed C - plan hits target center - Point	0.00	0.00	10,450.00	-453.93	652.78	467,842.50	784,880.57	32° 16' 58.263 N	103° 24' 41.487 W
PBHL - Dr. Ireland Fe - plan hits target center - Point	0.00	0.00	11,720.00	4,537.99	609.28	472,834.42	784,837.06	32° 17' 47.662 N	103° 24' 41.494 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
850.00	850.00	Surface Casing	13-3/8	13-3/8
5,400.00	5,384.32	9 5/8"	9-5/8	12-1/4
11,975.44	11,705.49	7"	7	7-1/2
16,494.93	11,720.00	5 1/2"	5-1/2	6

Database:	EDM Conroe	**Local Co-ordinate Reference:**	Well #211H
Company:	Matador Resources	**TVD Reference:**	WELL @ 3413.00usft (Patterson 297)
Project:	Lea County, New Mexico (NAD 27)	**MD Reference:**	WELL @ 3413.00usft (Patterson 297)
Site:	Dr. Ireland Fed Com	**North Reference:**	Grid
Well:	#211H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
950.00	950.00	0.00	0.00	KOP, 1.00°/100' Build
1,450.28	1,449.65	-12.46	17.92	Begin 5.00° Tangent
10,150.68	10,116.90	-445.62	640.84	Begin 1.50°/100' Drop
10,484.20	10,450.00	-453.93	652.78	Begin Vertical Hold
11,175.44	11,141.24	-453.93	652.78	Begin 10.00°/100' Build
11,975.44	11,705.49	19.52	648.66	Begin 6.00°/100' Build
12,142.11	11,720.00	185.33	647.21	Begin 90.00° Lateral
16,494.93	11,720.00	4,537.99	609.28	PBHL