PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC.
LEASE NO.:	NMNM014164
WELL NAME & NO.:	602H-FASCINATOR FEDERAL COM
SURFACE HOLE FOOTAGE:	210'/N & 1480'/W
BOTTOM HOLE FOOTAGE	200'/S & 1450'/W
LOCATION:	Section. 30.,T24S., R.35E., NMP
COUNTY:	LEA County, New Mexico

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	◉ Conventional	○ Multibowl	
Other	☐4 String Area	☐Capitan Reef	☐WIPP

A. Hydrogen Sulfide

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

B. CASING

1. The **13 3/8** inch surface casing shall be set at approximately **1170** 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 **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

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

whichever is greater.

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

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

   Operator has proposed a DV tool at a depth of **5460'**, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

   a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

   b. Second stage above DV tool:

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

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

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

C. PRESSURE CONTROL

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

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9 5/8** inch intermediate casing shoe shall be **10,000 (10M)** psi. **Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**

D. SPECIAL REQUIREMENT(S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the

anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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.

MHH 08032018

GENERAL REQUIREMENTS

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

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

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

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

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

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

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

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

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

A. CASING

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

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

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

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

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

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

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

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

B. PRESSURE CONTROL

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

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

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

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. 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.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

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

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

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

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

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

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

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SURFACE HOLE FOOTAGE:	210'/N & 1480'/W
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COUNTY:	LEA County, New Mexico

TABLE OF CONTENTS

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

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)

Hydrology

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling. A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating values and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

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.

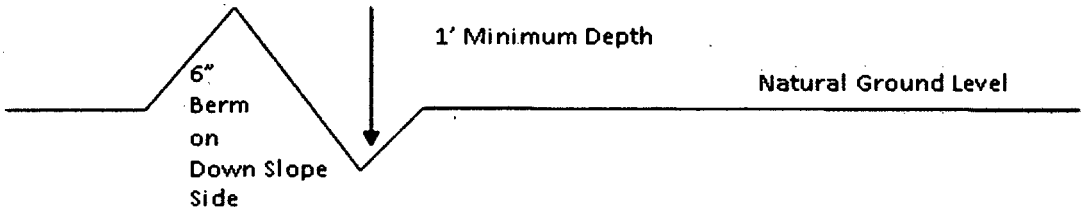
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

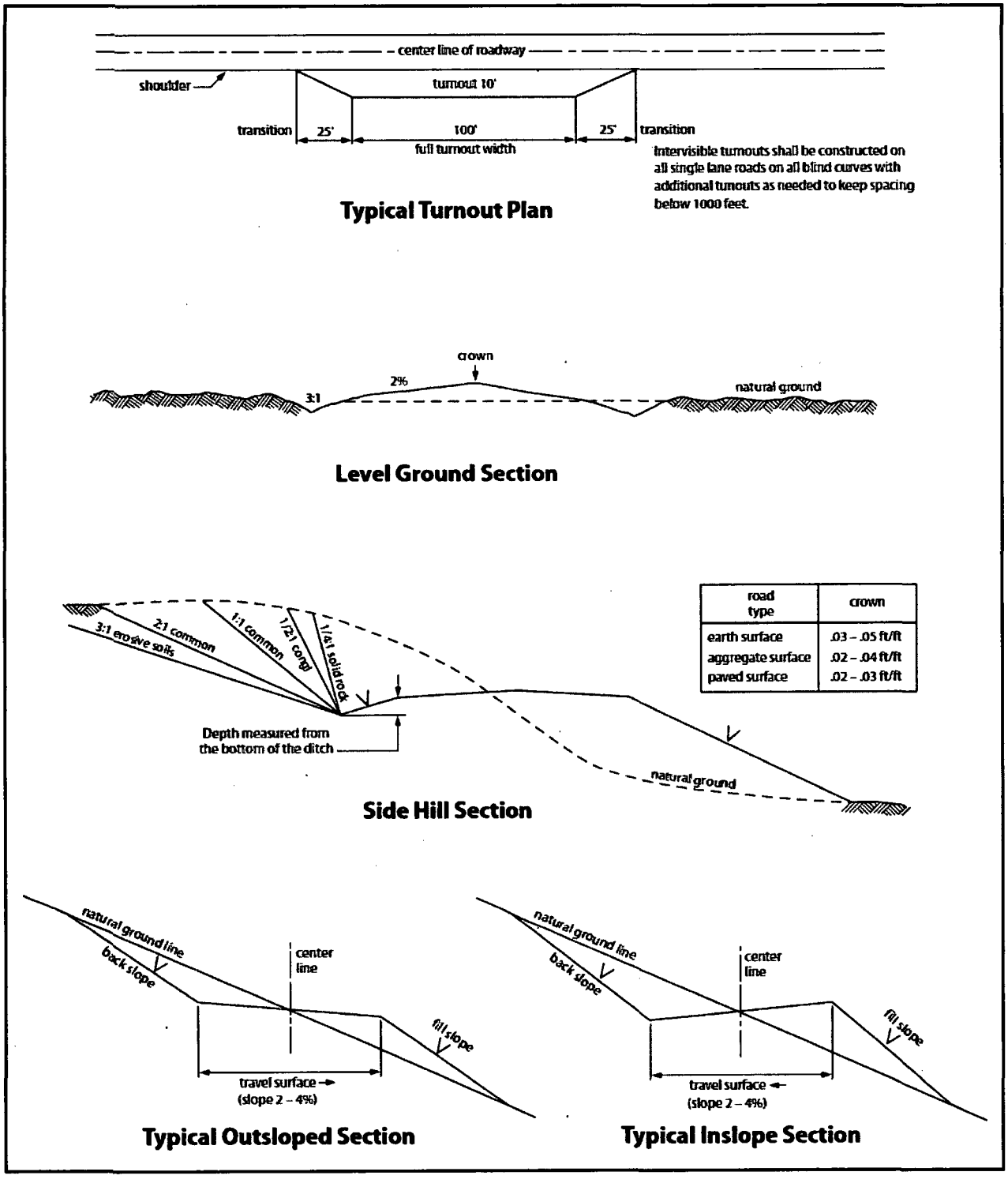


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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 3, for Shallow Sites

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

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

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

Species	lb/acre
Plains Bristlegrass (*Setaria macrostachya*)	1.0
Green Sprangletop (*Leptochloa dubia*)	2.0
Sideoats Grama (*Bouteloua curtipendula)*	5.0

*Pounds of pure live seed:

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

CONCHO

COG Operating L L C

Lea County, NM (NAD27 NME)
Sec. 30, T 24 S. , R 35 E
Fascinator Fed Com 602H

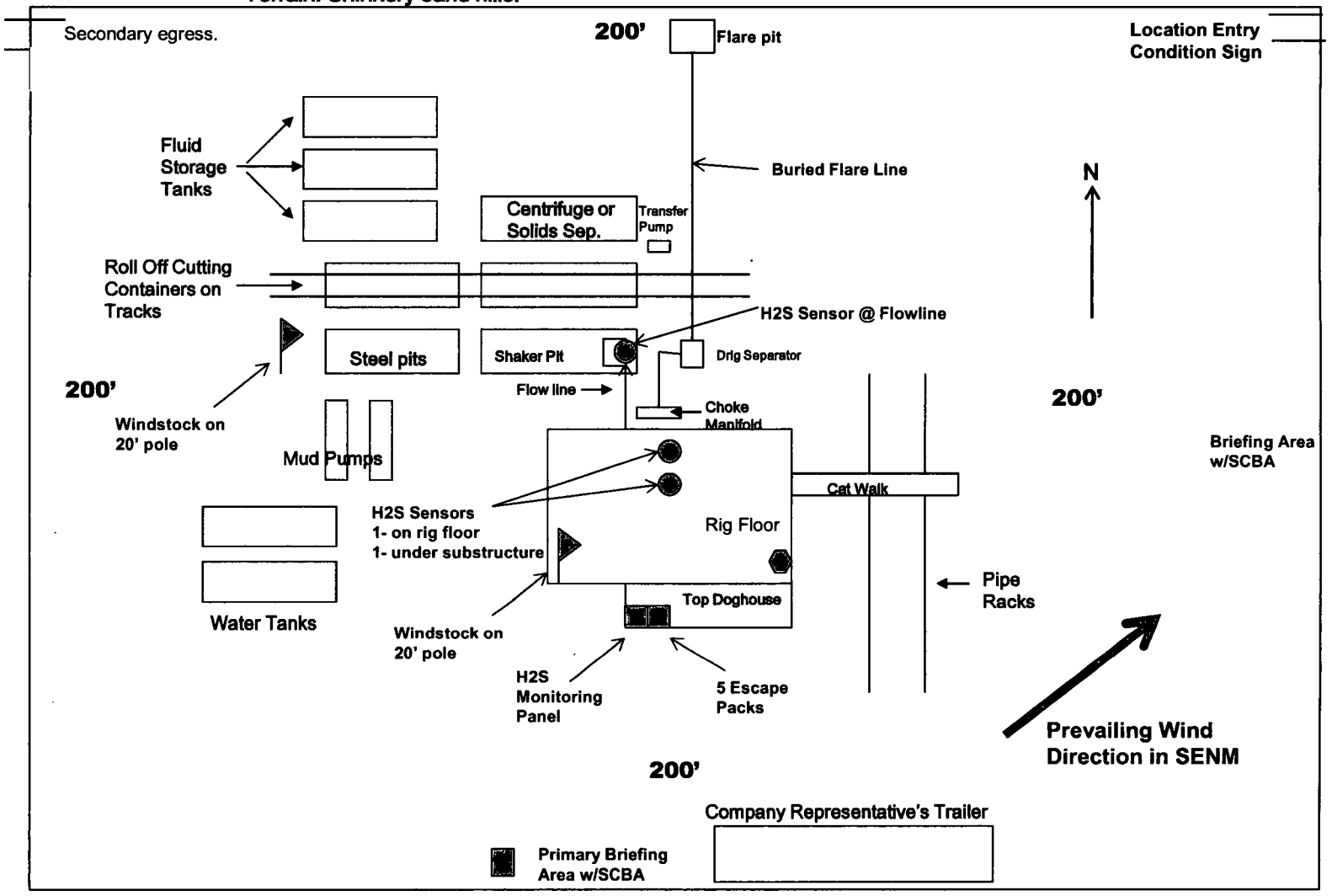
Wellbore #1
Plan #1

Anticollision Report

01 March, 2018

COG Operating LLC
H_2S Equipment Schematic
Terrain: Shinnery sand hills.

Well pad will be 400' x 400' with cellar in center of pad



Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 20,000.00 ft	**Error Surface:**	Circular Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 3/1/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	5,000.00	Plan #1 (Wellbore #1)	Keeper	Standard Wireline Keeper ver 1.0.2
5,000.00	22,436.55	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Sec. 30, T 24 S. , R 35 E						
Fascinator Fed Com 703H - Wellbore #1 - Plan #1	2,500.00	2,499.00	29.90	23.45	4.634	CC
Fascinator Fed Com 703H - Wellbore #1 - Plan #1	22,436.99	22,583.67	161.50	-210.26	0.434	Level 1, ES, SF

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	89.43	0.30	29.90	29.92				
100.00	100.00	99.00	99.00	0.07	0.07	89.43	0.30	29.90	29.90	29.77	0.13	227.007	
200.00	200.00	199.00	199.00	0.20	0.19	89.43	0.30	29.90	29.90	29.51	0.39	76.716	
300.00	300.00	299.00	299.00	0.33	0.33	89.43	0.30	29.90	29.90	29.25	0.65	45.830	
400.00	400.00	399.00	399.00	0.46	0.46	89.43	0.30	29.90	29.90	28.99	0.92	32.655	
500.00	500.00	499.00	499.00	0.59	0.59	89.43	0.30	29.90	29.90	28.72	1.18	25.359	
600.00	600.00	599.00	599.00	0.72	0.72	89.43	0.30	29.90	29.90	28.46	1.44	20.727	
700.00	700.00	699.00	699.00	0.85	0.85	89.43	0.30	29.90	29.90	28.20	1.71	17.525	
800.00	800.00	799.00	799.00	0.99	0.98	89.43	0.30	29.90	29.90	27.93	1.97	15.180	
900.00	900.00	899.00	899.00	1.12	1.12	89.43	0.30	29.90	29.90	27.67	2.23	13.388	
1,000.00	1,000.00	999.00	999.00	1.25	1.25	89.43	0.30	29.90	29.90	27.40	2.50	11.974	
1,100.00	1,100.00	1,099.00	1,099.00	1.38	1.38	89.43	0.30	29.90	29.90	27.14	2.76	10.831	
1,200.00	1,200.00	1,199.00	1,199.00	1.51	1.51	89.43	0.30	29.90	29.90	26.88	3.02	9.887	
1,300.00	1,300.00	1,299.00	1,299.00	1.64	1.64	89.43	0.30	29.90	29.90	26.61	3.29	9.094	
1,400.00	1,400.00	1,399.00	1,399.00	1.78	1.78	89.43	0.30	29.90	29.90	26.35	3.55	8.419	
1,500.00	1,500.00	1,499.00	1,499.00	1.91	1.91	89.43	0.30	29.90	29.90	26.09	3.82	7.837	
1,600.00	1,600.00	1,599.00	1,599.00	2.04	2.04	89.43	0.30	29.90	29.90	25.82	4.08	7.331	
1,700.00	1,700.00	1,699.00	1,699.00	2.17	2.17	89.43	0.30	29.90	29.90	25.56	4.34	6.885	
1,800.00	1,800.00	1,799.00	1,799.00	2.30	2.30	89.43	0.30	29.90	29.90	25.30	4.61	6.491	
1,900.00	1,900.00	1,899.00	1,899.00	2.44	2.43	89.43	0.30	29.90	29.90	25.03	4.87	6.140	
2,000.00	2,000.00	1,999.00	1,999.00	2.57	2.57	89.43	0.30	29.90	29.90	24.77	5.13	5.825	
2,100.00	2,100.00	2,099.00	2,099.00	2.70	2.70	89.43	0.30	29.90	29.90	24.50	5.40	5.540	
2,200.00	2,200.00	2,199.00	2,199.00	2.83	2.83	89.43	0.30	29.90	29.90	24.24	5.66	5.282	
2,300.00	2,300.00	2,299.00	2,299.00	2.96	2.96	89.43	0.30	29.90	29.90	23.98	5.92	5.047	

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,400.00	2,400.00	2,399.00	2,399.00	3.09	3.09	89.43	0.30	29.90	29.90	23.71	6.19	4.832	
2,500.00	2,500.00	2,499.00	2,499.00	3.23	3.23	89.43	0.30	29.90	29.90	23.45	6.45	4.634	CC
2,509.04	2,509.04	2,508.04	2,508.04	3.23	3.24	179.43	0.30	29.90	29.92	23.44	6.47	4.623	
2,600.00	2,600.00	2,599.00	2,599.00	3.27	3.36	179.43	0.30	29.90	30.20	23.58	6.63	4.557	
2,700.00	2,700.00	2,699.00	2,699.00	3.31	3.49	179.44	0.30	29.90	30.52	23.71	6.80	4.485	
2,800.00	2,800.00	2,799.00	2,799.00	3.36	3.62	179.44	0.30	29.90	30.83	23.85	6.98	4.414	
2,900.00	2,900.00	2,899.00	2,899.00	3.42	3.75	179.45	0.30	29.90	31.15	23.98	7.17	4.344	
3,000.00	3,000.00	2,999.00	2,999.00	3.47	3.88	179.45	0.30	29.90	31.46	24.11	7.36	4.276	
3,100.00	3,100.00	3,099.00	3,099.00	3.54	4.02	179.46	0.30	29.90	31.78	24.23	7.55	4.208	
3,200.00	3,200.00	3,199.00	3,199.00	3.60	4.15	179.46	0.30	29.90	32.10	24.35	7.75	4.142	
3,300.00	3,300.00	3,299.00	3,299.00	3.67	4.28	179.47	0.30	29.90	32.41	24.46	7.95	4.077	
3,400.00	3,400.00	3,399.00	3,399.00	3.74	4.41	179.47	0.30	29.90	32.73	24.57	8.15	4.014	
3,500.00	3,500.00	3,499.00	3,499.00	3.82	4.54	179.48	0.30	29.90	33.04	24.68	8.36	3.952	
3,600.00	3,599.99	3,598.99	3,598.99	3.90	4.68	179.48	0.30	29.90	33.36	24.79	8.57	3.892	
3,700.00	3,699.99	3,698.99	3,698.99	3.98	4.81	179.49	0.30	29.90	33.67	24.89	8.78	3.833	
3,800.00	3,799.99	3,798.99	3,798.99	4.06	4.94	179.49	0.30	29.90	33.99	24.99	9.00	3.777	
3,900.00	3,899.99	3,898.99	3,898.99	4.15	5.07	179.50	0.30	29.90	34.30	25.09	9.22	3.721	
4,000.00	3,999.99	3,998.99	3,998.99	4.24	5.20	179.50	0.30	29.90	34.62	25.18	9.44	3.668	
4,100.00	4,099.99	4,098.99	4,098.99	4.33	5.33	179.51	0.30	29.90	34.94	25.27	9.66	3.616	
4,200.00	4,199.99	4,198.99	4,198.99	4.42	5.47	179.51	0.30	29.90	35.25	25.37	9.89	3.566	
4,300.00	4,299.99	4,298.99	4,298.99	4.51	5.60	179.52	0.30	29.90	35.57	25.45	10.11	3.517	
4,400.00	4,399.99	4,398.99	4,398.99	4.61	5.73	179.52	0.30	29.90	35.88	25.54	10.34	3.470	
4,500.00	4,499.99	4,498.99	4,498.99	4.71	5.86	179.53	0.30	29.90	36.20	25.63	10.57	3.424	
4,600.00	4,599.99	4,598.99	4,598.99	4.81	5.99	179.53	0.30	29.90	36.51	25.71	10.80	3.380	
4,700.00	4,699.99	4,698.99	4,698.99	4.91	6.13	179.53	0.30	29.90	36.83	25.79	11.04	3.337	
4,800.00	4,799.99	4,798.99	4,798.99	5.01	6.26	179.54	0.30	29.90	37.14	25.87	11.27	3.296	
4,900.00	4,899.99	4,898.99	4,898.99	5.12	6.39	179.54	0.30	29.90	37.46	25.95	11.51	3.256	
5,000.00	4,999.99	4,998.99	4,998.99	5.22	6.52	179.54	0.30	29.90	37.78	26.03	11.74	3.217	
5,100.00	5,099.99	5,098.99	5,098.99	5.25	6.57	179.55	0.30	29.90	38.09	26.27	11.82	3.221	
5,200.00	5,199.99	5,198.99	5,198.99	5.26	6.58	179.55	0.30	29.90	38.41	26.56	11.84	3.243	
5,300.00	5,299.99	5,298.99	5,298.99	5.28	6.59	179.56	0.30	29.90	38.72	26.85	11.88	3.260	
5,400.00	5,399.99	5,398.99	5,398.99	5.31	6.62	179.56	0.30	29.90	39.04	27.11	11.93	3.273	
5,500.00	5,499.99	5,498.99	5,498.99	5.35	6.65	179.56	0.30	29.90	39.35	27.36	12.00	3.280	
5,600.00	5,599.98	5,598.98	5,598.98	5.40	6.68	179.57	0.30	29.90	39.67	27.59	12.08	3.284	
5,700.00	5,699.98	5,698.98	5,698.98	5.45	6.73	179.57	0.30	29.90	39.98	27.80	12.18	3.282	
5,800.00	5,799.98	5,798.98	5,798.98	5.52	6.78	179.57	0.30	29.90	40.30	28.00	12.30	3.277	
5,900.00	5,899.98	5,898.98	5,898.98	5.59	6.84	179.58	0.30	29.90	40.61	28.18	12.43	3.267	
6,000.00	5,999.98	5,998.98	5,998.98	5.67	6.91	179.58	0.30	29.90	40.93	28.35	12.58	3.254	
6,100.00	6,099.98	6,098.98	6,098.98	5.76	6.98	179.58	0.30	29.90	41.25	28.51	12.74	3.238	
6,200.00	6,199.98	6,198.98	6,198.98	5.85	7.06	179.59	0.30	29.90	41.56	28.65	12.91	3.218	
6,300.00	6,299.98	6,298.98	6,298.98	5.96	7.14	179.59	0.30	29.90	41.88	28.77	13.10	3.196	
6,400.00	6,399.98	6,398.98	6,398.98	6.07	7.24	179.59	0.30	29.90	42.19	28.89	13.30	3.172	
6,500.00	6,499.98	6,498.98	6,498.98	6.18	7.33	179.60	0.30	29.90	42.51	28.99	13.52	3.145	
6,600.00	6,599.98	6,598.98	6,598.98	6.30	7.44	179.60	0.30	29.90	42.82	29.08	13.74	3.117	
6,700.00	6,699.98	6,698.98	6,698.98	6.43	7.54	179.60	0.30	29.90	43.14	29.16	13.97	3.087	
6,800.00	6,799.98	6,798.98	6,798.98	6.56	7.66	179.60	0.30	29.90	43.45	29.23	14.22	3.056	
6,900.00	6,899.98	6,898.98	6,898.98	6.70	7.77	179.61	0.30	29.90	43.77	29.30	14.47	3.024	
7,000.00	6,999.98	6,998.98	6,998.98	6.84	7.90	179.61	0.30	29.90	44.09	29.35	14.74	2.991	
7,100.00	7,099.98	7,098.98	7,098.98	6.99	8.02	179.61	0.30	29.90	44.40	29.39	15.01	2.958	
7,200.00	7,199.98	7,198.98	7,198.98	7.14	8.15	179.62	0.30	29.90	44.72	29.42	15.29	2.924	
7,300.00	7,299.98	7,298.98	7,298.98	7.29	8.29	179.62	0.30	29.90	45.03	29.45	15.58	2.890	
7,400.00	7,399.98	7,398.98	7,398.98	7.45	8.43	179.62	0.30	29.90	45.35	29.47	15.88	2.856	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,500.00	7,499.98	7,498.98	7,498.98	7.61	8.57	179.62	0.30	29.90	45.66	29.48	16.18	2.822	
7,600.00	7,599.97	7,598.97	7,598.97	7.78	8.72	179.63	0.30	29.90	45.98	29.48	16.49	2.788	
7,700.00	7,699.97	7,698.97	7,698.97	7.94	8.87	179.63	0.30	29.90	46.29	29.48	16.81	2.754	
7,800.00	7,799.97	7,798.97	7,798.97	8.11	9.02	179.63	0.30	29.90	46.61	29.48	17.13	2.720	
7,900.00	7,899.97	7,898.97	7,898.97	8.29	9.17	179.63	0.30	29.90	46.92	29.46	17.46	2.687	
8,000.00	7,999.97	7,998.97	7,998.97	8.46	9.33	179.64	0.30	29.90	47.24	29.45	17.79	2.655	
8,100.00	8,099.97	8,098.97	8,098.97	8.64	9.49	179.64	0.30	29.90	47.56	29.42	18.13	2.623	
8,200.00	8,199.97	8,198.97	8,198.97	8.82	9.66	179.64	0.30	29.90	47.87	29.40	18.48	2.591	
8,300.00	8,299.97	8,298.97	8,298.97	9.00	9.82	179.64	0.30	29.90	48.19	29.36	18.82	2.560	
8,400.00	8,399.97	8,398.97	8,398.97	9.18	9.99	179.65	0.30	29.90	48.50	29.33	19.18	2.529	
8,500.00	8,499.97	8,498.97	8,498.97	9.37	10.16	179.65	0.30	29.90	48.82	29.29	19.53	2.499	
8,600.00	8,599.97	8,598.97	8,598.97	9.56	10.33	179.65	0.30	29.90	49.13	29.24	19.89	2.470	
8,700.00	8,699.97	8,698.97	8,698.97	9.75	10.51	179.65	0.30	29.90	49.45	29.20	20.25	2.441	
8,800.00	8,799.97	8,798.97	8,798.97	9.94	10.69	179.65	0.30	29.90	49.76	29.14	20.62	2.413	
8,900.00	8,899.97	8,898.97	8,898.97	10.13	10.86	179.66	0.30	29.90	50.08	29.09	20.99	2.386	
9,000.00	8,999.97	8,998.97	8,998.97	10.32	11.04	179.66	0.30	29.90	50.40	29.03	21.36	2.359	
9,100.00	9,099.97	9,098.97	9,098.97	10.51	11.22	179.66	0.30	29.90	50.71	28.97	21.74	2.333	
9,200.00	9,199.97	9,198.97	9,198.97	10.71	11.41	179.66	0.30	29.90	51.03	28.91	22.12	2.307	
9,300.00	9,299.97	9,298.97	9,298.97	10.91	11.59	179.67	0.30	29.90	51.34	28.84	22.50	2.282	
9,400.00	9,399.97	9,398.97	9,398.97	11.10	11.78	179.67	0.30	29.90	51.66	28.78	22.88	2.258	
9,500.00	9,499.97	9,498.97	9,498.97	11.30	11.97	179.67	0.30	29.90	51.97	28.71	23.27	2.234	
9,600.00	9,599.96	9,598.96	9,598.96	11.50	12.15	179.67	0.30	29.90	52.29	28.63	23.66	2.210	
9,700.00	9,699.96	9,698.96	9,698.96	11.70	12.34	179.67	0.30	29.90	52.60	28.56	24.05	2.188	
9,800.00	9,799.96	9,798.96	9,798.96	11.90	12.53	179.68	0.30	29.90	52.92	28.48	24.44	2.165	
9,900.00	9,899.96	9,898.96	9,898.96	12.11	12.73	179.68	0.30	29.90	53.24	28.40	24.83	2.144	
10,000.00	9,999.96	9,998.96	9,998.96	12.31	12.92	179.68	0.30	29.90	53.55	28.32	25.23	2.123	
10,100.00	10,099.96	10,098.96	10,098.96	12.51	13.11	179.68	0.30	29.90	53.87	28.24	25.63	2.102	
10,200.00	10,199.96	10,198.96	10,198.96	12.72	13.31	179.68	0.30	29.90	54.18	28.16	26.03	2.082	
10,300.00	10,299.96	10,298.96	10,298.96	12.92	13.50	179.68	0.30	29.90	54.50	28.07	26.43	2.062	
10,400.00	10,399.96	10,398.96	10,398.96	13.13	13.70	179.69	0.30	29.90	54.81	27.98	26.83	2.043	
10,500.00	10,499.96	10,498.96	10,498.96	13.33	13.90	179.69	0.30	29.90	55.13	27.90	27.23	2.024	
10,600.00	10,599.96	10,598.96	10,598.96	13.54	14.10	179.69	0.30	29.90	55.44	27.81	27.64	2.006	
10,700.00	10,699.96	10,698.96	10,698.96	13.75	14.30	179.69	0.30	29.90	55.76	27.71	28.05	1.988	
10,800.00	10,799.96	10,798.96	10,798.96	13.96	14.50	179.69	0.30	29.90	56.07	27.62	28.45	1.971	
10,900.00	10,899.96	10,898.96	10,898.96	14.17	14.70	179.70	0.30	29.90	56.39	27.53	28.86	1.954	
11,000.00	10,999.96	10,998.96	10,998.96	14.38	14.90	179.70	0.30	29.90	56.71	27.43	29.27	1.937	
11,100.00	11,099.96	11,098.96	11,098.96	14.58	15.10	179.70	0.30	29.90	57.02	27.34	29.68	1.921	
11,200.00	11,199.96	11,198.96	11,198.96	14.79	15.30	179.70	0.30	29.90	57.34	27.24	30.10	1.905	
11,300.00	11,299.96	11,298.96	11,298.96	15.01	15.51	179.70	0.30	29.90	57.65	27.14	30.51	1.890	
11,400.00	11,399.96	11,398.96	11,398.96	15.22	15.71	179.70	0.30	29.90	57.97	27.04	30.93	1.874	
11,500.00	11,499.96	11,498.96	11,498.96	15.43	15.91	179.71	0.30	29.90	58.28	26.94	31.34	1.860	
11,600.00	11,599.95	11,598.95	11,598.95	15.64	16.12	179.71	0.30	29.90	58.60	26.84	31.76	1.845	
11,700.00	11,699.95	11,698.95	11,698.95	15.85	16.33	179.71	0.30	29.90	58.91	26.74	32.18	1.831	
11,800.00	11,799.95	11,798.95	11,798.95	16.06	16.53	179.71	0.30	29.90	59.23	26.64	32.59	1.817	
11,900.00	11,899.95	11,898.95	11,898.95	16.28	16.74	179.71	0.30	29.90	59.55	26.53	33.01	1.804	
12,000.00	11,999.95	11,998.95	11,998.95	16.49	16.94	179.71	0.30	29.90	59.86	26.43	33.43	1.790	
12,012.61	12,012.56	12,011.56	12,011.56	16.52	16.97	179.71	0.30	29.90	59.90	26.41	33.49	1.789	
12,025.00	12,024.95	12,023.95	12,023.95	16.54	17.00	-96.76	0.30	29.90	59.94	26.40	33.54	1.787	
12,050.00	12,049.91	12,048.91	12,048.91	16.59	17.05	-93.36	0.30	29.90	60.03	26.39	33.64	1.785	
12,075.00	12,074.78	12,073.78	12,073.78	16.64	17.10	-94.88	0.30	29.90	60.21	26.48	33.74	1.785	
12,100.00	12,099.47	12,098.47	12,098.47	16.68	17.15	-98.07	0.30	29.90	60.66	26.82	33.83	1.793	
12,125.00	12,123.92	12,122.92	12,122.92	16.73	17.20	-102.43	0.30	29.90	61.60	27.67	33.93	1.815	

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,150.00	12,148.06	12,147.06	12,147.06	16.78	17.25	-107.63	0.30	29.90	63.34	29.30	34.03	1.861	
12,175.00	12,171.84	12,171.39	12,171.39	16.83	17.30	-113.42	0.20	29.90	66.13	31.99	34.13	1.937	
12,200.00	12,195.18	12,196.77	12,196.74	16.88	17.34	-119.04	-1.00	29.91	69.75	35.53	34.23	2.038	
12,225.00	12,218.02	12,222.61	12,222.45	16.94	17.38	-124.10	-3.60	29.94	74.01	39.70	34.32	2.157	
12,250.00	12,240.29	12,248.94	12,248.45	16.99	17.42	-128.61	-7.67	29.98	78.79	44.37	34.41	2.289	
12,275.00	12,261.94	12,275.78	12,274.69	17.05	17.47	-132.59	-13.29	30.04	83.95	49.44	34.51	2.432	
12,300.00	12,282.91	12,303.15	12,301.08	17.10	17.51	-136.08	-20.53	30.12	89.40	54.79	34.61	2.583	
12,325.00	12,303.14	12,331.07	12,327.53	17.16	17.56	-139.15	-29.47	30.21	95.04	60.32	34.72	2.737	
12,350.00	12,322.57	12,359.56	12,353.93	17.23	17.60	-141.83	-40.16	30.33	100.78	65.95	34.83	2.894	
12,375.00	12,341.15	12,388.64	12,380.18	17.29	17.65	-144.19	-52.68	30.46	106.55	71.61	34.94	3.050	
12,400.00	12,358.83	12,418.33	12,406.13	17.36	17.69	-146.25	-67.08	30.61	112.29	77.24	35.06	3.203	
12,425.00	12,375.56	12,448.63	12,431.65	17.44	17.74	-148.07	-83.42	30.78	117.94	82.76	35.18	3.352	
12,450.00	12,391.30	12,479.56	12,456.57	17.52	17.78	-149.66	-101.73	30.97	123.43	88.12	35.31	3.496	
12,475.00	12,406.00	12,511.12	12,480.72	17.61	17.83	-151.06	-122.03	31.19	128.71	93.27	35.44	3.632	
12,500.00	12,419.62	12,543.29	12,503.91	17.71	17.87	-152.29	-144.32	31.42	133.75	98.17	35.58	3.759	
12,525.00	12,432.12	12,576.08	12,525.94	17.82	17.91	-153.36	-168.59	31.68	138.50	102.76	35.73	3.876	
12,550.00	12,443.47	12,609.46	12,546.60	17.93	17.95	-154.29	-194.80	31.95	142.90	107.01	35.89	3.982	
12,575.00	12,453.65	12,643.40	12,565.69	18.06	17.99	-155.09	-222.86	32.25	146.93	110.88	36.05	4.076	
12,600.00	12,462.61	12,677.88	12,582.98	18.20	18.02	-155.77	-252.67	32.56	150.54	114.32	36.22	4.156	
12,625.00	12,470.34	12,712.83	12,598.27	18.35	18.05	-156.35	-284.10	32.89	153.71	117.31	36.40	4.223	
12,650.00	12,476.82	12,748.22	12,611.37	18.50	18.08	-156.82	-316.96	33.24	156.40	119.82	36.58	4.275	
12,675.00	12,482.02	12,783.97	12,622.09	18.67	18.13	-157.19	-351.06	33.59	158.59	121.79	36.80	4.309	
12,700.00	12,485.94	12,820.02	12,630.29	18.85	18.36	-157.47	-386.15	33.96	160.26	123.05	37.21	4.307	
12,725.00	12,488.56	12,856.29	12,635.84	19.03	18.61	-157.66	-421.98	34.34	161.39	123.74	37.65	4.287	
12,750.00	12,489.87	12,892.69	12,638.67	19.23	18.89	-157.75	-458.26	34.72	161.97	123.85	38.11	4.250	
12,756.46	12,490.00	12,902.10	12,638.95	19.28	18.96	-157.76	-467.67	34.82	162.03	123.79	38.24	4.237	
12,800.00	12,490.56	12,946.68	12,639.53	19.64	19.34	-157.77	-512.24	35.29	162.03	123.06	38.97	4.157	
12,900.00	12,491.85	13,046.68	12,640.82	20.56	20.24	-157.77	-612.23	36.34	162.03	121.22	40.81	3.971	
13,000.00	12,493.14	13,146.68	12,642.12	21.61	21.27	-157.78	-712.22	37.39	162.02	119.15	42.87	3.779	
13,100.00	12,494.44	13,246.68	12,643.41	22.75	22.39	-157.78	-812.20	38.44	162.01	116.87	45.14	3.589	
13,200.00	12,495.73	13,346.68	12,644.70	23.98	23.61	-157.78	-912.19	39.49	162.01	114.42	47.59	3.404	
13,300.00	12,497.02	13,446.68	12,645.99	25.28	24.90	-157.79	-1,012.17	40.54	162.00	111.82	50.18	3.228	
13,400.00	12,498.31	13,546.68	12,647.28	26.65	26.25	-157.79	-1,112.16	41.59	162.00	109.10	52.90	3.062	
13,500.00	12,499.60	13,646.68	12,648.57	28.07	27.66	-157.80	-1,212.15	42.65	161.99	106.27	55.72	2.907	
13,600.00	12,500.89	13,746.68	12,649.86	29.53	29.11	-157.80	-1,312.13	43.70	161.99	103.35	58.64	2.762	
13,700.00	12,502.18	13,846.68	12,651.15	31.03	30.60	-157.81	-1,412.12	44.75	161.98	100.35	61.63	2.628	
13,800.00	12,503.48	13,946.68	12,652.45	32.56	32.13	-157.81	-1,512.10	45.80	161.98	97.28	64.70	2.504	
13,900.00	12,504.77	14,046.68	12,653.74	34.13	33.69	-157.82	-1,612.09	46.85	161.97	94.15	67.82	2.388	
14,000.00	12,506.06	14,146.68	12,655.03	35.72	35.27	-157.82	-1,712.08	47.90	161.96	90.97	70.99	2.282	
14,100.00	12,507.35	14,246.68	12,656.32	37.33	36.88	-157.83	-1,812.06	48.95	161.96	87.75	74.21	2.183	
14,200.00	12,508.64	14,346.68	12,657.61	38.96	38.50	-157.83	-1,912.05	50.00	161.95	84.49	77.46	2.091	
14,300.00	12,509.93	14,446.68	12,658.90	40.60	40.15	-157.84	-2,012.03	51.05	161.95	81.20	80.75	2.006	
14,400.00	12,511.22	14,546.68	12,660.19	42.26	41.81	-157.84	-2,112.02	52.11	161.94	77.87	84.07	1.926	
14,500.00	12,512.51	14,646.68	12,661.49	43.94	43.48	-157.85	-2,212.01	53.16	161.94	74.52	87.41	1.853	
14,600.00	12,513.81	14,746.68	12,662.78	45.62	45.16	-157.85	-2,311.99	54.21	161.93	71.15	90.78	1.784	
14,700.00	12,515.10	14,846.68	12,664.07	47.32	46.85	-157.86	-2,411.98	55.26	161.93	67.75	94.17	1.719	
14,800.00	12,516.39	14,946.68	12,665.36	49.02	48.56	-157.86	-2,511.97	56.31	161.92	64.34	97.58	1.659	
14,900.00	12,517.68	15,046.68	12,666.65	50.74	50.27	-157.87	-2,611.95	57.36	161.91	60.91	101.01	1.603	
15,000.00	12,518.97	15,146.68	12,667.94	52.46	51.99	-157.87	-2,711.94	58.41	161.91	57.46	104.45	1.550	
15,100.00	12,520.26	15,246.68	12,669.23	54.19	53.72	-157.88	-2,811.92	59.46	161.90	54.00	107.90	1.500	
15,200.00	12,521.55	15,346.68	12,670.52	55.92	55.45	-157.88	-2,911.91	60.51	161.90	50.53	111.37	1.454	Level 3
15,300.00	12,522.85	15,446.68	12,671.82	57.66	57.19	-157.89	-3,011.90	61.57	161.89	47.05	114.85	1.410	Level 3

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,400.00	12,524.14	15,546.68	12,673.11	59.40	58.93	-157.89	-3,111.88	62.62	161.89	43.55	118.34	1.368	Level 3
15,500.00	12,525.43	15,646.68	12,674.40	61.15	60.68	-157.90	-3,211.87	63.67	161.88	40.05	121.84	1.329	Level 3
15,600.00	12,526.72	15,746.68	12,675.69	62.91	62.43	-157.90	-3,311.85	64.72	161.88	36.53	125.34	1.291	Level 3
15,700.00	12,528.01	15,846.68	12,676.98	64.67	64.19	-157.90	-3,411.84	65.77	161.87	33.01	128.86	1.256	Level 3
15,800.00	12,529.30	15,946.68	12,678.27	66.43	65.95	-157.91	-3,511.83	66.82	161.87	29.48	132.38	1.223	Level 2
15,900.00	12,530.59	16,046.68	12,679.56	68.19	67.72	-157.91	-3,611.81	67.87	161.86	25.95	135.91	1.191	Level 2
16,000.00	12,531.88	16,146.68	12,680.86	69.96	69.49	-157.92	-3,711.80	68.92	161.85	22.41	139.45	1.161	Level 2
16,100.00	12,533.18	16,246.68	12,682.15	71.73	71.26	-157.92	-3,811.79	69.97	161.85	18.86	142.99	1.132	Level 2
16,200.00	12,534.47	16,346.68	12,683.44	73.51	73.03	-157.93	-3,911.77	71.03	161.84	15.31	146.53	1.104	Level 2
16,300.00	12,535.76	16,446.68	12,684.73	75.28	74.80	-157.93	-4,011.76	72.08	161.84	11.75	150.09	1.078	Level 2
16,400.00	12,537.05	16,546.68	12,686.02	77.06	76.58	-157.94	-4,111.74	73.13	161.83	8.19	153.64	1.053	Level 2
16,500.00	12,538.34	16,646.68	12,687.31	78.84	78.36	-157.94	-4,211.73	74.18	161.83	4.62	157.20	1.029	Level 2
16,600.00	12,539.63	16,746.68	12,688.60	80.62	80.15	-157.95	-4,311.72	75.23	161.82	1.05	160.77	1.007	Level 2
16,700.00	12,540.92	16,846.68	12,689.89	82.41	81.93	-157.95	-4,411.70	76.28	161.82	-2.52	164.34	0.985	Level 1
16,800.00	12,542.21	16,946.68	12,691.19	84.19	83.72	-157.96	-4,511.69	77.33	161.81	-6.10	167.91	0.964	Level 1
16,900.00	12,543.51	17,046.68	12,692.48	85.98	85.50	-157.96	-4,611.67	78.38	161.81	-9.68	171.49	0.944	Level 1
17,000.00	12,544.80	17,146.68	12,693.77	87.77	87.29	-157.97	-4,711.66	79.43	161.80	-13.27	175.07	0.924	Level 1
17,100.00	12,546.09	17,246.68	12,695.06	89.56	89.08	-157.97	-4,811.65	80.49	161.79	-16.85	178.65	0.906	Level 1
17,200.00	12,547.38	17,346.68	12,696.35	91.36	90.88	-157.98	-4,911.63	81.54	161.79	-20.44	182.23	0.888	Level 1
17,300.00	12,548.67	17,446.68	12,697.64	93.15	92.67	-157.98	-5,011.62	82.59	161.78	-24.03	185.82	0.871	Level 1
17,400.00	12,549.96	17,546.68	12,698.93	94.94	94.46	-157.99	-5,111.61	83.64	161.78	-27.63	189.41	0.854	Level 1
17,500.00	12,551.25	17,646.68	12,700.23	96.74	96.26	-157.99	-5,211.59	84.69	161.77	-31.23	193.00	0.838	Level 1
17,600.00	12,552.55	17,746.68	12,701.52	98.54	98.06	-158.00	-5,311.58	85.74	161.77	-34.83	196.59	0.823	Level 1
17,700.00	12,553.84	17,846.68	12,702.81	100.34	99.85	-158.00	-5,411.56	86.79	161.76	-38.43	200.19	0.808	Level 1
17,800.00	12,555.13	17,946.68	12,704.10	102.13	101.65	-158.01	-5,511.55	87.84	161.76	-42.03	203.79	0.794	Level 1
17,900.00	12,556.42	18,046.68	12,705.39	103.93	103.45	-158.01	-5,611.54	88.89	161.75	-45.64	207.39	0.780	Level 1
18,000.00	12,557.71	18,146.68	12,706.68	105.74	105.25	-158.02	-5,711.52	89.95	161.75	-49.24	210.99	0.767	Level 1
18,100.00	12,559.00	18,246.68	12,707.97	107.54	107.06	-158.02	-5,811.51	91.00	161.74	-52.85	214.59	0.754	Level 1
18,200.00	12,560.29	18,346.68	12,709.26	109.34	108.86	-158.02	-5,911.49	92.05	161.73	-56.46	218.20	0.741	Level 1
18,300.00	12,561.58	18,446.68	12,710.56	111.14	110.66	-158.03	-6,011.48	93.10	161.73	-60.08	221.80	0.729	Level 1
18,400.00	12,562.88	18,546.68	12,711.85	112.95	112.47	-158.03	-6,111.47	94.15	161.72	-63.69	225.41	0.717	Level 1
18,500.00	12,564.17	18,646.68	12,713.14	114.75	114.27	-158.04	-6,211.45	95.20	161.72	-67.30	229.02	0.706	Level 1
18,600.00	12,565.46	18,746.68	12,714.43	116.56	116.08	-158.04	-6,311.44	96.25	161.71	-70.92	232.63	0.695	Level 1
18,700.00	12,566.75	18,846.68	12,715.72	118.36	117.88	-158.05	-6,411.43	97.30	161.71	-74.54	236.24	0.684	Level 1
18,800.00	12,568.04	18,946.68	12,717.01	120.17	119.69	-158.05	-6,511.41	98.35	161.70	-78.16	239.86	0.674	Level 1
18,900.00	12,569.33	19,046.68	12,718.30	121.98	121.49	-158.06	-6,611.40	99.40	161.70	-81.77	243.47	0.664	Level 1
19,000.00	12,570.62	19,146.68	12,719.60	123.78	123.30	-158.06	-6,711.38	100.46	161.69	-85.40	247.09	0.654	Level 1
19,100.00	12,571.91	19,246.68	12,720.89	125.59	125.11	-158.07	-6,811.37	101.51	161.69	-89.02	250.70	0.645	Level 1
19,200.00	12,573.21	19,346.68	12,722.18	127.40	126.92	-158.07	-6,911.36	102.56	161.68	-92.64	254.32	0.636	Level 1
19,300.00	12,574.50	19,446.68	12,723.47	129.21	128.73	-158.08	-7,011.34	103.61	161.67	-96.26	257.94	0.627	Level 1
19,400.00	12,575.79	19,546.68	12,724.76	131.02	130.54	-158.08	-7,111.33	104.66	161.67	-99.89	261.56	0.618	Level 1
19,500.00	12,577.08	19,646.68	12,726.05	132.83	132.35	-158.09	-7,211.31	105.71	161.66	-103.51	265.18	0.610	Level 1
19,600.00	12,578.37	19,746.68	12,727.34	134.64	134.16	-158.09	-7,311.30	106.76	161.66	-107.14	268.80	0.601	Level 1
19,700.00	12,579.66	19,846.68	12,728.63	136.45	135.97	-158.10	-7,411.29	107.81	161.65	-110.77	272.42	0.593	Level 1
19,800.00	12,580.95	19,946.68	12,729.93	138.26	137.78	-158.10	-7,511.27	108.86	161.65	-114.40	276.04	0.586	Level 1
19,900.00	12,582.25	20,046.68	12,731.22	140.07	139.59	-158.11	-7,611.26	109.92	161.64	-118.02	279.67	0.578	Level 1
20,000.00	12,583.54	20,146.68	12,732.51	141.89	141.40	-158.11	-7,711.24	110.97	161.64	-121.65	283.29	0.571	Level 1
20,100.00	12,584.83	20,246.68	12,733.80	143.70	143.22	-158.12	-7,811.23	112.02	161.63	-125.28	286.91	0.563	Level 1
20,200.00	12,586.12	20,346.68	12,735.09	145.51	145.03	-158.12	-7,911.22	113.07	161.63	-128.91	290.54	0.556	Level 1
20,300.00	12,587.41	20,446.68	12,736.38	147.32	146.84	-158.13	-8,011.20	114.12	161.62	-132.55	294.16	0.549	Level 1
20,400.00	12,588.70	20,546.68	12,737.67	149.14	148.65	-158.13	-8,111.19	115.17	161.61	-136.18	297.79	0.543	Level 1
20,500.00	12,589.99	20,646.68	12,738.97	150.95	150.47	-158.14	-8,211.18	116.22	161.61	-139.81	301.42	0.536	Level 1

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design Sec. 30, T 24 S. , R 35 E - Fascinator Fed Com 703H - Wellbore #1 - Plan #1 — **Offset Site Error:** 0.00 ft

Survey Program: 0-Keeper, 5000-MWD — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
20,600.00	12,591.28	20,746.68	12,740.26	152.76	152.28	-158.14	-8,311.16	117.27	161.60	-143.44	305.05	0.530	Level 1
20,700.00	12,592.58	20,846.68	12,741.55	154.58	154.10	-158.15	-8,411.15	118.32	161.60	-147.08	308.67	0.524	Level 1
20,800.00	12,593.87	20,946.68	12,742.84	156.39	155.91	-158.15	-8,511.13	119.38	161.59	-150.71	312.30	0.517	Level 1
20,900.00	12,595.16	21,046.68	12,744.13	158.21	157.72	-158.15	-8,611.12	120.43	161.59	-154.35	315.93	0.511	Level 1
21,000.00	12,596.45	21,146.68	12,745.42	160.02	159.54	-158.16	-8,711.11	121.48	161.58	-157.98	319.56	0.506	Level 1
21,100.00	12,597.74	21,246.68	12,746.71	161.84	161.35	-158.16	-8,811.09	122.53	161.58	-161.62	323.19	0.500	Level 1
21,200.00	12,599.03	21,346.68	12,748.00	163.65	163.17	-158.17	-8,911.08	123.58	161.57	-165.25	326.82	0.494	Level 1
21,300.00	12,600.32	21,446.68	12,749.30	165.47	164.99	-158.17	-9,011.06	124.63	161.57	-168.89	330.45	0.489	Level 1
21,400.00	12,601.62	21,546.68	12,750.59	167.28	166.80	-158.18	-9,111.05	125.68	161.56	-172.53	334.09	0.484	Level 1
21,500.00	12,602.91	21,646.68	12,751.88	169.10	168.62	-158.18	-9,211.04	126.73	161.55	-176.16	337.72	0.478	Level 1
21,600.00	12,604.20	21,746.68	12,753.17	170.92	170.43	-158.19	-9,311.02	127.78	161.55	-179.80	341.35	0.473	Level 1
21,700.00	12,605.49	21,846.68	12,754.46	172.73	172.25	-158.19	-9,411.01	128.84	161.54	-183.44	344.98	0.468	Level 1
21,800.00	12,606.78	21,946.68	12,755.75	174.55	174.07	-158.20	-9,511.00	129.89	161.54	-187.08	348.62	0.463	Level 1
21,900.00	12,608.07	22,046.68	12,757.04	176.37	175.88	-158.20	-9,610.98	130.94	161.53	-190.72	352.25	0.459	Level 1
22,000.00	12,609.36	22,146.68	12,758.34	178.18	177.70	-158.21	-9,710.97	131.99	161.53	-194.36	355.88	0.454	Level 1
22,100.00	12,610.65	22,246.68	12,759.63	180.00	179.52	-158.21	-9,810.95	133.04	161.52	-198.00	359.52	0.449	Level 1
22,200.00	12,611.95	22,346.68	12,760.92	181.82	181.33	-158.22	-9,910.94	134.09	161.52	-201.64	363.15	0.445	Level 1
22,300.00	12,613.24	22,446.68	12,762.21	183.64	183.15	-158.22	-10,010.93	135.14	161.51	-205.28	366.79	0.440	Level 1
22,400.00	12,614.53	22,546.68	12,763.50	185.45	184.97	-158.23	-10,110.91	136.19	161.51	-208.92	370.42	0.436	Level 1
22,436.55	12,615.00	22,583.23	12,763.97	186.12	185.63	-158.23	-10,147.45	136.58	161.50	-210.25	371.75	0.434	Level 1
22,436.99	12,615.01	22,583.67	12,763.98	186.12	185.64	-158.23	-10,147.90	136.58	161.50	-210.26	371.77	0.434	Level 1, ES, SF

CONCHO

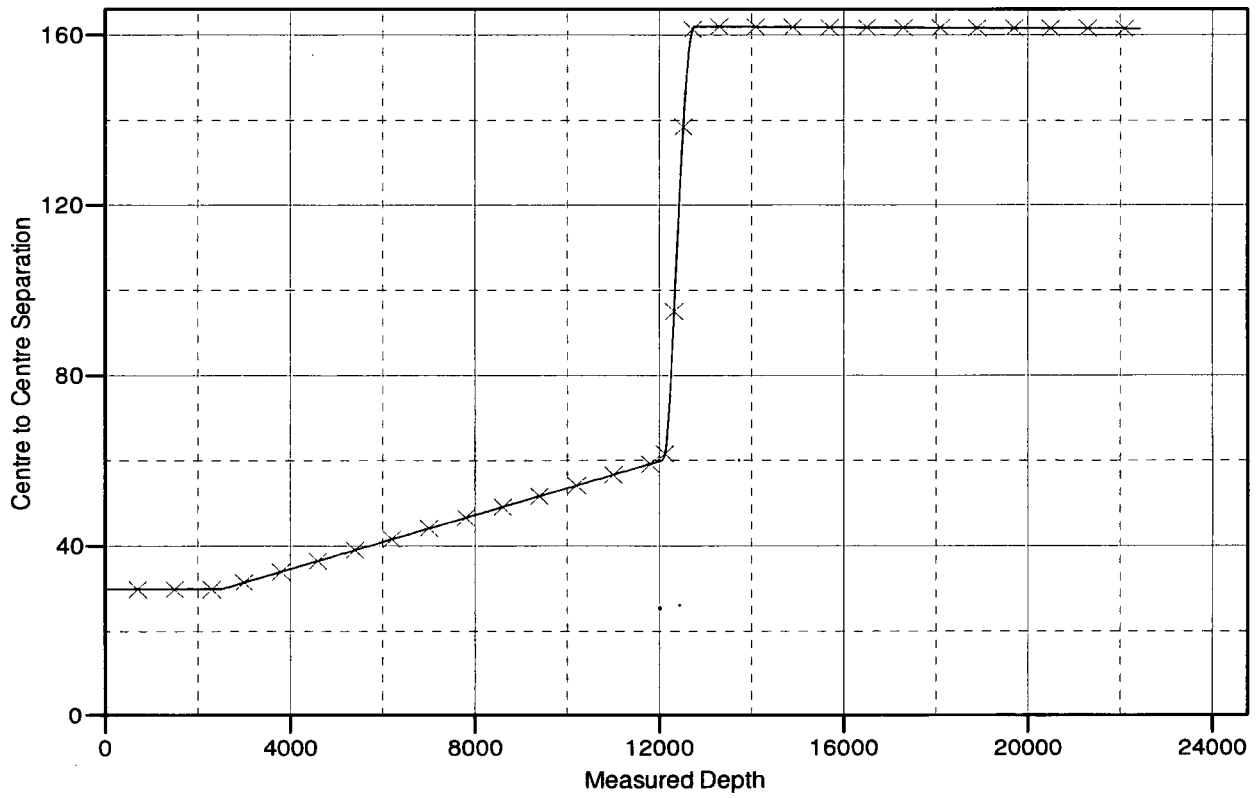
Anticollision Report

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=26' @ 3385.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Fascinator Fed Com 602H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.49°

Ladder Plot



LEGEND

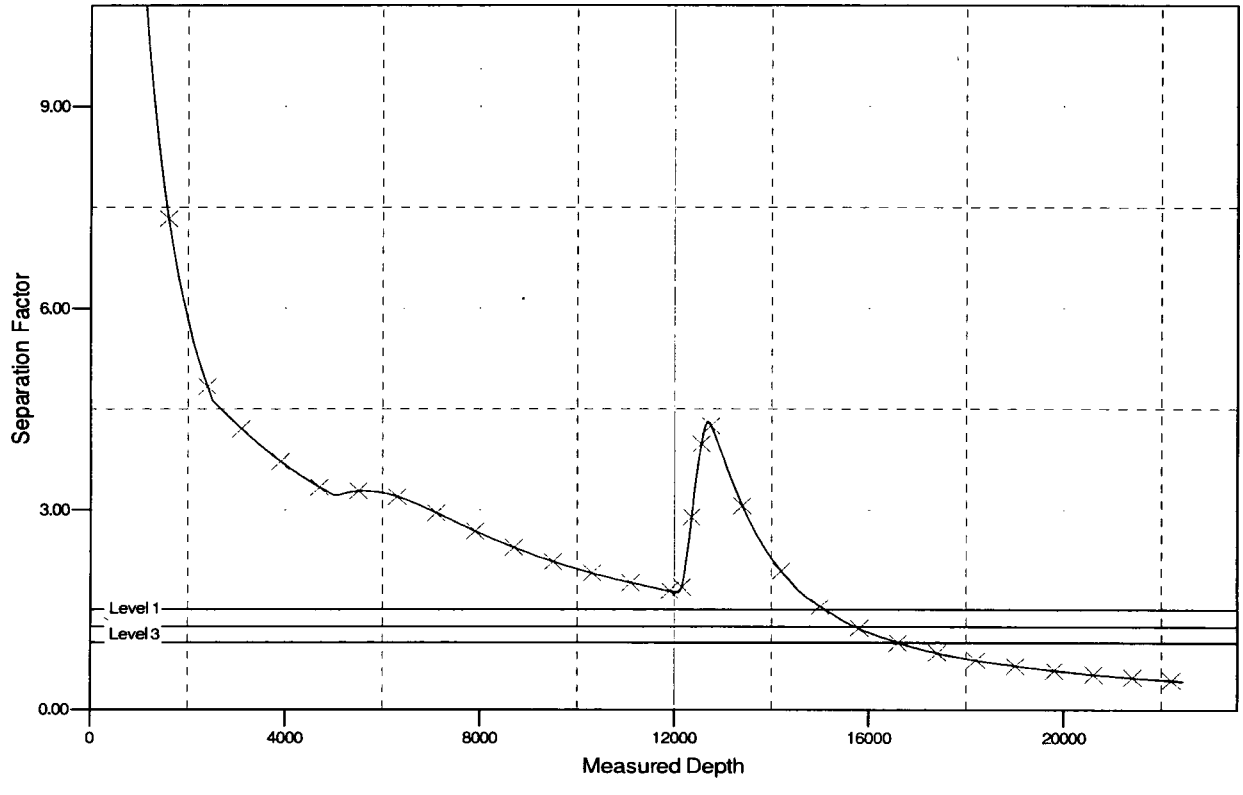
scinator Fed Com 703H, Wellbore #1, Plan #1 V0

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Reference Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	Fascinator Fed Com 602H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	EDM 5000.1
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=26' @ 3385.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Fascinator Fed Com 602H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.49°

Separation Factor Plot



LEGEND

scinator Fed Com 703H, Wellbore #1, Plan #1 V0

CONCHO

COG Operating L L C

Lea County, NM (NAD27 NME)
Sec. 30, T 24 S. , R 35 E
Fascinator Fed Com 602H

Wellbore #1

Plan: Plan #1

Standard Survey Report

01 March, 2018

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Project Lea County, NM (NAD27 NME)

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		

Site Sec. 30, T 24 S., R 35 E

Site Position:		**Northing:**	435,904.80 usft	**Latitude:**	32.195047
From:	Map	**Easting:**	785,685.20 usft	**Longitude:**	-103.409810
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.49 °

Well Fascinator Fed Com 602H

Well Position	**+N/-S**	0.00 ft	**Northing:**	435,904.50 usft	**Latitude:**	32.195047
	+E/-W	0.00 ft	**Easting:**	785,655.30 usft	**Longitude:**	-103.409906
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	0.00 ft	**Ground Level:**	3,359.00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/1/2018	6.75	59.90	48,019

Design Plan #1

Audit Notes:

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

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	179.57

Survey Tool Program **Date** 3/1/2018

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	5,000.00	Plan #1 (Wellbore #1)	Keeper	Standard Wireline Keeper ver 1.0.2
5,000.00	22,436.55	Plan #1 (Wellbore #1)	MWD	MWD - Standard

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,090.00	0.00	0.00	1,090.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,282.00	0.00	0.00	1,282.00	0.00	0.00	0.00	0.00	0.00	0.00
TOS									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,509.04	0.18	270.00	2,509.04	0.00	-0.01	0.00	2.00	2.00	0.00
Start 9503.57 hold at 2509.04 MD									
2,600.00	0.18	270.00	2,600.00	0.00	-0.30	0.00	0.00	0.00	0.00
2,700.00	0.18	270.00	2,700.00	0.00	-0.62	0.00	0.00	0.00	0.00
2,800.00	0.18	270.00	2,800.00	0.00	-0.93	-0.01	0.00	0.00	0.00
2,900.00	0.18	270.00	2,900.00	0.00	-1.25	-0.01	0.00	0.00	0.00
3,000.00	0.18	270.00	3,000.00	0.00	-1.56	-0.01	0.00	0.00	0.00
3,100.00	0.18	270.00	3,100.00	0.00	-1.88	-0.01	0.00	0.00	0.00
3,200.00	0.18	270.00	3,200.00	0.00	-2.19	-0.02	0.00	0.00	0.00
3,300.00	0.18	270.00	3,300.00	0.00	-2.51	-0.02	0.00	0.00	0.00
3,400.00	0.18	270.00	3,400.00	0.00	-2.83	-0.02	0.00	0.00	0.00
3,500.00	0.18	270.00	3,500.00	0.00	-3.14	-0.02	0.00	0.00	0.00
3,600.00	0.18	270.00	3,599.99	0.00	-3.46	-0.03	0.00	0.00	0.00
3,700.00	0.18	270.00	3,699.99	0.00	-3.77	-0.03	0.00	0.00	0.00
3,800.00	0.18	270.00	3,799.99	0.00	-4.09	-0.03	0.00	0.00	0.00
3,900.00	0.18	270.00	3,899.99	0.00	-4.40	-0.03	0.00	0.00	0.00
4,000.00	0.18	270.00	3,999.99	0.00	-4.72	-0.04	0.00	0.00	0.00
4,100.00	0.18	270.00	4,099.99	0.00	-5.03	-0.04	0.00	0.00	0.00
4,200.00	0.18	270.00	4,199.99	0.00	-5.35	-0.04	0.00	0.00	0.00
4,300.00	0.18	270.00	4,299.99	0.00	-5.67	-0.04	0.00	0.00	0.00
4,400.00	0.18	270.00	4,399.99	0.00	-5.98	-0.05	0.00	0.00	0.00
4,500.00	0.18	270.00	4,499.99	0.00	-6.30	-0.05	0.00	0.00	0.00
4,600.00	0.18	270.00	4,599.99	0.00	-6.61	-0.05	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	0.18	270.00	4,699.99	0.00	-6.93	-0.05	0.00	0.00	0.00
4,800.00	0.18	270.00	4,799.99	0.00	-7.24	-0.05	0.00	0.00	0.00
4,900.00	0.18	270.00	4,899.99	0.00	-7.56	-0.06	0.00	0.00	0.00
5,000.00	0.18	270.00	4,999.99	0.00	-7.87	-0.06	0.00	0.00	0.00
5,100.00	0.18	270.00	5,099.99	0.00	-8.19	-0.06	0.00	0.00	0.00
5,130.01	0.18	270.00	5,130.00	0.00	-8.28	-0.06	0.00	0.00	0.00
BOS (Fletcher)									
5,200.00	0.18	270.00	5,199.99	0.00	-8.50	-0.06	0.00	0.00	0.00
5,300.00	0.18	270.00	5,299.99	0.00	-8.82	-0.07	0.00	0.00	0.00
5,400.00	0.18	270.00	5,399.99	0.00	-9.14	-0.07	0.00	0.00	0.00
5,456.01	0.18	270.00	5,456.00	0.00	-9.31	-0.07	0.00	0.00	0.00
LMAR (Top Delaware)									
5,479.01	0.18	270.00	5,479.00	0.00	-9.39	-0.07	0.00	0.00	0.00
BLCN									
5,500.00	0.18	270.00	5,499.99	0.00	-9.45	-0.07	0.00	0.00	0.00
5,600.00	0.18	270.00	5,599.98	0.00	-9.77	-0.07	0.00	0.00	0.00
5,700.00	0.18	270.00	5,699.98	0.00	-10.08	-0.08	0.00	0.00	0.00
5,800.00	0.18	270.00	5,799.98	0.00	-10.40	-0.08	0.00	0.00	0.00
5,900.00	0.18	270.00	5,899.98	0.00	-10.71	-0.08	0.00	0.00	0.00
6,000.00	0.18	270.00	5,999.98	0.00	-11.03	-0.08	0.00	0.00	0.00
6,100.00	0.18	270.00	6,099.98	0.00	-11.34	-0.09	0.00	0.00	0.00
6,200.00	0.18	270.00	6,199.98	0.00	-11.66	-0.09	0.00	0.00	0.00
6,300.00	0.18	270.00	6,299.98	0.00	-11.98	-0.09	0.00	0.00	0.00
6,400.00	0.18	270.00	6,399.98	0.00	-12.29	-0.09	0.00	0.00	0.00
6,454.02	0.18	270.00	6,454.00	0.00	-12.46	-0.09	0.00	0.00	0.00
CYCN									
6,500.00	0.18	270.00	6,499.98	0.00	-12.61	-0.10	0.00	0.00	0.00
6,600.00	0.18	270.00	6,599.98	0.00	-12.92	-0.10	0.00	0.00	0.00
6,700.00	0.18	270.00	6,699.98	0.00	-13.24	-0.10	0.00	0.00	0.00
6,800.00	0.18	270.00	6,799.98	0.00	-13.55	-0.10	0.00	0.00	0.00
6,900.00	0.18	270.00	6,899.98	0.00	-13.87	-0.10	0.00	0.00	0.00
7,000.00	0.18	270.00	6,999.98	0.00	-14.18	-0.11	0.00	0.00	0.00
7,100.00	0.18	270.00	7,099.98	0.00	-14.50	-0.11	0.00	0.00	0.00
7,200.00	0.18	270.00	7,199.98	0.00	-14.82	-0.11	0.00	0.00	0.00
7,300.00	0.18	270.00	7,299.98	0.00	-15.13	-0.11	0.00	0.00	0.00
7,400.00	0.18	270.00	7,399.98	0.00	-15.45	-0.12	0.00	0.00	0.00
7,500.00	0.18	270.00	7,499.98	0.00	-15.76	-0.12	0.00	0.00	0.00
7,600.00	0.18	270.00	7,599.97	0.00	-16.08	-0.12	0.00	0.00	0.00
7,700.00	0.18	270.00	7,699.97	0.00	-16.39	-0.12	0.00	0.00	0.00
7,800.00	0.18	270.00	7,799.97	0.00	-16.71	-0.13	0.00	0.00	0.00
7,900.00	0.18	270.00	7,899.97	0.00	-17.02	-0.13	0.00	0.00	0.00
8,000.00	0.18	270.00	7,999.97	0.00	-17.34	-0.13	0.00	0.00	0.00
8,062.03	0.18	270.00	8,062.00	0.00	-17.54	-0.13	0.00	0.00	0.00
BYCN									

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.00	0.18	270.00	8,099.97	0.00	-17.65	-0.13	0.00	0.00	0.00
8,200.00	0.18	270.00	8,199.97	0.00	-17.97	-0.14	0.00	0.00	0.00
8,300.00	0.18	270.00	8,299.97	0.00	-18.29	-0.14	0.00	0.00	0.00
8,400.00	0.18	270.00	8,399.97	0.00	-18.60	-0.14	0.00	0.00	0.00
8,500.00	0.18	270.00	8,499.97	0.00	-18.92	-0.14	0.00	0.00	0.00
8,600.00	0.18	270.00	8,599.97	0.00	-19.23	-0.15	0.00	0.00	0.00
8,700.00	0.18	270.00	8,699.97	0.00	-19.55	-0.15	0.00	0.00	0.00
8,800.00	0.18	270.00	8,799.97	0.00	-19.86	-0.15	0.00	0.00	0.00
8,900.00	0.18	270.00	8,899.97	0.00	-20.18	-0.15	0.00	0.00	0.00
9,000.00	0.18	270.00	8,999.97	0.00	-20.49	-0.15	0.00	0.00	0.00
9,100.00	0.18	270.00	9,099.97	0.00	-20.81	-0.16	0.00	0.00	0.00
9,200.00	0.18	270.00	9,199.97	0.00	-21.13	-0.16	0.00	0.00	0.00
9,300.00	0.18	270.00	9,299.97	0.00	-21.44	-0.16	0.00	0.00	0.00
9,305.03	0.18	270.00	9,305.00	0.00	-21.46	-0.16	0.00	0.00	0.00
Bone Sprg (BSGL)									
9,400.00	0.18	270.00	9,399.97	0.00	-21.76	-0.16	0.00	0.00	0.00
9,500.00	0.18	270.00	9,499.97	0.00	-22.07	-0.17	0.00	0.00	0.00
9,600.00	0.18	270.00	9,599.96	0.00	-22.39	-0.17	0.00	0.00	0.00
9,655.04	0.18	270.00	9,655.00	0.00	-22.56	-0.17	0.00	0.00	0.00
U Avalon Sh									
9,700.00	0.18	270.00	9,699.96	0.00	-22.70	-0.17	0.00	0.00	0.00
9,800.00	0.18	270.00	9,799.96	0.00	-23.02	-0.17	0.00	0.00	0.00
9,896.04	0.18	270.00	9,896.00	0.00	-23.32	-0.18	0.00	0.00	0.00
L Avalon Sh									
9,900.00	0.18	270.00	9,899.96	0.00	-23.33	-0.18	0.00	0.00	0.00
10,000.00	0.18	270.00	9,999.96	0.00	-23.65	-0.18	0.00	0.00	0.00
10,100.00	0.18	270.00	10,099.96	0.00	-23.97	-0.18	0.00	0.00	0.00
10,106.04	0.18	270.00	10,106.00	0.00	-23.98	-0.18	0.00	0.00	0.00
Basal Avalon									
10,200.00	0.18	270.00	10,199.96	0.00	-24.28	-0.18	0.00	0.00	0.00
10,300.00	0.18	270.00	10,299.96	0.00	-24.60	-0.19	0.00	0.00	0.00
10,400.00	0.18	270.00	10,399.96	0.00	-24.91	-0.19	0.00	0.00	0.00
10,464.04	0.18	270.00	10,464.00	0.00	-25.11	-0.19	0.00	0.00	0.00
FBSG_sand									
10,500.00	0.18	270.00	10,499.96	0.00	-25.23	-0.19	0.00	0.00	0.00
10,600.00	0.18	270.00	10,599.96	0.00	-25.54	-0.19	0.00	0.00	0.00
10,700.00	0.18	270.00	10,699.96	0.00	-25.86	-0.20	0.00	0.00	0.00
10,800.00	0.18	270.00	10,799.96	0.00	-26.17	-0.20	0.00	0.00	0.00
10,900.00	0.18	270.00	10,899.96	0.00	-26.49	-0.20	0.00	0.00	0.00
11,000.00	0.18	270.00	10,999.96	0.00	-26.81	-0.20	0.00	0.00	0.00
11,100.00	0.18	270.00	11,099.96	0.00	-27.12	-0.20	0.00	0.00	0.00
11,170.04	0.18	270.00	11,170.00	0.00	-27.34	-0.21	0.00	0.00	0.00
SBSG_sand									
11,200.00	0.18	270.00	11,199.96	0.00	-27.44	-0.21	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,300.00	0.18	270.00	11,299.96	0.00	-27.75	-0.21	0.00	0.00	0.00
11,400.00	0.18	270.00	11,399.96	0.00	-28.07	-0.21	0.00	0.00	0.00
11,500.00	0.18	270.00	11,499.96	0.00	-28.38	-0.21	0.00	0.00	0.00
11,501.05	0.18	270.00	11,501.00	0.00	-28.39	-0.21	0.00	0.00	0.00
SBSG_sand base									
11,600.00	0.18	270.00	11,599.95	0.00	-28.70	-0.22	0.00	0.00	0.00
11,700.00	0.18	270.00	11,699.95	0.00	-29.01	-0.22	0.00	0.00	0.00
11,800.00	0.18	270.00	11,799.95	0.00	-29.33	-0.22	0.00	0.00	0.00
11,900.00	0.18	270.00	11,899.95	0.00	-29.64	-0.22	0.00	0.00	0.00
12,000.00	0.18	270.00	11,999.95	0.00	-29.96	-0.23	0.00	0.00	0.00
12,012.61	0.18	270.00	12,012.56	0.00	-30.00	-0.23	0.00	0.00	0.00
Start DLS 12.00 TFO -90.61									
12,100.00	10.49	180.36	12,099.47	-7.98	-30.19	7.75	12.00	11.79	-102.57
12,120.98	13.00	180.17	12,120.00	-12.24	-30.21	12.02	12.00	12.00	-0.92
TBSG_sand									
12,200.00	22.49	179.82	12,195.18	-36.30	-30.19	36.07	12.00	12.00	-0.44
12,300.00	34.49	179.65	12,282.91	-83.91	-29.96	83.68	12.00	12.00	-0.17
12,400.00	46.49	179.56	12,358.83	-148.71	-29.50	148.49	12.00	12.00	-0.09
12,500.00	58.49	179.50	12,419.62	-227.89	-28.85	227.66	12.00	12.00	-0.06
12,600.00	70.49	179.45	12,462.61	-317.96	-28.02	317.74	12.00	12.00	-0.05
12,700.00	82.49	179.41	12,485.94	-415.01	-27.05	414.80	12.00	12.00	-0.04
12,756.46	89.26	179.39	12,490.00	-471.29	-26.46	471.08	12.00	12.00	-0.04
Start 9680.09 hold at 12756.46 MD									
12,800.00	89.26	179.39	12,490.56	-514.82	-26.00	514.61	0.00	0.00	0.00
12,900.00	89.26	179.39	12,491.85	-614.81	-24.93	614.60	0.00	0.00	0.00
13,000.00	89.26	179.39	12,493.14	-714.80	-23.87	714.60	0.00	0.00	0.00
13,100.00	89.26	179.39	12,494.44	-814.78	-22.80	814.59	0.00	0.00	0.00
13,200.00	89.26	179.39	12,495.73	-914.77	-21.74	914.58	0.00	0.00	0.00
13,300.00	89.26	179.39	12,497.02	-1,014.75	-20.67	1,014.57	0.00	0.00	0.00
13,400.00	89.26	179.39	12,498.31	-1,114.74	-19.61	1,114.56	0.00	0.00	0.00
13,500.00	89.26	179.39	12,499.60	-1,214.73	-18.54	1,214.55	0.00	0.00	0.00
13,600.00	89.26	179.39	12,500.89	-1,314.71	-17.47	1,314.54	0.00	0.00	0.00
13,700.00	89.26	179.39	12,502.18	-1,414.70	-16.41	1,414.53	0.00	0.00	0.00
13,800.00	89.26	179.39	12,503.48	-1,514.68	-15.34	1,514.52	0.00	0.00	0.00
13,900.00	89.26	179.39	12,504.77	-1,614.67	-14.28	1,614.52	0.00	0.00	0.00
14,000.00	89.26	179.39	12,506.06	-1,714.66	-13.21	1,714.51	0.00	0.00	0.00
14,100.00	89.26	179.39	12,507.35	-1,814.64	-12.15	1,814.50	0.00	0.00	0.00
14,200.00	89.26	179.39	12,508.64	-1,914.63	-11.08	1,914.49	0.00	0.00	0.00
14,300.00	89.26	179.39	12,509.93	-2,014.61	-10.01	2,014.48	0.00	0.00	0.00
14,400.00	89.26	179.39	12,511.22	-2,114.60	-8.95	2,114.47	0.00	0.00	0.00
14,500.00	89.26	179.39	12,512.51	-2,214.59	-7.88	2,214.46	0.00	0.00	0.00
14,600.00	89.26	179.39	12,513.81	-2,314.57	-6.82	2,314.45	0.00	0.00	0.00
14,700.00	89.26	179.39	12,515.10	-2,414.56	-5.75	2,414.45	0.00	0.00	0.00
14,800.00	89.26	179.39	12,516.39	-2,514.54	-4.69	2,514.44	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,900.00	89.26	179.39	12,517.68	-2,614.53	-3.62	2,614.43	0.00	0.00	0.00
15,000.00	89.26	179.39	12,518.97	-2,714.52	-2.55	2,714.42	0.00	0.00	0.00
15,100.00	89.26	179.39	12,520.26	-2,814.50	-1.49	2,814.41	0.00	0.00	0.00
15,200.00	89.26	179.39	12,521.55	-2,914.49	-0.42	2,914.40	0.00	0.00	0.00
15,300.00	89.26	179.39	12,522.85	-3,014.47	0.64	3,014.39	0.00	0.00	0.00
15,400.00	89.26	179.39	12,524.14	-3,114.46	1.71	3,114.38	0.00	0.00	0.00
15,500.00	89.26	179.39	12,525.43	-3,214.45	2.78	3,214.37	0.00	0.00	0.00
15,600.00	89.26	179.39	12,526.72	-3,314.43	3.84	3,314.37	0.00	0.00	0.00
15,700.00	89.26	179.39	12,528.01	-3,414.42	4.91	3,414.36	0.00	0.00	0.00
15,800.00	89.26	179.39	12,529.30	-3,514.40	5.97	3,514.35	0.00	0.00	0.00
15,854.10	89.26	179.39	12,530.00	-3,568.50	6.55	3,568.45	0.00	0.00	0.00
WFMP									
15,900.00	89.26	179.39	12,530.59	-3,614.39	7.04	3,614.34	0.00	0.00	0.00
16,000.00	89.26	179.39	12,531.88	-3,714.38	8.10	3,714.33	0.00	0.00	0.00
16,100.00	89.26	179.39	12,533.18	-3,814.36	9.17	3,814.32	0.00	0.00	0.00
16,200.00	89.26	179.39	12,534.47	-3,914.35	10.24	3,914.31	0.00	0.00	0.00
16,300.00	89.26	179.39	12,535.76	-4,014.33	11.30	4,014.30	0.00	0.00	0.00
16,400.00	89.26	179.39	12,537.05	-4,114.32	12.37	4,114.30	0.00	0.00	0.00
16,500.00	89.26	179.39	12,538.34	-4,214.31	13.43	4,214.29	0.00	0.00	0.00
16,600.00	89.26	179.39	12,539.63	-4,314.29	14.50	4,314.28	0.00	0.00	0.00
16,700.00	89.26	179.39	12,540.92	-4,414.28	15.56	4,414.27	0.00	0.00	0.00
16,800.00	89.26	179.39	12,542.21	-4,514.26	16.63	4,514.26	0.00	0.00	0.00
16,900.00	89.26	179.39	12,543.51	-4,614.25	17.70	4,614.25	0.00	0.00	0.00
17,000.00	89.26	179.39	12,544.80	-4,714.24	18.76	4,714.24	0.00	0.00	0.00
17,100.00	89.26	179.39	12,546.09	-4,814.22	19.83	4,814.23	0.00	0.00	0.00
17,200.00	89.26	179.39	12,547.38	-4,914.21	20.89	4,914.22	0.00	0.00	0.00
17,300.00	89.26	179.39	12,548.67	-5,014.19	21.96	5,014.22	0.00	0.00	0.00
17,400.00	89.26	179.39	12,549.96	-5,114.18	23.02	5,114.21	0.00	0.00	0.00
17,500.00	89.26	179.39	12,551.25	-5,214.17	24.09	5,214.20	0.00	0.00	0.00
17,600.00	89.26	179.39	12,552.55	-5,314.15	25.16	5,314.19	0.00	0.00	0.00
17,700.00	89.26	179.39	12,553.84	-5,414.14	26.22	5,414.18	0.00	0.00	0.00
17,800.00	89.26	179.39	12,555.13	-5,514.12	27.29	5,514.17	0.00	0.00	0.00
17,900.00	89.26	179.39	12,556.42	-5,614.11	28.35	5,614.16	0.00	0.00	0.00
18,000.00	89.26	179.39	12,557.71	-5,714.10	29.42	5,714.15	0.00	0.00	0.00
18,100.00	89.26	179.39	12,559.00	-5,814.08	30.48	5,814.15	0.00	0.00	0.00
18,200.00	89.26	179.39	12,560.29	-5,914.07	31.55	5,914.14	0.00	0.00	0.00
18,300.00	89.26	179.39	12,561.58	-6,014.05	32.62	6,014.13	0.00	0.00	0.00
18,400.00	89.26	179.39	12,562.88	-6,114.04	33.68	6,114.12	0.00	0.00	0.00
18,500.00	89.26	179.39	12,564.17	-6,214.03	34.75	6,214.11	0.00	0.00	0.00
18,600.00	89.26	179.39	12,565.46	-6,314.01	35.81	6,314.10	0.00	0.00	0.00
18,700.00	89.26	179.39	12,566.75	-6,414.00	36.88	6,414.09	0.00	0.00	0.00
18,800.00	89.26	179.39	12,568.04	-6,513.98	37.94	6,514.08	0.00	0.00	0.00
18,900.00	89.26	179.39	12,569.33	-6,613.97	39.01	6,614.08	0.00	0.00	0.00
19,000.00	89.26	179.39	12,570.62	-6,713.96	40.08	6,714.07	0.00	0.00	0.00

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,100.00	89.26	179.39	12,571.91	-6,813.94	41.14	6,814.06	0.00	0.00	0.00
19,200.00	89.26	179.39	12,573.21	-6,913.93	42.21	6,914.05	0.00	0.00	0.00
19,300.00	89.26	179.39	12,574.50	-7,013.91	43.27	7,014.04	0.00	0.00	0.00
19,400.00	89.26	179.39	12,575.79	-7,113.90	44.34	7,114.03	0.00	0.00	0.00
19,500.00	89.26	179.39	12,577.08	-7,213.89	45.40	7,214.02	0.00	0.00	0.00
19,600.00	89.26	179.39	12,578.37	-7,313.87	46.47	7,314.01	0.00	0.00	0.00
19,700.00	89.26	179.39	12,579.66	-7,413.86	47.54	7,414.00	0.00	0.00	0.00
19,800.00	89.26	179.39	12,580.95	-7,513.84	48.60	7,514.00	0.00	0.00	0.00
19,900.00	89.26	179.39	12,582.25	-7,613.83	49.67	7,613.99	0.00	0.00	0.00
20,000.00	89.26	179.39	12,583.54	-7,713.81	50.73	7,713.98	0.00	0.00	0.00
20,100.00	89.26	179.39	12,584.83	-7,813.80	51.80	7,813.97	0.00	0.00	0.00
20,200.00	89.26	179.39	12,586.12	-7,913.79	52.86	7,913.96	0.00	0.00	0.00
20,300.00	89.26	179.39	12,587.41	-8,013.77	53.93	8,013.95	0.00	0.00	0.00
20,400.00	89.26	179.39	12,588.70	-8,113.76	55.00	8,113.94	0.00	0.00	0.00
20,500.00	89.26	179.39	12,589.99	-8,213.74	56.06	8,213.93	0.00	0.00	0.00
20,600.00	89.26	179.39	12,591.28	-8,313.73	57.13	8,313.93	0.00	0.00	0.00
20,700.00	89.26	179.39	12,592.58	-8,413.72	58.19	8,413.92	0.00	0.00	0.00
20,800.00	89.26	179.39	12,593.87	-8,513.70	59.26	8,513.91	0.00	0.00	0.00
20,900.00	89.26	179.39	12,595.16	-8,613.69	60.32	8,613.90	0.00	0.00	0.00
21,000.00	89.26	179.39	12,596.45	-8,713.67	61.39	8,713.89	0.00	0.00	0.00
21,100.00	89.26	179.39	12,597.74	-8,813.66	62.46	8,813.88	0.00	0.00	0.00
21,200.00	89.26	179.39	12,599.03	-8,913.65	63.52	8,913.87	0.00	0.00	0.00
21,300.00	89.26	179.39	12,600.32	-9,013.63	64.59	9,013.86	0.00	0.00	0.00
21,400.00	89.26	179.39	12,601.62	-9,113.62	65.65	9,113.85	0.00	0.00	0.00
21,500.00	89.26	179.39	12,602.91	-9,213.60	66.72	9,213.85	0.00	0.00	0.00
21,600.00	89.26	179.39	12,604.20	-9,313.59	67.78	9,313.84	0.00	0.00	0.00
21,700.00	89.26	179.39	12,605.49	-9,413.58	68.85	9,413.83	0.00	0.00	0.00
21,800.00	89.26	179.39	12,606.78	-9,513.56	69.92	9,513.82	0.00	0.00	0.00
21,900.00	89.26	179.39	12,608.07	-9,613.55	70.98	9,613.81	0.00	0.00	0.00
22,000.00	89.26	179.39	12,609.36	-9,713.53	72.05	9,713.80	0.00	0.00	0.00
22,100.00	89.26	179.39	12,610.65	-9,813.52	73.11	9,813.79	0.00	0.00	0.00
22,200.00	89.26	179.39	12,611.95	-9,913.51	74.18	9,913.78	0.00	0.00	0.00
22,300.00	89.26	179.39	12,613.24	-10,013.49	75.24	10,013.78	0.00	0.00	0.00
22,400.00	89.26	179.39	12,614.53	-10,113.48	76.31	10,113.77	0.00	0.00	0.00
22,436.55	89.26	179.39	12,615.00	-10,150.02	76.70	10,150.31	0.00	0.00	0.00
TD at 22436.55									

Company:	COG Operating L L C	**Local Co-ordinate Reference:**	Well Fascinator Fed Com 602H
Project:	Lea County, NM (NAD27 NME)	**TVD Reference:**	KB=26' @ 3385.00ft
Site:	Sec. 30, T 24 S. , R 35 E	**MD Reference:**	KB=26' @ 3385.00ft
Well:	Fascinator Fed Com 602H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1	**Database:**	EDM 5000.1

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fascinator 602H FTP	0.00	0.00	12,329.55	-120.40	-29.10	435,784.10	785,626.20	32.194717	-103.410004
- plan misses target center by 0.61ft at 12359.28ft MD (12329.57 TVD, -120.41 N, -29.71 E)									
- Point									
Fascinator 602H LTP	0.00	0.00	12,613.32	-10,020.02	75.00	425,884.50	785,730.30	32.167504	-103.409942
- plan misses target center by 0.31ft at 22306.53ft MD (12613.32 TVD, -10020.02 N, 75.31 E)									
- Point									
Fascinator 602H BHL	0.00	0.00	12,615.00	-10,150.02	76.70	425,754.50	785,732.00	32.167146	-103.409940
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,090.00	1,090.00	Rustler		0.00	
1,282.00	1,282.00	TOS		0.00	
5,130.01	5,130.00	BOS (Fletcher)			
5,456.01	5,456.00	LMAR (Top Delaware)			
5,479.01	5,479.00	BLCN			
6,454.02	6,454.00	CYCN			
8,062.03	8,062.00	BYCN			
9,305.03	9,305.00	Bone Sprg (BSGL)			
9,655.04	9,655.00	U Avalon Sh			
9,896.04	9,896.00	L Avalon Sh			
10,106.04	10,106.00	Basal Avalon			
10,464.04	10,464.00	FBSG_sand			
11,170.04	11,170.00	SBSG_sand			
11,501.05	11,501.00	SBSG_sand base			
12,120.98	12,120.00	TBSG_sand			
15,854.10	12,530.00	WFMP			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
2500	2500	0	0	Start Build 2.00
2509	2509	0	0	Start 9503.57 hold at 2509.04 MD
12,013	12,013	0	-30	Start DLS 12.00 TFO -90.61
12,756	12,490	-471	-26	Start 9680.09 hold at 12756.46 MD
22,437	12,615	-10,150	77	TD at 22436.55

Checked By: _____ Approved By: _____ Date: _____

CONCHO

INTEGRITY DIRECTIONAL

COG Operating L L C
Project: Lea County, NM (NAD27 NME)
Site: Sec. 30, T 24 S. , R 35 E
Well: Fascinator Fed Com 602H
Wellbore: Wellbore #1
Plan: Plan #1 (Fascinator Fed Com 602H/Wellbore #1)

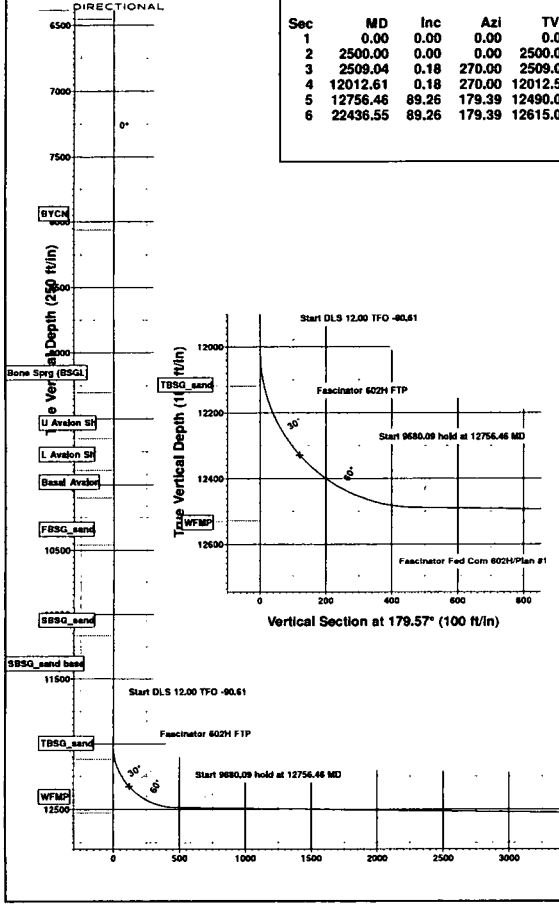
WELL DETAILS: Fascinator Fed Com 602H

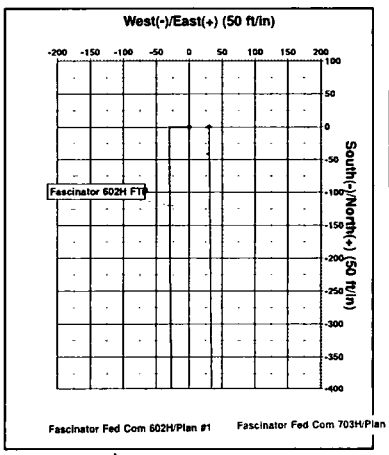
Ground Elevation:: 3359.00
RKB Elevation: KB=26' @ 3385.00ft
Rig Name:

Northing	Easting	Latitude	Longitude
435904.50	785655.30	32.195047	-103.409906

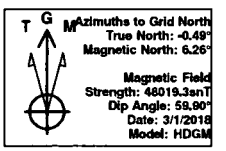
Planned Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
3	2509.04	0.18	270.00	2509.04	0.00	-0.01	2.00	270.00	0.00	Start 9503.57 hold at 2509.04 MD
4	12012.61	0.18	270.00	12012.56	0.00	-30.00	0.00	0.00	-0.23	Start DLS 12.00 TFO -90.61
5	12756.46	89.26	179.39	12490.00	-471.29	-26.46	12.00	-90.61	471.08	Start 9680.09 hold at 12756.46 MD
6	22436.55	89.26	179.39	12615.00	-10150.02	76.70	0.00	0.00	10150.31	TD at 22436.55





PROJECT DETAILS: Lea County, NM (NAD27 NME)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid



1. Component and Preventer Compatibility Table

The table below covers drilling and casing of the 10M MASP portion of the well and outlines the tubulars and the compatible preventers in use. Combined with the mud program, the below documents that two barriers to flow can be maintained at all times, independent of the rating of the annular preventer.

Component	OD	Preventer	RWP
Drill pipe	5"	Upper 4.5-7" VBR Lower 4.5-7" VBR	10M
HWDP	5"		
Jars	5"		
Drill collars and MWD tools	6.25-6.75"		
Mud Motor	6.75"		
Production casing	5.5"		
ALL	0-13-5/8"	Annular	5M
Open-hole	-	Blind Rams	10M

VBR = Variable Bore Ram with compatible range listed in chart.

2. Well Control and Shut-In Procedures

Well control procedures are specific to the rig equipment and the operation at the time the kick occurs. Below are minimum tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. The maximum pressure at which well control is transferred from the annular to another compatible ram is 2500 psi.

Drilling:

1. Sound the alarm (alert rig crew)
2. Space out the drill string
3. Shut down pumps and stop the rotary
4. Shut-in the well with the annular with HCR and choke in closed position
5. Confirm the well is shut-in
6. Notify contractor and company representatives
7. Read and record the following data
    - Time of shut-in
    - SIDPP and SICP
    - Pit gain
8. If pressure has increased to or is anticipated to increase to 2500 psi, confirm spacing and close the upper pipe rams.
9. Prepare for well kill operation.

Tripping:

1. Sound alarm (alert rig crew)
2. Stab full opening safety valve and close the valve
3. Space out the drill string
4. Shut-in the well with the annular with HCR and choke in closed position
5. Confirm shut-in
6. Notify contractor and company representatives
7. Read and record the following data: