Form 3160-3
(June 2015)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

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

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

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

8. Lease Name and Well No.
[329921]

2. Name of Operator
[229137]

9. API Well No. **30-025-48221**

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool, or Exploratory **[51683]**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface
At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

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

12. County or Parish

13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
Title		
Approved by *(Signature)*	Name *(Printed/Typed)*	Date
Title	Office	

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

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

GCP Rec 12/21/2020

12/23/2020

SL

APPROVED WITH CONDITIONS

Approval Date: 12/18/2020

(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

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

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

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

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

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

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

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

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

Additional Operator Remarks

Location of Well

0. SHL: SWSW / 365 FSL / 1100 FWL / TWSP: 23S / RANGE: 32E / SECTION: 2 / LAT: 32.32746 / LONG: -103.650417 (TVD: 0 feet, MD: 0 feet)

PPP: SWSW / 100 FSL / 1254 FWL / TWSP: 23S / RANGE: 32E / SECTION: 2 / LAT: 32.326735 / LONG: -103.649919 (TVD: 10545 feet, MD: 10600 feet)

BHL: NWNW / 50 FNL / 1254 FWL / TWSP: 22S / RANGE: 32E / SECTION: 35 / LAT: 32.355335 / LONG: -103.649929 (TVD: 10528 feet, MD: 20914 feet)

BLM Point of Contact

Name: Deborah Ham
Title: Legal Landlaw Examiner
Phone: (575) 234-5965
Email: dham@blm.gov

Review and Appeal Rights

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	NMNM002379 & NMNM086150
COUNTY:	Lea

Wells:

Well Pad 1
Redtail Federal Com 201H
Surface Hole Location: 310' FSL & 1380' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 330' FEL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 202H
Surface Hole Location: 310' FSL & 1410' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 1254' FEL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 203H
Surface Hole Location: 310' FSL & 1440' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 2178' FEL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 501H
Surface Hole Location: 310' FSL & 1070' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 330' FEL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 502H
Surface Hole Location: 310' FSL & 1100' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 1254' FEL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 503H
Surface Hole Location: 310' FSL & 1130' FEL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 2178' FEL, Section 35, T. 22 S, R 32 E.

Well Pad 2
Redtail Federal Com 204H
Surface Hole Location: 365' FSL & 1440' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 2178' FWL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 205H
Surface Hole Location: 365' FSL & 1410' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 1254' FWL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 206H
Surface Hole Location: 365' FSL & 1380' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 330' FWL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 504H
Surface Hole Location: 365' FSL & 1130' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 2178' FWL, Section 35, T. 22 S, R 32 E.

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Redtail Federal Com 505H
Surface Hole Location: 365' FSL & 1100' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 1254' FWL, Section 35, T. 22 S, R 32 E.

Redtail Federal Com 506H
Surface Hole Location: 365' FSL & 1070' FWL, Section 2, T. 23 S., R. 32 E.
Bottom Hole Location: 50' FNL & 330' FWL, Section 35, T. 22 S, R 32 E.

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

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

OR

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

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

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

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

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

IV. NOXIOUS WEEDS

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

SPECIAL REQUIREMENT(S)

TANK BATTERY:
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.

BURIED/SURFACE LINE(S):
When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves 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.

ELECTRIC LINE(S):
Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Lesser Prairie Chicken:

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

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

Timing Limitation Exceptions:

The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

Ground-level Abandoned Well Marker to avoid raptor perching:

Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

V. CONSTRUCTION

A. NOTIFICATION

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

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

B. TOPSOIL

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

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

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

F. EXCLOSURE FENCING (CELLARS & PITS)

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

G. ON LEASE ACCESS ROADS

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

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

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

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

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

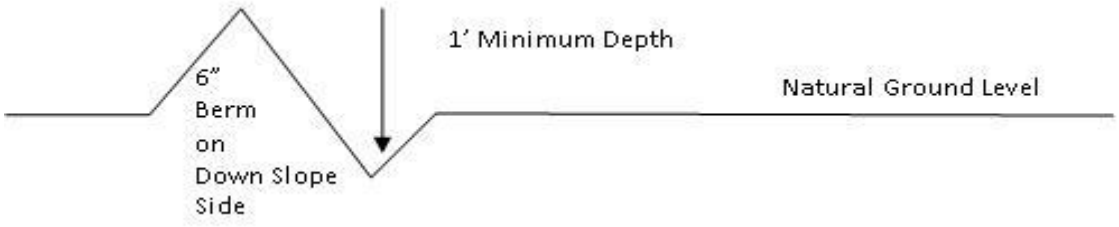
Ditching
Ditching shall be required on both sides of the road.

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

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

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

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

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

Construction Steps

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

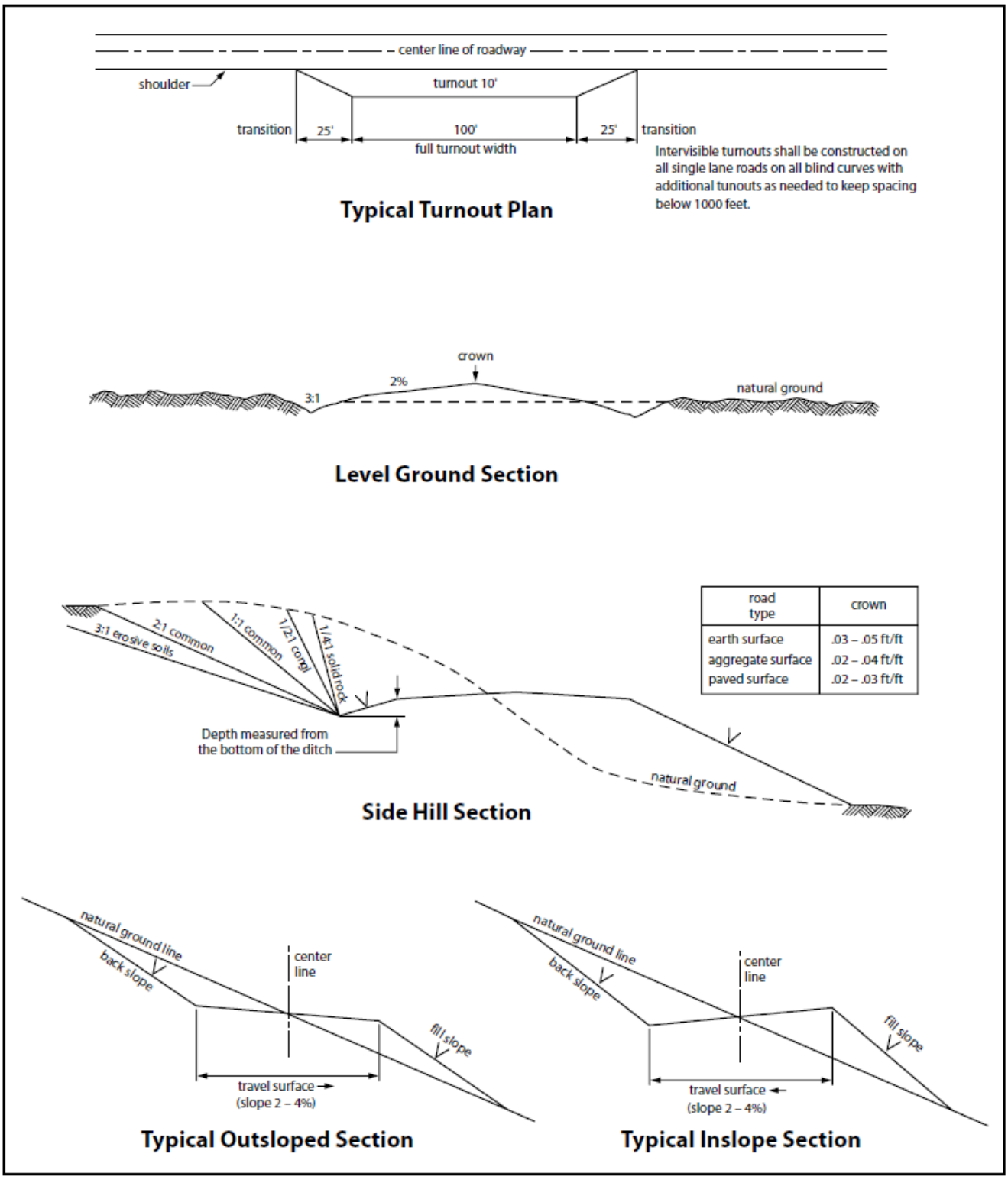


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

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

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1½ 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 1½ 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).

B. PIPELINES

- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, passages, or voids are intersected by trenching, and no pipe will be laid in the trench at that point until clearance has been issued by the Authorized Officer.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Special restoration stipulations or realignment may be required at such intersections, if any.
- 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.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation*.)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately ___6___ inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them.

When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1	( ) seed mixture 3
(X) seed mixture 2	( ) seed mixture 4
( ) seed mixture 2/LPC	( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

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

OR

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

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 17 for more information.

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

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

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

19. 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 associated roads, 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.

20. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems. Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction.
- No further construction will be done until clearance has been issued by the Authorized Officer.
- Special restoration stipulations or realignment may be required.

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

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

OR

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

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 11 for more information.

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

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

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

13. Special Stipulations:
For reclamation remove poles, lines, transformer, etc. and dispose of properly.
Fill in any holes from the poles removed.

VII. INTERIM RECLAMATION

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

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

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

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

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

VIII. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

Seed Mixture 2, for Sandy Sites

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

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

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

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

*Pounds of pure live seed:

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

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**COG Operating LLC**
LEASE NO.:	**NMNM-086150**
WELL NAME & NO.:	**Redtail Federal Com 505H**
SURFACE HOLE FOOTAGE:	**0365' FSL & 1100' FWL**
BOTTOM HOLE FOOTAGE	**0050' FNL & 1254' FWL Sec. 35, T.22 S., R.32 E.**
LOCATION:	**Section 02, T.23 S., R.32 E., NMPM**
COUNTY:	**Lea County, New Mexico**

COA

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

Possible water flows in the Salado and Castile.
Possible lost circulation in the Rustler, Red Beds, and Delaware.

A. HYDROGEN SULFIDE

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

Approval Date: 12/18/2020

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1260** feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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:

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

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 **3000 (3M)** psi.

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

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

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

3. 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.

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

5. 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.

6. 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.

B. PRESSURE CONTROL

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

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

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

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. 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).

c. 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.

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

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

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes 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.

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

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

JAM 10222020

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. FIRST ST., ARTESIA, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-025-48221	51683	Red Tank; Bone Spring

Property Code	Property Name	Well Number
329921	REDTAIL FEDERAL COM	505H
OGRID No.	**Operator Name**	**Elevation**
229137	COG OPERATING, LLC	3715.6'

Surface Location

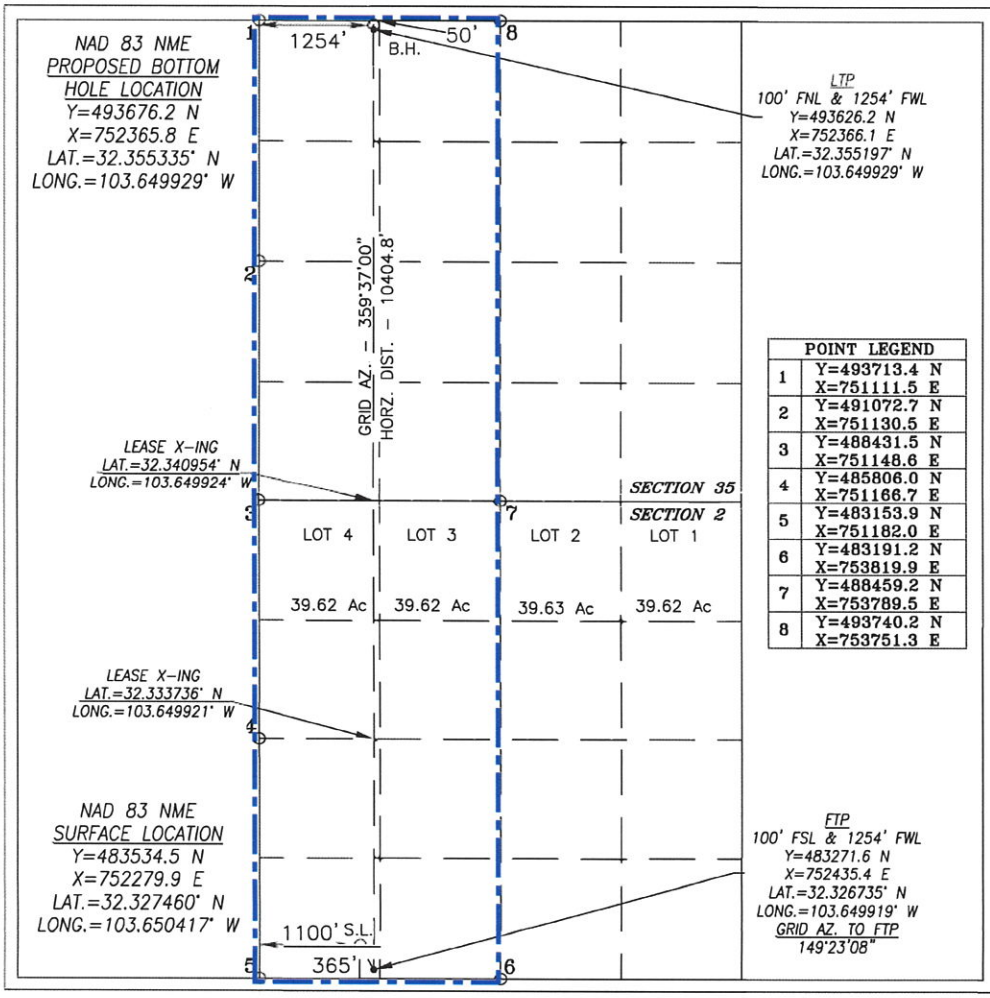
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	2	23-S	32-E		365	SOUTH	1100	WEST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	35	22-S	32-E		50	NORTH	1254	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
~~639.24~~ 639.29			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



POINT LEGEND	
1	Y=493713.4 N X=751111.5 E
2	Y=491072.7 N X=751130.5 E
3	Y=488431.5 N X=751148.6 E
4	Y=485806.0 N X=751166.7 E
5	Y=483153.9 N X=751182.0 E
6	Y=483191.2 N X=753819.9 E
7	Y=488459.2 N X=753789.5 E
8	Y=493740.2 N X=753751.3 E

OPERATOR CERTIFICATION

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

Stan Wagner 8/5/2020
Signature Date

Stan Wagner
Printed Name

E-mail Address

SURVEYOR CERTIFICATION

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

JUNE 17, 2020
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW NEW MEXICO 17777 LICENSED PROFESSIONAL SURVEYOR

Chad Harcrow 6/29/20
Certificate No. CHAD HARCROW 17777
W.O. # 20-853 DRAWN BY: AH

Intent [X] As Drilled [ ]

API #
30-025-

Operator Name:	Property Name:	Well Number
COG Operating LLC	Redtail Federal Com	505H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	2	23S	32E						Lea

Latitude	Longitude	NAD
		83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	2	23S	32E		100	South	1254	West	Lea

Latitude	Longitude	NAD
32.326735	-103.649919	NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
D	35	22S	32E		100	North	1254	West	Lea

Latitude	Longitude	NAD
32.355197	-103.649929	NAD 83

Is this well the defining well for the Horizontal Spacing Unit? Yes

Is this well an infill well? No

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #
30-025-

Operator Name:	Property Name:	Well Number
COG Operating LLC	Redtail Federal Com	505H

KZ 06/29/2018

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Submit Original to Appropriate District Office

GAS CAPTURE PLAN

Date: 8/03/20

☒ Original

Operator & OGRID No.: COG Operating LLC, (229137)

☐ Amended - Reason for Amendment:

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Redtail Federal Com 501H	30-025-	P-2-23S-32E	310' FSL & 1070' FEL	±3000	None Planned	APD Submission Plan Subject to change
Redtail Federal Com 502H	30-025-	P-2-23S-32E	310' FSL & 1100' FEL	±3000	None Planned	APD Submission Plan Subject to change
Redtail Federal Com 503H	30-025-	P-2-23S-32E	310' FSL & 1130' FEL	±3000	None Planned	APD Submission Plan Subject to change
Redtail Federal Com 504H	30-025-	M-2-23S-32E	365' FSL & 1130' FWL	±3000	None Planned	APD Submission Plan Subject to change
Redtail Federal Com 505H	30-025-48221	M-2-23S-32E	365' FSL & 1100' FWL	±3000	None Planned	APD Submission Plan Subject to change
Redtail Federal Com 506H	30-025-	M-2-23S-32E	365' FSL & 1070' FWL	±3000	None Planned	APD Submission Plan Subject to change

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **DCP Midstream** and will be connected to **Eunice** low pressure gathering system located in **Lea** County, New Mexico. **COG Operating LLC** provides (periodically) to **DCP Midstream** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **COG Operating LLC** and **DCP Midstream** have periodic conference calls to discuss changes to the drilling and completion schedules. Gas from these wells will be processed at **DCP Midstream-Eunice** Processing Plant located in Sec. **5**, Twn. **21S**, Rng **36E**, **Lea** County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

COG Operating, LLC - Redtail Federal Com #505H

1. Geologic Formations

TVD of target	10,708' EOC	Pilot hole depth	NA
MD at TD:	20,913'	Deepest expected fresh water:	400'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1204	Water	
Top of Salt	1681	Salt	
Base of Salt	4644	Salt	
Lamar	4917	Salt Water	
Bell Canyon	5014	Salt Water	
Cherry Canyon	5817	Oil/Gas	
Brushy Canyon	7099	Oil/Gas	
Bone Springs	8808	Oil/Gas	
1st Bone Spring Sand	9970	Oil/Gas	
2nd Bone Spring Sand	10638	Target Oil/Gas	
2nd BSS Base	11038	Not Penetrated	
3rd Bone Spring Sand	11827	Not Penetrated	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1230	13.375"	54.5	J55	BTC	2.01	1.25	13.56
12.25"	0	4000	9.625"	40	J55	BTC	1.22	1.14	4.46
12.25"	4000	4942	9.625"	40	L80	BTC	1.19	1.40	5.73
8.75"	0	20,913	5.5"	17	P110	BTC	1.44	2.59	3.12
			BLM Minimum Safety Factor				1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing.to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Operating, LLC - Redtail Federal Com #505H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

COG Operating, LLC - Redtail Federal Com #505H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	550	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	930	12.7	2.0	9.6	16	Lead: 35:65:6 C Blend
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	810	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	2730	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
Production	4,442'	25% OH in Lateral (KOP to EOL) – 40% OH in Vertical

COG Operating, LLC - Redtail Federal Com #505H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		
8-3/4"	13-5/8"	5M	Annular	x	50% testing pressure
			Blind Ram	x	5M
			Pipe Ram	x	
			Double Ram		
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

COG Operating, LLC - Redtail Federal Com #505H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Saturated Brine	10 - 10.1	28-34	N/C
9-5/8" Int shoe	Lateral TD	Cut Brine	8.6 - 9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5180 psi at 10708' TVD
Abnormal Temperature	NO 165 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
Y	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan

DELAWARE BASIN EAST

BULLDOG PROSPECT (NM-E)
REDTAIL FED COM PROJECT
REDTAIL FEDERAL COM 505H

OWB
PWP1

Anticollision Report

20 July, 2020

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Reference PWP1

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 ellipse separation of 1,000.0 usft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 7/20/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,120.0	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
10,120.0	20,913.2	PWP1 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
REDTAIL FED COM PROJECT						
RED TANK `35` FEDERAL 1 - OWB - AWP						Out of range
RED TANK `35` FEDERAL 2 - OWB - AWP						Out of range
SAFFRON UNIT 1 - OWB - AWP						Out of range
COVINGTON `A` FEDERAL 25 - OWB - AWP						Out of range
COVINGTON `A` FEDERAL 26 - OWB - AWP						Out of range
REDTAIL FEDERAL COM 201H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 202H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 203H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 204H - OWB - PWP1	2,415.6	2,418.6	340.0	327.2	26.485	CC
REDTAIL FEDERAL COM 204H - OWB - PWP1	2,500.0	2,500.0	340.0	326.9	25.869	ES
REDTAIL FEDERAL COM 204H - OWB - PWP1	9,200.0	9,139.3	697.5	656.5	17.016	SF
REDTAIL FEDERAL COM 205H - OWB - PWP1	9,024.2	9,029.2	79.9	40.4	2.020	CC, ES, SF
REDTAIL FEDERAL COM 206H - OWB - PWP1	6,624.3	6,632.4	94.4	83.2	8.404	CC, ES
REDTAIL FEDERAL COM 206H - OWB - PWP1	6,800.0	6,806.9	96.7	84.9	8.182	SF
REDTAIL FEDERAL COM 501H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 502H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 503H - OWB - PWP1						Out of range
REDTAIL FEDERAL COM 504H - OWB - PWP1	2,500.0	2,499.5	30.0	17.3	2.367	CC, ES
REDTAIL FEDERAL COM 504H - OWB - PWP1	2,600.0	2,598.6	30.8	17.7	2.360	SF
REDTAIL FEDERAL COM 506H - OWB - PWP1	2,416.4	2,417.1	30.0	17.6	2.426	CC
REDTAIL FEDERAL COM 506H - OWB - PWP1	2,500.0	2,500.7	30.0	17.3	2.366	ES, SF
REDTAIL STATE COM 1H - OWB - AWP						Out of range

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 204H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	3.0	3.0	3.0	3.0	89.19	4.8	340.0	340.0				
100.0	100.0	103.0	103.0	3.0	3.0	89.19	4.8	340.0	340.0	334.0	6.01	56.601	
200.0	200.0	203.0	203.0	3.0	3.1	89.19	4.8	340.0	340.0	333.9	6.09	55.826	
300.0	300.0	303.0	303.0	3.0	3.3	89.19	4.8	340.0	340.0	333.8	6.23	54.585	
400.0	400.0	403.0	403.0	3.0	3.5	89.19	4.8	340.0	340.0	333.6	6.40	53.112	

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

Concho Resources LLC

Anticollision Report

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Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 204H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
500.0	500.0	503.0	503.0	3.1	3.8	89.19	4.8	340.0	340.0	333.4	6.60	51.486	
600.0	600.0	603.0	603.0	3.1	4.0	89.19	4.8	340.0	340.0	333.2	6.83	49.770	
700.0	700.0	703.0	703.0	3.1	4.3	89.19	4.8	340.0	340.0	333.0	7.08	48.020	
800.0	800.0	803.0	803.0	3.2	4.6	89.19	4.8	340.0	340.0	332.7	7.35	46.274	
900.0	900.0	903.0	903.0	3.2	4.9	89.19	4.8	340.0	340.0	332.4	7.63	44.561	
1,000.0	1,000.0	1,003.0	1,003.0	3.2	5.2	89.19	4.8	340.0	340.0	332.1	7.93	42.900	
1,100.0	1,100.0	1,103.0	1,103.0	3.3	5.5	89.19	4.8	340.0	340.0	331.8	8.23	41.302	
1,200.0	1,200.0	1,203.0	1,203.0	3.4	5.8	89.19	4.8	340.0	340.0	331.5	8.55	39.775	
1,300.0	1,300.0	1,303.0	1,303.0	3.4	6.1	89.19	4.8	340.0	340.0	331.2	8.87	38.320	
1,400.0	1,400.0	1,403.0	1,403.0	3.5	6.4	89.19	4.8	340.0	340.0	330.8	9.21	36.940	
1,500.0	1,500.0	1,503.0	1,503.0	3.5	6.7	89.19	4.8	340.0	340.0	330.5	9.54	35.632	
1,600.0	1,600.0	1,603.0	1,603.0	3.6	7.1	89.19	4.8	340.0	340.0	330.1	9.89	34.393	
1,700.0	1,700.0	1,703.0	1,703.0	3.7	7.4	89.19	4.8	340.0	340.0	329.8	10.24	33.222	
1,800.0	1,800.0	1,803.0	1,803.0	3.8	7.7	89.19	4.8	340.0	340.0	329.4	10.59	32.114	
1,900.0	1,900.0	1,903.0	1,903.0	3.9	8.1	89.19	4.8	340.0	340.0	329.1	10.95	31.066	
2,000.0	2,000.0	2,003.0	2,003.0	3.9	8.4	89.19	4.8	340.0	340.0	328.7	11.31	30.075	
2,100.0	2,100.0	2,103.0	2,103.0	4.0	8.8	89.19	4.8	340.0	340.0	328.4	11.67	29.137	
2,200.0	2,200.0	2,203.0	2,203.0	4.1	9.1	89.19	4.8	340.0	340.0	328.0	12.04	28.248	
2,300.0	2,300.0	2,303.0	2,303.0	4.2	9.4	89.19	4.8	340.0	340.0	327.6	12.41	27.405	
2,400.0	2,400.0	2,403.0	2,403.0	4.3	9.8	89.19	4.8	340.0	340.0	327.3	12.78	26.606	
2,415.6	2,415.6	2,418.6	2,418.6	4.3	9.8	89.19	4.8	340.0	340.0	327.2	12.84	26.485	CC
2,500.0	2,500.0	2,500.0	2,500.0	4.4	10.1	89.19	4.8	340.0	340.0	326.9	13.14	25.869	ES
2,600.0	2,600.0	2,593.6	2,593.6	4.4	10.4	-63.88	4.0	341.3	340.7	327.2	13.53	25.181	
2,627.7	2,627.7	2,618.8	2,618.8	4.4	10.5	-63.94	3.5	342.1	341.1	327.4	13.64	24.999	
2,700.0	2,699.9	2,684.4	2,684.3	4.4	10.7	-64.07	1.7	345.1	342.9	328.9	13.95	24.586	
2,800.0	2,799.8	2,777.7	2,777.3	4.4	10.9	-64.03	-2.2	351.4	347.6	333.3	14.29	24.319	
2,900.0	2,899.7	2,877.5	2,876.7	4.3	11.3	-63.91	-6.7	358.8	353.0	338.3	14.64	24.116	
3,000.0	2,999.6	2,977.4	2,976.2	4.3	11.6	-63.80	-11.3	366.2	358.4	343.4	14.99	23.915	
3,100.0	3,099.5	3,077.2	3,075.7	4.3	11.9	-63.70	-15.8	373.6	363.8	348.4	15.34	23.715	
3,200.0	3,199.4	3,177.1	3,175.2	4.3	12.2	-63.60	-20.3	381.0	369.2	353.5	15.70	23.516	
3,300.0	3,299.3	3,276.9	3,274.6	4.3	12.5	-63.50	-24.9	388.5	374.6	358.5	16.06	23.320	
3,400.0	3,399.2	3,376.8	3,374.1	4.3	12.9	-63.40	-29.4	395.9	380.0	363.6	16.43	23.127	
3,500.0	3,499.1	3,476.6	3,473.6	4.3	13.2	-63.31	-34.0	403.3	385.4	368.6	16.80	22.936	
3,600.0	3,599.0	3,576.5	3,573.0	4.3	13.5	-63.21	-38.5	410.7	390.8	373.6	17.18	22.749	
3,700.0	3,698.9	3,676.4	3,672.5	4.3	13.9	-63.13	-43.1	418.1	396.2	378.7	17.56	22.565	
3,800.0	3,798.8	3,776.2	3,772.0	4.3	14.2	-63.04	-47.6	425.6	401.6	383.7	17.94	22.386	
3,900.0	3,898.7	3,876.1	3,871.5	4.3	14.6	-62.96	-52.2	433.0	407.0	388.7	18.33	22.209	
4,000.0	3,998.6	3,975.9	3,970.9	4.4	14.9	-62.87	-56.7	440.4	412.5	393.7	18.72	22.037	
4,100.0	4,098.5	4,075.8	4,070.4	4.4	15.3	-62.79	-61.3	447.8	417.9	398.8	19.11	21.868	
4,200.0	4,198.4	4,175.6	4,169.9	4.4	15.6	-62.72	-65.8	455.2	423.3	403.8	19.50	21.704	
4,300.0	4,298.3	4,275.5	4,269.3	4.4	16.0	-62.64	-70.4	462.7	428.7	408.8	19.90	21.543	
4,400.0	4,398.2	4,375.3	4,368.8	4.5	16.4	-62.57	-74.9	470.1	434.1	413.8	20.30	21.386	
4,500.0	4,498.1	4,475.2	4,468.3	4.5	16.7	-62.49	-79.5	477.5	439.5	418.8	20.70	21.232	
4,600.0	4,598.0	4,575.0	4,567.8	4.6	17.1	-62.42	-84.0	484.9	444.9	423.8	21.10	21.083	
4,700.0	4,697.9	4,674.9	4,667.2	4.6	17.4	-62.35	-88.6	492.3	450.4	428.8	21.51	20.937	
4,800.0	4,797.8	4,774.7	4,766.7	4.7	17.8	-62.29	-93.1	499.8	455.8	433.9	21.92	20.794	
4,900.0	4,897.7	4,874.6	4,866.2	4.7	18.2	-62.22	-97.6	507.2	461.2	438.9	22.33	20.656	
5,000.0	4,997.6	4,974.4	4,965.6	4.8	18.5	-62.16	-102.2	514.6	466.6	443.9	22.74	20.520	
5,100.0	5,097.5	5,074.3	5,065.1	4.8	18.9	-62.10	-106.7	522.0	472.0	448.9	23.15	20.388	
5,200.0	5,197.4	5,174.1	5,164.6	4.9	19.3	-62.04	-111.3	529.4	477.5	453.9	23.57	20.259	
5,300.0	5,297.3	5,274.0	5,264.1	4.9	19.6	-61.98	-115.8	536.9	482.9	458.9	23.98	20.134	
5,400.0	5,397.2	5,373.8	5,363.5	5.0	20.0	-61.92	-120.4	544.3	488.3	463.9	24.40	20.011	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 204H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,500.0	5,497.1	5,473.7	5,463.0	5.1	20.4	-61.86	-124.9	551.7	493.7	468.9	24.82	19.892	
5,600.0	5,597.0	5,573.5	5,562.5	5.1	20.7	-61.80	-129.5	559.1	499.1	473.9	25.24	19.775	
5,700.0	5,696.9	5,673.4	5,661.9	5.2	21.1	-61.75	-134.0	566.5	504.6	478.9	25.66	19.662	
5,800.0	5,796.8	5,773.2	5,761.4	5.3	21.5	-61.70	-138.6	574.0	510.0	483.9	26.08	19.551	
5,900.0	5,896.7	5,873.1	5,860.9	5.4	21.8	-61.64	-143.1	581.4	515.4	488.9	26.51	19.443	
6,000.0	5,996.6	5,972.9	5,960.4	5.4	22.2	-61.59	-147.7	588.8	520.8	493.9	26.93	19.337	
6,100.0	6,096.5	6,072.8	6,059.8	5.5	22.6	-61.54	-152.2	596.2	526.2	498.9	27.36	19.234	
6,200.0	6,196.4	6,172.6	6,159.3	5.6	23.0	-61.49	-156.8	603.6	531.7	503.9	27.79	19.133	
6,300.0	6,296.3	6,272.5	6,258.8	5.7	23.3	-61.44	-161.3	611.1	537.1	508.9	28.22	19.035	
6,400.0	6,396.2	6,372.3	6,358.2	5.8	23.7	-61.40	-165.9	618.5	542.5	513.9	28.65	18.939	
6,500.0	6,496.1	6,472.2	6,457.7	5.9	24.1	-61.35	-170.4	625.9	547.9	518.9	29.08	18.846	
6,600.0	6,596.0	6,572.1	6,557.2	5.9	24.4	-61.31	-174.9	633.3	553.4	523.9	29.51	18.754	
6,700.0	6,695.9	6,671.9	6,656.7	6.0	24.8	-61.26	-179.5	640.7	558.8	528.9	29.94	18.665	
6,800.0	6,795.8	6,771.8	6,756.1	6.1	25.2	-61.22	-184.0	648.2	564.2	533.9	30.37	18.578	
6,900.0	6,895.7	6,871.6	6,855.6	6.2	25.6	-61.18	-188.6	655.6	569.7	538.8	30.80	18.492	
7,000.0	6,995.6	6,971.5	6,955.1	6.3	25.9	-61.13	-193.1	663.0	575.1	543.8	31.24	18.409	
7,100.0	7,095.5	7,071.3	7,054.6	6.4	26.3	-61.09	-197.7	670.4	580.5	548.8	31.67	18.328	
7,200.0	7,195.4	7,171.2	7,154.0	6.5	26.7	-61.05	-202.2	677.8	585.9	553.8	32.11	18.248	
7,300.0	7,295.3	7,271.0	7,253.5	6.6	27.1	-61.01	-206.8	685.3	591.4	558.8	32.55	18.170	
7,400.0	7,395.2	7,370.9	7,353.0	6.7	27.4	-60.97	-211.3	692.7	596.8	563.8	32.98	18.094	
7,500.0	7,495.1	7,470.7	7,452.4	6.8	27.8	-60.93	-215.9	700.1	602.2	568.8	33.42	18.020	
7,600.0	7,595.0	7,570.6	7,551.9	6.9	28.2	-60.90	-220.4	707.5	607.6	573.8	33.86	17.947	
7,700.0	7,694.9	7,670.4	7,651.4	7.0	28.6	-60.86	-225.0	714.9	613.1	578.8	34.30	17.875	
7,800.0	7,794.8	7,770.3	7,750.9	7.1	28.9	-60.82	-229.5	722.4	618.5	583.8	34.74	17.805	
7,900.0	7,894.7	7,870.1	7,850.3	7.2	29.3	-60.79	-234.1	729.8	623.9	588.8	35.18	17.737	
8,000.0	7,994.6	7,970.0	7,949.8	7.3	29.7	-60.75	-238.6	737.2	629.4	593.7	35.62	17.670	
8,100.0	8,094.5	8,069.8	8,049.3	7.4	30.1	-60.72	-243.2	744.6	634.8	598.7	36.06	17.605	
8,200.0	8,194.4	8,169.7	8,148.7	7.5	30.4	-60.68	-247.7	752.0	640.2	603.7	36.50	17.541	
8,300.0	8,294.3	8,269.5	8,248.2	7.6	30.8	-60.65	-252.2	759.5	645.7	608.7	36.94	17.478	
8,400.0	8,394.2	8,369.4	8,347.7	7.8	31.2	-60.62	-256.8	766.9	651.1	613.7	37.38	17.416	
8,500.0	8,494.1	8,469.2	8,447.2	7.9	31.6	-60.59	-261.3	774.3	656.5	618.7	37.83	17.356	
8,600.0	8,594.0	8,569.1	8,546.6	8.0	31.9	-60.55	-265.9	781.7	661.9	623.7	38.27	17.297	
8,700.0	8,693.9	8,668.9	8,646.1	8.1	32.3	-60.52	-270.4	789.1	667.4	628.7	38.71	17.239	
8,800.0	8,793.8	8,768.8	8,745.6	8.2	32.7	-60.49	-275.0	796.6	672.8	633.6	39.16	17.182	
8,900.0	8,893.7	8,868.6	8,845.0	8.3	33.1	-60.46	-279.5	804.0	678.2	638.6	39.60	17.126	
9,000.0	8,993.6	8,968.5	8,944.5	8.4	33.5	-60.43	-284.1	811.4	683.7	643.6	40.05	17.071	
9,100.0	9,093.5	9,059.8	9,035.5	8.5	33.8	-60.50	-287.1	818.5	689.4	648.9	40.48	17.031	
9,200.0	9,193.4	9,139.3	9,114.2	8.6	34.1	-61.34	-280.4	826.8	697.5	656.5	40.99	17.016 SF	
9,300.0	9,293.3	9,214.3	9,186.7	8.8	34.4	-62.90	-264.3	836.9	709.0	667.5	41.48	17.092	
9,400.0	9,393.2	9,283.0	9,250.6	8.9	34.8	-64.93	-241.6	847.8	724.8	682.9	41.89	17.301	
9,500.0	9,493.1	9,350.0	9,309.6	9.0	35.1	-67.40	-212.4	859.8	745.8	703.6	42.29	17.638	
9,600.0	9,593.0	9,400.0	9,351.0	9.1	35.3	-69.50	-186.2	869.7	773.0	730.3	42.66	18.121	
9,700.0	9,692.9	9,450.0	9,389.9	9.2	35.4	-71.77	-156.6	880.1	806.7	763.7	43.02	18.750	
9,800.0	9,792.8	9,486.6	9,416.6	9.3	35.5	-73.53	-132.9	888.1	847.1	803.7	43.34	19.544	
9,900.0	9,892.7	9,522.1	9,440.9	9.4	35.6	-75.29	-108.2	896.0	893.9	850.3	43.63	20.491	
10,000.0	9,992.6	9,550.0	9,458.9	9.6	35.7	-76.70	-87.9	902.5	946.8	903.0	43.84	21.597	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 205H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	2.0	2.0	3.0	3.0	89.19	4.4	310.0	310.0				
100.0	100.0	102.0	102.0	3.0	3.0	89.19	4.4	310.0	310.0	304.0	6.01	51.610	
200.0	200.0	202.0	202.0	3.0	3.1	89.19	4.4	310.0	310.0	303.9	6.09	50.909	
300.0	300.0	302.0	302.0	3.0	3.3	89.19	4.4	310.0	310.0	303.8	6.23	49.780	
400.0	400.0	402.0	402.0	3.0	3.5	89.19	4.4	310.0	310.0	303.6	6.40	48.440	
500.0	500.0	502.0	502.0	3.1	3.8	89.19	4.4	310.0	310.0	303.4	6.60	46.957	
600.0	600.0	602.0	602.0	3.1	4.0	89.19	4.4	310.0	310.0	303.2	6.83	45.394	
700.0	700.0	702.0	702.0	3.1	4.3	89.19	4.4	310.0	310.0	303.0	7.08	43.798	
800.0	800.0	802.0	802.0	3.2	4.6	89.19	4.4	310.0	310.0	302.7	7.35	42.206	
900.0	900.0	902.0	902.0	3.2	4.9	89.19	4.4	310.0	310.0	302.4	7.63	40.643	
1,000.0	1,000.0	1,002.0	1,002.0	3.2	5.2	89.19	4.4	310.0	310.0	302.1	7.92	39.128	
1,100.0	1,100.0	1,102.0	1,102.0	3.3	5.5	89.19	4.4	310.0	310.0	301.8	8.23	37.671	
1,200.0	1,200.0	1,202.0	1,202.0	3.4	5.8	89.19	4.4	310.0	310.0	301.5	8.55	36.278	
1,300.0	1,300.0	1,302.0	1,302.0	3.4	6.1	89.19	4.4	310.0	310.0	301.2	8.87	34.951	
1,400.0	1,400.0	1,402.0	1,402.0	3.5	6.4	89.19	4.4	310.0	310.0	300.8	9.20	33.692	
1,500.0	1,500.0	1,502.0	1,502.0	3.5	6.7	89.19	4.4	310.0	310.0	300.5	9.54	32.498	
1,600.0	1,600.0	1,602.0	1,602.0	3.6	7.1	89.19	4.4	310.0	310.0	300.1	9.88	31.369	
1,700.0	1,700.0	1,702.0	1,702.0	3.7	7.4	89.19	4.4	310.0	310.0	299.8	10.23	30.300	
1,800.0	1,800.0	1,802.0	1,802.0	3.8	7.7	89.19	4.4	310.0	310.0	299.4	10.59	29.290	
1,900.0	1,900.0	1,902.0	1,902.0	3.9	8.1	89.19	4.4	310.0	310.0	299.1	10.94	28.334	
2,000.0	2,000.0	2,002.0	2,002.0	3.9	8.4	89.19	4.4	310.0	310.0	298.7	11.30	27.429	
2,100.0	2,100.0	2,102.0	2,102.0	4.0	8.8	89.19	4.4	310.0	310.0	298.4	11.67	26.573	
2,200.0	2,200.0	2,202.0	2,202.0	4.1	9.1	89.19	4.4	310.0	310.0	298.0	12.03	25.762	
2,300.0	2,300.0	2,302.0	2,302.0	4.2	9.4	89.19	4.4	310.0	310.0	297.6	12.40	24.994	
2,400.0	2,400.0	2,402.0	2,402.0	4.3	9.8	89.19	4.4	310.0	310.0	297.3	12.78	24.265	
2,500.0	2,500.0	2,502.0	2,502.0	4.4	10.1	89.19	4.4	310.0	310.0	296.9	13.15	23.573	
2,600.0	2,600.0	2,602.0	2,602.0	4.4	10.5	-64.10	4.4	310.0	309.3	295.7	13.53	22.850	
2,627.7	2,627.7	2,629.7	2,629.7	4.4	10.6	-64.29	4.4	310.0	308.8	295.1	13.64	22.633	
2,700.0	2,699.9	2,701.9	2,701.9	4.4	10.8	-64.83	4.4	310.0	307.4	293.5	13.93	22.071	
2,800.0	2,799.8	2,801.8	2,801.8	4.4	11.2	-65.58	4.4	310.0	305.5	291.2	14.33	21.327	
2,900.0	2,899.7	2,901.7	2,901.7	4.3	11.5	-66.35	4.4	310.0	303.7	289.0	14.73	20.623	
3,000.0	2,999.6	3,001.6	3,001.6	4.3	11.9	-67.12	4.4	310.0	302.0	286.8	15.13	19.955	
3,100.0	3,099.5	3,101.5	3,101.5	4.3	12.2	-67.91	4.4	310.0	300.2	284.7	15.54	19.322	
3,200.0	3,199.4	3,201.4	3,201.4	4.3	12.6	-68.70	4.4	310.0	298.6	282.6	15.95	18.722	
3,300.0	3,299.3	3,301.3	3,301.3	4.3	12.9	-69.50	4.4	310.0	297.0	280.6	16.36	18.153	
3,400.0	3,399.2	3,401.2	3,401.2	4.3	13.3	-70.31	4.4	310.0	295.5	278.7	16.78	17.613	
3,500.0	3,499.1	3,501.1	3,501.1	4.3	13.6	-71.12	4.4	310.0	294.0	276.8	17.19	17.101	
3,600.0	3,599.0	3,601.0	3,601.0	4.3	14.0	-71.95	4.4	310.0	292.6	275.0	17.61	16.616	
3,700.0	3,698.9	3,700.9	3,700.9	4.3	14.3	-72.78	4.4	310.0	291.2	273.2	18.03	16.155	
3,800.0	3,798.8	3,800.8	3,800.8	4.3	14.7	-73.62	4.4	310.0	289.9	271.5	18.45	15.717	
3,900.0	3,898.7	3,900.7	3,900.7	4.3	15.0	-74.47	4.4	310.0	288.7	269.9	18.87	15.302	
4,000.0	3,998.6	4,000.6	4,000.6	4.4	15.4	-75.33	4.4	310.0	287.6	268.3	19.29	14.908	
4,100.0	4,098.5	4,100.5	4,100.5	4.4	15.7	-76.19	4.4	310.0	286.5	266.7	19.71	14.533	
4,200.0	4,198.4	4,200.4	4,200.4	4.4	16.1	-77.05	4.4	310.0	285.4	265.3	20.13	14.177	
4,300.0	4,298.3	4,300.3	4,300.3	4.4	16.4	-77.93	4.4	310.0	284.5	263.9	20.55	13.839	
4,400.0	4,398.2	4,400.2	4,400.2	4.5	16.8	-78.81	4.4	310.0	283.6	262.6	20.98	13.518	
4,500.0	4,498.1	4,500.1	4,500.1	4.5	17.1	-79.69	4.4	310.0	282.7	261.3	21.40	13.212	
4,600.0	4,598.0	4,600.0	4,600.0	4.6	17.5	-80.58	4.4	310.0	282.0	260.1	21.82	12.922	
4,700.0	4,697.9	4,699.9	4,699.9	4.6	17.8	-81.48	4.4	310.0	281.3	259.0	22.24	12.646	
4,800.0	4,797.8	4,799.8	4,799.8	4.7	18.2	-82.38	4.4	310.0	280.6	258.0	22.66	12.384	
4,900.0	4,897.7	4,899.7	4,899.7	4.7	18.5	-83.28	4.4	310.0	280.1	257.0	23.08	12.134	
5,000.0	4,997.6	4,999.6	4,999.6	4.8	18.9	-84.19	4.4	310.0	279.6	256.1	23.50	11.897	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 205H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,097.5	5,099.5	5,099.5	4.8	19.3	-85.10	4.4	310.0	279.2	255.3	23.92	11.671	
5,200.0	5,197.4	5,199.4	5,199.4	4.9	19.6	-86.01	4.4	310.0	278.8	254.5	24.34	11.456	
5,300.0	5,297.3	5,299.3	5,299.3	4.9	20.0	-86.92	4.4	310.0	278.6	253.8	24.76	11.252	
5,400.0	5,397.2	5,399.2	5,399.2	5.0	20.3	-87.84	4.4	310.0	278.4	253.2	25.17	11.058	
5,500.0	5,497.1	5,499.1	5,499.1	5.1	20.7	-88.75	4.4	310.0	278.2	252.6	25.59	10.873	
5,600.0	5,597.0	5,607.8	5,607.8	5.1	21.0	-89.53	2.7	308.9	276.6	250.6	26.02	10.632	
5,700.0	5,696.9	5,715.2	5,715.0	5.2	21.5	-89.86	-2.5	305.8	271.8	245.3	26.51	10.252	
5,800.0	5,796.8	5,815.0	5,814.6	5.3	21.9	-90.03	-8.4	302.2	265.9	238.9	26.92	9.874	
5,900.0	5,896.7	5,914.8	5,914.2	5.4	22.2	-90.20	-14.4	298.6	259.9	232.6	27.30	9.520	
6,000.0	5,996.6	6,014.7	6,013.7	5.4	22.5	-90.39	-20.3	295.0	254.0	226.3	27.69	9.174	
6,100.0	6,096.5	6,114.5	6,113.3	5.5	22.8	-90.58	-26.3	291.4	248.1	220.0	28.07	8.838	
6,200.0	6,196.4	6,214.3	6,212.9	5.6	23.1	-90.78	-32.2	287.7	242.1	213.7	28.45	8.510	
6,300.0	6,296.3	6,314.1	6,312.5	5.7	23.5	-90.99	-38.2	284.1	236.2	207.4	28.84	8.191	
6,400.0	6,396.2	6,413.9	6,412.0	5.8	23.8	-91.21	-44.1	280.5	230.3	201.1	29.22	7.880	
6,500.0	6,496.1	6,513.8	6,511.6	5.9	24.1	-91.44	-50.1	276.9	224.4	194.8	29.61	7.577	
6,600.0	6,596.0	6,613.6	6,611.2	5.9	24.4	-91.69	-56.0	273.3	218.5	188.5	30.00	7.282	
6,700.0	6,695.9	6,713.4	6,710.8	6.0	24.8	-91.94	-62.0	269.6	212.6	182.2	30.39	6.994	
6,800.0	6,795.8	6,813.2	6,810.4	6.1	25.1	-92.22	-67.9	266.0	206.6	175.9	30.78	6.713	
6,900.0	6,895.7	6,913.0	6,909.9	6.2	25.4	-92.51	-73.9	262.4	200.8	169.6	31.17	6.440	
7,000.0	6,995.6	7,012.9	7,009.5	6.3	25.8	-92.82	-79.8	258.8	194.9	163.3	31.57	6.173	
7,100.0	7,095.5	7,112.7	7,109.1	6.4	26.1	-93.14	-85.8	255.2	189.0	157.0	31.96	5.913	
7,200.0	7,195.4	7,212.5	7,208.7	6.5	26.4	-93.49	-91.7	251.6	183.1	150.7	32.35	5.659	
7,300.0	7,295.3	7,312.3	7,308.2	6.6	26.8	-93.86	-97.7	247.9	177.2	144.5	32.75	5.412	
7,400.0	7,395.2	7,412.1	7,407.8	6.7	27.1	-94.26	-103.6	244.3	171.3	138.2	33.14	5.170	
7,500.0	7,495.1	7,512.0	7,507.4	6.8	27.4	-94.68	-109.6	240.7	165.5	132.0	33.54	4.934	
7,600.0	7,595.0	7,611.8	7,607.0	6.9	27.8	-95.14	-115.5	237.1	159.6	125.7	33.93	4.705	
7,700.0	7,694.9	7,711.6	7,706.5	7.0	28.1	-95.62	-121.5	233.5	153.8	119.5	34.33	4.480	
7,800.0	7,794.8	7,811.4	7,806.1	7.1	28.4	-96.15	-127.4	229.9	148.0	113.3	34.73	4.261	
7,900.0	7,894.7	7,911.3	7,905.7	7.2	28.8	-96.72	-133.4	226.2	142.2	107.0	35.12	4.048	
8,000.0	7,994.6	8,011.1	8,005.3	7.3	29.1	-97.34	-139.3	222.6	136.4	100.9	35.52	3.839	
8,100.0	8,094.5	8,110.9	8,104.9	7.4	29.5	-98.02	-145.3	219.0	130.6	94.7	35.92	3.636	
8,200.0	8,194.4	8,210.7	8,204.4	7.5	29.8	-98.76	-151.2	215.4	124.8	88.5	36.31	3.438	
8,300.0	8,294.3	8,310.5	8,304.0	7.6	30.1	-99.57	-157.2	211.8	119.1	82.4	36.71	3.244	
8,400.0	8,394.2	8,410.4	8,403.6	7.8	30.5	-100.46	-163.1	208.2	113.4	76.3	37.11	3.056	
8,500.0	8,494.1	8,510.2	8,503.2	7.9	30.8	-101.44	-169.1	204.5	107.7	70.2	37.50	2.872	
8,600.0	8,594.0	8,610.0	8,602.7	8.0	31.2	-102.53	-175.0	200.9	102.1	64.2	37.90	2.693	
8,700.0	8,693.9	8,709.8	8,702.3	8.1	31.5	-103.75	-181.0	197.3	96.5	58.2	38.29	2.519	
8,800.0	8,793.8	8,809.6	8,801.9	8.2	31.8	-105.13	-186.9	193.7	90.9	52.2	38.69	2.349	
8,900.0	8,893.7	8,909.5	8,901.5	8.3	32.2	-106.67	-192.9	190.1	85.4	46.3	39.09	2.185	
9,000.0	8,993.6	9,007.3	8,999.1	8.4	32.5	-108.58	-198.3	186.5	80.3	40.8	39.47	2.034	
9,024.2	9,017.8	9,029.2	9,021.0	8.4	32.6	-109.61	-198.4	185.7	79.9	40.4	39.56	2.020	CC, ES, SF
9,100.0	9,093.5	9,097.1	9,088.6	8.5	33.0	-115.21	-193.4	183.2	83.6	43.6	40.01	2.090	
9,200.0	9,193.4	9,182.3	9,171.9	8.6	33.4	-124.99	-175.9	179.9	101.5	60.8	40.70	2.493	
9,300.0	9,293.3	9,259.9	9,244.7	8.8	33.7	-133.25	-149.4	176.9	134.7	93.4	41.29	3.263	
9,400.0	9,393.2	9,328.4	9,305.4	8.9	34.0	-138.82	-118.0	174.3	181.4	139.8	41.62	4.358	
9,500.0	9,493.1	9,387.7	9,354.7	9.0	34.2	-142.35	-85.1	172.2	238.7	196.9	41.74	5.717	
9,600.0	9,593.0	9,438.5	9,394.0	9.1	34.4	-144.62	-52.9	170.4	304.1	262.3	41.75	7.283	
9,700.0	9,692.9	9,481.9	9,425.2	9.2	34.5	-146.13	-22.9	168.9	375.8	334.1	41.70	9.011	
9,800.0	9,792.8	9,519.0	9,450.0	9.3	34.6	-147.17	4.7	167.7	452.3	410.7	41.65	10.860	
9,900.0	9,892.7	9,550.0	9,469.3	9.4	34.7	-147.90	28.9	166.7	532.7	491.1	41.60	12.806	
10,000.0	9,992.6	9,578.2	9,485.7	9.6	34.8	-148.47	51.8	165.9	616.1	574.5	41.61	14.808	
10,100.0	10,092.5	9,600.0	9,497.7	9.7	34.8	-148.86	70.0	165.3	701.9	660.3	41.60	16.873	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 205H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,119.9	10,112.4	9,600.0	9,497.7	9.7	34.8	-148.86	70.0	165.3	719.3	677.8	41.53	17.319	
10,150.0	10,142.5	9,600.0	9,497.7	9.7	34.8	-53.30	70.0	165.3	745.5	704.1	41.35	18.027	
10,200.0	10,192.4	9,624.7	9,510.3	9.7	34.9	-7.84	91.2	164.6	786.9	745.3	41.57	18.929	
10,250.0	10,241.9	9,650.0	9,522.3	9.7	34.9	-3.23	113.5	163.9	826.9	785.2	41.76	19.803	
10,300.0	10,290.5	9,650.0	9,522.3	9.7	34.9	-1.60	113.5	163.9	864.4	822.9	41.53	20.815	
10,350.0	10,338.0	9,650.0	9,522.3	9.7	34.9	-0.84	113.5	163.9	900.3	859.0	41.29	21.803	
10,400.0	10,383.9	9,678.5	9,534.7	9.8	35.0	-0.55	139.2	163.2	933.4	891.9	41.46	22.513	
10,450.0	10,427.9	9,700.0	9,543.1	9.8	35.0	-0.36	158.9	162.6	964.4	922.9	41.50	23.237	
10,500.0	10,469.7	9,700.0	9,543.1	9.9	35.0	-0.19	158.9	162.6	992.9	951.7	41.24	24.075	

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 206H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-Standard Keeper 104, 9038-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	1.5	1.5	3.0	3.0	89.18	4.0	280.0	280.0				
100.0	100.0	101.5	101.5	3.0	3.0	89.18	4.0	280.0	280.0	274.0	6.00	46.670	
200.0	200.0	201.5	201.5	3.0	3.0	89.18	4.0	280.0	280.0	274.0	6.00	46.648	
300.0	300.0	301.5	301.5	3.0	3.0	89.18	4.0	280.0	280.0	274.0	6.01	46.601	
400.0	400.0	401.5	401.5	3.0	3.0	89.18	4.0	280.0	280.0	274.0	6.02	46.530	
500.0	500.0	501.5	501.5	3.1	3.1	89.18	4.0	280.0	280.0	274.0	6.03	46.433	
600.0	600.0	601.5	601.5	3.1	3.1	89.18	4.0	280.0	280.0	274.0	6.05	46.313	
700.0	700.0	701.5	701.5	3.1	3.1	89.18	4.0	280.0	280.0	274.0	6.07	46.169	
800.0	800.0	801.5	801.5	3.2	3.2	89.18	4.0	280.0	280.0	273.9	6.09	46.002	
900.0	900.0	901.5	901.5	3.2	3.2	89.18	4.0	280.0	280.0	273.9	6.11	45.813	
1,000.0	1,000.0	1,001.5	1,001.5	3.2	3.2	89.18	4.0	280.0	280.0	273.9	6.14	45.602	
1,100.0	1,100.0	1,101.5	1,101.5	3.3	3.3	89.18	4.0	280.0	280.0	273.9	6.17	45.371	
1,200.0	1,200.0	1,201.5	1,201.5	3.4	3.4	89.18	4.0	280.0	280.0	273.8	6.21	45.121	
1,300.0	1,300.0	1,301.5	1,301.5	3.4	3.4	89.18	4.0	280.0	280.0	273.8	6.24	44.853	
1,400.0	1,400.0	1,401.5	1,401.5	3.5	3.5	89.18	4.0	280.0	280.0	273.7	6.28	44.567	
1,500.0	1,500.0	1,501.5	1,501.5	3.5	3.5	89.18	4.0	280.0	280.0	273.7	6.33	44.265	
1,600.0	1,600.0	1,601.5	1,601.5	3.6	3.6	89.18	4.0	280.0	280.0	273.7	6.37	43.948	
1,700.0	1,700.0	1,701.5	1,701.5	3.7	3.7	89.18	4.0	280.0	280.0	273.6	6.42	43.617	
1,800.0	1,800.0	1,801.5	1,801.5	3.8	3.8	89.18	4.0	280.0	280.0	273.6	6.47	43.273	
1,900.0	1,900.0	1,901.5	1,901.5	3.9	3.9	89.18	4.0	280.0	280.0	273.5	6.52	42.917	
2,000.0	2,000.0	2,001.5	2,001.5	3.9	3.9	89.18	4.0	280.0	280.0	273.4	6.58	42.551	
2,100.0	2,100.0	2,101.5	2,101.5	4.0	4.0	89.18	4.0	280.0	280.0	273.4	6.64	42.176	
2,200.0	2,200.0	2,201.5	2,201.5	4.1	4.1	89.18	4.0	280.0	280.0	273.3	6.70	41.792	
2,300.0	2,300.0	2,301.5	2,301.5	4.2	4.2	89.18	4.0	280.0	280.0	273.3	6.76	41.401	
2,400.0	2,400.0	2,401.5	2,401.5	4.3	4.3	89.18	4.0	280.0	280.0	273.2	6.83	41.003	
2,500.0	2,500.0	2,501.7	2,501.7	4.4	4.4	89.18	4.0	280.0	280.0	273.1	6.90	40.599	
2,600.0	2,600.0	2,610.7	2,610.6	4.4	4.4	-64.05	3.3	278.0	277.4	270.4	6.97	39.800	
2,627.7	2,627.7	2,638.3	2,638.3	4.4	4.4	-64.22	2.9	277.1	276.0	269.0	6.99	39.482	
2,700.0	2,699.9	2,710.5	2,710.4	4.4	4.5	-64.65	2.1	274.7	272.2	265.2	7.05	38.638	
2,800.0	2,799.8	2,810.3	2,810.2	4.4	4.5	-65.28	0.9	271.5	267.0	259.9	7.13	37.469	
2,900.0	2,899.7	2,910.1	2,909.9	4.3	4.5	-65.94	-0.3	268.2	261.9	254.6	7.21	36.307	
3,000.0	2,999.6	3,010.0	3,009.7	4.3	4.5	-66.61	-1.5	264.9	256.7	249.4	7.30	35.156	
3,100.0	3,099.5	3,109.8	3,109.4	4.3	4.5	-67.32	-2.7	261.6	251.6	244.2	7.40	34.018	
3,200.0	3,199.4	3,209.6	3,209.2	4.3	4.5	-68.06	-3.9	258.4	246.6	239.1	7.49	32.897	
3,300.0	3,299.3	3,309.4	3,309.0	4.3	4.6	-68.82	-5.1	255.1	241.5	233.9	7.60	31.795	
3,400.0	3,399.2	3,409.2	3,408.7	4.3	4.6	-69.62	-6.3	251.8	236.6	228.9	7.70	30.715	
3,500.0	3,499.1	3,509.1	3,508.5	4.3	4.7	-70.45	-7.4	248.5	231.6	223.8	7.81	29.658	
3,600.0	3,599.0	3,608.9	3,608.2	4.3	4.7	-71.32	-8.6	245.3	226.8	218.8	7.92	28.627	
3,700.0	3,698.9	3,708.7	3,708.0	4.3	4.7	-72.23	-9.8	242.0	221.9	213.9	8.03	27.623	
3,800.0	3,798.8	3,808.5	3,807.8	4.3	4.8	-73.18	-11.0	238.7	217.2	209.0	8.15	26.648	
3,900.0	3,898.7	3,908.3	3,907.5	4.3	4.8	-74.16	-12.2	235.5	212.5	204.2	8.27	25.702	
4,000.0	3,998.6	4,008.2	4,007.3	4.4	4.9	-75.20	-13.4	232.2	207.9	199.5	8.39	24.786	
4,100.0	4,098.5	4,108.0	4,107.0	4.4	4.9	-76.28	-14.6	228.9	203.3	194.8	8.51	23.902	
4,200.0	4,198.4	4,207.8	4,206.8	4.4	5.0	-77.41	-15.8	225.6	198.8	190.2	8.63	23.048	
4,300.0	4,298.3	4,307.6	4,306.6	4.4	5.1	-78.59	-17.0	222.4	194.4	185.7	8.75	22.227	
4,400.0	4,398.2	4,407.4	4,406.3	4.5	5.1	-79.82	-18.2	219.1	190.1	181.2	8.87	21.438	
4,500.0	4,498.1	4,507.3	4,506.1	4.5	5.2	-81.11	-19.4	215.8	185.8	176.9	8.99	20.682	
4,600.0	4,598.0	4,607.1	4,605.8	4.6	5.3	-82.46	-20.6	212.5	181.7	172.6	9.11	19.958	
4,700.0	4,697.9	4,706.9	4,705.6	4.6	5.3	-83.87	-21.7	209.3	177.7	168.5	9.22	19.267	
4,800.0	4,797.8	4,806.7	4,805.4	4.7	5.4	-85.35	-22.9	206.0	173.8	164.4	9.34	18.609	
4,900.0	4,897.7	4,906.5	4,905.1	4.7	5.5	-86.89	-24.1	202.7	170.0	160.5	9.45	17.983	
5,000.0	4,997.6	5,006.4	5,004.9	4.8	5.5	-88.51	-25.3	199.4	166.3	156.8	9.56	17.390	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 206H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-Standard Keeper 104, 9038-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,097.5	5,106.2	5,104.6	4.8	5.6	-90.19	-26.5	196.2	162.8	153.1	9.67	16.830	
5,200.0	5,197.4	5,206.0	5,204.4	4.9	5.7	-91.95	-27.7	192.9	159.4	149.7	9.78	16.302	
5,300.0	5,297.3	5,305.8	5,304.2	4.9	5.8	-93.78	-28.9	189.6	156.2	146.3	9.88	15.806	
5,400.0	5,397.2	5,405.6	5,403.9	5.0	5.9	-95.68	-30.1	186.3	153.2	143.2	9.98	15.342	
5,500.0	5,497.1	5,505.5	5,503.7	5.1	6.0	-97.66	-31.3	183.1	150.3	140.2	10.08	14.910	
5,600.0	5,597.0	5,605.5	5,603.6	5.1	6.0	-99.72	-32.5	179.8	147.6	137.4	10.17	14.508	
5,700.0	5,696.9	5,710.3	5,708.2	5.2	6.1	-102.22	-34.4	174.4	143.2	133.0	10.28	13.937	
5,800.0	5,796.8	5,813.9	5,811.5	5.3	6.2	-105.43	-37.6	165.6	135.8	125.4	10.38	13.088	
5,900.0	5,896.7	5,913.2	5,910.2	5.4	6.3	-109.13	-41.2	155.9	127.6	117.1	10.43	12.231	
6,000.0	5,996.6	6,012.5	6,009.0	5.4	6.4	-113.32	-44.7	146.1	119.9	109.5	10.48	11.448	
6,100.0	6,096.5	6,111.8	6,107.7	5.5	6.5	-118.04	-48.3	136.4	113.0	102.5	10.52	10.741	
6,200.0	6,196.4	6,211.1	6,206.5	5.6	6.6	-123.33	-51.8	126.6	107.0	96.4	10.58	10.115	
6,300.0	6,296.3	6,310.4	6,305.2	5.7	6.7	-129.19	-55.4	116.9	102.0	91.3	10.65	9.572	
6,400.0	6,396.2	6,409.7	6,404.0	5.8	6.8	-135.57	-58.9	107.1	98.1	87.3	10.77	9.113	
6,500.0	6,496.1	6,509.0	6,502.7	5.9	6.9	-142.38	-62.5	97.4	95.6	84.6	10.94	8.741	
6,600.0	6,596.0	6,608.3	6,601.5	5.9	7.0	-149.44	-66.0	87.6	94.5	83.3	11.17	8.458	
6,624.3	6,620.3	6,632.4	6,625.5	6.0	7.0	-151.18	-66.9	85.2	94.4	83.2	11.24	8.404	CC, ES
6,700.0	6,695.9	6,707.6	6,700.2	6.0	7.1	-156.56	-69.6	77.8	94.9	83.4	11.47	8.271	
6,800.0	6,795.8	6,806.9	6,799.0	6.1	7.2	-163.51	-73.1	68.1	96.7	84.9	11.82	8.182	SF
6,900.0	6,895.7	6,906.2	6,897.7	6.2	7.3	-170.12	-76.7	58.3	99.9	87.7	12.20	8.192	
7,000.0	6,995.6	7,005.5	6,996.5	6.3	7.4	-176.24	-80.2	48.6	104.4	91.8	12.59	8.295	
7,100.0	7,095.5	7,104.8	7,095.2	6.4	7.5	178.19	-83.8	38.8	110.0	97.0	12.96	8.482	
7,200.0	7,195.4	7,204.1	7,194.0	6.5	7.6	173.19	-87.3	29.1	116.5	103.1	13.33	8.740	
7,300.0	7,295.3	7,303.3	7,292.7	6.6	7.7	168.75	-90.9	19.3	123.8	110.1	13.67	9.058	
7,400.0	7,395.2	7,402.6	7,391.5	6.7	7.8	164.82	-94.4	9.6	131.7	117.8	13.98	9.421	
7,500.0	7,495.1	7,501.9	7,490.2	6.8	7.9	161.35	-98.0	-0.2	140.3	126.0	14.28	9.821	
7,600.0	7,595.0	7,601.2	7,589.0	6.9	8.0	158.29	-101.5	-9.9	149.2	134.7	14.56	10.248	
7,700.0	7,694.9	7,700.5	7,687.8	7.0	8.1	155.57	-105.1	-19.7	158.6	143.7	14.83	10.695	
7,800.0	7,794.8	7,799.8	7,786.5	7.1	8.3	153.16	-108.6	-29.4	168.2	153.1	15.08	11.155	
7,900.0	7,894.7	7,899.1	7,885.3	7.2	8.4	151.02	-112.2	-39.2	178.2	162.8	15.32	11.626	
8,000.0	7,994.6	7,998.4	7,984.0	7.3	8.5	149.10	-115.7	-48.9	188.3	172.7	15.56	12.101	
8,100.0	8,094.5	8,097.7	8,082.8	7.4	8.6	147.38	-119.3	-58.7	198.6	182.8	15.79	12.580	
8,200.0	8,194.4	8,197.0	8,181.5	7.5	8.7	145.83	-122.8	-68.5	209.1	193.1	16.01	13.058	
8,300.0	8,294.3	8,296.3	8,280.3	7.6	8.8	144.43	-126.4	-78.2	219.8	203.5	16.24	13.536	
8,400.0	8,394.2	8,395.6	8,379.0	7.8	8.9	143.16	-129.9	-88.0	230.5	214.1	16.45	14.010	
8,500.0	8,494.1	8,494.9	8,477.8	7.9	9.0	142.00	-133.5	-97.7	241.4	224.7	16.67	14.480	
8,600.0	8,594.0	8,594.2	8,576.5	8.0	9.1	140.95	-137.0	-107.5	252.3	235.4	16.88	14.945	
8,700.0	8,693.9	8,693.5	8,675.3	8.1	9.3	139.98	-140.6	-117.2	263.3	246.2	17.09	15.405	
8,800.0	8,793.8	8,792.8	8,774.0	8.2	9.4	139.09	-144.1	-127.0	274.4	257.1	17.30	15.859	
8,900.0	8,893.7	8,892.1	8,872.8	8.3	9.5	138.26	-147.7	-136.7	285.5	268.0	17.51	16.305	
9,000.0	8,993.6	8,991.4	8,971.5	8.4	9.6	137.50	-151.2	-146.5	296.7	279.0	17.72	16.745	
9,100.0	9,093.5	9,075.7	9,055.3	8.5	9.8	137.06	-153.1	-155.3	309.3	291.3	18.03	17.154	
9,200.0	9,193.4	9,150.0	9,128.4	8.6	9.8	137.76	-147.1	-167.0	329.8	311.3	18.55	17.784	
9,300.0	9,293.3	9,210.5	9,186.5	8.8	9.8	139.08	-135.9	-179.5	358.9	339.3	19.58	18.332	
9,400.0	9,393.2	9,270.7	9,242.4	8.9	9.9	140.88	-119.3	-194.5	396.4	375.7	20.76	19.094	
9,500.0	9,493.1	9,325.3	9,290.8	9.0	9.9	142.81	-99.7	-210.1	441.9	419.8	22.12	19.981	
9,600.0	9,593.0	9,374.0	9,332.0	9.1	9.9	144.67	-78.7	-225.6	494.7	471.1	23.54	21.011	
9,700.0	9,692.9	9,417.2	9,366.5	9.2	10.0	146.36	-57.4	-240.5	553.9	529.0	24.96	22.190	
9,800.0	9,792.8	9,450.0	9,391.3	9.3	10.0	147.65	-39.7	-252.4	618.8	592.3	26.45	23.391	
9,900.0	9,892.7	9,500.0	9,426.8	9.4	10.1	149.59	-10.1	-271.6	688.5	661.2	27.35	25.179	
10,000.0	9,992.6	9,518.8	9,439.4	9.6	10.1	150.30	1.7	-279.1	762.0	733.2	28.75	26.503	
10,100.0	10,092.5	9,550.0	9,459.1	9.7	10.2	151.45	22.2	-291.9	839.0	809.3	29.73	28.220	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 206H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-Standard Keeper 104, 9038-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,119.9	10,112.4	9,550.0	9,459.1	9.7	10.2	151.45	22.2	-291.9	854.7	824.7	30.02	28.473	
10,150.0	10,142.5	9,550.0	9,459.1	9.7	10.2	-109.49	22.2	-291.9	878.4	848.0	30.42	28.878	
10,200.0	10,192.4	9,570.1	9,471.1	9.7	10.2	-58.18	35.9	-300.3	916.8	886.0	30.77	29.793	
10,250.0	10,241.9	9,583.2	9,478.7	9.7	10.2	-48.92	45.1	-305.8	954.0	922.7	31.23	30.543	
10,300.0	10,290.5	9,600.0	9,488.0	9.7	10.3	-43.59	57.1	-313.0	989.8	958.1	31.64	31.286	

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 504H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	3.0	3.0	89.24	0.4	30.0	30.0				
100.0	100.0	99.5	99.5	3.0	3.0	89.24	0.4	30.0	30.0	24.0	6.00	4.998	
200.0	200.0	199.5	199.5	3.0	3.0	89.24	0.4	30.0	30.0	24.0	6.04	4.967	
300.0	300.0	299.5	299.5	3.0	3.1	89.24	0.4	30.0	30.0	23.9	6.12	4.902	
400.0	400.0	399.5	399.5	3.0	3.2	89.24	0.4	30.0	30.0	23.8	6.24	4.808	
500.0	500.0	499.5	499.5	3.1	3.4	89.24	0.4	30.0	30.0	23.6	6.40	4.691	
600.0	600.0	599.5	599.5	3.1	3.6	89.24	0.4	30.0	30.0	23.4	6.58	4.558	
700.0	700.0	699.5	699.5	3.1	3.8	89.24	0.4	30.0	30.0	23.2	6.80	4.414	
800.0	800.0	799.5	799.5	3.2	4.0	89.24	0.4	30.0	30.0	23.0	7.04	4.265	
900.0	900.0	899.5	899.5	3.2	4.2	89.24	0.4	30.0	30.0	22.7	7.29	4.114	
1,000.0	1,000.0	999.5	999.5	3.2	4.5	89.24	0.4	30.0	30.0	22.4	7.57	3.965	
1,100.0	1,100.0	1,099.5	1,099.5	3.3	4.8	89.24	0.4	30.0	30.0	22.1	7.86	3.819	
1,200.0	1,200.0	1,199.5	1,199.5	3.4	5.1	89.24	0.4	30.0	30.0	21.8	8.16	3.678	
1,300.0	1,300.0	1,299.5	1,299.5	3.4	5.3	89.24	0.4	30.0	30.0	21.5	8.47	3.543	
1,400.0	1,400.0	1,399.5	1,399.5	3.5	5.6	89.24	0.4	30.0	30.0	21.2	8.79	3.414	
1,500.0	1,500.0	1,499.5	1,499.5	3.5	6.0	89.24	0.4	30.0	30.0	20.9	9.12	3.291	
1,600.0	1,600.0	1,599.5	1,599.5	3.6	6.3	89.24	0.4	30.0	30.0	20.6	9.45	3.174	
1,700.0	1,700.0	1,699.5	1,699.5	3.7	6.6	89.24	0.4	30.0	30.0	20.2	9.79	3.064	
1,800.0	1,800.0	1,799.5	1,799.5	3.8	6.9	89.24	0.4	30.0	30.0	19.9	10.14	2.959	
1,900.0	1,900.0	1,899.5	1,899.5	3.9	7.2	89.24	0.4	30.0	30.0	19.5	10.49	2.860	
2,000.0	2,000.0	1,999.5	1,999.5	3.9	7.6	89.24	0.4	30.0	30.0	19.2	10.85	2.766	
2,100.0	2,100.0	2,099.5	2,099.5	4.0	7.9	89.24	0.4	30.0	30.0	18.8	11.21	2.677	
2,200.0	2,200.0	2,199.5	2,199.5	4.1	8.2	89.24	0.4	30.0	30.0	18.4	11.57	2.593	
2,300.0	2,300.0	2,299.5	2,299.5	4.2	8.6	89.24	0.4	30.0	30.0	18.1	11.94	2.514	
2,400.0	2,400.0	2,399.5	2,399.5	4.3	8.9	89.24	0.4	30.0	30.0	17.7	12.30	2.438	
2,500.0	2,500.0	2,499.5	2,499.5	4.4	9.2	89.24	0.4	30.0	30.0	17.3	12.68	2.367	CC, ES
2,600.0	2,600.0	2,598.6	2,598.6	4.4	9.6	-65.17	-0.4	31.5	30.8	17.7	13.03	2.360	SF
2,627.7	2,627.7	2,626.0	2,626.0	4.4	9.6	-66.03	-0.8	32.5	31.3	18.1	13.13	2.380	
2,700.0	2,699.9	2,697.6	2,697.4	4.4	9.9	-67.60	-2.6	36.1	33.5	20.1	13.38	2.504	
2,800.0	2,799.8	2,796.9	2,796.4	4.4	10.2	-67.39	-6.3	43.4	38.9	25.1	13.73	2.831	
2,900.0	2,899.7	2,896.7	2,895.8	4.3	10.5	-66.91	-10.2	51.2	44.6	30.5	14.09	3.167	
3,000.0	2,999.6	2,996.5	2,995.3	4.3	10.8	-66.55	-14.1	59.0	50.4	35.9	14.46	3.486	
3,100.0	3,099.5	3,096.4	3,094.7	4.3	11.2	-66.25	-17.9	66.8	56.2	41.4	14.83	3.789	
3,200.0	3,199.4	3,196.2	3,194.2	4.3	11.5	-66.01	-21.8	74.6	62.0	46.8	15.20	4.075	
3,300.0	3,299.3	3,296.0	3,293.6	4.3	11.8	-65.82	-25.7	82.3	67.7	52.1	15.58	4.347	
3,400.0	3,399.2	3,395.9	3,393.1	4.3	12.2	-65.65	-29.6	90.1	73.5	57.5	15.96	4.605	
3,500.0	3,499.1	3,495.7	3,492.6	4.3	12.5	-65.51	-33.5	97.9	79.3	62.9	16.34	4.851	
3,600.0	3,599.0	3,595.5	3,592.0	4.3	12.8	-65.39	-37.3	105.7	85.1	68.3	16.73	5.084	
3,700.0	3,698.9	3,695.4	3,691.5	4.3	13.2	-65.28	-41.2	113.5	90.8	73.7	17.12	5.306	
3,800.0	3,798.8	3,795.2	3,790.9	4.3	13.5	-65.18	-45.1	121.3	96.6	79.1	17.51	5.517	
3,900.0	3,898.7	3,895.0	3,890.4	4.3	13.9	-65.10	-49.0	129.1	102.4	84.5	17.91	5.718	
4,000.0	3,998.6	3,994.9	3,989.8	4.4	14.2	-65.02	-52.9	136.9	108.2	89.9	18.30	5.910	
4,100.0	4,098.5	4,094.7	4,089.3	4.4	14.5	-64.96	-56.8	144.6	113.9	95.2	18.70	6.093	
4,200.0	4,198.4	4,194.5	4,188.7	4.4	14.9	-64.90	-60.6	152.4	119.7	100.6	19.10	6.267	
4,300.0	4,298.3	4,294.4	4,288.2	4.4	15.2	-64.84	-64.5	160.2	125.5	106.0	19.51	6.434	
4,400.0	4,398.2	4,394.2	4,387.6	4.5	15.6	-64.79	-68.4	168.0	131.3	111.4	19.91	6.593	
4,500.0	4,498.1	4,494.0	4,487.1	4.5	15.9	-64.74	-72.3	175.8	137.1	116.7	20.32	6.746	
4,600.0	4,598.0	4,593.9	4,586.5	4.6	16.3	-64.70	-76.2	183.6	142.8	122.1	20.73	6.892	
4,700.0	4,697.9	4,693.7	4,686.0	4.6	16.6	-64.66	-80.1	191.4	148.6	127.5	21.14	7.032	
4,800.0	4,797.8	4,793.5	4,785.4	4.7	17.0	-64.63	-83.9	199.1	154.4	132.9	21.55	7.166	
4,900.0	4,897.7	4,893.4	4,884.9	4.7	17.3	-64.59	-87.8	206.9	160.2	138.2	21.96	7.294	
5,000.0	4,997.6	4,993.2	4,984.3	4.8	17.7	-64.56	-91.7	214.7	166.0	143.6	22.37	7.418	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 504H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,097.5	5,093.0	5,083.8	4.8	18.0	-64.53	-95.6	222.5	171.7	149.0	22.79	7.536	
5,200.0	5,197.4	5,192.9	5,183.3	4.9	18.4	-64.51	-99.5	230.3	177.5	154.3	23.20	7.650	
5,300.0	5,297.3	5,292.7	5,282.7	4.9	18.7	-64.48	-103.3	238.1	183.3	159.7	23.62	7.760	
5,400.0	5,397.2	5,392.5	5,382.2	5.0	19.1	-64.46	-107.2	245.9	189.1	165.0	24.04	7.865	
5,500.0	5,497.1	5,492.4	5,481.6	5.1	19.4	-64.43	-111.1	253.7	194.9	170.4	24.46	7.966	
5,600.0	5,597.0	5,592.2	5,581.1	5.1	19.8	-64.41	-115.0	261.4	200.6	175.8	24.88	8.064	
5,700.0	5,696.9	5,692.0	5,680.5	5.2	20.1	-64.39	-118.9	269.2	206.4	181.1	25.30	8.158	
5,800.0	5,796.8	5,791.9	5,780.0	5.3	20.5	-64.37	-122.8	277.0	212.2	186.5	25.73	8.248	
5,900.0	5,896.7	5,891.7	5,879.4	5.4	20.8	-64.36	-126.6	284.8	218.0	191.8	26.15	8.336	
6,000.0	5,996.6	5,991.5	5,978.9	5.4	21.2	-64.34	-130.5	292.6	223.8	197.2	26.57	8.420	
6,100.0	6,096.5	6,091.4	6,078.3	5.5	21.6	-64.32	-134.4	300.4	229.5	202.5	27.00	8.502	
6,200.0	6,196.4	6,191.2	6,177.8	5.6	21.9	-64.31	-138.3	308.2	235.3	207.9	27.42	8.580	
6,300.0	6,296.3	6,291.0	6,277.2	5.7	22.3	-64.29	-142.2	316.0	241.1	213.2	27.85	8.657	
6,400.0	6,396.2	6,390.9	6,376.7	5.8	22.6	-64.28	-146.1	323.7	246.9	218.6	28.28	8.730	
6,500.0	6,496.1	6,490.7	6,476.1	5.9	23.0	-64.27	-149.9	331.5	252.7	223.9	28.71	8.801	
6,600.0	6,596.0	6,590.5	6,575.6	5.9	23.3	-64.25	-153.8	339.3	258.4	229.3	29.14	8.870	
6,700.0	6,695.9	6,690.4	6,675.0	6.0	23.7	-64.24	-157.7	347.1	264.2	234.6	29.56	8.937	
6,800.0	6,795.8	6,790.2	6,774.5	6.1	24.1	-64.23	-161.6	354.9	270.0	240.0	29.99	9.001	
6,900.0	6,895.7	6,890.0	6,874.0	6.2	24.4	-64.22	-165.5	362.7	275.8	245.3	30.43	9.064	
7,000.0	6,995.6	6,989.9	6,973.4	6.3	24.8	-64.21	-169.3	370.5	281.6	250.7	30.86	9.125	
7,100.0	7,095.5	7,089.7	7,072.9	6.4	25.1	-64.20	-173.2	378.2	287.3	256.0	31.29	9.183	
7,200.0	7,195.4	7,189.5	7,172.3	6.5	25.5	-64.19	-177.1	386.0	293.1	261.4	31.72	9.240	
7,300.0	7,295.3	7,289.4	7,271.8	6.6	25.8	-64.18	-181.0	393.8	298.9	266.7	32.15	9.296	
7,400.0	7,395.2	7,389.2	7,371.2	6.7	26.2	-64.17	-184.9	401.6	304.7	272.1	32.59	9.350	
7,500.0	7,495.1	7,489.0	7,470.7	6.8	26.6	-64.16	-188.8	409.4	310.5	277.4	33.02	9.402	
7,600.0	7,595.0	7,588.9	7,570.1	6.9	26.9	-64.15	-192.6	417.2	316.2	282.8	33.45	9.453	
7,700.0	7,694.9	7,688.7	7,669.6	7.0	27.3	-64.14	-196.5	425.0	322.0	288.1	33.89	9.502	
7,800.0	7,794.8	7,788.5	7,769.0	7.1	27.6	-64.14	-200.4	432.8	327.8	293.5	34.32	9.550	
7,900.0	7,894.7	7,888.4	7,868.5	7.2	28.0	-64.13	-204.3	440.5	333.6	298.8	34.76	9.596	
8,000.0	7,994.6	7,988.2	7,967.9	7.3	28.4	-64.12	-208.2	448.3	339.4	304.2	35.20	9.642	
8,100.0	8,094.5	8,088.0	8,067.4	7.4	28.7	-64.11	-212.1	456.1	345.1	309.5	35.63	9.686	
8,200.0	8,194.4	8,187.9	8,166.8	7.5	29.1	-64.11	-215.9	463.9	350.9	314.8	36.07	9.729	
8,300.0	8,294.3	8,287.7	8,266.3	7.6	29.4	-64.10	-219.8	471.7	356.7	320.2	36.51	9.771	
8,400.0	8,394.2	8,387.5	8,365.7	7.8	29.8	-64.09	-223.7	479.5	362.5	325.5	36.94	9.812	
8,500.0	8,494.1	8,487.3	8,465.2	7.9	30.1	-64.09	-227.6	487.3	368.3	330.9	37.38	9.851	
8,600.0	8,594.0	8,587.2	8,564.7	8.0	30.5	-64.08	-231.5	495.0	374.0	336.2	37.82	9.890	
8,700.0	8,693.9	8,687.0	8,664.1	8.1	30.9	-64.08	-235.3	502.8	379.8	341.6	38.26	9.928	
8,800.0	8,793.8	8,786.8	8,763.6	8.2	31.2	-64.07	-239.2	510.6	385.6	346.9	38.70	9.965	
8,900.0	8,893.7	8,886.7	8,863.0	8.3	31.6	-64.06	-243.1	518.4	391.4	352.2	39.13	10.001	
9,000.0	8,993.6	8,986.5	8,962.5	8.4	31.9	-64.06	-247.0	526.2	397.1	357.6	39.57	10.036	
9,100.0	9,093.5	9,086.3	9,061.9	8.5	32.3	-64.05	-250.9	534.0	402.9	362.9	40.01	10.070	
9,200.0	9,193.4	9,186.2	9,161.4	8.6	32.7	-64.05	-254.8	541.8	408.7	368.3	40.45	10.103	
9,300.0	9,293.3	9,286.0	9,260.8	8.8	33.0	-64.04	-258.6	549.6	414.5	373.6	40.89	10.136	
9,400.0	9,393.2	9,385.8	9,360.3	8.9	33.4	-64.04	-262.5	557.3	420.3	378.9	41.33	10.168	
9,500.0	9,493.1	9,485.7	9,459.7	9.0	33.8	-64.03	-266.4	565.1	426.0	384.3	41.77	10.199	
9,600.0	9,593.0	9,585.5	9,559.2	9.1	34.1	-64.03	-270.3	572.9	431.8	389.6	42.22	10.229	
9,700.0	9,692.9	9,685.3	9,658.6	9.2	34.5	-64.03	-274.2	580.7	437.6	395.0	42.66	10.259	
9,800.0	9,792.8	9,785.2	9,758.1	9.3	34.8	-64.02	-278.1	588.5	443.4	400.3	43.10	10.288	
9,900.0	9,892.7	9,885.0	9,857.5	9.4	35.2	-64.02	-281.9	596.3	449.2	405.6	43.54	10.316	
10,000.0	9,992.6	9,984.8	9,957.0	9.6	35.6	-64.01	-285.8	604.1	454.9	411.0	43.98	10.344	
10,100.0	10,092.5	10,084.7	10,056.4	9.7	35.9	-64.01	-289.7	611.9	460.7	416.3	44.42	10.371	
10,119.9	10,112.4	10,104.5	10,076.2	9.7	36.0	-64.01	-290.5	613.4	461.9	417.4	44.51	10.377	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 504H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,150.0	10,142.5	10,134.6	10,106.2	9.7	36.1	31.88	-291.6	615.7	463.6	419.0	44.63	10.388	
10,200.0	10,192.4	10,184.2	10,155.6	9.7	36.3	78.44	-293.6	619.6	466.5	421.6	44.83	10.405	
10,250.0	10,241.9	10,233.3	10,204.5	9.7	36.5	84.42	-295.5	623.4	469.4	424.4	45.05	10.419	
10,300.0	10,290.5	10,281.4	10,252.4	9.7	36.6	87.55	-297.4	627.2	472.7	427.4	45.29	10.436	
10,350.0	10,338.0	10,328.1	10,299.0	9.7	36.8	90.10	-299.2	630.8	476.6	431.1	45.55	10.464	
10,400.0	10,383.9	10,373.2	10,343.9	9.8	37.0	92.49	-300.9	634.4	481.6	435.7	45.82	10.510	
10,450.0	10,427.9	10,414.1	10,384.6	9.8	37.1	94.65	-302.4	637.6	488.0	441.9	46.10	10.586	
10,500.0	10,469.7	10,450.0	10,420.3	9.9	37.2	96.27	-302.0	641.1	496.7	450.3	46.38	10.709	
10,550.0	10,509.0	10,488.4	10,458.4	9.9	37.4	97.77	-299.2	645.7	507.7	461.0	46.65	10.882	
10,600.0	10,545.4	10,526.7	10,495.9	10.0	37.5	98.98	-294.1	651.1	520.9	474.0	46.92	11.104	
10,650.0	10,578.7	10,565.9	10,533.8	10.0	37.6	99.98	-286.4	657.5	536.4	489.3	47.17	11.373	
10,700.0	10,608.6	10,606.2	10,572.0	10.1	37.8	100.77	-275.9	665.0	554.0	506.6	47.40	11.686	
10,750.0	10,634.9	10,647.8	10,610.4	10.1	37.9	101.37	-262.5	673.7	573.4	525.8	47.63	12.040	
10,800.0	10,657.4	10,690.9	10,648.9	10.2	38.0	101.78	-245.8	683.6	594.6	546.8	47.83	12.431	
10,850.0	10,676.0	10,735.9	10,687.4	10.3	38.2	102.03	-225.5	694.9	617.3	569.3	48.03	12.852	
10,900.0	10,690.4	10,783.4	10,726.0	10.4	38.3	102.15	-201.1	707.7	641.4	593.1	48.22	13.299	
10,950.0	10,700.6	10,833.8	10,764.3	10.5	38.4	102.16	-171.8	722.4	666.5	618.0	48.41	13.766	
11,000.0	10,706.5	10,888.0	10,802.2	10.5	38.5	102.10	-136.9	739.1	692.4	643.8	48.60	14.247	
11,053.2	10,708.0	10,951.1	10,841.4	10.6	38.6	102.01	-92.0	759.7	720.5	671.7	48.80	14.765	
11,100.0	10,707.1	11,014.3	10,875.1	10.7	38.8	104.63	-43.1	781.4	745.0	696.0	48.98	15.212	
11,200.0	10,705.3	11,183.2	10,934.6	11.0	39.0	108.18	102.2	841.9	792.5	743.1	49.41	16.040	
11,300.0	10,703.5	11,358.9	10,946.8	11.4	39.2	107.78	265.4	904.5	829.7	779.7	49.93	16.618	
11,400.0	10,701.7	11,490.7	10,944.4	11.9	39.3	106.85	390.4	946.2	860.9	810.4	50.50	17.049	
11,500.0	10,699.8	11,626.5	10,941.9	12.4	39.5	106.11	521.0	983.2	888.0	836.9	51.16	17.357	
11,600.0	10,698.0	11,765.9	10,939.3	12.9	39.7	105.51	656.7	1,014.7	910.7	858.8	51.91	17.544	
11,700.0	10,696.2	11,908.2	10,936.7	13.5	40.0	105.06	796.7	1,040.0	928.8	876.1	52.73	17.615	
11,800.0	10,694.4	12,052.9	10,934.0	14.2	40.3	104.74	940.2	1,058.5	942.1	888.5	53.61	17.575	
11,900.0	10,692.5	12,199.3	10,931.4	14.9	40.6	104.54	1,086.1	1,069.9	950.6	896.1	54.52	17.435	
12,000.0	10,690.7	12,346.6	10,928.7	15.5	41.0	104.46	1,233.3	1,073.7	954.1	898.6	55.47	17.200	
12,100.0	10,688.9	12,456.4	10,926.7	16.3	41.3	104.46	1,343.1	1,072.8	954.2	897.8	56.40	16.918	
12,200.0	10,687.1	12,556.4	10,924.8	17.0	41.6	104.46	1,443.1	1,071.8	954.2	896.9	57.35	16.638	
12,300.0	10,685.2	12,656.4	10,923.0	17.7	41.8	104.46	1,543.1	1,070.8	954.2	895.9	58.33	16.358	
12,400.0	10,683.4	12,756.4	10,921.2	18.5	42.1	104.46	1,643.0	1,069.8	954.2	894.9	59.34	16.080	
12,500.0	10,681.6	12,856.4	10,919.4	19.2	42.5	104.46	1,743.0	1,068.9	954.2	893.8	60.38	15.804	
12,600.0	10,679.8	12,956.4	10,917.6	20.0	42.8	104.46	1,843.0	1,067.9	954.2	892.8	61.44	15.530	
12,700.0	10,677.9	13,056.4	10,915.8	20.8	43.2	104.47	1,943.0	1,066.9	954.2	891.7	62.53	15.260	
12,800.0	10,676.1	13,156.4	10,914.0	21.6	43.5	104.47	2,043.0	1,065.9	954.2	890.6	63.64	14.994	
12,900.0	10,674.3	13,256.4	10,912.1	22.4	43.9	104.47	2,142.9	1,064.9	954.2	889.5	64.78	14.731	
13,000.0	10,672.5	13,356.4	10,910.3	23.2	44.3	104.47	2,242.9	1,063.9	954.2	888.3	65.93	14.474	
13,100.0	10,670.6	13,456.4	10,908.5	24.0	44.7	104.47	2,342.9	1,062.9	954.2	887.1	67.10	14.220	
13,200.0	10,668.8	13,556.4	10,906.7	24.8	45.1	104.47	2,442.9	1,061.9	954.2	885.9	68.30	13.972	
13,300.0	10,667.0	13,656.4	10,904.9	25.6	45.5	104.47	2,542.9	1,060.9	954.2	884.7	69.51	13.729	
13,400.0	10,665.2	13,756.4	10,903.1	26.4	46.0	104.47	2,642.8	1,059.9	954.2	883.5	70.73	13.490	
13,500.0	10,663.3	13,856.4	10,901.2	27.2	46.4	104.47	2,742.8	1,058.9	954.2	882.2	71.98	13.257	
13,600.0	10,661.5	13,956.4	10,899.4	28.0	46.9	104.47	2,842.8	1,057.9	954.2	881.0	73.24	13.029	
13,700.0	10,659.7	14,056.4	10,897.6	28.9	47.4	104.47	2,942.8	1,056.9	954.2	879.7	74.51	12.806	
13,800.0	10,657.9	14,156.4	10,895.8	29.7	47.9	104.47	3,042.7	1,055.9	954.2	878.4	75.80	12.588	
13,900.0	10,656.0	14,256.4	10,894.0	30.5	48.4	104.47	3,142.7	1,055.0	954.2	877.1	77.11	12.375	
14,000.0	10,654.2	14,356.4	10,892.2	31.3	48.9	104.47	3,242.7	1,054.0	954.2	875.8	78.43	12.167	
14,100.0	10,652.4	14,456.4	10,890.3	32.2	49.4	104.47	3,342.7	1,053.0	954.2	874.5	79.76	11.964	
14,200.0	10,650.6	14,556.4	10,888.5	33.0	49.9	104.47	3,442.7	1,052.0	954.2	873.1	81.10	11.766	
14,300.0	10,648.7	14,656.4	10,886.7	33.8	50.5	104.47	3,542.6	1,051.0	954.2	871.8	82.45	11.573	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 504H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,400.0	10,646.9	14,756.4	10,884.9	34.7	51.0	104.48	3,642.6	1,050.0	954.2	870.4	83.82	11.385	
14,500.0	10,645.1	14,856.4	10,883.1	35.5	51.6	104.48	3,742.6	1,049.0	954.2	869.0	85.19	11.201	
14,600.0	10,643.3	14,956.4	10,881.3	36.4	52.1	104.48	3,842.6	1,048.0	954.2	867.6	86.58	11.021	
14,700.0	10,641.4	15,056.4	10,879.4	37.2	52.7	104.48	3,942.6	1,047.0	954.2	866.3	87.98	10.846	
14,800.0	10,639.6	15,156.4	10,877.6	38.0	53.3	104.48	4,042.5	1,046.0	954.2	864.8	89.38	10.676	
14,900.0	10,637.8	15,256.4	10,875.8	38.9	53.9	104.48	4,142.5	1,045.0	954.2	863.4	90.80	10.509	
15,000.0	10,636.0	15,356.4	10,874.0	39.7	54.5	104.48	4,242.5	1,044.0	954.2	862.0	92.22	10.347	
15,100.0	10,634.1	15,456.4	10,872.2	40.6	55.1	104.48	4,342.5	1,043.0	954.2	860.6	93.66	10.189	
15,200.0	10,632.3	15,556.4	10,870.4	41.4	55.7	104.48	4,442.4	1,042.1	954.2	859.1	95.10	10.034	
15,300.0	10,630.5	15,656.4	10,868.5	42.3	56.3	104.48	4,542.4	1,041.1	954.2	857.7	96.55	9.884	
15,400.0	10,628.7	15,756.4	10,866.7	43.1	56.9	104.48	4,642.4	1,040.1	954.2	856.2	98.00	9.737	
15,500.0	10,626.8	15,856.4	10,864.9	44.0	57.6	104.48	4,742.4	1,039.1	954.2	854.8	99.47	9.593	
15,600.0	10,625.0	15,956.4	10,863.1	44.8	58.2	104.48	4,842.4	1,038.1	954.2	853.3	100.94	9.453	
15,677.2	10,623.6	16,033.6	10,861.7	45.5	58.7	104.48	4,919.5	1,037.3	954.2	852.2	102.08	9.348	
15,688.1	10,623.4	16,041.8	10,861.6	45.6	58.7	104.49	4,927.7	1,037.3	954.2	852.0	102.23	9.334	
15,690.6	10,623.4	16,043.7	10,861.5	45.6	58.8	104.49	4,929.7	1,037.2	954.2	852.0	102.26	9.331	
15,695.0	10,623.3	16,047.1	10,861.5	45.6	58.8	104.49	4,933.0	1,037.2	954.2	851.9	102.32	9.326	
15,700.0	10,623.2	16,052.0	10,861.4	45.7	58.8	104.49	4,938.0	1,037.2	954.2	851.8	102.39	9.319	
15,800.0	10,621.4	16,152.0	10,859.6	46.5	59.5	104.49	5,037.9	1,036.7	954.2	850.3	103.88	9.186	
15,900.0	10,619.5	16,252.0	10,857.7	47.4	60.1	104.49	5,137.9	1,036.2	954.2	848.9	105.37	9.056	
16,000.0	10,617.7	16,352.0	10,855.9	48.2	60.8	104.49	5,237.9	1,035.6	954.2	847.4	106.87	8.929	
16,100.0	10,615.9	16,452.0	10,854.1	49.1	61.4	104.49	5,337.9	1,035.1	954.2	845.9	108.37	8.805	
16,200.0	10,614.1	16,552.0	10,852.3	49.9	62.1	104.49	5,437.9	1,034.6	954.2	844.4	109.88	8.684	
16,300.0	10,612.2	16,652.0	10,850.5	50.8	62.8	104.49	5,537.9	1,034.1	954.3	842.9	111.39	8.566	
16,400.0	10,610.4	16,752.0	10,848.7	51.6	63.5	104.49	5,637.8	1,033.6	954.3	841.3	112.91	8.451	
16,500.0	10,608.6	16,852.0	10,846.9	52.5	64.1	104.49	5,737.8	1,033.0	954.3	839.8	114.44	8.339	
16,600.0	10,606.8	16,952.0	10,845.1	53.3	64.8	104.50	5,837.8	1,032.5	954.3	838.3	115.97	8.229	
16,700.0	10,604.9	17,052.0	10,843.3	54.2	65.5	104.50	5,937.8	1,032.0	954.3	836.8	117.50	8.121	
16,800.0	10,603.1	17,152.0	10,841.5	55.1	66.2	104.50	6,037.8	1,031.5	954.3	835.2	119.04	8.016	
16,900.0	10,601.3	17,252.0	10,839.6	55.9	66.9	104.50	6,137.7	1,031.0	954.3	833.7	120.59	7.914	
17,000.0	10,599.4	17,352.0	10,837.8	56.8	67.6	104.50	6,237.7	1,030.4	954.3	832.2	122.13	7.813	
17,100.0	10,597.6	17,452.0	10,836.0	57.6	68.3	104.50	6,337.7	1,029.9	954.3	830.6	123.69	7.715	
17,200.0	10,595.8	17,552.0	10,834.2	58.5	69.0	104.50	6,437.7	1,029.4	954.3	829.1	125.24	7.620	
17,300.0	10,594.0	17,652.0	10,832.4	59.3	69.7	104.50	6,537.7	1,028.9	954.3	827.5	126.80	7.526	
17,400.0	10,592.1	17,752.0	10,830.6	60.2	70.5	104.50	6,637.7	1,028.4	954.3	825.9	128.37	7.434	
17,500.0	10,590.3	17,852.0	10,828.8	61.1	71.2	104.50	6,737.6	1,027.8	954.3	824.4	129.94	7.344	
17,600.0	10,588.5	17,952.0	10,827.0	61.9	71.9	104.50	6,837.6	1,027.3	954.3	822.8	131.51	7.257	
17,700.0	10,586.7	18,052.0	10,825.2	62.8	72.6	104.51	6,937.6	1,026.8	954.3	821.2	133.08	7.171	
17,800.0	10,584.8	18,152.0	10,823.4	63.6	73.4	104.51	7,037.6	1,026.3	954.3	819.7	134.66	7.087	
17,900.0	10,583.0	18,252.0	10,821.5	64.5	74.1	104.51	7,137.6	1,025.8	954.3	818.1	136.24	7.005	
18,000.0	10,581.2	18,352.0	10,819.7	65.3	74.8	104.51	7,237.5	1,025.2	954.3	816.5	137.83	6.924	
18,100.0	10,579.4	18,452.0	10,817.9	66.2	75.6	104.51	7,337.5	1,024.7	954.3	814.9	139.41	6.845	
18,200.0	10,577.5	18,552.0	10,816.1	67.1	76.3	104.51	7,437.5	1,024.2	954.3	813.3	141.00	6.768	
18,300.0	10,575.7	18,652.0	10,814.3	67.9	77.1	104.51	7,537.5	1,023.7	954.4	811.8	142.60	6.693	
18,400.0	10,573.9	18,752.0	10,812.5	68.8	77.8	104.51	7,637.5	1,023.2	954.4	810.2	144.19	6.619	
18,500.0	10,572.1	18,852.0	10,810.7	69.6	78.6	104.51	7,737.5	1,022.6	954.4	808.6	145.79	6.546	
18,600.0	10,570.2	18,952.0	10,808.9	70.5	79.3	104.51	7,837.4	1,022.1	954.4	807.0	147.39	6.475	
18,700.0	10,568.4	19,052.0	10,807.1	71.4	80.1	104.51	7,937.4	1,021.6	954.4	805.4	149.00	6.405	
18,800.0	10,566.6	19,152.0	10,805.3	72.2	80.8	104.52	8,037.4	1,021.1	954.4	803.8	150.60	6.337	
18,900.0	10,564.8	19,252.0	10,803.4	73.1	81.6	104.52	8,137.4	1,020.6	954.4	802.2	152.21	6.270	
19,000.0	10,562.9	19,352.0	10,801.6	73.9	82.3	104.52	8,237.4	1,020.0	954.4	800.6	153.82	6.204	
19,100.0	10,561.1	19,452.0	10,799.8	74.8	83.1	104.52	8,337.4	1,019.5	954.4	799.0	155.44	6.140	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 504H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,200.0	10,559.3	19,552.0	10,798.0	75.7	83.9	104.52	8,437.3	1,019.0	954.4	797.3	157.05	6.077	
19,300.0	10,557.5	19,652.0	10,796.2	76.5	84.6	104.52	8,537.3	1,018.5	954.4	795.7	158.67	6.015	
19,400.0	10,555.6	19,752.0	10,794.4	77.4	85.4	104.52	8,637.3	1,018.0	954.4	794.1	160.29	5.954	
19,500.0	10,553.8	19,852.0	10,792.6	78.2	86.2	104.52	8,737.3	1,017.4	954.4	792.5	161.91	5.895	
19,600.0	10,552.0	19,952.0	10,790.8	79.1	86.9	104.52	8,837.3	1,016.9	954.4	790.9	163.54	5.836	
19,700.0	10,550.2	20,052.0	10,789.0	80.0	87.7	104.52	8,937.2	1,016.4	954.4	789.3	165.16	5.779	
19,800.0	10,548.3	20,152.0	10,787.2	80.8	88.5	104.52	9,037.2	1,015.9	954.4	787.6	166.79	5.722	
19,900.0	10,546.5	20,252.0	10,785.3	81.7	89.3	104.53	9,137.2	1,015.4	954.4	786.0	168.42	5.667	
20,000.0	10,544.7	20,352.0	10,783.5	82.5	90.0	104.53	9,237.2	1,014.8	954.4	784.4	170.05	5.613	
20,100.0	10,542.9	20,452.0	10,781.7	83.4	90.8	104.53	9,337.2	1,014.3	954.4	782.8	171.68	5.559	
20,200.0	10,541.0	20,552.0	10,779.9	84.3	91.6	104.53	9,437.2	1,013.8	954.4	781.1	173.32	5.507	
20,300.0	10,539.2	20,652.0	10,778.1	85.1	92.4	104.53	9,537.1	1,013.3	954.5	779.5	174.95	5.456	
20,400.0	10,537.4	20,752.0	10,776.3	86.0	93.2	104.53	9,637.1	1,012.8	954.5	777.9	176.59	5.405	
20,500.0	10,535.5	20,852.0	10,774.5	86.9	94.0	104.53	9,737.1	1,012.3	954.5	776.2	178.23	5.355	
20,600.0	10,533.7	20,952.0	10,772.7	87.7	94.8	104.53	9,837.1	1,011.7	954.5	774.6	179.87	5.306	
20,700.0	10,531.9	21,052.0	10,770.9	88.6	95.5	104.53	9,937.1	1,011.2	954.5	773.0	181.51	5.258	
20,800.0	10,530.1	21,152.0	10,769.1	89.4	96.3	104.53	10,037.1	1,010.7	954.5	771.3	183.15	5.211	
20,900.0	10,528.2	21,252.0	10,767.2	90.3	97.2	104.53	10,137.0	1,010.2	954.5	769.7	184.81	5.165	
20,913.5	10,528.0	21,265.5	10,767.0	90.4	97.3	104.53	10,150.5	1,010.1	954.5	769.5	185.03	5.159	

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 506H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.7	0.7	3.0	3.0	-90.76	-0.4	-30.0	30.0				
100.0	100.0	100.7	100.7	3.0	3.0	-90.76	-0.4	-30.0	30.0	24.0	6.00	4.998	
200.0	200.0	200.7	200.7	3.0	3.0	-90.76	-0.4	-30.0	30.0	24.0	6.04	4.967	
300.0	300.0	300.7	300.7	3.0	3.1	-90.76	-0.4	-30.0	30.0	23.9	6.12	4.901	
400.0	400.0	400.7	400.7	3.0	3.2	-90.76	-0.4	-30.0	30.0	23.8	6.24	4.807	
500.0	500.0	500.7	500.7	3.1	3.4	-90.76	-0.4	-30.0	30.0	23.6	6.40	4.690	
600.0	600.0	600.7	600.7	3.1	3.6	-90.76	-0.4	-30.0	30.0	23.4	6.59	4.556	
700.0	700.0	700.7	700.7	3.1	3.8	-90.76	-0.4	-30.0	30.0	23.2	6.80	4.412	
800.0	800.0	800.7	800.7	3.2	4.0	-90.76	-0.4	-30.0	30.0	23.0	7.04	4.263	
900.0	900.0	900.7	900.7	3.2	4.2	-90.76	-0.4	-30.0	30.0	22.7	7.30	4.112	
1,000.0	1,000.0	1,000.7	1,000.7	3.2	4.5	-90.76	-0.4	-30.0	30.0	22.4	7.57	3.963	
1,100.0	1,100.0	1,100.7	1,100.7	3.3	4.8	-90.76	-0.4	-30.0	30.0	22.1	7.86	3.818	
1,200.0	1,200.0	1,200.7	1,200.7	3.4	5.1	-90.76	-0.4	-30.0	30.0	21.8	8.16	3.677	
1,300.0	1,300.0	1,300.7	1,300.7	3.4	5.3	-90.76	-0.4	-30.0	30.0	21.5	8.47	3.542	
1,400.0	1,400.0	1,400.7	1,400.7	3.5	5.7	-90.76	-0.4	-30.0	30.0	21.2	8.79	3.413	
1,500.0	1,500.0	1,500.7	1,500.7	3.5	6.0	-90.76	-0.4	-30.0	30.0	20.9	9.12	3.290	
1,600.0	1,600.0	1,600.7	1,600.7	3.6	6.3	-90.76	-0.4	-30.0	30.0	20.5	9.46	3.173	
1,700.0	1,700.0	1,700.7	1,700.7	3.7	6.6	-90.76	-0.4	-30.0	30.0	20.2	9.80	3.063	
1,800.0	1,800.0	1,800.7	1,800.7	3.8	6.9	-90.76	-0.4	-30.0	30.0	19.9	10.14	2.958	
1,900.0	1,900.0	1,900.7	1,900.7	3.9	7.2	-90.76	-0.4	-30.0	30.0	19.5	10.49	2.859	
2,000.0	2,000.0	2,000.7	2,000.7	3.9	7.6	-90.76	-0.4	-30.0	30.0	19.2	10.85	2.765	
2,100.0	2,100.0	2,100.7	2,100.7	4.0	7.9	-90.76	-0.4	-30.0	30.0	18.8	11.21	2.677	
2,200.0	2,200.0	2,200.7	2,200.7	4.1	8.2	-90.76	-0.4	-30.0	30.0	18.4	11.57	2.593	
2,300.0	2,300.0	2,300.7	2,300.7	4.2	8.6	-90.76	-0.4	-30.0	30.0	18.1	11.94	2.513	
2,400.0	2,400.0	2,400.7	2,400.7	4.3	8.9	-90.76	-0.4	-30.0	30.0	17.7	12.31	2.438	
2,416.4	2,416.4	2,417.1	2,417.1	4.3	8.9	-90.76	-0.4	-30.0	30.0	17.6	12.37	2.426	CC
2,500.0	2,500.0	2,500.7	2,500.7	4.4	9.2	-90.76	-0.4	-30.0	30.0	17.3	12.68	2.366	ES, SF
2,600.0	2,600.0	2,600.0	2,600.0	4.4	9.6	117.63	-1.2	-31.6	32.4	19.3	13.04	2.482	
2,627.7	2,627.7	2,627.1	2,627.1	4.4	9.6	118.38	-1.7	-32.5	33.8	20.7	13.13	2.578	
2,700.0	2,699.9	2,698.4	2,698.2	4.4	9.9	119.69	-3.5	-36.1	39.0	25.6	13.37	2.917	
2,800.0	2,799.8	2,797.3	2,796.8	4.4	10.2	119.47	-7.2	-43.4	48.4	34.7	13.72	3.529	
2,900.0	2,899.7	2,896.8	2,895.9	4.3	10.5	119.10	-11.0	-51.2	58.2	44.1	14.07	4.135	
3,000.0	2,999.6	2,996.3	2,995.1	4.3	10.8	118.83	-14.9	-58.9	68.0	53.6	14.44	4.709	
3,100.0	3,099.5	3,095.9	3,094.2	4.3	11.2	118.63	-18.8	-66.7	77.8	63.0	14.81	5.253	
3,200.0	3,199.4	3,195.4	3,193.4	4.3	11.5	118.48	-22.7	-74.4	87.6	72.4	15.18	5.770	
3,300.0	3,299.3	3,294.9	3,292.5	4.3	11.8	118.35	-26.6	-82.2	97.4	81.8	15.56	6.260	
3,400.0	3,399.2	3,394.4	3,391.6	4.3	12.2	118.25	-30.5	-89.9	107.2	91.3	15.94	6.726	
3,500.0	3,499.1	3,493.9	3,490.8	4.3	12.5	118.17	-34.4	-97.7	117.0	100.7	16.32	7.168	
3,600.0	3,599.0	3,593.4	3,589.9	4.3	12.8	118.10	-38.3	-105.4	126.8	110.1	16.71	7.589	
3,700.0	3,698.9	3,693.0	3,689.1	4.3	13.2	118.04	-42.2	-113.2	136.6	119.5	17.10	7.990	
3,800.0	3,798.8	3,792.5	3,788.2	4.3	13.5	117.98	-46.1	-120.9	146.4	128.9	17.49	8.372	
3,900.0	3,898.7	3,892.0	3,887.3	4.3	13.8	117.94	-50.0	-128.7	156.2	138.3	17.88	8.735	
4,000.0	3,998.6	3,991.5	3,986.5	4.4	14.2	117.90	-53.9	-136.4	166.0	147.7	18.28	9.082	
4,100.0	4,098.5	4,091.0	4,085.6	4.4	14.5	117.86	-57.8	-144.2	175.8	157.1	18.68	9.413	
4,200.0	4,198.4	4,190.6	4,184.8	4.4	14.9	117.83	-61.7	-151.9	185.6	166.5	19.08	9.729	
4,300.0	4,298.3	4,290.1	4,283.9	4.4	15.2	117.80	-65.6	-159.7	195.4	175.9	19.48	10.031	
4,400.0	4,398.2	4,389.6	4,383.0	4.5	15.6	117.77	-69.5	-167.4	205.2	185.3	19.89	10.320	
4,500.0	4,498.1	4,489.1	4,482.2	4.5	15.9	117.75	-73.4	-175.2	215.0	194.7	20.29	10.596	
4,600.0	4,598.0	4,588.6	4,581.3	4.6	16.3	117.73	-77.3	-182.9	224.8	204.1	20.70	10.861	
4,700.0	4,697.9	4,688.2	4,680.5	4.6	16.6	117.71	-81.2	-190.6	234.6	213.5	21.11	11.114	
4,800.0	4,797.8	4,787.7	4,779.6	4.7	16.9	117.69	-85.1	-198.4	244.4	222.9	21.52	11.357	
4,900.0	4,897.7	4,887.2	4,878.7	4.7	17.3	117.67	-89.0	-206.1	254.2	232.3	21.94	11.590	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 506H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,997.6	4,986.7	4,977.9	4.8	17.6	117.66	-92.9	-213.9	264.0	241.7	22.35	11.814	
5,100.0	5,097.5	5,086.2	5,077.0	4.8	18.0	117.64	-96.8	-221.6	273.8	251.1	22.76	12.029	
5,200.0	5,197.4	5,185.7	5,176.2	4.9	18.3	117.63	-100.7	-229.4	283.6	260.5	23.18	12.236	
5,300.0	5,297.3	5,285.3	5,275.3	4.9	18.7	117.62	-104.6	-237.1	293.5	269.9	23.60	12.435	
5,400.0	5,397.2	5,384.8	5,374.4	5.0	19.1	117.60	-108.5	-244.9	303.3	279.2	24.02	12.626	
5,500.0	5,497.1	5,484.3	5,473.6	5.1	19.4	117.59	-112.4	-252.6	313.1	288.6	24.44	12.810	
5,600.0	5,597.0	5,583.8	5,572.7	5.1	19.8	117.58	-116.3	-260.4	322.9	298.0	24.86	12.987	
5,700.0	5,696.9	5,683.3	5,671.9	5.2	20.1	117.57	-120.2	-268.1	332.7	307.4	25.28	13.158	
5,800.0	5,796.8	5,782.9	5,771.0	5.3	20.5	117.56	-124.1	-275.9	342.5	316.8	25.71	13.322	
5,900.0	5,896.7	5,882.4	5,870.1	5.4	20.8	117.56	-128.0	-283.6	352.3	326.1	26.13	13.481	
6,000.0	5,996.6	5,981.9	5,969.3	5.4	21.2	117.55	-131.9	-291.4	362.1	335.5	26.56	13.635	
6,100.0	6,096.5	6,081.4	6,068.4	5.5	21.5	117.54	-135.8	-299.1	371.9	344.9	26.98	13.783	
6,200.0	6,196.4	6,180.9	6,167.6	5.6	21.9	117.53	-139.7	-306.9	381.7	354.3	27.41	13.926	
6,300.0	6,296.3	6,280.4	6,266.7	5.7	22.2	117.52	-143.6	-314.6	391.5	363.6	27.84	14.064	
6,400.0	6,396.2	6,380.0	6,365.8	5.8	22.6	117.52	-147.5	-322.4	401.3	373.0	28.26	14.198	
6,500.0	6,496.1	6,479.5	6,465.0	5.9	22.9	117.51	-151.3	-330.1	411.1	382.4	28.69	14.327	
6,600.0	6,596.0	6,579.0	6,564.1	5.9	23.3	117.51	-155.2	-337.9	420.9	391.8	29.12	14.452	
6,700.0	6,695.9	6,678.5	6,663.3	6.0	23.7	117.50	-159.1	-345.6	430.7	401.1	29.55	14.574	
6,800.0	6,795.8	6,778.0	6,762.4	6.1	24.0	117.49	-163.0	-353.4	440.5	410.5	29.98	14.691	
6,900.0	6,895.7	6,877.6	6,861.5	6.2	24.4	117.49	-166.9	-361.1	450.3	419.9	30.42	14.805	
7,000.0	6,995.6	6,977.1	6,960.7	6.3	24.7	117.48	-170.8	-368.9	460.1	429.3	30.85	14.915	
7,100.0	7,095.5	7,076.6	7,059.8	6.4	25.1	117.48	-174.7	-376.6	469.9	438.6	31.28	15.022	
7,200.0	7,195.4	7,176.1	7,158.9	6.5	25.4	117.47	-178.6	-384.4	479.7	448.0	31.72	15.126	
7,300.0	7,295.3	7,275.6	7,258.1	6.6	25.8	117.47	-182.5	-392.1	489.5	457.4	32.15	15.226	
7,400.0	7,395.2	7,375.1	7,357.2	6.7	26.2	117.47	-186.4	-399.9	499.3	466.7	32.58	15.324	
7,500.0	7,495.1	7,474.7	7,456.4	6.8	26.5	117.46	-190.3	-407.6	509.1	476.1	33.02	15.419	
7,600.0	7,595.0	7,574.2	7,555.5	6.9	26.9	117.46	-194.2	-415.4	518.9	485.5	33.45	15.512	
7,700.0	7,694.9	7,673.7	7,654.6	7.0	27.2	117.45	-198.1	-423.1	528.7	494.8	33.89	15.601	
7,800.0	7,794.8	7,773.2	7,753.8	7.1	27.6	117.45	-202.0	-430.9	538.5	504.2	34.33	15.688	
7,900.0	7,894.7	7,872.7	7,852.9	7.2	27.9	117.45	-205.9	-438.6	548.3	513.6	34.76	15.773	
8,000.0	7,994.6	7,972.3	7,952.1	7.3	28.3	117.44	-209.8	-446.4	558.1	522.9	35.20	15.856	
8,100.0	8,094.5	8,071.8	8,051.2	7.4	28.7	117.44	-213.7	-454.1	567.9	532.3	35.64	15.936	
8,200.0	8,194.4	8,171.3	8,150.3	7.5	29.0	117.44	-217.6	-461.9	577.7	541.7	36.08	16.014	
8,300.0	8,294.3	8,270.8	8,249.5	7.6	29.4	117.43	-221.5	-469.6	587.6	551.0	36.52	16.090	
8,400.0	8,394.2	8,370.3	8,348.6	7.8	29.7	117.43	-225.4	-477.4	597.4	560.4	36.96	16.164	
8,500.0	8,494.1	8,469.8	8,447.8	7.9	30.1	117.43	-229.3	-485.1	607.2	569.8	37.40	16.236	
8,600.0	8,594.0	8,569.4	8,546.9	8.0	30.5	117.42	-233.2	-492.8	617.0	579.1	37.83	16.307	
8,700.0	8,693.9	8,668.9	8,646.0	8.1	30.8	117.42	-237.1	-500.6	626.8	588.5	38.28	16.375	
8,800.0	8,793.8	8,768.4	8,745.2	8.2	31.2	117.42	-241.0	-508.3	636.6	597.9	38.72	16.442	
8,900.0	8,893.7	8,867.9	8,844.3	8.3	31.5	117.42	-244.9	-516.1	646.4	607.2	39.16	16.507	
9,000.0	8,993.6	8,967.4	8,943.5	8.4	31.9	117.41	-248.8	-523.8	656.2	616.6	39.60	16.571	
9,100.0	9,093.5	9,067.0	9,042.6	8.5	32.3	117.41	-252.7	-531.6	666.0	625.9	40.04	16.633	
9,200.0	9,193.4	9,166.5	9,141.7	8.6	32.6	117.41	-256.6	-539.3	675.8	635.3	40.48	16.694	
9,300.0	9,293.3	9,266.0	9,240.9	8.8	33.0	117.41	-260.5	-547.1	685.6	644.7	40.92	16.753	
9,400.0	9,393.2	9,365.5	9,340.0	8.9	33.3	117.40	-264.4	-554.8	695.4	654.0	41.37	16.811	
9,500.0	9,493.1	9,465.0	9,439.2	9.0	33.7	117.40	-268.3	-562.6	705.2	663.4	41.81	16.867	
9,600.0	9,593.0	9,564.5	9,538.3	9.1	34.1	117.40	-272.2	-570.3	715.0	672.7	42.25	16.922	
9,700.0	9,692.9	9,664.1	9,637.4	9.2	34.4	117.40	-276.1	-578.1	724.8	682.1	42.70	16.976	
9,800.0	9,792.8	9,763.6	9,736.6	9.3	34.8	117.40	-280.0	-585.8	734.6	691.5	43.14	17.029	
9,900.0	9,892.7	9,863.1	9,835.7	9.4	35.1	117.39	-283.9	-593.6	744.4	700.8	43.58	17.080	
10,000.0	9,992.6	9,962.6	9,934.9	9.6	35.5	117.39	-287.7	-601.3	754.2	710.2	44.03	17.130	
10,100.0	10,092.5	10,062.1	10,034.0	9.7	35.9	117.39	-291.6	-609.1	764.0	719.5	44.47	17.180	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 506H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,119.9	10,112.4	10,081.9	10,053.7	9.7	35.9	117.39	-292.4	-610.6	766.0	721.4	44.56	17.189	
10,150.0	10,142.5	10,111.9	10,083.6	9.7	36.0	-146.41	-293.6	-613.0	768.9	724.2	44.69	17.204	
10,200.0	10,192.4	10,161.4	10,132.9	9.7	36.2	-100.02	-295.5	-616.8	773.7	728.9	44.87	17.245	
10,250.0	10,241.9	10,210.3	10,181.6	9.7	36.4	-95.02	-297.5	-620.6	778.5	733.5	45.03	17.289	
10,300.0	10,290.5	10,258.3	10,229.4	9.7	36.6	-93.57	-299.3	-624.4	783.4	738.2	45.18	17.338	
10,350.0	10,338.0	10,304.9	10,275.8	9.7	36.7	-93.26	-301.2	-628.0	788.5	743.2	45.33	17.396	
10,400.0	10,383.9	10,349.8	10,320.6	9.8	36.9	-93.50	-302.9	-631.5	794.1	748.7	45.47	17.467	
10,450.0	10,427.9	10,392.7	10,363.3	9.8	37.1	-94.02	-304.6	-634.8	800.5	754.9	45.60	17.556	
10,500.0	10,469.7	10,434.9	10,405.3	9.9	37.2	-94.63	-304.4	-638.3	807.8	762.1	45.72	17.668	
10,550.0	10,509.0	10,478.9	10,449.0	9.9	37.4	-95.30	-301.0	-642.3	816.2	770.3	45.85	17.802	
10,600.0	10,545.4	10,524.9	10,494.2	10.0	37.5	-95.99	-293.9	-646.9	825.5	779.5	45.97	17.957	
10,650.0	10,578.7	10,573.3	10,541.0	10.0	37.7	-96.71	-282.5	-652.0	835.7	789.6	46.10	18.129	
10,700.0	10,608.6	10,624.7	10,589.3	10.1	37.8	-97.45	-266.1	-657.9	846.7	800.4	46.23	18.314	
10,750.0	10,634.9	10,679.6	10,639.1	10.1	38.0	-98.22	-243.9	-664.6	858.3	812.0	46.38	18.507	
10,800.0	10,657.4	10,738.8	10,689.9	10.2	38.2	-99.02	-214.7	-672.1	870.6	824.0	46.55	18.700	
10,850.0	10,676.0	10,803.0	10,741.4	10.3	38.3	-99.87	-177.3	-680.7	883.1	836.3	46.76	18.884	
10,900.0	10,690.4	10,873.3	10,792.5	10.4	38.5	-100.75	-130.0	-690.3	895.7	848.7	47.01	19.053	
10,950.0	10,700.6	10,950.8	10,841.5	10.5	38.6	-101.66	-71.1	-701.1	908.0	860.7	47.30	19.196	
11,000.0	10,706.5	11,036.3	10,885.8	10.5	38.8	-102.54	1.0	-713.0	919.8	872.2	47.64	19.309	
11,053.2	10,708.0	11,137.0	10,923.3	10.6	38.9	-103.38	93.3	-726.7	931.1	883.1	48.02	19.389	
11,100.0	10,707.1	11,234.3	10,943.6	10.7	39.0	-104.54	187.5	-739.2	939.3	890.9	48.39	19.410	
11,200.0	10,705.3	11,408.1	10,946.3	11.0	39.2	-104.63	360.1	-757.7	949.1	900.0	49.10	19.330	
11,300.0	10,703.5	11,555.3	10,943.6	11.4	39.4	-104.53	507.0	-765.8	953.5	903.7	49.82	19.139	
11,400.0	10,701.7	11,673.2	10,941.5	11.9	39.5	-104.52	624.9	-767.5	953.8	903.3	50.50	18.888	
11,500.0	10,699.8	11,773.2	10,939.7	12.4	39.7	-104.52	724.9	-768.5	953.9	902.7	51.18	18.637	
11,600.0	10,698.0	11,873.2	10,937.8	12.9	39.9	-104.52	824.9	-769.5	953.9	901.9	51.91	18.374	
11,700.0	10,696.2	11,973.2	10,936.0	13.5	40.1	-104.52	924.9	-770.5	953.9	901.2	52.70	18.101	
11,800.0	10,694.4	12,073.2	10,934.2	14.2	40.3	-104.52	1,024.9	-771.5	953.9	900.3	53.52	17.822	
11,900.0	10,692.5	12,173.2	10,932.4	14.9	40.5	-104.52	1,124.8	-772.5	953.9	899.5	54.39	17.539	
12,000.0	10,690.7	12,273.2	10,930.5	15.5	40.8	-104.52	1,224.8	-773.5	953.9	898.6	55.29	17.252	
12,100.0	10,688.9	12,373.2	10,928.7	16.3	41.0	-104.52	1,324.8	-774.5	953.9	897.6	56.23	16.964	
12,200.0	10,687.1	12,473.2	10,926.9	17.0	41.3	-104.52	1,424.8	-775.5	953.9	896.7	57.20	16.676	
12,300.0	10,685.2	12,573.2	10,925.1	17.7	41.6	-104.52	1,524.8	-776.5	953.9	895.7	58.20	16.389	
12,400.0	10,683.4	12,673.2	10,923.2	18.5	42.0	-104.52	1,624.7	-777.5	953.9	894.6	59.23	16.104	
12,500.0	10,681.6	12,773.2	10,921.4	19.2	42.3	-104.52	1,724.7	-778.5	953.9	893.6	60.29	15.821	
12,600.0	10,679.8	12,873.2	10,919.6	20.0	42.6	-104.52	1,824.7	-779.5	953.9	892.5	61.37	15.542	
12,700.0	10,677.9	12,973.2	10,917.8	20.8	43.0	-104.52	1,924.7	-780.4	953.9	891.4	62.48	15.267	
12,800.0	10,676.1	13,073.2	10,915.9	21.6	43.4	-104.52	2,024.6	-781.4	953.9	890.3	63.61	14.996	
12,900.0	10,674.3	13,173.2	10,914.1	22.4	43.8	-104.52	2,124.6	-782.4	953.9	889.1	64.76	14.730	
13,000.0	10,672.5	13,273.2	10,912.3	23.2	44.2	-104.52	2,224.6	-783.4	953.9	888.0	65.93	14.468	
13,100.0	10,670.6	13,373.2	10,910.5	24.0	44.6	-104.52	2,324.6	-784.4	953.9	886.8	67.12	14.212	
13,200.0	10,668.8	13,473.2	10,908.7	24.8	45.0	-104.52	2,424.6	-785.4	953.9	885.6	68.33	13.960	
13,300.0	10,667.0	13,573.2	10,906.8	25.6	45.5	-104.52	2,524.5	-786.4	953.9	884.4	69.56	13.714	
13,400.0	10,665.2	13,673.2	10,905.0	26.4	45.9	-104.52	2,624.5	-787.4	953.9	883.1	70.80	13.473	
13,500.0	10,663.3	13,773.2	10,903.2	27.2	46.4	-104.52	2,724.5	-788.4	953.9	881.9	72.06	13.238	
13,600.0	10,661.5	13,873.2	10,901.4	28.0	46.9	-104.52	2,824.5	-789.4	953.9	880.6	73.34	13.008	
13,700.0	10,659.7	13,973.2	10,899.5	28.9	47.3	-104.52	2,924.5	-790.4	953.9	879.3	74.62	12.783	
13,800.0	10,657.9	14,073.2	10,897.7	29.7	47.8	-104.52	3,024.4	-791.4	953.9	878.0	75.93	12.564	
13,900.0	10,656.0	14,173.2	10,895.9	30.5	48.4	-104.52	3,124.4	-792.4	953.9	876.7	77.25	12.349	
14,000.0	10,654.2	14,273.2	10,894.1	31.3	48.9	-104.52	3,224.4	-793.4	953.9	875.4	78.58	12.140	
14,100.0	10,652.4	14,373.2	10,892.2	32.2	49.4	-104.52	3,324.4	-794.3	953.9	874.0	79.92	11.936	
14,200.0	10,650.6	14,473.2	10,890.4	33.0	49.9	-104.52	3,424.3	-795.3	953.9	872.7	81.27	11.737	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 506H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.0	10,648.7	14,573.2	10,888.6	33.8	50.5	-104.52	3,524.3	-796.3	953.9	871.3	82.64	11.543	
14,400.0	10,646.9	14,673.2	10,886.8	34.7	51.0	-104.52	3,624.3	-797.3	954.0	869.9	84.02	11.354	
14,500.0	10,645.1	14,773.2	10,884.9	35.5	51.6	-104.52	3,724.3	-798.3	954.0	868.6	85.40	11.170	
14,600.0	10,643.3	14,873.2	10,883.1	36.4	52.2	-104.52	3,824.3	-799.3	954.0	867.2	86.80	10.990	
14,700.0	10,641.4	14,973.2	10,881.3	37.2	52.8	-104.52	3,924.2	-800.3	954.0	865.8	88.21	10.815	
14,800.0	10,639.6	15,073.2	10,879.5	38.0	53.4	-104.52	4,024.2	-801.3	954.0	864.3	89.63	10.644	
14,900.0	10,637.8	15,173.2	10,877.6	38.9	53.9	-104.52	4,124.2	-802.3	954.0	862.9	91.05	10.477	
15,000.0	10,636.0	15,273.2	10,875.8	39.7	54.6	-104.52	4,224.2	-803.3	954.0	861.5	92.49	10.315	
15,100.0	10,634.1	15,373.2	10,874.0	40.6	55.2	-104.52	4,324.2	-804.3	954.0	860.0	93.93	10.156	
15,200.0	10,632.3	15,473.2	10,872.2	41.4	55.8	-104.52	4,424.1	-805.3	954.0	858.6	95.38	10.002	
15,300.0	10,630.5	15,573.2	10,870.4	42.3	56.4	-104.52	4,524.1	-806.3	954.0	857.1	96.84	9.851	
15,400.0	10,628.7	15,673.2	10,868.5	43.1	57.0	-104.52	4,624.1	-807.3	954.0	855.7	98.31	9.704	
15,500.0	10,626.8	15,773.2	10,866.7	44.0	57.7	-104.52	4,724.1	-808.3	954.0	854.2	99.78	9.561	
15,600.0	10,625.0	15,873.2	10,864.9	44.8	58.3	-104.52	4,824.0	-809.2	954.0	852.7	101.26	9.421	
15,677.2	10,623.6	15,951.1	10,863.5	45.5	58.8	-104.52	4,901.9	-810.0	954.0	851.6	102.41	9.315	
15,690.3	10,623.4	15,967.9	10,863.2	45.6	58.9	-104.52	4,918.6	-810.1	954.0	851.3	102.63	9.295	
15,690.6	10,623.4	15,968.1	10,863.2	45.6	58.9	-104.52	4,918.9	-810.1	954.0	851.3	102.64	9.295	
15,700.0	10,623.2	15,977.5	10,863.0	45.7	59.0	-104.52	4,928.3	-810.2	954.0	851.2	102.78	9.282	
15,800.0	10,621.4	16,077.5	10,861.2	46.5	59.6	-104.52	5,028.3	-810.7	954.0	849.7	104.27	9.149	
15,900.0	10,619.5	16,177.5	10,859.3	47.4	60.3	-104.52	5,128.3	-811.2	954.0	848.2	105.77	9.020	
16,000.0	10,617.7	16,277.5	10,857.5	48.2	61.0	-104.52	5,228.2	-811.8	954.0	846.7	107.27	8.893	
16,100.0	10,615.9	16,377.5	10,855.7	49.1	61.6	-104.52	5,328.2	-812.3	954.0	845.2	108.78	8.770	
16,200.0	10,614.1	16,477.5	10,853.9	49.9	62.3	-104.52	5,428.2	-812.8	954.0	843.7	110.30	8.649	
16,300.0	10,612.2	16,577.5	10,852.0	50.8	63.0	-104.52	5,528.2	-813.4	954.0	842.2	111.82	8.532	
16,400.0	10,610.4	16,677.5	10,850.2	51.6	63.7	-104.52	5,628.2	-813.9	954.0	840.7	113.35	8.417	
16,500.0	10,608.6	16,777.5	10,848.4	52.5	64.4	-104.52	5,728.2	-814.4	954.1	839.2	114.88	8.305	
16,600.0	10,606.8	16,877.5	10,846.6	53.3	65.1	-104.52	5,828.1	-815.0	954.1	837.6	116.42	8.195	
16,700.0	10,604.9	16,977.5	10,844.7	54.2	65.8	-104.52	5,928.1	-815.5	954.1	836.1	117.96	8.088	
16,800.0	10,603.1	17,077.5	10,842.9	55.1	66.5	-104.52	6,028.1	-816.0	954.1	834.6	119.50	7.984	
16,900.0	10,601.3	17,177.5	10,841.1	55.9	67.2	-104.52	6,128.1	-816.5	954.1	833.0	121.05	7.882	
17,000.0	10,599.4	17,277.5	10,839.3	56.8	67.9	-104.52	6,228.1	-817.1	954.1	831.5	122.61	7.782	
17,100.0	10,597.6	17,377.5	10,837.4	57.6	68.6	-104.52	6,328.0	-817.6	954.1	829.9	124.17	7.684	
17,200.0	10,595.8	17,477.5	10,835.6	58.5	69.3	-104.52	6,428.0	-818.1	954.1	828.4	125.73	7.589	
17,300.0	10,594.0	17,577.5	10,833.8	59.3	70.0	-104.52	6,528.0	-818.7	954.1	826.8	127.29	7.495	
17,400.0	10,592.1	17,677.5	10,832.0	60.2	70.7	-104.52	6,628.0	-819.2	954.1	825.3	128.86	7.404	
17,500.0	10,590.3	17,777.5	10,830.1	61.1	71.5	-104.52	6,728.0	-819.7	954.1	823.7	130.44	7.315	
17,600.0	10,588.5	17,877.5	10,828.3	61.9	72.2	-104.52	6,828.0	-820.3	954.2	822.1	132.01	7.228	
17,700.0	10,586.7	17,977.5	10,826.5	62.8	72.9	-104.52	6,927.9	-820.8	954.2	820.6	133.60	7.142	
17,800.0	10,584.8	18,077.5	10,824.7	63.6	73.7	-104.52	7,027.9	-821.3	954.2	819.0	135.18	7.059	
17,900.0	10,583.0	18,177.5	10,822.8	64.5	74.4	-104.52	7,127.9	-821.8	954.2	817.4	136.77	6.977	
18,000.0	10,581.2	18,277.5	10,821.0	65.3	75.1	-104.52	7,227.9	-822.4	954.2	815.8	138.35	6.897	
18,100.0	10,579.4	18,377.5	10,819.2	66.2	75.9	-104.51	7,327.9	-822.9	954.2	814.3	139.95	6.818	
18,200.0	10,577.5	18,477.5	10,817.4	67.1	76.6	-104.51	7,427.9	-823.4	954.2	812.7	141.54	6.741	
18,300.0	10,575.7	18,577.5	10,815.5	67.9	77.4	-104.51	7,527.8	-824.0	954.2	811.1	143.14	6.666	
18,400.0	10,573.9	18,677.5	10,813.7	68.8	78.1	-104.51	7,627.8	-824.5	954.2	809.5	144.74	6.593	
18,500.0	10,572.1	18,777.5	10,811.9	69.6	78.9	-104.51	7,727.8	-825.0	954.2	807.9	146.35	6.520	
18,600.0	10,570.2	18,877.5	10,810.1	70.5	79.6	-104.51	7,827.8	-825.6	954.2	806.3	147.95	6.450	
18,700.0	10,568.4	18,977.5	10,808.2	71.4	80.4	-104.51	7,927.8	-826.1	954.3	804.7	149.56	6.380	
18,800.0	10,566.6	19,077.5	10,806.4	72.2	81.1	-104.51	8,027.7	-826.6	954.3	803.1	151.17	6.312	
18,900.0	10,564.8	19,177.5	10,804.6	73.1	81.9	-104.51	8,127.7	-827.1	954.3	801.5	152.79	6.246	
19,000.0	10,562.9	19,277.5	10,802.8	73.9	82.7	-104.51	8,227.7	-827.7	954.3	799.9	154.40	6.181	
19,100.0	10,561.1	19,377.5	10,800.9	74.8	83.4	-104.51	8,327.7	-828.2	954.3	798.3	156.02	6.117	

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

Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Offset Design REDTAIL FED COM PROJECT - REDTAIL FEDERAL COM 506H - OWB - PWP1 — **Offset Site Error:** 3.0 usft

Survey Program: 0-MWD+IFR1+FDIR — **Offset Well Error:** 3.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,200.0	10,559.3	19,477.5	10,799.1	75.7	84.2	-104.51	8,427.7	-828.7	954.3	796.7	157.64	6.054	
19,300.0	10,557.5	19,577.5	10,797.3	76.5	85.0	-104.51	8,527.7	-829.3	954.3	795.1	159.26	5.992	
19,400.0	10,555.6	19,677.5	10,795.5	77.4	85.7	-104.51	8,627.6	-829.8	954.3	793.4	160.88	5.932	
19,500.0	10,553.8	19,777.5	10,793.6	78.2	86.5	-104.51	8,727.6	-830.3	954.3	791.8	162.51	5.872	
19,600.0	10,552.0	19,877.5	10,791.8	79.1	87.3	-104.51	8,827.6	-830.9	954.3	790.2	164.14	5.814	
19,700.0	10,550.2	19,977.5	10,790.0	80.0	88.1	-104.51	8,927.6	-831.4	954.4	788.6	165.77	5.757	
19,800.0	10,548.3	20,077.5	10,788.2	80.8	88.8	-104.51	9,027.6	-831.9	954.4	787.0	167.40	5.701	
19,900.0	10,546.5	20,177.5	10,786.3	81.7	89.6	-104.51	9,127.5	-832.4	954.4	785.3	169.03	5.646	
20,000.0	10,544.7	20,277.5	10,784.5	82.5	90.4	-104.51	9,227.5	-833.0	954.4	783.7	170.67	5.592	
20,100.0	10,542.9	20,377.5	10,782.7	83.4	91.2	-104.51	9,327.5	-833.5	954.4	782.1	172.30	5.539	
20,200.0	10,541.0	20,477.5	10,780.9	84.3	92.0	-104.51	9,427.5	-834.0	954.4	780.5	173.94	5.487	
20,300.0	10,539.2	20,577.5	10,779.0	85.1	92.7	-104.51	9,527.5	-834.6	954.4	778.8	175.58	5.436	
20,400.0	10,537.4	20,677.5	10,777.2	86.0	93.5	-104.51	9,627.5	-835.1	954.4	777.2	177.22	5.385	
20,500.0	10,535.5	20,777.5	10,775.4	86.9	94.3	-104.51	9,727.4	-835.6	954.4	775.6	178.87	5.336	
20,600.0	10,533.7	20,877.5	10,773.6	87.7	95.1	-104.51	9,827.4	-836.2	954.4	773.9	180.51	5.287	
20,700.0	10,531.9	20,977.5	10,771.7	88.6	95.9	-104.51	9,927.4	-836.7	954.4	772.3	182.16	5.240	
20,800.0	10,530.1	21,077.5	10,769.9	89.4	96.7	-104.51	10,027.4	-837.2	954.5	770.7	183.80	5.193	
20,900.0	10,528.2	21,177.5	10,768.1	90.3	97.5	-104.51	10,127.4	-837.7	954.5	769.0	185.45	5.147	
20,913.5	10,528.0	21,182.5	10,768.0	90.4	97.5	-104.51	10,132.4	-837.8	954.5	768.9	185.61	5.143	

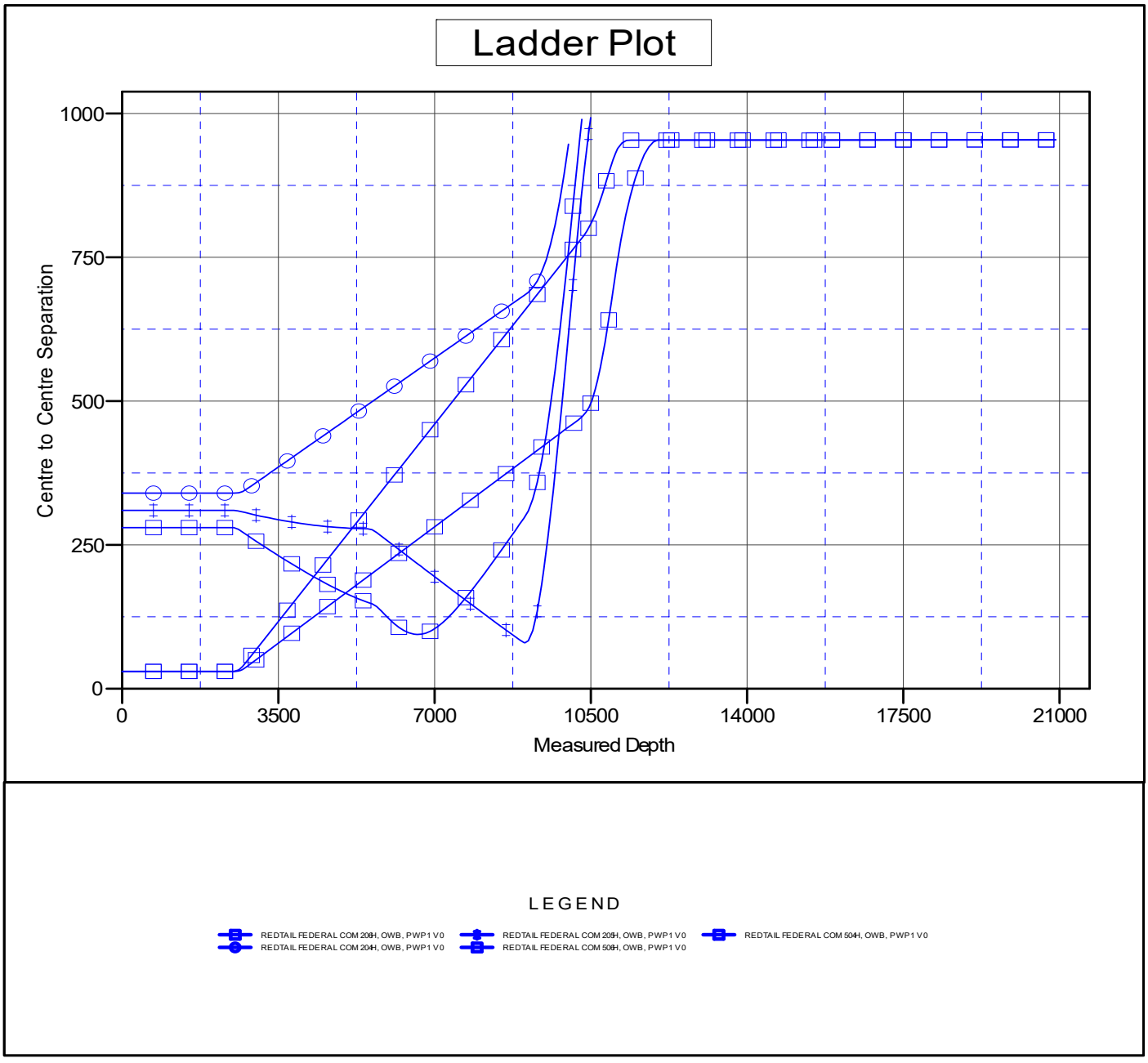
Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=30' @ 3745.6usft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: REDTAIL FEDERAL COM 505H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.37°



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

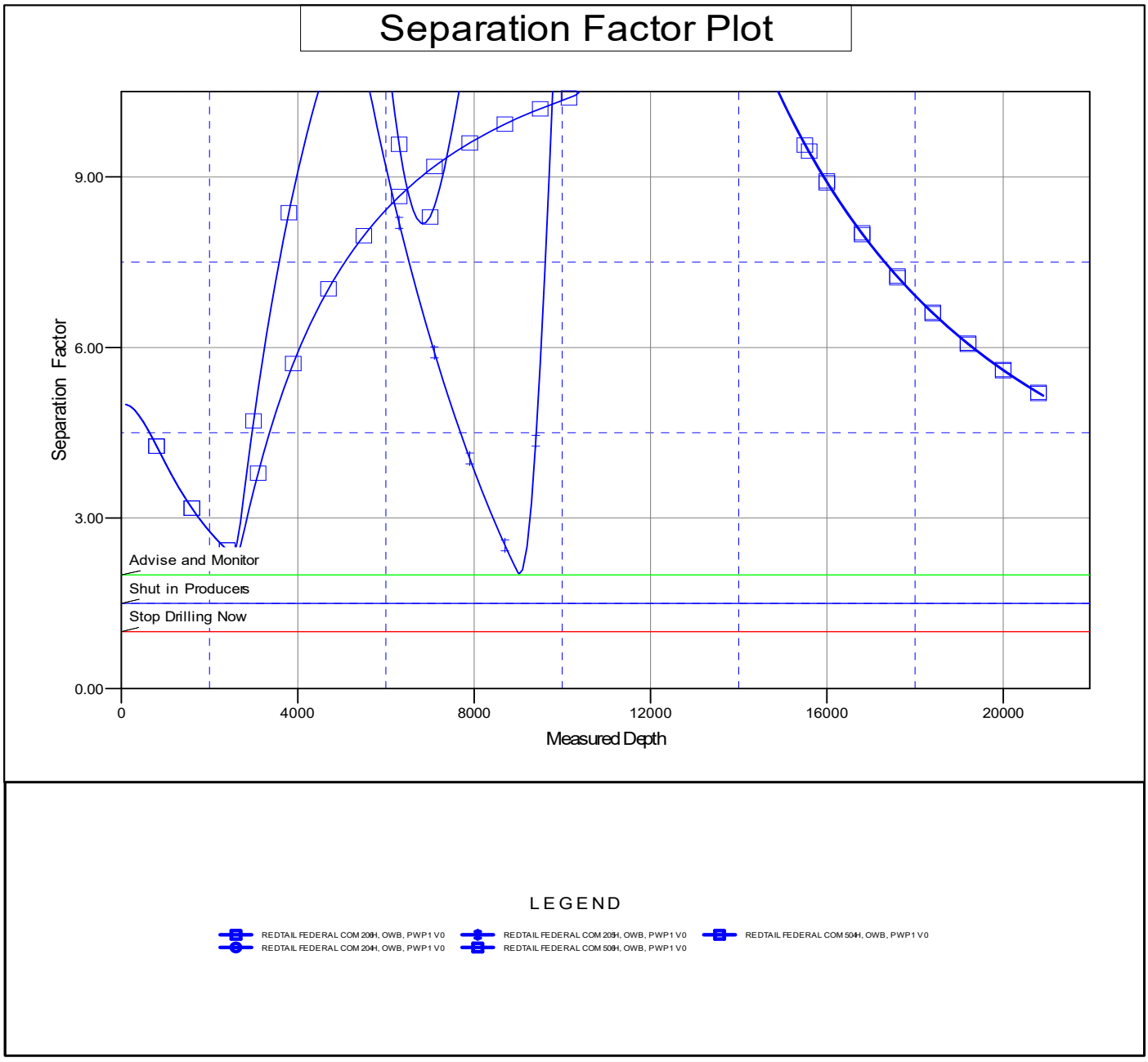
Concho Resources LLC

Anticollision Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Reference Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Site Error:	3.0 usft	**North Reference:**	Grid
Reference Well:	REDTAIL FEDERAL COM 505H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	3.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	OWB	**Database:**	edm
Reference Design:	PWP1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB=30' @ 3745.6usft (TBD)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: REDTAIL FEDERAL COM 505H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.37°



DELAWARE BASIN EAST

BULLDOG PROSPECT (NM-E)
REDTAIL FED COM PROJECT
REDTAIL FEDERAL COM 505H

OWB

Plan: PWP1

Standard Survey Report

20 July, 2020

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Project	BULLDOG PROSPECT (NM-E)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Well	REDTAIL FEDERAL COM 505H				
Well Position	**+N/-S**	0.0 usft	**Northing:**	483,474.60 usft	**Latitude:**	32° 19' 38.413 N
	+E/-W	0.0 usft	**Easting:**	711,096.80 usft	**Longitude:**	103° 38' 59.756 W
Position Uncertainty		3.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,715.6 usft

Wellbore	OWB				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2020	7/20/2020	6.70	60.01	47,639.08989357

Design	PWP1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.0	0.0	0.0	0.49	

Survey Tool Program **Date** 7/20/2020

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	10,120.0	PWP1 (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
10,120.0	20,913.2	PWP1 (OWB)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	152.98	2,600.0	-1.6	0.8	-1.5	2.00	2.00	0.00
2,627.7	2.55	152.98	2,627.7	-2.5	1.3	-2.5	2.00	2.00	0.00
Start 7492.2 hold at 2627.7 MD									
2,700.0	2.55	152.98	2,699.9	-5.4	2.8	-5.4	0.00	0.00	0.00
2,800.0	2.55	152.98	2,799.8	-9.4	4.8	-9.3	0.00	0.00	0.00
2,900.0	2.55	152.98	2,899.7	-13.3	6.8	-13.3	0.00	0.00	0.00
3,000.0	2.55	152.98	2,999.6	-17.3	8.8	-17.2	0.00	0.00	0.00
3,100.0	2.55	152.98	3,099.5	-21.3	10.9	-21.2	0.00	0.00	0.00
3,200.0	2.55	152.98	3,199.4	-25.3	12.9	-25.1	0.00	0.00	0.00
3,300.0	2.55	152.98	3,299.3	-29.2	14.9	-29.1	0.00	0.00	0.00
3,400.0	2.55	152.98	3,399.2	-33.2	16.9	-33.1	0.00	0.00	0.00
3,500.0	2.55	152.98	3,499.1	-37.2	19.0	-37.0	0.00	0.00	0.00
3,600.0	2.55	152.98	3,599.0	-41.1	21.0	-41.0	0.00	0.00	0.00
3,700.0	2.55	152.98	3,698.9	-45.1	23.0	-44.9	0.00	0.00	0.00
3,800.0	2.55	152.98	3,798.8	-49.1	25.0	-48.9	0.00	0.00	0.00
3,900.0	2.55	152.98	3,898.7	-53.0	27.1	-52.8	0.00	0.00	0.00
4,000.0	2.55	152.98	3,998.6	-57.0	29.1	-56.8	0.00	0.00	0.00
4,100.0	2.55	152.98	4,098.5	-61.0	31.1	-60.7	0.00	0.00	0.00
4,200.0	2.55	152.98	4,198.4	-65.0	33.1	-64.7	0.00	0.00	0.00
4,300.0	2.55	152.98	4,298.3	-68.9	35.2	-68.6	0.00	0.00	0.00
4,400.0	2.55	152.98	4,398.2	-72.9	37.2	-72.6	0.00	0.00	0.00
4,500.0	2.55	152.98	4,498.1	-76.9	39.2	-76.5	0.00	0.00	0.00
4,600.0	2.55	152.98	4,598.0	-80.8	41.2	-80.5	0.00	0.00	0.00
4,700.0	2.55	152.98	4,697.9	-84.8	43.3	-84.4	0.00	0.00	0.00
4,800.0	2.55	152.98	4,797.8	-88.8	45.3	-88.4	0.00	0.00	0.00
4,900.0	2.55	152.98	4,897.7	-92.8	47.3	-92.3	0.00	0.00	0.00
5,000.0	2.55	152.98	4,997.6	-96.7	49.3	-96.3	0.00	0.00	0.00
5,100.0	2.55	152.98	5,097.5	-100.7	51.4	-100.3	0.00	0.00	0.00
5,200.0	2.55	152.98	5,197.4	-104.7	53.4	-104.2	0.00	0.00	0.00
5,300.0	2.55	152.98	5,297.3	-108.6	55.4	-108.2	0.00	0.00	0.00
5,400.0	2.55	152.98	5,397.2	-112.6	57.4	-112.1	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,500.0	2.55	152.98	5,497.1	-116.6	59.5	-116.1	0.00	0.00	0.00
5,600.0	2.55	152.98	5,597.0	-120.5	61.5	-120.0	0.00	0.00	0.00
5,700.0	2.55	152.98	5,696.9	-124.5	63.5	-124.0	0.00	0.00	0.00
5,800.0	2.55	152.98	5,796.8	-128.5	65.5	-127.9	0.00	0.00	0.00
5,900.0	2.55	152.98	5,896.7	-132.5	67.6	-131.9	0.00	0.00	0.00
6,000.0	2.55	152.98	5,996.6	-136.4	69.6	-135.8	0.00	0.00	0.00
6,100.0	2.55	152.98	6,096.5	-140.4	71.6	-139.8	0.00	0.00	0.00
6,200.0	2.55	152.98	6,196.4	-144.4	73.6	-143.7	0.00	0.00	0.00
6,300.0	2.55	152.98	6,296.3	-148.3	75.7	-147.7	0.00	0.00	0.00
6,400.0	2.55	152.98	6,396.2	-152.3	77.7	-151.6	0.00	0.00	0.00
6,500.0	2.55	152.98	6,496.1	-156.3	79.7	-155.6	0.00	0.00	0.00
6,600.0	2.55	152.98	6,596.0	-160.2	81.7	-159.5	0.00	0.00	0.00
6,700.0	2.55	152.98	6,695.9	-164.2	83.8	-163.5	0.00	0.00	0.00
6,800.0	2.55	152.98	6,795.8	-168.2	85.8	-167.5	0.00	0.00	0.00
6,900.0	2.55	152.98	6,895.7	-172.2	87.8	-171.4	0.00	0.00	0.00
7,000.0	2.55	152.98	6,995.6	-176.1	89.8	-175.4	0.00	0.00	0.00
7,100.0	2.55	152.98	7,095.5	-180.1	91.9	-179.3	0.00	0.00	0.00
7,200.0	2.55	152.98	7,195.4	-184.1	93.9	-183.3	0.00	0.00	0.00
7,300.0	2.55	152.98	7,295.3	-188.0	95.9	-187.2	0.00	0.00	0.00
7,400.0	2.55	152.98	7,395.2	-192.0	97.9	-191.2	0.00	0.00	0.00
7,500.0	2.55	152.98	7,495.1	-196.0	100.0	-195.1	0.00	0.00	0.00
7,600.0	2.55	152.98	7,595.0	-200.0	102.0	-199.1	0.00	0.00	0.00
7,700.0	2.55	152.98	7,694.9	-203.9	104.0	-203.0	0.00	0.00	0.00
7,800.0	2.55	152.98	7,794.8	-207.9	106.0	-207.0	0.00	0.00	0.00
7,900.0	2.55	152.98	7,894.7	-211.9	108.1	-210.9	0.00	0.00	0.00
8,000.0	2.55	152.98	7,994.6	-215.8	110.1	-214.9	0.00	0.00	0.00
8,100.0	2.55	152.98	8,094.5	-219.8	112.1	-218.8	0.00	0.00	0.00
8,200.0	2.55	152.98	8,194.4	-223.8	114.1	-222.8	0.00	0.00	0.00
8,300.0	2.55	152.98	8,294.3	-227.7	116.1	-226.7	0.00	0.00	0.00
8,400.0	2.55	152.98	8,394.2	-231.7	118.2	-230.7	0.00	0.00	0.00
8,500.0	2.55	152.98	8,494.1	-235.7	120.2	-234.7	0.00	0.00	0.00
8,600.0	2.55	152.98	8,594.0	-239.7	122.2	-238.6	0.00	0.00	0.00
8,700.0	2.55	152.98	8,693.9	-243.6	124.2	-242.6	0.00	0.00	0.00
8,800.0	2.55	152.98	8,793.8	-247.6	126.3	-246.5	0.00	0.00	0.00
8,900.0	2.55	152.98	8,893.7	-251.6	128.3	-250.5	0.00	0.00	0.00
9,000.0	2.55	152.98	8,993.6	-255.5	130.3	-254.4	0.00	0.00	0.00
9,100.0	2.55	152.98	9,093.5	-259.5	132.3	-258.4	0.00	0.00	0.00
9,200.0	2.55	152.98	9,193.4	-263.5	134.4	-262.3	0.00	0.00	0.00
9,300.0	2.55	152.98	9,293.3	-267.4	136.4	-266.3	0.00	0.00	0.00
9,400.0	2.55	152.98	9,393.2	-271.4	138.4	-270.2	0.00	0.00	0.00
9,500.0	2.55	152.98	9,493.1	-275.4	140.4	-274.2	0.00	0.00	0.00
9,600.0	2.55	152.98	9,593.0	-279.4	142.5	-278.1	0.00	0.00	0.00
9,700.0	2.55	152.98	9,692.9	-283.3	144.5	-282.1	0.00	0.00	0.00
9,800.0	2.55	152.98	9,792.8	-287.3	146.5	-286.0	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.0	2.55	152.98	9,892.7	-291.3	148.5	-290.0	0.00	0.00	0.00
10,000.0	2.55	152.98	9,992.6	-295.2	150.6	-293.9	0.00	0.00	0.00
10,100.0	2.55	152.98	10,092.5	-299.2	152.6	-297.9	0.00	0.00	0.00
10,119.9	2.55	152.98	10,112.4	-300.0	153.0	-298.7	0.00	0.00	0.00
Start DLS 10.00 TFO -153.50									
10,200.0	5.84	10.67	10,192.4	-297.6	154.6	-296.3	10.00	4.10	-177.63
10,300.0	15.77	3.49	10,290.5	-279.0	156.3	-277.6	10.00	9.93	-7.18
10,400.0	25.75	1.82	10,383.9	-243.6	157.9	-242.3	10.00	9.98	-1.68
10,500.0	35.74	1.04	10,469.7	-192.6	159.1	-191.2	10.00	9.99	-0.78
10,600.0	45.74	0.56	10,545.4	-127.4	160.0	-126.0	10.00	10.00	-0.47
10,700.0	55.73	0.23	10,608.6	-50.1	160.5	-48.7	10.00	10.00	-0.33
10,800.0	65.73	359.97	10,657.4	37.0	160.6	38.4	10.00	10.00	-0.26
10,900.0	75.73	359.74	10,690.4	131.3	160.4	132.7	10.00	10.00	-0.22
11,000.0	85.73	359.54	10,706.5	229.9	159.8	231.2	10.00	10.00	-0.20
11,053.2	91.05	359.43	10,708.0	283.0	159.3	284.4	10.00	10.00	-0.20
Start 4623.9 hold at 11053.2 MD									
11,100.0	91.05	359.43	10,707.1	329.8	158.8	331.2	0.00	0.00	0.00
11,200.0	91.05	359.43	10,705.3	429.8	157.8	431.1	0.00	0.00	0.00
11,300.0	91.05	359.43	10,703.5	529.8	156.8	531.1	0.00	0.00	0.00
11,400.0	91.05	359.43	10,701.7	629.8	155.9	631.1	0.00	0.00	0.00
11,500.0	91.05	359.43	10,699.8	729.7	154.9	731.0	0.00	0.00	0.00
11,600.0	91.05	359.43	10,698.0	829.7	153.9	831.0	0.00	0.00	0.00
11,700.0	91.05	359.43	10,696.2	929.7	152.9	931.0	0.00	0.00	0.00
11,800.0	91.05	359.43	10,694.4	1,029.7	151.9	1,030.9	0.00	0.00	0.00
11,900.0	91.05	359.43	10,692.5	1,129.7	150.9	1,130.9	0.00	0.00	0.00
12,000.0	91.05	359.43	10,690.7	1,229.6	149.9	1,230.9	0.00	0.00	0.00
12,100.0	91.05	359.43	10,688.9	1,329.6	148.9	1,330.8	0.00	0.00	0.00
12,200.0	91.05	359.43	10,687.1	1,429.6	147.9	1,430.8	0.00	0.00	0.00
12,300.0	91.05	359.43	10,685.2	1,529.6	146.9	1,530.8	0.00	0.00	0.00
12,400.0	91.05	359.43	10,683.4	1,629.5	145.9	1,630.7	0.00	0.00	0.00
12,500.0	91.05	359.43	10,681.6	1,729.5	145.0	1,730.7	0.00	0.00	0.00
12,600.0	91.05	359.43	10,679.8	1,829.5	144.0	1,830.7	0.00	0.00	0.00
12,700.0	91.05	359.43	10,677.9	1,929.5	143.0	1,930.6	0.00	0.00	0.00
12,800.0	91.05	359.43	10,676.1	2,029.5	142.0	2,030.6	0.00	0.00	0.00
12,900.0	91.05	359.43	10,674.3	2,129.4	141.0	2,130.6	0.00	0.00	0.00
13,000.0	91.05	359.43	10,672.5	2,229.4	140.0	2,230.5	0.00	0.00	0.00
13,100.0	91.05	359.43	10,670.6	2,329.4	139.0	2,330.5	0.00	0.00	0.00
13,200.0	91.05	359.43	10,668.8	2,429.4	138.0	2,430.5	0.00	0.00	0.00
13,300.0	91.05	359.43	10,667.0	2,529.4	137.0	2,530.4	0.00	0.00	0.00
13,400.0	91.05	359.43	10,665.2	2,629.3	136.0	2,630.4	0.00	0.00	0.00
13,500.0	91.05	359.43	10,663.3	2,729.3	135.1	2,730.4	0.00	0.00	0.00
13,600.0	91.05	359.43	10,661.5	2,829.3	134.1	2,830.3	0.00	0.00	0.00
13,700.0	91.05	359.43	10,659.7	2,929.3	133.1	2,930.3	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.0	91.05	359.43	10,657.9	3,029.2	132.1	3,030.3	0.00	0.00	0.00
13,900.0	91.05	359.43	10,656.0	3,129.2	131.1	3,130.2	0.00	0.00	0.00
14,000.0	91.05	359.43	10,654.2	3,229.2	130.1	3,230.2	0.00	0.00	0.00
14,100.0	91.05	359.43	10,652.4	3,329.2	129.1	3,330.2	0.00	0.00	0.00
14,200.0	91.05	359.43	10,650.6	3,429.2	128.1	3,430.1	0.00	0.00	0.00
14,300.0	91.05	359.43	10,648.7	3,529.1	127.1	3,530.1	0.00	0.00	0.00
14,400.0	91.05	359.43	10,646.9	3,629.1	126.1	3,630.1	0.00	0.00	0.00
14,500.0	91.05	359.43	10,645.1	3,729.1	125.2	3,730.0	0.00	0.00	0.00
14,600.0	91.05	359.43	10,643.3	3,829.1	124.2	3,830.0	0.00	0.00	0.00
14,700.0	91.05	359.43	10,641.4	3,929.0	123.2	3,930.0	0.00	0.00	0.00
14,800.0	91.05	359.43	10,639.6	4,029.0	122.2	4,029.9	0.00	0.00	0.00
14,900.0	91.05	359.43	10,637.8	4,129.0	121.2	4,129.9	0.00	0.00	0.00
15,000.0	91.05	359.43	10,636.0	4,229.0	120.2	4,229.9	0.00	0.00	0.00
15,100.0	91.05	359.43	10,634.1	4,329.0	119.2	4,329.8	0.00	0.00	0.00
15,200.0	91.05	359.43	10,632.3	4,428.9	118.2	4,429.8	0.00	0.00	0.00
15,300.0	91.05	359.43	10,630.5	4,528.9	117.2	4,529.8	0.00	0.00	0.00
15,400.0	91.05	359.43	10,628.7	4,628.9	116.2	4,629.7	0.00	0.00	0.00
15,500.0	91.05	359.43	10,626.8	4,728.9	115.3	4,729.7	0.00	0.00	0.00
15,600.0	91.05	359.43	10,625.0	4,828.9	114.3	4,829.7	0.00	0.00	0.00
15,677.2	91.05	359.43	10,623.6	4,906.0	113.5	4,906.8	0.00	0.00	0.00
Start DLS 2.00 TFO 89.95									
15,690.6	91.05	359.70	10,623.4	4,919.4	113.4	4,920.2	2.00	0.00	2.00
Start 5222.9 hold at 15690.6 MD									
15,700.0	91.05	359.70	10,623.2	4,928.8	113.3	4,929.6	0.00	0.00	0.00
15,800.0	91.05	359.70	10,621.4	5,028.8	112.8	5,029.6	0.00	0.00	0.00
15,900.0	91.05	359.70	10,619.5	5,128.8	112.3	5,129.6	0.00	0.00	0.00
16,000.0	91.05	359.70	10,617.7	5,228.8	111.8	5,229.5	0.00	0.00	0.00
16,100.0	91.05	359.70	10,615.9	5,328.8	111.3	5,329.5	0.00	0.00	0.00
16,200.0	91.05	359.70	10,614.1	5,428.7	110.7	5,429.5	0.00	0.00	0.00
16,300.0	91.05	359.70	10,612.2	5,528.7	110.2	5,529.5	0.00	0.00	0.00
16,400.0	91.05	359.70	10,610.4	5,628.7	109.7	5,629.4	0.00	0.00	0.00
16,500.0	91.05	359.70	10,608.6	5,728.7	109.2	5,729.4	0.00	0.00	0.00
16,600.0	91.05	359.70	10,606.8	5,828.7	108.7	5,829.4	0.00	0.00	0.00
16,700.0	91.05	359.70	10,604.9	5,928.7	108.1	5,929.4	0.00	0.00	0.00
16,800.0	91.05	359.70	10,603.1	6,028.6	107.6	6,029.3	0.00	0.00	0.00
16,900.0	91.05	359.70	10,601.3	6,128.6	107.1	6,129.3	0.00	0.00	0.00
17,000.0	91.05	359.70	10,599.4	6,228.6	106.6	6,229.3	0.00	0.00	0.00
17,100.0	91.05	359.70	10,597.6	6,328.6	106.1	6,329.3	0.00	0.00	0.00
17,200.0	91.05	359.70	10,595.8	6,428.6	105.5	6,429.2	0.00	0.00	0.00
17,300.0	91.05	359.70	10,594.0	6,528.5	105.0	6,529.2	0.00	0.00	0.00
17,400.0	91.05	359.70	10,592.1	6,628.5	104.5	6,629.2	0.00	0.00	0.00
17,500.0	91.05	359.70	10,590.3	6,728.5	104.0	6,729.2	0.00	0.00	0.00
17,600.0	91.05	359.70	10,588.5	6,828.5	103.5	6,829.1	0.00	0.00	0.00
17,700.0	91.05	359.70	10,586.7	6,928.5	102.9	6,929.1	0.00	0.00	0.00

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,800.0	91.05	359.70	10,584.8	7,028.5	102.4	7,029.1	0.00	0.00	0.00
17,900.0	91.05	359.70	10,583.0	7,128.4	101.9	7,129.0	0.00	0.00	0.00
18,000.0	91.05	359.70	10,581.2	7,228.4	101.4	7,229.0	0.00	0.00	0.00
18,100.0	91.05	359.70	10,579.4	7,328.4	100.9	7,329.0	0.00	0.00	0.00
18,200.0	91.05	359.70	10,577.5	7,428.4	100.3	7,429.0	0.00	0.00	0.00
18,300.0	91.05	359.70	10,575.7	7,528.4	99.8	7,528.9	0.00	0.00	0.00
18,400.0	91.05	359.70	10,573.9	7,628.3	99.3	7,628.9	0.00	0.00	0.00
18,500.0	91.05	359.70	10,572.1	7,728.3	98.8	7,728.9	0.00	0.00	0.00
18,600.0	91.05	359.70	10,570.2	7,828.3	98.2	7,828.9	0.00	0.00	0.00
18,700.0	91.05	359.70	10,568.4	7,928.3	97.7	7,928.8	0.00	0.00	0.00
18,800.0	91.05	359.70	10,566.6	8,028.3	97.2	8,028.8	0.00	0.00	0.00
18,900.0	91.05	359.70	10,564.8	8,128.3	96.7	8,128.8	0.00	0.00	0.00
19,000.0	91.05	359.70	10,562.9	8,228.2	96.2	8,228.8	0.00	0.00	0.00
19,100.0	91.05	359.70	10,561.1	8,328.2	95.6	8,328.7	0.00	0.00	0.00
19,200.0	91.05	359.70	10,559.3	8,428.2	95.1	8,428.7	0.00	0.00	0.00
19,300.0	91.05	359.70	10,557.5	8,528.2	94.6	8,528.7	0.00	0.00	0.00
19,400.0	91.05	359.70	10,555.6	8,628.2	94.1	8,628.7	0.00	0.00	0.00
19,500.0	91.05	359.70	10,553.8	8,728.1	93.6	8,728.6	0.00	0.00	0.00
19,600.0	91.05	359.70	10,552.0	8,828.1	93.0	8,828.6	0.00	0.00	0.00
19,700.0	91.05	359.70	10,550.2	8,928.1	92.5	8,928.6	0.00	0.00	0.00
19,800.0	91.05	359.70	10,548.3	9,028.1	92.0	9,028.6	0.00	0.00	0.00
19,900.0	91.05	359.70	10,546.5	9,128.1	91.5	9,128.5	0.00	0.00	0.00
20,000.0	91.05	359.70	10,544.7	9,228.1	91.0	9,228.5	0.00	0.00	0.00
20,100.0	91.05	359.70	10,542.9	9,328.0	90.4	9,328.5	0.00	0.00	0.00
20,200.0	91.05	359.70	10,541.0	9,428.0	89.9	9,428.4	0.00	0.00	0.00
20,300.0	91.05	359.70	10,539.2	9,528.0	89.4	9,528.4	0.00	0.00	0.00
20,400.0	91.05	359.70	10,537.4	9,628.0	88.9	9,628.4	0.00	0.00	0.00
20,500.0	91.05	359.70	10,535.5	9,728.0	88.4	9,728.4	0.00	0.00	0.00
20,600.0	91.05	359.70	10,533.7	9,828.0	87.8	9,828.3	0.00	0.00	0.00
20,700.0	91.05	359.70	10,531.9	9,927.9	87.3	9,928.3	0.00	0.00	0.00
20,800.0	91.05	359.70	10,530.1	10,027.9	86.8	10,028.3	0.00	0.00	0.00
20,900.0	91.05	359.70	10,528.2	10,127.9	86.3	10,128.3	0.00	0.00	0.00
20,913.5	91.05	359.70	10,528.0	10,141.4	86.2	10,141.8	0.00	0.00	0.00
TD at 20913.5									

Concho Resources LLC

Survey Report

Company:	DELAWARE BASIN EAST	**Local Co-ordinate Reference:**	Well REDTAIL FEDERAL COM 505H
Project:	BULLDOG PROSPECT (NM-E)	**TVD Reference:**	KB=30' @ 3745.6usft (TBD)
Site:	REDTAIL FED COM PROJECT	**MD Reference:**	KB=30' @ 3745.6usft (TBD)
Well:	REDTAIL FEDERAL COM 505H	**North Reference:**	Grid
Wellbore:	OWB	**Survey Calculation Method:**	Minimum Curvature
Design:	PWP1	**Database:**	edm

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (REDTAIL FED - plan hits target center - Rectangle (sides W100.0 H5,226.0 D20.0)	1.05	179.70	10,528.0	10,141.4	86.2	493,616.00	711,183.00	32° 21' 18.762 N	103° 38' 57.997 W
LTP (REDTAIL FED C - plan misses target center by 0.9usft at 20863.5usft MD (10528.9 TVD, 10091.4 N, 86.5 E) - Point	0.00	0.00	10,528.0	10,091.4	86.2	493,566.00	711,183.00	32° 21' 18.267 N	103° 38' 58.001 W
T1 (REDTAIL FED CC - plan hits target center - Rectangle (sides W100.0 H5,226.0 D20.0)	1.05	179.43	10,623.6	4,906.0	113.5	488,380.60	711,210.30	32° 20' 26.953 N	103° 38' 58.068 W
FTP (REDTAIL FED C - plan misses target center by 211.6usft at 10600.0usft MD (10545.4 TVD, -127.4 N, 160.0 E) - Circle (radius 50.0)	0.00	0.00	10,708.0	-262.8	155.5	483,211.80	711,252.30	32° 19' 35.803 N	103° 38' 57.963 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2500	2500	0	0	Start Build 2.00
2628	2628	-3	1	Start 7492.2 hold at 2627.7 MD
10,120	10,112	-300	153	Start DLS 10.00 TFO -153.50
11,053	10,708	283	159	Start 4623.9 hold at 11053.2 MD
15,677	10,624	4906	114	Start DLS 2.00 TFO 89.95
15,691	10,623	4919	113	Start 5222.9 hold at 15690.6 MD
20,914	10,528	10,141	86	TD at 20913.5

Checked By: _____ Approved By: _____ Date: _____

CONCHO

Project: BULLDOG PROSPECT (NM-E)
Site: REDTAIL FED COM PROJECT
Well: REDTAIL FEDERAL COM 505H
Wellbore: OWB
Design: PWP1
GL: 3715.6
KB=30' @ 3745.6usft (TBD)

G T M

Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.33°

Magnetic Field
Strength: 47639.1nT
Dip Angle: 60.01°
Date: 7/20/2020
Model: IGRF2020

WELL DETAILS: REDTAIL FEDERAL COM 505H

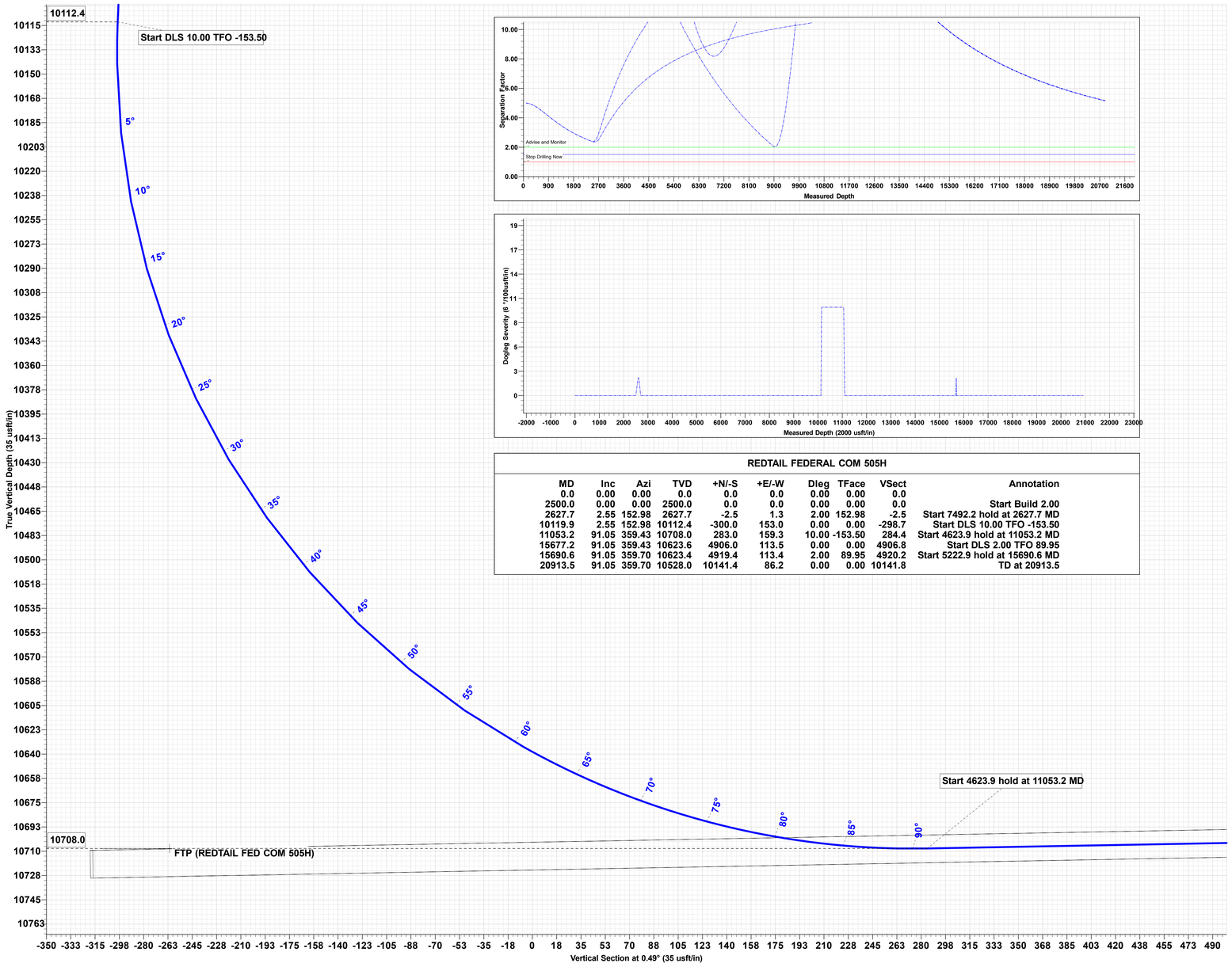
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	483474.60	711096.80	32° 19' 38.413 N	103° 38' 59.756 W

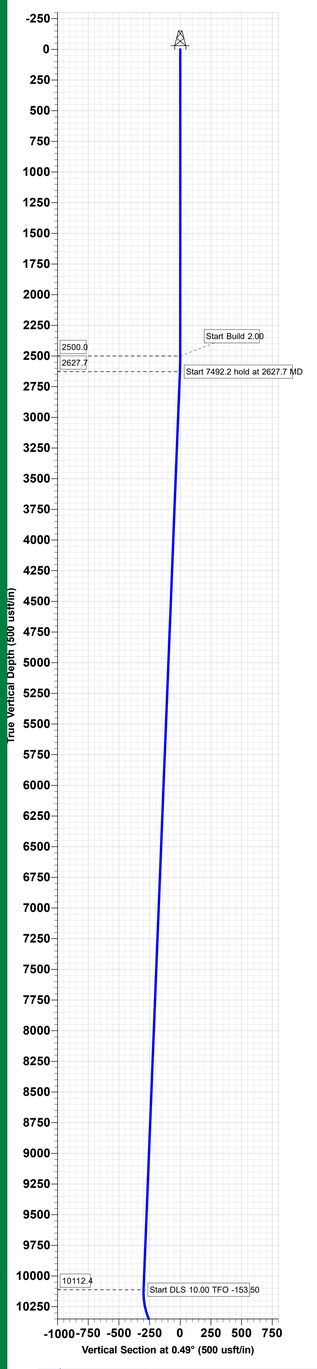
DESIGN TARGET DETAILS

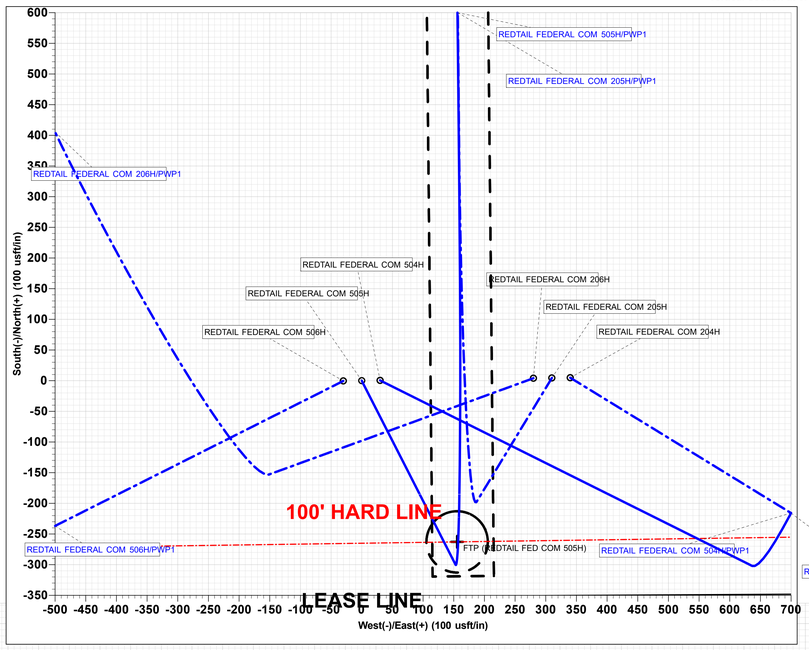
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LTP (REDTAIL FED COM 505H)	10528.0	10091.4	86.2	493566.00	711183.00	32° 21' 18.267 N	103° 38' 58.001 W
PBHL (REDTAIL FED COM 505H)	10528.0	10141.4	86.2	493616.00	711183.00	32° 21' 18.762 N	103° 38' 57.997 W
T1 (REDTAIL FED COM 505H)	10623.6	4906.0	113.5	488380.60	711210.30	32° 20' 26.953 N	103° 38' 58.068 W
FTP (REDTAIL FED COM 505H)	10708.0	-262.8	155.5	483211.80	711252.30	32° 19' 35.803 N	103° 38' 57.963 W

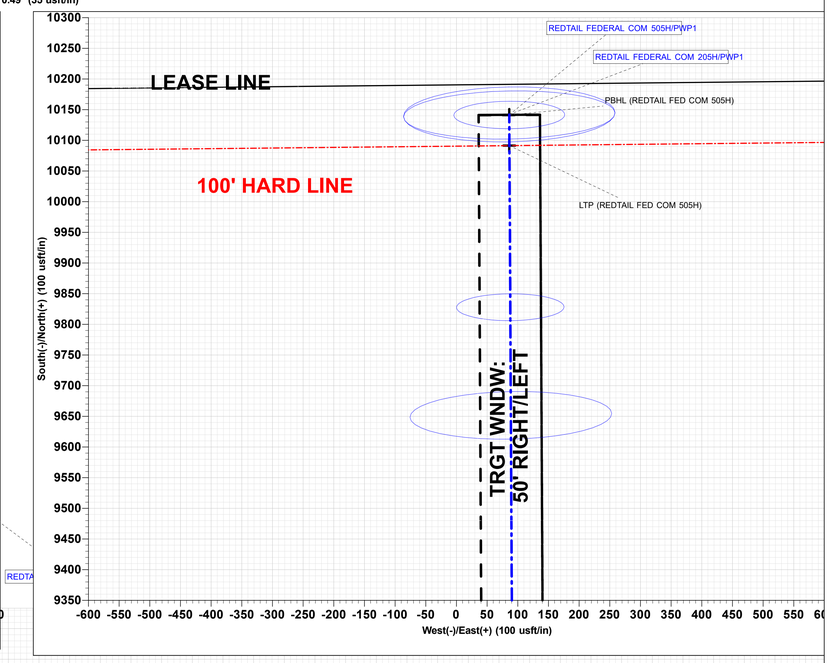
REDTAIL FEDERAL COM 505H

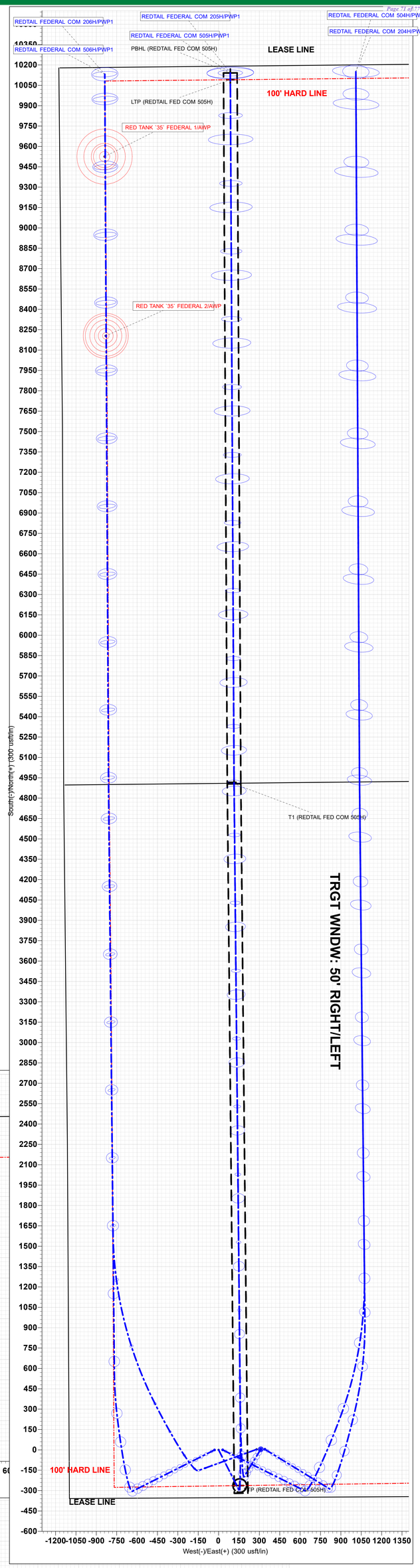
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2627.7	2.55	152.98	2627.7	-2.5	1.3	2.00	152.98	-2.5	Start 7492.2 hold at 2627.7 MD
10119.9	2.55	152.98	10112.4	-300.0	153.0	0.00	0.00	-298.7	Start DLS 10.00 TFO -153.50
11053.2	91.05	359.43	10708.0	283.0	159.3	10.00	-153.50	284.4	Start 4623.9 hold at 11053.2 MD
15677.2	91.05	359.43	10623.6	4906.0	113.5	0.00	0.00	4906.8	Start DLS 2.00 TFO 89.95
15690.6	91.05	359.70	10623.4	4919.4	113.4	2.00	89.95	4920.2	Start 5222.9 hold at 15690.6 MD
20913.5	91.05	359.70	10528.0	10141.4	86.2	0.00	0.00	10141.8	TD at 20913.5



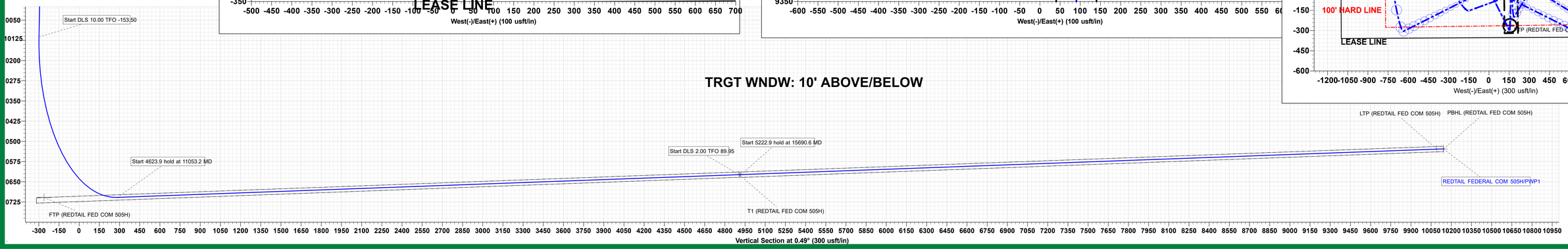








TRGT WNDW: 10' ABOVE/BELOW



COG OPERATING LLC
HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. HYDROGEN SULFIDE TRAINING

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

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

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

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

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

2. H_2S SAFETY EQUIPMENT AND SYSTEMS

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

a. Well Control Equipment:
   Flare line.
   Choke manifold with remotely operated choke.
   Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
   Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

b. Protective equipment for essential personnel:
Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

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

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

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

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

g. Communication:
Company vehicles equipped with cellular telephone.

COG OPERATING LLC has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H2S contingency plan is necessary.

W A R N I N G

YOU ARE ENTERING AN H_2S AREA
AUTHORIZED PERSONNEL ONLY

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

COG OPERATING LLC

1-575-748-6940

EMERGENCY CALL LIST

	OFFICE	MOBILE
COG OPERATING LLC OFFICE	575-748-6940	
SETH WILD	432-683-7443	432-528-3633
WALTER ROYE	575-748-6940	432-934-1886

EMERGENCY RESPONSE NUMBERS

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

COG Operating LLC

Rig Plat & Closed Loop Equipment Diagram

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

Flare Lines will be from both Choke Manifold & Separator to edge of location.

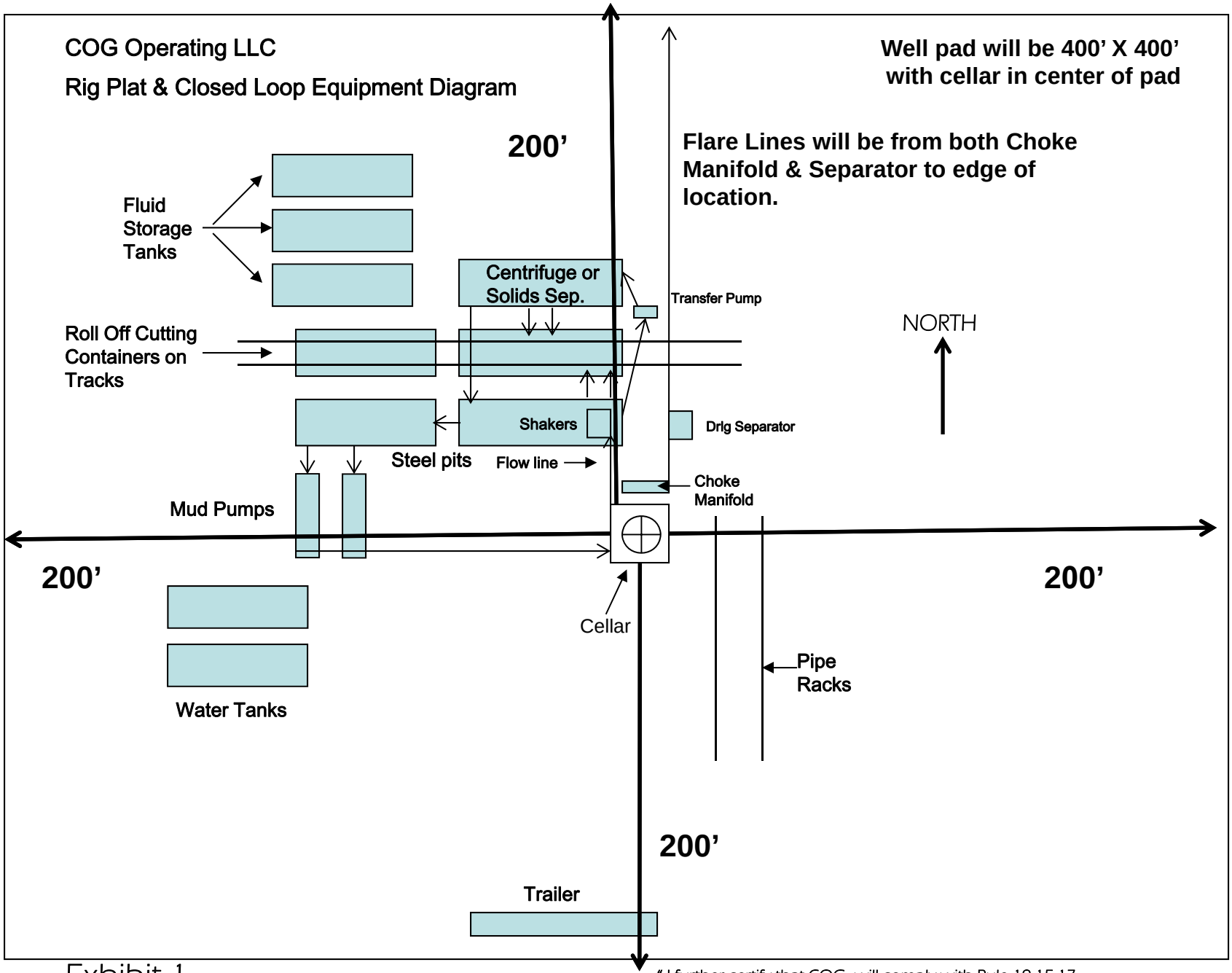


Exhibit 1

" I further certify that COG will comply with Rule 19.15.17 NMAC by using a Closed Loop System."

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 12819

CONDITIONS OF APPROVAL

Operator:	OGRID:	Action Number:	Action Type:
COG OPERATING LLC 600 W Illinois Ave Midland, TX79701	229137	12819	FORM 3160-3

OCD Reviewer	Condition
pkautz	Will require a directional survey with the C-104
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
pkautz	Oil base muds are not to be used until freshwater zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.