

Well Name: BOO RADLEY COM	Well Location: T26S / R28E / SEC 16 / SESW / 32.035836 / -104.096302	County or Parish/State: EDDY / NM
Well Number: 704H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM126965	Unit or CA Name:	Unit or CA Number:
US Well Number: 300154778500X1	Well Status: Approved Application for Permit to Drill	Operator: COG OPERATING LLC

Notice of Intent

Type of Submission: Notice of Intent

Type of Action: Other

Date Sundry Submitted: 05/24/2021

Time Sundry Submitted: 02:51

Date proposed operation will begin: 05/23/2021

Procedure Description: COG Operating requests an amendment to our approved APD for this well to reflect a change in surface hole location due to cave/karst issues. New SHL is 400' FSL & 1490' FWL SESW-16-26S-28E Eddy County. Revised C-102 and drill plan attached.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Boo_Radley_Com_705H_C_102_SHL_Sundry_Change_5_2021_20210524145047.pdf

BOO_RADLEY_COM_705H_PWP4_AC_RPT_20210524145047.pdf

Boo_Radley_Com_705H___APD_Drill_Plan_Sundry_Update_4_13_21_20210524145047.pdf

BOO_RADLEY_COM_705H_PWP4_SVY_RPT_20210524145047.pdf

BOO_RADLEY_COM_705H_PWP4_WP_20210524145047.pdf

**Carlsbad Field Office
Operator Copy**

Well Number: 704H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM126965

Unit or CA Name:

Unit or CA Number:

US Well Number: 300154778500X1

Well Status: Approved Application for
Permit to Drill

Operator: COG OPERATING
LLC

Operator Certification

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a submission of Form 3160-5 or a Sundry Notice.

Operator Electronic Signature: STAN WAGNER

Signed on: MAY 24, 2021 02:50 PM

Name: COG OPERATING LLC

Title: Regulatory Advisor

Street Address: 600 WEST ILLINOIS AVE

City: MIDLAND

State: TX

Phone: (432) 253-9685

Email address: STAN.S.WAGNER@CONOCOPHILLIPS.COM

Field Representative

Representative Name: Gerald Herrera

Street Address: 2208 West Main Street

City: Artesia

State: NM

Zip: 88210

Phone: (432)260-7399

Email address: Gerald.A.Herrera@conocophillips.com

BLM Point of Contact

BLM POC Name: Cody Layton

BLM POC Title: Assistant Field Manager Lands & Minerals

BLM POC Phone: 5752345959

BLM POC Email Address: clayton@blm.gov

Disposition: Approved

Disposition Date: 06/02/2021

Signature: Cody R. Layton

**PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	Lease Number NMNM126965
COUNTY:	Eddy

Wells:

Well Pad 1

Boo Radley Com 704H

Surface Hole Location: 400' FSL & 1490' FWL, Section 16, T. 26 S., R. 28 E.

Bottom Hole Location: 200' FSL & 2325' FWL, Section 33, T. 26 S, R 28 E.

Boo Radley Com 705H

Surface Hole Location: 400' FSL & 1460' FWL, Section 16, T. 26 S., R. 28 E.

Bottom Hole Location: 200' FSL & 1430' FWL, Section 33, T. 26 S, R 28 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.

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

Texas Hornshell Mussel

- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

OR

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

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

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

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

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

IV. NOXIOUS WEEDS

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

SPECIAL REQUIREMENT(S)

Texas Hornshell Mussel:

Oil and Gas and Associated Infrastructure Mitigation Measures for Zone D – CCA Boundary Requirements:

- Provide CEHMM with the permit, lease grant, or other authorization form BLM, if applicable.
- Provide CEHMM with plats or other electronic media describing the new surface disturbance for the project.

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

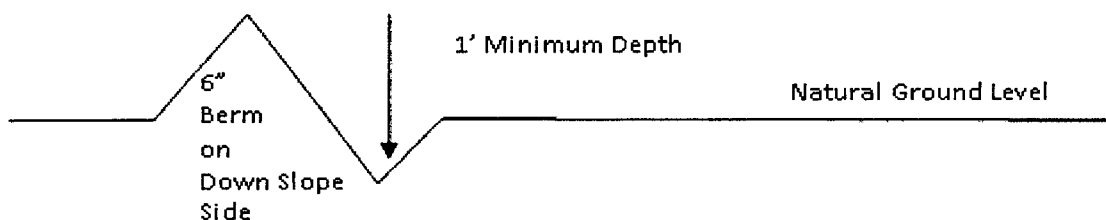
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

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

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

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

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

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

Cattle guards

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

Fence Requirement

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

Public Access

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

Construction Steps

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

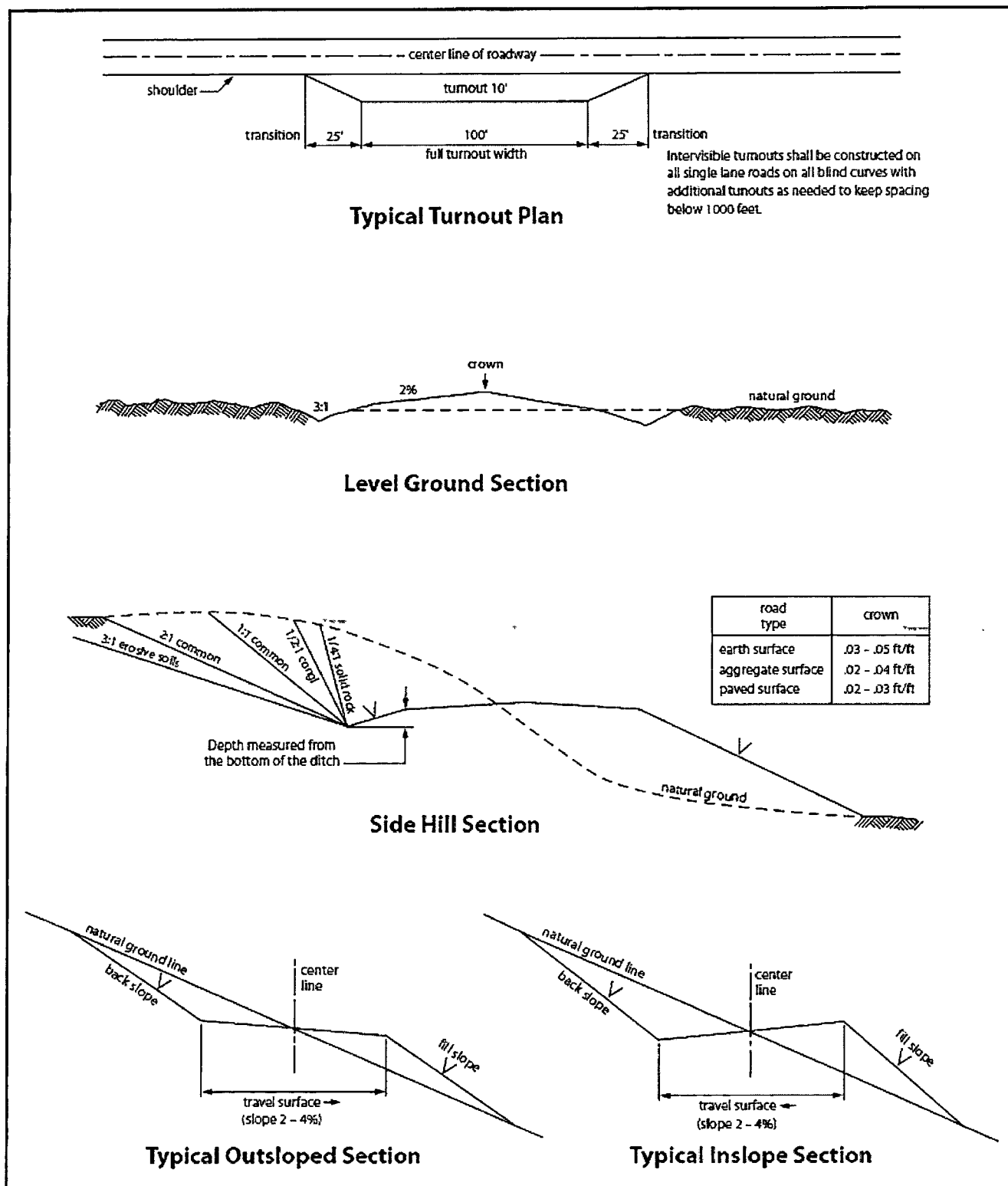


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VI. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Exclosure Netting (Open-top Tanks)

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

Chemical and Fuel Secondary Containment and Exclosure Screening

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

Open-Vent Exhaust Stack Exclosures

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

Containment Structures

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

Painting Requirement

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

VII. INTERIM RECLAMATION

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

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

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

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

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

VIII. FINAL ABANDONMENT & RECLAMATION

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

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

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

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

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

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
611 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) 478-3460 Fax: (505) 478-3462

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 30-015-47785	Pool Code 98220	Pool Name Purple Sage; Wolfcamp (Gas)
Property Code 328970	Property Name BOO RADLEY COM	Well Number 704H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3034.1'

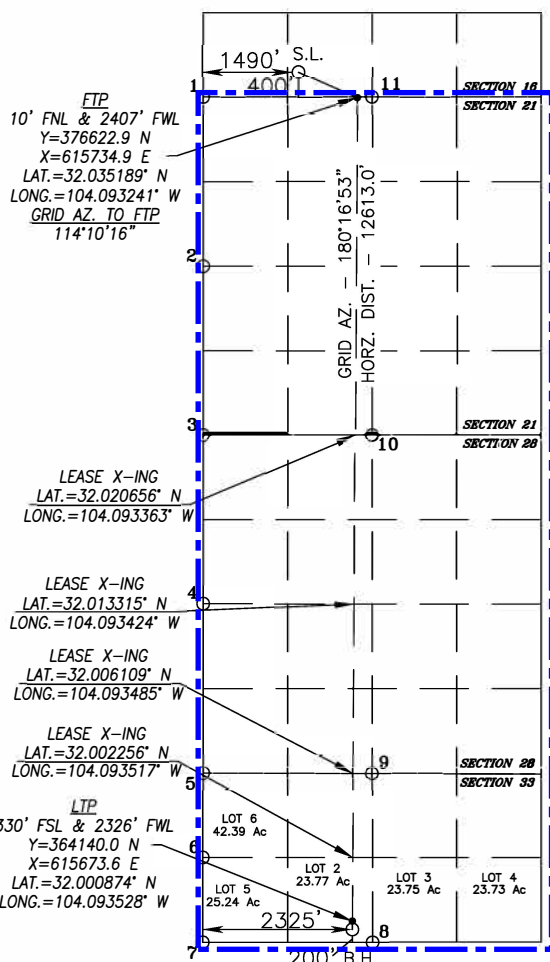
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	16	26-S	28-E		400	SOUTH	1490	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	33	26-S	28-E		200	SOUTH	2325	WEST	EDDY
Dedicated Acres 1538.88	Joint or Infill	Consolidation Code	Order No.						

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



NAD 83 NME
SURFACE LOCATION
Y=377036.0 N
X=614814.4 E
LAT.=32.036330° N
LONG.=104.096209° W

POINT LEGEND	
1	Y=376640.8 N X=613327.9 E
2	Y=373994.3 N X=613329.4 E
3	Y=371341.9 N X=613334.9 E
4	Y=368648.2 N X=613339.0 E
5	Y=366056.4 N X=613343.5 E
6	Y=364641.9 N X=613346.7 E
7	Y=363800.2 N X=613348.4 E
8	Y=363813.8 N X=615965.2 E
9	Y=366042.7 N X=615960.0 E
10	Y=371335.2 N X=616078.1 E
11	Y=376631.8 N X=616063.7 E

NAD 83 NME
PROPOSED BOTTOM
HOLE LOCATION
Y=364010.0 N
X=615673.0 E
LAT.=32.000517° N
LONG.=104.093531° W

OPERATOR CERTIFICATION

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

Stan Wagner 5/24/2021
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.

MARCH 10, 2021

Date of Survey

Signature & Seal of Professional Surveyor



Chad Hargrow 3/16/21
Certificate No. CHAD HARGROW 17777
W.O. # 21-250 DRAWN BY: DS

DELAWARE BASIN WEST

**ATLAS PROSPECT (NM-E)
BOO RADLEY COM PROJECT
BOO RADLEY COM #704H**

OWB

Plan: PWP4

Standard Survey Report

13 April, 2021



ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	Database:	edm

Project	ATLAS 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	BOO RADLEY COM #704H				
Well Position	+N/-S	0.0 usft	Northing:	376,978.70 usft	Latitude: 32° 2' 10.343 N
	+E/-W	0.0 usft	Easting:	573,629.70 usft	Longitude: 104° 5' 44.596 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level: 3,034.1 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	4/8/2021	6.79	59.66	47,350.19317868

Design	PWP4				
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	176.23	

Survey Tool Program	Date	4/13/2021			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	22,188.0	PWP4 (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	

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
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Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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	110.93	2,600.0	-0.6	1.6	0.7	2.00	2.00	0.00
2,700.0	4.00	110.93	2,699.8	-2.5	6.5	2.9	2.00	2.00	0.00
2,750.0	5.00	110.93	2,749.6	-3.9	10.2	4.6	2.00	2.00	0.00
Start 6300.6 hold at 2750.0 MD									
2,800.0	5.00	110.93	2,799.5	-5.5	14.3	6.4	0.00	0.00	0.00
2,900.0	5.00	110.93	2,899.1	-8.6	22.4	10.0	0.00	0.00	0.00
3,000.0	5.00	110.93	2,998.7	-11.7	30.5	13.7	0.00	0.00	0.00
3,100.0	5.00	110.93	3,098.4	-14.8	38.7	17.3	0.00	0.00	0.00
3,200.0	5.00	110.93	3,198.0	-17.9	46.8	20.9	0.00	0.00	0.00
3,300.0	5.00	110.93	3,297.6	-21.0	54.9	24.6	0.00	0.00	0.00
3,400.0	5.00	110.93	3,397.2	-24.1	63.1	28.2	0.00	0.00	0.00
3,500.0	5.00	110.93	3,496.8	-27.2	71.2	31.9	0.00	0.00	0.00
3,600.0	5.00	110.93	3,596.4	-30.4	79.4	35.5	0.00	0.00	0.00
3,700.0	5.00	110.93	3,696.1	-33.5	87.5	39.1	0.00	0.00	0.00
3,800.0	5.00	110.93	3,795.7	-36.6	95.6	42.8	0.00	0.00	0.00
3,900.0	5.00	110.93	3,895.3	-39.7	103.8	46.4	0.00	0.00	0.00
4,000.0	5.00	110.93	3,994.9	-42.8	111.9	50.1	0.00	0.00	0.00
4,100.0	5.00	110.93	4,094.5	-45.9	120.1	53.7	0.00	0.00	0.00
4,200.0	5.00	110.93	4,194.2	-49.0	128.2	57.3	0.00	0.00	0.00
4,300.0	5.00	110.93	4,293.8	-52.1	136.3	61.0	0.00	0.00	0.00
4,400.0	5.00	110.93	4,393.4	-55.3	144.5	64.6	0.00	0.00	0.00
4,500.0	5.00	110.93	4,493.0	-58.4	152.6	68.3	0.00	0.00	0.00
4,600.0	5.00	110.93	4,592.6	-61.5	160.8	71.9	0.00	0.00	0.00
4,700.0	5.00	110.93	4,692.3	-64.6	168.9	75.6	0.00	0.00	0.00
4,800.0	5.00	110.93	4,791.9	-67.7	177.0	79.2	0.00	0.00	0.00
4,900.0	5.00	110.93	4,891.5	-70.8	185.2	82.8	0.00	0.00	0.00
5,000.0	5.00	110.93	4,991.1	-73.9	193.3	86.5	0.00	0.00	0.00
5,100.0	5.00	110.93	5,090.7	-77.0	201.5	90.1	0.00	0.00	0.00
5,200.0	5.00	110.93	5,190.4	-80.2	209.6	93.8	0.00	0.00	0.00
5,300.0	5.00	110.93	5,290.0	-83.3	217.7	97.4	0.00	0.00	0.00
5,400.0	5.00	110.93	5,389.6	-86.4	225.9	101.0	0.00	0.00	0.00
5,500.0	5.00	110.93	5,489.2	-89.5	234.0	104.7	0.00	0.00	0.00

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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)	
5,600.0	5.00	110.93	5,588.8	-92.6	242.1	108.3	0.00	0.00	0.00	
5,700.0	5.00	110.93	5,688.5	-95.7	250.3	112.0	0.00	0.00	0.00	
5,800.0	5.00	110.93	5,788.1	-98.8	258.4	115.6	0.00	0.00	0.00	
5,900.0	5.00	110.93	5,887.7	-101.9	266.6	119.2	0.00	0.00	0.00	
6,000.0	5.00	110.93	5,987.3	-105.1	274.7	122.9	0.00	0.00	0.00	
6,100.0	5.00	110.93	6,086.9	-108.2	282.8	126.5	0.00	0.00	0.00	
6,200.0	5.00	110.93	6,186.6	-111.3	291.0	130.2	0.00	0.00	0.00	
6,300.0	5.00	110.93	6,286.2	-114.4	299.1	133.8	0.00	0.00	0.00	
6,400.0	5.00	110.93	6,385.8	-117.5	307.3	137.4	0.00	0.00	0.00	
6,500.0	5.00	110.93	6,485.4	-120.6	315.4	141.1	0.00	0.00	0.00	
6,600.0	5.00	110.93	6,585.0	-123.7	323.5	144.7	0.00	0.00	0.00	
6,700.0	5.00	110.93	6,684.7	-126.8	331.7	148.4	0.00	0.00	0.00	
6,800.0	5.00	110.93	6,784.3	-130.0	339.8	152.0	0.00	0.00	0.00	
6,900.0	5.00	110.93	6,883.9	-133.1	348.0	155.7	0.00	0.00	0.00	
7,000.0	5.00	110.93	6,983.5	-136.2	356.1	159.3	0.00	0.00	0.00	
7,100.0	5.00	110.93	7,083.1	-139.3	364.2	162.9	0.00	0.00	0.00	
7,200.0	5.00	110.93	7,182.8	-142.4	372.4	166.6	0.00	0.00	0.00	
7,300.0	5.00	110.93	7,282.4	-145.5	380.5	170.2	0.00	0.00	0.00	
7,400.0	5.00	110.93	7,382.0	-148.6	388.7	173.9	0.00	0.00	0.00	
7,500.0	5.00	110.93	7,481.6	-151.7	396.8	177.5	0.00	0.00	0.00	
7,600.0	5.00	110.93	7,581.2	-154.9	404.9	181.1	0.00	0.00	0.00	
7,700.0	5.00	110.93	7,680.9	-158.0	413.1	184.8	0.00	0.00	0.00	
7,800.0	5.00	110.93	7,780.5	-161.1	421.2	188.4	0.00	0.00	0.00	
7,900.0	5.00	110.93	7,880.1	-164.2	429.4	192.1	0.00	0.00	0.00	
8,000.0	5.00	110.93	7,979.7	-167.3	437.5	195.7	0.00	0.00	0.00	
8,100.0	5.00	110.93	8,079.3	-170.4	445.6	199.3	0.00	0.00	0.00	
8,200.0	5.00	110.93	8,179.0	-173.5	453.8	203.0	0.00	0.00	0.00	
8,300.0	5.00	110.93	8,278.6	-176.6	461.9	206.6	0.00	0.00	0.00	
8,400.0	5.00	110.93	8,378.2	-179.8	470.0	210.3	0.00	0.00	0.00	
8,500.0	5.00	110.93	8,477.8	-182.9	478.2	213.9	0.00	0.00	0.00	
8,600.0	5.00	110.93	8,577.4	-186.0	486.3	217.5	0.00	0.00	0.00	
8,700.0	5.00	110.93	8,677.0	-189.1	494.5	221.2	0.00	0.00	0.00	
8,800.0	5.00	110.93	8,776.7	-192.2	502.6	224.8	0.00	0.00	0.00	
8,900.0	5.00	110.93	8,876.3	-195.3	510.7	228.5	0.00	0.00	0.00	
9,000.0	5.00	110.93	8,975.9	-198.4	518.9	232.1	0.00	0.00	0.00	
9,050.6	5.00	110.93	9,026.3	-200.0	523.0	234.0	0.00	0.00	0.00	
Start DLS 12.00 TFO 48.11										
9,100.0	9.98	137.26	9,075.3	-203.9	527.9	238.2	12.00	10.09	53.29	
9,200.0	21.58	149.47	9,171.4	-226.2	543.2	261.4	12.00	11.60	12.21	
9,300.0	33.46	153.29	9,259.9	-266.8	565.0	303.4	12.00	11.88	3.81	
9,400.0	45.39	155.26	9,337.0	-324.0	592.4	362.2	12.00	11.94	1.97	
9,500.0	57.35	156.55	9,399.3	-395.2	624.2	435.4	12.00	11.96	1.29	
9,600.0	69.32	157.53	9,444.1	-477.3	658.9	519.6	12.00	11.97	0.98	
9,700.0	81.29	158.36	9,469.5	-566.8	695.2	611.3	12.00	11.97	0.84	

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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)
9,774.9	90.26	158.95	9,475.0	-636.3	722.3	682.4	12.00	11.97	0.78
Start DLS 2.00 TFO 89.96									
9,800.0	90.26	159.45	9,474.9	-659.8	731.2	706.4	2.00	0.00	2.00
9,900.0	90.26	161.45	9,474.4	-754.0	764.7	802.7	2.00	0.00	2.00
10,000.0	90.26	163.45	9,473.9	-849.4	794.9	899.8	2.00	0.00	2.00
10,100.0	90.26	165.45	9,473.5	-945.7	821.7	997.7	2.00	0.00	2.00
10,200.0	90.26	167.45	9,473.0	-1,042.9	845.1	1,096.2	2.00	0.00	2.00
10,300.0	90.26	169.45	9,472.6	-1,140.9	865.1	1,195.3	2.00	0.00	2.00
10,400.0	90.26	171.45	9,472.1	-1,239.5	881.7	1,294.8	2.00	0.00	2.00
10,500.0	90.26	173.45	9,471.7	-1,338.6	894.8	1,394.6	2.00	0.00	2.00
10,600.0	90.26	175.45	9,471.2	-1,438.1	904.5	1,494.5	2.00	0.00	2.00
10,700.0	90.26	177.45	9,470.7	-1,537.9	910.7	1,594.5	2.00	0.00	2.00
10,800.0	90.26	179.45	9,470.3	-1,637.9	913.4	1,694.4	2.00	0.00	2.00
10,841.3	90.26	180.28	9,470.1	-1,679.3	913.5	1,735.7	2.00	0.00	2.00
Start 11346.7 hold at 10841.3 MD									
10,900.0	90.26	180.28	9,469.8	-1,737.9	913.2	1,794.2	0.00	0.00	0.00
11,000.0	90.26	180.28	9,469.4	-1,837.9	912.7	1,893.9	0.00	0.00	0.00
11,100.0	90.26	180.28	9,468.9	-1,937.9	912.2	1,993.7	0.00	0.00	0.00
11,200.0	90.26	180.28	9,468.5	-2,037.9	911.7	2,093.4	0.00	0.00	0.00
11,300.0	90.26	180.28	9,468.0	-2,137.9	911.2	2,193.2	0.00	0.00	0.00
11,400.0	90.26	180.28	9,467.6	-2,237.9	910.8	2,292.9	0.00	0.00	0.00
11,500.0	90.26	180.28	9,467.1	-2,337.9	910.3	2,392.7	0.00	0.00	0.00
11,600.0	90.26	180.28	9,466.7	-2,437.9	909.8	2,492.4	0.00	0.00	0.00
11,700.0	90.26	180.28	9,466.2	-2,537.9	909.3	2,592.2	0.00	0.00	0.00
11,800.0	90.26	180.28	9,465.8	-2,637.9	908.8	2,691.9	0.00	0.00	0.00
11,900.0	90.26	180.28	9,465.3	-2,737.9	908.3	2,791.7	0.00	0.00	0.00
12,000.0	90.26	180.28	9,464.9	-2,837.9	907.8	2,891.4	0.00	0.00	0.00
12,100.0	90.26	180.28	9,464.4	-2,937.9	907.3	2,991.2	0.00	0.00	0.00
12,200.0	90.26	180.28	9,464.0	-3,037.9	906.9	3,090.9	0.00	0.00	0.00
12,300.0	90.26	180.28	9,463.5	-3,137.9	906.4	3,190.7	0.00	0.00	0.00
12,400.0	90.26	180.28	9,463.1	-3,237.9	905.9	3,290.4	0.00	0.00	0.00
12,500.0	90.26	180.28	9,462.6	-3,337.9	905.4	3,390.2	0.00	0.00	0.00
12,600.0	90.26	180.28	9,462.2	-3,437.9	904.9	3,489.9	0.00	0.00	0.00
12,700.0	90.26	180.28	9,461.7	-3,537.9	904.4	3,589.7	0.00	0.00	0.00
12,800.0	90.26	180.28	9,461.3	-3,637.9	903.9	3,689.4	0.00	0.00	0.00
12,900.0	90.26	180.28	9,460.8	-3,737.9	903.4	3,789.2	0.00	0.00	0.00
13,000.0	90.26	180.28	9,460.4	-3,837.9	903.0	3,888.9	0.00	0.00	0.00
13,100.0	90.26	180.28	9,459.9	-3,937.9	902.5	3,988.7	0.00	0.00	0.00
13,200.0	90.26	180.28	9,459.5	-4,037.9	902.0	4,088.4	0.00	0.00	0.00
13,300.0	90.26	180.28	9,459.0	-4,137.8	901.5	4,188.2	0.00	0.00	0.00
13,400.0	90.26	180.28	9,458.6	-4,237.8	901.0	4,287.9	0.00	0.00	0.00
13,500.0	90.26	180.28	9,458.1	-4,337.8	900.5	4,387.7	0.00	0.00	0.00
13,600.0	90.26	180.28	9,457.7	-4,437.8	900.0	4,487.4	0.00	0.00	0.00

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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)
13,700.0	90.26	180.28	9,457.2	-4,537.8	899.5	4,587.2	0.00	0.00	0.00
13,800.0	90.26	180.28	9,456.8	-4,637.8	899.1	4,686.9	0.00	0.00	0.00
13,900.0	90.26	180.28	9,456.3	-4,737.8	898.6	4,786.7	0.00	0.00	0.00
14,000.0	90.26	180.28	9,455.9	-4,837.8	898.1	4,886.4	0.00	0.00	0.00
14,100.0	90.26	180.28	9,455.4	-4,937.8	897.6	4,986.2	0.00	0.00	0.00
14,200.0	90.26	180.28	9,455.0	-5,037.8	897.1	5,085.9	0.00	0.00	0.00
14,300.0	90.26	180.28	9,454.5	-5,137.8	896.6	5,185.7	0.00	0.00	0.00
14,400.0	90.26	180.28	9,454.1	-5,237.8	896.1	5,285.4	0.00	0.00	0.00
14,500.0	90.26	180.28	9,453.6	-5,337.8	895.7	5,385.2	0.00	0.00	0.00
14,600.0	90.26	180.28	9,453.2	-5,437.8	895.2	5,484.9	0.00	0.00	0.00
14,700.0	90.26	180.28	9,452.7	-5,537.8	894.7	5,584.7	0.00	0.00	0.00
14,800.0	90.26	180.28	9,452.3	-5,637.8	894.2	5,684.4	0.00	0.00	0.00
14,900.0	90.26	180.28	9,451.8	-5,737.8	893.7	5,784.2	0.00	0.00	0.00
15,000.0	90.26	180.28	9,451.4	-5,837.8	893.2	5,883.9	0.00	0.00	0.00
15,100.0	90.26	180.28	9,450.9	-5,937.8	892.7	5,983.7	0.00	0.00	0.00
15,200.0	90.26	180.28	9,450.5	-6,037.8	892.2	6,083.4	0.00	0.00	0.00
15,300.0	90.26	180.28	9,450.0	-6,137.8	891.8	6,183.2	0.00	0.00	0.00
15,400.0	90.26	180.28	9,449.6	-6,237.8	891.3	6,282.9	0.00	0.00	0.00
15,500.0	90.26	180.28	9,449.1	-6,337.8	890.8	6,382.7	0.00	0.00	0.00
15,600.0	90.26	180.28	9,448.7	-6,437.8	890.3	6,482.4	0.00	0.00	0.00
15,700.0	90.26	180.28	9,448.2	-6,537.8	889.8	6,582.2	0.00	0.00	0.00
15,800.0	90.26	180.28	9,447.8	-6,637.8	889.3	6,681.9	0.00	0.00	0.00
15,900.0	90.26	180.28	9,447.3	-6,737.8	888.8	6,781.6	0.00	0.00	0.00
16,000.0	90.26	180.28	9,446.9	-6,837.8	888.3	6,881.4	0.00	0.00	0.00
16,100.0	90.26	180.28	9,446.4	-6,937.8	887.9	6,981.1	0.00	0.00	0.00
16,200.0	90.26	180.28	9,446.0	-7,037.8	887.4	7,080.9	0.00	0.00	0.00
16,300.0	90.26	180.28	9,445.5	-7,137.8	886.9	7,180.6	0.00	0.00	0.00
16,400.0	90.26	180.28	9,445.1	-7,237.8	886.4	7,280.4	0.00	0.00	0.00
16,500.0	90.26	180.28	9,444.6	-7,337.8	885.9	7,380.1	0.00	0.00	0.00
16,600.0	90.26	180.28	9,444.2	-7,437.8	885.4	7,479.9	0.00	0.00	0.00
16,700.0	90.26	180.28	9,443.7	-7,537.8	884.9	7,579.6	0.00	0.00	0.00
16,800.0	90.26	180.28	9,443.3	-7,637.8	884.4	7,679.4	0.00	0.00	0.00
16,900.0	90.26	180.28	9,442.8	-7,737.8	884.0	7,779.1	0.00	0.00	0.00
17,000.0	90.26	180.28	9,442.4	-7,837.8	883.5	7,878.9	0.00	0.00	0.00
17,100.0	90.26	180.28	9,441.9	-7,937.8	883.0	7,978.6	0.00	0.00	0.00
17,200.0	90.26	180.28	9,441.5	-8,037.8	882.5	8,078.4	0.00	0.00	0.00
17,300.0	90.26	180.28	9,441.0	-8,137.8	882.0	8,178.1	0.00	0.00	0.00
17,400.0	90.26	180.28	9,440.6	-8,237.8	881.5	8,277.9	0.00	0.00	0.00
17,500.0	90.26	180.28	9,440.1	-8,337.8	881.0	8,377.6	0.00	0.00	0.00
17,600.0	90.26	180.28	9,439.7	-8,437.8	880.5	8,477.4	0.00	0.00	0.00
17,700.0	90.26	180.28	9,439.2	-8,537.8	880.1	8,577.1	0.00	0.00	0.00
17,800.0	90.26	180.28	9,438.8	-8,637.8	879.6	8,676.9	0.00	0.00	0.00
17,900.0	90.26	180.28	9,438.3	-8,737.7	879.1	8,776.6	0.00	0.00	0.00
18,000.0	90.26	180.28	9,437.9	-8,837.7	878.6	8,876.4	0.00	0.00	0.00

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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)
18,100.0	90.26	180.28	9,437.4	-8,937.7	878.1	8,976.1	0.00	0.00	0.00
18,200.0	90.26	180.28	9,437.0	-9,037.7	877.6	9,075.9	0.00	0.00	0.00
18,300.0	90.26	180.28	9,436.5	-9,137.7	877.1	9,175.6	0.00	0.00	0.00
18,400.0	90.26	180.28	9,436.1	-9,237.7	876.7	9,275.4	0.00	0.00	0.00
18,500.0	90.26	180.28	9,435.6	-9,337.7	876.2	9,375.1	0.00	0.00	0.00
18,600.0	90.26	180.28	9,435.2	-9,437.7	875.7	9,474.9	0.00	0.00	0.00
18,700.0	90.26	180.28	9,434.7	-9,537.7	875.2	9,574.6	0.00	0.00	0.00
18,800.0	90.26	180.28	9,434.3	-9,637.7	874.7	9,674.4	0.00	0.00	0.00
18,900.0	90.26	180.28	9,433.8	-9,737.7	874.2	9,774.1	0.00	0.00	0.00
19,000.0	90.26	180.28	9,433.4	-9,837.7	873.7	9,873.9	0.00	0.00	0.00
19,100.0	90.26	180.28	9,432.9	-9,937.7	873.2	9,973.6	0.00	0.00	0.00
19,200.0	90.26	180.28	9,432.5	-10,037.7	872.8	10,073.4	0.00	0.00	0.00
19,300.0	90.26	180.28	9,432.0	-10,137.7	872.3	10,173.1	0.00	0.00	0.00
19,400.0	90.26	180.28	9,431.6	-10,237.7	871.8	10,272.9	0.00	0.00	0.00
19,500.0	90.26	180.28	9,431.1	-10,337.7	871.3	10,372.6	0.00	0.00	0.00
19,600.0	90.26	180.28	9,430.7	-10,437.7	870.8	10,472.4	0.00	0.00	0.00
19,700.0	90.26	180.28	9,430.2	-10,537.7	870.3	10,572.1	0.00	0.00	0.00
19,800.0	90.26	180.28	9,429.8	-10,637.7	869.8	10,671.9	0.00	0.00	0.00
19,900.0	90.26	180.28	9,429.3	-10,737.7	869.3	10,771.6	0.00	0.00	0.00
20,000.0	90.26	180.28	9,428.9	-10,837.7	868.9	10,871.4	0.00	0.00	0.00
20,100.0	90.26	180.28	9,428.4	-10,937.7	868.4	10,971.1	0.00	0.00	0.00
20,200.0	90.26	180.28	9,428.0	-11,037.7	867.9	11,070.9	0.00	0.00	0.00
20,300.0	90.26	180.28	9,427.5	-11,137.7	867.4	11,170.6	0.00	0.00	0.00
20,400.0	90.26	180.28	9,427.1	-11,237.7	866.9	11,270.4	0.00	0.00	0.00
20,500.0	90.26	180.28	9,426.6	-11,337.7	866.4	11,370.1	0.00	0.00	0.00
20,600.0	90.26	180.28	9,426.2	-11,437.7	865.9	11,469.9	0.00	0.00	0.00
20,700.0	90.26	180.28	9,425.7	-11,537.7	865.4	11,569.6	0.00	0.00	0.00
20,800.0	90.26	180.28	9,425.3	-11,637.7	865.0	11,669.4	0.00	0.00	0.00
20,900.0	90.26	180.28	9,424.8	-11,737.7	864.5	11,769.1	0.00	0.00	0.00
21,000.0	90.26	180.28	9,424.4	-11,837.7	864.0	11,868.9	0.00	0.00	0.00
21,100.0	90.26	180.28	9,423.9	-11,937.7	863.5	11,968.6	0.00	0.00	0.00
21,200.0	90.26	180.28	9,423.4	-12,037.7	863.0	12,068.4	0.00	0.00	0.00
21,300.0	90.26	180.28	9,423.0	-12,137.7	862.5	12,168.1	0.00	0.00	0.00
21,400.0	90.26	180.28	9,422.5	-12,237.7	862.0	12,267.9	0.00	0.00	0.00
21,500.0	90.26	180.28	9,422.1	-12,337.7	861.6	12,367.6	0.00	0.00	0.00
21,600.0	90.26	180.28	9,421.6	-12,437.7	861.1	12,467.4	0.00	0.00	0.00
21,700.0	90.26	180.28	9,421.2	-12,537.7	860.6	12,567.1	0.00	0.00	0.00
21,800.0	90.26	180.28	9,420.7	-12,637.7	860.1	12,666.9	0.00	0.00	0.00
21,900.0	90.26	180.28	9,420.3	-12,737.7	859.6	12,766.6	0.00	0.00	0.00
22,000.0	90.26	180.28	9,419.8	-12,837.7	859.1	12,866.4	0.00	0.00	0.00
22,100.0	90.26	180.28	9,419.4	-12,937.7	858.6	12,966.1	0.00	0.00	0.00
22,188.0	90.26	180.28	9,419.0	-13,025.7	858.2	13,053.9	0.00	0.00	0.00
TD at 22188.0									

ConocoPhillips

Survey Report



Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well BOO RADLEY COM #704H
Project:	ATLAS PROSPECT (NM-E)	TVD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Site:	BOO RADLEY COM PROJECT	MD Reference:	KB=25' @ 3059.1usft (PIONEER 84)
Well:	BOO RADLEY COM #704H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP4	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)
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Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LTP (BOO RADLEY C	0.00	0.00	9,419.0	-12,895.7	858.9	364,083.00	574,488.60	32° 0' 2.700 N	104° 5' 34.950 W
- plan misses target center by 0.6usft at 22058.0usft MD (9419.6 TVD, -12895.7 N, 858.8 E)									
- Point									
PBHL (BOO RADLEY	0.26	0.28	9,419.0	-13,025.7	858.2	363,953.00	574,487.90	32° 0' 1.414 N	104° 5' 34.962 W
- plan hits target center									
- Rectangle (sides W100.0 H12,611.0 D20.0)									
FTP (BOO RADLEY C	0.00	0.00	9,475.0	-413.1	920.4	376,565.60	574,550.10	32° 2' 6.235 N	104° 5' 33.913 W
- plan misses target center by 266.9usft at 9645.2usft MD (9458.1 TVD, -517.1 N, 675.2 E)									
- Circle (radius 50.0)									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
2500	2500	0	0	Start Build 2.00
2750	2750	-4	10	Start 6300.6 hold at 2750.0 MD
9051	9026	-200	523	Start DLS 12.00 TFO 48.11
9775	9475	-636	722	Start DLS 2.00 TFO 89.96
10,841	9470	-1679	913	Start 11346.7 hold at 10841.3 MD
22,188	9419	-13,026	858	TD at 22188.0

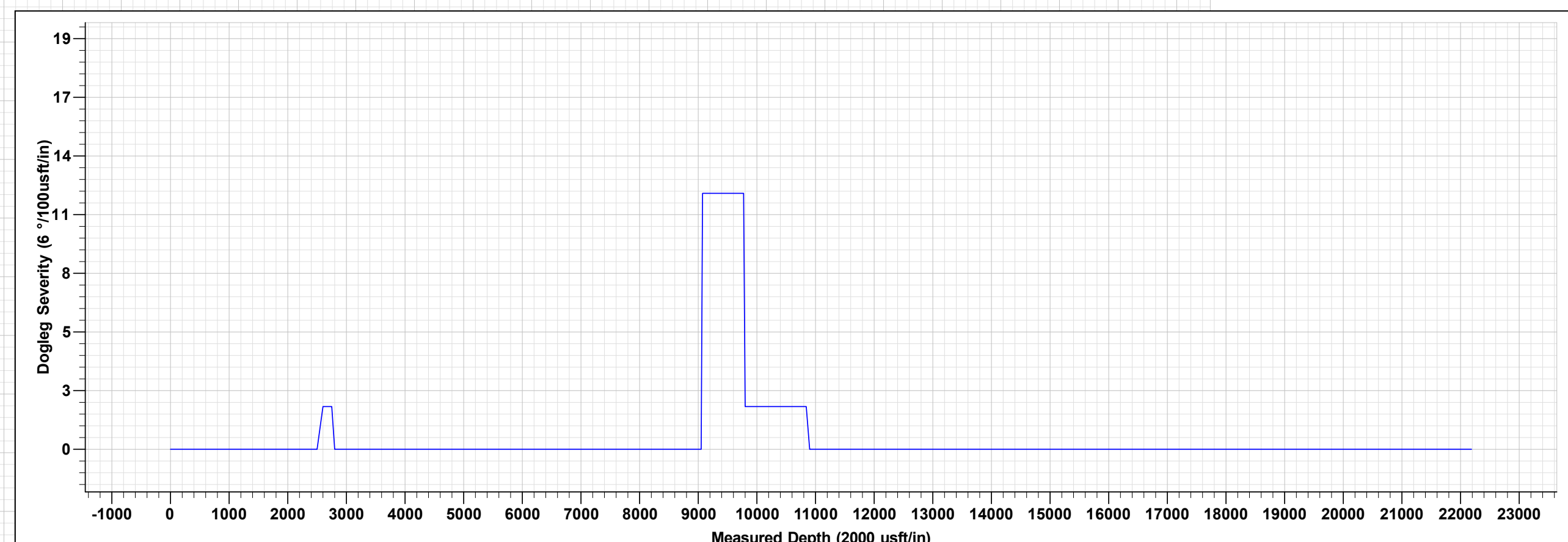
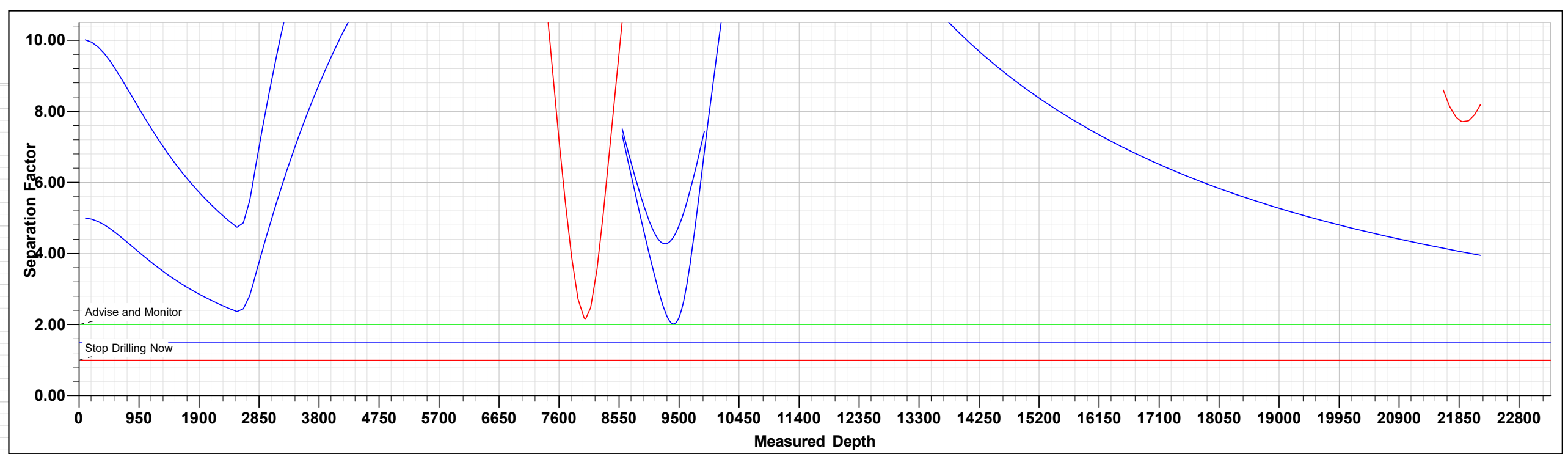
Checked By: _____ Approved By: _____ Date: _____



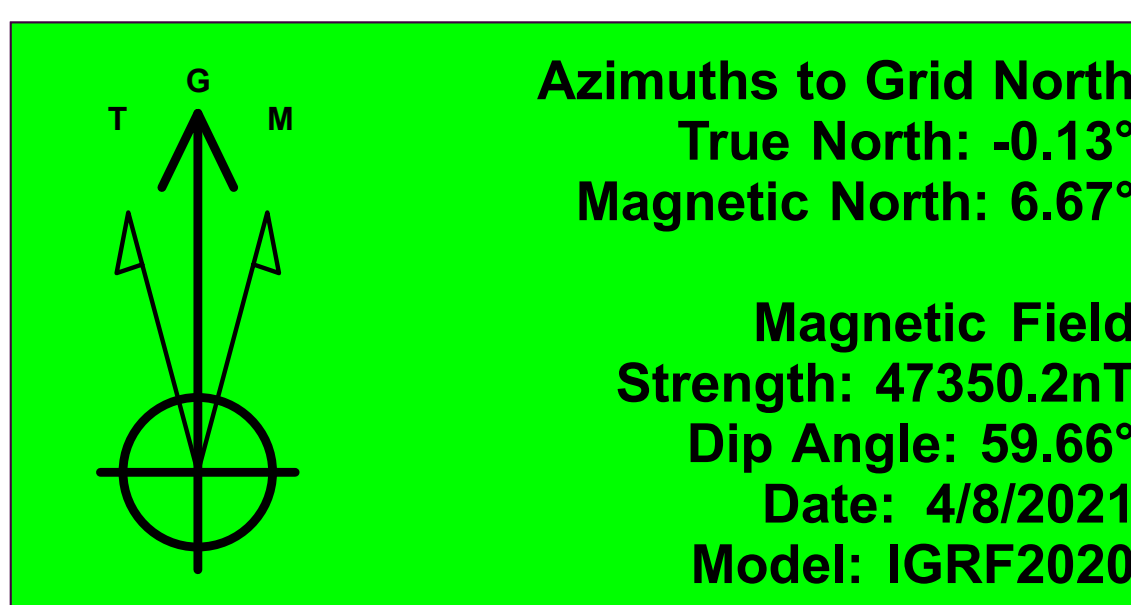
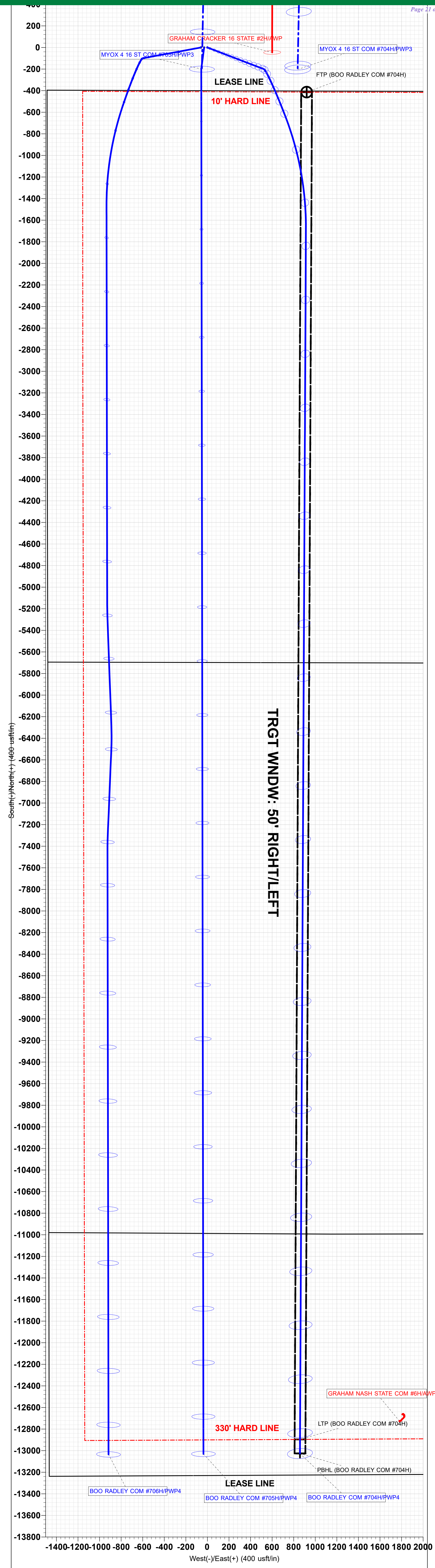
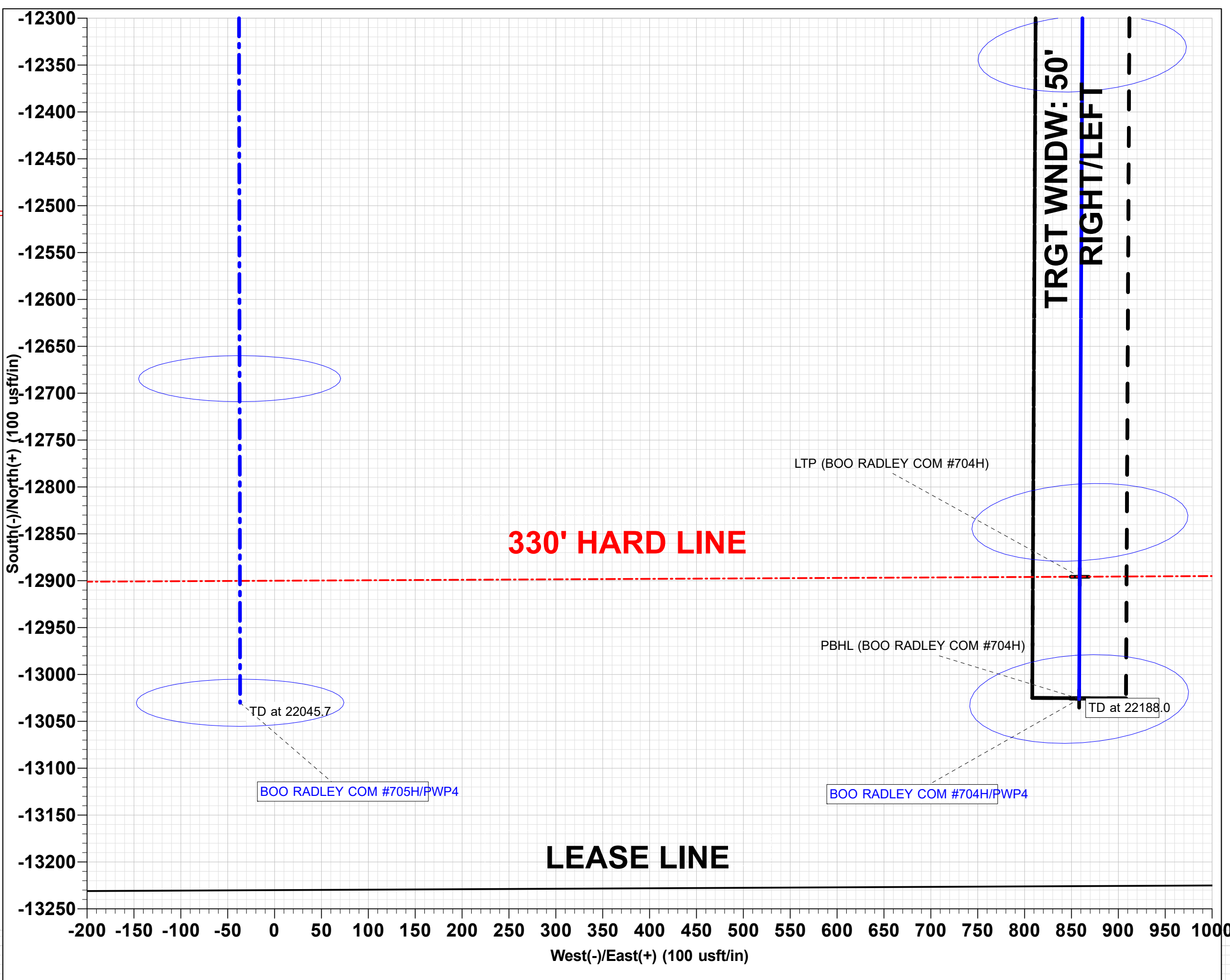
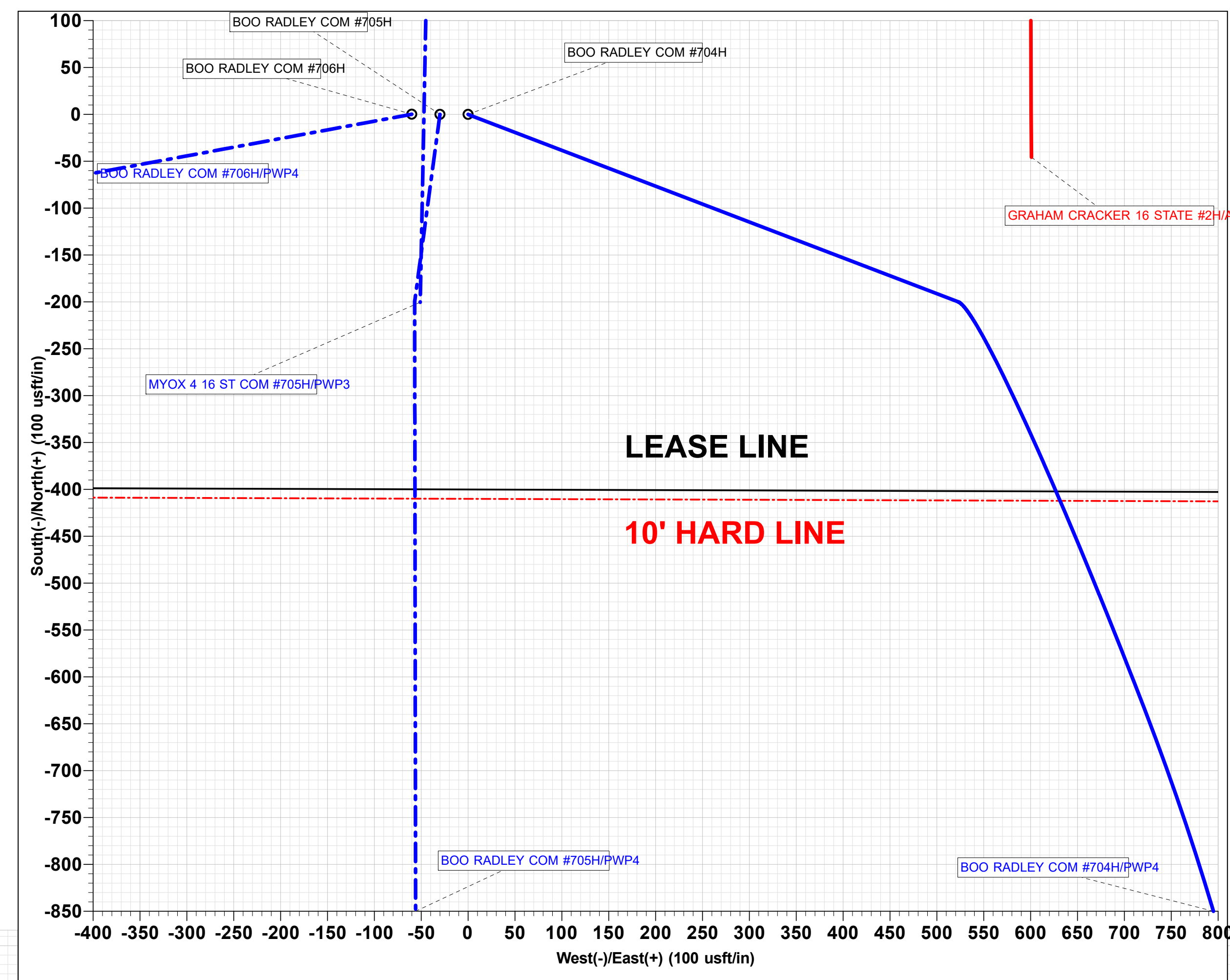
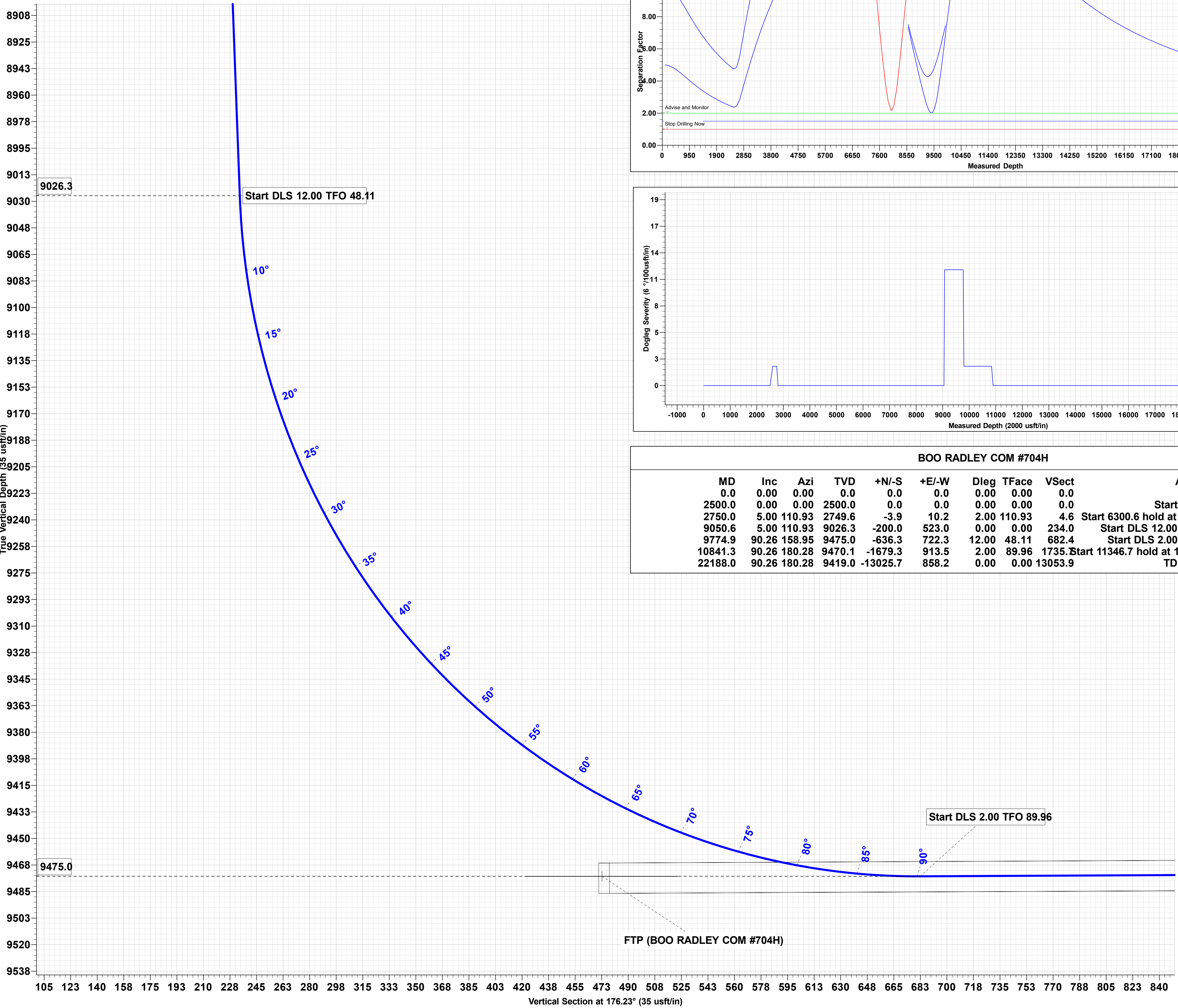
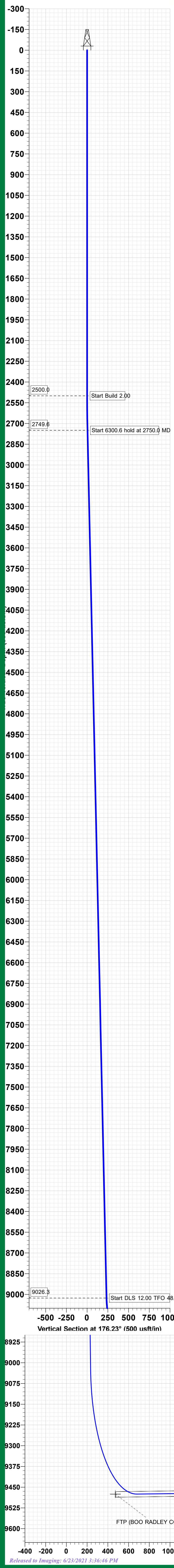
Project: ATLAS PROSPECT (NM-E)
Site: BOO RADLEY COM PROJECT
Well: BOO RADLEY COM #704H
Wellbore: OWB
Design: PWP4
GL: 3034.1
KB=25' @ 3059.1ustf (PIONEER 84)

WELL DETAILS: BOO RADLEY COM #704H						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	376978.70	573629.70	32° 2' 10.343 N	104° 5' 44.596 W	

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
LTP (BOO RADLEY COM #704H)	9419.0	-12895.7	858.9	364083.00	574488.60	32° 0' 2.700 N
PBHL (BOO RADLEY COM #704H)	9419.0	-13025.7	858.2	363953.00	574487.90	32° 0' 1.414 N
FTP (BOO RADLEY COM #704H)	9475.0	-413.1	920.4	376565.60	574550.10	32° 2' 6.235 N



BOO RADLEY COM #704H									
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
2750.0	5.00	110.93	2749.6	-3.9	10.2	2.00	110.93	4.6	Start 6300.6 hold at 2750.0 MD
9050.6	5.00	110.93	9028.3	-200.0	523.0	0.00	0.00	234.0	Start DLS 12.00 TFO 48.11
9774.9	90.26	158.95	9475.0	-636.3	722.3	12.00	48.11	682.4	Start DLS 2.00 TFO 89.96
10841.3	90.26	180.28	9470.1	-1679.3	913.5	2.00	89.96	1735.0	Start 11346.7 hold at 10841.3 MD
22188.0	90.26	180.28	9419.0	-13025.7	858.2	0.00	0.00	13053.9	TD at 22188.0



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

COMMENTS

Action 31211

COMMENTS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 31211
	Action Type: [C-103] NOI Change of Plans (C-103A)

COMMENTS

Created By	Comment	Comment Date
kpickford	KP GEO Review 6/10/2021	6/11/2021

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

CONDITIONS

Action 31211

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 31211
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
kpickford	Adhere to previous NMOCD Conditions of Approval	6/11/2021