

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

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		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No.
2. Name of Operator		9. API Well No. 30-025-52889
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
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.

(Continued on page 2)

*(Instructions on page 2)



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) 746-1283 Fax: (575) 746-9720

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 30-025-52889	Pool Code 97088	Pool Name WC-025 G-08 S2535340; Bone Spring
Property Code 335855	Property Name AKUBRA FEDERAL COM	Well Number 602H
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3193.2'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	4	26-S	35-E		280	NORTH	1390	EAST	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
B	28	25-S	35-E		50	NORTH	2409	EAST	LEA
Dedicated Acres 1280	Joint or Infill	Consolidation Code Com	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

LTP
100' FNL & 2409' FEL
Y=404483.1 N
X=839078.8 E
LAT.=32.108352° N
LONG.=103.371728° W

PPP5
2412' FEL
Y=401939.4 N
X=839103.5 E
LAT.=32.101360° N
LONG.=103.371721° W

PPP4
2411' FEL
Y=399293.8 N
X=839129.2 E
LAT.=32.094088° N
LONG.=103.371714° W

PPP3
2410' FEL
Y=397975.5 N
X=839142.0 E
LAT.=32.090464° N
LONG.=103.371711° W

PPP2
2409' FEL
Y=396657.1 N
X=839154.8 E
LAT.=32.086840° N
LONG.=103.371708° W

FTP/PPP1
100' FSL & 2409' FEL
Y=394117.7 N
X=839179.5 E
LAT.=32.079860° N
LONG.=103.371701° W
GRID AZ. TO FTP
289°57'37"

**NAD 83 NME
PROPOSED BOTTOM
HOLE LOCATION**
Y=404533.1 N
X=839078.3 E
LAT.=32.108490° N
LONG.=103.371728° W

POINT LEGEND	
1	Y=404549.9 N X=836202.0 E
2	Y=401910.4 N X=836227.2 E
3	Y=399270.9 N X=836252.9 E
4	Y=396633.0 N X=836278.7 E
5	Y=393995.1 N X=836304.4 E
6	Y=394015.7 N X=838947.5 E
7	Y=394038.0 N X=841589.3 E
8	Y=396677.3 N X=841563.6 E
9	Y=399317.2 N X=841540.4 E
10	Y=401963.7 N X=841515.9 E
11	Y=404599.6 N X=841486.7 E
12	Y=404581.5 N X=838843.0 E

**NAD 83 NME
SURFACE LOCATION**
Y=393746.3 N
X=840202.1 E
LAT.=32.078814° N
LONG.=103.368411° 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 8/1/2023
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 6, 2023
Date of Survey

Signature & Seal of Professional Surveyor



Chad Harcrow 6/15/23
Certificate No. CHAD HARCROW 17777
W.O. #23-406 DRAWN BY: WN

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

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: COG Operating LLC

OGRID: 229137

Date: 07/31/2023

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Akubra Federal Com 602H	30-025-	B-4-26S-35E	280 FNL & 1390 FEL	± 1100	± 1225	± 3225
Akubra Federal Com 603H	30-025-	B-4-26S-35E	280 FNL & 1330 FEL	± 1100	± 1225	± 3225
Akubra Federal Com 703H	30-025-	B-4-26S-35E	280 FNL & 1360 FEL	± 1100	± 1225	± 3225
Akubra Federal Com 704H	30-025-	B-4-26S-35E	280 FNL & 1300 FEL	± 1100	± 1225	± 3225
Akubra Federal Com 802H	30-025-	B-4-26S-35E	280 FNL & 1420 FEL	± 1100	± 1225	± 3225

IV. Central Delivery Point Name: 33 O CTB SWSE 33-25S-35E [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Akubra Federal Com	Pending	± 8/1/2024	± 25 days from spud	TBD	TBD	TBD
601H, 701H, 702H, 801H						

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

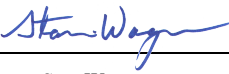
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Stan Wagner
Title: Regulatory Advisor
E-mail Address: stan.s.wagner@conocophillips.com
Date: 07/31/2023
Phone: 432-253-9685
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

VI. Separation Equipment

How Operator will size separation equipment to optimize gas capture:

All ConocoPhillips production facility equipment will be sized per industry standards (API 12J) with adequate retention time to effectively separate all phases of production. Each project will take into consideration the number of wells and type curves for each formation pool to ensure adequate facility capacity. Design considerations will also include review of all piping, tanks, VRU's and associated equipment to ensure optimized gas capture minimized risk of release.

VII. Operational Practices

Actions Operator will take to comply with the requirements below:

B. Drilling Operations

- During drilling, flare stacks will be located a minimum of 100 feet from the nearest surface hole location. All gas is captured or combusted. If an emergency or malfunction occurs, gas will be flared or vented for public health, safety, and the environment and be properly reported to the NMOCD pursuant to 19.15.27.8.G.
- Measure or estimate the volume of natural gas that is vented, flared or beneficially used during drilling, completion and production operations, regardless of the reason or authorization for such venting or flaring.

C. Completion Operations

- During completion operations, operator does not produce oil or gas but maintains adequate well control through completion operations.
- Individual well test separators will be set to properly separate gas and liquids. A temporary test separator will be utilized initially to process volumes. In addition, separators will be tied into flowback tanks which will be tied into the gas processing equipment for sales down a pipeline.

D. Venting and flaring during production operations

- During each phase of well life (drilling, completion and production) of a ConocoPhillips well, COP personnel will follow all necessary procedures to ensure both the operation and the equipment are within the NMAC 19.15.27.8 Subsection D guidelines.
- During well operations that require unloading of the well to atmospheric pressure, all reasonable actions will be taken to minimize vented gas
- Through the life of the well all flaring shall be measured, and venting events quantified using the data available and industry best practice.

E. Performance standards for separation, storage tank and flare equipment

- All storage tanks and separation equipment are designed minimize risk of liquid or vapor release and optimize gas capture. This includes automation for automatic gauging and pressure monitoring.

- All flare stacks are equipped with auto ignition devices and/or continuous pilots and are designed to operate at maximum combustion efficiency pursuant NMAC 19.15.27.8 Subsection E. Flares will follow COP spacing guidelines to ensure they are a safe distance from combustibles and operations equipment.
- COP personnel will conduct routine AVO inspections on a regular basis per NMAC 19.15.27.8 Subsection E guidelines.

F. Measurement of vented and flared natural gas.

- Measurement equipment will be installed to quantify gas flared during drilling, completion and production of the well.
- All measurement devices installed will meet accuracy ratings per AGA and API standards.
- Measurement devices will be installed without manifolds that allow diversion of gas around the metering element, except for the sole purpose of inspection of servicing the measurement device.

VIII. Best Management Practices

- Operator will curtail or shut in production, within reasonable limits, during upset conditions to minimize venting and flaring.
- When feasible, Operator will use equipment to capture gas that would otherwise be vented or flared.
- During completions and production operations Operator will minimize blowdowns to atmosphere
- When feasible, Operator will use electric or air actuated equipment to reduce bleed emissions

COG Operating, LLC - AKUBRA FED COM #602H

1. Geologic Formations

TVD of target	12,288' EOL	Pilot hole depth	NA
MD at TD:	23,061'	Deepest expected fresh water:	118'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	1036.94	Alluvium	
Top of Salt	1369.46	Salt	
Base of Salt	4928.69	Anhydrite	
Lamar	5297.24	Limestone	
Bell Canyon	5309.85	Sandstone	
Cherry Canyon	6255.76	Sandstone	
Brushy Canyon	7839.71	Sandstone	
Bone Spring	9175.47	Shale	
Bone Spring 1st Sand - BS1S	10413.66	Sandstone	
Bone Spring Shale - BS1SH	10566.9	Limestone	
Bone Spring 2nd Sand - BS2S	10921.3	Sandstone	
Bone Spring 3rd Carb - BS3C	11424.74	Limestone	
Bone Spring 3rd Sand - BS3S	12020.87	Sandstone	
0	0	Oil/Gas	

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Body	SF Joint
	From	To								
14.75"	0	1107	10.75"	45.5	J55	BTC	4.13	1.14	14.20	15.80
9.875"	0	8500	7.625"	29.7	HCL80	BTC	1.48	1.08	2.88	2.88
8.750"	8500	11,700	7.625"	29.7	HCP110	W513	1.34	1.64	3.07	1.84
6.75"	0	11,200	5.5"	20	P110	TXP BTC	1.69	2.33	3.25	3.25
6.75"	11200	23,061	5.5"	20	P110	W441	1.54	2.12	2.97	2.42
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

The 5 1/2" talon casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

COG Operating, LLC - AKUBRA FED COM #602H

	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.	Y
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 3 rd 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 2 nd 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 - AKUBRA FED COM #602H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	530	13.5	1.73	9.22	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.35	6.45	8	Tail: Class C + 2% CaCl ₂
Inter. Stage 1	770	10.5	3.6	22.81	72	NeoCem-C
	210	14.8	1.35	6.6	8	HalCem-C
Prod	610	12.5	1.71	9.32	72	VersaCem
	900	13.2	1.48	7.49	19	NeoCem-C

If losses are encountered in the intermediate section a DV/ECP tool will be run ~50' above the Lamar Lime top, cement will be adjusted accordingly if this contingency is necessary.

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%
1 st Intermediate	0'	50%
Production	11,200'	35% OH in Lateral (KOP to EOL)

COG Operating, LLC - AKUBRA FED COM #602H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
9-7/8"	13-5/8"	3M	Annular	x	2500psi
			Blind Ram		3000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		
6-3/4"	13-5/8"	5M	5M Annular	x	2500psi
			Blind Ram		5000psi
			Pipe Ram	x	
			Double Ram	x	
			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.

Y	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 - AKUBRA FED COM #602H

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	7-5/8" Int shoe	Brine Diesel Emulsion	8.4 - 9	28-34	N/C
7-5/8" Int shoe	Lateral TD	OBM	9.6 - 12.5	35-45	<20

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	

COG Operating, LLC - AKUBRA FED COM #602H**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	7990 psi at 12288' TVD
Abnormal Temperature	NO 180 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	H ₂ S Plan.
x	BOP & Choke Schematics.
x	Directional Plan

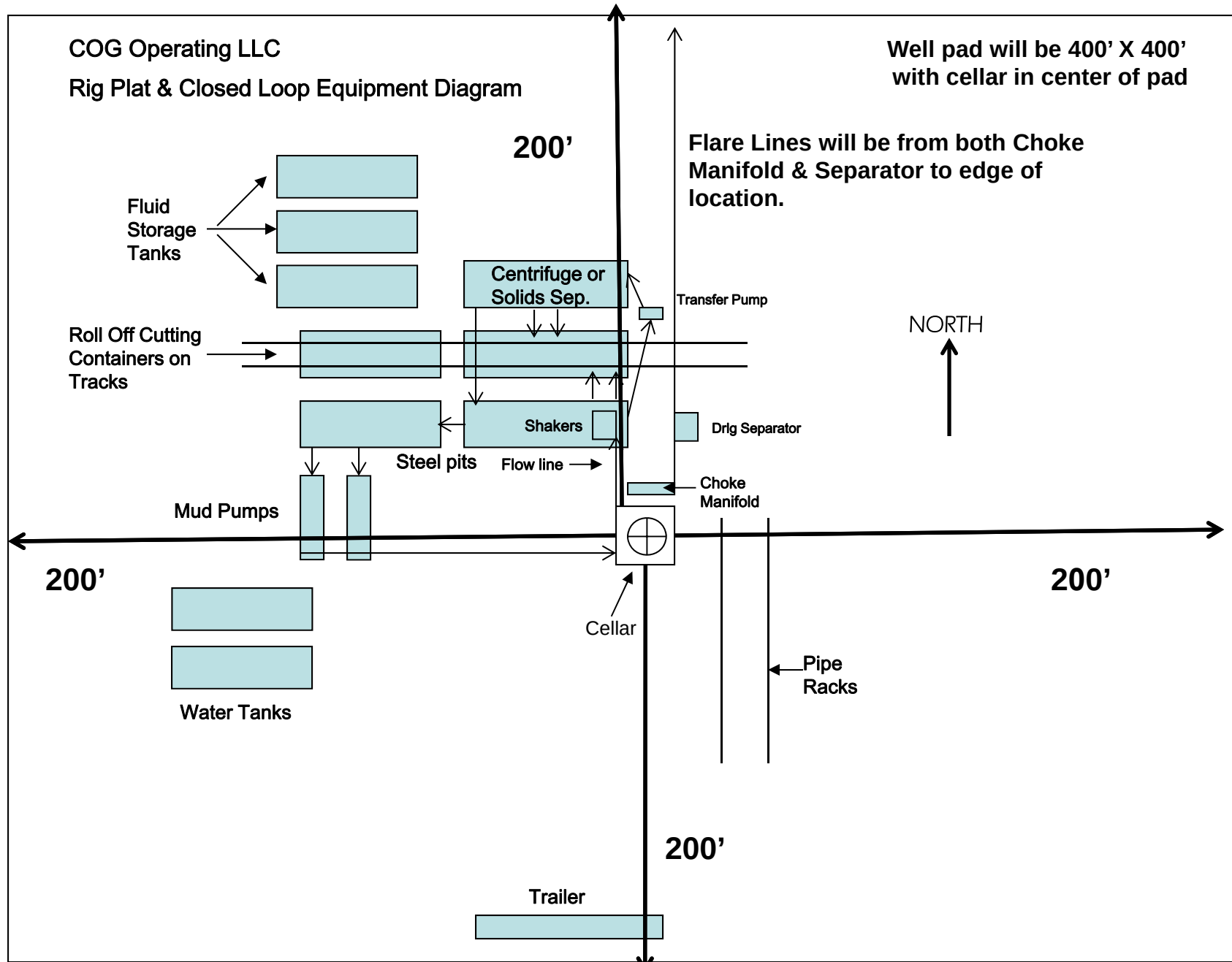


Exhibit 1

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

DELAWARE BASIN EAST

BULLDOG PROSPECT (NM-E)

AKUBRA PROJECT

AKUBRA FED COM #602H

OWB

PWP1

Anticollision Report

04 July, 2023

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference	PWP1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.0usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,000.0usft	Error Surface:	Combined Pedal Curve
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Added to Error Values

Survey Tool Program	Date	7/4/2023		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	1,200.0	PWP1 (OWB)	r.5 SDI_KPR_WL_NS-CT	SDI Keeper Wireline Gyrocomp-Initilzd Cont. rev.5
1,200.0	11,893.4	PWP1 (OWB)	r.5 MWD+IFR1	OWSG MWD + IFR1 rev.5
11,893.4	23,060.6	PWP1 (OWB)	r.5 MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction rev.5

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AKUBRA PROJECT						
AKUBRA FED COM #603H - OWB - PWP1	1,200.0	1,199.1	60.0	51.2	6.819	CC, ES, SF
AKUBRA FED COM #703H - OWB - PWP1	1,200.0	1,199.7	30.0	21.2	3.409	CC, ES
AKUBRA FED COM #703H - OWB - PWP1	1,400.0	1,400.8	31.1	21.6	3.291	SF
AKUBRA FED COM #704H - OWB - PWP1	1,200.0	1,198.8	90.0	81.2	10.229	CC, ES
AKUBRA FED COM #704H - OWB - PWP1	1,300.0	1,296.5	92.4	83.4	10.211	SF
AKUBRA FED COM #802H - OWB - PWP1	1,166.5	1,166.9	30.0	21.3	3.433	CC
AKUBRA FED COM #802H - OWB - PWP1	1,400.0	1,398.8	30.5	21.0	3.217	ES
AKUBRA FED COM #802H - OWB - PWP1	1,500.0	1,498.0	31.4	21.4	3.157	SF

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

TD Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
AKUBRA PROJECT						
AKUBRA FED COM #603H - OWB - PWP1	23,060.6	22,950.6				Out of Range @TD
AKUBRA FED COM #703H - OWB - PWP1	23,060.6	23,311.7	821.7	647.9	4.729	
AKUBRA FED COM #704H - OWB - PWP1	23,060.6	23,264.6				Out of Range @TD
AKUBRA FED COM #802H - OWB - PWP1	23,060.6	23,823.0	845.5	668.6	4.780	

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #603H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program:		0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 11827-r.5 MWD+IFR1+MS							Rule Assigned:				Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance			Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	3.0	3.0	89.62	0.4	60.0	60.0					
100.0	100.0	99.1	99.1	3.1	3.1	89.62	0.4	60.0	60.0	53.5	6.54	9.178		
200.0	200.0	199.1	199.1	3.2	3.2	89.62	0.4	60.0	60.0	53.2	6.78	8.854		
300.0	300.0	299.1	299.1	3.3	3.3	89.62	0.4	60.0	60.0	53.0	7.01	8.563		
400.0	400.0	399.1	399.1	3.4	3.4	89.62	0.4	60.0	60.0	52.8	7.23	8.299		
500.0	500.0	499.1	499.1	3.6	3.6	89.62	0.4	60.0	60.0	52.6	7.45	8.059		
600.0	600.0	599.1	599.1	3.7	3.7	89.62	0.4	60.0	60.0	52.3	7.65	7.839		
700.0	700.0	699.1	699.1	3.8	3.8	89.62	0.4	60.0	60.0	52.1	7.86	7.636		
800.0	800.0	799.1	799.1	3.9	3.9	89.62	0.4	60.0	60.0	51.9	8.06	7.449		
900.0	900.0	899.1	899.1	4.0	4.0	89.62	0.4	60.0	60.0	51.8	8.25	7.275		
1,000.0	1,000.0	999.1	999.1	4.2	4.2	89.62	0.4	60.0	60.0	51.6	8.44	7.113		
1,100.0	1,100.0	1,099.1	1,099.1	4.3	4.3	89.62	0.4	60.0	60.0	51.4	8.62	6.961		
1,200.0	1,200.0	1,199.1	1,199.1	4.4	4.4	89.62	0.4	60.0	60.0	51.2	8.80	6.819	CC, ES, SF	
1,300.0	1,300.0	1,297.5	1,297.5	4.5	4.5	-155.65	0.2	61.2	62.4	53.4	9.05	6.897		
1,400.0	1,399.9	1,395.6	1,395.5	4.7	4.7	-156.34	-0.5	64.9	69.8	60.3	9.49	7.357		
1,500.0	1,499.7	1,492.9	1,492.7	4.9	4.8	-157.21	-1.5	71.1	82.0	72.1	9.94	8.249		
1,600.0	1,599.3	1,589.2	1,588.6	5.1	5.1	-158.04	-3.0	79.5	99.1	88.7	10.43	9.505		
1,700.0	1,698.6	1,684.7	1,683.4	5.4	5.3	-158.75	-4.9	90.2	121.0	110.1	10.87	11.132		
1,733.3	1,731.6	1,717.0	1,715.5	5.5	5.3	-158.99	-5.6	94.1	129.1	118.1	10.99	11.742		
1,800.0	1,797.6	1,781.5	1,779.5	5.6	5.5	-165.78	-7.0	101.8	145.9	134.6	11.30	12.905		
1,900.0	1,896.4	1,877.9	1,875.2	5.9	5.8	-174.04	-9.0	113.4	172.5	160.7	11.86	14.552		
1,978.9	1,974.2	1,953.6	1,950.3	6.1	6.0	-179.17	-10.6	122.5	194.8	182.5	12.29	15.849		
2,000.0	1,995.0	1,973.8	1,970.3	6.2	6.1	-179.01	-11.0	124.9	200.9	188.5	12.40	16.201		
2,100.0	2,093.5	2,069.5	2,065.3	6.5	6.4	-178.35	-13.1	136.4	229.8	216.8	13.02	17.643		
2,200.0	2,191.9	2,165.2	2,160.3	6.9	6.7	-177.83	-15.1	147.9	258.7	245.1	13.66	18.942		
2,300.0	2,290.4	2,260.9	2,255.3	7.2	7.0	-177.42	-17.1	159.4	287.6	273.3	14.31	20.097		

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #603H - OWB - PWP1											Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 11827-r.5 MWD+IFR1+MS											Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
2,400.0	2,388.9	2,356.6	2,350.3	7.6	7.3	-177.09	-19.1	170.8	316.6	301.6	14.99	21.126
2,500.0	2,487.4	2,452.3	2,445.3	7.9	7.7	-176.81	-21.2	182.3	345.6	329.9	15.68	22.045
2,600.0	2,585.9	2,548.0	2,540.2	8.3	8.0	-176.57	-23.2	193.8	374.5	358.1	16.38	22.867
2,700.0	2,684.3	2,643.7	2,635.2	8.7	8.4	-176.37	-25.2	205.3	403.5	386.4	17.09	23.605
2,800.0	2,782.8	2,739.4	2,730.2	9.1	8.7	-176.19	-27.2	216.8	432.5	414.6	17.82	24.269
2,900.0	2,881.3	2,835.1	2,825.2	9.5	9.1	-176.04	-29.3	228.3	461.4	442.9	18.55	24.869
3,000.0	2,979.8	2,930.8	2,920.2	9.9	9.4	-175.91	-31.3	239.8	490.4	471.1	19.30	25.413
3,100.0	3,078.3	3,026.5	3,015.2	10.3	9.8	-175.79	-33.3	251.2	519.4	499.4	20.05	25.907
3,200.0	3,176.7	3,122.2	3,110.2	10.7	10.2	-175.68	-35.3	262.7	548.4	527.6	20.81	26.357
3,300.0	3,275.2	3,217.9	3,205.2	11.2	10.5	-175.58	-37.4	274.2	577.4	555.8	21.57	26.770
3,400.0	3,373.7	3,314.6	3,301.2	11.6	10.9	-175.49	-39.4	285.8	606.4	584.0	22.35	27.127
3,500.0	3,472.2	3,415.9	3,401.7	12.0	11.4	-175.42	-41.5	297.4	634.8	611.5	23.25	27.303
3,600.0	3,570.7	3,517.7	3,502.9	12.4	11.8	-175.37	-43.3	308.1	662.3	638.3	24.06	27.529
3,700.0	3,669.1	3,619.9	3,604.7	12.9	12.2	-175.34	-45.1	318.0	689.1	664.2	24.87	27.707
3,800.0	3,767.6	3,722.7	3,707.1	13.3	12.5	-175.32	-46.7	327.0	715.0	689.3	25.68	27.843
3,900.0	3,866.1	3,826.0	3,810.0	13.7	12.9	-175.31	-48.1	335.2	740.0	713.5	26.48	27.941
4,000.0	3,964.6	3,929.7	3,913.5	14.2	13.3	-175.33	-49.4	342.4	764.2	736.9	27.29	28.006
4,100.0	4,063.1	4,033.9	4,017.5	14.6	13.6	-175.35	-50.5	348.8	787.5	759.4	28.08	28.042
4,200.0	4,161.5	4,138.5	4,122.0	15.0	14.0	-175.38	-51.5	354.3	809.9	781.0	28.87	28.054
4,300.0	4,260.0	4,243.6	4,226.9	15.5	14.3	-175.43	-52.3	358.9	831.5	801.8	29.65	28.044
4,400.0	4,358.5	4,349.0	4,332.3	15.9	14.7	-175.48	-52.9	362.5	852.1	821.7	30.41	28.017
4,500.0	4,457.0	4,454.9	4,438.1	16.3	15.0	-175.54	-53.4	365.1	871.9	840.8	31.16	27.978
4,600.0	4,555.5	4,561.1	4,544.3	16.8	15.2	-175.62	-53.7	366.8	890.8	858.9	31.89	27.934
4,700.0	4,654.0	4,667.7	4,650.9	17.2	15.4	-175.70	-53.8	367.6	908.8	876.3	32.54	27.933
4,800.0	4,752.4	4,768.3	4,751.5	17.7	15.6	-175.78	-53.8	367.6	926.2	893.1	33.11	27.972
4,900.0	4,850.9	4,866.8	4,850.0	18.1	15.6	-175.86	-53.8	367.6	943.5	909.8	33.64	28.047
5,000.0	4,949.4	4,965.3	4,948.5	18.6	15.7	-175.93	-53.8	367.6	960.8	926.7	34.15	28.134
5,100.0	5,047.9	5,063.8	5,047.0	19.0	15.7	-176.00	-53.8	367.6	978.1	943.5	34.67	28.214
5,200.0	5,146.4	5,162.2	5,145.5	19.4	15.8	-176.07	-53.8	367.6	995.5	960.3	35.19	28.289

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS													Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum	Separation	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor		
0.0	0.0	0.0	0.0	3.0	3.0	89.62	0.2	30.0	30.0					
100.0	100.0	99.7	99.7	3.1	3.1	89.62	0.2	30.0	30.0	23.5	6.54	4.589		
200.0	200.0	199.7	199.7	3.2	3.2	89.62	0.2	30.0	30.0	23.2	6.78	4.427		
300.0	300.0	299.7	299.7	3.3	3.3	89.62	0.2	30.0	30.0	23.0	7.01	4.281		
400.0	400.0	399.7	399.7	3.4	3.4	89.62	0.2	30.0	30.0	22.8	7.23	4.149		
500.0	500.0	499.7	499.7	3.6	3.6	89.62	0.2	30.0	30.0	22.6	7.45	4.029		
600.0	600.0	599.7	599.7	3.7	3.7	89.62	0.2	30.0	30.0	22.3	7.66	3.919		
700.0	700.0	699.7	699.7	3.8	3.8	89.62	0.2	30.0	30.0	22.1	7.86	3.818		
800.0	800.0	799.7	799.7	3.9	3.9	89.62	0.2	30.0	30.0	21.9	8.06	3.724		
900.0	900.0	899.7	899.7	4.0	4.0	89.62	0.2	30.0	30.0	21.8	8.25	3.637		
1,000.0	1,000.0	999.7	999.7	4.2	4.2	89.62	0.2	30.0	30.0	21.6	8.44	3.556		
1,100.0	1,100.0	1,099.7	1,099.7	4.3	4.3	89.62	0.2	30.0	30.0	21.4	8.62	3.480		
1,200.0	1,200.0	1,199.7	1,199.7	4.4	4.4	89.62	0.2	30.0	30.0	21.2	8.80	3.409 CC, ES		
1,300.0	1,300.0	1,300.3	1,300.2	4.5	4.5	-154.67	-0.7	29.1	30.3	21.2	9.03	3.350		
1,400.0	1,399.9	1,400.8	1,400.7	4.7	4.7	-152.58	-3.5	26.3	31.1	21.6	9.44	3.291 SF		
1,500.0	1,499.7	1,501.3	1,501.0	4.9	5.0	-149.33	-8.2	21.6	32.5	22.6	9.85	3.298		
1,600.0	1,599.3	1,601.8	1,601.1	5.1	5.2	-145.25	-14.7	15.1	34.6	24.3	10.26	3.374		
1,700.0	1,698.6	1,702.2	1,700.8	5.4	5.5	-140.70	-23.1	6.7	37.6	26.9	10.65	3.526		
1,733.3	1,731.6	1,735.7	1,734.0	5.5	5.5	-139.15	-26.3	3.5	38.7	28.0	10.71	3.619		
1,800.0	1,797.6	1,802.8	1,800.4	5.6	5.7	-142.82	-32.4	-3.4	41.4	30.5	10.88	3.799		
1,900.0	1,896.4	1,903.6	1,900.3	5.9	6.0	-148.37	-39.6	-14.9	45.7	34.4	11.32	4.040		
1,978.9	1,974.2	1,983.2	1,979.2	6.1	6.2	-152.65	-43.6	-25.0	49.5	37.8	11.67	4.239		
2,000.0	1,995.0	2,004.5	2,000.2	6.2	6.3	-152.49	-44.4	-27.8	50.5	38.7	11.76	4.292		
2,100.0	2,093.5	2,104.4	2,099.2	6.5	6.6	-152.03	-48.0	-41.2	54.9	42.6	12.28	4.469		
2,200.0	2,191.9	2,204.3	2,198.1	6.9	6.9	-151.64	-51.6	-54.7	59.3	46.5	12.81	4.626		
2,300.0	2,290.4	2,304.2	2,297.0	7.2	7.2	-151.31	-55.2	-68.1	63.7	50.3	13.37	4.763		
2,400.0	2,388.9	2,404.1	2,396.0	7.6	7.5	-151.02	-58.8	-81.5	68.1	54.1	13.94	4.883		
2,500.0	2,487.4	2,504.0	2,494.9	7.9	7.9	-150.77	-62.4	-94.9	72.5	58.0	14.53	4.989		
2,600.0	2,585.9	2,603.9	2,593.8	8.3	8.2	-150.54	-66.0	-108.4	76.9	61.8	15.13	5.082		
2,700.0	2,684.3	2,703.8	2,692.8	8.7	8.6	-150.34	-69.6	-121.8	81.3	65.6	15.74	5.164		
2,800.0	2,782.8	2,803.7	2,791.7	9.1	9.0	-150.16	-73.2	-135.2	85.7	69.3	16.37	5.236		
2,900.0	2,881.3	2,903.6	2,890.6	9.5	9.3	-150.00	-76.8	-148.7	90.1	73.1	17.00	5.301		
3,000.0	2,979.8	3,003.0	2,989.0	9.9	9.7	-149.98	-80.3	-161.7	94.8	77.1	17.65	5.371		
3,100.0	3,078.3	3,102.2	3,087.4	10.3	10.1	-150.28	-83.6	-173.9	100.1	81.8	18.33	5.461		
3,200.0	3,176.7	3,201.3	3,185.9	10.7	10.4	-150.84	-86.6	-185.3	106.1	87.1	19.05	5.571		
3,300.0	3,275.2	3,300.0	3,284.0	11.2	10.8	-151.61	-89.5	-195.8	112.8	93.0	19.80	5.699		
3,400.0	3,373.7	3,399.2	3,382.7	11.6	11.2	-152.55	-92.1	-205.5	120.2	99.6	20.57	5.843		
3,500.0	3,472.2	3,498.0	3,481.1	12.0	11.5	-153.61	-94.4	-214.4	128.3	107.0	21.37	6.005		
3,600.0	3,570.7	3,596.7	3,579.3	12.4	11.9	-154.74	-96.6	-222.4	137.2	115.0	22.18	6.183		
3,700.0	3,669.1	3,695.2	3,677.6	12.9	12.3	-155.93	-98.5	-229.6	146.8	123.8	23.01	6.379		
3,800.0	3,767.6	3,793.5	3,775.6	13.3	12.6	-157.13	-100.2	-236.0	157.2	133.3	23.85	6.591		
3,900.0	3,866.1	3,891.6	3,873.6	13.7	12.9	-158.34	-101.7	-241.5	168.3	143.7	24.68	6.820		
4,000.0	3,964.6	3,989.5	3,971.4	14.2	13.3	-159.53	-103.0	-246.3	180.3	154.8	25.52	7.067		
4,100.0	4,063.1	4,087.3	4,069.1	14.6	13.6	-160.69	-104.0	-250.2	193.1	166.7	26.34	7.330		
4,200.0	4,161.5	4,184.8	4,166.5	15.0	13.9	-161.82	-104.9	-253.3	206.7	179.5	27.16	7.611		
4,300.0	4,260.0	4,282.0	4,263.7	15.5	14.1	-162.91	-105.5	-255.6	221.1	193.1	27.95	7.909		
4,400.0	4,358.5	4,379.0	4,360.7	15.9	14.4	-163.95	-105.9	-257.1	236.3	207.6	28.73	8.226		
4,500.0	4,457.0	4,475.8	4,457.5	16.3	14.6	-164.95	-106.1	-257.9	252.4	222.9	29.47	8.566		
4,600.0	4,555.5	4,573.5	4,555.2	16.8	14.7	-165.89	-106.1	-257.9	269.2	239.0	30.11	8.939		
4,700.0	4,654.0	4,672.0	4,653.7	17.2	14.7	-166.74	-106.1	-257.9	286.0	255.3	30.72	9.312		
4,800.0	4,752.4	4,770.4	4,752.1	17.7	14.8	-167.49	-106.1	-257.9	303.0	271.7	31.32	9.674		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS				Offset		Rule Assigned:			Offset Well Error:		3.0 usft			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
4,900.0	4,850.9	4,868.9	4,850.6	18.1	14.8	-168.17	-106.1	-257.9	320.0	288.1	31.91	10.026		
5,000.0	4,949.4	4,967.4	4,949.1	18.6	14.9	-168.77	-106.1	-257.9	337.0	304.5	32.50	10.368		
5,100.0	5,047.9	5,065.9	5,047.6	19.0	14.9	-169.32	-106.1	-257.9	354.1	321.0	33.09	10.699		
5,200.0	5,146.4	5,164.4	5,146.1	19.4	15.0	-169.81	-106.1	-257.9	371.1	337.5	33.68	11.021		
5,300.0	5,244.8	5,262.8	5,244.5	19.9	15.0	-170.27	-106.1	-257.9	388.3	354.0	34.26	11.333		
5,400.0	5,343.3	5,361.3	5,343.0	20.3	15.1	-170.68	-106.1	-257.9	405.4	370.5	34.84	11.635		
5,500.0	5,441.8	5,459.8	5,441.5	20.8	15.1	-171.06	-106.1	-257.9	422.5	387.1	35.43	11.928		
5,600.0	5,540.3	5,558.3	5,540.0	21.2	15.2	-171.41	-106.1	-257.9	439.7	403.7	36.01	12.212		
5,700.0	5,638.8	5,656.8	5,638.5	21.7	15.2	-171.74	-106.1	-257.9	456.9	420.3	36.59	12.487		
5,800.0	5,737.2	5,755.2	5,736.9	22.1	15.2	-172.04	-106.1	-257.9	474.1	436.9	37.17	12.753		
5,900.0	5,835.7	5,853.7	5,835.4	22.6	15.3	-172.32	-106.1	-257.9	491.3	453.5	37.76	13.012		
6,000.0	5,934.2	5,952.2	5,933.9	23.0	15.3	-172.58	-106.1	-257.9	508.5	470.2	38.34	13.263		
6,100.0	6,032.7	6,050.7	6,032.4	23.5	15.4	-172.83	-106.1	-257.9	525.7	486.8	38.93	13.506		
6,200.0	6,131.2	6,149.2	6,130.9	23.9	15.4	-173.06	-106.1	-257.9	543.0	503.5	39.51	13.742		
6,300.0	6,229.6	6,247.7	6,229.3	24.4	15.5	-173.27	-106.1	-257.9	560.2	520.1	40.10	13.971		
6,400.0	6,328.1	6,346.1	6,327.8	24.8	15.5	-173.47	-106.1	-257.9	577.5	536.8	40.69	14.193		
6,453.7	6,381.0	6,399.0	6,380.7	25.0	15.6	-173.58	-106.1	-257.9	586.7	545.7	40.99	14.313		
6,500.0	6,426.6	6,444.6	6,426.3	25.2	15.6	-173.67	-106.1	-257.9	594.6	553.4	41.26	14.413		
6,600.0	6,525.2	6,543.3	6,524.9	25.7	15.6	-173.85	-106.1	-257.9	611.1	569.2	41.84	14.605		
6,700.0	6,624.0	6,642.0	6,623.7	26.1	15.7	-174.01	-106.1	-257.9	626.7	584.3	42.42	14.773		
6,800.0	6,722.9	6,740.9	6,722.6	26.6	15.7	-174.15	-106.1	-257.9	641.4	598.4	42.99	14.919		
6,900.0	6,821.9	6,839.9	6,821.6	27.0	15.8	-174.28	-106.1	-257.9	655.3	611.7	43.56	15.044		
7,000.0	6,921.1	6,939.1	6,920.8	27.4	15.8	-174.40	-106.1	-257.9	668.3	624.2	44.12	15.148		
7,100.0	7,020.3	7,038.3	7,020.0	27.8	15.9	-174.51	-106.1	-257.9	680.5	635.8	44.67	15.233		
7,200.0	7,119.7	7,137.7	7,119.4	28.2	15.9	-174.60	-106.1	-257.9	691.8	646.6	45.22	15.300		
7,300.0	7,219.1	7,237.1	7,218.8	28.7	16.0	-174.69	-106.1	-257.9	702.2	656.5	45.75	15.348		
7,400.0	7,318.7	7,336.7	7,318.4	29.1	16.0	-174.77	-106.1	-257.9	711.8	665.5	46.28	15.381		
7,500.0	7,418.3	7,436.3	7,418.0	29.4	16.1	-174.83	-106.1	-257.9	720.5	673.7	46.80	15.397		
7,600.0	7,518.0	7,536.0	7,517.7	29.8	16.1	-174.89	-106.1	-257.9	728.3	681.0	47.30	15.398		
7,700.0	7,617.7	7,635.7	7,617.4	30.2	16.2	-174.94	-106.1	-257.9	735.3	687.5	47.80	15.385		
7,800.0	7,717.5	7,735.5	7,717.2	30.5	16.3	-174.99	-106.1	-257.9	741.4	693.2	48.28	15.358		
7,900.0	7,817.4	7,835.4	7,817.1	30.9	16.3	-175.03	-106.1	-257.9	746.7	697.9	48.74	15.319		
8,000.0	7,917.3	7,935.3	7,917.0	31.2	16.4	-175.06	-106.1	-257.9	751.1	701.9	49.19	15.269		
8,100.0	8,017.2	8,035.2	8,016.9	31.5	16.4	-175.08	-106.1	-257.9	754.6	705.0	49.62	15.208		
8,200.0	8,117.2	8,135.2	8,116.9	31.8	16.5	-175.10	-106.1	-257.9	757.2	707.2	50.02	15.138		
8,300.0	8,217.2	8,235.2	8,216.9	32.1	16.5	-175.11	-106.1	-257.9	759.0	708.6	50.39	15.061		
8,400.0	8,317.2	8,335.2	8,316.9	32.3	16.6	-175.12	-106.1	-257.9	759.9	709.2	50.72	14.983		
8,453.7	8,370.9	8,388.9	8,370.6	32.4	16.6	89.88	-106.1	-257.9	760.0	709.2	50.80	14.961		
8,500.0	8,417.2	8,435.2	8,416.9	32.4	16.6	89.88	-106.1	-257.9	760.0	709.2	50.82	14.955		
8,600.0	8,517.2	8,535.2	8,516.9	32.4	16.7	89.88	-106.1	-257.9	760.0	709.1	50.88	14.937		
8,700.0	8,617.2	8,635.2	8,616.9	32.4	16.7	89.88	-106.1	-257.9	760.0	709.1	50.94	14.918		
8,800.0	8,717.2	8,735.2	8,716.9	32.5	16.8	89.88	-106.1	-257.9	760.0	709.0	51.01	14.900		
8,900.0	8,817.2	8,835.2	8,816.9	32.5	16.9	89.88	-106.1	-257.9	760.0	708.9	51.07	14.882		
9,000.0	8,917.2	8,935.2	8,916.9	32.5	16.9	89.88	-106.1	-257.9	760.0	708.9	51.13	14.863		
9,100.0	9,017.2	9,035.2	9,016.9	32.5	17.0	89.88	-106.1	-257.9	760.0	708.8	51.20	14.845		
9,200.0	9,117.2	9,135.2	9,116.9	32.5	17.0	89.88	-106.1	-257.9	760.0	708.7	51.26	14.826		
9,300.0	9,217.2	9,235.2	9,216.9	32.6	17.1	89.88	-106.1	-257.9	760.0	708.7	51.33	14.808		
9,400.0	9,317.2	9,335.2	9,316.9	32.6	17.1	89.88	-106.1	-257.9	760.0	708.6	51.39	14.789		
9,500.0	9,417.2	9,435.2	9,416.9	32.6	17.2	89.88	-106.1	-257.9	760.0	708.6	51.46	14.770		
9,600.0	9,517.2	9,535.2	9,516.9	32.6	17.3	89.88	-106.1	-257.9	760.0	708.5	51.52	14.751		
9,700.0	9,617.2	9,635.2	9,616.9	32.7	17.3	89.88	-106.1	-257.9	760.0	708.4	51.59	14.732		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS				Rule Assigned:		Offset Well Error:		3.0 usft						
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,800.0	9,717.2	9,735.2	9,716.9	32.7	17.4	89.88	-106.1	-257.9	760.0	708.4	51.66	14.713		
9,900.0	9,817.2	9,835.2	9,816.9	32.7	17.4	89.88	-106.1	-257.9	760.0	708.3	51.72	14.694		
10,000.0	9,917.2	9,935.2	9,916.9	32.7	17.5	89.88	-106.1	-257.9	760.0	708.2	51.79	14.675		
10,100.0	10,017.2	10,035.2	10,016.9	32.7	17.5	89.88	-106.1	-257.9	760.0	708.2	51.86	14.656		
10,200.0	10,117.2	10,135.2	10,116.9	32.8	17.6	89.88	-106.1	-257.9	760.0	708.1	51.93	14.636		
10,300.0	10,217.2	10,235.2	10,216.9	32.8	17.7	89.88	-106.1	-257.9	760.0	708.0	52.00	14.617		
10,400.0	10,317.2	10,335.2	10,316.9	32.8	17.7	89.88	-106.1	-257.9	760.0	707.9	52.06	14.597		
10,500.0	10,417.2	10,435.2	10,416.9	32.8	17.8	89.88	-106.1	-257.9	760.0	707.9	52.13	14.578		
10,600.0	10,517.2	10,535.2	10,516.9	32.9	17.8	89.88	-106.1	-257.9	760.0	707.8	52.20	14.558		
10,700.0	10,617.2	10,635.2	10,616.9	32.9	17.9	89.88	-106.1	-257.9	760.0	707.7	52.27	14.539		
10,800.0	10,717.2	10,735.2	10,716.9	32.9	18.0	89.88	-106.1	-257.9	760.0	707.7	52.35	14.519		
10,900.0	10,817.2	10,835.2	10,816.9	32.9	18.0	89.88	-106.1	-257.9	760.0	707.6	52.42	14.499		
11,000.0	10,917.2	10,935.2	10,916.9	33.0	18.1	89.88	-106.1	-257.9	760.0	707.5	52.49	14.480		
11,100.0	11,017.2	11,035.2	11,016.9	33.0	18.1	89.88	-106.1	-257.9	760.0	707.5	52.56	14.460		
11,200.0	11,117.2	11,135.2	11,116.9	33.0	18.2	89.88	-106.1	-257.9	760.0	707.4	52.63	14.440		
11,300.0	11,217.2	11,235.2	11,216.9	33.1	18.3	89.88	-106.1	-257.9	760.0	707.3	52.71	14.420		
11,400.0	11,317.2	11,335.2	11,316.9	33.1	18.3	89.88	-106.1	-257.9	760.0	707.2	52.78	14.400		
11,500.0	11,417.2	11,435.2	11,416.9	33.1	18.4	89.88	-106.1	-257.9	760.0	707.2	52.85	14.380		
11,600.0	11,517.2	11,535.2	11,516.9	33.1	18.4	89.88	-106.1	-257.9	760.0	707.1	52.93	14.360		
11,700.0	11,617.2	11,635.2	11,616.9	33.2	18.5	89.88	-106.1	-257.9	760.0	707.0	53.00	14.340		
11,800.0	11,717.2	11,735.2	11,716.9	33.2	18.6	89.88	-106.1	-257.9	760.0	706.9	53.08	14.319		
11,893.4	11,810.5	11,828.5	11,810.2	33.2	18.6	89.88	-106.1	-257.9	760.0	706.9	53.14	14.302		
11,900.0	11,817.2	11,835.2	11,816.9	33.2	18.6	90.44	-106.1	-257.9	760.0	706.9	53.14	14.301		
11,925.0	11,842.1	11,860.2	11,841.8	33.2	18.6	90.51	-106.1	-257.9	760.0	706.9	53.15	14.299		
11,950.0	11,867.0	11,885.0	11,866.7	33.2	18.7	90.68	-106.1	-257.9	760.0	706.9	53.15	14.300		
11,975.0	11,891.8	11,909.8	11,891.5	33.2	18.7	90.95	-106.1	-257.9	760.1	707.0	53.14	14.304		
12,000.0	11,916.3	11,934.3	11,916.0	33.2	18.7	91.30	-106.1	-257.9	760.2	707.1	53.12	14.312		
12,025.0	11,940.5	11,958.5	11,940.2	33.2	18.7	91.73	-106.1	-257.9	760.4	707.3	53.08	14.324		
12,050.0	11,964.4	11,982.4	11,964.1	33.2	18.7	92.23	-106.1	-257.9	760.6	707.6	53.04	14.340		
12,075.0	11,987.8	12,005.8	11,987.5	33.2	18.7	92.79	-106.1	-257.9	761.0	708.1	52.98	14.363		
12,100.0	12,010.8	12,028.8	12,010.5	33.2	18.7	93.40	-106.1	-257.9	761.6	708.7	52.91	14.394		
12,125.0	12,033.2	12,051.2	12,032.9	33.2	18.8	94.05	-106.1	-257.9	762.4	709.6	52.83	14.433		
12,150.0	12,055.0	12,073.0	12,054.7	33.2	18.8	94.72	-106.1	-257.9	763.5	710.8	52.72	14.482		
12,175.0	12,076.1	12,094.1	12,075.8	33.2	18.8	95.40	-106.1	-257.9	764.9	712.3	52.60	14.543		
12,200.0	12,096.5	12,114.5	12,096.2	33.2	18.8	96.07	-106.1	-257.9	766.7	714.2	52.45	14.618		
12,225.0	12,116.1	12,134.1	12,115.8	33.2	18.8	96.71	-106.1	-257.9	768.8	716.6	52.27	14.709		
12,250.0	12,134.9	12,152.6	12,139.3	33.2	18.8	97.53	-105.8	-257.9	771.5	719.4	52.11	14.806		
12,275.0	12,152.8	12,184.5	12,166.1	33.2	18.8	98.47	-104.1	-257.9	774.5	722.5	51.96	14.904		
12,300.0	12,169.8	12,212.9	12,194.3	33.2	18.8	99.43	-100.7	-258.0	777.7	725.9	51.83	15.004		
12,325.0	12,185.7	12,243.0	12,223.9	33.3	18.8	100.42	-95.2	-258.0	781.3	729.6	51.73	15.104		
12,350.0	12,200.7	12,275.1	12,255.0	33.3	18.8	101.44	-87.4	-258.1	785.1	733.4	51.66	15.199		
12,375.0	12,214.5	12,309.5	12,287.7	33.3	18.8	102.49	-76.6	-258.2	789.1	737.5	51.63	15.285		
12,400.0	12,227.3	12,346.6	12,322.0	33.3	18.8	103.59	-62.4	-258.4	793.3	741.6	51.66	15.356		
12,425.0	12,238.9	12,386.8	12,357.8	33.3	18.8	104.73	-44.1	-258.5	797.5	745.8	51.76	15.408		
12,450.0	12,249.4	12,420.9	12,386.7	33.3	18.8	105.54	-26.3	-258.7	801.8	750.0	51.81	15.474		
12,475.0	12,258.6	12,478.1	12,432.5	33.3	18.9	107.11	8.1	-259.0	806.0	753.7	52.24	15.428		
12,500.0	12,266.6	12,530.1	12,470.1	33.3	18.9	108.30	44.0	-259.4	809.9	757.3	52.64	15.387		
12,525.0	12,273.4	12,586.7	12,506.4	33.3	18.9	109.46	87.4	-259.8	813.5	760.4	53.13	15.311		
12,550.0	12,278.9	12,648.0	12,539.6	33.3	19.0	110.51	138.9	-260.3	816.6	762.9	53.71	15.205		
12,575.0	12,283.1	12,713.7	12,567.5	33.4	19.0	111.38	198.2	-260.9	819.1	764.8	54.32	15.078		
12,600.0	12,286.0	12,769.7	12,584.6	33.4	19.1	111.87	251.5	-261.4	820.8	766.0	54.76	14.988		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS												Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis	Offset	Highside	Offset Wellbore Centre	Distance	Between	Between	Minimum	Separation	Warning		
Measured	Vertical	Measured	Vertical	Reference	Offset	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor	
Depth	Depth	Depth	Depth	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
12,625.0	12,287.6	12,854.4	12,598.6	33.4	19.1	112.32	335.0	-262.2	821.6	766.2	55.44	14.820	
12,643.4	12,288.0	12,896.6	12,600.0	33.4	19.2	112.34	377.1	-262.6	821.7	766.0	55.66	14.761	
12,700.0	12,288.0	12,953.2	12,600.0	33.5	19.3	112.34	433.7	-263.1	821.7	765.9	55.78	14.731	
12,800.0	12,288.0	13,053.2	12,600.0	33.6	19.4	112.34	533.7	-264.1	821.7	765.6	56.01	14.670	
12,900.0	12,288.0	13,153.2	12,600.0	33.7	19.6	112.34	633.7	-265.1	821.7	765.4	56.28	14.598	
13,000.0	12,288.0	13,253.2	12,600.0	33.8	19.8	112.34	733.7	-266.0	821.7	765.1	56.60	14.518	
13,100.0	12,288.0	13,353.2	12,600.0	34.0	20.1	112.34	833.7	-267.0	821.7	764.7	56.95	14.428	
13,200.0	12,288.0	13,453.2	12,600.0	34.2	20.4	112.34	933.7	-268.0	821.7	764.3	57.34	14.330	
13,300.0	12,288.0	13,553.2	12,600.0	34.4	20.6	112.34	1,033.7	-268.9	821.7	763.9	57.77	14.224	
13,400.0	12,288.0	13,653.2	12,600.0	34.6	21.0	112.34	1,133.7	-269.9	821.7	763.4	58.23	14.110	
13,500.0	12,288.0	13,753.2	12,600.0	34.8	21.3	112.34	1,233.7	-270.9	821.7	762.9	58.73	13.991	
13,600.0	12,288.0	13,853.2	12,600.0	35.0	21.6	112.34	1,333.7	-271.8	821.7	762.4	59.26	13.864	
13,700.0	12,288.0	13,953.2	12,600.0	35.3	22.0	112.34	1,433.7	-272.8	821.7	761.8	59.83	13.733	
13,800.0	12,288.0	14,053.2	12,600.0	35.5	22.4	112.34	1,533.7	-273.8	821.7	761.2	60.43	13.596	
13,900.0	12,288.0	14,153.2	12,600.0	35.8	22.8	112.34	1,633.7	-274.7	821.7	760.6	61.06	13.456	
14,000.0	12,288.0	14,253.2	12,600.0	36.1	23.3	112.34	1,733.7	-275.7	821.7	759.9	61.73	13.311	
14,100.0	12,288.0	14,353.2	12,600.0	36.4	23.7	112.34	1,833.7	-276.7	821.7	759.2	62.42	13.163	
14,200.0	12,288.0	14,453.2	12,600.0	36.7	24.2	112.34	1,933.7	-277.6	821.7	758.5	63.14	13.013	
14,300.0	12,288.0	14,553.2	12,600.0	37.1	24.7	112.34	2,033.7	-278.6	821.7	757.8	63.89	12.860	
14,400.0	12,288.0	14,653.2	12,600.0	37.4	25.2	112.34	2,133.7	-279.6	821.7	757.0	64.67	12.706	
14,500.0	12,288.0	14,753.2	12,600.0	37.8	25.7	112.34	2,233.6	-280.5	821.7	756.2	65.47	12.550	
14,600.0	12,288.0	14,853.2	12,600.0	38.1	26.2	112.34	2,333.6	-281.5	821.7	755.4	66.30	12.394	
14,700.0	12,288.0	14,953.2	12,600.0	38.5	26.7	112.34	2,433.6	-282.5	821.7	754.5	67.15	12.237	
14,800.0	12,288.0	15,053.2	12,600.0	38.9	27.3	112.34	2,533.6	-283.4	821.7	753.6	68.02	12.079	
14,900.0	12,288.0	15,153.2	12,600.0	39.3	27.9	112.34	2,633.6	-284.4	821.7	752.7	68.92	11.922	
15,000.0	12,288.0	15,253.2	12,600.0	39.7	28.4	112.34	2,733.6	-285.4	821.7	751.8	69.84	11.766	
15,100.0	12,288.0	15,353.2	12,600.0	40.1	29.0	112.34	2,833.6	-286.3	821.7	750.9	70.77	11.610	
15,200.0	12,288.0	15,453.2	12,600.0	40.6	29.6	112.34	2,933.6	-287.3	821.7	749.9	71.73	11.454	
15,300.0	12,288.0	15,553.2	12,600.0	41.0	30.2	112.34	3,033.6	-288.3	821.7	749.0	72.71	11.301	
15,400.0	12,288.0	15,653.2	12,600.0	41.5	30.8	112.34	3,133.6	-289.2	821.7	748.0	73.71	11.148	
15,500.0	12,288.0	15,753.2	12,600.0	41.9	31.4	112.34	3,233.6	-290.2	821.7	746.9	74.72	10.997	
15,600.0	12,288.0	15,853.2	12,600.0	42.4	32.0	112.34	3,333.6	-291.2	821.7	745.9	75.75	10.847	
15,700.0	12,288.0	15,953.2	12,600.0	42.9	32.6	112.34	3,433.6	-292.1	821.7	744.9	76.79	10.700	
15,800.0	12,288.0	16,053.2	12,600.0	43.3	33.3	112.34	3,533.6	-293.1	821.7	743.8	77.85	10.554	
15,900.0	12,288.0	16,153.2	12,600.0	43.8	33.9	112.34	3,633.6	-294.1	821.7	742.7	78.93	10.410	
16,000.0	12,288.0	16,253.2	12,600.0	44.3	34.5	112.34	3,733.6	-295.0	821.7	741.6	80.02	10.268	
16,100.0	12,288.0	16,353.2	12,600.0	44.8	35.2	112.34	3,833.6	-296.0	821.7	740.5	81.12	10.129	
16,200.0	12,288.0	16,453.2	12,600.0	45.4	35.8	112.34	3,933.6	-297.0	821.7	739.4	82.24	9.991	
16,300.0	12,288.0	16,553.2	12,600.0	45.9	36.5	112.34	4,033.6	-297.9	821.7	738.3	83.37	9.856	
16,400.0	12,288.0	16,653.2	12,600.0	46.4	37.1	112.34	4,133.6	-298.9	821.7	737.2	84.51	9.723	
16,500.0	12,288.0	16,753.2	12,600.0	46.9	37.8	112.34	4,233.6	-299.9	821.7	736.0	85.66	9.592	
16,600.0	12,288.0	16,853.2	12,600.0	47.5	38.5	112.34	4,333.6	-300.8	821.7	734.8	86.83	9.463	
16,700.0	12,288.0	16,953.2	12,600.0	48.0	39.1	112.34	4,433.5	-301.8	821.7	733.7	88.00	9.337	
16,800.0	12,288.0	17,053.2	12,600.0	48.6	39.8	112.34	4,533.5	-302.8	821.7	732.5	89.18	9.213	
16,900.0	12,288.0	17,153.2	12,600.0	49.1	40.5	112.34	4,633.5	-303.7	821.7	731.3	90.38	9.091	
17,000.0	12,288.0	17,253.2	12,600.0	49.7	41.2	112.34	4,733.5	-304.7	821.7	730.1	91.58	8.972	
17,100.0	12,288.0	17,353.2	12,600.0	50.3	41.8	112.34	4,833.5	-305.7	821.7	728.9	92.80	8.855	
17,200.0	12,288.0	17,453.2	12,600.0	50.8	42.5	112.34	4,933.5	-306.7	821.7	727.6	94.02	8.740	
17,300.0	12,288.0	17,553.2	12,600.0	51.4	43.2	112.34	5,033.5	-307.6	821.7	726.4	95.25	8.627	
17,400.0	12,288.0	17,653.2	12,600.0	52.0	43.9	112.34	5,133.5	-308.6	821.7	725.2	96.48	8.516	
17,500.0	12,288.0	17,753.2	12,600.0	52.6	44.6	112.34	5,233.5	-309.6	821.7	723.9	97.73	8.407	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1													Offset Site Error: 0.0 usft		
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS				Rule Assigned:										Offset Well Error: 3.0 usft	
Reference		Offset		Semi Major Axis		Offset Wellbore Centre			Distance				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
17,600.0	12,288.0	17,853.2	12,600.0	53.2	45.3	112.34	5,333.5	-310.5	821.7	722.7	98.98	8.301			
17,700.0	12,288.0	17,953.2	12,600.0	53.8	46.0	112.34	5,433.5	-311.5	821.7	721.4	100.24	8.197			
17,800.0	12,288.0	18,053.2	12,600.0	54.4	46.7	112.34	5,533.5	-312.5	821.7	720.2	101.51	8.094			
17,900.0	12,288.0	18,153.2	12,600.0	55.0	47.4	112.34	5,633.5	-313.4	821.7	718.9	102.78	7.994			
18,000.0	12,288.0	18,253.2	12,600.0	55.6	48.1	112.34	5,733.5	-314.4	821.7	717.6	104.07	7.896			
18,100.0	12,288.0	18,353.2	12,600.0	56.2	48.8	112.34	5,833.5	-315.4	821.7	716.3	105.35	7.799			
18,200.0	12,288.0	18,453.2	12,600.0	56.8	49.5	112.34	5,933.5	-316.3	821.7	715.0	106.64	7.705			
18,300.0	12,288.0	18,553.2	12,600.0	57.4	50.2	112.34	6,033.5	-317.3	821.7	713.7	107.94	7.612			
18,400.0	12,288.0	18,653.2	12,600.0	58.1	50.9	112.34	6,133.5	-318.3	821.7	712.4	109.25	7.521			
18,500.0	12,288.0	18,753.2	12,600.0	58.7	51.6	112.34	6,233.5	-319.2	821.7	711.1	110.55	7.432			
18,600.0	12,288.0	18,853.2	12,600.0	59.3	52.4	112.34	6,333.5	-320.2	821.7	709.8	111.87	7.345			
18,700.0	12,288.0	18,953.2	12,600.0	59.9	53.1	112.34	6,433.5	-321.2	821.7	708.5	113.19	7.259			
18,800.0	12,288.0	19,053.2	12,600.0	60.6	53.8	112.34	6,533.4	-322.1	821.7	707.2	114.51	7.175			
18,900.0	12,288.0	19,153.2	12,600.0	61.2	54.5	112.34	6,633.4	-323.1	821.7	705.8	115.84	7.093			
19,000.0	12,288.0	19,253.2	12,600.0	61.9	55.2	112.34	6,733.4	-324.1	821.7	704.5	117.17	7.012			
19,100.0	12,288.0	19,353.2	12,600.0	62.5	55.9	112.34	6,833.4	-325.0	821.7	703.2	118.51	6.933			
19,200.0	12,288.0	19,453.2	12,600.0	63.1	56.7	112.34	6,933.4	-326.0	821.7	701.8	119.85	6.856			
19,300.0	12,288.0	19,553.2	12,600.0	63.8	57.4	112.34	7,033.4	-327.0	821.7	700.5	121.20	6.780			
19,400.0	12,288.0	19,653.2	12,600.0	64.4	58.1	112.34	7,133.4	-327.9	821.7	699.1	122.54	6.705			
19,500.0	12,288.0	19,753.2	12,600.0	65.1	58.8	112.34	7,233.4	-328.9	821.7	697.8	123.90	6.632			
19,600.0	12,288.0	19,853.2	12,600.0	65.8	59.6	112.34	7,333.4	-329.9	821.7	696.4	125.25	6.560			
19,700.0	12,288.0	19,953.2	12,600.0	66.4	60.3	112.34	7,433.4	-330.8	821.7	695.1	126.61	6.490			
19,800.0	12,288.0	20,053.2	12,600.0	67.1	61.0	112.34	7,533.4	-331.8	821.7	693.7	127.98	6.420			
19,900.0	12,288.0	20,153.2	12,600.0	67.7	61.7	112.34	7,633.4	-332.8	821.7	692.3	129.34	6.353			
20,000.0	12,288.0	20,253.2	12,600.0	68.4	62.5	112.34	7,733.4	-333.7	821.7	691.0	130.71	6.286			
20,100.0	12,288.0	20,353.2	12,600.0	69.1	63.2	112.34	7,833.4	-334.7	821.7	689.6	132.09	6.221			
20,200.0	12,288.0	20,453.2	12,600.0	69.7	63.9	112.34	7,933.4	-335.7	821.7	688.2	133.46	6.156			
20,300.0	12,288.0	20,553.2	12,600.0	70.4	64.7	112.34	8,033.4	-336.6	821.7	686.8	134.84	6.094			
20,400.0	12,288.0	20,653.2	12,600.0	71.1	65.4	112.34	8,133.4	-337.6	821.7	685.4	136.23	6.032			
20,500.0	12,288.0	20,753.2	12,600.0	71.8	66.1	112.34	8,233.4	-338.6	821.7	684.1	137.61	5.971			
20,600.0	12,288.0	20,853.2	12,600.0	72.4	66.9	112.34	8,333.4	-339.5	821.7	682.7	139.00	5.911			
20,700.0	12,288.0	20,953.2	12,600.0	73.1	67.6	112.34	8,433.4	-340.5	821.7	681.3	140.39	5.853			
20,800.0	12,288.0	21,053.2	12,600.0	73.8	68.3	112.34	8,533.4	-341.5	821.7	679.9	141.78	5.795			
20,900.0	12,288.0	21,153.2	12,600.0	74.5	69.1	112.34	8,633.3	-342.4	821.7	678.5	143.17	5.739			
21,000.0	12,288.0	21,253.2	12,600.0	75.2	69.8	112.34	8,733.3	-343.4	821.7	677.1	144.57	5.684			
21,100.0	12,288.0	21,353.2	12,600.0	75.8	70.5	112.34	8,833.3	-344.4	821.7	675.7	145.97	5.629			
21,200.0	12,288.0	21,453.2	12,600.0	76.5	71.3	112.34	8,933.3	-345.3	821.7	674.3	147.37	5.576			
21,300.0	12,288.0	21,553.2	12,600.0	77.2	72.0	112.34	9,033.3	-346.3	821.7	672.9	148.78	5.523			
21,400.0	12,288.0	21,653.2	12,600.0	77.9	72.8	112.34	9,133.3	-347.3	821.7	671.5	150.18	5.471			
21,500.0	12,288.0	21,753.2	12,600.0	78.6	73.5	112.34	9,233.3	-348.2	821.7	670.1	151.59	5.420			
21,600.0	12,288.0	21,853.2	12,600.0	79.3	74.2	112.34	9,333.3	-349.2	821.7	668.7	153.00	5.370			
21,700.0	12,288.0	21,953.2	12,600.0	80.0	75.0	112.34	9,433.3	-350.2	821.7	667.3	154.41	5.321			
21,800.0	12,288.0	22,053.2	12,600.0	80.7	75.7	112.34	9,533.3	-351.1	821.7	665.8	155.82	5.273			
21,900.0	12,288.0	22,153.2	12,600.0	81.4	76.5	112.34	9,633.3	-352.1	821.7	664.4	157.24	5.226			
22,000.0	12,288.0	22,253.2	12,600.0	82.1	77.2	112.34	9,733.3	-353.1	821.7	663.0	158.66	5.179			
22,100.0	12,288.0	22,353.2	12,600.0	82.8	77.9	112.34	9,833.3	-354.0	821.7	661.6	160.08	5.133			
22,200.0	12,288.0	22,453.2	12,600.0	83.5	78.7	112.34	9,933.3	-355.0	821.7	660.2	161.50	5.088			
22,300.0	12,288.0	22,553.2	12,600.0	84.2	79.4	112.34	10,033.3	-356.0	821.7	658.8	162.92	5.043			
22,400.0	12,288.0	22,653.2	12,600.0	84.9	80.2	112.34	10,133.3	-356.9	821.7	657.3	164.34	5.000			
22,500.0	12,288.0	22,753.2	12,600.0	85.6	80.9	112.34	10,233.3	-357.9	821.7	655.9	165.77	4.957			
22,600.0	12,288.0	22,853.2	12,600.0	86.3	81.7	112.34	10,333.3	-358.9	821.7	654.5	167.20	4.914			

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #703H - OWB - PWP1												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12141-r.5 MWD+IFR1+MS												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:		Distance			
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside				Between	Between	Minimum	Separation
Depth	Depth	Depth	Depth			Toolface				Centres	Ellipses	Separation	Factor
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S	+E/-W		(usft)	(usft)	(usft)	
							(usft)	(usft)					Warning
22,700.0	12,288.0	22,953.2	12,600.0	87.0	82.4	112.34	10,433.3	-359.8		821.7	653.1	168.62	4.873
22,800.0	12,288.0	23,053.2	12,600.0	87.7	83.1	112.34	10,533.3	-360.8		821.7	651.6	170.05	4.832
22,900.0	12,288.0	23,153.2	12,600.0	88.4	83.9	112.34	10,633.3	-361.8		821.7	650.2	171.49	4.792
23,000.0	12,288.0	23,253.2	12,600.0	89.1	84.6	112.34	10,733.3	-362.7		821.7	648.8	172.92	4.752
23,010.6	12,288.0	23,263.8	12,600.0	89.2	84.7	112.34	10,743.8	-362.8		821.7	648.6	173.07	4.748
23,015.4	12,288.0	23,268.7	12,600.0	89.2	84.7	112.34	10,748.7	-362.9		821.7	648.5	173.14	4.746
23,060.6	12,288.0	23,311.7	12,600.0	89.5	85.1	112.34	10,791.7	-363.3		821.7	647.9	173.74	4.729

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #704H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12201-r.5 MWD+IFR1+MS													Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Minimum		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor			
0.0	0.0	0.0	0.0	3.0	3.0	89.55	0.7	90.0	90.0					
100.0	100.0	98.8	98.8	3.1	3.1	89.55	0.7	90.0	90.0	83.5	6.54	13.768		
200.0	200.0	198.8	198.8	3.2	3.2	89.55	0.7	90.0	90.0	83.2	6.78	13.282		
300.0	300.0	298.8	298.8	3.3	3.3	89.55	0.7	90.0	90.0	83.0	7.01	12.845		
400.0	400.0	398.8	398.8	3.4	3.4	89.55	0.7	90.0	90.0	82.8	7.23	12.449		
500.0	500.0	498.8	498.8	3.6	3.6	89.55	0.7	90.0	90.0	82.6	7.45	12.089		
600.0	600.0	598.8	598.8	3.7	3.7	89.55	0.7	90.0	90.0	82.3	7.65	11.758		
700.0	700.0	698.8	698.8	3.8	3.8	89.55	0.7	90.0	90.0	82.1	7.86	11.454		
800.0	800.0	798.8	798.8	3.9	3.9	89.55	0.7	90.0	90.0	81.9	8.06	11.173		
900.0	900.0	898.8	898.8	4.0	4.0	89.55	0.7	90.0	90.0	81.8	8.25	10.912		
1,000.0	1,000.0	998.8	998.8	4.2	4.2	89.55	0.7	90.0	90.0	81.6	8.44	10.669		
1,100.0	1,100.0	1,098.8	1,098.8	4.3	4.3	89.55	0.7	90.0	90.0	81.4	8.62	10.442		
1,200.0	1,200.0	1,198.8	1,198.8	4.4	4.4	89.55	0.7	90.0	90.0	81.2	8.80	10.229 CC, ES		
1,300.0	1,300.0	1,296.5	1,296.5	4.5	4.5	-155.75	0.7	91.2	92.4	83.4	9.05	10.211 SF		
1,400.0	1,399.9	1,393.7	1,393.6	4.7	4.7	-156.58	0.7	94.9	99.8	90.3	9.49	10.524		
1,500.0	1,499.7	1,490.3	1,490.0	4.9	4.8	-157.72	0.7	101.0	112.2	102.2	9.95	11.277		
1,600.0	1,599.3	1,585.7	1,585.1	5.1	5.0	-158.93	0.7	109.5	129.4	119.0	10.44	12.402		
1,700.0	1,698.6	1,679.7	1,678.5	5.4	5.3	-160.06	0.7	120.1	151.6	140.6	10.96	13.837		
1,733.3	1,731.6	1,710.7	1,709.2	5.5	5.4	-160.40	0.7	124.1	160.0	148.9	11.10	14.423		
1,800.0	1,797.6	1,772.1	1,769.9	5.6	5.6	-167.40	0.7	132.8	178.4	167.0	11.41	15.632		
1,900.0	1,896.4	1,862.6	1,859.3	5.9	5.8	-175.98	0.7	147.3	209.2	197.3	11.91	17.569		
1,978.9	1,974.2	1,936.8	1,932.4	6.1	6.0	178.63	0.7	160.2	235.6	223.3	12.31	19.132		
2,000.0	1,995.0	1,956.6	1,951.9	6.2	6.1	178.75	0.7	163.6	242.8	230.3	12.42	19.539		
2,100.0	2,093.5	2,050.6	2,044.4	6.5	6.4	179.21	0.7	180.0	276.9	263.8	13.06	21.203		
2,200.0	2,191.9	2,144.6	2,137.0	6.9	6.7	179.58	0.7	196.3	311.0	297.3	13.70	22.695		
2,300.0	2,290.4	2,238.5	2,229.5	7.2	7.1	179.87	0.7	212.6	345.1	330.8	14.37	24.014		
2,400.0	2,388.9	2,332.5	2,322.1	7.6	7.4	-179.89	0.7	228.9	379.3	364.2	15.06	25.182		
2,500.0	2,487.4	2,426.5	2,414.6	7.9	7.8	-179.69	0.7	245.2	413.4	397.7	15.77	26.220		
2,600.0	2,585.9	2,520.5	2,507.2	8.3	8.1	-179.52	0.7	261.6	447.6	431.1	16.49	27.144		
2,700.0	2,684.3	2,614.5	2,599.7	8.7	8.5	-179.37	0.7	277.9	481.7	464.5	17.22	27.969		
2,800.0	2,782.8	2,708.4	2,692.3	9.1	8.9	-179.25	0.7	294.2	515.9	497.9	17.97	28.709		
2,900.0	2,881.3	2,802.4	2,784.8	9.5	9.2	-179.13	0.7	310.5	550.0	531.3	18.73	29.373		
3,000.0	2,979.8	2,896.4	2,877.4	9.9	9.6	-179.04	0.7	326.8	584.2	564.7	19.49	29.973		
3,100.0	3,078.3	2,990.4	2,969.9	10.3	10.0	-178.95	0.7	343.2	618.4	598.1	20.26	30.515		
3,200.0	3,176.7	3,084.4	3,062.5	10.7	10.4	-178.87	0.7	359.5	652.5	631.5	21.04	31.007		
3,300.0	3,275.2	3,178.3	3,155.0	11.2	10.8	-178.80	0.7	375.8	686.7	664.9	21.83	31.456		
3,400.0	3,373.7	3,272.3	3,247.6	11.6	11.2	-178.74	0.7	392.1	720.8	698.2	22.62	31.865		
3,500.0	3,472.2	3,366.3	3,340.1	12.0	11.6	-178.68	0.7	408.4	755.0	731.6	23.42	32.240		
3,600.0	3,570.7	3,460.3	3,432.7	12.4	12.0	-178.63	0.7	424.8	789.2	765.0	24.22	32.584		
3,700.0	3,669.1	3,554.3	3,525.3	12.9	12.4	-178.58	0.7	441.1	823.3	798.3	25.03	32.900		
3,800.0	3,767.6	3,648.3	3,617.8	13.3	12.8	-178.53	0.7	457.4	857.5	831.7	25.83	33.193		
3,900.0	3,866.1	3,742.2	3,710.4	13.7	13.2	-178.49	0.7	473.7	891.7	865.0	26.65	33.463		
4,000.0	3,964.6	3,836.2	3,802.9	14.2	13.6	-178.46	0.7	490.0	925.8	898.4	27.46	33.713		
4,100.0	4,063.1	3,930.2	3,895.5	14.6	14.0	-178.42	0.7	506.4	960.0	931.7	28.28	33.946		
4,200.0	4,161.5	4,024.2	3,988.0	15.0	14.4	-178.39	0.7	522.7	994.2	965.1	29.10	34.163		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS													Offset Well Error:	3.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.4	0.4	3.0	3.0	-90.57	-0.3	-30.0	30.0					
100.0	100.0	100.4	100.4	3.1	3.1	-90.57	-0.3	-30.0	30.0	23.5	6.54	4.588		
200.0	200.0	200.4	200.4	3.2	3.2	-90.57	-0.3	-30.0	30.0	23.2	6.78	4.426		
300.0	300.0	300.4	300.4	3.3	3.3	-90.57	-0.3	-30.0	30.0	23.0	7.01	4.281		
400.0	400.0	400.4	400.4	3.4	3.4	-90.57	-0.3	-30.0	30.0	22.8	7.23	4.149		
500.0	500.0	500.4	500.4	3.6	3.6	-90.57	-0.3	-30.0	30.0	22.6	7.45	4.029		
600.0	600.0	600.4	600.4	3.7	3.7	-90.57	-0.3	-30.0	30.0	22.3	7.66	3.919		
700.0	700.0	700.4	700.4	3.8	3.8	-90.57	-0.3	-30.0	30.0	22.1	7.86	3.817		
800.0	800.0	800.4	800.4	3.9	3.9	-90.57	-0.3	-30.0	30.0	21.9	8.06	3.724		
900.0	900.0	900.4	900.4	4.0	4.0	-90.57	-0.3	-30.0	30.0	21.8	8.25	3.637		
1,000.0	1,000.0	1,000.4	1,000.4	4.2	4.2	-90.57	-0.3	-30.0	30.0	21.6	8.44	3.556		
1,100.0	1,100.0	1,100.4	1,100.4	4.3	4.3	-90.57	-0.3	-30.0	30.0	21.4	8.62	3.480		
1,166.5	1,166.5	1,166.9	1,166.9	4.4	4.4	-90.57	-0.3	-30.0	30.0	21.3	8.74	3.433 CC		
1,200.0	1,200.0	1,200.4	1,200.4	4.4	4.4	-90.57	-0.3	-30.0	30.0	21.2	8.80	3.409		
1,300.0	1,300.0	1,300.0	1,300.0	4.5	4.5	25.44	-0.3	-31.3	30.1	21.1	9.06	3.326		
1,304.4	1,304.4	1,304.0	1,304.0	4.5	4.5	25.52	-0.3	-31.4	30.1	21.1	9.07	3.321		
1,400.0	1,399.9	1,398.8	1,398.7	4.7	4.7	28.39	-0.4	-35.2	30.5	21.0	9.49	3.217 ES		
1,500.0	1,499.7	1,498.0	1,497.7	4.9	4.8	33.12	-0.5	-41.6	31.4	21.4	9.93	3.157 SF		
1,600.0	1,599.3	1,597.1	1,596.4	5.1	5.1	39.27	-0.7	-50.6	32.9	22.5	10.39	3.164		
1,700.0	1,698.6	1,696.1	1,694.8	5.4	5.4	46.28	-0.9	-62.2	35.3	24.5	10.83	3.259		
1,733.3	1,731.6	1,729.1	1,727.5	5.5	5.5	48.70	-0.9	-66.6	36.3	25.4	10.93	3.324		
1,800.0	1,797.6	1,795.1	1,792.7	5.6	5.7	46.41	-1.1	-76.3	38.7	27.5	11.17	3.460		
1,900.0	1,896.4	1,894.2	1,890.3	5.9	6.0	41.25	-1.4	-92.9	42.1	30.5	11.64	3.617		
1,978.9	1,974.2	1,972.3	1,967.1	6.1	6.3	36.17	-1.7	-107.8	44.6	32.6	12.02	3.711		
2,000.0	1,995.0	1,993.1	1,987.5	6.2	6.3	36.00	-1.7	-112.0	45.3	33.2	12.11	3.738		
2,100.0	2,093.5	2,093.0	2,085.1	6.5	6.7	35.01	-2.1	-132.8	48.9	36.2	12.72	3.845		
2,200.0	2,191.9	2,192.9	2,182.9	6.9	7.0	34.16	-2.5	-153.6	52.6	39.2	13.35	3.938		
2,300.0	2,290.4	2,292.9	2,280.6	7.2	7.4	33.41	-2.8	-174.3	56.2	42.2	14.01	4.015		
2,400.0	2,388.9	2,392.8	2,378.4	7.6	7.8	32.76	-3.2	-195.1	59.9	45.2	14.69	4.079		
2,500.0	2,487.4	2,492.7	2,476.1	7.9	8.2	32.18	-3.5	-215.9	63.6	48.2	15.39	4.132		
2,600.0	2,585.9	2,592.7	2,573.9	8.3	8.6	31.67	-3.9	-236.7	67.3	51.2	16.11	4.176		
2,700.0	2,684.3	2,692.6	2,671.6	8.7	9.0	31.20	-4.3	-257.4	71.0	54.1	16.85	4.212		
2,800.0	2,782.8	2,792.5	2,769.4	9.1	9.4	30.79	-4.6	-278.2	74.7	57.1	17.60	4.242		
2,900.0	2,881.3	2,892.5	2,867.1	9.5	9.8	30.41	-5.0	-299.0	78.4	60.0	18.37	4.266		
3,000.0	2,979.8	2,992.4	2,964.9	9.9	10.2	30.07	-5.4	-319.8	82.1	62.9	19.14	4.287		
3,100.0	3,078.3	3,092.3	3,062.6	10.3	10.6	29.76	-5.7	-340.5	85.8	65.8	19.93	4.304		
3,200.0	3,176.7	3,192.2	3,160.4	10.7	11.1	29.47	-6.1	-361.3	89.5	68.8	20.73	4.318		
3,300.0	3,275.2	3,292.2	3,258.1	11.2	11.5	29.21	-6.4	-382.1	93.2	71.7	21.53	4.329		
3,400.0	3,373.7	3,392.1	3,355.8	11.6	11.9	28.96	-6.8	-402.8	96.9	74.6	22.34	4.339		
3,500.0	3,472.2	3,492.0	3,453.6	12.0	12.4	28.74	-7.2	-423.6	100.6	77.5	23.15	4.346		
3,600.0	3,570.7	3,592.0	3,551.3	12.4	12.8	28.53	-7.5	-444.4	104.3	80.4	23.97	4.353		
3,700.0	3,669.1	3,691.9	3,649.1	12.9	13.3	28.33	-7.9	-465.2	108.0	83.3	24.79	4.358		
3,800.0	3,767.6	3,791.8	3,746.8	13.3	13.7	28.15	-8.3	-485.9	111.8	86.1	25.62	4.362		
3,900.0	3,866.1	3,891.8	3,844.6	13.7	14.2	27.98	-8.6	-506.7	115.5	89.0	26.46	4.365		
4,000.0	3,964.6	3,991.7	3,942.3	14.2	14.6	27.82	-9.0	-527.5	119.2	91.9	27.29	4.367		
4,100.0	4,063.1	4,091.6	4,040.1	14.6	15.1	27.67	-9.3	-548.3	122.9	94.8	28.13	4.369		
4,200.0	4,161.5	4,191.5	4,137.8	15.0	15.5	27.52	-9.7	-569.0	126.6	97.7	28.98	4.371		
4,300.0	4,260.0	4,291.5	4,235.6	15.5	16.0	27.39	-10.1	-589.8	130.4	100.5	29.82	4.371		
4,400.0	4,358.5	4,391.4	4,333.3	15.9	16.4	27.27	-10.4	-610.6	134.1	103.4	30.67	4.372		
4,500.0	4,457.0	4,491.3	4,431.1	16.3	16.9	27.15	-10.8	-631.4	137.8	106.3	31.52	4.372		
4,600.0	4,555.5	4,591.3	4,528.8	16.8	17.3	27.03	-11.2	-652.1	141.5	109.2	32.37	4.372		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS													Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis	Offset	Reference	Offset	Highside	Offset Wellbore Centre	Distance	Between	Between	Minimum	Separation	Warning	
Measured	Vertical	Measured	Vertical	Reference	Offset	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
Depth	Depth	Depth	Depth	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)		
4,700.0	4,654.0	4,691.2	4,626.6	17.2	17.8	26.93	-11.5	-672.9	145.3	112.0	33.23	4.372		
4,800.0	4,752.4	4,791.1	4,724.3	17.7	18.3	26.82	-11.9	-693.7	149.0	114.9	34.08	4.371		
4,900.0	4,850.9	4,891.1	4,822.0	18.1	18.7	26.73	-12.2	-714.5	152.7	117.8	34.94	4.371		
5,000.0	4,949.4	4,991.0	4,919.8	18.6	19.2	26.64	-12.6	-735.2	156.4	120.6	35.80	4.370		
5,100.0	5,047.9	5,090.9	5,017.5	19.0	19.6	26.55	-13.0	-756.0	160.2	123.5	36.66	4.369		
5,200.0	5,146.4	5,190.8	5,115.3	19.4	20.1	26.46	-13.3	-776.8	163.9	126.4	37.52	4.368		
5,300.0	5,244.8	5,290.8	5,213.0	19.9	20.6	26.38	-13.7	-797.5	167.6	129.2	38.38	4.367		
5,400.0	5,343.3	5,390.7	5,310.8	20.3	21.0	26.31	-14.1	-818.3	171.3	132.1	39.25	4.365		
5,500.0	5,441.8	5,490.6	5,408.5	20.8	21.5	26.23	-14.4	-839.1	175.1	134.9	40.11	4.364		
5,600.0	5,540.3	5,590.6	5,506.3	21.2	22.0	26.16	-14.8	-859.9	178.8	137.8	40.98	4.363		
5,700.0	5,638.8	5,690.5	5,604.0	21.7	22.4	26.10	-15.1	-880.6	182.5	140.7	41.85	4.362		
5,800.0	5,737.2	5,790.4	5,701.8	22.1	22.9	26.03	-15.5	-901.4	186.2	143.5	42.71	4.360		
5,900.0	5,835.7	5,890.4	5,799.5	22.6	23.3	25.97	-15.9	-922.2	190.0	146.4	43.58	4.359		
6,000.0	5,934.2	5,990.3	5,897.3	23.0	23.8	25.91	-16.2	-943.0	193.7	149.2	44.45	4.357		
6,100.0	6,032.7	6,090.2	5,995.0	23.5	24.3	25.85	-16.6	-963.7	197.4	152.1	45.32	4.356		
6,200.0	6,131.2	6,190.2	6,092.8	23.9	24.7	25.80	-17.0	-984.5	201.2	155.0	46.19	4.355		
6,300.0	6,229.6	6,290.1	6,190.5	24.4	25.2	25.74	-17.3	-1,005.3	204.9	157.8	47.06	4.353		
6,400.0	6,328.1	6,390.0	6,288.2	24.8	25.7	25.69	-17.7	-1,026.1	208.6	160.7	47.94	4.352		
6,453.7	6,381.0	6,443.7	6,340.7	25.0	25.9	25.66	-17.9	-1,037.2	210.6	162.2	48.40	4.352		
6,500.0	6,426.6	6,489.9	6,386.0	25.2	26.2	25.63	-18.0	-1,046.8	212.4	163.6	48.79	4.353		
6,600.0	6,525.2	6,589.8	6,483.7	25.7	26.6	25.50	-18.4	-1,067.6	216.9	167.2	49.69	4.365		
6,700.0	6,624.0	6,689.7	6,581.4	26.1	27.1	25.28	-18.8	-1,088.4	222.2	171.6	50.60	4.391		
6,800.0	6,722.9	6,789.5	6,679.0	26.6	27.6	24.97	-19.1	-1,109.1	228.3	176.7	51.53	4.430		
6,900.0	6,821.9	6,889.3	6,776.6	27.0	28.0	24.60	-19.5	-1,129.8	235.1	182.7	52.47	4.481		
7,000.0	6,921.1	6,992.9	6,878.1	27.4	28.5	24.21	-19.9	-1,150.5	242.0	188.5	53.46	4.527		
7,100.0	7,020.3	7,096.9	6,980.4	27.8	29.0	23.91	-20.2	-1,169.4	248.0	193.6	54.38	4.561		
7,200.0	7,119.7	7,201.1	7,083.1	28.2	29.5	23.69	-20.5	-1,186.5	253.1	197.8	55.24	4.581		
7,300.0	7,219.1	7,305.3	7,186.3	28.7	29.9	23.53	-20.8	-1,201.7	257.3	201.2	56.06	4.589		
7,400.0	7,318.7	7,409.7	7,289.8	29.1	30.4	23.43	-21.0	-1,215.1	260.5	203.7	56.82	4.585		
7,500.0	7,418.3	7,514.2	7,393.7	29.4	30.8	23.40	-21.2	-1,226.6	262.9	205.3	57.53	4.569		
7,600.0	7,518.0	7,618.7	7,497.8	29.8	31.2	23.42	-21.4	-1,236.2	264.3	206.1	58.19	4.542		
7,700.0	7,617.7	7,723.3	7,602.0	30.2	31.6	23.49	-21.5	-1,243.8	264.8	206.0	58.78	4.505		
7,800.0	7,717.5	7,827.8	7,706.4	30.5	32.0	23.63	-21.6	-1,249.6	264.4	205.1	59.30	4.458		
7,900.0	7,817.4	7,932.3	7,810.9	30.9	32.3	23.82	-21.7	-1,253.5	263.1	203.3	59.75	4.403		
8,000.0	7,917.3	8,036.8	7,915.3	31.2	32.5	24.08	-21.7	-1,255.5	260.8	200.7	60.07	4.342		
8,100.0	8,017.2	8,139.1	8,017.6	31.5	32.6	24.38	-21.7	-1,255.7	257.8	197.6	60.27	4.278		
8,200.0	8,117.2	8,239.1	8,117.6	31.8	32.7	24.62	-21.7	-1,255.7	255.4	194.9	60.49	4.222		
8,300.0	8,217.2	8,339.1	8,217.6	32.1	32.7	24.78	-21.7	-1,255.7	253.8	193.1	60.70	4.181		
8,400.0	8,317.2	8,439.1	8,317.6	32.3	32.7	24.87	-21.7	-1,255.7	253.0	192.1	60.91	4.154		
8,453.7	8,370.9	8,492.8	8,371.3	32.4	32.7	-70.12	-21.7	-1,255.7	252.9	191.9	60.96	4.148		
8,500.0	8,417.2	8,539.1	8,417.6	32.4	32.7	-70.12	-21.7	-1,255.7	252.9	191.9	60.98	4.147		
8,600.0	8,517.2	8,639.1	8,517.6	32.4	32.8	-70.12	-21.7	-1,255.7	252.9	191.9	61.02	4.144		
8,700.0	8,617.2	8,739.1	8,617.6	32.4	32.8	-70.12	-21.7	-1,255.7	252.9	191.8	61.07	4.141		
8,800.0	8,717.2	8,839.1	8,717.6	32.5	32.8	-70.12	-21.7	-1,255.7	252.9	191.8	61.12	4.138		
8,900.0	8,817.2	8,939.1	8,817.6	32.5	32.8	-70.12	-21.7	-1,255.7	252.9	191.7	61.17	4.134		
9,000.0	8,917.2	9,039.1	8,917.6	32.5	32.8	-70.12	-21.7	-1,255.7	252.9	191.7	61.22	4.131		
9,100.0	9,017.2	9,139.1	9,017.6	32.5	32.9	-70.12	-21.7	-1,255.7	252.9	191.6	61.26	4.128		
9,200.0	9,117.2	9,239.1	9,117.6	32.5	32.9	-70.12	-21.7	-1,255.7	252.9	191.6	61.31	4.124		
9,300.0	9,217.2	9,339.1	9,217.6	32.6	32.9	-70.12	-21.7	-1,255.7	252.9	191.5	61.36	4.121		
9,400.0	9,317.2	9,439.1	9,317.6	32.6	32.9	-70.12	-21.7	-1,255.7	252.9	191.5	61.41	4.118		
9,500.0	9,417.2	9,539.1	9,417.6	32.6	33.0	-70.12	-21.7	-1,255.7	252.9	191.4	61.46	4.114		

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,600.0	9,517.2	9,639.1	9,517.6	32.6	33.0	-70.12	-21.7	-1,255.7	252.9	191.4	61.51	4.111	
9,700.0	9,617.2	9,739.1	9,617.6	32.7	33.0	-70.12	-21.7	-1,255.7	252.9	191.3	61.56	4.108	
9,800.0	9,717.2	9,839.1	9,717.6	32.7	33.0	-70.12	-21.7	-1,255.7	252.9	191.3	61.62	4.104	
9,900.0	9,817.2	9,939.1	9,817.6	32.7	33.1	-70.12	-21.7	-1,255.7	252.9	191.2	61.67	4.101	
10,000.0	9,917.2	10,039.1	9,917.6	32.7	33.1	-70.12	-21.7	-1,255.7	252.9	191.2	61.72	4.097	
10,100.0	10,017.2	10,139.1	10,017.6	32.7	33.1	-70.12	-21.7	-1,255.7	252.9	191.1	61.77	4.094	
10,200.0	10,117.2	10,239.1	10,117.6	32.8	33.1	-70.12	-21.7	-1,255.7	252.9	191.1	61.83	4.090	
10,300.0	10,217.2	10,339.1	10,217.6	32.8	33.2	-70.12	-21.7	-1,255.7	252.9	191.0	61.88	4.087	
10,400.0	10,317.2	10,439.1	10,317.6	32.8	33.2	-70.12	-21.7	-1,255.7	252.9	190.9	61.93	4.083	
10,500.0	10,417.2	10,539.1	10,417.6	32.8	33.2	-70.12	-21.7	-1,255.7	252.9	190.9	61.99	4.080	
10,600.0	10,517.2	10,639.1	10,517.6	32.9	33.3	-70.12	-21.7	-1,255.7	252.9	190.8	62.04	4.076	
10,700.0	10,617.2	10,739.1	10,617.6	32.9	33.3	-70.12	-21.7	-1,255.7	252.9	190.8	62.10	4.072	
10,800.0	10,717.2	10,839.1	10,717.6	32.9	33.3	-70.12	-21.7	-1,255.7	252.9	190.7	62.15	4.069	
10,900.0	10,817.2	10,939.1	10,817.6	32.9	33.3	-70.12	-21.7	-1,255.7	252.9	190.7	62.21	4.065	
11,000.0	10,917.2	11,039.1	10,917.6	33.0	33.4	-70.12	-21.7	-1,255.7	252.9	190.6	62.26	4.062	
11,100.0	11,017.2	11,139.1	11,017.6	33.0	33.4	-70.12	-21.7	-1,255.7	252.9	190.6	62.32	4.058	
11,200.0	11,117.2	11,239.1	11,117.6	33.0	33.4	-70.12	-21.7	-1,255.7	252.9	190.5	62.37	4.054	
11,300.0	11,217.2	11,339.1	11,217.6	33.1	33.4	-70.12	-21.7	-1,255.7	252.9	190.4	62.43	4.051	
11,400.0	11,317.2	11,439.1	11,317.6	33.1	33.5	-70.12	-21.7	-1,255.7	252.9	190.4	62.49	4.047	
11,500.0	11,417.2	11,539.1	11,417.6	33.1	33.5	-70.12	-21.7	-1,255.7	252.9	190.3	62.55	4.043	
11,600.0	11,517.2	11,639.1	11,517.6	33.1	33.5	-70.12	-21.7	-1,255.7	252.9	190.3	62.61	4.039	
11,700.0	11,617.2	11,739.1	11,617.6	33.2	33.6	-70.12	-21.7	-1,255.7	252.9	190.2	62.66	4.036	
11,800.0	11,717.2	11,839.1	11,717.6	33.2	33.6	-70.12	-21.7	-1,255.7	252.9	190.2	62.72	4.032	
11,893.4	11,810.5	11,932.4	11,810.9	33.2	33.6	-70.12	-21.7	-1,255.7	252.9	190.1	62.77	4.028	
11,900.0	11,817.2	11,939.1	11,817.6	33.2	33.6	-69.58	-21.7	-1,255.7	252.9	190.1	62.78	4.028	
11,925.0	11,842.1	11,964.1	11,842.5	33.2	33.6	-69.83	-21.7	-1,255.7	252.5	189.7	62.85	4.018	
11,950.0	11,867.0	11,988.9	11,867.4	33.2	33.6	-70.41	-21.7	-1,255.7	251.7	188.7	63.01	3.995	
11,975.0	11,891.8	12,013.7	11,892.2	33.2	33.6	-71.31	-21.7	-1,255.7	250.5	187.3	63.24	3.962	
12,000.0	11,916.3	12,038.2	11,916.7	33.2	33.6	-72.54	-21.7	-1,255.7	249.0	185.4	63.54	3.918	
12,025.0	11,940.5	12,062.4	11,940.9	33.2	33.7	-74.08	-21.7	-1,255.7	247.2	183.3	63.91	3.867	
12,050.0	11,964.4	12,086.3	11,964.8	33.2	33.7	-75.91	-21.7	-1,255.7	245.2	180.8	64.33	3.811	
12,075.0	11,987.8	12,109.7	11,988.2	33.2	33.7	-78.02	-21.7	-1,255.7	243.1	178.3	64.77	3.753	
12,100.0	12,010.8	12,132.7	12,011.2	33.2	33.7	-80.37	-21.7	-1,255.7	241.1	175.8	65.22	3.696	
12,125.0	12,033.2	12,155.1	12,033.6	33.2	33.7	-82.94	-21.7	-1,255.7	239.3	173.6	65.66	3.645	
12,150.0	12,055.0	12,176.9	12,055.4	33.2	33.7	-85.65	-21.7	-1,255.7	237.9	171.9	66.03	3.603	
12,175.0	12,076.1	12,198.0	12,076.5	33.2	33.7	-88.47	-21.7	-1,255.7	237.1	170.8	66.31	3.575	
12,188.4	12,087.2	12,209.1	12,087.6	33.2	33.7	-90.00	-21.7	-1,255.7	237.0	170.6	66.41	3.568	
12,200.0	12,096.5	12,218.4	12,096.9	33.2	33.7	-91.32	-21.7	-1,255.7	237.1	170.6	66.46	3.567	
12,225.0	12,116.1	12,238.0	12,116.5	33.2	33.7	-94.14	-21.7	-1,255.7	238.0	171.6	66.43	3.583	
12,250.0	12,134.9	12,256.8	12,135.3	33.2	33.7	-96.86	-21.7	-1,255.7	240.1	173.9	66.20	3.627	
12,275.0	12,152.8	12,274.7	12,153.2	33.2	33.7	-99.40	-21.7	-1,255.7	243.6	177.8	65.74	3.705	
12,300.0	12,169.8	12,291.7	12,170.2	33.2	33.7	-101.72	-21.7	-1,255.7	248.4	183.4	65.06	3.819	
12,325.0	12,185.7	12,307.6	12,186.1	33.3	33.7	-103.77	-21.7	-1,255.7	254.9	190.7	64.16	3.973	
12,350.0	12,200.7	12,322.6	12,201.1	33.3	33.7	-105.49	-21.7	-1,255.7	262.9	199.9	63.08	4.168	
12,375.0	12,214.5	12,336.5	12,214.9	33.3	33.7	-106.86	-21.7	-1,255.7	272.6	210.7	61.85	4.407	
12,400.0	12,227.3	12,349.2	12,227.7	33.3	33.7	-107.83	-21.7	-1,255.7	283.8	223.3	60.52	4.690	
12,425.0	12,238.9	12,360.8	12,239.3	33.3	33.7	-108.38	-21.7	-1,255.7	296.6	237.4	59.14	5.015	
12,450.0	12,249.4	12,371.3	12,249.8	33.3	33.7	-108.48	-21.7	-1,255.7	310.8	253.0	57.75	5.381	
12,475.0	12,258.6	12,380.5	12,259.0	33.3	33.7	-108.10	-21.7	-1,255.7	326.3	269.9	56.39	5.786	
12,500.0	12,266.6	12,388.5	12,267.0	33.3	33.7	-107.20	-21.7	-1,255.7	343.0	287.9	55.08	6.227	
12,525.0	12,273.4	12,395.3	12,273.8	33.3	33.8	-105.73	-21.7	-1,255.7	360.8	306.9	53.84	6.700	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
12,550.0	12,278.9	12,400.8	12,279.3	33.3	33.8	-103.66	-21.7	-1,255.7	379.5	326.8	52.69	7.202	
12,575.0	12,283.1	12,405.0	12,283.5	33.4	33.8	-100.94	-21.7	-1,255.7	399.0	347.4	51.62	7.730	
12,600.0	12,286.0	12,407.9	12,286.4	33.4	33.8	-97.54	-21.7	-1,255.7	419.3	368.6	50.64	8.279	
12,625.0	12,287.6	12,409.6	12,288.0	33.4	33.8	-93.44	-21.7	-1,255.7	440.1	390.3	49.75	8.846	
12,643.4	12,288.0	12,409.9	12,288.4	33.4	33.8	-90.00	-21.7	-1,255.7	455.6	406.5	49.15	9.271	
12,700.0	12,288.0	12,409.9	12,288.4	33.5	33.8	-90.00	-21.7	-1,255.7	504.9	457.3	47.54	10.620	
12,800.0	12,288.0	12,409.9	12,288.4	33.6	33.8	-90.00	-21.7	-1,255.7	595.0	549.6	45.46	13.090	
12,900.0	12,288.0	12,409.9	12,288.4	33.7	33.8	-90.00	-21.7	-1,255.7	687.9	643.9	44.03	15.625	
13,000.0	12,288.0	12,409.9	12,288.4	33.8	33.8	-90.00	-21.7	-1,255.7	782.6	739.5	43.02	18.191	
13,100.0	12,288.0	13,862.4	13,100.0	34.0	34.5	-163.72	824.1	-1,263.9	845.5	788.0	57.45	14.716	
13,200.0	12,288.0	13,962.4	13,100.0	34.2	34.7	-163.72	924.1	-1,264.9	845.5	787.6	57.84	14.618	
13,300.0	12,288.0	14,062.4	13,100.0	34.4	34.8	-163.72	1,024.1	-1,265.9	845.5	787.2	58.26	14.511	
13,400.0	12,288.0	14,162.4	13,100.0	34.6	35.0	-163.72	1,124.1	-1,266.8	845.5	786.8	58.73	14.397	
13,500.0	12,288.0	14,262.4	13,100.0	34.8	35.2	-163.72	1,224.1	-1,267.8	845.5	786.3	59.23	14.276	
13,600.0	12,288.0	14,362.4	13,100.0	35.0	35.5	-163.72	1,324.1	-1,268.8	845.5	785.7	59.76	14.147	
13,700.0	12,288.0	14,462.4	13,100.0	35.3	35.7	-163.72	1,424.0	-1,269.7	845.5	785.2	60.33	14.014	
13,800.0	12,288.0	14,562.4	13,100.0	35.5	36.0	-163.72	1,524.0	-1,270.7	845.5	784.5	60.94	13.874	
13,900.0	12,288.0	14,662.4	13,100.0	35.8	36.2	-163.72	1,624.0	-1,271.7	845.5	783.9	61.58	13.730	
14,000.0	12,288.0	14,762.4	13,100.0	36.1	36.5	-163.72	1,724.0	-1,272.6	845.5	783.2	62.25	13.582	
14,100.0	12,288.0	14,862.4	13,100.0	36.4	36.8	-163.72	1,824.0	-1,273.6	845.5	782.5	62.95	13.431	
14,200.0	12,288.0	14,962.4	13,100.0	36.7	37.1	-163.72	1,924.0	-1,274.6	845.5	781.8	63.68	13.277	
14,300.0	12,288.0	15,062.4	13,100.0	37.1	37.4	-163.72	2,024.0	-1,275.5	845.5	781.0	64.44	13.120	
14,400.0	12,288.0	15,162.4	13,100.0	37.4	37.8	-163.72	2,124.0	-1,276.5	845.5	780.3	65.23	12.961	
14,500.0	12,288.0	15,262.4	13,100.0	37.8	38.1	-163.72	2,224.0	-1,277.5	845.5	779.4	66.05	12.801	
14,600.0	12,288.0	15,362.4	13,100.0	38.1	38.5	-163.72	2,324.0	-1,278.4	845.5	778.6	66.89	12.640	
14,700.0	12,288.0	15,462.4	13,100.0	38.5	38.8	-163.72	2,424.0	-1,279.4	845.5	777.7	67.76	12.479	
14,800.0	12,288.0	15,562.4	13,100.0	38.9	39.2	-163.72	2,524.0	-1,280.4	845.5	776.8	68.65	12.317	
14,900.0	12,288.0	15,662.4	13,100.0	39.3	39.6	-163.72	2,624.0	-1,281.3	845.5	775.9	69.56	12.155	
15,000.0	12,288.0	15,762.4	13,100.0	39.7	40.0	-163.72	2,724.0	-1,282.3	845.5	775.0	70.50	11.993	
15,100.0	12,288.0	15,862.4	13,100.0	40.1	40.4	-163.72	2,824.0	-1,283.3	845.5	774.0	71.45	11.833	
15,200.0	12,288.0	15,962.4	13,100.0	40.6	40.9	-163.72	2,924.0	-1,284.2	845.5	773.1	72.43	11.673	
15,300.0	12,288.0	16,062.4	13,100.0	41.0	41.3	-163.72	3,024.0	-1,285.2	845.5	772.1	73.43	11.514	
15,400.0	12,288.0	16,162.4	13,100.0	41.5	41.7	-163.72	3,124.0	-1,286.2	845.5	771.0	74.45	11.357	
15,500.0	12,288.0	16,262.4	13,100.0	41.9	42.2	-163.72	3,224.0	-1,287.1	845.5	770.0	75.48	11.201	
15,600.0	12,288.0	16,362.4	13,100.0	42.4	42.7	-163.72	3,324.0	-1,288.1	845.5	769.0	76.53	11.048	
15,700.0	12,288.0	16,462.4	13,100.0	42.9	43.1	-163.72	3,424.0	-1,289.1	845.5	767.9	77.60	10.895	
15,800.0	12,288.0	16,562.4	13,100.0	43.3	43.6	-163.72	3,523.9	-1,290.0	845.5	766.8	78.69	10.745	
15,900.0	12,288.0	16,662.4	13,100.0	43.8	44.1	-163.72	3,623.9	-1,291.0	845.5	765.7	79.79	10.597	
16,000.0	12,288.0	16,762.4	13,100.0	44.3	44.6	-163.72	3,723.9	-1,292.0	845.5	764.6	80.90	10.451	
16,100.0	12,288.0	16,862.4	13,100.0	44.8	45.1	-163.72	3,823.9	-1,292.9	845.5	763.5	82.03	10.307	
16,200.0	12,288.0	16,962.4	13,100.0	45.4	45.6	-163.72	3,923.9	-1,293.9	845.5	762.3	83.17	10.166	
16,300.0	12,288.0	17,062.4	13,100.0	45.9	46.1	-163.72	4,023.9	-1,294.9	845.5	761.2	84.33	10.027	
16,400.0	12,288.0	17,162.4	13,100.0	46.4	46.6	-163.72	4,123.9	-1,295.9	845.5	760.0	85.49	9.890	
16,500.0	12,288.0	17,262.4	13,100.0	46.9	47.2	-163.72	4,223.9	-1,296.8	845.5	758.8	86.67	9.755	
16,600.0	12,288.0	17,362.4	13,100.0	47.5	47.7	-163.72	4,323.9	-1,297.8	845.5	757.6	87.86	9.623	
16,700.0	12,288.0	17,462.4	13,100.0	48.0	48.2	-163.72	4,423.9	-1,298.8	845.5	756.4	89.06	9.493	
16,800.0	12,288.0	17,562.4	13,100.0	48.6	48.8	-163.72	4,523.9	-1,299.7	845.5	755.2	90.28	9.366	
16,900.0	12,288.0	17,662.4	13,100.0	49.1	49.3	-163.72	4,623.9	-1,300.7	845.5	754.0	91.50	9.240	
17,000.0	12,288.0	17,762.4	13,100.0	49.7	49.9	-163.72	4,723.9	-1,301.7	845.5	752.8	92.73	9.118	
17,100.0	12,288.0	17,862.4	13,100.0	50.3	50.5	-163.72	4,823.9	-1,302.6	845.5	751.5	93.97	8.997	
17,200.0	12,288.0	17,962.4	13,100.0	50.8	51.0	-163.72	4,923.9	-1,303.6	845.5	750.3	95.22	8.879	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS													Offset Well Error:	3.0 usft
Reference	Offset	Semi Major Axis		Rule Assigned:		Distance		Minimum		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor			
17,300.0	12,288.0	18,062.4	13,100.0	51.4	51.6	-163.72	5,023.9	-1,304.6	845.5	749.0	96.48	8.763		
17,400.0	12,288.0	18,162.4	13,100.0	52.0	52.2	-163.72	5,123.9	-1,305.5	845.5	747.7	97.75	8.650		
17,500.0	12,288.0	18,262.4	13,100.0	52.6	52.8	-163.72	5,223.9	-1,306.5	845.5	746.5	99.02	8.538		
17,600.0	12,288.0	18,362.4	13,100.0	53.2	53.3	-163.72	5,323.9	-1,307.5	845.5	745.2	100.31	8.429		
17,700.0	12,288.0	18,462.4	13,100.0	53.8	53.9	-163.72	5,423.9	-1,308.4	845.5	743.9	101.60	8.322		
17,800.0	12,288.0	18,562.4	13,100.0	54.4	54.5	-163.72	5,523.9	-1,309.4	845.5	742.6	102.90	8.217		
17,900.0	12,288.0	18,662.4	13,100.0	55.0	55.1	-163.72	5,623.9	-1,310.4	845.5	741.3	104.20	8.114		
18,000.0	12,288.0	18,762.4	13,100.0	55.6	55.7	-163.72	5,723.8	-1,311.3	845.5	740.0	105.51	8.013		
18,100.0	12,288.0	18,862.4	13,100.0	56.2	56.3	-163.72	5,823.8	-1,312.3	845.5	738.7	106.83	7.915		
18,200.0	12,288.0	18,962.4	13,100.0	56.8	57.0	-163.72	5,923.8	-1,313.3	845.5	737.3	108.15	7.818		
18,300.0	12,288.0	19,062.4	13,100.0	57.4	57.6	-163.72	6,023.8	-1,314.2	845.5	736.0	109.48	7.723		
18,400.0	12,288.0	19,162.4	13,100.0	58.1	58.2	-163.72	6,123.8	-1,315.2	845.5	734.7	110.81	7.630		
18,500.0	12,288.0	19,262.4	13,100.0	58.7	58.8	-163.72	6,223.8	-1,316.2	845.5	733.3	112.15	7.539		
18,600.0	12,288.0	19,362.4	13,100.0	59.3	59.4	-163.72	6,323.8	-1,317.1	845.5	732.0	113.50	7.449		
18,700.0	12,288.0	19,462.4	13,100.0	59.9	60.1	-163.72	6,423.8	-1,318.1	845.5	730.6	114.85	7.362		
18,800.0	12,288.0	19,562.4	13,100.0	60.6	60.7	-163.72	6,523.8	-1,319.1	845.5	729.3	116.20	7.276		
18,900.0	12,288.0	19,662.4	13,100.0	61.2	61.3	-163.72	6,623.8	-1,320.0	845.5	727.9	117.56	7.192		
19,000.0	12,288.0	19,762.4	13,100.0	61.9	62.0	-163.72	6,723.8	-1,321.0	845.5	726.6	118.93	7.109		
19,100.0	12,288.0	19,862.4	13,100.0	62.5	62.6	-163.72	6,823.8	-1,322.0	845.5	725.2	120.30	7.028		
19,200.0	12,288.0	19,962.4	13,100.0	63.1	63.3	-163.72	6,923.8	-1,322.9	845.5	723.8	121.67	6.949		
19,300.0	12,288.0	20,062.4	13,100.0	63.8	63.9	-163.72	7,023.8	-1,323.9	845.5	722.4	123.05	6.871		
19,400.0	12,288.0	20,162.4	13,100.0	64.4	64.5	-163.72	7,123.8	-1,324.9	845.5	721.1	124.43	6.795		
19,500.0	12,288.0	20,262.4	13,100.0	65.1	65.2	-163.72	7,223.8	-1,325.8	845.5	719.7	125.82	6.720		
19,600.0	12,288.0	20,362.4	13,100.0	65.8	65.8	-163.72	7,323.8	-1,326.8	845.5	718.3	127.20	6.647		
19,700.0	12,288.0	20,462.4	13,100.0	66.4	66.5	-163.72	7,423.8	-1,327.8	845.5	716.9	128.60	6.575		
19,800.0	12,288.0	20,562.4	13,100.0	67.1	67.2	-163.72	7,523.8	-1,328.7	845.5	715.5	129.99	6.504		
19,900.0	12,288.0	20,662.4	13,100.0	67.7	67.8	-163.72	7,623.8	-1,329.7	845.5	714.1	131.39	6.435		
20,000.0	12,288.0	20,762.4	13,100.0	68.4	68.5	-163.72	7,723.8	-1,330.7	845.5	712.7	132.79	6.367		
20,100.0	12,288.0	20,862.4	13,100.0	69.1	69.1	-163.72	7,823.7	-1,331.6	845.5	711.3	134.20	6.300		
20,200.0	12,288.0	20,962.4	13,100.0	69.7	69.8	-163.72	7,923.7	-1,332.6	845.5	709.9	135.61	6.235		
20,300.0	12,288.0	21,062.4	13,100.0	70.4	70.5	-163.72	8,023.7	-1,333.6	845.5	708.5	137.02	6.171		
20,400.0	12,288.0	21,162.4	13,100.0	71.1	71.1	-163.72	8,123.7	-1,334.5	845.5	707.1	138.44	6.107		
20,500.0	12,288.0	21,262.4	13,100.0	71.8	71.8	-163.72	8,223.7	-1,335.5	845.5	705.6	139.85	6.046		
20,600.0	12,288.0	21,362.4	13,100.0	72.4	72.5	-163.72	8,323.7	-1,336.5	845.5	704.2	141.27	5.985		
20,700.0	12,288.0	21,462.4	13,100.0	73.1	73.2	-163.72	8,423.7	-1,337.4	845.5	702.8	142.70	5.925		
20,800.0	12,288.0	21,562.4	13,100.0	73.8	73.8	-163.72	8,523.7	-1,338.4	845.5	701.4	144.12	5.867		
20,900.0	12,288.0	21,662.4	13,100.0	74.5	74.5	-163.72	8,623.7	-1,339.4	845.5	699.9	145.55	5.809		
21,000.0	12,288.0	21,762.4	13,100.0	75.2	75.2	-163.72	8,723.7	-1,340.3	845.5	698.5	146.98	5.752		
21,100.0	12,288.0	21,862.4	13,100.0	75.8	75.9	-163.72	8,823.7	-1,341.3	845.5	697.1	148.41	5.697		
21,200.0	12,288.0	21,962.4	13,100.0	76.5	76.6	-163.72	8,923.7	-1,342.3	845.5	695.6	149.85	5.642		
21,300.0	12,288.0	22,062.4	13,100.0	77.2	77.3	-163.72	9,023.7	-1,343.2	845.5	694.2	151.28	5.589		
21,400.0	12,288.0	22,162.4	13,100.0	77.9	77.9	-163.72	9,123.7	-1,344.2	845.5	692.8	152.72	5.536		
21,500.0	12,288.0	22,262.4	13,100.0	78.6	78.6	-163.72	9,223.7	-1,345.2	845.5	691.3	154.16	5.484		
21,600.0	12,288.0	22,362.4	13,100.0	79.3	79.3	-163.72	9,323.7	-1,346.1	845.5	689.9	155.61	5.434		
21,700.0	12,288.0	22,462.4	13,100.0	80.0	80.0	-163.72	9,423.7	-1,347.1	845.5	688.4	157.05	5.384		
21,800.0	12,288.0	22,562.4	13,100.0	80.7	80.7	-163.72	9,523.7	-1,348.1	845.5	687.0	158.50	5.334		
21,900.0	12,288.0	22,662.4	13,100.0	81.4	81.4	-163.72	9,623.7	-1,349.1	845.5	685.5	159.95	5.286		
22,000.0	12,288.0	22,762.4	13,100.0	82.1	82.1	-163.72	9,723.7	-1,350.0	845.5	684.1	161.40	5.239		
22,100.0	12,288.0	22,862.4	13,100.0	82.8	82.8	-163.72	9,823.7	-1,351.0	845.5	682.6	162.85	5.192		
22,200.0	12,288.0	22,962.4	13,100.0	83.5	83.5	-163.72	9,923.6	-1,352.0	845.5	681.2	164.31	5.146		
22,300.0	12,288.0	23,062.4	13,100.0	84.2	84.2	-163.72	10,023.6	-1,352.9	845.5	679.7	165.76	5.101		

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset Design: AKUBRA PROJECT - AKUBRA FED COM #802H - OWB - PWP1													Offset Site Error: 0.0 usft	
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1200-r.5 MWD+IFR1, 12744-r.5 MWD+IFR1+MS													Offset Well Error: 3.0 usft	
Reference				Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned: Distance				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
22,400.0	12,288.0	23,162.4	13,100.0	84.9	84.9	-163.72	10,123.6	-1,353.9	845.5	678.3	167.22	5.056		
22,500.0	12,288.0	23,262.4	13,100.0	85.6	85.6	-163.72	10,223.6	-1,354.9	845.5	676.8	168.68	5.013		
22,600.0	12,288.0	23,362.4	13,100.0	86.3	86.3	-163.72	10,323.6	-1,355.8	845.5	675.4	170.14	4.969		
22,700.0	12,288.0	23,462.4	13,100.0	87.0	87.0	-163.72	10,423.6	-1,356.8	845.5	673.9	171.60	4.927		
22,800.0	12,288.0	23,562.4	13,100.0	87.7	87.7	-163.72	10,523.6	-1,357.8	845.5	672.4	173.06	4.885		
22,900.0	12,288.0	23,662.4	13,100.0	88.4	88.4	-163.72	10,623.6	-1,358.7	845.5	671.0	174.53	4.844		
23,000.0	12,288.0	23,762.4	13,100.0	89.1	89.1	-163.72	10,723.6	-1,359.7	845.5	669.5	175.99	4.804		
23,010.6	12,288.0	23,773.0	13,100.0	89.2	89.2	-163.72	10,734.2	-1,359.8	845.5	669.3	176.15	4.800		
23,060.6	12,288.0	23,823.0	13,100.0	89.5	89.5	-163.72	10,784.2	-1,360.3	845.5	668.6	176.88	4.780		

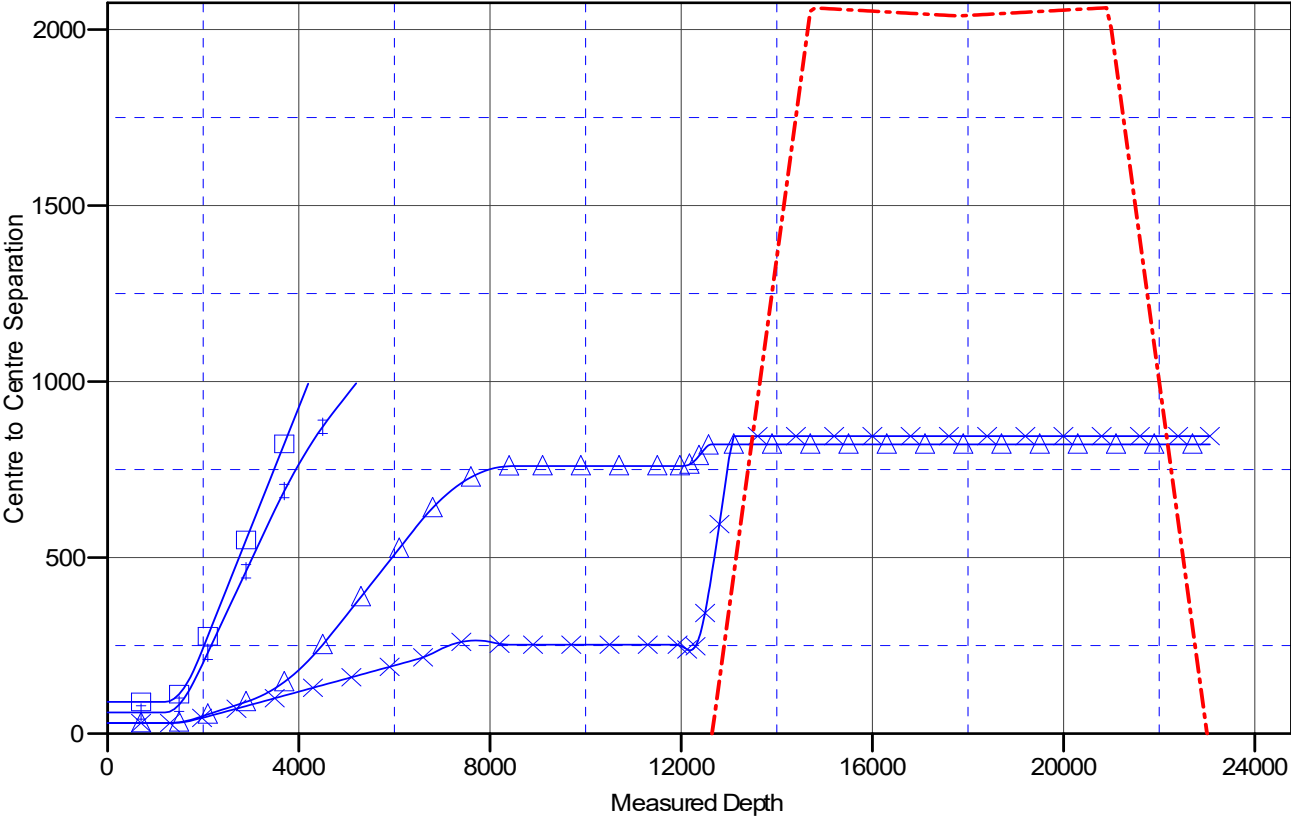
ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=25ft @ 3218.2usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: AKUBRA FED COM #602H - Slot AKUBRA FED COM
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.51°

Ladder Plot



LEGEND

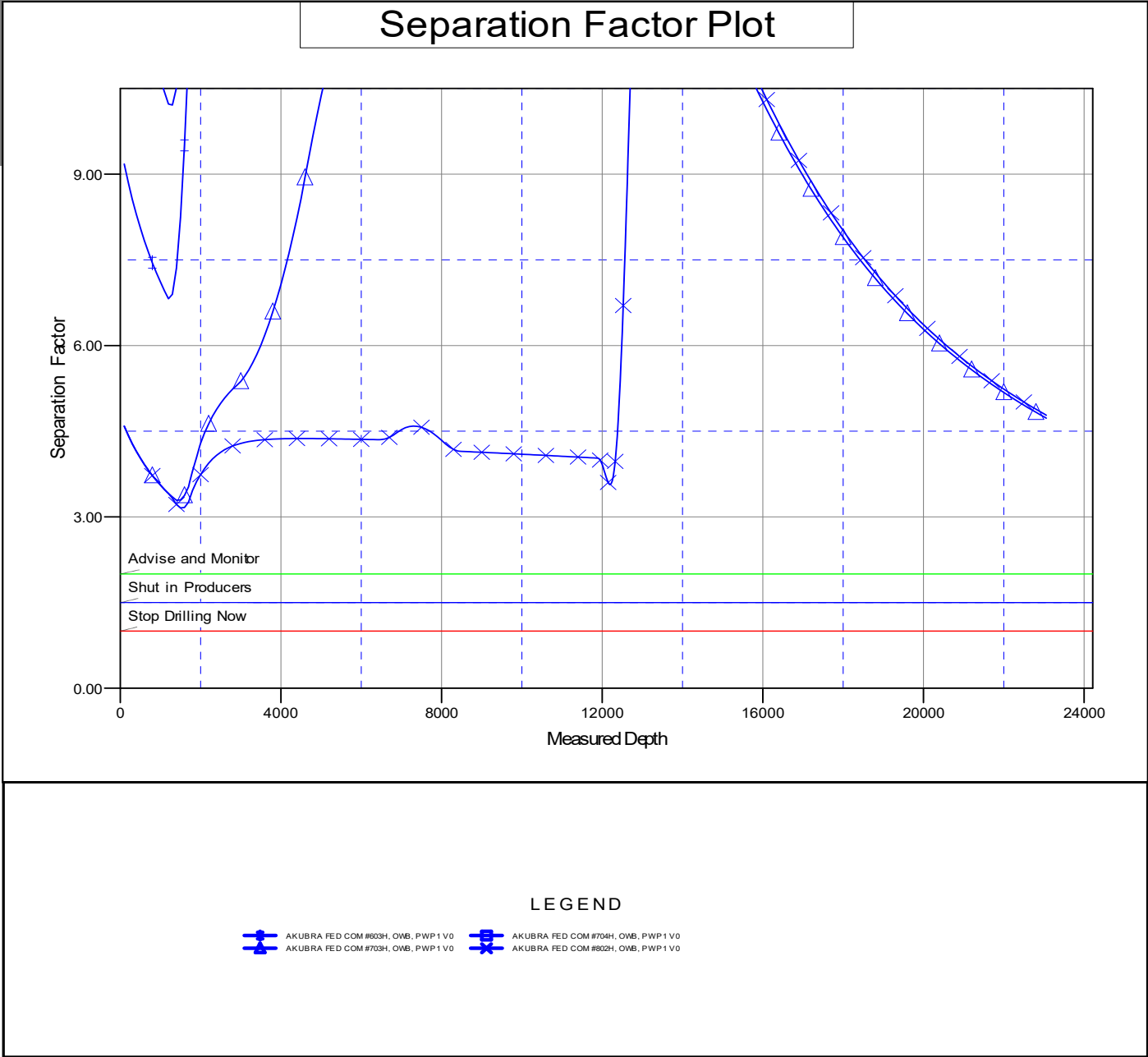
- AKUBRA FED COM #603H, OWB, PWP 1 V0
- AKUBRA FED COM #704H, OWB, PWP 1 V0
- AKUBRA FED COM #703H, OWB, PWP 1 V0
- AKUBRA FED COM #802H, OWB, PWP 1 V0

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN EAST	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Project:	BULLDOG PROSPECT (NM-E)	TVD Reference:	KB=25ft @ 3218.2usft
Reference Site:	AKUBRA PROJECT	MD Reference:	KB=25ft @ 3218.2usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Central Planning Prod
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=25ft @ 3218.2usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: AKUBRA FED COM #602H - Slot AKUBRA FED COM
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.51°



DELAWARE BASIN EAST

BULLDOG PROSPECT (NM-E)

AKUBRA PROJECT

AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H

OWB

Plan: PWP1

Standard Planning Report

04 July, 2023

ConocoPhillips
Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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		

Site	AKUBRA PROJECT		
Site Position:		Northing:	399,228.16 usft
From:	Map	Easting:	797,901.87 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 5' 38.189 N
		Longitude:	103° 22' 16.971 W

Well	AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H					
Well Position	+N/-S	0.0 usft	Northing:	393,688.60 usft	Latitude:	32° 4' 43.276 N
	+E/-W	0.0 usft	Easting:	799,014.50 usft	Longitude:	103° 22' 4.615 W
Position Uncertainty		3.0 usft	Wellhead Elevation:	usft	Ground Level:	3,193.2 usft
Grid Convergence:		0.51 °				

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2023	11/1/2024	6.04	59.58	47,173.58716924

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	354.05

Plan Survey Tool Program		Date 7/4/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	1,200.0 PWP1 (OWB)	r.5 SDI_KPR_WL_NS-CT SDI Keeper Wireline Gyrocom	
2	1,200.0	11,893.4 PWP1 (OWB)	r.5 MWD+IFR1 OWSG MWD + IFR1 rev.5	
3	11,893.4	23,060.6 PWP1 (OWB)	r.5 MWD+IFR1+MS OWSG MWD + IFR1 + Multi-Si	

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Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,733.3	8.00	245.00	1,731.6	-15.7	-33.7	1.50	1.50	0.00	245.00	
1,978.9	10.00	265.00	1,974.2	-24.8	-70.4	1.50	0.81	8.14	67.56	
6,453.7	10.00	265.00	6,381.0	-92.5	-844.5	0.00	0.00	0.00	0.00	
8,453.7	0.00	0.00	8,370.9	-107.7	-1,017.9	0.50	-0.50	0.00	180.00	
11,893.4	0.00	0.00	11,810.5	-107.7	-1,017.9	0.00	0.00	0.00	0.00	
12,643.4	90.00	359.45	12,288.0	369.8	-1,022.6	12.00	12.00	-0.07	359.45	
23,010.6	90.00	359.45	12,288.0	10,736.5	-1,122.8	0.00	0.00	0.00	0.00	
23,060.6	90.00	359.45	12,288.0	10,786.5	-1,123.3	0.00	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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
Start Build 1.50									
1,300.0	1.50	245.00	1,300.0	-0.6	-1.2	-0.4	1.50	1.50	0.00
1,400.0	3.00	245.00	1,399.9	-2.2	-4.7	-1.7	1.50	1.50	0.00
1,500.0	4.50	245.00	1,499.7	-5.0	-10.7	-3.8	1.50	1.50	0.00
1,600.0	6.00	245.00	1,599.3	-8.8	-19.0	-6.8	1.50	1.50	0.00
1,700.0	7.50	245.00	1,698.6	-13.8	-29.6	-10.7	1.50	1.50	0.00
1,733.3	8.00	245.00	1,731.6	-15.7	-33.7	-12.1	1.50	1.50	0.00
Start DLS 1.50 TFO 67.56									
1,800.0	8.43	251.32	1,797.6	-19.2	-42.5	-14.7	1.50	0.65	9.47
1,900.0	9.25	259.53	1,896.4	-23.0	-57.4	-17.0	1.50	0.81	8.22
1,978.9	10.00	265.00	1,974.2	-24.8	-70.4	-17.4	1.50	0.96	6.93
Start 4474.7 hold at 1978.9 MD									
2,000.0	10.00	265.00	1,995.0	-25.1	-74.1	-17.3	0.00	0.00	0.00
2,100.0	10.00	265.00	2,093.5	-26.6	-91.4	-17.0	0.00	0.00	0.00
2,200.0	10.00	265.00	2,191.9	-28.1	-108.7	-16.7	0.00	0.00	0.00
2,300.0	10.00	265.00	2,290.4	-29.7	-126.0	-16.4	0.00	0.00	0.00
2,400.0	10.00	265.00	2,388.9	-31.2	-143.3	-16.2	0.00	0.00	0.00
2,500.0	10.00	265.00	2,487.4	-32.7	-160.6	-15.9	0.00	0.00	0.00
2,600.0	10.00	265.00	2,585.9	-34.2	-177.9	-15.6	0.00	0.00	0.00
2,700.0	10.00	265.00	2,684.3	-35.7	-195.2	-15.3	0.00	0.00	0.00
2,800.0	10.00	265.00	2,782.8	-37.2	-212.5	-15.0	0.00	0.00	0.00
2,900.0	10.00	265.00	2,881.3	-38.7	-229.8	-14.7	0.00	0.00	0.00
3,000.0	10.00	265.00	2,979.8	-40.2	-247.1	-14.4	0.00	0.00	0.00
3,100.0	10.00	265.00	3,078.3	-41.8	-264.4	-14.2	0.00	0.00	0.00
3,200.0	10.00	265.00	3,176.7	-43.3	-281.7	-13.9	0.00	0.00	0.00
3,300.0	10.00	265.00	3,275.2	-44.8	-299.0	-13.6	0.00	0.00	0.00
3,400.0	10.00	265.00	3,373.7	-46.3	-316.3	-13.3	0.00	0.00	0.00
3,500.0	10.00	265.00	3,472.2	-47.8	-333.6	-13.0	0.00	0.00	0.00
3,600.0	10.00	265.00	3,570.7	-49.3	-350.9	-12.7	0.00	0.00	0.00
3,700.0	10.00	265.00	3,669.1	-50.8	-368.2	-12.4	0.00	0.00	0.00
3,800.0	10.00	265.00	3,767.6	-52.4	-385.5	-12.1	0.00	0.00	0.00
3,900.0	10.00	265.00	3,866.1	-53.9	-402.8	-11.9	0.00	0.00	0.00
4,000.0	10.00	265.00	3,964.6	-55.4	-420.1	-11.6	0.00	0.00	0.00
4,100.0	10.00	265.00	4,063.1	-56.9	-437.4	-11.3	0.00	0.00	0.00
4,200.0	10.00	265.00	4,161.5	-58.4	-454.7	-11.0	0.00	0.00	0.00
4,300.0	10.00	265.00	4,260.0	-59.9	-472.0	-10.7	0.00	0.00	0.00
4,400.0	10.00	265.00	4,358.5	-61.4	-489.2	-10.4	0.00	0.00	0.00
4,500.0	10.00	265.00	4,457.0	-62.9	-506.5	-10.1	0.00	0.00	0.00
4,600.0	10.00	265.00	4,555.5	-64.5	-523.8	-9.9	0.00	0.00	0.00
4,700.0	10.00	265.00	4,654.0	-66.0	-541.1	-9.6	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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)
4,800.0	10.00	265.00	4,752.4	-67.5	-558.4	-9.3	0.00	0.00	0.00
4,900.0	10.00	265.00	4,850.9	-69.0	-575.7	-9.0	0.00	0.00	0.00
5,000.0	10.00	265.00	4,949.4	-70.5	-593.0	-8.7	0.00	0.00	0.00
5,100.0	10.00	265.00	5,047.9	-72.0	-610.3	-8.4	0.00	0.00	0.00
5,200.0	10.00	265.00	5,146.4	-73.5	-627.6	-8.1	0.00	0.00	0.00
5,300.0	10.00	265.00	5,244.8	-75.1	-644.9	-7.9	0.00	0.00	0.00
5,400.0	10.00	265.00	5,343.3	-76.6	-662.2	-7.6	0.00	0.00	0.00
5,500.0	10.00	265.00	5,441.8	-78.1	-679.5	-7.3	0.00	0.00	0.00
5,600.0	10.00	265.00	5,540.3	-79.6	-696.8	-7.0	0.00	0.00	0.00
5,700.0	10.00	265.00	5,638.8	-81.1	-714.1	-6.7	0.00	0.00	0.00
5,800.0	10.00	265.00	5,737.2	-82.6	-731.4	-6.4	0.00	0.00	0.00
5,900.0	10.00	265.00	5,835.7	-84.1	-748.7	-6.1	0.00	0.00	0.00
6,000.0	10.00	265.00	5,934.2	-85.7	-766.0	-5.8	0.00	0.00	0.00
6,100.0	10.00	265.00	6,032.7	-87.2	-783.3	-5.6	0.00	0.00	0.00
6,200.0	10.00	265.00	6,131.2	-88.7	-800.6	-5.3	0.00	0.00	0.00
6,300.0	10.00	265.00	6,229.6	-90.2	-817.9	-5.0	0.00	0.00	0.00
6,400.0	10.00	265.00	6,328.1	-91.7	-835.2	-4.7	0.00	0.00	0.00
6,453.7	10.00	265.00	6,381.0	-92.5	-844.5	-4.5	0.00	0.00	0.00
Start Drop -0.50									
6,500.0	9.77	265.00	6,426.6	-93.2	-852.4	-4.4	0.50	-0.50	0.00
6,600.0	9.27	265.00	6,525.2	-94.7	-868.9	-4.1	0.50	-0.50	0.00
6,700.0	8.77	265.00	6,624.0	-96.0	-884.5	-3.9	0.50	-0.50	0.00
6,800.0	8.27	265.00	6,722.9	-97.3	-899.3	-3.6	0.50	-0.50	0.00
6,900.0	7.77	265.00	6,821.9	-98.5	-913.2	-3.4	0.50	-0.50	0.00
7,000.0	7.27	265.00	6,921.1	-99.7	-926.2	-3.2	0.50	-0.50	0.00
7,100.0	6.77	265.00	7,020.3	-100.7	-938.4	-3.0	0.50	-0.50	0.00
7,200.0	6.27	265.00	7,119.7	-101.7	-949.7	-2.8	0.50	-0.50	0.00
7,300.0	5.77	265.00	7,219.1	-102.6	-960.1	-2.6	0.50	-0.50	0.00
7,400.0	5.27	265.00	7,318.7	-103.5	-969.7	-2.5	0.50	-0.50	0.00
7,500.0	4.77	265.00	7,418.3	-104.2	-978.4	-2.3	0.50	-0.50	0.00
7,600.0	4.27	265.00	7,518.0	-104.9	-986.3	-2.2	0.50	-0.50	0.00
7,700.0	3.77	265.00	7,617.7	-105.5	-993.3	-2.1	0.50	-0.50	0.00
7,800.0	3.27	265.00	7,717.5	-106.1	-999.4	-2.0	0.50	-0.50	0.00
7,900.0	2.77	265.00	7,817.4	-106.5	-1,004.6	-1.9	0.50	-0.50	0.00
8,000.0	2.27	265.00	7,917.3	-106.9	-1,009.0	-1.8	0.50	-0.50	0.00
8,100.0	1.77	265.00	8,017.2	-107.2	-1,012.5	-1.8	0.50	-0.50	0.00
8,200.0	1.27	265.00	8,117.2	-107.4	-1,015.1	-1.7	0.50	-0.50	0.00
8,300.0	0.77	265.00	8,217.2	-107.6	-1,016.9	-1.7	0.50	-0.50	0.00
8,400.0	0.27	265.00	8,317.2	-107.7	-1,017.8	-1.7	0.50	-0.50	0.00
8,453.7	0.00	0.00	8,370.9	-107.7	-1,017.9	-1.7	0.50	-0.50	0.00
Start 3439.7 hold at 8453.7 MD									
8,500.0	0.00	0.00	8,417.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
8,600.0	0.00	0.00	8,517.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
8,700.0	0.00	0.00	8,617.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
8,800.0	0.00	0.00	8,717.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
8,900.0	0.00	0.00	8,817.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,000.0	0.00	0.00	8,917.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,100.0	0.00	0.00	9,017.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,200.0	0.00	0.00	9,117.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,300.0	0.00	0.00	9,217.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,400.0	0.00	0.00	9,317.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00
9,500.0	0.00	0.00	9,417.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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)	
9,600.0	0.00	0.00	9,517.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,617.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,717.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,817.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,917.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,017.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,117.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,300.0	0.00	0.00	10,217.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,400.0	0.00	0.00	10,317.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,500.0	0.00	0.00	10,417.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,600.0	0.00	0.00	10,517.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,700.0	0.00	0.00	10,617.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,800.0	0.00	0.00	10,717.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
10,900.0	0.00	0.00	10,817.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,000.0	0.00	0.00	10,917.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,100.0	0.00	0.00	11,017.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,200.0	0.00	0.00	11,117.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,300.0	0.00	0.00	11,217.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,400.0	0.00	0.00	11,317.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,500.0	0.00	0.00	11,417.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,600.0	0.00	0.00	11,517.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,700.0	0.00	0.00	11,617.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,800.0	0.00	0.00	11,717.2	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
11,893.4	0.00	0.00	11,810.5	-107.7	-1,017.9	-1.7	0.00	0.00	0.00	
Start DLS 12.00 TFO 359.45										
11,900.0	0.80	359.45	11,817.2	-107.6	-1,017.9	-1.6	12.00	12.00	0.00	
11,925.0	3.80	359.45	11,842.1	-106.6	-1,017.9	-0.6	12.00	12.00	0.00	
11,950.0	6.80	359.45	11,867.0	-104.3	-1,018.0	1.7	12.00	12.00	0.00	
11,975.0	9.80	359.45	11,891.8	-100.7	-1,018.0	5.3	12.00	12.00	0.00	
12,000.0	12.80	359.45	11,916.3	-95.8	-1,018.1	10.1	12.00	12.00	0.00	
12,025.0	15.80	359.45	11,940.5	-89.7	-1,018.1	16.3	12.00	12.00	0.00	
12,050.0	18.80	359.45	11,964.4	-82.2	-1,018.2	23.7	12.00	12.00	0.00	
12,075.0	21.80	359.45	11,987.8	-73.6	-1,018.3	32.3	12.00	12.00	0.00	
12,100.0	24.80	359.45	12,010.8	-63.7	-1,018.4	42.2	12.00	12.00	0.00	
12,125.0	27.80	359.45	12,033.2	-52.6	-1,018.5	53.2	12.00	12.00	0.00	
12,150.0	30.80	359.45	12,055.0	-40.4	-1,018.6	65.4	12.00	12.00	0.00	
12,175.0	33.80	359.45	12,076.1	-27.0	-1,018.7	78.7	12.00	12.00	0.00	
12,200.0	36.80	359.45	12,096.5	-12.6	-1,018.9	93.0	12.00	12.00	0.00	
12,225.0	39.80	359.45	12,116.1	2.9	-1,019.0	108.5	12.00	12.00	0.00	
12,250.0	42.80	359.45	12,134.9	19.4	-1,019.2	124.9	12.00	12.00	0.00	
12,275.0	45.80	359.45	12,152.8	36.9	-1,019.3	142.3	12.00	12.00	0.00	
12,300.0	48.80	359.45	12,169.8	55.2	-1,019.5	160.5	12.00	12.00	0.00	
12,325.0	51.80	359.45	12,185.7	74.5	-1,019.7	179.7	12.00	12.00	0.00	
12,350.0	54.80	359.45	12,200.7	94.5	-1,019.9	199.6	12.00	12.00	0.00	
12,375.0	57.80	359.45	12,214.5	115.3	-1,020.1	220.3	12.00	12.00	0.00	
12,400.0	60.80	359.45	12,227.3	136.8	-1,020.3	241.7	12.00	12.00	0.00	
12,425.0	63.80	359.45	12,238.9	158.9	-1,020.5	263.8	12.00	12.00	0.00	
12,450.0	66.80	359.45	12,249.4	181.6	-1,020.7	286.4	12.00	12.00	0.00	
12,475.0	69.80	359.45	12,258.6	204.9	-1,021.0	309.5	12.00	12.00	0.00	
12,500.0	72.80	359.45	12,266.6	228.5	-1,021.2	333.1	12.00	12.00	0.00	
12,525.0	75.80	359.45	12,273.4	252.6	-1,021.4	357.0	12.00	12.00	0.00	
12,550.0	78.80	359.45	12,278.9	277.0	-1,021.7	381.3	12.00	12.00	0.00	
12,575.0	81.80	359.45	12,283.1	301.6	-1,021.9	405.8	12.00	12.00	0.00	

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Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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)
12,600.0	84.80	359.45	12,286.0	326.5	-1,022.1	430.6	12.00	12.00	0.00
12,625.0	87.80	359.45	12,287.6	351.4	-1,022.4	455.4	12.00	12.00	0.00
12,643.4	90.00	359.45	12,288.0	369.8	-1,022.6	473.7	12.00	12.00	0.00
Start 10367.2 hold at 12643.4 MD									
12,700.0	90.00	359.45	12,288.0	426.4	-1,023.1	530.1	0.00	0.00	0.00
12,800.0	90.00	359.45	12,288.0	526.4	-1,024.1	629.6	0.00	0.00	0.00
12,900.0	90.00	359.45	12,288.0	626.4	-1,025.0	729.2	0.00	0.00	0.00
13,000.0	90.00	359.45	12,288.0	726.4	-1,026.0	828.7	0.00	0.00	0.00
13,100.0	90.00	359.45	12,288.0	826.4	-1,027.0	928.3	0.00	0.00	0.00
13,200.0	90.00	359.45	12,288.0	926.4	-1,027.9	1,027.9	0.00	0.00	0.00
13,300.0	90.00	359.45	12,288.0	1,026.4	-1,028.9	1,127.4	0.00	0.00	0.00
13,400.0	90.00	359.45	12,288.0	1,126.4	-1,029.9	1,227.0	0.00	0.00	0.00
13,500.0	90.00	359.45	12,288.0	1,226.3	-1,030.8	1,326.5	0.00	0.00	0.00
13,600.0	90.00	359.45	12,288.0	1,326.3	-1,031.8	1,426.1	0.00	0.00	0.00
13,700.0	90.00	359.45	12,288.0	1,426.3	-1,032.8	1,525.6	0.00	0.00	0.00
13,800.0	90.00	359.45	12,288.0	1,526.3	-1,033.7	1,625.2	0.00	0.00	0.00
13,900.0	90.00	359.45	12,288.0	1,626.3	-1,034.7	1,724.8	0.00	0.00	0.00
14,000.0	90.00	359.45	12,288.0	1,726.3	-1,035.7	1,824.3	0.00	0.00	0.00
14,100.0	90.00	359.45	12,288.0	1,826.3	-1,036.6	1,923.9	0.00	0.00	0.00
14,200.0	90.00	359.45	12,288.0	1,926.3	-1,037.6	2,023.4	0.00	0.00	0.00
14,300.0	90.00	359.45	12,288.0	2,026.3	-1,038.6	2,123.0	0.00	0.00	0.00
14,400.0	90.00	359.45	12,288.0	2,126.3	-1,039.5	2,222.5	0.00	0.00	0.00
14,500.0	90.00	359.45	12,288.0	2,226.3	-1,040.5	2,322.1	0.00	0.00	0.00
14,600.0	90.00	359.45	12,288.0	2,326.3	-1,041.5	2,421.7	0.00	0.00	0.00
14,700.0	90.00	359.45	12,288.0	2,426.3	-1,042.4	2,521.2	0.00	0.00	0.00
14,800.0	90.00	359.45	12,288.0	2,526.3	-1,043.4	2,620.8	0.00	0.00	0.00
14,900.0	90.00	359.45	12,288.0	2,626.3	-1,044.4	2,720.3	0.00	0.00	0.00
15,000.0	90.00	359.45	12,288.0	2,726.3	-1,045.3	2,819.9	0.00	0.00	0.00
15,100.0	90.00	359.45	12,288.0	2,826.3	-1,046.3	2,919.4	0.00	0.00	0.00
15,200.0	90.00	359.45	12,288.0	2,926.3	-1,047.3	3,019.0	0.00	0.00	0.00
15,300.0	90.00	359.45	12,288.0	3,026.3	-1,048.2	3,118.6	0.00	0.00	0.00
15,400.0	90.00	359.45	12,288.0	3,126.3	-1,049.2	3,218.1	0.00	0.00	0.00
15,500.0	90.00	359.45	12,288.0	3,226.3	-1,050.2	3,317.7	0.00	0.00	0.00
15,600.0	90.00	359.45	12,288.0	3,326.3	-1,051.1	3,417.2	0.00	0.00	0.00
15,700.0	90.00	359.45	12,288.0	3,426.2	-1,052.1	3,516.8	0.00	0.00	0.00
15,800.0	90.00	359.45	12,288.0	3,526.2	-1,053.1	3,616.4	0.00	0.00	0.00
15,900.0	90.00	359.45	12,288.0	3,626.2	-1,054.0	3,715.9	0.00	0.00	0.00
16,000.0	90.00	359.45	12,288.0	3,726.2	-1,055.0	3,815.5	0.00	0.00	0.00
16,100.0	90.00	359.45	12,288.0	3,826.2	-1,056.0	3,915.0	0.00	0.00	0.00
16,200.0	90.00	359.45	12,288.0	3,926.2	-1,056.9	4,014.6	0.00	0.00	0.00
16,300.0	90.00	359.45	12,288.0	4,026.2	-1,057.9	4,114.1	0.00	0.00	0.00
16,400.0	90.00	359.45	12,288.0	4,126.2	-1,058.9	4,213.7	0.00	0.00	0.00
16,500.0	90.00	359.45	12,288.0	4,226.2	-1,059.8	4,313.3	0.00	0.00	0.00
16,600.0	90.00	359.45	12,288.0	4,326.2	-1,060.8	4,412.8	0.00	0.00	0.00
16,700.0	90.00	359.45	12,288.0	4,426.2	-1,061.8	4,512.4	0.00	0.00	0.00
16,800.0	90.00	359.45	12,288.0	4,526.2	-1,062.7	4,611.9	0.00	0.00	0.00
16,900.0	90.00	359.45	12,288.0	4,626.2	-1,063.7	4,711.5	0.00	0.00	0.00
17,000.0	90.00	359.45	12,288.0	4,726.2	-1,064.7	4,811.0	0.00	0.00	0.00
17,100.0	90.00	359.45	12,288.0	4,826.2	-1,065.6	4,910.6	0.00	0.00	0.00
17,200.0	90.00	359.45	12,288.0	4,926.2	-1,066.6	5,010.2	0.00	0.00	0.00
17,300.0	90.00	359.45	12,288.0	5,026.2	-1,067.6	5,109.7	0.00	0.00	0.00
17,400.0	90.00	359.45	12,288.0	5,126.2	-1,068.5	5,209.3	0.00	0.00	0.00
17,500.0	90.00	359.45	12,288.0	5,226.2	-1,069.5	5,308.8	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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)
17,600.0	90.00	359.45	12,288.0	5,326.2	-1,070.5	5,408.4	0.00	0.00	0.00
17,700.0	90.00	359.45	12,288.0	5,426.2	-1,071.5	5,507.9	0.00	0.00	0.00
17,800.0	90.00	359.45	12,288.0	5,526.1	-1,072.4	5,607.5	0.00	0.00	0.00
17,900.0	90.00	359.45	12,288.0	5,626.1	-1,073.4	5,707.1	0.00	0.00	0.00
18,000.0	90.00	359.45	12,288.0	5,726.1	-1,074.4	5,806.6	0.00	0.00	0.00
18,100.0	90.00	359.45	12,288.0	5,826.1	-1,075.3	5,906.2	0.00	0.00	0.00
18,200.0	90.00	359.45	12,288.0	5,926.1	-1,076.3	6,005.7	0.00	0.00	0.00
18,300.0	90.00	359.45	12,288.0	6,026.1	-1,077.3	6,105.3	0.00	0.00	0.00
18,400.0	90.00	359.45	12,288.0	6,126.1	-1,078.2	6,204.8	0.00	0.00	0.00
18,500.0	90.00	359.45	12,288.0	6,226.1	-1,079.2	6,304.4	0.00	0.00	0.00
18,600.0	90.00	359.45	12,288.0	6,326.1	-1,080.2	6,404.0	0.00	0.00	0.00
18,700.0	90.00	359.45	12,288.0	6,426.1	-1,081.1	6,503.5	0.00	0.00	0.00
18,800.0	90.00	359.45	12,288.0	6,526.1	-1,082.1	6,603.1	0.00	0.00	0.00
18,900.0	90.00	359.45	12,288.0	6,626.1	-1,083.1	6,702.6	0.00	0.00	0.00
19,000.0	90.00	359.45	12,288.0	6,726.1	-1,084.0	6,802.2	0.00	0.00	0.00
19,100.0	90.00	359.45	12,288.0	6,826.1	-1,085.0	6,901.8	0.00	0.00	0.00
19,200.0	90.00	359.45	12,288.0	6,926.1	-1,086.0	7,001.3	0.00	0.00	0.00
19,300.0	90.00	359.45	12,288.0	7,026.1	-1,086.9	7,100.9	0.00	0.00	0.00
19,400.0	90.00	359.45	12,288.0	7,126.1	-1,087.9	7,200.4	0.00	0.00	0.00
19,500.0	90.00	359.45	12,288.0	7,226.1	-1,088.9	7,300.0	0.00	0.00	0.00
19,600.0	90.00	359.45	12,288.0	7,326.1	-1,089.8	7,399.5	0.00	0.00	0.00
19,700.0	90.00	359.45	12,288.0	7,426.1	-1,090.8	7,499.1	0.00	0.00	0.00
19,800.0	90.00	359.45	12,288.0	7,526.1	-1,091.8	7,598.7	0.00	0.00	0.00
19,900.0	90.00	359.45	12,288.0	7,626.0	-1,092.7	7,698.2	0.00	0.00	0.00
20,000.0	90.00	359.45	12,288.0	7,726.0	-1,093.7	7,797.8	0.00	0.00	0.00
20,100.0	90.00	359.45	12,288.0	7,826.0	-1,094.7	7,897.3	0.00	0.00	0.00
20,200.0	90.00	359.45	12,288.0	7,926.0	-1,095.6	7,996.9	0.00	0.00	0.00
20,300.0	90.00	359.45	12,288.0	8,026.0	-1,096.6	8,096.4	0.00	0.00	0.00
20,400.0	90.00	359.45	12,288.0	8,126.0	-1,097.6	8,196.0	0.00	0.00	0.00
20,500.0	90.00	359.45	12,288.0	8,226.0	-1,098.5	8,295.6	0.00	0.00	0.00
20,600.0	90.00	359.45	12,288.0	8,326.0	-1,099.5	8,395.1	0.00	0.00	0.00
20,700.0	90.00	359.45	12,288.0	8,426.0	-1,100.5	8,494.7	0.00	0.00	0.00
20,800.0	90.00	359.45	12,288.0	8,526.0	-1,101.4	8,594.2	0.00	0.00	0.00
20,900.0	90.00	359.45	12,288.0	8,626.0	-1,102.4	8,693.8	0.00	0.00	0.00
21,000.0	90.00	359.45	12,288.0	8,726.0	-1,103.4	8,793.3	0.00	0.00	0.00
21,100.0	90.00	359.45	12,288.0	8,826.0	-1,104.3	8,892.9	0.00	0.00	0.00
21,200.0	90.00	359.45	12,288.0	8,926.0	-1,105.3	8,992.5	0.00	0.00	0.00
21,300.0	90.00	359.45	12,288.0	9,026.0	-1,106.3	9,092.0	0.00	0.00	0.00
21,400.0	90.00	359.45	12,288.0	9,126.0	-1,107.2	9,191.6	0.00	0.00	0.00
21,500.0	90.00	359.45	12,288.0	9,226.0	-1,108.2	9,291.1	0.00	0.00	0.00
21,600.0	90.00	359.45	12,288.0	9,326.0	-1,109.2	9,390.7	0.00	0.00	0.00
21,700.0	90.00	359.45	12,288.0	9,426.0	-1,110.1	9,490.3	0.00	0.00	0.00
21,800.0	90.00	359.45	12,288.0	9,526.0	-1,111.1	9,589.8	0.00	0.00	0.00
21,900.0	90.00	359.45	12,288.0	9,626.0	-1,112.1	9,689.4	0.00	0.00	0.00
22,000.0	90.00	359.45	12,288.0	9,726.0	-1,113.0	9,788.9	0.00	0.00	0.00
22,100.0	90.00	359.45	12,288.0	9,825.9	-1,114.0	9,888.5	0.00	0.00	0.00
22,200.0	90.00	359.45	12,288.0	9,925.9	-1,115.0	9,988.0	0.00	0.00	0.00
22,300.0	90.00	359.45	12,288.0	10,025.9	-1,115.9	10,087.6	0.00	0.00	0.00
22,400.0	90.00	359.45	12,288.0	10,125.9	-1,116.9	10,187.2	0.00	0.00	0.00
22,500.0	90.00	359.45	12,288.0	10,225.9	-1,117.9	10,286.7	0.00	0.00	0.00
22,600.0	90.00	359.45	12,288.0	10,325.9	-1,118.8	10,386.3	0.00	0.00	0.00
22,700.0	90.00	359.45	12,288.0	10,425.9	-1,119.8	10,485.8	0.00	0.00	0.00
22,800.0	90.00	359.45	12,288.0	10,525.9	-1,120.8	10,585.4	0.00	0.00	0.00

ConocoPhillips
Planning Report

Database:	EDT 17 Central Planning Prod	Local Co-ordinate Reference:	Well AKUBRA FED COM #602H - Slot AKUBRA FED COM #602H
Company:	DELAWARE BASIN EAST	TVD Reference:	KB=25ft @ 3218.2usft
Project:	BULLDOG PROSPECT (NM-E)	MD Reference:	KB=25ft @ 3218.2usft
Site:	AKUBRA PROJECT	North Reference:	Grid
Well:	AKUBRA FED COM #602H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP1		

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)	
22,900.0	90.00	359.45	12,288.0	10,625.9	-1,121.7	10,684.9	0.00	0.00	0.00	
23,000.0	90.00	359.45	12,288.0	10,725.9	-1,122.7	10,784.5	0.00	0.00	0.00	
23,010.6	90.00	359.45	12,288.0	10,736.5	-1,122.8	10,795.0	0.00	0.00	0.00	
Start 50.0 hold at 23010.6 MD										
23,060.6	90.00	359.45	12,288.0	10,786.5	-1,123.3	10,844.8	0.00	0.00	0.00	
TD at 23060.6										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL (AKUBRA FED COI - hit/miss target - Shape - Rectangle (sides W100.0 H100.0 D20.0)	0.00	179.45	12,288.0	10,786.5	-1,123.3	404,475.10	797,891.20	32° 6' 30.109 N	103° 22' 16.551 W	
LTP (AKUBRA FED COI - plan hits target center - Circle (radius 50.0)	90.00	359.45	12,288.0	10,736.5	-1,122.8	404,425.10	797,891.70	32° 6' 29.615 N	103° 22' 16.550 W	
FTP (AKUBRA FED COI - plan misses target center by 0.1usft at 12644.9usft MD (12288.0 TVD, 371.3 N, -1022.6 E) - Circle (radius 50.0)	0.00	0.00	12,288.0	371.3	-1,022.5	394,059.90	797,992.00	32° 4' 47.040 N	103° 22' 16.459 W	

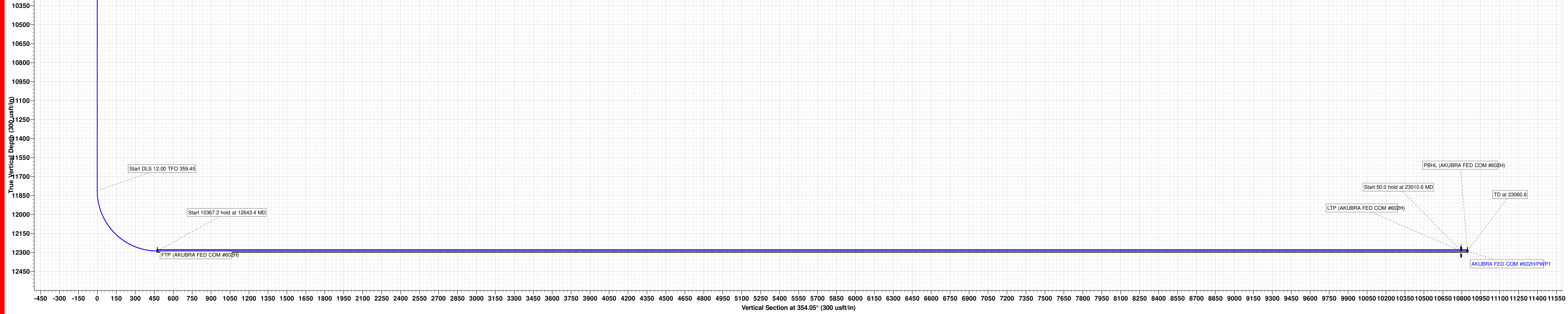
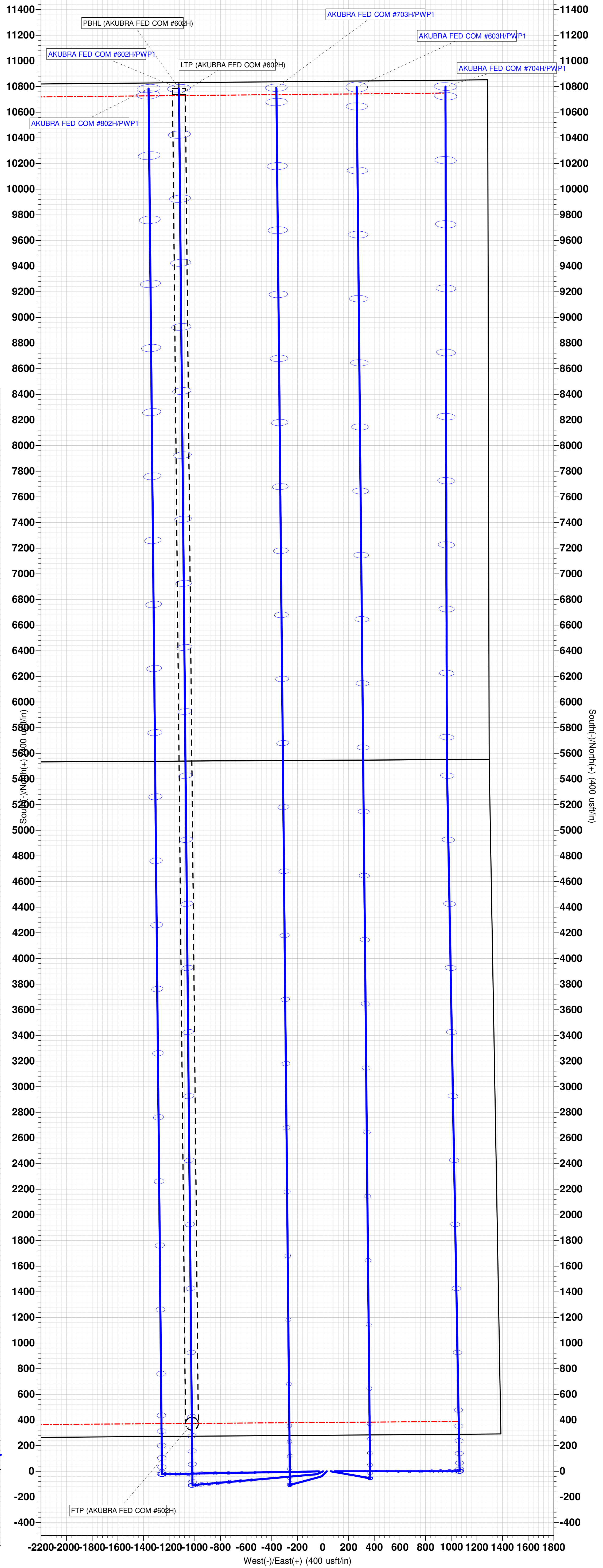
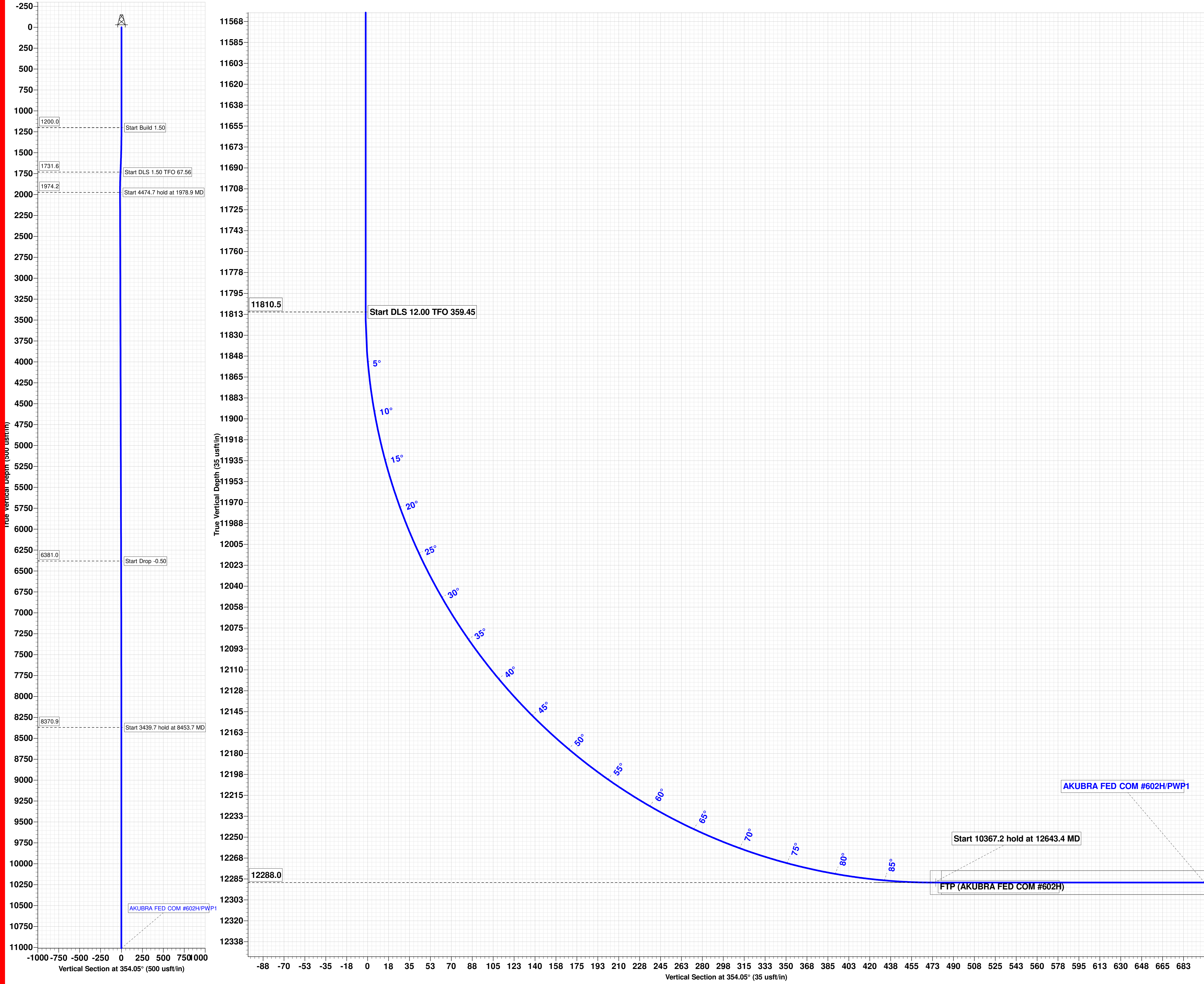
Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
1,200.0	1,200.0	0.0	0.0	Start Build 1.50	
1,733.3	1,731.6	-15.7	-33.7	Start DLS 1.50 TFO 67.56	
1,978.9	1,974.2	-24.8	-70.4	Start 4474.7 hold at 1978.9 MD	
6,453.7	6,381.0	-92.5	-844.5	Start Drop -0.50	
8,453.7	8,370.9	-107.7	-1,017.9	Start 3439.7 hold at 8453.7 MD	
11,893.4	11,810.5	-107.7	-1,017.9	Start DLS 12.00 TFO 359.45	
12,643.4	12,288.0	369.8	-1,022.6	Start 10367.2 hold at 12643.4 MD	
23,010.6	12,288.0	10,736.5	-1,122.8	Start 50.0 hold at 23010.6 MD	
23,060.6	12,288.0	10,786.5	-1,123.3	TD at 23060.6	

Project: BULLDOG PROSPECT (NM-E)
Site: AKUBRA PROJECT
Well: AKUBRA FED COM #602H
Wellbore: OWB
Design: PWP1
GL: 3193.2
KB=25ft @ 3218.2usft

WELL DETAILS: AKUBRA FED COM #602H						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	393688.60	799014.50	32° 4' 43.276 N	103° 22' 4.615 W	

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	
FTP (AKUBRA FED COM #602H)	12288.0	371.3	-1022.5	394059.90	797982.00	
LTP (AKUBRA FED COM #602H)	12288.0	10736.5	-1122.8	404425.10	797891.70	
PBHL (AKUBRA FED COM #602H)	12288.0	10786.5	-1123.3	404475.10	797891.20	

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
1733.3	8.00	245.00	1731.6	-15.7	-33.7	1.50	245.00	-12.1	
1978.9	10.00	265.00	1974.2	-24.8	-70.4	1.50	67.56	-17.4	
6453.7	10.00	265.00	6381.0	-92.5	-844.5	0.00	0.00	-4.5	
8453.7	0.00	0.00	8370.9	-107.7	-1017.9	0.50	180.00	-1.7	
11893.4	0.00	0.00	11810.5	-107.7	-1017.9	0.00	0.00	-1.7	
12643.4	90.00	359.45	12288.0	369.8	-1022.6	12.00	359.45	473.7	
23010.6	90.00	359.45	12288.0	10736.5	-1122.8	0.00	0.00	10795.0	
23060.6	90.00	359.45	12288.0	10786.5	-1123.3	0.00	0.00	10844.8	



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC
WELL NAME & NO.:	AKUBRA FEDERAL COM 602H
SURFACE HOLE FOOTAGE:	280'/N & 1390'/E
BOTTOM HOLE FOOTAGE:	50'/N & 2409'/E
LOCATION:	Section 4, T.26 S., R.35 E.
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
Wellhead Variance	☐ Diverter		
Other	☐ 4 String	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Pilot Hole	☐ Open Annulus
Cementing	☐ Contingency Cement Squeeze	☐ EchoMeter	☐ Primary Cement Squeeze
Special Requirements	☐ Water Disposal	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☐ Break Testing	☐ Offline Cementing	☒ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Primary Casing Design:

1. The 10-3/4 inch surface casing shall be set at approximately 1,107 feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite, above the salt, and below usable fresh water) 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 7-5/8 inch intermediate casing shall be set at approximately **11,700 feet**. **Keep casing minimum 1/3 full for collapse SF. Intermediate cement volumes does not meet CFO 25% excess recommendation. Primary cement job should be planned to surface. Please review.** The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:

Option 1 (Single Stage):

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

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as it is below the salt interval and the cement volume is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3. The 5-1/2 inch production casing shall be set at approximately **23,061 feet**. **The W441 connection should tie back 500'+ into the W513 intermediate casing for clearance overlap.** The minimum required fill of cement behind the 5-1/2 inch production casing is:

Option 1 (Single Stage):

- 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. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **10-3/4 inch** surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 3500 (70% Working Pressure) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in Onshore Order 1 and 43 CFR part 3170 Subpart 3172.
- 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.

Casing Clearance:

- **The W441 connection should tie back 500'+ into the W513 intermediate casing for clearance overlap.**

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are adequate "coffee ground or less" before cementing.

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)
 - If well located in Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822
 - If well located in Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981
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 **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172 and API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.

- d. Whenever any seal subject to test pressure is broken, all the tests in **43 CFR part 3170 Subpart 3172** must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
 - e. The results of the test shall be reported to the appropriate BLM office.
 - f. All tests are required to be recorded on a calibrated test chart. A copy of the

BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

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

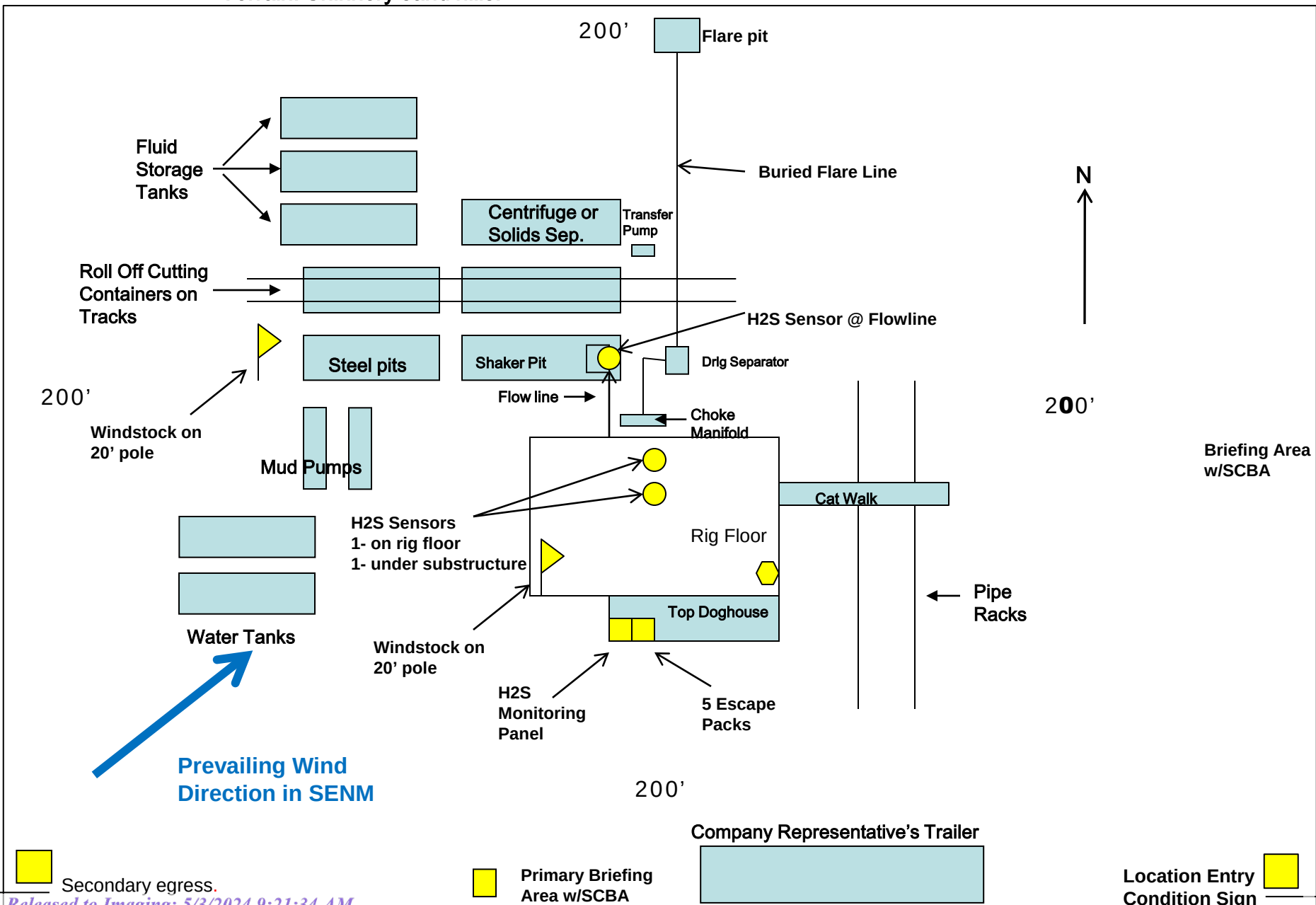
All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location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

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

KPI 4/5/2024

COG Operating LLC
H₂S Equipment Schematic
Terrain: Shinnery sand hills.

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



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 (H₂S).
- b. The proper use and maintenance of personal protective equipment and life support systems.
- c. The proper use of H₂S 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 H₂S 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. H₂S SAFETY EQUIPMENT AND SYSTEMS

Note: All H₂S 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 H₂S 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

	<u>OFFICE</u>	<u>MOBILE</u>
COG OPERATING LLC OFFICE	575-748-6940	
Dallas Daley	432-818-2329	432-631-6977

EMERGENCY RESPONSE NUMBERS

	<u>OFFICE</u>
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

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 339443

CONDITIONS

Operator: COG OPERATING LLC 600 W Illinois Ave Midland, TX 79701	OGRID: 229137
	Action Number: 339443
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/3/2024
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	5/3/2024
pkautz	Oil base muds are not to be used until fresh water 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	5/3/2024
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	5/3/2024
pkautz	If cement does not circulate on any string, a CBL is required for that string of casing	5/3/2024