

Form 3160-3
(October 2024)FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☐ DRILL ☐ REENTER		5. Lease Serial No.
1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address		9. API Well No. 30-015-57324
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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 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). | 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)



Approval Date: 09/22/2025

Additional Operator Remarks

Location of Well

0. SHL: NESW / 2360 FSL / 1514 FWL / TWSP: 23S / RANGE: 30E / SECTION: 23 / LAT: 32.289692 / LONG: -103.85541 (TVD: 0 feet, MD: 0 feet)

PPP: SWNW / 2540 FNL / 612 FWL / TWSP: 23S / RANGE: 30E / SECTION: 23 / LAT: 32.290766 / LONG: -103.858336 (TVD: 9802 feet, MD: 10012 feet)

PPP: SWSW / 1 FSL / 612 FWL / TWSP: 23S / RANGE: 30E / SECTION: 14 / LAT: 32.297748 / LONG: -103.858376 (TVD: 9850 feet, MD: 17352 feet)

BHL: NWNW / 50 FNL / 330 FWL / TWSP: 23S / RANGE: 30E / SECTION: 11 / LAT: 32.326705 / LONG: -103.85922 (TVD: 9850 feet, MD: 23106 feet)

BLM Point of Contact

Name: JANET D ESTES

Title: ADJUDICATOR

Phone: (575) 234-6233

Email: JESTES@BLM.GOV

C-102 Submit Electronically Via OCD Permitting	State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION	Revised July 9, 2024	
		Submittal Type:	☒ Initial Submittal
			☐ Amended Report
			☐ As Drilled

WELL LOCATION INFORMATION

API Number 30-015- 57324	Pool Code 24720	Pool Name Forty Niner Ridge; Bone Spring
Property Code 336009	Property Name THUNDERDOME FED COM	Well Number 501H
OGRID No. 217817	Operator Name CONOCOPHILLIPS COMPANY	Ground Level Elevation 3,251.70'
Surface Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal		Mineral Owner: ☐ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL K	Section 23	Township 23S	Range 30E	Lot	Ft. from N/S 2,360' FSL	Ft. from E/W 1,514' FWL	Latitude 32.289692°	Longitude -103.855410°	County EDDY
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Bottom Hole Location

UL D	Section 11	Township 23S	Range 30E	Lot	Ft. from N/S 50' FNL	Ft. from E/W 330' FWL	Latitude 32.326705°	Longitude -103.859220°	County EDDY
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Dedicated Acres 1600	Infill or Defining Well Infill	Defining Well API Pending 502H	Overlapping Spacing Unit (Y/N)	Consolidation Code Com
Order Numbers.			Well setbacks are under Common Ownership: ☒ Yes ☐ No	

Kick Off Point (KOP)

UL K	Section 23	Township 23S	Range 30E	Lot	Ft. from N/S 2,360' FSL	Ft. from E/W 1,514' FWL	Latitude 32.289692°	Longitude -103.855410°	County EDDY
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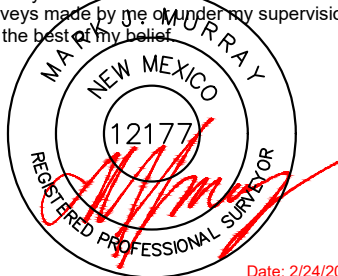
First Take Point (FTP)

UL E	Section 23	Township 23S	Range 30E	Lot	Ft. from N/S 2,540' FNL	Ft. from E/W 612' FWL	Latitude 32.290766°	Longitude -103.858336°	County EDDY
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Last Take Point (LTP)

UL D	Section 11	Township 23S	Range 30E	Lot	Ft. from N/S 100' FNL	Ft. from E/W 330' FWL	Latitude 32.326568°	Longitude -103.859219°	County EDDY
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Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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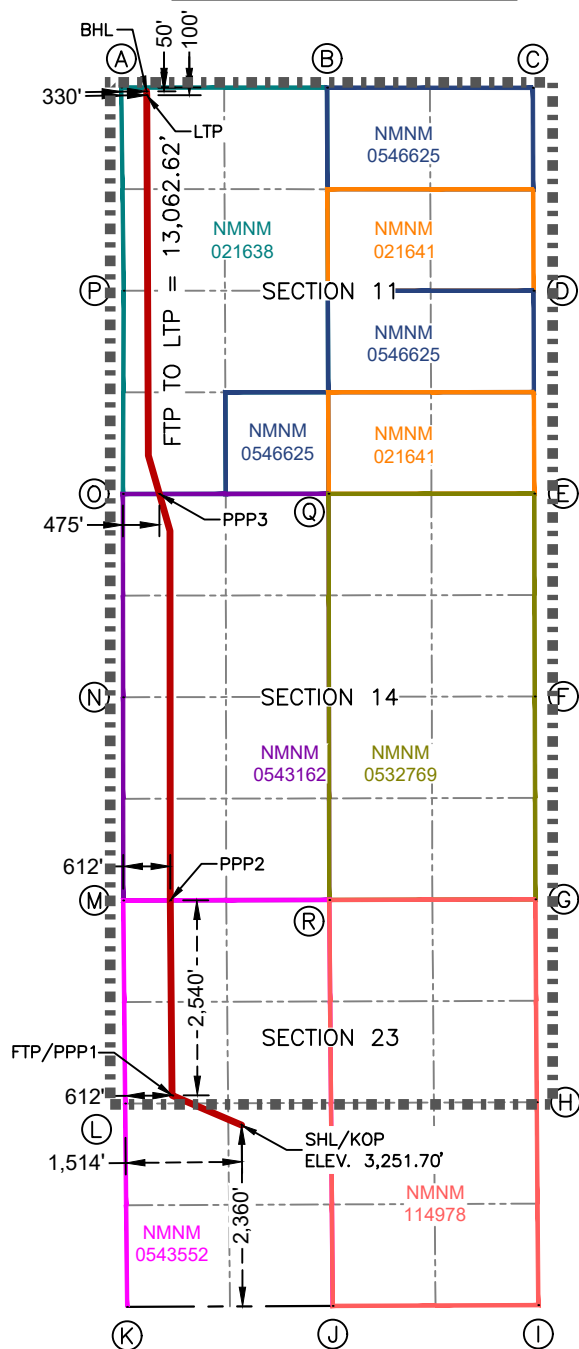
OPERATOR CERTIFICATIONS I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.		SURVEYOR CERTIFICATIONS 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.  Date: 2/24/2025	
Signature  Date 5/27/25		Signature and Seal of Professional Surveyor	
Printed Name Stan Wagner		Certificate Number 12177	Date of Survey 2/24/2025
Email Address			

Note: 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.

ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other than the First Take Point or Last Take Point) that is closest to any outer boundary of the tract.

Surveyors shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land is not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.

THUNDERDOME FED COM 501H**SURFACE HOLE LOCATION
& KICK-OFF POINT**

2,360' FSL & 1,514' FWL
ELEV.=3,251.70'
NAD 83 X = 689,021.12'
NAD 83 Y = 469,451.80'
NAD 83 LAT = 32.289692°
NAD 83 LONG = -103.855410°

**PENETRATION POINT 3
0' FNL & 475' FWL**

NAD 83 X = 687,950.15'
NAD 83 Y = 477,669.66'
NAD 83 LAT = 32.312294°
NAD 83 LONG = -103.858758°

**FIRST TAKE POINT &
PENETRATION POINT 1
2,540' FNL & 612' FWL**

NAD 83 X = 688,115.32'
NAD 83 Y = 469,838.31'
NAD 83 LAT = 32.290766°
NAD 83 LONG = -103.858336°

**LAST TAKE POINT
100' FNL & 330' FWL**

NAD 83 X = 687,784.64'
NAD 83 Y = 482,861.44'
NAD 83 LAT = 32.326568°
NAD 83 LONG = -103.859219°

**PENETRATION POINT 2
0' FNL & 612' FWL**

NAD 83 X = 688,091.55'
NAD 83 Y = 472,378.26'
NAD 83 LAT = 32.297748°
NAD 83 LONG = -103.858376°

**BOTTOM HOLE LOCATION
50' FNL & 330' FWL**

NAD 83 X = 687,784.02'
NAD 83 Y = 482,911.44'
NAD 83 LAT = 32.326705°
NAD 83 LONG = -103.859220°

**CORNER COORDINATES
NEW MEXICO EAST - NAD 83**

A	CALCULATED CORNER N:482,961.73' E:687,453.38'	F	1" MONUMENT N:475,033.03' E:692,835.76'	K	IRON ROD W/CAP N:467,084.70' E:687,530.34'	P	CALCULATED CORNER N:480,315.52' E:687,485.82'
B	IRON ROD W/CAP N:482,959.45' E:690,132.18'	G	IRON ROD W/CAP N:472,390.77' E:692,844.23'	L	IRON ROD W/CAP N:469,732.12' E:687,504.28'	Q	BENT IRON ROD W/CAP N:477,671.15' E:690,152.19'
C	IRON ROD W/CAP N:482,957.17' E:692,810.98'	H	IRON ROD W/CAP N:469,750.12' E:692,862.25'	M	IRON ROD W/CAP N:472,376.66' E:687,479.54'	R	BENT IRON ROD W/CAP N:472,383.64' E:690,161.18'
D	1" MONUMENT N:480,315.20' E:692,820.19'	I	CALCULATED CORNER N:467,108.30' E:692,881.70'	N	CALCULATED CORNER N:475,022.92' E:687,477.28'		
E	1" MONUMENT N:477,674.32' E:692,829.30'	J	IRON ROD W/CAP N:467,097.47' E:690,206.32'	O	BENT IRON ROD W/CAP N:477,669.34' E:687,475.07'		

State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

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: ConocoPhillips Company

OGRID: 217817

Date: 05/27/2025

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
Thunderdome Federal Com 501H	30-015-	K-23-23S-30E	2360 FSL & 1514 FWL	± 1045	± 1766	± 2782
Thunderdome Federal Com 502H	30-015-	K-23-23S-30E	2360 FSL & 1534 FWL	± 1091	± 3230	± 4172
Thunderdome Federal Com 503H	30-015-	J-23-23S-30E	2425 FSL & 2333 FEL	± 1091	± 3230	± 4172
Thunderdome Federal Com 504H	30-015-	J-23-23S-30E	2425 FSL & 2313 FEL	± 1091	± 3230	± 4172

IV. Central Delivery Point Name: CTB NENW 23-23S-30E [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
Thunderdome Federal Com	Pending	± 04/1/2027	± 25 days from spud	TBD	TBD	TBD
501H, 502H, 503H, 504H						

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

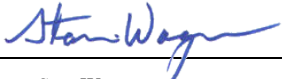
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(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: 05/27/2025
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

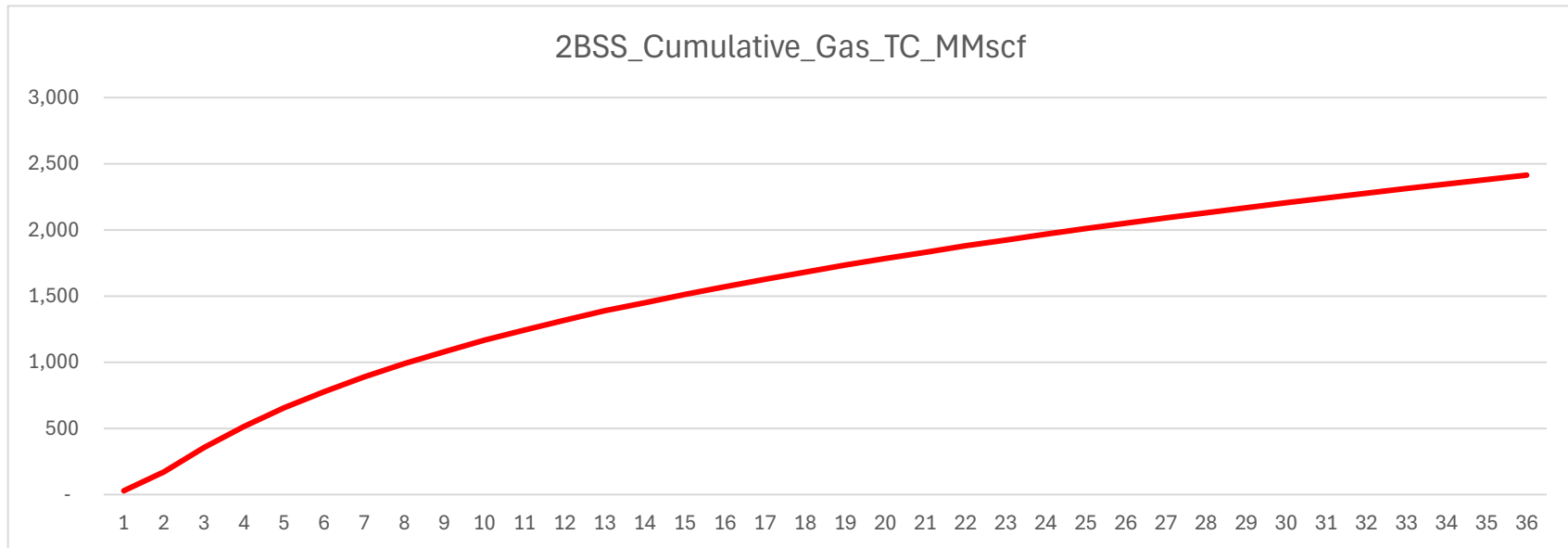
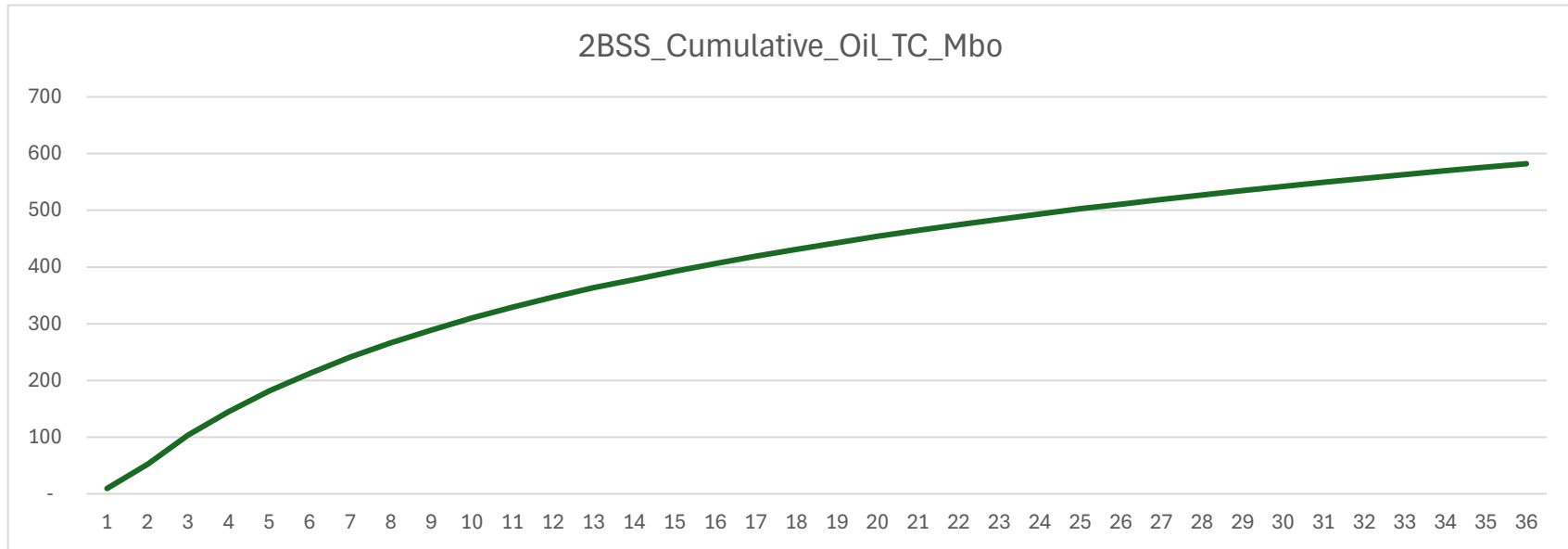
- Operator will curtail or shut in production, within reasonable limits, during upset conditions to minimize venting and flaring.
- When feasible, Operator will use equipment to capture gas that would otherwise be vented or flared.
- During completions and production operations Operator will minimize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

Waste Minimization Plan

Per § 3162.3-1 Drilling applications and plans. Part J:

- (1) The anticipated initial oil production rate from the oil well and the anticipated production decline over the first 3 years of production.
 - a. See attached Anticipated Production & Decline Curve
- (2) The anticipated initial oil-well gas production rate from the oil well and the anticipated production decline over the first 3 years of production.
 - a. See attached Anticipated Production & Decline Curve
- (3) Certification that the operator has a valid, executed gas sales contract to sell to a purchaser 100 percent of the produced oil-well gas, less gas anticipated for use on-lease pursuant to 43 CFR subpart 3178.
 - a. See attached NMOCD – Natural Gas Management Plan
- (4) Any other information demonstrating the operator's plans to avoid the waste of gas production from any source, including, as appropriate, from pneumatic equipment, storage tanks, and leaks.
 - a. This location will comply with NSPS OOOOb which will include reduced associated gas flaring, non-emitting pneumatic equipment, storage tanks that are controlled and a rigorous leak detection and repair program. In addition, this facility complies with 20.2.50 NMAC (Ozone Precursor Pollutants) which also imposes standards on pneumatic equipment, tank controls, and leak detection and repair. Finally, this facility must comply with 19.15.27 NMAC (Venting and Flaring of Natural Gas) which significantly reduces instances of flaring.

Anticipated Production Decline Curve



ConocoPhillips Company - Thunderdome Fed Com 501H

1. Geologic Formations

TVD of target	9,850' EOL	Pilot hole depth	NA
MD at TD:	23,107'	Deepest expected fresh water:	0'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	138	Water	
Top of Salt	475	Salt	
USGS Marker Bed 126	1285	Salt	
Base of Salt	3610	Salt Water	
Lamar	3767	Salt Water	
Bell Canyon	3847	Oil/Gas	
Cherry Canyon	4753	Oil/Gas	
Brushy Canyon	6028	Oil/Gas	
Bone Spring	7606	Oil/Gas	
1st Bone Spring Sand	8658	Oil/Gas	
2nd Bone Spring Sand	9388	Target	

Potash well archetype: 3-String Design Open Production Casing Annulua (Figure B). Sundry aims to comply with R-111-Q as passed on 5/10/2024.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	250	13.375"	54.5	J55	BTC	9.88	1.75	66.72
12.25"	0	3717	9.625"	40	L80-IC	BTC	2.00	1.48	6.37
8.75"	0	23,107	5.5"	23	P110-CY	TXP BTC	2.99	3.74	3.22
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.

All casing strings will be tested in accordance with 43 CFR Part 3170 Subpart 3172

ConocoPhillips Company - Thunderdome Fed Com 501H

	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?	Y
If yes, are the first three strings cemented to surface?	N
Is 2 nd string set 100' to 600' below the base of salt?	Y
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?	

ConocoPhillips Company - Thunderdome Fed Com 501H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	90	13.5	1.75	9.21	12	Lead: Class C
	179	14.8	1.35	6.8	8	Tail: Class C
Inter.	720	12.8	1.8	9.21	12	Lead: Class C
	351	14.8	1.34	6.52	8	Tail: Class C
Prod.	850	10.2	2.98	14.92	72	Lead: Tuned Light
	2350	13.2	1.42	7.45	19	Tail: Class H

Intermediate #1 Salt string cemented to surface. Intermediate cement job to be performed offline. Drill out to wait for 500PSI compressive strength.

Production long string cemented Tail single slurry leaving Brushy Canyon Delaware Mountain group open as a relief zone. Section to be monitored during completions, and then Bradenhead cemented after completion is complete within 180 days to tie back.

Casing String	TOC	% Excess
Surface	0'	50%
1 st Intermediate	0'	50%
Production	4,717'	0% OH in Lateral (KOP to EOL)

ConocoPhillips Company - Thunderdome Fed Com 501H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
Y	A variance is requested for the use of BOPE break testing on intermediate skids (in accordance with the 30 day full BOPE test requirements).

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12-1/4"	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram		5M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	10M
			Pipe Ram	x	
			Double Ram		
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per 43 CFR Part 3170 Subpart 3172 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.
Y	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 43 CFR Part 3170 Subpart 3172.
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?
N	A multibowl wellhead is being used. The BOP will be tested per 43 CFR Part 3170 Subpart 3172 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.

ConocoPhillips Company - Thunderdome Fed Com 501H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Saturated Brine	9 - 10	28-34	N/C
9-5/8" Int shoe	Lateral TD	Cut Brine or OBM	8.6 - 9.5	28-34	N/C

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

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

6. Logging and Testing Procedures

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

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
N	CBL	Production casing
Y	Mud log	Intermediate shoe to TD
N	PEX	

ConocoPhillips Company - Thunderdome Fed Com 501H**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	4870 psi at 9850' TVD
Abnormal Temperature	NO 155 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 43 CFR Part 3170 Subpart 3176. 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

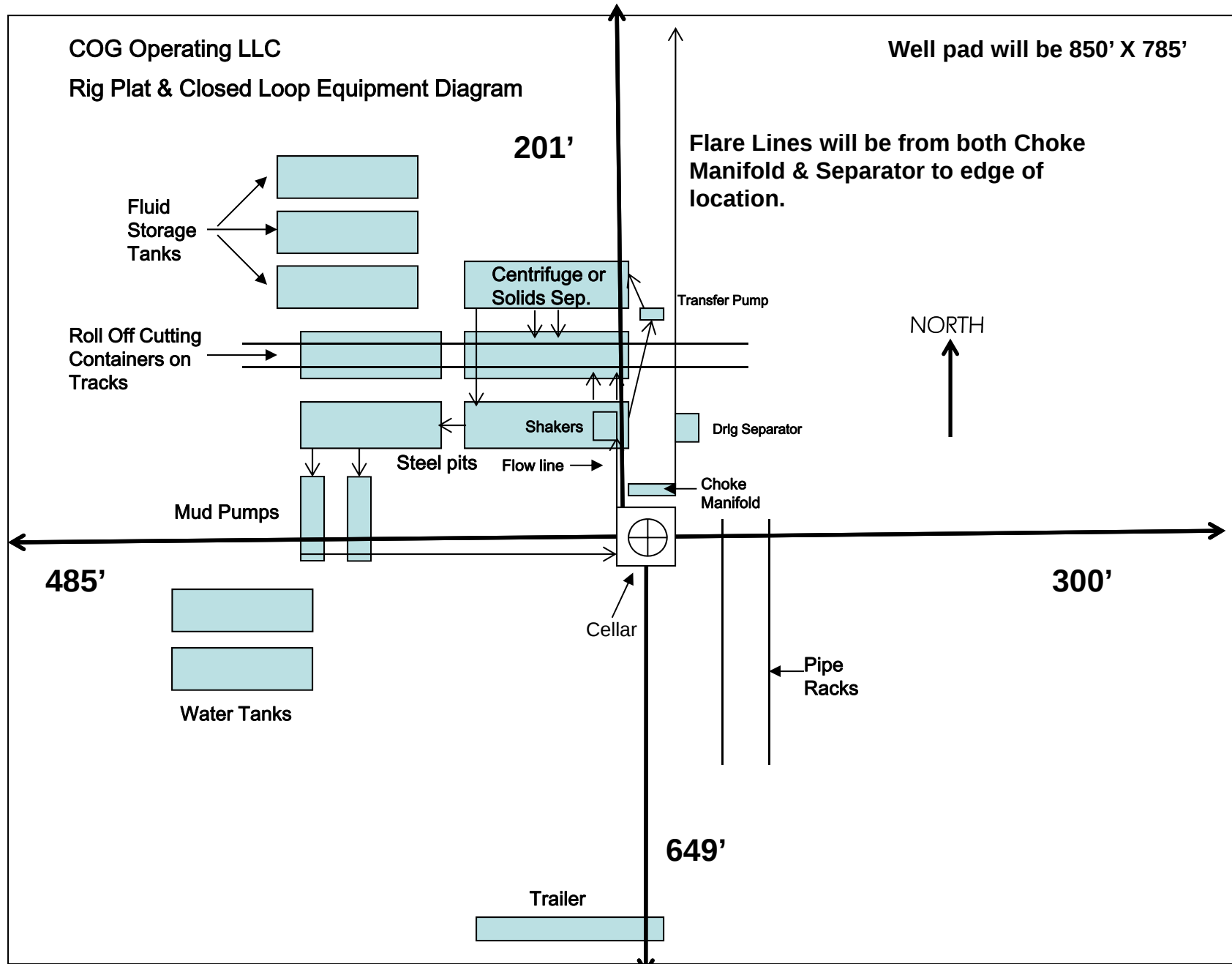


Exhibit 1

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

DELAWARE BASIN WEST

**ATLAS PROSPECT (DBW)
THUNDERDOME PROJECT
_THUNDERDOME FED COM 501H**

**OWB
PWP0**

Anticollision Report

04 March, 2025

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Reference	PWP0		
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:	Max. Cent. Dist. of 1,000.0usft or Max. Ell. Sep. of 500.0usft	Error Surface:	Combined Pedal Curve
Warning Levels Evaluated at:	2.79 Sigma	Casing Method:	Added to Error Values

Survey Tool Program		Date	3/4/2025		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	1,800.0	PWP0 (OWB)	r.5 SDI_KPR_WL_NS-CT	SDI Keeper Wireline Gyrocomp.-Initilzd Cor	
1,800.0	23,105.7	PWP0 (OWB)	r.5 MWD+IFR1+SAG+FDIR	OWSG MWD + IFR1 + SAG + FDIR Corr. I	

Summary						
	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Site Name Offset Well - Wellbore - Design						
FURY ROAD PROJECT						
_FURY ROAD FED COM 501H - OWB - PWP0	6,653.4	6,684.1	49.1	21.0	1.746	Caution - Monitor Closely, CC, ES
_FURY ROAD FED COM 501H - OWB - PWP0	6,700.0	6,729.2	50.5	21.5	1.739	Caution - Monitor Closely, SF
_FURY ROAD FED COM 502H - OWB - PWP0	3,032.3	3,099.1	342.0	326.4	21.939	CC, ES
_FURY ROAD FED COM 502H - OWB - PWP0	3,200.0	3,258.6	345.8	329.8	21.496	SF
_FURY ROAD FED COM 521H - OWB - PWP0	4,677.8	4,716.3	127.4	99.7	4.590	CC, ES
_FURY ROAD FED COM 521H - OWB - PWP0	10,227.0	10,039.9	219.8	168.8	4.306	SF
IRON THRONE PROJECT						
FORTY NINER RIDGE UNIT 105H - OWB - AWP	17,900.0	19,580.0	850.5	603.3	3.440	ES, SF
FORTY NINER RIDGE UNIT 105H - OWB - AWP	17,976.2	19,580.0	847.1	604.3	3.489	CC
FORTY NINER RIDGE UNIT 106H - OWB - AWP						Out of range
FORTY NINER RIDGE UNIT 170H - OWB - AWP						Out of range
FORTY NINER RIDGE UNIT 22 23 III FEDERAL COM 1	7,418.1	8,557.4	784.3	723.7	12.942	CC, ES
FORTY NINER RIDGE UNIT 22 23 III FEDERAL COM 1	7,500.0	8,560.0	788.6	727.5	12.914	SF

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

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						
THUNDERDOME PROJECT						
_THUNDERDOME FED COM 502H - OWB - PWP0	1,800.0	1,800.0	20.0	10.4	2.094	Caution - Monitor Closely, CC, ES, SF
_THUNDERDOME FED COM 503H - OWB - PWP0						Out of range
_THUNDERDOME FED COM 521H - OWB - PWP0	1,500.0	1,500.0	20.0	11.3	2.291	Caution - Monitor Closely, CC, ES, SF
_THUNDERDOME FED COM 522H - OWB - PWP0						Out of range
ROADRUNNER FEDERAL COM 23 ILL 005H - ST01 - A	7,624.2	11,804.4	229.6	77.1	1.506	Caution - Monitor Closely, CC, ES, SF
ROADRUNNER FEDERAL COM 23 PML - OWB - AWP						Out of range
THUNDERDOME FED COM 701H - OWB - AWP	0.0	39.9	151.8	151.1	215.127	CC
THUNDERDOME FED COM 701H - OWB - AWP	1,834.9	1,875.3	153.7	146.4	21.049	ES
THUNDERDOME FED COM 701H - OWB - AWP	2,100.0	2,133.9	161.6	153.6	20.342	SF
THUNDERDOME FED COM 701H - OWB - PWP3	1,800.0	1,840.0	151.8	141.8	15.264	CC
THUNDERDOME FED COM 701H - OWB - PWP3	1,900.0	1,940.0	151.8	141.6	14.860	ES
THUNDERDOME FED COM 701H - OWB - PWP3	2,100.0	2,136.1	154.2	143.4	14.233	SF
THUNDERDOME FED COM 702H - OWB - AWP	1,582.9	1,623.1	144.0	137.3	21.235	CC, ES
THUNDERDOME FED COM 702H - OWB - AWP	2,200.0	2,237.9	158.0	149.8	19.231	SF
THUNDERDOME FED COM 703H - OWB - AWP	197.0	237.0	154.6	152.2	63.907	CC
THUNDERDOME FED COM 703H - OWB - AWP	1,941.3	1,984.6	159.2	151.7	20.981	ES
THUNDERDOME FED COM 703H - OWB - AWP	2,200.0	2,242.6	165.1	156.9	20.076	SF
THUNDERDOME FED COM 705H - OWB - AWP	434.9	475.0	178.2	174.8	51.498	CC
THUNDERDOME FED COM 705H - OWB - AWP	1,100.0	1,138.8	178.9	173.4	32.278	ES
THUNDERDOME FED COM 705H - OWB - AWP	2,100.0	2,134.7	191.2	183.3	24.196	SF
THUNDERDOME FED COM 706H - ST01 - AWP						Out of range

Offset Design:		FURY ROAD PROJECT - _FURY ROAD FED COM 501H - OWB - PWP0												Offset Site Error:		0.0 usft	
Survey Program:		0-r.5 MWD+IFR1						Rule Assigned:						Offset Well Error:		0.0 usft	
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)	Distance Between Centres (usft)	Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning				
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-450.5	0.0	450.5	450.0	0.51	882.171					
100.0	100.0	100.0	100.0	0.9	1.2	180.00	-450.5	0.0	450.5	447.9	2.60	173.597					
200.0	200.0	200.0	200.0	1.2	1.7	180.00	-450.5	0.0	450.5	447.0	3.47	129.781					
300.0	300.0	300.0	300.0	1.5	2.1	180.00	-450.5	0.0	450.5	446.4	4.15	108.501					
400.0	400.0	400.0	400.0	1.8	2.4	180.00	-450.5	0.0	450.5	445.8	4.73	95.181					
500.0	500.0	500.0	500.0	2.0	2.7	180.00	-450.5	0.0	450.5	445.3	5.25	85.789					
600.0	600.0	600.0	600.0	2.2	3.0	180.00	-450.5	0.0	450.5	444.8	5.73	78.687					
700.0	700.0	700.0	700.0	2.4	3.2	180.00	-450.5	0.0	450.5	444.4	6.17	73.060					
800.0	800.0	800.0	800.0	2.6	3.5	180.00	-450.5	0.0	450.5	443.9	6.58	68.451					
900.0	900.0	900.0	900.0	2.8	3.7	180.00	-450.5	0.0	450.5	443.5	6.98	64.583					
1,000.0	1,000.0	1,000.0	1,000.0	3.0	3.9	180.00	-450.5	0.0	450.5	443.2	7.35	61.271					
1,100.0	1,100.0	1,100.0	1,100.0	3.1	4.1	180.00	-450.5	0.0	450.5	442.8	7.72	58.392					
1,200.0	1,200.0	1,200.0	1,200.0	3.3	4.3	180.00	-450.5	0.0	450.5	442.5	8.07	55.858					
1,300.0	1,300.0	1,300.0	1,300.0	3.5	4.5	180.00	-450.5	0.0	450.5	442.1	8.40	53.603					
1,400.0	1,400.0	1,400.0	1,400.0	3.6	4.7	180.00	-450.5	0.0	450.5	441.8	8.73	51.579					
1,500.0	1,500.0	1,500.0	1,500.0	3.8	4.8	180.00	-450.5	0.0	450.5	441.5	9.06	49.748					
1,600.0	1,600.0	1,600.0	1,600.0	3.9	5.0	180.00	-450.5	0.0	450.5	441.2	9.37	48.081					
1,700.0	1,700.0	1,700.0	1,700.0	4.1	5.2	180.00	-450.5	0.0	450.5	440.8	9.68	46.554					
1,800.0	1,800.0	1,800.0	1,800.0	4.2	5.3	180.00	-450.5	0.0	450.5	440.5	9.98	45.149					
1,900.0	1,900.0	1,900.0	1,900.0	4.3	5.5	-98.32	-450.5	0.0	450.8	440.5	10.25	43.973					
2,000.0	1,999.8	1,999.8	1,999.8	4.5	5.6	-98.96	-450.5	0.0	451.6	441.0	10.57	42.733					

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
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Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 501H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
2,100.0	2,099.5	2,103.9	2,103.9	4.7	5.7	-100.02	-450.3	-0.4	452.8	442.0	10.80	41.914	
2,200.0	2,198.7	2,212.7	2,212.7	4.9	6.0	-101.22	-448.2	-4.0	453.0	441.8	11.14	40.648	
2,300.0	2,297.5	2,321.8	2,321.4	5.1	6.3	-102.49	-444.1	-11.2	452.0	440.5	11.49	39.324	
2,400.0	2,395.6	2,431.1	2,430.0	5.4	6.6	-103.83	-437.9	-22.0	449.9	438.0	11.86	37.935	
2,500.0	2,493.1	2,540.6	2,538.2	5.6	6.9	-105.24	-429.7	-36.4	446.5	434.3	12.24	36.473	
2,514.5	2,507.1	2,556.5	2,553.9	5.6	6.9	-105.46	-428.3	-38.7	446.0	433.7	12.29	36.299	
2,600.0	2,590.0	2,650.4	2,646.0	5.8	7.2	-106.50	-419.3	-54.4	441.7	429.1	12.64	34.945	
2,700.0	2,686.9	2,760.3	2,753.0	6.0	7.5	-107.36	-406.9	-76.0	434.8	421.7	13.04	33.343	
2,800.0	2,783.8	2,862.0	2,851.5	6.1	7.9	-107.89	-394.2	-98.3	426.2	412.7	13.45	31.684	
2,900.0	2,880.7	2,961.6	2,947.8	6.3	8.2	-108.43	-381.6	-120.1	417.6	403.7	13.89	30.057	
3,000.0	2,977.6	3,061.1	3,044.1	6.5	8.5	-108.99	-369.1	-142.0	409.1	394.7	14.34	28.517	
3,100.0	3,074.5	3,160.7	3,140.4	6.7	8.8	-109.57	-356.5	-163.9	400.6	385.7	14.81	27.039	
3,200.0	3,171.4	3,260.3	3,236.7	6.9	9.2	-110.17	-344.0	-185.8	392.1	376.8	15.30	25.624	
3,300.0	3,268.3	3,359.8	3,333.0	7.1	9.6	-110.81	-331.4	-207.6	383.7	367.9	15.81	24.273	
3,400.0	3,365.2	3,459.4	3,429.3	7.3	9.9	-111.47	-318.9	-229.5	375.3	359.0	16.33	22.984	
3,500.0	3,462.1	3,558.9	3,525.6	7.4	10.3	-112.16	-306.4	-251.4	367.0	350.1	16.87	21.756	
3,600.0	3,559.0	3,658.5	3,622.0	7.6	10.7	-112.89	-293.8	-273.2	358.8	341.3	17.43	20.587	
3,700.0	3,655.9	3,758.0	3,718.3	7.8	11.1	-113.64	-281.3	-295.1	350.6	332.6	18.00	19.476	
3,800.0	3,752.8	3,857.6	3,814.6	8.0	11.5	-114.44	-268.7	-317.0	342.4	323.8	18.59	18.421	
3,900.0	3,849.7	3,957.1	3,910.9	8.2	11.9	-115.27	-256.2	-338.9	334.4	315.2	19.19	17.419	
4,000.0	3,946.7	4,056.7	4,007.2	8.5	12.4	-116.14	-243.6	-360.7	326.4	306.5	19.82	16.468	
4,100.0	4,043.6	4,156.2	4,103.5	8.7	12.8	-117.06	-231.1	-382.6	318.5	298.0	20.46	15.567	
4,200.0	4,140.5	4,255.8	4,199.8	8.9	13.2	-118.02	-218.6	-404.5	310.6	289.5	21.11	14.712	
4,300.0	4,237.4	4,355.3	4,296.1	9.1	13.7	-119.04	-206.0	-426.3	302.9	281.1	21.79	13.901	
4,400.0	4,334.3	4,454.9	4,392.4	9.3	14.1	-120.10	-193.5	-448.2	295.3	272.8	22.48	13.134	
4,500.0	4,431.2	4,554.5	4,488.7	9.5	14.5	-121.22	-180.9	-470.1	287.7	264.5	23.19	12.407	
4,600.0	4,528.1	4,654.0	4,585.0	9.7	15.0	-122.40	-168.4	-492.0	280.3	256.4	23.92	11.720	
4,700.0	4,625.0	4,753.6	4,681.3	9.9	15.4	-123.65	-155.8	-513.8	273.0	248.4	24.66	11.070	
4,800.0	4,721.9	4,853.1	4,777.6	10.1	15.9	-124.96	-143.3	-535.7	265.9	240.4	25.43	10.456	
4,900.0	4,818.8	4,952.7	4,874.0	10.3	16.3	-126.34	-130.8	-557.6	258.9	232.7	26.21	9.877	
5,000.0	4,915.7	5,052.2	4,970.3	10.6	16.8	-127.80	-118.2	-579.4	252.0	225.0	27.01	9.330	
5,100.0	5,012.6	5,151.8	5,066.6	10.8	17.3	-129.34	-105.7	-601.3	245.3	217.5	27.83	8.816	
5,175.5	5,085.8	5,226.9	5,139.3	10.9	17.6	-130.55	-96.2	-617.8	240.4	212.0	28.45	8.452	
5,200.0	5,109.5	5,251.3	5,162.9	11.0	17.7	-130.94	-93.1	-623.2	238.8	210.2	28.64	8.339	
5,300.0	5,206.8	5,350.9	5,259.2	11.2	18.2	-132.36	-80.6	-645.1	231.7	202.2	29.47	7.861	
5,400.0	5,304.4	5,450.4	5,355.5	11.4	18.7	-133.55	-68.0	-666.9	223.5	193.2	30.27	7.381	
5,500.0	5,402.3	5,549.9	5,451.7	11.6	19.1	-134.49	-55.5	-688.8	214.1	183.1	31.05	6.896	
5,600.0	5,500.6	5,649.3	5,547.9	11.8	19.6	-135.18	-43.0	-710.6	203.7	171.9	31.81	6.402	
5,700.0	5,599.3	5,748.6	5,644.0	12.0	20.1	-135.57	-30.5	-732.4	192.0	159.4	32.54	5.900	
5,800.0	5,698.2	5,847.8	5,739.9	12.2	20.5	-135.63	-18.0	-754.2	179.1	145.8	33.23	5.388	
5,900.0	5,797.3	5,946.8	5,835.7	12.4	21.0	-135.27	-5.5	-776.0	164.9	131.0	33.88	4.868	
6,000.0	5,896.6	6,045.6	5,931.2	12.6	21.5	-134.38	6.9	-797.7	149.6	115.1	34.46	4.340	
6,100.0	5,996.2	6,144.1	6,026.6	12.8	21.9	-132.75	19.4	-819.3	133.1	98.1	34.94	3.808	
6,200.0	6,095.8	6,242.4	6,121.7	12.9	22.4	-130.01	31.7	-840.9	115.6	80.3	35.24	3.279	
6,300.0	6,195.7	6,340.4	6,216.5	13.1	22.9	-125.53	44.1	-862.5	97.3	62.1	35.23	2.763 Normal Operations	
6,400.0	6,295.6	6,438.1	6,311.0	13.3	23.3	-118.02	56.4	-883.9	79.1	44.6	34.55	2.289 Caution - Monitor Closely	
6,500.0	6,395.5	6,535.5	6,405.1	13.4	23.8	-105.03	68.7	-905.3	62.4	29.9	32.55	1.917 Caution - Monitor Closely	
6,600.0	6,495.5	6,632.4	6,498.9	13.5	24.3	-83.20	80.9	-926.6	51.0	21.9	29.03	1.756 Caution - Monitor Closely	
6,604.5	6,500.0	6,636.8	6,503.1	13.5	24.3	-163.89	81.4	-927.6	50.7	21.8	28.89	1.754 Caution - Monitor Closely	
6,653.4	6,548.9	6,684.1	6,548.9	13.6	24.5	-150.18	87.4	-938.0	49.1	21.0	28.14	1.746 Caution - Monitor Closely, CC, ES	
6,700.0	6,595.5	6,729.2	6,592.7	13.6	24.7	-137.27	93.0	-947.7	50.5	21.5	29.03	1.739 Caution - Monitor Closely, SF	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 501H - OWB - PWP0													Offset Site Error: 0.0 usft	
Survey Program: 0-r.5 MWD+IFR1				Rule Assigned:									Offset Well Error: 0.0 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			No-Go Distance (usft)	
6,800.0	6,695.5	6,826.8	6,687.4	13.6	25.2	-115.17	104.5	-967.8	60.5	27.1	33.39	1.813	Caution - Monitor Closely	
6,900.0	6,795.5	6,925.1	6,783.3	13.7	25.6	-101.37	115.3	-986.6	75.6	38.7	36.86	2.050	Caution - Monitor Closely	
7,000.0	6,895.5	7,024.2	6,880.3	13.8	26.1	-92.94	125.4	-1,004.2	92.0	53.0	39.06	2.356	Caution - Monitor Closely	
7,100.0	6,995.5	7,123.9	6,978.3	13.8	26.6	-87.53	134.6	-1,020.3	108.3	67.7	40.55	2.671	Normal Operations	
7,200.0	7,095.5	7,224.3	7,077.2	13.9	27.0	-83.86	143.1	-1,035.1	123.6	82.0	41.65	2.969	Normal Operations	
7,300.0	7,195.5	7,325.3	7,177.0	13.9	27.4	-81.26	150.8	-1,048.5	137.8	95.2	42.54	3.238		
7,400.0	7,295.5	7,426.8	7,277.6	14.0	27.9	-79.37	157.6	-1,060.3	150.4	107.1	43.29	3.475		
7,500.0	7,395.5	7,528.7	7,378.8	14.0	28.3	-77.97	163.5	-1,070.7	161.6	117.6	43.95	3.676		
7,600.0	7,495.5	7,631.1	7,480.7	14.1	28.7	-76.92	168.6	-1,079.5	171.1	126.6	44.53	3.842		
7,700.0	7,595.5	7,733.8	7,583.0	14.2	29.1	-76.15	172.8	-1,086.8	178.9	133.9	45.04	3.973		
7,800.0	7,695.5	7,836.7	7,685.7	14.2	29.5	-75.58	176.0	-1,092.5	185.1	139.6	45.49	4.068		
7,900.0	7,795.5	7,939.8	7,788.8	14.3	29.8	-75.20	178.4	-1,096.6	189.5	143.6	45.88	4.130		
8,000.0	7,895.5	8,043.1	7,892.0	14.4	30.1	-74.98	179.8	-1,099.1	192.2	146.0	46.19	4.160		
8,100.0	7,995.5	8,146.5	7,995.4	14.4	30.3	-74.90	180.3	-1,100.0	193.1	146.8	46.37	4.165		
8,200.0	8,095.5	8,246.6	8,095.5	14.5	30.3	-74.90	180.3	-1,100.0	193.1	146.7	46.44	4.159		
8,300.0	8,195.5	8,346.6	8,195.5	14.5	30.4	-74.90	180.3	-1,100.0	193.1	146.6	46.52	4.152		
8,400.0	8,295.5	8,446.6	8,295.5	14.6	30.4	-74.90	180.3	-1,100.0	193.1	146.5	46.60	4.144		
8,500.0	8,395.5	8,546.6	8,395.5	14.7	30.4	-74.90	180.3	-1,100.0	193.1	146.5	46.68	4.137		
8,600.0	8,495.5	8,646.6	8,495.5	14.7	30.5	-74.90	180.3	-1,100.0	193.1	146.4	46.77	4.130		
8,700.0	8,595.5	8,746.6	8,595.5	14.8	30.5	-74.90	180.3	-1,100.0	193.1	146.3	46.85	4.122		
8,800.0	8,695.5	8,846.6	8,695.5	14.8	30.5	-74.90	180.3	-1,100.0	193.1	146.2	46.93	4.115		
8,900.0	8,795.5	8,946.6	8,795.5	14.9	30.6	-74.90	180.3	-1,100.0	193.1	146.1	47.02	4.108		
9,000.0	8,895.5	9,046.6	8,895.5	15.0	30.6	-74.90	180.3	-1,100.0	193.1	146.0	47.10	4.100		
9,100.0	8,995.5	9,146.6	8,995.5	15.0	30.7	-74.90	180.3	-1,100.0	193.1	145.9	47.19	4.093		
9,200.0	9,095.5	9,246.6	9,095.5	15.1	30.7	-74.90	180.3	-1,100.0	193.1	145.9	47.27	4.085		
9,300.0	9,195.5	9,346.6	9,195.5	15.2	30.7	-74.90	180.3	-1,100.0	193.1	145.8	47.36	4.078		
9,400.0	9,295.5	9,452.2	9,301.0	15.2	30.7	-75.77	177.3	-1,100.0	192.4	145.4	47.08	4.087		
9,477.0	9,372.5	9,534.9	9,381.9	15.3	30.5	-80.56	161.0	-1,099.9	189.1	142.9	46.20	4.094		
9,500.0	9,395.5	9,558.1	9,404.0	15.3	30.4	-82.70	153.9	-1,099.8	188.0	142.1	45.87	4.098		
9,525.0	9,420.4	9,581.8	9,426.2	15.3	30.4	-85.87	145.6	-1,099.8	186.8	141.4	45.44	4.111		
9,550.0	9,445.2	9,603.7	9,446.4	15.3	30.3	-89.37	136.9	-1,099.7	186.2	141.3	44.92	4.145		
9,554.7	9,449.9	9,607.7	9,449.9	15.3	30.3	-90.05	135.3	-1,099.7	186.2	141.4	44.82	4.154		
9,575.0	9,469.8	9,623.7	9,464.4	15.3	30.3	-92.94	128.2	-1,099.7	186.6	142.3	44.32	4.210		
9,600.0	9,494.2	9,641.7	9,480.2	15.3	30.2	-96.36	119.8	-1,099.6	188.4	144.8	43.60	4.320		
9,625.0	9,518.2	9,657.7	9,494.1	15.4	30.2	-99.42	111.7	-1,099.6	191.9	149.2	42.80	4.485		
9,650.0	9,541.7	9,671.7	9,506.0	15.4	30.2	-101.98	104.3	-1,099.5	197.6	155.7	41.92	4.714		
9,675.0	9,564.9	9,683.9	9,516.1	15.4	30.1	-103.94	97.6	-1,099.5	205.4	164.4	41.01	5.010		
9,700.0	9,587.5	9,694.2	9,524.6	15.4	30.1	-105.24	91.7	-1,099.5	215.5	175.4	40.12	5.372		
9,725.0	9,609.5	9,702.9	9,531.6	15.4	30.1	-105.86	86.6	-1,099.4	227.7	188.4	39.28	5.796		
9,750.0	9,630.9	9,710.0	9,537.3	15.4	30.1	-105.77	82.3	-1,099.4	241.8	203.3	38.53	6.276		
9,775.0	9,651.5	9,715.8	9,541.8	15.5	30.1	-104.97	78.8	-1,099.4	257.6	219.7	37.87	6.802		
9,800.0	9,671.4	9,720.2	9,545.3	15.5	30.1	-103.42	76.1	-1,099.4	274.9	237.6	37.31	7.368		
9,825.0	9,690.5	9,725.0	9,549.0	15.5	30.1	-101.56	73.1	-1,099.4	293.4	256.6	36.80	7.973		
9,850.0	9,708.7	9,725.0	9,549.0	15.5	30.1	-97.85	73.1	-1,099.4	313.0	276.5	36.48	8.580		
9,875.0	9,726.0	9,725.0	9,549.0	15.5	30.1	-93.65	73.1	-1,099.4	333.4	297.2	36.18	9.213		
9,900.0	9,742.3	9,725.0	9,549.0	15.5	30.1	-89.00	73.1	-1,099.4	354.4	318.4	35.93	9.864		
9,925.0	9,757.6	9,725.0	9,549.0	15.6	30.1	-83.96	73.1	-1,099.4	375.9	340.2	35.70	10.528		
9,950.0	9,771.8	9,725.0	9,549.0	15.6	30.1	-78.65	73.1	-1,099.4	397.7	362.2	35.51	11.201		
9,975.0	9,785.0	9,725.0	9,549.0	15.6	30.1	-73.18	73.1	-1,099.4	419.8	384.4	35.34	11.878		
10,000.0	9,797.0	9,725.0	9,549.0	15.6	30.1	-67.70	73.1	-1,099.4	442.0	406.8	35.19	12.558		
10,025.0	9,807.9	9,718.5	9,543.9	15.6	30.1	-60.86	77.1	-1,099.4	464.2	429.0	35.14	13.209		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 501H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:	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)		No-Go Distance (usft)	Separation Factor
10,050.0	9,817.5	9,715.0	9,541.2	15.6	30.1	-55.23	79.3	-1,099.4	486.3	451.3		35.06	13.871
10,075.0	9,826.0	9,711.1	9,538.1	15.6	30.1	-50.05	81.7	-1,099.4	508.4	473.4		35.00	14.526
10,100.0	9,833.2	9,706.7	9,534.7	15.7	30.1	-45.37	84.3	-1,099.4	530.3	495.3		34.95	15.173
10,125.0	9,839.1	9,700.0	9,529.3	15.7	30.1	-40.96	88.3	-1,099.5	551.9	517.0		34.92	15.804
10,150.0	9,843.8	9,700.0	9,529.3	15.7	30.1	-37.85	88.3	-1,099.5	573.2	538.4		34.85	16.447
10,175.0	9,847.1	9,691.5	9,522.4	15.7	30.1	-34.32	93.3	-1,099.5	594.2	559.3		34.85	17.050
10,200.0	9,849.2	9,685.9	9,517.7	15.7	30.1	-31.51	96.5	-1,099.5	614.7	579.9		34.83	17.650
10,227.0	9,850.0	9,675.0	9,508.7	15.8	30.2	-28.61	102.5	-1,099.5	636.5	601.7		34.84	18.271
10,300.0	9,850.0	9,662.6	9,498.2	15.9	30.2	-27.89	109.2	-1,099.6	695.5	660.7		34.84	19.965
10,400.0	9,850.0	9,642.2	9,480.7	16.2	30.2	-26.75	119.5	-1,099.6	778.9	744.0		34.95	22.285
10,500.0	9,850.0	9,625.0	9,465.5	16.5	30.3	-25.84	127.7	-1,099.7	864.8	829.7		35.12	24.621
10,600.0	9,850.0	9,609.2	9,451.3	16.9	30.3	-25.03	134.6	-1,099.7	952.6	917.3		35.32	26.968

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 502H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
0.0	0.0	0.0	0.0	0.0	0.0	177.52	-450.7	19.5	451.1	450.6	0.51	883.292	
100.0	100.0	100.0	100.0	0.9	1.2	177.52	-450.7	19.5	451.1	448.5	2.60	173.818	
200.0	200.0	200.0	200.0	1.2	1.7	177.52	-450.7	19.5	451.1	447.6	3.47	129.947	
300.0	300.0	300.0	300.0	1.5	2.1	177.52	-450.7	19.5	451.1	446.9	4.15	108.640	
400.0	400.0	400.0	400.0	1.8	2.4	177.52	-450.7	19.5	451.1	446.4	4.73	95.303	
500.0	500.0	500.0	500.0	2.0	2.7	177.52	-450.7	19.5	451.1	445.8	5.25	85.900	
600.0	600.0	600.0	600.0	2.2	3.0	177.52	-450.7	19.5	451.1	445.4	5.73	78.789	
700.0	700.0	700.0	700.0	2.4	3.2	177.52	-450.7	19.5	451.1	444.9	6.17	73.155	
800.0	800.0	800.0	800.0	2.6	3.5	177.52	-450.7	19.5	451.1	444.5	6.58	68.541	
900.0	900.0	900.0	900.0	2.8	3.7	177.52	-450.7	19.5	451.1	444.1	6.98	64.667	
1,000.0	1,000.0	1,000.0	1,000.0	3.0	3.9	177.52	-450.7	19.5	451.1	443.7	7.35	61.352	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	4.1	177.52	-450.7	19.5	451.1	443.4	7.72	58.469	
1,200.0	1,200.0	1,200.0	1,200.0	3.3	4.3	177.52	-450.7	19.5	451.1	443.0	8.07	55.932	
1,300.0	1,300.0	1,300.0	1,300.0	3.5	4.5	177.52	-450.7	19.5	451.1	442.7	8.40	53.674	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	4.7	177.52	-450.7	19.5	451.1	442.4	8.73	51.648	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	4.8	177.52	-450.7	19.5	451.1	442.0	9.06	49.815	
1,600.0	1,600.0	1,600.0	1,600.0	3.9	5.0	177.52	-450.7	19.5	451.1	441.7	9.37	48.146	
1,700.0	1,700.0	1,700.0	1,700.0	4.1	5.2	177.52	-450.7	19.5	451.1	441.4	9.68	46.617	
1,800.0	1,800.0	1,800.0	1,800.0	4.2	5.3	177.52	-450.7	19.5	451.1	441.1	9.98	45.210	
1,900.0	1,900.0	1,918.6	1,918.6	4.3	5.6	-100.87	-448.2	19.4	449.3	438.9	10.40	43.206	
2,000.0	1,999.8	2,036.8	2,036.5	4.5	5.9	-101.76	-440.9	19.1	444.2	433.3	10.87	40.859	
2,100.0	2,099.5	2,154.0	2,153.1	4.7	6.3	-103.28	-428.8	18.5	435.7	424.4	11.35	38.395	
2,200.0	2,198.7	2,270.0	2,267.9	4.9	6.6	-105.46	-412.2	17.8	424.3	412.5	11.84	35.834	
2,300.0	2,297.5	2,384.2	2,380.1	5.1	7.0	-108.38	-391.4	16.8	410.4	398.1	12.35	33.232	
2,400.0	2,395.6	2,496.3	2,489.5	5.4	7.4	-112.10	-366.5	15.7	394.6	381.8	12.89	30.618	
2,500.0	2,493.1	2,592.9	2,583.1	5.6	7.7	-116.09	-343.1	14.6	379.4	366.1	13.36	28.408	
2,514.5	2,507.1	2,606.7	2,596.5	5.6	7.7	-116.71	-339.7	14.5	377.5	364.1	13.41	28.151	
2,600.0	2,590.0	2,688.0	2,675.4	5.8	8.0	-120.32	-320.0	13.6	367.1	353.3	13.81	26.574	
2,700.0	2,686.9	2,783.1	2,767.7	6.0	8.3	-124.76	-296.9	12.5	357.0	342.8	14.27	25.021	
2,800.0	2,783.8	2,878.2	2,859.9	6.1	8.6	-129.41	-273.8	11.5	349.4	334.7	14.70	23.762	
2,900.0	2,880.7	2,973.3	2,952.2	6.3	8.9	-134.21	-250.7	10.4	344.4	329.3	15.11	22.792	
3,000.0	2,977.6	3,068.4	3,044.4	6.5	9.3	-139.11	-227.5	9.4	342.1	326.6	15.48	22.103	
3,032.3	3,008.9	3,099.1	3,074.2	6.6	9.4	-140.70	-220.1	9.0	342.0	326.4	15.59	21.939 CC, ES	
3,100.0	3,074.5	3,163.5	3,136.7	6.7	9.6	-144.02	-204.4	8.3	342.6	326.8	15.80	21.679	
3,200.0	3,171.4	3,258.6	3,228.9	6.9	10.0	-148.89	-181.3	7.3	345.8	329.8	16.09	21.496 SF	
3,300.0	3,268.3	3,353.8	3,321.2	7.1	10.4	-153.65	-158.2	6.2	351.8	335.5	16.34	21.530	
3,400.0	3,365.2	3,448.9	3,413.4	7.3	10.8	-158.23	-135.1	5.2	360.3	343.7	16.57	21.751	
3,500.0	3,462.1	3,544.0	3,505.7	7.4	11.2	-162.59	-112.0	4.1	371.2	354.4	16.78	22.126	
3,600.0	3,559.0	3,639.1	3,597.9	7.6	11.6	-166.70	-88.9	3.1	384.3	367.3	16.98	22.626	
3,700.0	3,655.9	3,734.2	3,690.2	7.8	12.0	-170.54	-65.8	2.0	399.3	382.1	17.20	23.221	
3,800.0	3,752.8	3,829.3	3,782.4	8.0	12.4	-174.10	-42.6	1.0	416.1	398.7	17.42	23.884	
3,900.0	3,849.7	3,924.4	3,874.7	8.2	12.8	-177.40	-19.5	-0.1	434.5	416.8	17.67	24.594	
4,000.0	3,946.7	4,019.5	3,966.9	8.5	13.2	179.56	3.6	-1.1	454.2	436.2	17.93	25.331	
4,100.0	4,043.6	4,114.6	4,059.2	8.7	13.6	176.77	26.7	-2.2	475.1	456.8	18.21	26.081	
4,200.0	4,140.5	4,209.8	4,151.5	8.9	14.0	174.21	49.8	-3.2	497.0	478.5	18.52	26.831	
4,300.0	4,237.4	4,304.9	4,243.7	9.1	14.4	171.86	72.9	-4.3	519.8	501.0	18.85	27.572	
4,400.0	4,334.3	4,400.0	4,336.0	9.3	14.9	169.70	96.0	-5.3	543.5	524.3	19.20	28.300	
4,500.0	4,431.2	4,495.1	4,428.2	9.5	15.3	167.72	119.1	-6.4	567.8	548.3	19.57	29.008	
4,600.0	4,528.1	4,590.2	4,520.5	9.7	15.7	165.90	142.2	-7.4	592.8	572.8	19.96	29.695	
4,700.0	4,625.0	4,685.3	4,612.7	9.9	16.2	164.22	165.4	-8.5	618.3	597.9	20.37	30.358	
4,800.0	4,721.9	4,780.4	4,705.0	10.1	16.6	162.67	188.5	-9.5	644.2	623.4	20.78	30.997	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 502H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
4,900.0	4,818.8	4,875.5	4,797.2	10.3	17.0	161.23	211.6	-10.6	670.6	649.4	21.21	31.611	
5,000.0	4,915.7	4,970.6	4,889.5	10.6	17.5	159.91	234.7	-11.6	697.4	675.7	21.66	32.201	
5,100.0	5,012.6	5,065.7	4,981.7	10.8	17.9	158.68	257.8	-12.7	724.4	702.3	22.11	32.767	
5,175.5	5,085.8	5,137.5	5,051.4	10.9	18.2	157.81	275.2	-13.5	745.1	722.6	22.44	33.200	
5,200.0	5,109.5	5,160.9	5,074.0	11.0	18.4	157.56	280.9	-13.7	751.8	729.2	22.54	33.346	
5,300.0	5,206.8	5,256.2	5,166.5	11.2	18.8	156.57	304.1	-14.8	778.2	755.2	23.02	33.808	
5,400.0	5,304.4	5,351.9	5,259.3	11.4	19.2	155.59	327.3	-15.8	803.5	780.0	23.50	34.192	
5,500.0	5,402.3	5,447.8	5,352.3	11.6	19.7	154.63	350.6	-16.9	827.4	803.4	23.99	34.493	
5,600.0	5,500.6	5,544.0	5,445.6	11.8	20.1	153.67	374.0	-18.0	850.1	825.6	24.49	34.717	
5,700.0	5,599.3	5,640.4	5,539.1	12.0	20.6	152.71	397.4	-19.0	871.5	846.5	25.00	34.867	
5,800.0	5,698.2	5,737.0	5,632.8	12.2	21.0	151.75	420.9	-20.1	891.7	866.2	25.51	34.950	
5,900.0	5,797.3	5,833.7	5,726.7	12.4	21.5	150.78	444.4	-21.2	910.7	884.7	26.05	34.967	
6,000.0	5,896.6	5,930.6	5,820.6	12.6	22.0	149.80	468.0	-22.2	928.6	902.0	26.59	34.925	
6,100.0	5,996.2	6,028.1	5,915.2	12.8	22.4	148.79	491.6	-23.3	945.2	918.1	27.14	34.834	
6,200.0	6,095.8	6,131.7	6,015.9	12.9	22.9	147.76	515.7	-24.4	960.4	932.7	27.71	34.655	
6,300.0	6,195.7	6,236.1	6,117.9	13.1	23.4	146.79	538.2	-25.4	973.7	945.5	28.28	34.427	
6,400.0	6,295.6	6,341.3	6,221.0	13.3	23.9	145.88	558.9	-26.4	985.2	956.4	28.84	34.158	
6,500.0	6,395.5	6,447.2	6,325.2	13.4	24.3	145.01	577.9	-27.2	994.7	965.4	29.38	33.854	
9,400.0	9,295.5	10,173.0	9,725.0	15.2	26.4	89.67	135.1	-28.0	984.2	950.9	33.27	29.581	
9,477.0	9,372.5	10,173.0	9,725.0	15.3	26.4	89.67	135.1	-28.0	953.1	920.2	32.94	28.931	
9,500.0	9,395.5	10,172.5	9,725.0	15.3	26.4	90.98	135.6	-28.0	944.8	912.0	32.84	28.770	
9,525.0	9,420.4	10,170.6	9,725.0	15.3	26.4	91.93	137.5	-28.0	936.4	903.7	32.73	28.613	
9,550.0	9,445.2	10,167.5	9,725.0	15.3	26.4	92.71	140.7	-28.0	928.7	896.1	32.61	28.474	
9,575.0	9,469.8	10,163.0	9,725.0	15.3	26.4	93.31	145.1	-28.1	921.6	889.1	32.50	28.353	
9,600.0	9,494.2	10,157.3	9,725.0	15.3	26.4	93.75	150.8	-28.1	915.1	882.7	32.39	28.250	
9,625.0	9,518.2	10,150.3	9,725.0	15.4	26.4	94.03	157.8	-28.1	909.4	877.1	32.29	28.163	
9,650.0	9,541.7	10,142.0	9,725.0	15.4	26.4	94.15	166.1	-28.2	904.3	872.1	32.19	28.093	
9,675.0	9,564.9	10,132.6	9,725.0	15.4	26.4	94.12	175.6	-28.2	899.9	867.8	32.09	28.039	
9,700.0	9,587.5	10,120.9	9,725.0	15.4	26.4	93.90	187.2	-28.3	896.1	864.1	32.00	28.003	
9,725.0	9,609.5	10,105.5	9,724.6	15.4	26.4	93.40	202.6	-28.4	893.0	861.0	31.90	27.988	
9,750.0	9,630.9	10,090.5	9,723.8	15.4	26.4	92.85	217.6	-28.5	890.4	858.5	31.83	27.976	
9,775.0	9,651.5	10,075.7	9,722.5	15.5	26.5	92.26	232.4	-28.6	888.3	856.6	31.76	27.967	
9,800.0	9,671.4	10,061.1	9,720.8	15.5	26.5	91.63	246.8	-28.6	886.9	855.1	31.72	27.962	
9,825.0	9,690.5	10,046.8	9,718.7	15.5	26.5	90.96	261.0	-28.7	885.9	854.2	31.68	27.963	
9,850.0	9,708.7	10,032.6	9,716.2	15.5	26.5	90.24	275.0	-28.8	885.5	853.8	31.66	27.969	
9,860.0	9,715.7	10,027.0	9,715.1	15.5	26.5	89.94	280.5	-28.8	885.4	853.8	31.65	27.973	
9,875.0	9,726.0	10,018.5	9,713.3	15.5	26.5	89.48	288.7	-28.9	885.5	853.9	31.65	27.981	
9,900.0	9,742.3	10,004.6	9,710.1	15.5	26.5	88.69	302.3	-29.0	886.0	854.4	31.64	28.000	
9,925.0	9,757.6	9,990.8	9,706.4	15.6	26.6	87.86	315.6	-29.0	887.0	855.3	31.65	28.024	
9,950.0	9,771.8	9,977.1	9,702.5	15.6	26.6	87.00	328.7	-29.1	888.4	856.7	31.66	28.055	
9,975.0	9,785.0	9,963.4	9,698.1	15.6	26.6	86.12	341.7	-29.2	890.1	858.4	31.69	28.091	
10,000.0	9,797.0	9,950.0	9,693.5	15.6	26.6	85.21	354.3	-29.3	892.2	860.5	31.72	28.133	
10,025.0	9,807.9	9,936.4	9,688.5	15.6	26.7	84.27	367.0	-29.3	894.7	862.9	31.75	28.178	
10,050.0	9,817.5	9,925.0	9,684.0	15.6	26.7	83.41	377.4	-29.4	897.5	865.7	31.80	28.224	
10,075.0	9,826.0	9,909.5	9,677.5	15.6	26.7	82.36	391.4	-29.5	900.5	868.7	31.84	28.279	
10,100.0	9,833.2	9,896.2	9,671.5	15.7	26.8	81.38	403.4	-29.5	903.8	871.9	31.90	28.332	
10,125.0	9,839.1	9,882.9	9,665.2	15.7	26.8	80.40	415.1	-29.6	907.3	875.3	31.96	28.386	
10,150.0	9,843.8	9,869.6	9,658.7	15.7	26.8	79.42	426.6	-29.7	910.9	878.9	32.03	28.440	
10,175.0	9,847.1	9,856.4	9,651.8	15.7	26.9	78.45	437.9	-29.7	914.8	882.7	32.11	28.491	
10,200.0	9,849.2	9,843.2	9,644.6	15.7	26.9	77.48	449.0	-29.8	918.7	886.5	32.19	28.541	
10,227.0	9,850.0	9,825.0	9,634.2	15.8	27.0	76.30	463.9	-29.9	923.1	890.8	32.28	28.601	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design:		FURY ROAD PROJECT - _FURY ROAD FED COM 502H - OWB - PWP0											Offset Site Error:		0.0 usft	
Survey Program:		0-r.5 MWD+IFR1											Offset Well Error:		0.0 usft	
Reference		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:			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)	No-Go Distance (usft)	Separation Factor				
10,300.0	9,850.0	9,792.7	9,614.4	15.9	27.1	75.10	489.4	-30.0	936.7	904.1	32.60	28.728				
10,400.0	9,850.0	9,750.0	9,585.6	16.2	27.3	73.37	521.0	-30.2	960.8	927.6	33.17	28.967				
10,500.0	9,850.0	9,713.0	9,558.5	16.5	27.4	71.78	546.1	-30.4	991.6	957.7	33.85	29.290				

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
0.0	0.0	0.0	0.0	0.0	0.0	-177.46	-450.9	-20.0	451.4	450.9	0.51	883.861	
100.0	100.0	100.0	100.0	0.9	1.2	-177.46	-450.9	-20.0	451.4	448.8	2.60	173.930	
200.0	200.0	200.0	200.0	1.2	1.7	-177.46	-450.9	-20.0	451.4	447.9	3.47	130.031	
300.0	300.0	300.0	300.0	1.5	2.1	-177.46	-450.9	-20.0	451.4	447.2	4.15	108.710	
400.0	400.0	400.0	400.0	1.8	2.4	-177.46	-450.9	-20.0	451.4	446.7	4.73	95.365	
500.0	500.0	500.0	500.0	2.0	2.7	-177.46	-450.9	-20.0	451.4	446.1	5.25	85.956	
600.0	600.0	600.0	600.0	2.2	3.0	-177.46	-450.9	-20.0	451.4	445.7	5.73	78.840	
700.0	700.0	700.0	700.0	2.4	3.2	-177.46	-450.9	-20.0	451.4	445.2	6.17	73.202	
800.0	800.0	800.0	800.0	2.6	3.5	-177.46	-450.9	-20.0	451.4	444.8	6.58	68.585	
900.0	900.0	900.0	900.0	2.8	3.7	-177.46	-450.9	-20.0	451.4	444.4	6.98	64.709	
1,000.0	1,000.0	1,000.0	1,000.0	3.0	3.9	-177.46	-450.9	-20.0	451.4	444.0	7.35	61.391	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	4.1	-177.46	-450.9	-20.0	451.4	443.7	7.72	58.507	
1,200.0	1,200.0	1,200.0	1,200.0	3.3	4.3	-177.46	-450.9	-20.0	451.4	443.3	8.07	55.968	
1,300.0	1,300.0	1,300.0	1,300.0	3.5	4.5	-177.46	-450.9	-20.0	451.4	443.0	8.40	53.709	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	4.7	-177.46	-450.9	-20.0	451.4	442.6	8.73	51.681	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	4.8	-177.46	-450.9	-20.0	451.4	442.3	9.06	49.847	
1,600.0	1,600.0	1,600.0	1,600.0	3.9	5.0	-177.46	-450.9	-20.0	451.4	442.0	9.37	48.177	
1,700.0	1,700.0	1,711.8	1,711.8	4.1	5.3	-177.26	-449.4	-21.5	450.1	440.3	9.75	46.174	
1,800.0	1,800.0	1,823.3	1,823.1	4.2	5.6	-176.63	-444.8	-26.2	446.2	436.0	10.12	44.103	
1,900.0	1,900.0	1,934.3	1,933.6	4.3	5.9	-94.06	-437.2	-33.8	439.9	429.4	10.46	42.056	
2,000.0	1,999.8	2,044.8	2,043.0	4.5	6.2	-93.49	-426.6	-44.4	431.4	420.5	10.85	39.750	
2,100.0	2,099.5	2,154.6	2,151.1	4.7	6.6	-93.01	-413.1	-57.9	420.7	409.4	11.25	37.398	
2,200.0	2,198.7	2,263.7	2,257.8	4.9	7.0	-92.63	-396.8	-74.1	407.8	396.1	11.65	35.000	
2,300.0	2,297.5	2,367.5	2,358.4	5.1	7.3	-92.41	-379.0	-92.0	393.0	381.0	12.01	32.709	
2,400.0	2,395.6	2,466.3	2,454.2	5.4	7.6	-92.65	-361.6	-109.4	378.0	365.6	12.41	30.455	
2,500.0	2,493.1	2,565.2	2,549.9	5.6	7.9	-93.45	-344.3	-126.8	363.3	350.4	12.85	28.280	
2,514.5	2,507.1	2,579.5	2,563.8	5.6	8.0	-93.61	-341.7	-129.3	361.1	348.2	12.90	28.001	
2,600.0	2,590.0	2,664.0	2,645.6	5.8	8.3	-94.39	-326.9	-144.1	348.7	335.4	13.31	26.206	
2,700.0	2,686.9	2,762.7	2,741.3	6.0	8.6	-95.38	-309.6	-161.5	334.2	320.4	13.79	24.229	
2,800.0	2,783.8	2,861.5	2,837.0	6.1	9.0	-96.46	-292.2	-178.9	319.8	305.5	14.30	22.357	
2,900.0	2,880.7	2,960.3	2,932.6	6.3	9.4	-97.63	-274.8	-196.2	305.5	290.7	14.84	20.588	
3,000.0	2,977.6	3,059.1	3,028.3	6.5	9.8	-98.93	-257.5	-213.6	291.4	276.0	15.40	18.920	
3,100.0	3,074.5	3,157.8	3,124.0	6.7	10.2	-100.35	-240.1	-231.0	277.4	261.5	15.99	17.349	
3,200.0	3,171.4	3,256.6	3,219.7	6.9	10.6	-101.92	-222.8	-248.3	263.7	247.1	16.61	15.872	
3,300.0	3,268.3	3,355.4	3,315.3	7.1	11.0	-103.66	-205.4	-265.7	250.1	232.8	17.26	14.488	
3,400.0	3,365.2	3,454.1	3,411.0	7.3	11.4	-105.59	-188.1	-283.1	236.8	218.9	17.95	13.193	
3,500.0	3,462.1	3,552.9	3,506.7	7.4	11.8	-107.76	-170.7	-300.5	223.8	205.1	18.67	11.986	
3,600.0	3,559.0	3,651.7	3,602.3	7.6	12.2	-110.18	-153.4	-317.8	211.1	191.7	19.43	10.864	
3,700.0	3,655.9	3,750.5	3,698.0	7.8	12.7	-112.90	-136.0	-335.2	198.9	178.7	20.24	9.829	
3,800.0	3,752.8	3,849.2	3,793.7	8.0	13.1	-115.97	-118.7	-352.6	187.2	166.1	21.08	8.879	
3,900.0	3,849.7	3,948.0	3,889.4	8.2	13.6	-119.43	-101.3	-369.9	176.1	154.1	21.97	8.016	
4,000.0	3,946.7	4,046.8	3,985.0	8.5	14.0	-123.34	-84.0	-387.3	165.7	142.8	22.88	7.241	
4,100.0	4,043.6	4,145.6	4,080.7	8.7	14.4	-127.74	-66.6	-404.7	156.2	132.4	23.81	6.559	
4,200.0	4,140.5	4,244.3	4,176.4	8.9	14.9	-132.67	-49.3	-422.0	147.7	123.0	24.73	5.971	
4,300.0	4,237.4	4,343.1	4,272.1	9.1	15.3	-138.13	-31.9	-439.4	140.4	114.8	25.62	5.483	
4,400.0	4,334.3	4,441.9	4,367.7	9.3	15.8	-144.12	-14.6	-456.8	134.6	108.2	26.41	5.098	
4,500.0	4,431.2	4,540.6	4,463.4	9.5	16.3	-150.56	2.8	-474.1	130.4	103.4	27.07	4.819	
4,600.0	4,528.1	4,639.4	4,559.1	9.7	16.7	-157.33	20.1	-491.5	128.0	100.5	27.54	4.649	
4,677.8	4,603.5	4,716.3	4,633.6	9.9	17.1	-162.71	33.6	-505.0	127.4	99.7	27.76	4.590 CC, ES	
4,700.0	4,625.0	4,738.2	4,654.8	9.9	17.2	-164.25	37.5	-508.9	127.5	99.7	27.81	4.585	
4,800.0	4,721.9	4,837.0	4,750.4	10.1	17.6	-171.13	54.8	-526.2	128.9	101.0	27.87	4.623	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 521H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
4,900.0	4,818.8	4,935.7	4,846.1	10.3	18.1	-177.77	72.2	-543.6	132.1	104.3	27.77	4.756	
5,000.0	4,915.7	5,034.5	4,941.8	10.6	18.6	175.98	89.5	-561.0	137.0	109.4	27.57	4.970	
5,100.0	5,012.6	5,133.3	5,037.4	10.8	19.0	170.22	106.9	-578.3	143.5	116.2	27.31	5.254	
5,175.5	5,085.8	5,207.8	5,109.7	10.9	19.4	166.22	120.0	-591.4	149.3	122.2	27.10	5.507	
5,200.0	5,109.5	5,232.1	5,133.1	11.0	19.5	164.99	124.2	-595.7	151.3	124.2	27.03	5.595	
5,300.0	5,206.8	5,330.9	5,228.8	11.2	20.0	160.17	141.6	-613.1	159.0	132.2	26.80	5.933	
5,400.0	5,304.4	5,429.7	5,324.6	11.4	20.4	155.58	159.0	-630.4	166.2	139.6	26.57	6.254	
5,500.0	5,402.3	5,528.6	5,420.4	11.6	20.9	151.13	176.3	-647.8	172.9	146.5	26.37	6.556	
5,600.0	5,500.6	5,627.5	5,516.1	11.8	21.4	146.74	193.7	-665.2	179.1	152.9	26.19	6.836	
5,700.0	5,599.3	5,726.3	5,611.9	12.0	21.8	142.35	211.1	-682.6	184.9	158.8	26.07	7.092	
5,800.0	5,698.2	5,825.0	5,707.5	12.2	22.3	137.90	228.4	-700.0	190.5	164.4	26.02	7.320	
5,900.0	5,797.3	5,923.7	5,803.0	12.4	22.8	133.39	245.7	-717.3	196.0	169.9	26.08	7.515	
6,000.0	5,896.6	6,022.2	5,898.4	12.6	23.3	128.77	263.0	-734.6	201.6	175.3	26.28	7.671	
6,100.0	5,996.2	6,120.5	5,993.7	12.8	23.7	124.06	280.3	-751.9	207.5	180.8	26.66	7.783	
6,200.0	6,095.8	6,218.6	6,088.7	12.9	24.2	119.26	297.5	-769.2	213.9	186.7	27.25	7.850	
6,300.0	6,195.7	6,316.5	6,183.6	13.1	24.7	114.38	314.7	-786.4	221.1	193.0	28.07	7.877	
6,400.0	6,295.6	6,414.2	6,278.2	13.3	25.1	109.47	331.9	-803.5	229.3	200.2	29.12	7.873	
6,500.0	6,395.5	6,511.6	6,372.5	13.4	25.6	104.56	349.0	-820.7	238.7	208.3	30.39	7.855	
6,600.0	6,495.5	6,608.6	6,466.5	13.5	26.1	99.70	366.0	-837.7	249.6	217.8	31.84	7.840	
6,604.5	6,500.0	6,612.9	6,470.7	13.5	26.1	17.58	366.8	-838.5	250.1	218.2	31.91	7.839	
6,700.0	6,595.5	6,705.5	6,560.3	13.6	26.5	13.08	383.1	-854.8	262.2	228.8	33.36	7.858	
6,800.0	6,695.5	6,802.3	6,654.1	13.6	27.0	8.79	400.1	-871.8	276.4	241.5	34.88	7.923	
6,900.0	6,795.5	6,899.2	6,747.9	13.7	27.5	4.92	417.1	-888.8	292.0	255.7	36.36	8.033	
7,000.0	6,895.5	6,996.0	6,841.8	13.8	27.9	1.45	434.1	-905.8	308.9	271.1	37.76	8.180	
7,100.0	6,995.5	7,092.9	6,935.6	13.8	28.4	-1.67	451.1	-922.9	326.8	287.7	39.09	8.359	
7,200.0	7,095.5	7,189.8	7,029.4	13.9	28.9	-4.46	468.1	-939.9	345.5	305.2	40.35	8.564	
7,300.0	7,195.5	7,286.6	7,123.2	13.9	29.4	-6.97	485.2	-956.9	365.0	323.5	41.54	8.788	
7,400.0	7,295.5	7,383.5	7,217.0	14.0	29.8	-9.22	502.2	-974.0	385.1	342.4	42.66	9.027	
7,500.0	7,395.5	7,480.4	7,310.9	14.0	30.3	-11.26	519.2	-991.0	405.7	362.0	43.73	9.278	
7,600.0	7,495.5	7,579.2	7,406.7	14.1	30.8	-13.13	536.5	-1,008.3	426.7	382.0	44.75	9.536	
7,700.0	7,595.5	7,683.3	7,507.8	14.2	31.3	-14.81	553.7	-1,025.6	447.0	401.2	45.73	9.773	
7,800.0	7,695.5	7,788.3	7,610.3	14.2	31.8	-16.24	569.8	-1,041.7	465.9	419.3	46.65	9.987	
7,900.0	7,795.5	7,894.0	7,714.0	14.3	32.3	-17.46	584.6	-1,056.5	483.5	436.0	47.50	10.179	
8,000.0	7,895.5	8,000.5	7,818.7	14.4	32.7	-18.49	598.2	-1,070.1	499.6	451.3	48.29	10.346	
8,100.0	7,995.5	8,107.8	7,924.5	14.4	33.2	-19.36	610.5	-1,082.4	514.2	465.2	49.02	10.489	
8,200.0	8,095.5	8,215.6	8,031.3	14.5	33.7	-20.10	621.4	-1,093.4	527.2	477.5	49.70	10.607	
8,300.0	8,195.5	8,324.0	8,138.8	14.5	34.1	-20.71	631.0	-1,102.9	538.6	488.3	50.33	10.701	
8,400.0	8,295.5	8,432.9	8,247.1	14.6	34.6	-21.21	639.2	-1,111.1	548.3	497.4	50.90	10.771	
8,500.0	8,395.5	8,542.2	8,355.9	14.7	35.0	-21.60	645.9	-1,117.8	556.2	504.8	51.42	10.818	
8,600.0	8,495.5	8,651.8	8,465.3	14.7	35.4	-21.91	651.1	-1,123.1	562.5	510.6	51.88	10.842	
8,700.0	8,595.5	8,761.6	8,575.0	14.8	35.8	-22.12	654.9	-1,126.9	567.0	514.7	52.27	10.847	
8,800.0	8,695.5	8,871.6	8,685.0	14.8	36.1	-22.25	657.2	-1,129.2	569.7	517.1	52.59	10.834	
8,900.0	8,795.5	8,981.7	8,795.1	14.9	36.3	-22.29	658.1	-1,130.0	570.7	518.0	52.72	10.824	
9,000.0	8,895.5	9,082.2	8,895.5	15.0	36.3	-22.29	658.1	-1,130.0	570.7	517.9	52.81	10.806	
9,100.0	8,995.5	9,182.2	8,995.5	15.0	36.4	-22.29	658.1	-1,130.0	570.7	517.8	52.90	10.788	
9,200.0	9,095.5	9,282.2	9,095.5	15.1	36.4	-22.29	658.1	-1,130.0	570.7	517.7	52.98	10.771	
9,300.0	9,195.5	9,382.2	9,195.5	15.2	36.4	-22.29	658.1	-1,130.0	570.7	517.6	53.07	10.754	
9,400.0	9,295.5	9,482.2	9,295.5	15.2	36.5	-22.29	658.1	-1,130.0	570.7	517.5	53.15	10.737	
9,477.0	9,372.5	9,559.2	9,372.5	15.3	36.5	-22.29	658.1	-1,130.0	570.7	517.5	53.21	10.725	
9,500.0	9,395.5	9,582.2	9,395.5	15.3	36.5	-22.06	658.1	-1,130.0	570.2	516.9	53.24	10.710	
9,525.0	9,420.4	9,607.1	9,420.4	15.3	36.5	-22.20	658.1	-1,130.0	568.5	515.2	53.28	10.670	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: FURY ROAD PROJECT - _FURY ROAD FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
9,550.0	9,445.2	9,631.9	9,445.2	15.3	36.5	-22.46	658.1	-1,130.0	565.5	512.2	53.33	10.605	
9,575.0	9,469.8	9,656.5	9,469.8	15.3	36.5	-22.83	658.1	-1,130.0	561.4	508.0	53.39	10.516	
9,600.0	9,494.2	9,680.8	9,494.2	15.3	36.5	-23.31	658.1	-1,130.0	556.1	502.6	53.46	10.402	
9,625.0	9,518.2	9,704.8	9,518.2	15.4	36.6	-23.92	658.1	-1,130.0	549.7	496.1	53.55	10.265	
9,650.0	9,541.7	9,728.4	9,541.7	15.4	36.6	-24.67	658.1	-1,130.0	542.1	488.4	53.64	10.105	
9,675.0	9,564.9	9,751.6	9,564.9	15.4	36.6	-25.56	658.1	-1,130.0	533.4	479.6	53.75	9.924	
9,700.0	9,587.5	9,774.2	9,587.5	15.4	36.6	-26.62	658.1	-1,130.0	523.6	469.8	53.86	9.721	
9,725.0	9,609.5	9,796.2	9,609.5	15.4	36.6	-27.86	658.1	-1,130.0	512.8	458.9	53.99	9.498	
9,750.0	9,630.9	9,817.6	9,630.9	15.4	36.6	-29.31	658.1	-1,130.0	501.1	447.0	54.13	9.256	
9,775.0	9,651.5	9,838.2	9,651.5	15.5	36.6	-30.98	658.1	-1,130.0	488.4	434.1	54.28	8.997	
9,800.0	9,671.4	9,858.1	9,671.4	15.5	36.6	-32.90	658.1	-1,130.0	474.8	420.4	54.45	8.721	
9,825.0	9,690.5	9,877.2	9,690.5	15.5	36.6	-35.11	658.1	-1,130.0	460.5	405.9	54.62	8.431	
9,850.0	9,708.7	9,895.4	9,708.7	15.5	36.6	-37.64	658.1	-1,130.0	445.4	390.6	54.80	8.128	
9,875.0	9,726.0	9,912.7	9,726.0	15.5	36.6	-40.50	658.1	-1,130.0	429.6	374.6	54.99	7.813	
9,900.0	9,742.3	9,929.0	9,742.3	15.5	36.6	-43.72	658.1	-1,130.0	413.3	358.1	55.18	7.490	
9,925.0	9,757.6	9,944.3	9,757.6	15.6	36.6	-47.30	658.1	-1,130.0	396.5	341.1	55.37	7.161	
9,950.0	9,771.8	9,958.5	9,771.8	15.6	36.6	-51.24	658.1	-1,130.0	379.4	323.8	55.57	6.828	
9,975.0	9,785.0	9,971.7	9,785.0	15.6	36.6	-55.48	658.1	-1,130.0	362.0	306.3	55.75	6.494	
10,000.0	9,797.0	9,983.7	9,797.0	15.6	36.6	-59.97	658.1	-1,130.0	344.6	288.7	55.90	6.164	
10,025.0	9,807.9	9,994.6	9,807.9	15.6	36.7	-64.58	658.1	-1,130.0	327.2	271.2	56.02	5.841	
10,050.0	9,817.5	10,004.2	9,817.5	15.6	36.7	-69.17	658.1	-1,130.0	310.1	254.1	56.08	5.530	
10,075.0	9,826.0	10,015.2	9,828.5	15.6	36.7	-74.20	658.0	-1,130.0	293.5	237.6	55.97	5.244	
10,100.0	9,833.2	10,026.2	9,839.5	15.7	36.6	-79.30	657.8	-1,130.0	277.6	221.9	55.67	4.986	
10,125.0	9,839.1	10,033.6	9,846.9	15.7	36.6	-83.43	657.4	-1,130.0	262.6	207.4	55.25	4.753	
10,150.0	9,843.8	10,038.2	9,851.6	15.7	36.6	-86.58	657.2	-1,130.0	249.1	194.4	54.66	4.557	
10,175.0	9,847.1	10,040.6	9,853.9	15.7	36.6	-88.82	657.0	-1,130.0	237.3	183.4	53.82	4.409	
10,200.0	9,849.2	10,041.1	9,854.4	15.7	36.6	-90.22	657.0	-1,130.0	227.6	174.9	52.67	4.320	
10,227.0	9,850.0	10,039.9	9,853.2	15.8	36.6	-90.88	657.1	-1,130.0	219.8	168.8	51.05	4.306 SF	
10,277.8	9,850.0	10,036.7	9,850.0	15.9	36.6	-90.00	657.3	-1,130.0	213.9	166.8	47.06	4.545	
10,300.0	9,850.0	10,035.5	9,848.8	15.9	36.6	-89.68	657.3	-1,130.0	215.0	169.9	45.12	4.766	
10,400.0	9,850.0	10,031.1	9,844.4	16.2	36.6	-88.51	657.6	-1,130.0	246.2	207.9	38.32	6.426	
10,500.0	9,850.0	10,025.0	9,838.3	16.5	36.6	-86.88	657.8	-1,130.0	308.2	271.4	36.87	8.360	
10,600.0	9,850.0	10,025.0	9,838.3	16.9	36.6	-86.88	657.8	-1,130.0	386.4	348.5	37.91	10.194	
10,700.0	9,850.0	10,025.0	9,838.3	17.3	36.6	-86.88	657.8	-1,130.0	472.9	433.6	39.34	12.022	
10,800.0	9,850.0	10,025.0	9,838.3	17.7	36.6	-86.88	657.8	-1,130.0	563.9	523.3	40.59	13.893	
10,900.0	9,850.0	10,025.0	9,838.3	18.2	36.6	-86.88	657.8	-1,130.0	657.5	615.9	41.59	15.808	
11,000.0	9,850.0	10,020.1	9,833.4	18.7	36.6	-85.58	657.9	-1,130.0	752.7	710.4	42.37	17.764	
11,100.0	9,850.0	10,019.3	9,832.6	19.2	36.6	-85.36	658.0	-1,130.0	849.1	806.0	43.02	19.737	
11,200.0	9,850.0	10,018.6	9,831.9	19.7	36.7	-85.17	658.0	-1,130.0	946.1	902.6	43.55	21.726	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: IRON THRONE PROJECT - FORTY NINER RIDGE UNIT 105H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 113-r.5 MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			
9,575.0	9,469.8	11,563.3	9,749.8	15.3	35.3	-95.46	100.8	-1,865.4	992.9	939.2	53.74	18.477	
9,600.0	9,494.2	11,568.3	9,749.6	15.3	35.4	-95.95	105.8	-1,865.7	986.6	932.6	53.92	18.298	
9,625.0	9,518.2	11,574.6	9,749.3	15.4	35.5	-96.28	112.0	-1,866.0	980.9	926.8	54.11	18.128	
9,650.0	9,541.7	11,582.1	9,749.0	15.4	35.6	-96.46	119.5	-1,866.4	975.9	921.6	54.31	17.968	
9,675.0	9,564.9	11,590.8	9,748.7	15.4	35.7	-96.49	128.3	-1,866.9	971.6	917.1	54.53	17.818	
9,700.0	9,587.5	11,600.8	9,748.2	15.4	35.9	-96.38	138.2	-1,867.4	968.0	913.3	54.76	17.677	
9,725.0	9,609.5	11,611.8	9,747.8	15.4	36.1	-96.13	149.2	-1,868.0	965.1	910.1	55.00	17.546	
9,750.0	9,630.9	11,624.0	9,747.2	15.4	36.2	-95.77	161.4	-1,868.6	962.8	907.5	55.26	17.423	
9,775.0	9,651.5	11,639.7	9,746.5	15.5	36.5	-95.18	177.0	-1,869.4	961.1	905.5	55.59	17.290	
9,800.0	9,671.4	11,657.3	9,745.8	15.5	36.8	-94.46	194.6	-1,870.2	959.9	904.0	55.95	17.156	
9,825.0	9,690.5	11,676.5	9,745.1	15.5	37.1	-93.64	213.8	-1,871.1	959.2	902.9	56.34	17.025	
9,850.0	9,708.7	11,697.3	9,744.5	15.5	37.4	-92.75	234.5	-1,871.9	958.9	902.2	56.76	16.895	
9,859.7	9,715.6	11,705.7	9,744.2	15.5	37.5	-92.38	243.0	-1,872.2	958.9	902.0	56.93	16.844	
9,875.0	9,726.0	11,719.5	9,743.9	15.5	37.7	-91.80	256.7	-1,872.6	959.0	901.8	57.20	16.764	
9,900.0	9,742.3	11,742.6	9,743.5	15.5	38.1	-90.85	279.8	-1,873.3	959.3	901.6	57.66	16.637	
9,925.0	9,757.6	11,766.9	9,743.2	15.6	38.5	-89.88	304.1	-1,873.9	959.7	901.6	58.14	16.508	
9,950.0	9,771.8	11,792.5	9,743.0	15.6	38.9	-88.93	329.7	-1,874.4	960.4	901.7	58.64	16.377	
9,975.0	9,785.0	11,819.2	9,742.9	15.6	39.3	-88.01	356.4	-1,874.7	961.0	901.9	59.17	16.243	
10,000.0	9,797.0	11,840.4	9,742.9	15.6	39.6	-87.31	377.6	-1,875.0	961.8	902.2	59.57	16.147	
10,025.0	9,807.9	11,863.2	9,742.8	15.6	40.0	-86.62	400.4	-1,875.3	962.6	902.6	60.00	16.043	
10,050.0	9,817.5	11,886.5	9,742.7	15.6	40.3	-85.98	423.7	-1,875.5	963.5	903.0	60.45	15.938	
10,075.0	9,826.0	11,909.0	9,742.6	15.6	40.7	-85.42	446.2	-1,875.8	964.3	903.4	60.89	15.838	
10,100.0	9,833.2	11,932.2	9,742.4	15.7	41.1	-84.92	469.4	-1,876.0	965.1	903.8	61.34	15.734	
10,125.0	9,839.1	11,954.6	9,742.3	15.7	41.4	-84.50	491.8	-1,876.3	965.9	904.2	61.79	15.633	
10,150.0	9,843.8	11,977.3	9,742.3	15.7	41.8	-84.16	514.5	-1,876.7	966.7	904.4	62.25	15.530	
10,175.0	9,847.1	12,003.0	9,742.3	15.7	42.2	-83.88	540.2	-1,877.2	967.4	904.6	62.78	15.409	
10,200.0	9,849.2	12,023.5	9,742.3	15.7	42.5	-83.72	560.7	-1,877.6	968.0	904.8	63.21	15.314	
10,227.0	9,850.0	12,048.9	9,742.3	15.8	42.9	-83.62	586.0	-1,878.1	968.5	904.7	63.75	15.192	
10,300.0	9,850.0	12,124.3	9,742.6	15.9	44.1	-83.64	661.4	-1,879.9	969.9	904.5	65.40	14.830	
10,400.0	9,850.0	12,236.4	9,741.5	16.2	45.9	-83.58	773.5	-1,880.9	970.3	902.4	67.88	14.295	
10,500.0	9,850.0	12,344.1	9,739.7	16.5	47.6	-83.48	881.2	-1,881.4	970.5	900.2	70.27	13.811	
10,600.0	9,850.0	12,450.0	9,741.4	16.9	49.3	-83.57	987.0	-1,880.9	969.4	896.7	72.66	13.341	
10,700.0	9,850.0	12,555.7	9,742.2	17.3	51.0	-83.61	1,092.7	-1,880.1	968.0	893.0	75.06	12.897	
10,800.0	9,850.0	12,649.2	9,742.0	17.7	52.5	-83.59	1,186.3	-1,879.1	966.5	889.3	77.22	12.517	
10,900.0	9,850.0	12,741.7	9,741.7	18.2	53.9	-83.56	1,278.8	-1,878.9	965.8	886.4	79.37	12.169	
10,922.3	9,850.0	12,761.0	9,741.7	18.3	54.2	-83.56	1,298.1	-1,878.9	965.7	885.9	79.82	12.099	
11,000.0	9,850.0	12,825.6	9,742.2	18.7	55.3	-83.59	1,362.6	-1,879.7	966.2	884.9	81.35	11.878	
11,100.0	9,850.0	12,918.1	9,743.7	19.2	56.8	-83.70	1,455.2	-1,882.1	968.2	884.6	83.54	11.589	
11,200.0	9,850.0	13,017.9	9,745.0	19.7	58.4	-83.79	1,554.8	-1,884.9	970.3	884.4	85.92	11.294	
11,300.0	9,850.0	13,129.2	9,744.9	20.3	60.2	-83.80	1,666.2	-1,887.4	972.1	883.5	88.56	10.976	
11,400.0	9,850.0	13,206.3	9,743.8	20.9	61.5	-83.74	1,743.2	-1,889.1	974.1	883.6	90.42	10.772	
11,500.0	9,850.0	13,300.2	9,744.5	21.5	63.0	-83.81	1,837.0	-1,893.5	978.1	885.4	92.70	10.552	
11,600.0	9,850.0	13,399.7	9,745.5	22.1	64.6	-83.89	1,936.4	-1,898.0	982.0	886.9	95.12	10.324	
11,700.0	9,850.0	13,551.0	9,750.1	22.7	67.1	-84.18	2,087.5	-1,901.7	983.8	885.0	98.75	9.962	
11,800.0	9,850.0	13,670.2	9,754.5	23.4	69.0	-84.41	2,206.7	-1,899.8	981.2	879.6	101.58	9.660	
11,900.0	9,850.0	13,768.2	9,757.1	24.0	70.6	-84.55	2,304.5	-1,897.4	978.0	874.1	103.98	9.406	
12,000.0	9,850.0	13,867.4	9,752.7	24.7	72.2	-84.27	2,403.6	-1,894.6	975.2	868.9	106.36	9.169	
12,100.0	9,850.0	13,958.0	9,745.8	25.4	73.7	-83.85	2,493.9	-1,892.0	972.7	864.1	108.55	8.961	
12,200.0	9,850.0	14,100.4	9,741.8	26.1	76.0	-83.58	2,636.2	-1,887.6	969.8	858.1	111.68	8.683	
12,300.0	9,850.0	14,204.4	9,741.2	26.8	77.6	-83.51	2,739.9	-1,881.5	963.6	849.4	114.16	8.440	
12,400.0	9,850.0	14,299.5	9,739.1	27.5	79.2	-83.33	2,834.8	-1,875.4	956.9	840.4	116.50	8.214	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: IRON THRONE PROJECT - FORTY NINER RIDGE UNIT 105H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 113-r.5 MWD												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:							
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)	No-Go Distance (usft)	Separation Factor	Warning
12,500.0	9,850.0	14,388.6	9,739.2	28.2	80.6	-83.31	2,923.9	-1,871.2	951.7	832.9	118.78	8.012	
12,600.0	9,850.0	14,494.7	9,737.3	29.0	82.3	-83.15	3,029.7	-1,864.8	945.3	824.0	121.31	7.793	
12,700.0	9,850.0	14,559.0	9,737.5	29.7	83.4	-83.14	3,093.9	-1,862.6	941.5	818.3	123.18	7.643	
12,800.0	9,850.0	14,646.1	9,740.7	30.5	84.8	-83.32	3,181.0	-1,862.2	940.1	814.7	125.43	7.495	
12,874.6	9,850.0	14,715.7	9,743.9	31.0	86.0	-83.52	3,250.5	-1,862.7	940.0	812.7	127.22	7.388	
12,900.0	9,850.0	14,739.7	9,744.7	31.2	86.3	-83.57	3,274.5	-1,863.0	940.0	812.1	127.83	7.353	
13,000.0	9,850.0	14,861.1	9,746.0	32.0	88.3	-83.64	3,395.9	-1,862.6	939.1	808.3	130.77	7.181	
13,100.0	9,850.0	14,964.2	9,743.5	32.7	90.0	-83.47	3,498.9	-1,859.9	936.2	803.0	133.28	7.024	
13,200.0	9,850.0	15,041.9	9,741.2	33.5	91.3	-83.32	3,576.6	-1,859.1	935.1	799.8	135.31	6.911	
13,210.8	9,850.0	15,052.0	9,741.0	33.6	91.5	-83.31	3,586.7	-1,859.1	935.1	799.5	135.56	6.898	
13,300.0	9,850.0	15,138.1	9,743.1	34.3	92.9	-83.44	3,672.7	-1,860.0	935.3	797.6	137.75	6.790	
13,400.0	9,850.0	15,248.1	9,747.8	35.0	94.7	-83.73	3,782.6	-1,860.8	935.1	794.5	140.53	6.654	
13,500.0	9,850.0	15,349.7	9,752.8	35.8	96.3	-84.03	3,884.1	-1,860.9	934.2	791.0	143.13	6.527	
13,600.0	9,850.0	15,443.0	9,756.9	36.6	97.8	-84.28	3,977.3	-1,861.3	933.6	788.0	145.55	6.414	
13,613.1	9,850.0	15,454.8	9,757.3	36.7	98.0	-84.30	3,989.0	-1,861.3	933.6	787.7	145.85	6.401	
13,700.0	9,850.0	15,534.0	9,758.5	37.4	99.3	-84.38	4,068.3	-1,862.2	934.0	786.1	147.89	6.315	
13,800.0	9,850.0	15,623.2	9,757.6	38.2	100.8	-84.33	4,157.5	-1,863.6	935.2	785.0	150.14	6.228	
13,900.0	9,850.0	15,706.6	9,754.5	39.0	102.2	-84.16	4,240.8	-1,866.3	938.2	786.0	152.21	6.164	
14,000.0	9,850.0	15,817.3	9,752.3	39.8	104.0	-84.04	4,351.4	-1,869.9	941.1	786.1	155.00	6.072	
14,100.0	9,850.0	15,911.7	9,754.0	40.5	105.5	-84.17	4,445.6	-1,873.3	944.0	786.6	157.41	5.997	
14,200.0	9,850.0	16,007.8	9,754.2	41.3	107.1	-84.20	4,541.7	-1,877.1	947.5	787.6	159.86	5.927	
14,300.0	9,850.0	16,106.8	9,753.2	42.2	108.8	-84.16	4,640.6	-1,881.1	951.2	788.8	162.36	5.858	
14,400.0	9,850.0	16,228.7	9,757.3	43.0	110.8	-84.43	4,762.4	-1,886.0	954.4	788.9	165.52	5.766	
14,500.0	9,850.0	16,340.8	9,759.0	43.8	112.6	-84.53	4,874.4	-1,887.1	954.7	786.4	168.35	5.671	
14,600.0	9,850.0	16,435.9	9,756.7	44.6	114.2	-84.40	4,969.5	-1,887.7	955.1	784.3	170.76	5.593	
14,700.0	9,850.0	16,544.4	9,754.3	45.4	116.0	-84.25	5,078.0	-1,888.3	955.4	782.0	173.44	5.508	
14,800.0	9,850.0	16,646.0	9,752.4	46.2	117.6	-84.14	5,179.5	-1,888.3	955.1	779.1	175.99	5.427	
14,900.0	9,850.0	16,746.9	9,750.5	47.0	119.3	-84.02	5,280.4	-1,888.0	954.5	776.0	178.52	5.347	
14,925.6	9,850.0	16,767.9	9,750.2	47.2	119.6	-84.00	5,301.4	-1,888.1	954.5	775.4	179.07	5.330	
15,000.0	9,850.0	16,831.0	9,751.0	47.8	120.7	-84.05	5,364.5	-1,888.9	955.0	774.3	180.73	5.284	
15,100.0	9,850.0	16,967.5	9,752.4	48.6	122.9	-84.13	5,501.0	-1,888.6	954.1	770.1	184.00	5.185	
15,200.0	9,850.0	17,065.6	9,750.5	49.5	124.5	-83.99	5,599.0	-1,885.8	951.0	764.6	186.47	5.100	
15,300.0	9,850.0	17,156.4	9,744.3	50.3	126.0	-83.61	5,689.6	-1,884.2	949.5	760.7	188.75	5.030	
15,400.0	9,850.0	17,265.7	9,735.1	51.1	127.8	-83.04	5,798.4	-1,881.5	947.5	756.2	191.26	4.954	
15,500.0	9,850.0	17,365.8	9,721.7	51.9	129.4	-82.19	5,897.5	-1,877.7	945.0	751.5	193.50	4.884	
15,600.0	9,850.0	17,451.2	9,708.4	52.8	130.8	-81.37	5,981.9	-1,874.8	943.4	747.9	195.47	4.826	
15,630.4	9,850.0	17,475.7	9,706.2	53.0	131.2	-81.23	6,006.2	-1,874.5	943.3	747.2	196.06	4.811	
15,700.0	9,850.0	17,529.9	9,703.8	53.6	132.1	-81.09	6,060.4	-1,874.8	943.8	746.4	197.43	4.781	
15,800.0	9,850.0	17,611.4	9,703.4	54.4	133.5	-81.09	6,141.8	-1,877.6	946.7	747.2	199.50	4.745	
15,900.0	9,850.0	17,715.6	9,705.2	55.2	135.2	-81.23	6,245.9	-1,881.8	950.0	747.8	202.22	4.698	
16,000.0	9,850.0	17,817.1	9,707.3	56.1	136.9	-81.39	6,347.3	-1,885.9	953.1	748.3	204.88	4.652	
16,100.0	9,850.0	17,921.0	9,709.9	56.9	138.6	-81.57	6,451.1	-1,889.6	955.9	748.3	207.60	4.604	
16,200.0	9,850.0	18,023.0	9,714.9	57.7	140.2	-81.90	6,552.9	-1,893.5	958.4	748.0	210.33	4.556	
16,300.0	9,850.0	18,133.2	9,720.4	58.6	142.1	-82.25	6,662.9	-1,897.0	960.4	747.1	213.27	4.503	
16,400.0	9,850.0	18,237.2	9,724.4	59.4	143.8	-82.50	6,766.8	-1,899.1	961.4	745.4	216.00	4.451	
16,500.0	9,850.0	18,341.4	9,728.7	60.2	145.5	-82.76	6,870.9	-1,901.0	962.1	743.4	218.75	4.398	
16,600.0	9,850.0	18,466.4	9,734.2	61.1	147.6	-83.08	6,995.8	-1,901.3	961.4	739.5	221.88	4.333	
16,700.0	9,850.0	18,573.4	9,734.5	61.9	149.3	-83.08	7,102.7	-1,898.9	958.6	734.1	224.53	4.269	
16,800.0	9,850.0	18,666.1	9,733.5	62.7	150.8	-83.01	7,195.4	-1,897.2	956.4	729.5	226.94	4.214	
16,900.0	9,850.0	18,778.6	9,731.5	63.6	152.7	-82.86	7,307.9	-1,894.4	953.7	724.1	229.61	4.154	
16,997.0	9,850.0	18,884.9	9,733.5	64.4	154.4	-82.95	7,414.1	-1,891.0	949.9	717.7	232.22	4.091	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: IRON THRONE PROJECT - FORTY NINER RIDGE UNIT 105H - OWB - AWP													Offset Site Error:	0.0 usft
Survey Program: 113-r.5 MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Rule Assigned:				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)	No-Go Distance (usft)	Separation Factor		
17,000.0	9,850.0	18,888.0	9,733.6	64.4	154.5	-82.95	7,417.2	-1,890.8	949.8	717.5	232.29	4.089		
17,100.0	9,850.0	18,974.4	9,736.5	65.3	155.9	-83.08	7,503.4	-1,888.1	943.9	709.2	234.74	4.021		
17,200.0	9,850.0	19,046.5	9,739.1	66.1	157.1	-83.19	7,575.5	-1,887.6	937.0	700.2	236.87	3.956		
17,300.0	9,850.0	19,115.0	9,740.2	67.0	158.2	-83.20	7,644.0	-1,889.4	930.1	691.5	238.67	3.897		
17,400.0	9,850.0	19,201.3	9,740.8	67.8	159.6	-83.17	7,730.2	-1,893.6	922.2	681.4	240.83	3.829		
17,500.0	9,850.0	19,305.2	9,742.5	68.7	161.4	-83.17	7,833.9	-1,899.2	911.1	667.6	243.55	3.741		
17,600.0	9,850.0	19,387.1	9,741.8	69.5	162.7	-83.00	7,915.7	-1,903.8	897.3	651.8	245.47	3.655		
17,700.0	9,850.0	19,469.6	9,738.4	70.4	164.1	-82.63	7,997.9	-1,909.7	881.8	634.6	247.26	3.566		
17,782.0	9,850.0	19,537.3	9,736.0	71.1	165.2	-82.33	8,065.2	-1,915.7	868.0	619.4	248.66	3.491		
17,800.0	9,850.0	19,555.0	9,735.3	71.2	165.5	-82.26	8,082.9	-1,917.4	864.9	615.8	249.09	3.472		
17,900.0	9,850.0	19,580.0	9,734.3	72.1	165.9	-82.15	8,107.8	-1,919.8	850.5	603.3	247.24	3.440 ES, SF		
17,976.2	9,850.0	19,580.0	9,734.3	72.7	165.9	-82.15	8,107.8	-1,919.8	847.1	604.3	242.82	3.489 CC		
17,980.0	9,850.0	19,580.0	9,734.3	72.7	165.9	-82.15	8,107.8	-1,919.8	847.1	604.6	242.55	3.493		
18,000.0	9,850.0	19,580.0	9,734.3	72.9	165.9	-82.15	8,107.8	-1,919.8	847.5	606.5	241.05	3.516		
18,100.0	9,850.0	19,580.0	9,734.3	73.8	165.9	-82.12	8,107.8	-1,919.8	858.6	626.8	231.80	3.704		
18,200.0	9,850.0	19,580.0	9,734.3	74.6	165.9	-82.05	8,107.8	-1,919.8	884.2	664.0	220.24	4.015		
18,300.0	9,850.0	19,580.0	9,734.3	75.5	165.9	-81.93	8,107.8	-1,919.8	923.2	715.8	207.40	4.451		
18,400.0	9,850.0	19,580.0	9,734.3	76.4	165.9	-81.76	8,107.8	-1,919.8	973.9	779.6	194.30	5.012		

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: IRON THRONE PROJECT - FORTY NINER RIDGE UNIT 22 23 III FEDERAL COM 15H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 442-r.5 MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Rule Assigned:	
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)		No-Go Distance (usft)	Warning
6,800.0	6,695.5	8,543.2	7,313.2	13.6	40.8	180.00	-654.4	-913.5	998.5	951.5	46.92	21.279	
6,900.0	6,795.5	8,545.0	7,313.3	13.7	40.8	179.87	-654.4	-911.7	939.9	890.4	49.48	18.994	
7,000.0	6,895.5	8,547.0	7,313.3	13.8	40.9	179.72	-654.4	-909.7	888.7	836.6	52.13	17.047	
7,100.0	6,995.5	8,549.1	7,313.4	13.8	40.9	179.57	-654.3	-907.6	846.3	791.6	54.74	15.461	
7,200.0	7,095.5	8,551.5	7,313.4	13.9	41.0	179.40	-654.3	-905.3	814.1	756.9	57.13	14.250	
7,300.0	7,195.5	8,554.0	7,313.5	13.9	41.0	179.21	-654.2	-902.7	793.2	734.1	59.09	13.424	
7,400.0	7,295.5	8,556.9	7,313.6	14.0	41.1	179.00	-654.2	-899.9	784.5	724.1	60.44	12.981	
7,418.1	7,313.6	8,557.4	7,313.6	14.0	41.1	178.96	-654.2	-899.4	784.3	723.7	60.61	12.942 CC, ES	
7,500.0	7,395.5	8,560.0	7,313.7	14.0	41.1	178.77	-654.1	-896.8	788.6	727.5	61.07	12.914 SF	
7,600.0	7,495.5	8,563.5	7,313.8	14.1	41.2	178.52	-654.1	-893.3	805.1	744.2	60.97	13.205	
7,700.0	7,595.5	8,567.4	7,313.9	14.2	41.3	178.23	-654.0	-889.3	833.4	773.2	60.25	13.833	
7,800.0	7,695.5	8,571.9	7,314.1	14.2	41.4	177.91	-653.9	-884.9	872.3	813.2	59.07	14.767	
7,900.0	7,795.5	8,577.0	7,314.3	14.3	41.5	177.53	-653.8	-879.8	920.4	862.8	57.61	15.976	
8,000.0	7,895.5	8,582.8	7,314.6	14.4	41.6	177.11	-653.7	-873.9	976.4	920.4	56.03	17.427	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 502H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Rule Assigned:		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)	No-Go Distance (usft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	20.0	20.0	19.5	0.51	39.162		
100.0	100.0	100.0	100.0	0.9	1.2	90.00	0.0	20.0	20.0	17.4	2.59	7.724		
200.0	200.0	200.0	200.0	1.2	1.7	90.00	0.0	20.0	20.0	16.5	3.45	5.789		
300.0	300.0	300.0	300.0	1.5	2.1	90.00	0.0	20.0	20.0	15.9	4.12	4.852		
400.0	400.0	400.0	400.0	1.8	2.4	90.00	0.0	20.0	20.0	15.3	4.69	4.267		
500.0	500.0	500.0	500.0	2.0	2.7	90.00	0.0	20.0	20.0	14.8	5.19	3.856		
600.0	600.0	600.0	600.0	2.2	3.0	90.00	0.0	20.0	20.0	14.4	5.64	3.546		
700.0	700.0	700.0	700.0	2.4	3.2	90.00	0.0	20.0	20.0	13.9	6.06	3.300		
800.0	800.0	800.0	800.0	2.6	3.5	90.00	0.0	20.0	20.0	13.5	6.45	3.100		
900.0	900.0	900.0	900.0	2.8	3.7	90.00	0.0	20.0	20.0	13.2	6.82	2.932 Normal Operations		
1,000.0	1,000.0	1,000.0	1,000.0	3.0	3.9	90.00	0.0	20.0	20.0	12.8	7.17	2.788 Normal Operations		
1,100.0	1,100.0	1,100.0	1,100.0	3.1	4.1	90.00	0.0	20.0	20.0	12.5	7.51	2.664 Normal Operations		
1,200.0	1,200.0	1,200.0	1,200.0	3.3	4.3	90.00	0.0	20.0	20.0	12.2	7.83	2.554 Normal Operations		
1,300.0	1,300.0	1,300.0	1,300.0	3.5	4.5	90.00	0.0	20.0	20.0	11.9	8.14	2.457 Caution - Monitor Closely		
1,400.0	1,400.0	1,400.0	1,400.0	3.6	4.7	90.00	0.0	20.0	20.0	11.6	8.44	2.370 Caution - Monitor Closely		
1,500.0	1,500.0	1,500.0	1,500.0	3.8	4.8	90.00	0.0	20.0	20.0	11.3	8.73	2.291 Caution - Monitor Closely		
1,600.0	1,600.0	1,600.0	1,600.0	3.9	5.0	90.00	0.0	20.0	20.0	11.0	9.01	2.220 Caution - Monitor Closely		
1,700.0	1,700.0	1,700.0	1,700.0	4.1	5.2	90.00	0.0	20.0	20.0	10.7	9.29	2.154 Caution - Monitor Closely		
1,800.0	1,800.0	1,800.0	1,800.0	4.2	5.3	90.00	0.0	20.0	20.0	10.4	9.55	2.094 Caution - Monitor Closely, CC, ES, SF		
1,900.0	1,900.0	1,899.6	1,899.6	4.3	5.5	168.64	1.5	20.8	22.6	12.7	9.89	2.280 Caution - Monitor Closely		
2,000.0	1,999.8	1,999.4	1,999.3	4.5	5.7	165.38	4.3	22.2	29.3	18.9	10.40	2.818 Normal Operations		
2,100.0	2,099.5	2,098.9	2,098.8	4.7	5.9	164.76	7.0	23.6	39.5	28.7	10.81	3.653		
2,200.0	2,198.7	2,197.9	2,197.8	4.9	6.0	165.38	9.8	25.1	53.0	41.8	11.20	4.731		
2,300.0	2,297.5	2,296.5	2,296.3	5.1	6.2	166.41	12.5	26.5	69.9	58.3	11.59	6.027		
2,400.0	2,395.6	2,394.4	2,394.2	5.4	6.3	167.51	15.2	27.9	90.1	78.1	11.98	7.524		
2,500.0	2,493.1	2,491.6	2,491.3	5.6	6.5	168.53	17.9	29.3	113.7	101.3	12.35	9.203		
2,514.5	2,507.1	2,505.6	2,505.3	5.6	6.5	168.67	18.3	29.5	117.4	105.0	12.39	9.476		
2,600.0	2,590.0	2,588.2	2,587.8	5.8	6.6	169.42	20.6	30.7	139.4	126.8	12.65	11.021		
2,700.0	2,686.9	2,684.8	2,684.4	6.0	6.8	170.05	23.3	32.0	165.2	152.3	12.95	12.760		
2,800.0	2,783.8	2,781.4	2,780.9	6.1	6.9	170.51	26.0	33.4	191.0	177.8	13.25	14.419		
2,900.0	2,880.7	2,878.0	2,877.5	6.3	7.1	170.86	28.6	34.8	216.8	203.3	13.55	16.004		
3,000.0	2,977.6	2,974.6	2,974.1	6.5	7.2	171.14	31.3	36.2	242.6	228.8	13.85	17.519		
3,100.0	3,074.5	3,071.2	3,070.6	6.7	7.3	171.36	34.0	37.6	268.4	254.3	14.15	18.966		
3,200.0	3,171.4	3,167.8	3,167.2	6.9	7.5	171.55	36.7	39.0	294.3	279.8	14.46	20.351		
3,300.0	3,268.3	3,264.4	3,263.7	7.1	7.6	171.70	39.4	40.4	320.1	305.3	14.77	21.676		
3,400.0	3,365.2	3,361.0	3,360.3	7.3	7.8	171.83	42.0	41.7	345.9	330.8	15.08	22.946		
3,500.0	3,462.1	3,457.6	3,456.8	7.4	7.9	171.94	44.7	43.1	371.7	356.4	15.39	24.162		
3,600.0	3,559.0	3,554.2	3,553.4	7.6	8.1	172.04	47.4	44.5	397.6	381.9	15.70	25.328		
3,700.0	3,655.9	3,650.8	3,650.0	7.8	8.2	172.13	50.1	45.9	423.4	407.4	16.01	26.447		
3,800.0	3,752.8	3,747.4	3,746.5	8.0	8.3	172.20	52.7	47.3	449.2	432.9	16.32	27.521		
3,900.0	3,849.7	3,844.0	3,843.1	8.2	8.5	172.27	55.4	48.7	475.1	458.4	16.64	28.553		
4,000.0	3,946.7	3,940.7	3,939.6	8.5	8.6	172.33	58.1	50.0	500.9	483.9	16.95	29.544		
4,100.0	4,043.6	4,037.3	4,036.2	8.7	8.8	172.39	60.8	51.4	526.7	509.5	17.27	30.498		
4,200.0	4,140.5	4,133.9	4,132.8	8.9	8.9	172.44	63.5	52.8	552.6	535.0	17.59	31.415		
4,300.0	4,237.4	4,230.5	4,229.3	9.1	9.1	172.48	66.1	54.2	578.4	560.5	17.91	32.298		
4,400.0	4,334.3	4,327.1	4,325.9	9.3	9.2	172.52	68.8	55.6	604.2	586.0	18.23	33.149		
4,500.0	4,431.2	4,423.7	4,422.4	9.5	9.3	172.56	71.5	57.0	630.1	611.5	18.55	33.969		
4,600.0	4,528.1	4,520.3	4,519.0	9.7	9.5	172.60	74.2	58.4	655.9	637.0	18.87	34.759		
4,700.0	4,625.0	4,616.9	4,615.5	9.9	9.6	172.63	76.8	59.7	681.7	662.5	19.19	35.522		
4,800.0	4,721.9	4,713.5	4,712.1	10.1	9.8	172.66	79.5	61.1	707.6	688.0	19.51	36.258		
4,900.0	4,818.8	4,810.1	4,808.7	10.3	9.9	172.69	82.2	62.5	733.4	713.6	19.83	36.980		

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 502H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			
5,000.0	4,915.7	4,911.9	4,910.5	10.6	10.0	172.76	84.4	63.6	758.9	738.8	20.15	37.662	
5,100.0	5,012.6	5,014.1	5,012.6	10.8	10.1	172.96	85.0	64.0	783.7	763.2	20.49	38.255	
5,175.5	5,085.8	5,087.2	5,085.8	10.9	10.2	173.12	85.0	64.0	802.2	781.5	20.71	38.736	
5,200.0	5,109.5	5,111.0	5,109.5	11.0	10.2	173.18	85.0	64.0	808.2	787.4	20.78	38.901	
5,300.0	5,206.8	5,208.2	5,206.8	11.2	10.3	173.40	85.0	64.0	831.5	810.4	21.10	39.411	
5,400.0	5,304.4	5,305.8	5,304.4	11.4	10.4	173.59	85.0	64.0	853.1	831.6	21.41	39.841	
5,500.0	5,402.3	5,403.8	5,402.3	11.6	10.5	173.76	85.0	64.0	872.9	851.2	21.72	40.184	
5,600.0	5,500.6	5,502.1	5,500.6	11.8	10.6	173.90	85.0	64.0	891.1	869.1	22.03	40.445	
5,700.0	5,599.3	5,600.7	5,599.3	12.0	10.7	174.03	85.0	64.0	907.6	885.3	22.34	40.628	
5,800.0	5,698.2	5,699.6	5,698.2	12.2	10.8	174.14	85.0	64.0	922.4	899.8	22.64	40.738	
5,900.0	5,797.3	5,798.8	5,797.3	12.4	10.9	174.24	85.0	64.0	935.5	912.5	22.94	40.777	
6,000.0	5,896.6	5,898.1	5,896.6	12.6	11.0	174.32	85.0	64.0	946.8	923.6	23.23	40.750	
6,100.0	5,996.2	5,997.6	5,996.2	12.8	11.1	174.39	85.0	64.0	956.4	932.9	23.52	40.661	
6,200.0	6,095.8	6,097.3	6,095.8	12.9	11.2	174.44	85.0	64.0	964.3	940.5	23.80	40.512	
6,300.0	6,195.7	6,197.1	6,195.7	13.1	11.3	174.48	85.0	64.0	970.5	946.4	24.08	40.308	
6,400.0	6,295.6	6,297.0	6,295.6	13.3	11.4	174.51	85.0	64.0	974.9	950.6	24.34	40.054	
6,500.0	6,395.5	6,397.0	6,395.5	13.4	11.5	174.53	85.0	64.0	977.6	953.0	24.59	39.755	
6,600.0	6,495.5	6,497.0	6,495.5	13.5	11.6	174.54	85.0	64.0	978.5	953.7	24.79	39.469	
6,604.5	6,500.0	6,501.5	6,500.0	13.5	11.6	92.64	85.0	64.0	978.5	953.7	24.80	39.455	
6,700.0	6,595.5	6,597.0	6,595.5	13.6	11.7	92.64	85.0	64.0	978.5	953.6	24.94	39.230	
6,800.0	6,695.5	6,697.0	6,695.5	13.6	11.8	92.64	85.0	64.0	978.5	953.4	25.10	38.992	
6,900.0	6,795.5	6,797.0	6,795.5	13.7	11.9	92.64	85.0	64.0	978.5	953.3	25.25	38.756	
7,000.0	6,895.5	6,897.0	6,895.5	13.8	12.0	92.64	85.0	64.0	978.5	953.1	25.40	38.522	
7,100.0	6,995.5	6,997.0	6,995.5	13.8	12.1	92.64	85.0	64.0	978.5	953.0	25.55	38.292	
7,200.0	7,095.5	7,097.0	7,095.5	13.9	12.2	92.64	85.0	64.0	978.5	952.8	25.71	38.064	
7,300.0	7,195.5	7,197.0	7,195.5	13.9	12.3	92.64	85.0	64.0	978.5	952.7	25.86	37.838	
7,400.0	7,295.5	7,297.0	7,295.5	14.0	12.4	92.64	85.0	64.0	978.5	952.5	26.01	37.615	
7,500.0	7,395.5	7,397.0	7,395.5	14.0	12.5	92.64	85.0	64.0	978.5	952.4	26.17	37.395	
7,600.0	7,495.5	7,497.0	7,495.5	14.1	12.6	92.64	85.0	64.0	978.5	952.2	26.32	37.177	
7,700.0	7,595.5	7,597.0	7,595.5	14.2	12.7	92.64	85.0	64.0	978.5	952.1	26.47	36.961	
7,800.0	7,695.5	7,697.0	7,695.5	14.2	12.8	92.64	85.0	64.0	978.5	951.9	26.63	36.748	
7,900.0	7,795.5	7,797.0	7,795.5	14.3	12.9	92.64	85.0	64.0	978.5	951.8	26.78	36.537	
8,000.0	7,895.5	7,897.0	7,895.5	14.4	13.0	92.64	85.0	64.0	978.5	951.6	26.94	36.328	
8,100.0	7,995.5	7,997.0	7,995.5	14.4	13.1	92.64	85.0	64.0	978.5	951.4	27.09	36.121	
8,200.0	8,095.5	8,097.0	8,095.5	14.5	13.2	92.64	85.0	64.0	978.5	951.3	27.24	35.917	
8,300.0	8,195.5	8,197.0	8,195.5	14.5	13.3	92.64	85.0	64.0	978.5	951.1	27.40	35.715	
8,400.0	8,295.5	8,297.0	8,295.5	14.6	13.4	92.64	85.0	64.0	978.5	951.0	27.55	35.515	
8,500.0	8,395.5	8,397.0	8,395.5	14.7	13.4	92.64	85.0	64.0	978.5	950.8	27.71	35.318	
8,600.0	8,495.5	8,497.0	8,495.5	14.7	13.5	92.64	85.0	64.0	978.5	950.7	27.86	35.122	
8,700.0	8,595.5	8,597.0	8,595.5	14.8	13.6	92.64	85.0	64.0	978.5	950.5	28.02	34.929	
8,800.0	8,695.5	8,697.0	8,695.5	14.8	13.7	92.64	85.0	64.0	978.5	950.4	28.17	34.737	
8,900.0	8,795.5	8,797.0	8,795.5	14.9	13.8	92.64	85.0	64.0	978.5	950.2	28.32	34.547	
9,000.0	8,895.5	8,897.0	8,895.5	15.0	13.9	92.64	85.0	64.0	978.5	950.1	28.48	34.360	
9,100.0	8,995.5	8,997.0	8,995.5	15.0	14.0	92.64	85.0	64.0	978.5	949.9	28.63	34.174	
9,200.0	9,095.5	9,097.0	9,095.5	15.1	14.1	92.64	85.0	64.0	978.5	949.7	28.79	33.991	
9,300.0	9,195.5	9,197.0	9,195.5	15.2	14.2	92.64	85.0	64.0	978.5	949.6	28.94	33.809	
9,400.0	9,295.5	9,297.0	9,295.5	15.2	14.3	92.64	85.0	64.0	978.5	949.4	29.10	33.629	
9,477.0	9,372.5	9,374.0	9,372.5	15.3	14.3	92.64	85.0	64.0	978.5	949.3	29.19	33.519	
9,500.0	9,395.5	9,399.6	9,398.1	15.3	14.4	92.91	85.7	64.0	978.5	949.3	29.24	33.471	
9,525.0	9,420.4	9,427.4	9,425.8	15.3	14.4	92.90	88.0	64.0	978.5	949.3	29.26	33.444	
9,550.0	9,445.2	9,455.2	9,453.4	15.3	14.5	92.88	91.9	63.9	978.5	949.2	29.28	33.418	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 502H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error: 0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
9,575.0	9,469.8	9,483.0	9,480.6	15.3	14.5	92.85	97.4	63.9	978.5	949.2	29.30	33.393	
9,600.0	9,494.2	9,510.7	9,507.4	15.3	14.5	92.81	104.5	63.9	978.5	949.1	29.32	33.368	
9,625.0	9,518.2	9,538.4	9,533.7	15.4	14.6	92.76	113.1	63.9	978.4	949.1	29.34	33.343	
9,650.0	9,541.7	9,566.0	9,559.4	15.4	14.6	92.70	123.1	63.8	978.4	949.0	29.36	33.319	
9,675.0	9,564.9	9,593.6	9,584.5	15.4	14.7	92.64	134.6	63.8	978.4	949.0	29.38	33.295	
9,700.0	9,587.5	9,621.1	9,608.7	15.4	14.7	92.57	147.5	63.7	978.3	948.9	29.40	33.271	
9,725.0	9,609.5	9,648.5	9,632.1	15.4	14.7	92.49	161.8	63.7	978.3	948.9	29.43	33.246	
9,750.0	9,630.9	9,675.8	9,654.6	15.4	14.8	92.40	177.3	63.6	978.2	948.8	29.45	33.221	
9,775.0	9,651.5	9,702.9	9,676.1	15.5	14.8	92.31	193.9	63.6	978.2	948.7	29.47	33.195	
9,800.0	9,671.4	9,730.0	9,696.5	15.5	14.8	92.21	211.7	63.5	978.1	948.6	29.49	33.168	
9,825.0	9,690.5	9,757.0	9,715.7	15.5	14.9	92.10	230.6	63.4	978.1	948.6	29.52	33.139	
9,850.0	9,708.7	9,783.8	9,733.9	15.5	14.9	91.99	250.4	63.4	978.0	948.5	29.54	33.108	
9,875.0	9,726.0	9,810.6	9,750.8	15.5	15.0	91.87	271.1	63.3	978.0	948.4	29.57	33.075	
9,900.0	9,742.3	9,837.2	9,766.4	15.5	15.0	91.75	292.6	63.2	978.0	948.4	29.60	33.039	
9,925.0	9,757.6	9,863.6	9,780.7	15.6	15.0	91.62	314.9	63.1	977.9	948.3	29.63	32.999	
9,950.0	9,771.8	9,890.0	9,793.8	15.6	15.0	91.49	337.7	63.0	977.9	948.2	29.67	32.957	
9,975.0	9,785.0	9,916.2	9,805.5	15.6	15.1	91.35	361.2	62.9	977.9	948.1	29.71	32.910	
10,000.0	9,797.0	9,942.2	9,815.8	15.6	15.1	91.21	385.1	62.8	977.8	948.1	29.76	32.859	
10,025.0	9,807.9	9,968.1	9,824.8	15.6	15.1	91.07	409.4	62.8	977.8	948.0	29.81	32.804	
10,050.0	9,817.5	9,993.9	9,832.4	15.6	15.1	90.92	434.0	62.7	977.8	947.9	29.86	32.744	
10,075.0	9,826.0	10,019.6	9,838.6	15.6	15.2	90.77	458.9	62.6	977.8	947.9	29.92	32.679	
10,097.4	9,832.5	10,042.4	9,843.0	15.7	15.2	90.64	481.3	62.5	977.8	947.8	29.98	32.616	
10,100.0	9,833.2	10,045.1	9,843.5	15.7	15.2	90.62	483.9	62.5	977.8	947.8	29.99	32.609	
10,125.0	9,839.1	10,070.4	9,847.0	15.7	15.2	90.47	509.0	62.4	977.8	947.7	30.06	32.533	
10,150.0	9,843.8	10,095.6	9,849.1	15.7	15.2	90.32	534.2	62.3	977.8	947.7	30.13	32.453	
10,175.0	9,847.1	10,120.7	9,850.0	15.7	15.2	90.17	559.2	62.2	977.8	947.6	30.21	32.367	
10,200.0	9,849.2	10,145.7	9,850.0	15.7	15.2	90.05	584.2	62.1	977.8	947.5	30.30	32.271	
10,227.0	9,850.0	10,172.6	9,850.0	15.8	15.2	90.00	611.1	62.0	977.9	947.5	30.41	32.161	
10,300.0	9,850.0	10,245.6	9,850.0	15.9	15.3	90.00	684.2	61.7	978.0	947.2	30.74	31.818	
10,400.0	9,850.0	10,345.6	9,850.0	16.2	15.3	90.00	784.2	61.4	978.1	946.8	31.27	31.275	
10,500.0	9,850.0	10,445.6	9,850.0	16.5	15.5	90.00	884.2	61.0	978.2	946.3	31.89	30.669	
10,600.0	9,850.0	10,545.6	9,850.0	16.9	15.8	90.00	984.2	60.6	978.3	945.7	32.59	30.014	
10,700.0	9,850.0	10,645.6	9,850.0	17.3	16.1	90.00	1,084.2	60.2	978.4	945.0	33.37	29.322	
10,800.0	9,850.0	10,745.6	9,850.0	17.7	16.5	90.00	1,184.2	59.9	978.5	944.3	34.21	28.605	
10,900.0	9,850.0	10,845.6	9,850.0	18.2	17.0	90.00	1,284.2	59.5	978.6	943.5	35.11	27.871	
11,000.0	9,850.0	10,945.6	9,850.0	18.7	17.5	90.00	1,384.2	59.1	978.7	942.7	36.08	27.130	
11,100.0	9,850.0	11,045.6	9,850.0	19.2	18.0	90.00	1,484.1	58.7	978.9	941.8	37.09	26.389	
11,200.0	9,850.0	11,145.6	9,850.0	19.7	18.5	90.00	1,584.1	58.4	979.0	940.8	38.16	25.654	
11,300.0	9,850.0	11,245.6	9,850.0	20.3	19.1	90.00	1,684.1	58.0	979.1	939.8	39.27	24.930	
11,400.0	9,850.0	11,345.6	9,850.0	20.9	19.7	90.00	1,784.1	57.6	979.2	938.8	40.43	24.221	
11,500.0	9,850.0	11,445.6	9,850.0	21.5	20.3	90.00	1,884.1	57.2	979.3	937.7	41.62	23.530	
11,600.0	9,850.0	11,545.6	9,850.0	22.1	20.9	90.00	1,984.1	56.9	979.4	936.6	42.85	22.859	
11,700.0	9,850.0	11,645.6	9,850.0	22.7	21.6	90.00	2,084.1	56.5	979.5	935.4	44.11	22.208	
11,800.0	9,850.0	11,745.6	9,850.0	23.4	22.2	90.00	2,184.1	56.1	979.7	934.3	45.40	21.581	
11,900.0	9,850.0	11,845.6	9,850.0	24.0	22.9	90.00	2,284.1	55.7	979.8	933.1	46.71	20.975	
12,000.0	9,850.0	11,945.6	9,850.0	24.7	23.6	90.00	2,384.1	55.4	979.9	931.8	48.05	20.393	
12,100.0	9,850.0	12,045.6	9,850.0	25.4	24.3	90.00	2,484.1	55.0	980.0	930.6	49.41	19.833	
12,200.0	9,850.0	12,145.6	9,850.0	26.1	25.0	90.00	2,584.1	54.6	980.1	929.3	50.80	19.295	
12,300.0	9,850.0	12,245.6	9,850.0	26.8	25.7	90.00	2,684.1	54.2	980.2	928.0	52.20	18.778	
12,400.0	9,850.0	12,345.6	9,850.0	27.5	26.4	90.00	2,784.1	53.9	980.3	926.7	53.62	18.283	
12,500.0	9,850.0	12,445.6	9,850.0	28.2	27.2	90.00	2,884.1	53.5	980.5	925.4	55.06	17.808	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 502H - OWB - PWP0											Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)		
12,600.0	9,850.0	12,545.6	9,850.0	29.0	27.9	90.00	2,984.1	53.1	980.6	924.1	56.51	17.353
12,700.0	9,850.0	12,645.6	9,850.0	29.7	28.7	90.00	3,084.1	52.7	980.7	922.7	57.97	16.916
12,800.0	9,850.0	12,745.6	9,850.0	30.5	29.4	90.00	3,184.1	52.4	980.8	921.3	59.45	16.498
12,900.0	9,850.0	12,845.6	9,850.0	31.2	30.2	90.00	3,284.1	52.0	980.9	920.0	60.94	16.096
13,000.0	9,850.0	12,945.6	9,850.0	32.0	30.9	90.00	3,384.1	51.6	981.0	918.6	62.44	15.711
13,100.0	9,850.0	13,045.6	9,850.0	32.7	31.7	90.00	3,484.1	51.2	981.1	917.2	63.95	15.342
13,200.0	9,850.0	13,145.6	9,850.0	33.5	32.5	90.00	3,584.1	50.9	981.3	915.8	65.47	14.987
13,300.0	9,850.0	13,245.6	9,850.0	34.3	33.3	90.00	3,684.1	50.5	981.4	914.4	67.00	14.647
13,400.0	9,850.0	13,345.6	9,850.0	35.0	34.0	90.00	3,784.1	50.1	981.5	912.9	68.54	14.320
13,500.0	9,850.0	13,445.6	9,850.0	35.8	34.8	90.00	3,884.1	49.7	981.6	911.5	70.08	14.006
13,600.0	9,850.0	13,545.6	9,850.0	36.6	35.6	90.00	3,984.1	49.4	981.7	910.1	71.64	13.704
13,700.0	9,850.0	13,645.6	9,850.0	37.4	36.4	90.00	4,084.1	49.0	981.8	908.6	73.20	13.414
13,800.0	9,850.0	13,745.6	9,850.0	38.2	37.2	90.00	4,184.1	48.6	981.9	907.2	74.76	13.134
13,900.0	9,850.0	13,845.6	9,850.0	39.0	38.0	90.00	4,284.1	48.2	982.1	905.7	76.33	12.865
14,000.0	9,850.0	13,945.6	9,850.0	39.8	38.8	90.00	4,384.1	47.9	982.2	904.3	77.91	12.606
14,100.0	9,850.0	14,045.6	9,850.0	40.5	39.6	90.00	4,484.1	47.5	982.3	902.8	79.49	12.357
14,200.0	9,850.0	14,145.6	9,850.0	41.3	40.4	90.00	4,584.1	47.1	982.4	901.3	81.08	12.116
14,300.0	9,850.0	14,245.6	9,850.0	42.2	41.2	90.00	4,684.1	46.7	982.5	899.8	82.67	11.884
14,400.0	9,850.0	14,345.6	9,850.0	43.0	42.0	90.00	4,784.1	46.4	982.6	898.4	84.27	11.661
14,500.0	9,850.0	14,445.6	9,850.0	43.8	42.9	90.00	4,884.1	46.0	982.7	896.9	85.87	11.445
14,600.0	9,850.0	14,545.6	9,850.0	44.6	43.7	90.00	4,984.1	45.6	982.9	895.4	87.47	11.236
14,700.0	9,850.0	14,645.6	9,850.0	45.4	44.5	90.00	5,084.1	45.2	983.0	893.9	89.08	11.034
14,800.0	9,850.0	14,745.6	9,850.0	46.2	45.3	90.00	5,184.1	44.9	983.1	892.4	90.69	10.840
14,900.0	9,850.0	14,845.6	9,850.0	47.0	46.1	90.00	5,284.1	44.5	983.2	890.9	92.31	10.651
15,000.0	9,850.0	14,945.6	9,850.0	47.8	47.0	90.00	5,384.1	44.1	983.3	889.4	93.93	10.469
15,100.0	9,850.0	15,045.6	9,850.0	48.6	47.8	90.00	5,484.1	43.7	983.4	887.9	95.55	10.293
15,200.0	9,850.0	15,145.6	9,850.0	49.5	48.6	90.00	5,584.1	43.4	983.5	886.4	97.17	10.122
15,300.0	9,850.0	15,245.6	9,850.0	50.3	49.4	90.00	5,684.1	43.0	983.6	884.9	98.80	9.956
15,400.0	9,850.0	15,345.6	9,850.0	51.1	50.3	90.00	5,784.1	42.6	983.8	883.3	100.43	9.796
15,500.0	9,850.0	15,445.6	9,850.0	51.9	51.1	90.00	5,884.1	42.2	983.9	881.8	102.06	9.640
15,600.0	9,850.0	15,545.6	9,850.0	52.8	51.9	90.00	5,984.1	41.9	984.0	880.3	103.69	9.490
15,700.0	9,850.0	15,645.6	9,850.0	53.6	52.8	90.00	6,084.1	41.5	984.1	878.8	105.33	9.343
15,800.0	9,850.0	15,745.6	9,850.0	54.4	53.6	90.00	6,184.1	41.1	984.2	877.3	106.96	9.201
15,900.0	9,850.0	15,845.6	9,850.0	55.2	54.4	90.00	6,284.1	40.7	984.3	875.7	108.60	9.063
16,000.0	9,850.0	15,945.6	9,850.0	56.1	55.3	90.00	6,384.1	40.4	984.4	874.2	110.25	8.929
16,100.0	9,850.0	16,045.6	9,850.0	56.9	56.1	90.00	6,484.1	40.0	984.6	872.7	111.89	8.799
16,200.0	9,850.0	16,145.6	9,850.0	57.7	56.9	90.00	6,584.1	39.6	984.7	871.1	113.54	8.673
16,300.0	9,850.0	16,245.6	9,850.0	58.6	57.8	90.00	6,684.1	39.2	984.8	869.6	115.18	8.550
16,400.0	9,850.0	16,345.6	9,850.0	59.4	58.6	90.00	6,784.1	38.9	984.9	868.1	116.83	8.430
16,500.0	9,850.0	16,445.6	9,850.0	60.2	59.4	90.00	6,884.1	38.5	985.0	866.5	118.48	8.314
16,600.0	9,850.0	16,545.6	9,850.0	61.1	60.3	90.00	6,984.1	38.1	985.1	865.0	120.13	8.200
16,700.0	9,850.0	16,645.6	9,850.0	61.9	61.1	90.00	7,084.1	37.7	985.2	863.5	121.79	8.090
16,800.0	9,850.0	16,745.6	9,850.0	62.7	62.0	90.00	7,184.1	37.4	985.4	861.9	123.44	7.982
16,900.0	9,850.0	16,845.6	9,850.0	63.6	62.8	90.00	7,284.1	37.0	985.5	860.4	125.10	7.878
16,997.0	9,850.0	16,942.6	9,850.0	64.4	63.6	90.00	7,381.1	36.6	985.6	858.9	126.71	7.779
17,000.0	9,850.0	16,945.6	9,850.0	64.4	63.6	90.00	7,384.1	36.6	985.6	858.8	126.76	7.776
17,100.0	9,850.0	17,045.6	9,850.0	65.3	64.5	90.00	7,484.1	36.2	987.6	859.1	128.42	7.690
17,200.0	9,850.0	17,145.5	9,850.0	66.1	65.3	90.00	7,583.9	35.9	993.0	862.9	130.09	7.633

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		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)	No-Go Distance (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-90.00	0.0	-20.0	20.0	19.5	0.51	39.162	
100.0	100.0	100.0	100.0	0.9	1.2	-90.00	0.0	-20.0	20.0	17.4	2.59	7.724	
200.0	200.0	200.0	200.0	1.2	1.7	-90.00	0.0	-20.0	20.0	16.5	3.45	5.789	
300.0	300.0	300.0	300.0	1.5	2.1	-90.00	0.0	-20.0	20.0	15.9	4.12	4.852	
400.0	400.0	400.0	400.0	1.8	2.4	-90.00	0.0	-20.0	20.0	15.3	4.69	4.267	
500.0	500.0	500.0	500.0	2.0	2.7	-90.00	0.0	-20.0	20.0	14.8	5.19	3.856	
600.0	600.0	600.0	600.0	2.2	3.0	-90.00	0.0	-20.0	20.0	14.4	5.64	3.546	
700.0	700.0	700.0	700.0	2.4	3.2	-90.00	0.0	-20.0	20.0	13.9	6.06	3.300	
800.0	800.0	800.0	800.0	2.6	3.5	-90.00	0.0	-20.0	20.0	13.5	6.45	3.100	
900.0	900.0	900.0	900.0	2.8	3.7	-90.00	0.0	-20.0	20.0	13.2	6.82	2.932 Normal Operations	
1,000.0	1,000.0	1,000.0	1,000.0	3.0	3.9	-90.00	0.0	-20.0	20.0	12.8	7.17	2.788 Normal Operations	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	4.1	-90.00	0.0	-20.0	20.0	12.5	7.51	2.664 Normal Operations	
1,200.0	1,200.0	1,200.0	1,200.0	3.3	4.3	-90.00	0.0	-20.0	20.0	12.2	7.83	2.554 Normal Operations	
1,300.0	1,300.0	1,300.0	1,300.0	3.5	4.5	-90.00	0.0	-20.0	20.0	11.9	8.14	2.457 Caution - Monitor Closely	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	4.7	-90.00	0.0	-20.0	20.0	11.6	8.44	2.370 Caution - Monitor Closely	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	4.8	-90.00	0.0	-20.0	20.0	11.3	8.73	2.291 Caution - Monitor Closely, CC, ES, SF	
1,600.0	1,600.0	1,599.4	1,599.4	3.9	5.1	-87.53	0.9	-21.5	21.5	12.4	9.09	2.364 Caution - Monitor Closely	
1,700.0	1,700.0	1,698.5	1,698.4	4.1	5.4	-81.87	3.7	-25.8	26.1	16.7	9.47	2.759 Normal Operations	
1,800.0	1,800.0	1,797.2	1,796.6	4.2	5.6	-75.95	8.3	-33.0	34.2	24.3	9.87	3.463	
1,900.0	1,900.0	1,895.3	1,894.1	4.3	5.9	11.05	14.6	-43.0	44.1	33.7	10.39	4.243	
2,000.0	1,999.8	1,993.1	1,990.7	4.5	6.2	15.74	22.7	-55.7	54.2	43.2	10.98	4.939	
2,100.0	2,099.5	2,090.4	2,086.2	4.7	6.6	20.15	32.5	-71.2	64.7	53.2	11.56	5.598	
2,200.0	2,198.7	2,187.3	2,180.7	4.9	6.9	24.34	44.0	-89.2	75.7	63.6	12.14	6.237	
2,300.0	2,297.5	2,285.7	2,276.1	5.1	7.2	28.43	57.0	-109.7	86.5	73.8	12.67	6.829	
2,400.0	2,395.6	2,385.1	2,372.4	5.4	7.5	32.71	70.2	-130.5	94.9	81.6	13.22	7.177	
2,500.0	2,493.1	2,484.6	2,468.8	5.6	7.9	37.45	83.4	-151.3	100.9	87.2	13.75	7.339	
2,514.5	2,507.1	2,499.0	2,482.8	5.6	7.9	38.19	85.3	-154.3	101.6	87.8	13.80	7.361	
2,600.0	2,590.0	2,584.1	2,565.2	5.8	8.2	42.47	96.6	-172.0	105.9	91.7	14.21	7.457	
2,700.0	2,686.9	2,683.5	2,661.5	6.0	8.6	47.03	109.9	-192.8	111.7	97.0	14.66	7.619	
2,800.0	2,783.8	2,783.0	2,757.9	6.1	9.0	51.12	123.1	-213.6	118.1	103.0	15.10	7.819	
2,900.0	2,880.7	2,882.4	2,854.2	6.3	9.3	54.78	136.3	-234.4	125.0	109.5	15.54	8.047	
3,000.0	2,977.6	2,981.9	2,950.6	6.5	9.7	58.05	149.5	-255.2	132.4	116.5	15.97	8.294	
3,100.0	3,074.5	3,081.3	3,047.0	6.7	10.1	60.96	162.7	-276.0	140.2	123.8	16.39	8.553	
3,200.0	3,171.4	3,180.8	3,143.3	6.9	10.6	63.56	175.9	-296.8	148.3	131.5	16.81	8.820	
3,300.0	3,268.3	3,280.3	3,239.7	7.1	11.0	65.89	189.1	-317.6	156.7	139.4	17.24	9.090	
3,400.0	3,365.2	3,379.7	3,336.0	7.3	11.4	67.98	202.3	-338.3	165.3	147.6	17.66	9.360	
3,500.0	3,462.1	3,479.2	3,432.4	7.4	11.8	69.86	215.5	-359.1	174.1	156.0	18.08	9.628	
3,600.0	3,559.0	3,578.6	3,528.8	7.6	12.3	71.56	228.8	-379.9	183.0	164.5	18.50	9.892	
3,700.0	3,655.9	3,678.1	3,625.1	7.8	12.7	73.10	242.0	-400.7	192.2	173.2	18.93	10.152	
3,800.0	3,752.8	3,777.5	3,721.5	8.0	13.1	74.50	255.2	-421.5	201.4	182.0	19.36	10.405	
3,900.0	3,849.7	3,877.0	3,817.8	8.2	13.6	75.78	268.4	-442.3	210.8	191.0	19.79	10.652	
4,000.0	3,946.7	3,976.5	3,914.2	8.5	14.0	76.95	281.6	-463.1	220.2	200.0	20.22	10.892	
4,100.0	4,043.6	4,075.9	4,010.5	8.7	14.5	78.02	294.8	-483.8	229.7	209.1	20.65	11.125	
4,200.0	4,140.5	4,175.4	4,106.9	8.9	14.9	79.01	308.0	-504.6	239.3	218.2	21.09	11.350	
4,300.0	4,237.4	4,274.8	4,203.3	9.1	15.4	79.92	321.2	-525.4	249.0	227.5	21.52	11.569	
4,400.0	4,334.3	4,374.3	4,299.6	9.3	15.9	80.76	334.5	-546.2	258.7	236.8	21.96	11.780	
4,500.0	4,431.2	4,473.7	4,396.0	9.5	16.3	81.54	347.7	-567.0	268.5	246.1	22.40	11.985	
4,600.0	4,528.1	4,573.2	4,492.3	9.7	16.8	82.27	360.9	-587.8	278.3	255.5	22.85	12.182	
4,700.0	4,625.0	4,672.6	4,588.7	9.9	17.2	82.94	374.1	-608.6	288.2	264.9	23.29	12.373	
4,800.0	4,721.9	4,772.1	4,685.1	10.1	17.7	83.57	387.3	-629.4	298.1	274.3	23.74	12.557	
4,900.0	4,818.8	4,871.6	4,781.4	10.3	18.2	84.16	400.5	-650.1	308.0	283.8	24.19	12.735	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			
5,000.0	4,915.7	4,971.0	4,877.8	10.6	18.6	84.72	413.7	-670.9	318.0	293.3	24.64	12.907	
5,100.0	5,012.6	5,070.5	4,974.1	10.8	19.1	85.24	426.9	-691.7	328.0	302.9	25.09	13.073	
5,175.5	5,085.8	5,145.5	5,046.9	10.9	19.5	85.61	436.9	-707.4	335.5	310.1	25.42	13.202	
5,200.0	5,109.5	5,169.9	5,070.5	11.0	19.6	85.74	440.1	-712.5	338.0	312.5	25.52	13.246	
5,300.0	5,206.8	5,269.4	5,166.9	11.2	20.1	86.09	453.4	-733.3	348.1	322.1	26.00	13.388	
5,400.0	5,304.4	5,368.9	5,263.2	11.4	20.5	86.15	466.6	-754.1	358.4	331.9	26.52	13.513	
5,500.0	5,402.3	5,468.3	5,359.6	11.6	21.0	85.94	479.8	-774.9	368.7	341.7	27.08	13.618	
5,600.0	5,500.6	5,567.7	5,455.9	11.8	21.5	85.48	493.0	-795.6	379.3	351.6	27.67	13.705	
5,700.0	5,599.3	5,667.0	5,552.1	12.0	21.9	84.80	506.2	-816.4	390.0	361.7	28.31	13.776	
5,800.0	5,698.2	5,766.1	5,648.1	12.2	22.4	83.91	519.3	-837.1	400.9	372.0	28.98	13.833	
5,900.0	5,797.3	5,865.1	5,744.0	12.4	22.9	82.85	532.5	-857.8	412.2	382.5	29.70	13.879	
6,000.0	5,896.6	5,964.0	5,839.8	12.6	23.4	81.61	545.6	-878.5	423.9	393.5	30.46	13.916	
6,100.0	5,996.2	6,062.6	5,935.3	12.8	23.8	80.24	558.7	-899.1	436.2	404.9	31.27	13.949	
6,200.0	6,095.8	6,161.0	6,030.6	12.9	24.3	78.73	571.8	-919.6	449.0	416.9	32.12	13.981	
6,300.0	6,195.7	6,259.0	6,125.7	13.1	24.8	77.12	584.8	-940.1	462.6	429.6	33.00	14.016	
6,400.0	6,295.6	6,356.8	6,220.4	13.3	25.3	75.42	597.8	-960.6	477.0	443.1	33.93	14.058	
6,500.0	6,395.5	6,454.3	6,314.8	13.4	25.7	73.65	610.8	-980.9	492.4	457.5	34.89	14.112	
6,600.0	6,495.5	6,551.4	6,408.9	13.5	26.2	71.82	623.7	-1,001.2	508.8	472.9	35.87	14.183	
6,604.5	6,500.0	6,555.7	6,413.1	13.5	26.2	-10.17	624.2	-1,002.1	509.6	473.6	35.92	14.186	
6,700.0	6,595.5	6,648.3	6,502.8	13.6	26.7	-12.03	636.5	-1,021.5	526.1	489.3	36.85	14.276	
6,800.0	6,695.5	6,746.4	6,597.8	13.6	27.1	-13.89	649.5	-1,042.0	544.0	506.2	37.81	14.386	
6,900.0	6,795.5	6,851.0	6,699.5	13.7	27.6	-15.65	662.8	-1,062.8	561.5	522.8	38.77	14.484	
7,000.0	6,895.5	6,956.6	6,802.6	13.8	28.1	-17.20	675.1	-1,082.2	578.1	538.5	39.67	14.572	
7,100.0	6,995.5	7,063.1	6,906.9	13.8	28.6	-18.54	686.5	-1,100.2	593.6	553.1	40.52	14.649	
7,200.0	7,095.5	7,170.3	7,012.3	13.9	29.1	-19.71	697.0	-1,116.6	608.0	566.6	41.32	14.714	
7,300.0	7,195.5	7,278.2	7,118.8	13.9	29.6	-20.71	706.4	-1,131.5	621.0	578.9	42.06	14.765	
7,400.0	7,295.5	7,386.7	7,226.2	14.0	30.1	-21.57	714.8	-1,144.7	632.7	589.9	42.75	14.800	
7,500.0	7,395.5	7,495.8	7,334.4	14.0	30.5	-22.29	722.2	-1,156.3	642.9	599.5	43.38	14.819	
7,600.0	7,495.5	7,605.4	7,443.4	14.1	31.0	-22.88	728.5	-1,166.1	651.7	607.7	43.96	14.823	
7,700.0	7,595.5	7,715.4	7,552.9	14.2	31.4	-23.36	733.6	-1,174.3	658.9	614.4	44.49	14.811	
7,800.0	7,695.5	7,825.8	7,663.0	14.2	31.8	-23.73	737.7	-1,180.6	664.6	619.6	44.95	14.785	
7,900.0	7,795.5	7,936.4	7,773.5	14.3	32.2	-23.99	740.6	-1,185.2	668.7	623.3	45.34	14.746	
8,000.0	7,895.5	8,047.1	7,884.2	14.4	32.5	-24.14	742.4	-1,188.0	671.2	625.5	45.66	14.698	
8,100.0	7,995.5	8,158.0	7,995.0	14.4	32.7	-24.20	743.0	-1,189.0	672.0	626.2	45.83	14.663	
8,200.0	8,095.5	8,258.4	8,095.5	14.5	32.7	-24.20	743.0	-1,189.0	672.0	626.1	45.91	14.638	
8,300.0	8,195.5	8,358.4	8,195.5	14.5	32.8	-24.20	743.0	-1,189.0	672.0	626.0	46.00	14.609	
8,400.0	8,295.5	8,458.4	8,295.5	14.6	32.8	-24.20	743.0	-1,189.0	672.0	625.9	46.09	14.580	
8,500.0	8,395.5	8,558.4	8,395.5	14.7	32.8	-24.20	743.0	-1,189.0	672.0	625.8	46.18	14.551	
8,600.0	8,495.5	8,658.4	8,495.5	14.7	32.9	-24.20	743.0	-1,189.0	672.0	625.8	46.28	14.522	
8,700.0	8,595.5	8,758.4	8,595.5	14.8	32.9	-24.20	743.0	-1,189.0	672.0	625.7	46.37	14.494	
8,800.0	8,695.5	8,858.4	8,695.5	14.8	32.9	-24.20	743.0	-1,189.0	672.0	625.6	46.46	14.465	
8,900.0	8,795.5	8,958.4	8,795.5	14.9	33.0	-24.20	743.0	-1,189.0	672.0	625.5	46.55	14.436	
9,000.0	8,895.5	9,058.4	8,895.5	15.0	33.0	-24.20	743.0	-1,189.0	672.0	625.4	46.65	14.407	
9,100.0	8,995.5	9,158.4	8,995.5	15.0	33.0	-24.20	743.0	-1,189.0	672.0	625.3	46.74	14.378	
9,200.0	9,095.5	9,258.4	9,095.5	15.1	33.1	-24.20	743.0	-1,189.0	672.0	625.2	46.83	14.349	
9,300.0	9,195.5	9,358.4	9,195.5	15.2	33.1	-24.20	743.0	-1,189.0	672.0	625.1	46.93	14.321	
9,400.0	9,295.5	9,458.4	9,295.5	15.2	33.1	-24.20	743.0	-1,189.0	672.0	625.0	47.02	14.292	
9,477.0	9,372.5	9,535.4	9,372.5	15.3	33.2	-24.20	743.0	-1,189.0	672.0	624.9	47.09	14.272	
9,500.0	9,395.5	9,558.4	9,395.5	15.3	33.2	-23.96	743.0	-1,189.0	671.5	624.4	47.11	14.253	
9,525.0	9,420.4	9,583.4	9,420.4	15.3	33.2	-24.11	743.0	-1,189.0	669.8	622.7	47.16	14.204	
9,550.0	9,445.2	9,608.2	9,445.2	15.3	33.2	-24.36	743.0	-1,189.0	666.9	619.7	47.21	14.126	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		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)			
9,575.0	9,469.8	9,632.8	9,469.8	15.3	33.2	-24.73	743.0	-1,189.0	662.9	615.6	47.28	14.020	
9,600.0	9,494.2	9,657.1	9,494.2	15.3	33.2	-25.21	743.0	-1,189.0	657.7	610.3	47.36	13.886	
9,625.0	9,518.2	9,681.1	9,518.2	15.4	33.2	-25.81	743.0	-1,189.0	651.3	603.8	47.45	13.725	
9,650.0	9,541.7	9,704.7	9,541.7	15.4	33.2	-26.54	743.0	-1,189.0	643.8	596.3	47.56	13.538	
9,675.0	9,564.9	9,727.8	9,564.9	15.4	33.2	-27.42	743.0	-1,189.0	635.2	587.6	47.67	13.325	
9,700.0	9,587.5	9,750.4	9,587.5	15.4	33.2	-28.45	743.0	-1,189.0	625.6	577.8	47.80	13.088	
9,725.0	9,609.5	9,772.4	9,609.5	15.4	33.3	-29.65	743.0	-1,189.0	615.0	567.1	47.94	12.828	
9,750.0	9,630.9	9,793.8	9,630.9	15.4	33.3	-31.04	743.0	-1,189.0	603.4	555.3	48.10	12.545	
9,775.0	9,651.5	9,814.5	9,651.5	15.5	33.3	-32.64	743.0	-1,189.0	590.9	542.6	48.26	12.242	
9,800.0	9,671.4	9,834.4	9,671.4	15.5	33.3	-34.46	743.0	-1,189.0	577.5	529.0	48.44	11.921	
9,825.0	9,690.5	9,853.4	9,690.5	15.5	33.3	-36.54	743.0	-1,189.0	563.3	514.7	48.64	11.581	
9,850.0	9,708.7	9,871.6	9,708.7	15.5	33.3	-38.88	743.0	-1,189.0	548.4	499.5	48.85	11.226	
9,875.0	9,726.0	9,888.9	9,726.0	15.5	33.3	-41.52	743.0	-1,189.0	532.8	483.7	49.07	10.858	
9,900.0	9,742.3	9,905.2	9,742.3	15.5	33.3	-44.46	743.0	-1,189.0	516.6	467.3	49.30	10.478	
9,925.0	9,757.6	9,920.5	9,757.6	15.6	33.3	-47.72	743.0	-1,189.0	499.9	450.3	49.55	10.089	
9,950.0	9,771.8	9,934.8	9,771.8	15.6	33.3	-51.28	743.0	-1,189.0	482.8	433.0	49.81	9.693	
9,975.0	9,785.0	9,947.9	9,785.0	15.6	33.3	-55.11	743.0	-1,189.0	465.4	415.3	50.08	9.293	
10,000.0	9,797.0	9,959.9	9,797.0	15.6	33.3	-59.16	743.0	-1,189.0	447.8	397.5	50.36	8.893	
10,025.0	9,807.9	9,970.8	9,807.9	15.6	33.3	-63.36	743.0	-1,189.0	430.2	379.5	50.64	8.495	
10,050.0	9,817.5	9,980.5	9,817.5	15.6	33.3	-67.61	743.0	-1,189.0	412.6	361.7	50.92	8.103	
10,075.0	9,826.0	9,985.4	9,822.5	15.6	33.3	-71.17	743.0	-1,189.0	395.2	344.0	51.25	7.712	
10,100.0	9,833.2	9,992.3	9,829.4	15.7	33.3	-75.08	743.0	-1,189.0	378.3	326.8	51.52	7.343	
10,125.0	9,839.1	9,996.5	9,833.6	15.7	33.3	-78.41	743.1	-1,189.0	362.0	310.2	51.77	6.991	
10,150.0	9,843.8	10,000.0	9,837.1	15.7	33.3	-81.46	743.2	-1,189.0	346.4	294.4	51.97	6.665	
10,175.0	9,847.1	10,000.0	9,837.1	15.7	33.3	-83.60	743.2	-1,189.0	331.7	279.6	52.13	6.364	
10,200.0	9,849.2	10,005.3	9,842.4	15.7	33.3	-86.62	743.4	-1,189.0	318.2	266.1	52.07	6.112	
10,227.0	9,850.0	10,006.8	9,843.8	15.8	33.4	-88.71	743.5	-1,189.0	305.2	253.3	51.90	5.880	
10,300.0	9,850.0	10,009.7	9,846.7	15.9	33.4	-89.32	743.6	-1,189.0	280.0	229.6	50.40	5.555	
10,364.6	9,850.0	10,012.9	9,850.0	16.1	33.4	-90.00	743.8	-1,189.0	272.5	224.8	47.67	5.716	
10,400.0	9,850.0	10,015.1	9,852.2	16.2	33.4	-90.47	743.9	-1,189.0	274.7	229.0	45.76	6.005	
10,500.0	9,850.0	10,023.8	9,860.8	16.5	33.4	-92.28	744.5	-1,189.0	304.1	263.7	40.43	7.523	
10,600.0	9,850.0	10,039.6	9,876.6	16.9	33.4	-95.58	746.1	-1,189.0	359.6	322.4	37.15	9.679	
10,700.0	9,850.0	10,077.3	9,913.8	17.3	33.5	-103.19	751.8	-1,189.0	430.7	394.7	35.95	11.979	
10,800.0	9,850.0	10,267.3	10,088.3	17.7	34.1	-131.18	823.8	-1,189.3	507.2	470.8	36.37	13.944	
10,900.0	9,850.0	10,794.4	10,300.0	18.2	35.1	-148.86	1,279.5	-1,191.0	525.7	487.0	38.71	13.582	
11,000.0	9,850.0	10,894.4	10,300.0	18.7	35.2	-148.87	1,379.5	-1,191.4	525.7	486.8	38.91	13.511	
11,100.0	9,850.0	10,994.4	10,300.0	19.2	35.3	-148.89	1,479.5	-1,191.7	525.6	486.5	39.16	13.423	
11,200.0	9,850.0	11,094.4	10,300.0	19.7	35.4	-148.90	1,579.5	-1,192.1	525.6	486.1	39.46	13.319	
11,300.0	9,850.0	11,194.4	10,300.0	20.3	35.6	-148.91	1,679.5	-1,192.5	525.5	485.7	39.81	13.200	
11,400.0	9,850.0	11,294.4	10,300.0	20.9	35.8	-148.92	1,779.5	-1,192.9	525.4	485.2	40.21	13.067	
11,500.0	9,850.0	11,394.4	10,300.0	21.5	36.0	-148.93	1,879.5	-1,193.2	525.4	484.7	40.66	12.922	
11,600.0	9,850.0	11,494.4	10,300.0	22.1	36.3	-148.94	1,979.5	-1,193.6	525.3	484.2	41.15	12.766	
11,700.0	9,850.0	11,594.4	10,300.0	22.7	36.6	-148.95	2,079.5	-1,194.0	525.3	483.6	41.69	12.600	
11,800.0	9,850.0	11,694.4	10,300.0	23.4	36.9	-148.96	2,179.5	-1,194.3	525.2	482.9	42.27	12.426	
11,900.0	9,850.0	11,794.4	10,300.0	24.0	37.2	-148.97	2,279.5	-1,194.7	525.1	482.2	42.89	12.245	
12,000.0	9,850.0	11,894.4	10,300.0	24.7	37.6	-148.98	2,379.5	-1,195.1	525.1	481.5	43.54	12.058	
12,100.0	9,850.0	11,994.4	10,300.0	25.4	38.0	-149.00	2,479.5	-1,195.5	525.0	480.8	44.24	11.867	
12,200.0	9,850.0	12,094.4	10,300.0	26.1	38.4	-149.01	2,579.5	-1,195.8	525.0	480.0	44.97	11.673	
12,300.0	9,850.0	12,194.4	10,300.0	26.8	38.9	-149.02	2,679.5	-1,196.2	524.9	479.2	45.73	11.477	
12,400.0	9,850.0	12,294.4	10,300.0	27.5	39.4	-149.03	2,779.5	-1,196.6	524.8	478.3	46.53	11.279	
12,500.0	9,850.0	12,394.4	10,300.0	28.2	39.9	-149.04	2,879.5	-1,196.9	524.8	477.4	47.36	11.081	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		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)			
12,600.0	9,850.0	12,494.4	10,300.0	29.0	40.4	-149.05	2,979.5	-1,197.3	524.7	476.5	48.21	10.884	
12,700.0	9,850.0	12,594.4	10,300.0	29.7	41.0	-149.06	3,079.5	-1,197.7	524.7	475.6	49.09	10.687	
12,800.0	9,850.0	12,694.4	10,300.0	30.5	41.6	-149.07	3,179.5	-1,198.1	524.6	474.6	50.00	10.492	
12,900.0	9,850.0	12,794.4	10,300.0	31.2	42.2	-149.08	3,279.5	-1,198.4	524.5	473.6	50.93	10.299	
13,000.0	9,850.0	12,894.4	10,300.0	32.0	42.8	-149.09	3,379.5	-1,198.8	524.5	472.6	51.88	10.108	
13,100.0	9,850.0	12,994.4	10,300.0	32.7	43.4	-149.11	3,479.5	-1,199.2	524.4	471.6	52.86	9.921	
13,200.0	9,850.0	13,094.4	10,300.0	33.5	44.1	-149.12	3,579.5	-1,199.5	524.4	470.5	53.86	9.736	
13,300.0	9,850.0	13,194.4	10,300.0	34.3	44.8	-149.13	3,679.5	-1,199.9	524.3	469.4	54.87	9.555	
13,400.0	9,850.0	13,294.4	10,300.0	35.0	45.5	-149.14	3,779.5	-1,200.3	524.2	468.3	55.91	9.377	
13,500.0	9,850.0	13,394.4	10,300.0	35.8	46.2	-149.15	3,879.5	-1,200.7	524.2	467.2	56.96	9.203	
13,600.0	9,850.0	13,494.4	10,300.0	36.6	46.9	-149.16	3,979.5	-1,201.0	524.1	466.1	58.02	9.033	
13,700.0	9,850.0	13,594.4	10,300.0	37.4	47.6	-149.17	4,079.5	-1,201.4	524.1	465.0	59.11	8.866	
13,800.0	9,850.0	13,694.4	10,300.0	38.2	48.3	-149.18	4,179.5	-1,201.8	524.0	463.8	60.20	8.704	
13,900.0	9,850.0	13,794.4	10,300.0	39.0	49.1	-149.19	4,279.4	-1,202.1	523.9	462.6	61.31	8.545	
14,000.0	9,850.0	13,894.4	10,300.0	39.8	49.9	-149.20	4,379.4	-1,202.5	523.9	461.4	62.44	8.391	
14,100.0	9,850.0	13,994.4	10,300.0	40.5	50.6	-149.22	4,479.4	-1,202.9	523.8	460.2	63.57	8.240	
14,200.0	9,850.0	14,094.4	10,300.0	41.3	51.4	-149.23	4,579.4	-1,203.3	523.8	459.0	64.72	8.093	
14,300.0	9,850.0	14,194.4	10,300.0	42.2	52.2	-149.24	4,679.4	-1,203.6	523.7	457.8	65.88	7.950	
14,400.0	9,850.0	14,294.4	10,300.0	43.0	53.0	-149.25	4,779.4	-1,204.0	523.6	456.6	67.05	7.810	
14,500.0	9,850.0	14,394.4	10,300.0	43.8	53.8	-149.26	4,879.4	-1,204.4	523.6	455.4	68.22	7.674	
14,600.0	9,850.0	14,494.4	10,300.0	44.6	54.6	-149.27	4,979.4	-1,204.7	523.5	454.1	69.41	7.542	
14,700.0	9,850.0	14,594.4	10,300.0	45.4	55.4	-149.28	5,079.4	-1,205.1	523.5	452.9	70.61	7.414	
14,800.0	9,850.0	14,694.4	10,300.0	46.2	56.2	-149.29	5,179.4	-1,205.5	523.4	451.6	71.81	7.288	
14,900.0	9,850.0	14,794.4	10,300.0	47.0	57.1	-149.30	5,279.4	-1,205.9	523.3	450.3	73.02	7.167	
15,000.0	9,850.0	14,894.4	10,300.0	47.8	57.9	-149.31	5,379.4	-1,206.2	523.3	449.0	74.24	7.048	
15,100.0	9,850.0	14,994.4	10,300.0	48.6	58.7	-149.33	5,479.4	-1,206.6	523.2	447.7	75.47	6.933	
15,200.0	9,850.0	15,094.4	10,300.0	49.5	59.6	-149.34	5,579.4	-1,207.0	523.2	446.5	76.71	6.820	
15,300.0	9,850.0	15,194.4	10,300.0	50.3	60.4	-149.35	5,679.4	-1,207.3	523.1	445.2	77.95	6.711	
15,400.0	9,850.0	15,294.4	10,300.0	51.1	61.2	-149.36	5,779.4	-1,207.7	523.0	443.9	79.19	6.605	
15,500.0	9,850.0	15,394.4	10,300.0	51.9	62.1	-149.37	5,879.4	-1,208.1	523.0	442.5	80.44	6.501	
15,600.0	9,850.0	15,494.4	10,300.0	52.8	63.0	-149.38	5,979.4	-1,208.5	522.9	441.2	81.70	6.400	
15,700.0	9,850.0	15,594.4	10,300.0	53.6	63.8	-149.39	6,079.4	-1,208.8	522.9	439.9	82.97	6.302	
15,800.0	9,850.0	15,694.4	10,300.0	54.4	64.7	-149.40	6,179.4	-1,209.2	522.8	438.6	84.23	6.207	
15,900.0	9,850.0	15,794.4	10,300.0	55.2	65.5	-149.41	6,279.4	-1,209.6	522.7	437.2	85.51	6.113	
16,000.0	9,850.0	15,894.4	10,300.0	56.1	66.4	-149.43	6,379.4	-1,209.9	522.7	435.9	86.78	6.023	
16,100.0	9,850.0	15,994.4	10,300.0	56.9	67.3	-149.44	6,479.4	-1,210.3	522.6	434.6	88.07	5.934	
16,200.0	9,850.0	16,094.4	10,300.0	57.7	68.2	-149.45	6,579.4	-1,210.7	522.6	433.2	89.35	5.848	
16,300.0	9,850.0	16,194.4	10,300.0	58.6	69.0	-149.46	6,679.4	-1,211.1	522.5	431.9	90.64	5.764	
16,400.0	9,850.0	16,294.4	10,300.0	59.4	69.9	-149.47	6,779.4	-1,211.4	522.4	430.5	91.94	5.683	
16,500.0	9,850.0	16,394.4	10,300.0	60.2	70.8	-149.48	6,879.4	-1,211.8	522.4	429.2	93.23	5.603	
16,600.0	9,850.0	16,494.4	10,300.0	61.1	71.7	-149.49	6,979.4	-1,212.2	522.3	427.8	94.54	5.525	
16,700.0	9,850.0	16,594.4	10,300.0	61.9	72.6	-149.50	7,079.4	-1,212.5	522.3	426.4	95.84	5.449	
16,800.0	9,850.0	16,694.4	10,300.0	62.7	73.5	-149.51	7,179.4	-1,212.9	522.2	425.1	97.15	5.375	
16,900.0	9,850.0	16,794.4	10,300.0	63.6	74.4	-149.52	7,279.4	-1,213.3	522.2	423.7	98.46	5.303	
16,997.0	9,850.0	16,891.4	10,300.0	64.4	75.2	-149.54	7,376.4	-1,213.6	522.1	422.4	99.73	5.235	
17,000.0	9,850.0	16,894.4	10,300.0	64.4	75.3	-149.54	7,379.4	-1,213.7	522.1	422.3	99.77	5.233	
17,100.0	9,850.0	16,994.4	10,300.0	65.3	76.2	-149.74	7,479.4	-1,214.0	521.1	420.1	101.02	5.158	
17,200.0	9,850.0	17,094.3	10,300.0	66.1	77.0	-150.31	7,579.2	-1,214.4	518.4	416.2	102.14	5.075	
17,300.0	9,850.0	17,193.9	10,300.0	67.0	77.9	-151.25	7,678.8	-1,214.8	514.0	410.9	103.13	4.984	
17,400.0	9,850.0	17,293.1	10,300.0	67.8	78.8	-152.57	7,778.1	-1,215.1	508.1	404.1	104.00	4.886	
17,500.0	9,850.0	17,391.8	10,300.0	68.7	79.7	-154.29	7,876.8	-1,215.5	500.9	396.2	104.78	4.781	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance		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)			
17,600.0	9,850.0	17,489.9	10,300.0	69.5	80.6	-156.43	7,974.9	-1,215.9	492.8	387.3	105.51	4.671	
17,700.0	9,850.0	17,587.3	10,300.0	70.4	81.5	-159.01	8,072.3	-1,216.2	484.0	377.7	106.26	4.555	
17,782.0	9,850.0	17,666.5	10,300.0	71.1	82.2	-161.45	8,151.5	-1,216.5	476.6	369.6	106.97	4.455	
17,800.0	9,850.0	17,683.8	10,300.0	71.2	82.4	-161.99	8,168.8	-1,216.6	475.0	367.9	107.15	4.433	
17,900.0	9,850.0	17,780.1	10,300.0	72.1	83.2	-165.05	8,265.1	-1,217.0	467.0	358.7	108.31	4.312	
17,980.0	9,850.0	17,857.1	10,300.0	72.7	84.0	-167.56	8,342.0	-1,217.2	461.7	352.2	109.49	4.217	
18,000.0	9,850.0	17,876.3	10,300.0	72.9	84.1	-168.17	8,361.3	-1,217.3	460.5	350.7	109.82	4.193	
18,100.0	9,850.0	17,973.2	10,300.0	73.8	85.0	-171.04	8,458.2	-1,217.7	455.9	344.3	111.64	4.084	
18,200.0	9,850.0	18,070.9	10,300.0	74.6	85.9	-173.60	8,555.9	-1,218.0	453.0	339.3	113.64	3.986	
18,300.0	9,850.0	18,169.2	10,300.0	75.5	86.8	-175.80	8,654.2	-1,218.4	451.3	335.6	115.71	3.900	
18,400.0	9,850.0	18,268.2	10,300.0	76.4	87.7	-177.61	8,753.2	-1,218.8	450.4	332.7	117.73	3.826	
18,500.0	9,850.0	18,367.6	10,300.0	77.2	88.6	-179.00	8,852.5	-1,219.1	450.1	330.5	119.63	3.762	
18,600.0	9,850.0	18,467.3	10,300.0	78.1	89.5	-179.97	8,952.2	-1,219.5	450.0	328.7	121.35	3.708	
18,605.1	9,850.0	18,472.3	10,300.0	78.1	89.6	180.00	8,957.3	-1,219.5	450.0	328.6	121.44	3.706	
18,700.0	9,850.0	18,567.2	10,300.0	78.9	90.4	179.51	9,052.1	-1,219.9	450.0	327.2	122.85	3.663	
18,764.8	9,850.0	18,632.0	10,300.0	79.5	91.0	179.41	9,117.0	-1,220.1	450.0	326.4	123.69	3.639	
18,800.0	9,850.0	18,667.2	10,300.0	79.8	91.4	179.40	9,152.1	-1,220.2	450.0	325.9	124.11	3.626	
18,900.0	9,850.0	18,767.2	10,300.0	80.6	92.3	179.38	9,252.1	-1,220.6	450.0	324.7	125.33	3.591	
19,000.0	9,850.0	18,867.2	10,300.0	81.5	93.2	179.37	9,352.1	-1,221.0	450.0	323.5	126.54	3.556	
19,100.0	9,850.0	18,967.2	10,300.0	82.3	94.1	179.35	9,452.1	-1,221.4	450.0	322.3	127.76	3.523	
19,200.0	9,850.0	19,067.2	10,300.0	83.2	95.1	179.34	9,552.1	-1,221.7	450.0	321.1	128.98	3.489	
19,300.0	9,850.0	19,167.2	10,300.0	84.0	96.0	179.32	9,652.1	-1,222.1	450.0	319.9	130.19	3.457	
19,400.0	9,850.0	19,267.2	10,300.0	84.8	96.9	179.31	9,752.1	-1,222.5	450.0	318.6	131.41	3.425	
19,500.0	9,850.0	19,367.2	10,300.0	85.7	97.8	179.29	9,852.1	-1,222.8	450.1	317.4	132.63	3.393	
19,600.0	9,850.0	19,467.2	10,300.0	86.5	98.8	179.27	9,952.1	-1,223.2	450.1	316.2	133.85	3.362	
19,700.0	9,850.0	19,567.2	10,300.0	87.4	99.7	179.26	10,052.1	-1,223.6	450.1	315.0	135.08	3.332	
19,800.0	9,850.0	19,667.2	10,300.0	88.2	100.6	179.24	10,152.1	-1,224.0	450.1	313.8	136.30	3.302	
19,900.0	9,850.0	19,767.2	10,300.0	89.1	101.5	179.23	10,252.1	-1,224.3	450.1	312.5	137.52	3.273	
20,000.0	9,850.0	19,867.2	10,300.0	89.9	102.5	179.21	10,352.1	-1,224.7	450.1	311.3	138.75	3.244	
20,100.0	9,850.0	19,967.2	10,300.0	90.8	103.4	179.20	10,452.1	-1,225.1	450.1	310.1	139.97	3.215	
20,200.0	9,850.0	20,067.2	10,300.0	91.6	104.3	179.18	10,552.1	-1,225.5	450.1	308.9	141.20	3.187	
20,300.0	9,850.0	20,167.2	10,300.0	92.5	105.3	179.17	10,652.1	-1,225.8	450.1	307.6	142.43	3.160	
20,400.0	9,850.0	20,267.2	10,300.0	93.3	106.2	179.15	10,752.1	-1,226.2	450.1	306.4	143.66	3.133	
20,500.0	9,850.0	20,367.2	10,300.0	94.2	107.1	179.13	10,852.1	-1,226.6	450.1	305.2	144.89	3.106	
20,600.0	9,850.0	20,467.2	10,300.0	95.0	108.1	179.12	10,952.1	-1,226.9	450.1	303.9	146.12	3.080	
20,700.0	9,850.0	20,567.2	10,300.0	95.9	109.0	179.10	11,052.1	-1,227.3	450.1	302.7	147.35	3.054	
20,800.0	9,850.0	20,667.2	10,300.0	96.7	109.9	179.09	11,152.1	-1,227.7	450.1	301.5	148.58	3.029	
20,900.0	9,850.0	20,767.2	10,300.0	97.6	110.9	179.07	11,252.1	-1,228.1	450.1	300.3	149.81	3.004	
21,000.0	9,850.0	20,867.2	10,300.0	98.4	111.8	179.06	11,352.1	-1,228.4	450.1	299.0	151.05	2.980 Normal Operations	
21,100.0	9,850.0	20,967.2	10,300.0	99.3	112.8	179.04	11,452.1	-1,228.8	450.1	297.8	152.28	2.956 Normal Operations	
21,200.0	9,850.0	21,067.2	10,300.0	100.1	113.7	179.02	11,552.1	-1,229.2	450.1	296.6	153.51	2.932 Normal Operations	
21,300.0	9,850.0	21,167.2	10,300.0	101.0	114.6	179.01	11,652.1	-1,229.5	450.1	295.3	154.75	2.908 Normal Operations	
21,400.0	9,850.0	21,267.2	10,300.0	101.8	115.6	178.99	11,752.1	-1,229.9	450.1	294.1	155.99	2.885 Normal Operations	
21,500.0	9,850.0	21,367.2	10,300.0	102.7	116.5	178.98	11,852.1	-1,230.3	450.1	292.9	157.22	2.863 Normal Operations	
21,600.0	9,850.0	21,467.2	10,300.0	103.5	117.5	178.96	11,952.1	-1,230.7	450.1	291.6	158.46	2.840 Normal Operations	
21,700.0	9,850.0	21,567.2	10,300.0	104.4	118.4	178.95	12,052.1	-1,231.0	450.1	290.4	159.70	2.818 Normal Operations	
21,800.0	9,850.0	21,667.2	10,300.0	105.2	119.3	178.93	12,152.1	-1,231.4	450.1	289.1	160.94	2.797 Normal Operations	
21,900.0	9,850.0	21,767.2	10,300.0	106.1	120.3	178.92	12,252.1	-1,231.8	450.1	287.9	162.18	2.775 Normal Operations	
22,000.0	9,850.0	21,867.2	10,300.0	106.9	121.2	178.90	12,352.1	-1,232.1	450.1	286.7	163.42	2.754 Normal Operations	
22,100.0	9,850.0	21,967.2	10,300.0	107.8	122.2	178.88	12,452.1	-1,232.5	450.1	285.4	164.66	2.734 Normal Operations	
22,200.0	9,850.0	22,067.2	10,300.0	108.6	123.1	178.87	12,552.1	-1,232.9	450.1	284.2	165.90	2.713 Normal Operations	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - _THUNDERDOME FED COM 521H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		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)	No-Go Distance (usft)	Separation Factor	
22,300.0	9,850.0	22,167.2	10,300.0	109.5	124.0	178.85	12,652.1	-1,233.3	450.1	283.0	167.14	2.693 Normal Operations	
22,400.0	9,850.0	22,267.2	10,300.0	110.4	125.0	178.84	12,752.1	-1,233.6	450.1	281.7	168.38	2.673 Normal Operations	
22,500.0	9,850.0	22,367.2	10,300.0	111.2	125.9	178.82	12,852.1	-1,234.0	450.1	280.5	169.62	2.654 Normal Operations	
22,600.0	9,850.0	22,467.2	10,300.0	112.1	126.9	178.81	12,952.1	-1,234.4	450.1	279.2	170.86	2.634 Normal Operations	
22,700.0	9,850.0	22,567.2	10,300.0	112.9	127.8	178.79	13,052.1	-1,234.7	450.1	278.0	172.11	2.615 Normal Operations	
22,800.0	9,850.0	22,667.2	10,300.0	113.8	128.8	178.78	13,152.1	-1,235.1	450.1	276.8	173.35	2.596 Normal Operations	
22,900.0	9,850.0	22,767.2	10,300.0	114.6	129.7	178.76	13,252.1	-1,235.5	450.1	275.5	174.60	2.578 Normal Operations	
23,000.0	9,850.0	22,867.2	10,300.0	115.5	130.7	178.74	13,352.1	-1,235.9	450.1	274.3	175.84	2.560 Normal Operations	
23,100.0	9,850.0	22,967.1	10,300.0	116.1	131.6	178.73	13,452.1	-1,236.2	450.1	273.2	176.93	2.544 Normal Operations	
23,100.4	9,850.0	22,967.6	10,300.0	116.1	131.6	178.73	13,452.5	-1,236.2	450.1	273.2	176.94	2.544 Normal Operations	
23,106.5	9,850.0	22,973.3	10,300.0	116.2	131.7	178.73	13,458.2	-1,236.2	450.1	273.1	177.01	2.543 Normal Operations	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - ROADRUNNER FEDERAL COM 23 ILL 005H - ST01 - AWP												Offset Site Error:	0.0 usft
Survey Program: 142-r.5 MWD, 7021-r.5 MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (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)			
6,700.0	6,595.5	11,828.7	7,519.1	13.6	109.0	-176.16	-100.3	-929.0	952.0	886.4	65.64	14.505	
6,800.0	6,695.5	11,825.3	7,519.2	13.6	108.9	-177.00	-100.2	-925.6	855.4	787.5	67.86	12.604	
6,900.0	6,795.5	11,822.1	7,519.3	13.7	108.8	-177.78	-100.1	-922.5	759.5	688.7	70.82	10.725	
7,000.0	6,895.5	11,819.2	7,519.4	13.8	108.8	-178.51	-100.0	-919.5	664.9	590.1	74.85	8.884	
7,100.0	6,995.5	11,816.4	7,519.4	13.8	108.7	-179.20	-99.9	-916.7	572.2	491.7	80.46	7.111	
7,200.0	7,095.5	11,813.8	7,519.5	13.9	108.6	-179.84	-99.8	-914.2	482.3	393.8	88.49	5.450	
7,300.0	7,195.5	11,811.4	7,519.6	13.9	108.6	179.55	-99.7	-911.7	397.2	297.0	100.16	3.966	
7,400.0	7,295.5	11,809.1	7,519.6	14.0	108.5	178.97	-99.6	-909.4	320.9	204.1	116.79	2.747	Normal Operations
7,500.0	7,395.5	11,806.9	7,519.7	14.0	108.5	178.43	-99.5	-907.2	261.0	123.6	137.41	1.899	Caution - Monitor Closely
7,600.0	7,495.5	11,804.8	7,519.7	14.1	108.4	177.92	-99.4	-905.2	230.9	78.9	151.91	1.520	Caution - Monitor Closely
7,624.2	7,519.7	11,804.4	7,519.7	14.1	108.4	177.80	-99.4	-904.7	229.6	77.1	152.48	1.506	Caution - Monitor Closely, CC, ES, SF
7,700.0	7,595.5	11,802.9	7,519.7	14.2	108.4	177.43	-99.3	-903.2	241.8	96.4	145.38	1.663	Caution - Monitor Closely
7,800.0	7,695.5	11,801.1	7,519.8	14.2	108.3	176.97	-99.3	-901.4	289.1	164.3	124.87	2.316	Caution - Monitor Closely
7,900.0	7,795.5	11,799.3	7,519.8	14.3	108.3	176.54	-99.2	-899.7	358.8	253.3	105.55	3.399	
8,000.0	7,895.5	11,797.6	7,519.8	14.4	108.3	176.12	-99.1	-898.0	440.3	348.7	91.65	4.804	
8,100.0	7,995.5	11,796.0	7,519.9	14.4	108.2	175.72	-99.1	-896.4	528.2	446.0	82.24	6.423	
8,200.0	8,095.5	11,794.5	7,519.9	14.5	108.2	175.35	-99.0	-894.9	619.8	543.9	75.85	8.171	
8,300.0	8,195.5	11,793.1	7,519.9	14.5	108.1	174.99	-99.0	-893.4	713.6	642.2	71.44	9.990	
8,400.0	8,295.5	11,791.7	7,519.9	14.6	108.1	174.64	-98.9	-892.1	808.9	740.6	68.32	11.841	
8,500.0	8,395.5	11,790.4	7,520.0	14.7	108.1	174.32	-98.9	-890.7	905.3	839.2	66.07	13.701	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - AWP													Offset Site Error: 0.0 usft	
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 371-r.5 MWD+IFR1+SAG+FDIR, 7581-r.5 MWD+IFR1+SAG+FDIR				Rule Assigned:						Offset Well Error: 0.0 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)	No-Go Distance (usft)	Separation Factor		
0.0	0.0	39.9	-0.1	0.0	0.1	-172.43	-150.5	-20.0	151.8	151.1	0.71	215.127	CC	
100.0	100.0	139.8	99.8	0.9	0.4	-172.13	-150.5	-20.8	151.9	150.1	1.87	81.412		
200.0	200.0	239.4	199.4	1.2	0.6	-171.70	-150.6	-22.0	152.2	149.8	2.43	62.724		
300.0	300.0	338.8	298.8	1.5	0.8	-171.27	-150.9	-23.2	152.7	149.8	2.87	53.198		
400.0	400.0	438.6	398.6	1.8	1.0	-170.93	-151.7	-24.2	153.6	150.3	3.31	46.454		
500.0	500.0	538.7	498.6	2.0	1.1	-170.72	-152.5	-24.9	154.5	150.8	3.71	41.702		
600.0	600.0	638.9	598.9	2.2	1.3	-170.61	-153.2	-25.3	155.3	151.2	4.07	38.133		
700.0	700.0	739.4	699.3	2.4	1.5	-170.48	-153.7	-25.8	155.9	151.5	4.42	35.292		
800.0	800.0	839.6	799.5	2.6	1.6	-170.33	-154.0	-26.2	156.2	151.5	4.74	32.958		
900.0	900.0	939.7	899.7	2.8	1.7	-170.06	-154.2	-27.0	156.5	151.5	5.04	31.028		
1,000.0	1,000.0	1,039.3	999.3	3.0	1.9	-169.79	-154.3	-27.8	156.8	151.5	5.34	29.383		
1,100.0	1,100.0	1,140.4	1,100.4	3.1	2.0	-169.85	-154.6	-27.7	157.1	151.5	5.61	27.988		
1,200.0	1,200.0	1,240.8	1,200.8	3.3	2.0	-170.67	-154.6	-25.4	156.7	150.8	5.85	26.767		
1,300.0	1,300.0	1,340.9	1,300.8	3.5	2.1	-171.44	-154.4	-23.2	156.1	150.1	6.09	25.648		
1,400.0	1,400.0	1,440.7	1,400.6	3.6	2.1	-172.11	-154.3	-21.4	155.7	149.4	6.32	24.637		
1,500.0	1,500.0	1,540.6	1,500.5	3.8	2.2	-172.86	-154.1	-19.3	155.3	148.8	6.55	23.706		
1,600.0	1,600.0	1,641.0	1,600.8	3.9	2.2	-173.63	-154.1	-17.2	155.0	148.2	6.78	22.855		
1,700.0	1,700.0	1,741.3	1,701.1	4.1	2.3	-174.43	-153.6	-15.0	154.3	147.3	7.01	22.020		
1,800.0	1,800.0	1,840.9	1,800.7	4.2	2.4	-175.25	-153.2	-12.7	153.7	146.5	7.23	21.253		
1,834.9	1,834.9	1,875.3	1,835.1	4.2	2.4	-93.69	-153.2	-12.0	153.7	146.4	7.30	21.049	ES	
1,900.0	1,900.0	1,938.9	1,898.7	4.3	2.5	-94.48	-153.4	-11.4	154.0	146.6	7.43	20.737		
2,000.0	1,999.8	2,035.2	1,994.9	4.5	2.6	-95.49	-155.5	-13.7	156.7	149.1	7.69	20.391		
2,100.0	2,099.5	2,133.9	2,093.4	4.7	2.6	-96.46	-159.2	-19.4	161.6	153.6	7.94	20.342	SF	
2,200.0	2,198.7	2,232.8	2,192.1	4.9	2.7	-98.58	-162.8	-25.0	166.9	158.7	8.20	20.347		
2,300.0	2,297.5	2,328.1	2,287.1	5.1	2.8	-101.81	-167.5	-29.5	174.5	166.0	8.47	20.607		
2,400.0	2,395.6	2,425.0	2,383.7	5.4	2.9	-105.69	-174.7	-34.0	186.0	177.3	8.75	21.248		
2,500.0	2,493.1	2,529.1	2,486.8	5.6	3.0	-108.40	-182.1	-45.7	198.0	189.0	9.05	21.882		
2,514.5	2,507.1	2,544.1	2,501.6	5.6	3.0	-108.69	-183.0	-47.9	199.6	190.5	9.07	22.005		
2,600.0	2,590.0	2,628.3	2,584.8	5.8	3.1	-110.55	-188.0	-60.2	209.2	199.9	9.32	22.444		
2,700.0	2,686.9	2,728.5	2,683.7	6.0	3.2	-112.52	-193.9	-75.0	220.6	211.0	9.60	22.975		
2,800.0	2,783.8	2,831.4	2,784.9	6.1	3.3	-113.70	-199.3	-93.1	230.9	221.0	9.89	23.346		
2,900.0	2,880.7	2,929.8	2,881.4	6.3	3.5	-114.55	-204.2	-111.2	240.8	230.6	10.18	23.654		
3,000.0	2,977.6	3,028.6	2,978.5	6.5	3.6	-115.45	-209.5	-128.8	251.2	240.7	10.48	23.973		
3,100.0	3,074.5	3,126.6	3,074.9	6.7	3.7	-116.38	-214.9	-145.6	262.0	251.2	10.78	24.297		
3,200.0	3,171.4	3,225.4	3,172.1	6.9	3.9	-117.25	-220.6	-162.5	273.2	262.1	11.09	24.628		
3,300.0	3,268.3	3,324.8	3,270.1	7.1	4.0	-118.24	-226.3	-178.5	284.7	273.3	11.41	24.950		
3,400.0	3,365.2	3,430.5	3,374.1	7.3	4.2	-119.20	-230.4	-196.4	294.3	282.6	11.74	25.073		
3,500.0	3,462.1	3,528.6	3,470.6	7.4	4.3	-119.83	-234.5	-214.0	303.8	291.8	12.06	25.189		
3,600.0	3,559.0	3,627.0	3,567.1	7.6	4.5	-120.26	-239.3	-232.3	313.8	301.4	12.39	25.322		
3,700.0	3,655.9	3,726.9	3,665.2	7.8	4.7	-120.69	-244.2	-250.8	323.9	311.2	12.73	25.442		
3,800.0	3,752.8	3,825.5	3,762.0	8.0	4.8	-121.17	-248.9	-268.6	334.0	320.9	13.07	25.555		
3,900.0	3,849.7	3,925.0	3,859.7	8.2	5.0	-121.60	-253.9	-286.6	344.3	330.9	13.41	25.670		
4,000.0	3,946.7	4,027.0	3,959.3	8.5	5.2	-121.54	-259.7	-307.8	354.2	340.5	13.77	25.721		
4,100.0	4,043.6	4,125.6	4,055.0	8.7	5.4	-121.12	-266.1	-330.5	363.9	349.8	14.13	25.749		
4,200.0	4,140.5	4,222.4	4,149.0	8.9	5.6	-120.69	-272.9	-352.9	374.1	359.6	14.49	25.814		
4,300.0	4,237.4	4,321.1	4,244.7	9.1	5.8	-120.25	-280.4	-375.6	384.9	370.0	14.86	25.897		
4,400.0	4,334.3	4,423.4	4,344.1	9.3	6.0	-119.83	-287.9	-399.2	395.3	380.1	15.24	25.936		
4,500.0	4,431.2	4,532.3	4,449.6	9.5	6.2	-119.38	-294.2	-425.1	404.2	388.6	15.64	25.846		
4,600.0	4,528.1	4,629.5	4,543.9	9.7	6.4	-119.02	-299.0	-448.4	412.2	396.2	16.02	25.741		
4,700.0	4,625.0	4,727.2	4,638.7	9.9	6.6	-118.69	-304.4	-471.5	420.9	404.5	16.39	25.674		
4,800.0	4,721.9	4,824.6	4,733.0	10.1	6.8	-118.32	-310.2	-494.7	430.0	413.2	16.78	25.629		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 371-r.5 MWD+IFR1+SAG+FDIR, 7581-r.5 MWD+IFR1+SAG+FDIR												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		No-Go		Separation	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)		Distance (usft)	Factor
4,900.0	4,818.8	4,924.5	4,830.0	10.3	7.0	-118.01	-316.4	-518.1	439.4	422.2		17.17	25.596
5,000.0	4,915.7	5,024.8	4,927.4	10.6	7.2	-117.78	-322.2	-541.1	448.5	431.0		17.56	25.549
5,100.0	5,012.6	5,124.5	5,024.4	10.8	7.4	-117.61	-327.7	-563.6	457.6	439.7		17.95	25.500
5,175.5	5,085.8	5,198.9	5,096.7	10.9	7.5	-117.47	-331.9	-580.6	464.6	446.4		18.22	25.495
5,200.0	5,109.5	5,223.1	5,120.2	11.0	7.6	-117.44	-333.3	-586.1	466.8	448.5		18.30	25.506
5,300.0	5,206.8	5,320.7	5,215.1	11.2	7.8	-117.25	-339.0	-608.0	475.7	457.0		18.69	25.453
5,400.0	5,304.4	5,420.8	5,312.7	11.4	8.0	-116.92	-345.2	-629.8	484.3	465.3		19.06	25.405
5,500.0	5,402.3	5,534.6	5,423.5	11.6	8.2	-116.33	-350.2	-655.2	490.3	470.8		19.46	25.195
5,600.0	5,500.6	5,631.8	5,518.1	11.8	8.4	-115.68	-353.3	-677.1	494.4	474.6		19.80	24.966
5,700.0	5,599.3	5,730.6	5,614.3	12.0	8.6	-114.84	-357.0	-699.3	498.3	478.2		20.14	24.744
5,800.0	5,698.2	5,827.5	5,708.6	12.2	8.8	-113.80	-360.8	-721.5	501.9	481.4		20.46	24.528
5,900.0	5,797.3	5,924.7	5,803.0	12.4	9.0	-112.53	-365.4	-744.1	505.5	484.7		20.77	24.335
6,000.0	5,896.6	6,021.1	5,896.6	12.6	9.3	-111.07	-370.4	-766.7	509.2	488.1		21.07	24.165
6,100.0	5,996.2	6,120.0	5,992.5	12.8	9.5	-109.40	-375.9	-790.1	512.9	491.6		21.37	24.007
6,200.0	6,095.8	6,216.7	6,086.7	12.9	9.7	-107.79	-381.1	-811.4	516.7	495.1		21.64	23.881
6,300.0	6,195.7	6,311.4	6,179.5	13.1	9.9	-106.41	-386.1	-829.3	520.8	498.9		21.88	23.801
6,400.0	6,295.6	6,409.3	6,275.9	13.3	10.1	-105.00	-391.9	-846.1	525.7	503.6		22.12	23.764
6,500.0	6,395.5	6,519.1	6,383.6	13.4	10.3	-103.12	-397.3	-866.0	529.3	507.0		22.38	23.657
6,600.0	6,495.5	6,620.1	6,482.8	13.5	10.5	-101.18	-401.0	-885.0	531.9	509.3		22.60	23.540
6,604.5	6,500.0	6,624.7	6,487.3	13.5	10.5	177.02	-401.1	-885.8	532.0	509.4		22.61	23.534
6,700.0	6,595.5	6,722.7	6,583.4	13.6	10.7	179.09	-404.0	-905.0	534.2	511.4		22.80	23.426
6,800.0	6,695.5	6,818.8	6,677.5	13.6	10.9	-178.90	-406.5	-923.8	537.0	514.0		23.01	23.336
6,900.0	6,795.5	6,915.5	6,772.5	13.7	11.1	-176.97	-409.5	-942.1	540.8	517.6		23.22	23.287
7,000.0	6,895.5	7,013.2	6,868.3	13.8	11.3	-175.07	-412.7	-960.4	545.4	522.0		23.45	23.263
7,100.0	6,995.5	7,109.9	6,963.3	13.8	11.5	-173.23	-416.0	-978.4	550.8	527.2		23.67	23.269
7,200.0	7,095.5	7,208.3	7,060.1	13.9	11.7	-171.45	-419.6	-996.1	556.9	533.0		23.91	23.296
7,300.0	7,195.5	7,305.0	7,155.3	13.9	11.9	-169.84	-423.4	-1,012.7	563.7	539.5		24.14	23.349
7,400.0	7,295.5	7,401.2	7,250.1	14.0	12.1	-168.37	-427.7	-1,028.3	571.3	546.9		24.38	23.434
7,500.0	7,395.5	7,500.8	7,348.4	14.0	12.3	-167.02	-432.6	-1,043.2	579.3	554.7		24.62	23.534
7,600.0	7,495.5	7,600.3	7,446.9	14.1	12.5	-165.83	-437.7	-1,056.9	587.5	562.7		24.83	23.666
7,700.0	7,595.5	7,705.1	7,550.7	14.2	12.5	-164.77	-443.0	-1,069.5	595.6	570.6		24.96	23.864
7,800.0	7,695.5	7,812.1	7,656.8	14.2	12.5	-163.60	-446.7	-1,083.3	602.4	577.3		25.09	24.006
7,900.0	7,795.5	7,919.8	7,763.5	14.3	12.5	-162.31	-448.9	-1,098.1	608.4	583.2		25.24	24.110
8,000.0	7,895.5	8,044.3	7,886.7	14.4	12.6	-160.73	-446.9	-1,115.2	611.2	585.8		25.39	24.075
8,100.0	7,995.5	8,147.9	7,989.7	14.4	12.6	-159.66	-444.2	-1,126.4	612.5	586.9		25.52	23.995
8,200.0	8,095.5	8,248.0	8,089.3	14.5	12.6	-158.76	-441.5	-1,135.7	613.2	587.6		25.65	23.903
8,300.0	8,195.5	8,339.3	8,180.2	14.5	12.7	-157.95	-439.8	-1,144.4	615.0	589.2		25.78	23.851
8,400.0	8,295.5	8,437.1	8,277.6	14.6	12.7	-157.15	-439.2	-1,153.3	617.9	592.0		25.91	23.845
8,500.0	8,395.5	8,550.7	8,391.0	14.7	12.7	-156.49	-438.2	-1,160.7	619.7	593.7		26.04	23.803
8,600.0	8,495.5	8,647.9	8,488.1	14.7	12.8	-156.12	-437.6	-1,164.8	620.8	594.7		26.15	23.743
8,700.0	8,595.5	8,756.3	8,596.3	14.8	12.8	-155.65	-436.1	-1,169.8	621.4	595.1		26.26	23.660
8,800.0	8,695.5	8,861.5	8,701.4	14.8	12.8	-155.17	-433.5	-1,174.3	621.0	594.6		26.38	23.539
8,900.0	8,795.5	8,957.0	8,796.9	14.9	12.9	-154.97	-431.9	-1,175.9	620.2	593.7		26.48	23.421
8,922.3	8,817.8	8,978.0	8,817.8	14.9	12.9	-154.94	-431.7	-1,176.2	620.1	593.6		26.50	23.400
9,000.0	8,895.5	9,051.5	8,891.3	15.0	12.9	-154.81	-431.4	-1,177.6	620.4	593.9		26.58	23.343
9,100.0	8,995.5	9,147.7	8,987.5	15.0	12.9	-154.66	-431.5	-1,179.5	621.4	594.7		26.68	23.286
9,200.0	9,095.5	9,241.6	9,081.4	15.1	13.0	-154.56	-432.6	-1,181.2	623.2	596.4		26.79	23.265
9,300.0	9,195.5	9,336.1	9,175.9	15.2	13.0	-154.46	-434.4	-1,183.3	625.9	599.0		26.89	23.275
9,400.0	9,295.5	9,434.7	9,274.4	15.2	13.0	-154.43	-437.2	-1,185.0	629.2	602.2		26.99	23.309
9,477.0	9,372.5	9,519.0	9,358.7	15.3	13.1	-154.44	-439.5	-1,185.8	631.4	604.4		27.06	23.337
9,500.0	9,395.5	9,543.1	9,382.8	15.3	13.1	-154.16	-440.0	-1,185.9	632.4	605.3		27.07	23.361

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 371-r.5 MWD+IFR1+SAG+FDIR, 7581-r.5 MWD+IFR1+SAG+FDIR												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:			
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)	No-Go Distance (usft)	Separation Factor	Warning
9,525.0	9,420.4	9,570.1	9,409.8	15.3	13.1	-154.15	-440.7	-1,185.8	634.6	607.5	27.09	23.428	
9,550.0	9,445.2	9,599.5	9,439.2	15.3	13.1	-154.17	-441.2	-1,185.6	637.7	610.6	27.10	23.531	
9,575.0	9,469.8	9,628.0	9,467.6	15.3	13.1	-154.19	-441.5	-1,185.2	641.9	614.8	27.12	23.673	
9,600.0	9,494.2	9,656.0	9,495.6	15.3	13.1	-154.22	-441.8	-1,184.7	647.1	620.0	27.13	23.853	
9,625.0	9,518.2	9,679.6	9,519.3	15.4	13.1	-154.20	-442.0	-1,184.1	653.4	626.3	27.14	24.074	
9,650.0	9,541.7	9,702.6	9,542.2	15.4	13.1	-154.14	-442.2	-1,183.6	660.9	633.7	27.15	24.337	
9,675.0	9,564.9	9,724.8	9,564.5	15.4	13.1	-154.04	-442.4	-1,183.2	669.5	642.3	27.17	24.642	
9,700.0	9,587.5	9,746.5	9,586.1	15.4	13.1	-153.89	-442.6	-1,182.8	679.3	652.1	27.19	24.987	
9,725.0	9,609.5	9,767.5	9,607.1	15.4	13.1	-153.70	-442.8	-1,182.4	690.2	663.0	27.20	25.372	
9,750.0	9,630.9	9,787.9	9,627.5	15.4	13.1	-153.44	-443.1	-1,182.1	702.3	675.0	27.22	25.795	
9,775.0	9,651.5	9,807.5	9,647.1	15.5	13.0	-153.12	-443.3	-1,181.7	715.4	688.1	27.25	26.255	
9,800.0	9,671.4	9,826.5	9,666.1	15.5	13.0	-152.72	-443.6	-1,181.4	729.5	702.3	27.27	26.752	
9,825.0	9,690.5	9,844.9	9,684.5	15.5	13.0	-152.23	-443.8	-1,181.1	744.7	717.4	27.29	27.284	
9,850.0	9,708.7	9,862.7	9,702.3	15.5	13.0	-151.65	-444.1	-1,180.8	760.8	733.5	27.32	27.849	
9,875.0	9,726.0	9,879.7	9,719.3	15.5	13.0	-150.94	-444.4	-1,180.5	777.9	750.6	27.35	28.445	
9,900.0	9,742.3	9,895.7	9,735.3	15.5	13.0	-150.07	-444.6	-1,180.3	795.8	768.5	27.38	29.071	
9,925.0	9,757.6	9,910.6	9,750.2	15.6	13.0	-149.02	-444.8	-1,180.0	814.6	787.2	27.40	29.726	
9,950.0	9,771.8	9,924.4	9,764.0	15.6	13.0	-147.73	-445.1	-1,179.8	834.2	806.7	27.43	30.408	
9,975.0	9,785.0	9,936.8	9,776.3	15.6	13.0	-146.15	-445.2	-1,179.6	854.4	827.0	27.46	31.115	
10,000.0	9,797.0	9,947.8	9,787.4	15.6	13.0	-144.21	-445.4	-1,179.4	875.4	847.9	27.49	31.844	
10,025.0	9,807.9	9,957.7	9,797.3	15.6	13.0	-141.83	-445.6	-1,179.3	897.0	869.4	27.52	32.596	
10,050.0	9,817.5	9,966.4	9,805.9	15.6	13.0	-138.89	-445.7	-1,179.1	919.1	891.6	27.55	33.367	
10,075.0	9,826.0	9,973.9	9,813.4	15.6	13.0	-135.24	-445.9	-1,179.0	941.7	914.2	27.57	34.155	
10,100.0	9,833.2	9,980.0	9,819.6	15.7	13.0	-130.67	-446.0	-1,178.9	964.8	937.2	27.60	34.959	
10,125.0	9,839.1	9,985.3	9,824.8	15.7	13.0	-124.98	-446.1	-1,178.9	988.2	960.6	27.62	35.776	

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Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - PWP3													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 2000-r.5 MWD+IFR1+SAG+FDIR, 10824-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis	Distance	Rule Assigned:									
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)	No-Go Distance (usft)	Separation Factor	Warning
0.0	0.0	40.0	0.0	0.0	0.3	-172.46	-150.5	-19.9	151.8	150.8	0.94	161.787	
100.0	100.0	140.0	100.0	0.9	1.0	-172.46	-150.5	-19.9	151.8	149.4	2.40	63.195	
200.0	200.0	240.0	200.0	1.2	1.6	-172.46	-150.5	-19.9	151.8	148.4	3.36	45.185	
300.0	300.0	340.0	300.0	1.5	2.0	-172.46	-150.5	-19.9	151.8	147.7	4.07	37.328	
400.0	400.0	440.0	400.0	1.8	2.4	-172.46	-150.5	-19.9	151.8	147.1	4.66	32.563	
500.0	500.0	540.0	500.0	2.0	2.7	-172.46	-150.5	-19.9	151.8	146.6	5.19	29.255	
600.0	600.0	640.0	600.0	2.2	2.9	-172.46	-150.5	-19.9	151.8	146.1	5.67	26.777	
700.0	700.0	740.0	700.0	2.4	3.2	-172.46	-150.5	-19.9	151.8	145.7	6.11	24.825	
800.0	800.0	840.0	800.0	2.6	3.4	-172.46	-150.5	-19.9	151.8	145.2	6.53	23.234	
900.0	900.0	940.0	900.0	2.8	3.7	-172.46	-150.5	-19.9	151.8	144.8	6.93	21.903	
1,000.0	1,000.0	1,040.0	1,000.0	3.0	3.9	-172.46	-150.5	-19.9	151.8	144.5	7.31	20.766	
1,100.0	1,100.0	1,140.0	1,100.0	3.1	4.1	-172.46	-150.5	-19.9	151.8	144.1	7.67	19.780	
1,200.0	1,200.0	1,240.0	1,200.0	3.3	4.3	-172.46	-150.5	-19.9	151.8	143.7	8.02	18.913	
1,300.0	1,300.0	1,340.0	1,300.0	3.5	4.4	-172.46	-150.5	-19.9	151.8	143.4	8.37	18.143	
1,400.0	1,400.0	1,440.0	1,400.0	3.6	4.6	-172.46	-150.5	-19.9	151.8	143.1	8.70	17.453	
1,500.0	1,500.0	1,540.0	1,500.0	3.8	4.8	-172.46	-150.5	-19.9	151.8	142.8	9.02	16.829	
1,600.0	1,600.0	1,640.0	1,600.0	3.9	5.0	-172.46	-150.5	-19.9	151.8	142.4	9.33	16.261	
1,700.0	1,700.0	1,740.0	1,700.0	4.1	5.1	-172.46	-150.5	-19.9	151.8	142.1	9.64	15.742	
1,800.0	1,800.0	1,840.0	1,800.0	4.2	5.3	-172.46	-150.5	-19.9	151.8	141.8	9.94	15.264	CC
1,900.0	1,900.0	1,940.0	1,900.0	4.3	5.5	-91.22	-150.5	-19.9	151.8	141.6	10.22	14.860	ES
2,000.0	1,999.8	2,038.8	1,998.8	4.5	5.6	-93.10	-150.6	-20.1	152.1	141.6	10.53	14.445	
2,100.0	2,099.5	2,136.1	2,096.1	4.7	5.8	-95.58	-151.9	-21.9	154.2	143.4	10.84	14.233	SF
2,200.0	2,198.7	2,233.4	2,193.2	4.9	6.0	-98.41	-154.5	-25.7	158.6	147.5	11.13	14.254	
2,300.0	2,297.5	2,330.5	2,290.1	5.1	6.1	-101.47	-158.7	-31.6	165.4	153.9	11.41	14.489	
2,400.0	2,395.6	2,428.0	2,387.1	5.4	6.3	-104.64	-164.1	-39.4	174.6	162.9	11.70	14.923	
2,500.0	2,493.1	2,526.6	2,485.2	5.6	6.4	-108.30	-170.1	-47.9	185.8	173.8	12.00	15.483	
2,514.5	2,507.1	2,540.9	2,499.4	5.6	6.4	-108.87	-170.9	-49.1	187.6	175.6	12.03	15.593	
2,600.0	2,590.0	2,624.9	2,582.9	5.8	6.5	-112.28	-175.9	-56.3	198.6	186.3	12.28	16.171	
2,700.0	2,686.9	2,724.9	2,682.4	6.0	6.6	-115.70	-181.8	-65.6	211.9	199.4	12.53	16.905	
2,800.0	2,783.8	2,826.4	2,783.0	6.1	6.8	-118.17	-187.5	-77.5	224.6	211.8	12.85	17.488	
2,900.0	2,880.7	2,928.5	2,883.9	6.3	6.9	-119.81	-192.8	-92.2	236.4	223.3	13.16	17.966	
3,000.0	2,977.6	3,031.2	2,985.0	6.5	7.1	-120.76	-197.7	-109.6	247.0	233.5	13.48	18.327	
3,100.0	3,074.5	3,133.5	3,085.2	6.7	7.3	-121.11	-202.3	-129.6	256.2	242.4	13.79	18.575	
3,200.0	3,171.4	3,233.1	3,182.6	6.9	7.4	-121.28	-206.6	-149.9	265.0	250.9	14.14	18.745	
3,300.0	3,268.3	3,332.7	3,280.0	7.1	7.6	-121.44	-210.9	-170.1	273.8	259.4	14.46	18.932	
3,400.0	3,365.2	3,432.3	3,377.4	7.3	7.7	-121.58	-215.2	-190.4	282.7	267.9	14.80	19.104	
3,500.0	3,462.1	3,531.9	3,474.9	7.4	7.9	-121.72	-219.5	-210.6	291.5	276.3	15.13	19.263	
3,600.0	3,559.0	3,631.5	3,572.3	7.6	8.1	-121.85	-223.8	-230.9	300.3	284.8	15.47	19.410	
3,700.0	3,655.9	3,731.1	3,669.7	7.8	8.2	-121.98	-228.1	-251.1	309.1	293.3	15.82	19.545	
3,800.0	3,752.8	3,830.7	3,767.2	8.0	8.4	-122.09	-232.4	-271.4	318.0	301.8	16.16	19.671	
3,900.0	3,849.7	3,930.3	3,864.6	8.2	8.6	-122.20	-236.7	-291.7	326.8	310.3	16.52	19.787	
4,000.0	3,946.7	4,030.0	3,962.0	8.5	8.7	-122.31	-241.0	-311.9	335.6	318.7	16.87	19.894	
4,100.0	4,043.6	4,129.6	4,059.5	8.7	8.9	-122.41	-245.3	-332.2	344.4	327.2	17.23	19.993	
4,200.0	4,140.5	4,229.2	4,156.9	8.9	9.1	-122.50	-249.6	-352.4	353.3	335.7	17.59	20.085	
4,300.0	4,237.4	4,328.8	4,254.3	9.1	9.2	-122.59	-253.9	-372.7	362.1	344.2	17.95	20.171	
4,400.0	4,334.3	4,428.4	4,351.8	9.3	9.4	-122.68	-258.2	-392.9	370.9	352.6	18.32	20.250	
4,500.0	4,431.2	4,528.0	4,449.2	9.5	9.6	-122.76	-262.5	-413.2	379.8	361.1	18.69	20.323	
4,600.0	4,528.1	4,627.6	4,546.6	9.7	9.8	-122.83	-266.8	-433.5	388.6	369.6	19.06	20.392	
4,700.0	4,625.0	4,727.2	4,644.1	9.9	10.0	-122.91	-271.1	-453.7	397.5	378.0	19.43	20.455	
4,800.0	4,721.9	4,826.8	4,741.5	10.1	10.1	-122.98	-275.4	-474.0	406.3	386.5	19.81	20.514	
4,900.0	4,818.8	4,926.4	4,838.9	10.3	10.3	-123.05	-279.8	-494.2	415.1	394.9	20.18	20.569	

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

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Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - PWP3													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 2000-r.5 MWD+IFR1+SAG+FDIR, 10824-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis	Distance	Rule Assigned:									
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)	No-Go Distance (usft)	Separation Factor	Warning
5,000.0	4,915.7	5,026.0	4,936.3	10.6	10.5	-123.11	-284.1	-514.5	424.0	403.4	20.56	20.620	
5,100.0	5,012.6	5,125.6	5,033.8	10.8	10.7	-123.18	-288.4	-534.7	432.8	411.9	20.94	20.668	
5,175.5	5,085.8	5,200.8	5,107.3	10.9	10.8	-123.22	-291.6	-550.0	439.5	418.3	21.21	20.718	
5,200.0	5,109.5	5,225.2	5,131.2	11.0	10.9	-123.25	-292.7	-555.0	441.6	420.3	21.29	20.739	
5,300.0	5,206.8	5,324.9	5,228.7	11.2	11.1	-123.23	-297.0	-575.3	449.7	428.1	21.67	20.750	
5,400.0	5,304.4	5,424.6	5,326.2	11.4	11.3	-123.03	-301.3	-595.5	456.9	434.9	22.04	20.731	
5,500.0	5,402.3	5,524.4	5,423.8	11.6	11.5	-122.65	-305.6	-615.8	463.2	440.8	22.40	20.680	
5,600.0	5,500.6	5,624.1	5,521.4	11.8	11.7	-122.09	-309.9	-636.1	468.5	445.8	22.74	20.600	
5,700.0	5,599.3	5,723.8	5,618.9	12.0	11.9	-121.36	-314.2	-656.4	473.0	449.9	23.08	20.497	
5,800.0	5,698.2	5,823.4	5,716.3	12.2	12.1	-120.46	-318.5	-676.7	476.7	453.3	23.40	20.372	
5,900.0	5,797.3	5,923.0	5,813.7	12.4	12.2	-119.38	-322.8	-696.9	479.7	456.0	23.71	20.231	
6,000.0	5,896.6	6,022.4	5,910.9	12.6	12.4	-118.14	-327.1	-717.1	482.0	458.0	24.00	20.078	
6,100.0	5,996.2	6,121.6	6,008.0	12.8	12.6	-116.72	-331.4	-737.3	483.7	459.4	24.29	19.918	
6,200.0	6,095.8	6,220.7	6,104.9	12.9	12.8	-115.14	-335.7	-757.4	485.0	460.5	24.55	19.754	
6,300.0	6,195.7	6,319.5	6,201.5	13.1	13.0	-113.37	-340.0	-777.5	486.0	461.2	24.81	19.592	
6,400.0	6,295.6	6,418.1	6,298.0	13.3	13.2	-111.44	-344.2	-797.6	486.9	461.8	25.05	19.437	
6,500.0	6,395.5	6,516.4	6,394.1	13.4	13.4	-109.33	-348.5	-817.6	487.7	462.4	25.28	19.295	
6,600.0	6,495.5	6,614.4	6,490.0	13.5	13.6	-107.05	-352.7	-837.5	488.7	463.2	25.49	19.174	
6,604.5	6,500.0	6,618.8	6,494.3	13.5	13.6	171.16	-352.9	-838.4	488.8	463.3	25.50	19.168	
6,700.0	6,595.5	6,712.2	6,585.7	13.6	13.8	173.42	-356.9	-857.4	490.3	464.6	25.69	19.089	
6,800.0	6,695.5	6,810.0	6,681.3	13.6	14.0	175.78	-361.2	-877.3	492.7	466.8	25.89	19.030	
6,900.0	6,795.5	6,907.8	6,777.0	13.7	14.2	178.11	-365.4	-897.2	496.0	469.9	26.11	18.999	
7,000.0	6,895.5	7,005.6	6,872.7	13.8	14.4	-179.59	-369.6	-917.1	500.2	473.9	26.33	18.994	
7,100.0	6,995.5	7,103.5	6,968.4	13.8	14.6	-177.34	-373.9	-937.0	505.2	478.6	26.57	19.013	
7,200.0	7,095.5	7,201.3	7,064.0	13.9	14.8	-175.13	-378.1	-956.9	510.9	484.1	26.81	19.055	
7,300.0	7,195.5	7,299.1	7,159.7	13.9	15.0	-172.97	-382.3	-976.8	517.5	490.4	27.07	19.119	
7,400.0	7,295.5	7,396.9	7,255.4	14.0	15.2	-170.86	-386.5	-996.6	524.7	497.4	27.33	19.204	
7,500.0	7,395.5	7,494.7	7,351.1	14.0	15.4	-168.81	-390.8	-1,016.5	532.7	505.1	27.59	19.307	
7,600.0	7,495.5	7,592.5	7,446.8	14.1	15.6	-166.83	-395.0	-1,036.4	541.4	513.5	27.87	19.428	
7,700.0	7,595.5	7,690.3	7,542.4	14.2	15.8	-164.90	-399.2	-1,056.3	550.7	522.6	28.15	19.567	
7,800.0	7,695.5	7,792.8	7,642.8	14.2	16.1	-163.03	-403.5	-1,076.4	560.3	531.8	28.55	19.625	
7,900.0	7,795.5	7,896.2	7,744.5	14.3	16.4	-161.35	-407.4	-1,094.9	569.5	540.7	28.84	19.744	
8,000.0	7,895.5	8,000.3	7,847.2	14.4	16.6	-159.89	-411.0	-1,111.7	578.2	549.1	29.12	19.854	
8,100.0	7,995.5	8,105.1	7,950.8	14.4	16.8	-158.61	-414.2	-1,126.7	586.2	556.8	29.39	19.945	
8,200.0	8,095.5	8,210.3	8,055.1	14.5	17.0	-157.52	-417.0	-1,139.9	593.4	563.8	29.65	20.016	
8,300.0	8,195.5	8,316.0	8,160.2	14.5	17.2	-156.59	-419.4	-1,151.4	599.8	569.9	29.89	20.063	
8,400.0	8,295.5	8,422.1	8,265.9	14.6	17.3	-155.84	-421.5	-1,160.9	605.2	575.0	30.13	20.086	
8,500.0	8,395.5	8,528.6	8,372.0	14.7	17.5	-155.25	-423.1	-1,168.6	609.5	579.2	30.35	20.083	
8,600.0	8,495.5	8,635.3	8,478.6	14.7	17.7	-154.81	-424.3	-1,174.3	612.8	582.3	30.56	20.054	
8,700.0	8,595.5	8,742.2	8,585.4	14.8	17.9	-154.52	-425.1	-1,178.1	615.0	584.3	30.75	19.999	
8,800.0	8,695.5	8,849.2	8,692.4	14.8	18.0	-154.38	-425.5	-1,180.0	616.1	585.2	30.92	19.929	
8,900.0	8,795.5	8,952.3	8,795.5	14.9	18.1	-154.36	-425.6	-1,180.2	616.2	585.1	31.10	19.815	
9,000.0	8,895.5	9,052.3	8,895.5	15.0	18.2	-154.36	-425.6	-1,180.2	616.2	585.0	31.27	19.709	
9,100.0	8,995.5	9,152.3	8,995.5	15.0	18.2	-154.36	-425.6	-1,180.2	616.2	584.9	31.38	19.640	
9,200.0	9,095.5	9,252.3	9,095.5	15.1	18.2	-154.36	-425.6	-1,180.2	616.2	584.8	31.49	19.571	
9,300.0	9,195.5	9,352.3	9,195.5	15.2	18.3	-154.36	-425.6	-1,180.2	616.2	584.6	31.60	19.502	
9,400.0	9,295.5	9,452.3	9,295.5	15.2	18.3	-154.36	-425.6	-1,180.2	616.2	584.5	31.71	19.433	
9,477.0	9,372.5	9,529.3	9,372.5	15.3	18.3	-154.36	-425.6	-1,180.2	616.2	584.5	31.79	19.387	
9,500.0	9,395.5	9,552.3	9,395.5	15.3	18.3	-154.08	-425.6	-1,180.2	616.7	584.9	31.80	19.392	
9,525.0	9,420.4	9,577.2	9,420.4	15.3	18.4	-154.07	-425.6	-1,180.2	618.4	586.6	31.82	19.432	
9,550.0	9,445.2	9,602.0	9,445.2	15.3	18.4	-154.04	-425.6	-1,180.2	621.3	589.4	31.84	19.510	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 701H - OWB - PWP3												Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 2000-r.5 MWD+IFR1+SAG+FDIR, 10824-r.5 MWD+IFR1+SAG+FDIR												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		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)	No-Go Distance (usft)	Separation Factor	
9,575.0	9,469.8	9,626.6	9,469.8	15.3	18.4	-154.01	-425.6	-1,180.2	625.3	593.4	31.86	19.625	
9,600.0	9,494.2	9,651.0	9,494.2	15.3	18.4	-153.96	-425.6	-1,180.2	630.5	598.6	31.88	19.776	
9,625.0	9,518.2	9,675.0	9,518.2	15.4	18.4	-153.89	-425.6	-1,180.2	636.8	604.9	31.90	19.964	
9,650.0	9,541.7	9,698.6	9,541.7	15.4	18.4	-153.80	-425.6	-1,180.2	644.3	612.4	31.92	20.186	
9,675.0	9,564.9	9,721.7	9,564.9	15.4	18.4	-153.67	-425.6	-1,180.2	652.9	620.9	31.94	20.444	
9,700.0	9,587.5	9,744.3	9,587.5	15.4	18.4	-153.51	-425.6	-1,180.2	662.6	630.7	31.95	20.736	
9,725.0	9,609.5	9,766.3	9,609.5	15.4	18.4	-153.31	-425.6	-1,180.2	673.4	641.5	31.97	21.062	
9,750.0	9,630.9	9,787.7	9,630.9	15.4	18.4	-153.06	-425.6	-1,180.2	685.4	653.4	32.00	21.421	
9,775.0	9,651.5	9,808.3	9,651.5	15.5	18.4	-152.74	-425.6	-1,180.2	698.3	666.3	32.02	21.811	
9,800.0	9,671.4	9,828.2	9,671.4	15.5	18.4	-152.35	-425.6	-1,180.2	712.3	680.3	32.04	22.233	
9,825.0	9,690.5	9,847.3	9,690.5	15.5	18.4	-151.88	-425.6	-1,180.2	727.3	695.2	32.06	22.685	
9,850.0	9,708.7	9,865.5	9,708.7	15.5	18.5	-151.29	-425.6	-1,180.2	743.2	711.1	32.08	23.166	
9,875.0	9,726.0	9,882.8	9,726.0	15.5	18.5	-150.59	-425.6	-1,180.2	760.1	728.0	32.11	23.674	
9,900.0	9,742.3	9,899.1	9,742.3	15.5	18.5	-149.74	-425.6	-1,180.2	777.8	745.7	32.13	24.209	
9,925.0	9,757.6	9,914.4	9,757.6	15.6	18.5	-148.70	-425.6	-1,180.2	796.4	764.3	32.15	24.768	
9,950.0	9,771.8	9,928.7	9,771.8	15.6	18.5	-147.46	-425.6	-1,180.2	815.8	783.6	32.18	25.352	
9,975.0	9,785.0	9,941.8	9,785.0	15.6	18.5	-145.95	-425.6	-1,180.2	835.9	803.7	32.20	25.957	
10,000.0	9,797.0	9,953.8	9,797.0	15.6	18.5	-144.11	-425.6	-1,180.2	856.6	824.4	32.22	26.583	
10,025.0	9,807.9	9,964.7	9,807.9	15.6	18.5	-141.87	-425.6	-1,180.2	878.0	845.8	32.25	27.228	
10,050.0	9,817.5	9,974.3	9,817.5	15.6	18.5	-139.11	-425.6	-1,180.2	900.0	867.7	32.27	27.891	
10,075.0	9,826.0	9,982.8	9,826.0	15.6	18.5	-135.71	-425.6	-1,180.2	922.5	890.2	32.29	28.569	
10,100.0	9,833.2	9,990.0	9,833.2	15.7	18.5	-131.49	-425.6	-1,180.2	945.4	913.1	32.31	29.261	
10,125.0	9,839.1	9,995.9	9,839.1	15.7	18.5	-126.22	-425.6	-1,180.2	968.7	936.4	32.33	29.965	
10,150.0	9,843.8	10,000.6	9,843.8	15.7	18.5	-119.65	-425.6	-1,180.2	992.3	960.0	32.34	30.680	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 702H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 388-r.5 MWD+IFR1+SAG+FDIR, 10291-r.5 MWD+IFR1+SAG, 10559-r.5 MWD+IFR1+SA												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis	Distance	Rule Assigned:									
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)	No-Go Distance (usft)	Separation Factor	Warning
0.0	0.0	39.6	-0.4	0.0	0.1	176.21	-150.5	10.0	150.8	150.1	0.70	214.006	
100.0	100.0	138.9	98.9	0.9	0.4	176.45	-151.1	9.4	151.4	149.5	1.87	81.018	
200.0	200.0	238.4	198.4	1.2	0.6	176.49	-152.1	9.3	152.4	150.0	2.45	62.283	
300.0	300.0	338.0	297.9	1.5	0.8	176.52	-153.4	9.3	153.6	150.7	2.92	52.697	
400.0	400.0	438.0	398.0	1.8	1.0	176.40	-154.7	9.7	155.0	151.7	3.35	46.269	
500.0	500.0	538.4	498.4	2.0	1.1	176.38	-155.9	9.9	156.2	152.5	3.75	41.711	
600.0	600.0	639.0	599.0	2.2	1.3	176.32	-156.7	10.1	157.0	152.9	4.11	38.194	
700.0	700.0	739.5	699.5	2.4	1.4	176.34	-157.2	10.1	157.5	153.1	4.45	35.368	
800.0	800.0	843.7	803.6	2.6	1.5	176.30	-156.1	10.1	156.5	151.8	4.75	32.972	
900.0	900.0	944.1	904.0	2.8	1.6	176.30	-153.5	9.9	153.9	148.9	5.02	30.661	
1,000.0	1,000.0	1,045.2	1,005.1	3.0	1.7	176.18	-150.5	10.0	150.9	145.6	5.29	28.534	
1,100.0	1,100.0	1,142.4	1,102.2	3.1	1.8	176.16	-147.7	9.9	148.1	142.5	5.55	26.660	
1,200.0	1,200.0	1,241.6	1,201.4	3.3	1.9	176.36	-146.8	9.3	147.1	141.3	5.82	25.284	
1,300.0	1,300.0	1,341.6	1,301.4	3.5	2.0	176.61	-145.8	8.6	146.1	140.0	6.08	24.047	
1,400.0	1,400.0	1,441.4	1,401.2	3.6	2.1	176.87	-145.0	7.9	145.2	138.9	6.33	22.934	
1,500.0	1,500.0	1,541.1	1,500.9	3.8	2.2	177.15	-144.2	7.2	144.4	137.8	6.58	21.943	
1,582.9	1,582.9	1,623.1	1,582.9	3.9	2.3	177.44	-143.9	6.4	144.0	137.3	6.78	21.235 CC, ES	
1,600.0	1,600.0	1,639.0	1,598.8	3.9	2.3	177.48	-144.0	6.3	144.1	137.3	6.82	21.128	
1,700.0	1,700.0	1,738.7	1,698.4	4.1	2.3	177.63	-145.1	6.0	145.2	138.2	7.04	20.642	
1,800.0	1,800.0	1,838.4	1,798.2	4.2	2.4	177.89	-146.2	5.4	146.3	139.1	7.25	20.176	
1,900.0	1,900.0	1,938.1	1,897.8	4.3	2.5	-100.49	-147.6	4.5	148.0	140.5	7.44	19.895	
2,000.0	1,999.8	2,038.1	1,997.9	4.5	2.5	-102.02	-149.0	3.6	150.4	142.7	7.69	19.546	
2,100.0	2,099.5	2,138.0	2,097.8	4.7	2.6	-104.79	-150.3	2.7	153.6	145.7	7.95	19.321	
2,200.0	2,198.7	2,237.9	2,197.6	4.9	2.7	-108.62	-151.3	1.8	158.0	149.8	8.21	19.231 SF	
2,300.0	2,297.5	2,336.0	2,295.7	5.1	2.8	-113.16	-152.5	0.8	164.6	156.1	8.49	19.383	
2,400.0	2,395.6	2,434.8	2,394.5	5.4	2.9	-118.28	-153.8	-0.2	174.0	165.2	8.79	19.803	
2,500.0	2,493.1	2,535.3	2,495.0	5.6	3.0	-123.39	-154.8	-3.0	185.5	176.4	9.11	20.371	
2,514.5	2,507.1	2,549.7	2,509.4	5.6	3.0	-124.09	-154.9	-3.6	187.4	178.3	9.13	20.516	
2,600.0	2,590.0	2,635.5	2,595.0	5.8	3.1	-127.97	-155.5	-8.1	198.4	189.0	9.40	21.102	
2,700.0	2,686.9	2,731.2	2,690.6	6.0	3.2	-131.63	-156.4	-13.8	212.1	202.4	9.70	21.866	
2,800.0	2,783.8	2,824.0	2,783.1	6.1	3.3	-134.50	-159.0	-19.1	228.2	218.2	9.99	22.834	
2,900.0	2,880.7	2,917.4	2,876.2	6.3	3.4	-136.51	-164.6	-25.0	246.8	236.5	10.28	24.011	
3,000.0	2,977.6	3,021.6	2,979.7	6.5	3.6	-137.88	-172.5	-33.4	265.9	255.3	10.58	25.122	
3,100.0	3,074.5	3,123.5	3,081.0	6.7	3.7	-138.94	-179.2	-43.2	283.2	272.4	10.89	26.003	
3,200.0	3,171.4	3,233.2	3,189.9	6.9	3.9	-140.12	-183.0	-55.4	297.3	286.1	11.22	26.495	
3,300.0	3,268.3	3,335.4	3,291.5	7.1	4.0	-141.62	-183.0	-66.7	309.1	297.6	11.55	26.764	
3,400.0	3,365.2	3,431.2	3,386.8	7.3	4.2	-143.00	-183.0	-76.4	321.8	309.9	11.88	27.098	
3,500.0	3,462.1	3,527.9	3,483.1	7.4	4.3	-144.23	-183.9	-85.8	335.5	323.3	12.20	27.491	
3,600.0	3,559.0	3,626.4	3,581.1	7.6	4.4	-145.33	-185.3	-95.5	349.6	337.1	12.54	27.882	
3,700.0	3,655.9	3,721.7	3,675.9	7.8	4.6	-146.34	-186.6	-104.6	364.1	351.3	12.87	28.286	
3,800.0	3,752.8	3,834.1	3,787.6	8.0	4.8	-147.39	-188.0	-116.0	378.2	365.0	13.24	28.558	
3,900.0	3,849.7	3,940.9	3,893.3	8.2	5.0	-147.78	-189.7	-131.8	389.0	375.4	13.61	28.588	
4,000.0	3,946.7	4,032.9	3,983.7	8.5	5.1	-147.53	-194.2	-148.0	399.7	385.8	13.94	28.670	
4,100.0	4,043.6	4,127.8	4,076.6	8.7	5.3	-146.83	-202.1	-165.8	411.8	397.5	14.28	28.841	
4,200.0	4,140.5	4,227.3	4,173.8	8.9	5.5	-145.93	-212.0	-184.9	424.6	410.0	14.62	29.042	
4,300.0	4,237.4	4,327.5	4,271.6	9.1	5.7	-145.12	-221.6	-204.1	437.4	422.4	14.97	29.216	
4,400.0	4,334.3	4,424.8	4,366.9	9.3	5.8	-144.49	-230.3	-222.1	450.2	434.9	15.32	29.393	
4,500.0	4,431.2	4,522.3	4,462.5	9.5	6.0	-144.01	-238.6	-239.2	463.5	447.8	15.67	29.581	
4,600.0	4,528.1	4,622.8	4,561.3	9.7	6.2	-143.71	-246.2	-255.9	476.9	460.9	16.03	29.752	
4,700.0	4,625.0	4,720.2	4,656.9	9.9	6.4	-143.38	-253.8	-272.5	490.1	473.7	16.39	29.907	
4,800.0	4,721.9	4,812.2	4,747.4	10.1	6.6	-143.15	-261.2	-287.1	504.4	487.6	16.73	30.150	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 702H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 388-r.5 MWD+IFR1+SAG+FDIR, 10291-r.5 MWD+IFR1+SAG, 10559-r.5 MWD+IFR1+SA												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:					
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)	No-Go Distance (usft)	Separation Factor	Warning
4,900.0	4,818.8	4,911.5	4,845.2	10.3	6.8	-142.95	-269.5	-302.3	519.3	502.2	17.09	30.384	
5,000.0	4,915.7	5,009.8	4,942.0	10.6	6.9	-142.73	-277.9	-317.5	534.2	516.7	17.45	30.609	
5,100.0	5,012.6	5,107.3	5,037.9	10.8	7.1	-142.50	-286.5	-332.6	549.3	531.4	17.81	30.839	
5,175.5	5,085.8	5,181.8	5,111.3	10.9	7.3	-142.32	-293.2	-344.1	560.8	542.7	18.07	31.039	
5,200.0	5,109.5	5,206.1	5,135.2	11.0	7.3	-142.28	-295.4	-347.8	564.4	546.3	18.14	31.114	
5,300.0	5,206.8	5,308.3	5,235.9	11.2	7.5	-142.15	-303.7	-363.2	578.3	559.8	18.52	31.233	
5,400.0	5,304.4	5,427.3	5,353.0	11.4	7.8	-141.88	-311.8	-382.2	589.4	570.5	18.92	31.147	
5,500.0	5,402.3	5,526.7	5,450.7	11.6	8.0	-141.52	-317.4	-399.8	597.0	577.7	19.28	30.970	
5,600.0	5,500.6	5,627.0	5,549.2	11.8	8.2	-141.02	-323.3	-417.7	603.3	583.7	19.62	30.748	
5,700.0	5,599.3	5,728.8	5,649.1	12.0	8.4	-140.36	-329.4	-436.4	608.0	588.1	19.96	30.464	
5,800.0	5,698.2	5,827.6	5,745.9	12.2	8.6	-139.57	-335.6	-455.1	611.4	591.1	20.28	30.147	
5,900.0	5,797.3	5,909.7	5,826.4	12.4	8.7	-138.83	-341.5	-470.0	614.9	594.3	20.54	29.931	
6,000.0	5,896.6	6,001.7	5,917.0	12.6	8.9	-138.02	-349.1	-484.5	619.5	598.7	20.81	29.765	
6,100.0	5,996.2	6,090.8	6,005.1	12.8	9.1	-137.39	-355.8	-495.7	624.3	603.2	21.06	29.649	
6,200.0	6,095.8	6,181.6	6,095.3	12.9	9.2	-136.96	-361.5	-503.9	629.3	608.0	21.28	29.568	
6,300.0	6,195.7	6,277.0	6,190.6	13.1	9.4	-136.93	-364.8	-507.3	634.2	612.7	21.50	29.497	
6,400.0	6,295.6	6,376.4	6,290.0	13.3	9.5	-136.98	-367.3	-508.9	638.4	616.7	21.71	29.410	
6,500.0	6,395.5	6,475.6	6,389.1	13.4	9.6	-136.92	-369.7	-510.5	641.3	619.4	21.90	29.286	
6,600.0	6,495.5	6,574.5	6,488.0	13.5	9.7	-136.75	-372.2	-511.9	643.1	621.0	22.04	29.174	
6,604.5	6,500.0	6,579.0	6,492.4	13.5	9.7	141.36	-372.3	-512.0	643.1	621.1	22.05	29.168	
6,700.0	6,595.5	6,674.1	6,587.5	13.6	9.8	141.59	-374.8	-513.2	644.3	622.1	22.15	29.094	
6,800.0	6,695.5	6,775.3	6,688.7	13.6	9.9	141.83	-377.5	-514.7	645.5	623.3	22.26	29.006	
6,900.0	6,795.5	6,886.5	6,799.9	13.7	10.0	142.02	-379.0	-516.0	645.9	623.5	22.40	28.834	
7,000.0	6,895.5	6,985.5	6,898.9	13.8	10.2	142.12	-379.2	-517.3	645.2	622.7	22.53	28.642	
7,100.0	6,995.5	7,083.4	6,996.7	13.8	10.3	142.23	-379.7	-518.5	644.9	622.2	22.65	28.470	
7,168.2	7,063.7	7,150.3	7,063.7	13.9	10.4	142.30	-380.2	-519.2	644.8	622.1	22.73	28.365	
7,200.0	7,095.5	7,181.8	7,095.1	13.9	10.4	142.34	-380.5	-519.6	644.8	622.1	22.77	28.318	
7,300.0	7,195.5	7,278.8	7,192.1	13.9	10.5	142.45	-381.4	-520.4	645.1	622.2	22.88	28.192	
7,400.0	7,295.5	7,378.7	7,292.0	14.0	10.6	142.56	-382.6	-521.0	645.7	622.7	22.99	28.082	
7,500.0	7,395.5	7,477.5	7,390.8	14.0	10.7	142.65	-383.8	-521.4	646.3	623.2	23.10	27.979	
7,600.0	7,495.5	7,577.5	7,490.8	14.1	10.8	142.77	-385.1	-522.0	647.0	623.8	23.21	27.877	
7,700.0	7,595.5	7,677.2	7,590.5	14.2	10.9	142.89	-386.6	-522.7	647.8	624.5	23.32	27.776	
7,800.0	7,695.5	7,776.1	7,689.3	14.2	11.0	143.01	-388.0	-523.3	648.6	625.2	23.43	27.681	
7,900.0	7,795.5	7,872.7	7,785.9	14.3	11.1	143.14	-389.8	-523.7	649.8	626.3	23.53	27.615	
8,000.0	7,895.5	7,972.5	7,885.7	14.4	11.2	143.27	-392.0	-524.0	651.4	627.8	23.63	27.563	
8,100.0	7,995.5	8,078.8	7,992.0	14.4	11.3	143.40	-393.8	-524.5	652.5	628.7	23.76	27.467	
8,200.0	8,095.5	8,192.3	8,105.5	14.5	11.2	143.31	-392.6	-524.2	651.8	627.9	23.87	27.308	
8,300.0	8,195.5	8,290.0	8,203.2	14.5	11.2	143.10	-390.1	-523.0	650.4	626.5	23.94	27.171	
8,400.0	8,295.5	8,393.4	8,306.5	14.6	11.1	142.98	-388.1	-522.8	649.0	625.0	24.03	27.013	
8,500.0	8,395.5	8,493.9	8,407.0	14.7	11.1	142.95	-386.6	-523.6	647.4	623.2	24.14	26.823	
8,600.0	8,495.5	8,593.7	8,506.8	14.7	11.2	143.00	-385.5	-525.1	645.5	621.3	24.26	26.611	
8,700.0	8,595.5	8,694.3	8,607.3	14.8	11.2	142.93	-383.6	-525.5	643.9	619.5	24.36	26.430	
8,800.0	8,695.5	8,791.1	8,704.1	14.8	11.1	142.69	-380.8	-524.3	642.3	617.8	24.44	26.282	
8,900.0	8,795.5	8,887.9	8,800.9	14.9	11.1	142.51	-378.8	-523.3	641.2	616.7	24.51	26.159	
9,000.0	8,895.5	8,985.3	8,898.3	15.0	11.0	142.32	-376.9	-522.0	640.6	616.0	24.58	26.057	
9,100.0	8,995.5	9,084.5	8,997.4	15.0	10.9	142.08	-375.1	-520.1	640.2	615.6	24.65	25.972	
9,200.0	9,095.5	9,184.0	9,096.9	15.1	10.8	141.88	-373.4	-518.5	640.0	615.2	24.72	25.888	
9,293.6	9,189.1	9,276.2	9,189.1	15.2	10.7	141.75	-372.5	-517.4	639.8	615.1	24.78	25.819	
9,300.0	9,195.5	9,282.5	9,195.4	15.2	10.7	141.75	-372.4	-517.4	639.8	615.1	24.79	25.815	
9,400.0	9,295.5	9,379.8	9,292.7	15.2	10.8	141.80	-373.3	-517.5	640.4	615.6	24.88	25.743	
9,477.0	9,372.5	9,458.2	9,371.1	15.3	10.8	141.87	-374.0	-518.0	640.7	615.7	24.96	25.672	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 702H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 388-r.5 MWD+IFR1+SAG+FDIR, 10291-r.5 MWD+IFR1+SAG, 10559-r.5 MWD+IFR1+SA												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:		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)	No-Go Distance (usft)	Separation Factor	
9,500.0	9,395.5	9,481.2	9,394.0	15.3	10.9	142.17	-374.2	-518.1	641.2	616.2	24.98	25.666	
9,525.0	9,420.4	9,505.1	9,418.0	15.3	10.9	142.17	-374.3	-518.2	642.7	617.7	25.01	25.695	
9,550.0	9,445.2	9,529.0	9,441.9	15.3	10.9	142.15	-374.5	-518.3	645.3	620.3	25.04	25.771	
9,575.0	9,469.8	9,552.7	9,465.5	15.3	10.9	142.11	-374.6	-518.2	649.0	624.0	25.07	25.893	
9,600.0	9,494.2	9,576.1	9,489.0	15.3	10.9	142.05	-374.8	-518.1	653.8	628.7	25.08	26.063	
9,625.0	9,518.2	9,599.3	9,512.2	15.4	10.9	141.97	-374.9	-518.0	659.6	634.5	25.10	26.276	
9,650.0	9,541.7	9,622.1	9,535.0	15.4	10.9	141.85	-375.1	-517.8	666.4	641.3	25.12	26.532	
9,675.0	9,564.9	9,644.4	9,557.2	15.4	10.9	141.70	-375.2	-517.6	674.4	649.2	25.13	26.832	
9,700.0	9,587.5	9,666.4	9,579.3	15.4	10.9	141.50	-375.4	-517.4	683.3	658.2	25.15	27.173	
9,725.0	9,609.5	9,688.0	9,600.8	15.4	10.9	141.26	-375.6	-517.2	693.3	668.1	25.16	27.554	
9,750.0	9,630.9	9,708.8	9,621.7	15.4	10.9	140.96	-375.8	-517.0	704.3	679.1	25.17	27.976	
9,775.0	9,651.5	9,729.0	9,641.8	15.5	10.9	140.58	-376.0	-516.9	716.3	691.1	25.19	28.436	
9,800.0	9,671.4	9,748.3	9,661.2	15.5	10.9	140.12	-376.2	-516.8	729.2	704.0	25.20	28.935	
9,825.0	9,690.5	9,767.1	9,680.0	15.5	10.9	139.56	-376.5	-516.6	743.1	717.9	25.21	29.472	
9,850.0	9,708.7	9,785.0	9,697.9	15.5	10.9	138.87	-376.7	-516.5	758.0	732.7	25.23	30.045	
9,875.0	9,726.0	9,801.9	9,714.7	15.5	10.9	138.05	-376.9	-516.4	773.7	748.4	25.24	30.654	
9,900.0	9,742.3	9,817.9	9,730.7	15.5	10.9	137.05	-377.1	-516.3	790.3	765.0	25.25	31.298	
9,925.0	9,757.6	9,832.8	9,745.7	15.6	10.9	135.87	-377.4	-516.3	807.7	782.4	25.26	31.974	
9,950.0	9,771.8	9,846.6	9,759.4	15.6	10.9	134.44	-377.6	-516.2	825.9	800.6	25.27	32.682	
9,975.0	9,785.0	9,859.1	9,772.0	15.6	10.9	132.73	-377.7	-516.1	844.8	819.5	25.28	33.420	
10,000.0	9,797.0	9,870.6	9,783.4	15.6	10.9	130.71	-377.9	-516.1	864.4	839.1	25.29	34.186	
10,025.0	9,807.9	9,880.9	9,793.7	15.6	10.9	128.31	-378.1	-516.0	884.7	859.4	25.29	34.979	
10,050.0	9,817.5	9,890.0	9,802.8	15.6	10.9	125.46	-378.2	-516.0	905.5	880.2	25.30	35.797	
10,075.0	9,826.0	9,898.0	9,810.8	15.6	10.9	122.11	-378.3	-515.9	926.9	901.6	25.30	36.637	
10,100.0	9,833.2	9,904.7	9,817.5	15.7	10.9	118.16	-378.4	-515.9	948.7	923.4	25.30	37.499	
10,125.0	9,839.1	9,910.1	9,822.9	15.7	10.9	113.54	-378.5	-515.9	970.9	945.6	25.30	38.378	
10,150.0	9,843.8	9,914.2	9,827.1	15.7	10.9	108.19	-378.6	-515.9	993.5	968.2	25.30	39.275	

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

ConocoPhillips
Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 703H - OWB - AWP													Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 384-r.5 MWD+IFR1+SAG+FDIR, 10662-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		No-Go		Separation		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)	Distance (usft)	Factor		
0.0	0.0	40.5	0.5	0.0	0.1	165.12	-150.4	39.9	155.6	154.9	0.71	219.021		
100.0	100.0	141.1	101.1	0.9	0.4	165.25	-149.8	39.4	154.9	153.0	1.87	82.674		
197.0	197.0	237.0	197.0	1.2	0.6	165.46	-149.6	38.8	154.6	152.2	2.42	63.907 CC		
200.0	200.0	240.0	199.9	1.2	0.6	165.47	-149.6	38.8	154.6	152.2	2.44	63.480		
300.0	300.0	339.1	299.1	1.5	0.7	165.51	-150.1	38.8	155.0	152.1	2.86	54.104		
400.0	400.0	438.6	398.6	1.8	0.9	165.48	-150.9	39.1	155.9	152.6	3.28	47.574		
500.0	500.0	538.9	498.9	2.0	1.1	165.34	-151.5	39.7	156.7	153.0	3.68	42.606		
600.0	600.0	639.0	599.0	2.2	1.2	165.10	-152.0	40.4	157.3	153.2	4.04	38.904		
700.0	700.0	739.1	699.0	2.4	1.4	164.89	-152.4	41.2	157.9	153.5	4.38	36.014		
800.0	800.0	839.1	799.1	2.6	1.5	164.73	-152.9	41.8	158.5	153.8	4.71	33.649		
900.0	900.0	939.2	899.2	2.8	1.7	164.68	-153.4	42.0	159.0	154.0	5.02	31.666		
1,000.0	1,000.0	1,039.0	999.0	3.0	1.8	164.72	-153.9	42.0	159.6	154.3	5.32	29.994		
1,100.0	1,100.0	1,138.7	1,098.7	3.1	1.9	164.77	-154.7	42.1	160.3	154.7	5.61	28.567		
1,200.0	1,200.0	1,239.0	1,199.0	3.3	2.0	164.84	-155.5	42.1	161.1	155.2	5.90	27.313		
1,300.0	1,300.0	1,338.9	1,298.9	3.5	2.2	164.94	-156.2	42.0	161.7	155.5	6.17	26.199		
1,400.0	1,400.0	1,438.7	1,398.6	3.6	2.3	165.04	-157.0	42.0	162.5	156.1	6.45	25.213		
1,500.0	1,500.0	1,538.6	1,498.5	3.8	2.4	165.16	-157.9	41.8	163.4	156.6	6.71	24.332		
1,600.0	1,600.0	1,639.6	1,599.6	3.9	2.5	165.36	-158.8	41.5	164.2	157.2	6.97	23.540		
1,700.0	1,700.0	1,743.9	1,703.8	4.1	2.5	165.37	-157.4	41.1	162.7	155.6	7.16	22.729		
1,800.0	1,800.0	1,843.1	1,803.0	4.2	2.6	165.36	-155.3	40.6	160.5	153.2	7.33	21.896		
1,900.0	1,900.0	1,943.2	1,903.1	4.3	2.6	-113.26	-153.6	39.9	159.4	151.9	7.49	21.266		
1,941.3	1,941.3	1,984.6	1,944.5	4.4	2.6	-113.80	-152.8	39.6	159.2	151.7	7.59	20.981 ES		
2,000.0	1,999.8	2,043.2	2,003.0	4.5	2.6	-114.87	-151.7	39.1	159.5	151.8	7.73	20.638		
2,100.0	2,099.5	2,143.0	2,102.8	4.7	2.6	-117.42	-150.0	37.9	161.3	153.4	7.97	20.242		
2,200.0	2,198.7	2,242.6	2,202.5	4.9	2.6	-120.91	-148.1	36.6	165.1	156.9	8.22	20.076 SF		
2,300.0	2,297.5	2,341.6	2,301.4	5.1	2.7	-125.30	-146.0	35.8	171.4	162.9	8.50	20.174		
2,400.0	2,395.6	2,438.8	2,398.6	5.4	2.7	-130.11	-144.0	35.3	181.2	172.4	8.80	20.594		
2,500.0	2,493.1	2,531.5	2,491.3	5.6	2.8	-134.65	-143.6	35.1	196.1	187.0	9.12	21.506		
2,514.5	2,507.1	2,545.6	2,505.4	5.6	2.8	-135.29	-143.8	35.1	198.8	189.7	9.15	21.737		
2,600.0	2,590.0	2,629.2	2,589.0	5.8	2.9	-139.05	-144.7	35.0	215.1	205.7	9.40	22.880		
2,700.0	2,686.9	2,726.4	2,686.2	6.0	2.9	-142.84	-145.3	34.8	234.8	225.1	9.68	24.247		
2,800.0	2,783.8	2,823.1	2,782.9	6.1	3.0	-146.09	-145.7	34.8	255.5	245.5	9.97	25.635		
2,900.0	2,880.7	2,918.8	2,878.6	6.3	3.1	-148.84	-146.2	35.0	276.9	266.7	10.25	27.030		
3,000.0	2,977.6	3,009.8	2,969.5	6.5	3.1	-150.80	-148.5	35.4	300.3	289.8	10.52	28.553		
3,100.0	3,074.5	3,099.0	3,058.6	6.7	3.2	-152.10	-153.4	35.9	325.7	314.9	10.79	30.198		
3,200.0	3,171.4	3,186.7	3,146.0	6.9	3.3	-152.86	-161.2	37.1	353.7	342.7	11.05	32.013		
3,300.0	3,268.3	3,276.0	3,234.6	7.1	3.4	-153.21	-171.7	38.6	383.6	372.3	11.32	33.884		
3,400.0	3,365.2	3,366.1	3,323.9	7.3	3.5	-153.45	-183.4	41.0	414.9	403.3	11.60	35.764		
3,500.0	3,462.1	3,456.9	3,413.9	7.4	3.6	-153.71	-195.4	44.3	447.3	435.4	11.89	37.616		
3,600.0	3,559.0	3,550.6	3,506.5	7.6	3.8	-153.85	-208.7	47.9	480.2	468.0	12.19	39.375		
3,700.0	3,655.9	3,653.7	3,608.4	7.8	3.9	-153.73	-224.6	49.8	512.2	499.6	12.53	40.868		
3,800.0	3,752.8	3,748.6	3,702.1	8.0	4.0	-153.56	-239.3	50.6	543.3	530.5	12.85	42.291		
3,900.0	3,849.7	3,843.8	3,796.3	8.2	4.2	-153.56	-252.9	52.2	574.6	561.4	13.17	43.633		
4,000.0	3,946.7	3,937.8	3,889.5	8.5	4.3	-153.67	-265.5	54.4	605.9	592.4	13.49	44.915		
4,100.0	4,043.6	4,030.0	3,980.8	8.7	4.4	-153.80	-277.6	57.0	637.5	623.7	13.81	46.163		
4,200.0	4,140.5	4,124.0	4,073.9	8.9	4.6	-153.95	-290.0	60.1	669.4	655.3	14.14	47.344		
4,300.0	4,237.4	4,220.4	4,169.5	9.1	4.7	-154.16	-301.9	63.8	701.4	686.9	14.48	48.437		
4,400.0	4,334.3	4,332.5	4,280.9	9.3	4.9	-154.53	-313.5	67.8	732.1	717.3	14.87	49.248		
4,500.0	4,431.2	4,463.7	4,412.0	9.5	5.1	-155.34	-319.1	69.8	757.7	742.4	15.29	49.566		
4,600.0	4,528.1	4,564.4	4,512.7	9.7	5.2	-156.02	-321.6	71.3	782.7	767.1	15.62	50.100		
4,700.0	4,625.0	4,675.6	4,623.9	9.9	5.2	-156.88	-321.4	72.3	806.1	790.2	15.94	50.561		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 703H - OWB - AWP													Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 384-r.5 MWD+IFR1+SAG+FDIR, 10662-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Offset Wellbore Centre			Rule Assigned:					
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)	No-Go Distance (usft)	Separation Factor	Warning	
4,800.0	4,721.9	4,773.2	4,721.4	10.1	5.2	-157.58	-321.2	72.5	829.1	812.9	16.22	51.104		
4,900.0	4,818.8	4,872.1	4,820.4	10.3	5.2	-158.24	-321.0	72.6	852.0	835.5	16.50	51.651		
5,000.0	4,915.7	4,970.3	4,918.6	10.6	5.2	-158.85	-320.7	72.4	874.8	858.0	16.76	52.208		
5,100.0	5,012.6	5,067.5	5,015.7	10.8	5.1	-159.44	-320.2	72.4	897.7	880.6	17.02	52.742		
5,175.5	5,085.8	5,141.3	5,089.5	10.9	5.1	-159.87	-319.9	72.2	914.9	897.7	17.20	53.188		
5,200.0	5,109.5	5,164.1	5,112.3	11.0	5.1	-160.02	-319.8	72.1	920.4	903.2	17.25	53.362		
5,300.0	5,206.8	5,260.4	5,208.6	11.2	5.1	-160.58	-319.7	72.0	942.4	924.9	17.52	53.785		
5,400.0	5,304.4	5,359.1	5,307.3	11.4	5.1	-161.10	-319.2	72.0	962.7	944.9	17.79	54.121		
5,500.0	5,402.3	5,459.6	5,407.8	11.6	5.0	-161.57	-318.6	71.8	981.3	963.3	18.05	54.356		
5,600.0	5,500.6	5,559.8	5,508.0	11.8	5.0	-161.99	-317.9	71.4	998.1	979.8	18.31	54.498		

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWPO	Offset TVD Reference:	Reference Datum

Offset Design: THUNDERDOME PROJECT - THUNDERDOME FED COM 705H - OWB - AWP												Offset Site Error:	0.0 usft
Survey Program: 100-r.5 SDI_KPR_WL_NS-CT, 343-r.5 MWD+IFR1+SAG+FDIR, 10583-r.5 MWD+IFR1+SAG+FDIR												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		No-Go		Separation		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)	Distance (usft)	Factor	
0.0	0.0	40.6	0.6	0.0	0.1	146.38	-150.3	100.0	180.6	179.8	0.71	253.901	
100.0	100.0	141.3	101.2	0.9	0.4	146.36	-149.8	99.7	179.9	178.0	1.87	96.064	
200.0	200.0	240.9	200.9	1.2	0.6	146.29	-149.1	99.5	179.3	176.8	2.45	73.293	
300.0	300.0	341.2	301.2	1.5	0.8	146.36	-148.8	99.0	178.7	175.8	2.91	61.510	
400.0	400.0	440.3	400.3	1.8	1.0	146.49	-148.6	98.4	178.3	174.9	3.33	53.594	
434.9	434.9	475.0	434.9	1.9	1.0	146.57	-148.8	98.2	178.2	174.8	3.46	51.498 CC	
500.0	500.0	539.7	499.7	2.0	1.1	146.79	-149.2	97.7	178.3	174.6	3.71	48.101	
600.0	600.0	639.7	599.7	2.2	1.3	147.19	-150.0	96.7	178.5	174.4	4.06	44.002	
700.0	700.0	739.8	699.8	2.4	1.4	147.55	-150.7	95.9	178.6	174.2	4.38	40.751	
800.0	800.0	839.6	799.6	2.6	1.5	147.93	-151.5	94.9	178.8	174.1	4.69	38.097	
900.0	900.0	940.2	900.2	2.8	1.7	148.35	-152.3	93.9	178.9	173.9	4.99	35.854	
1,000.0	1,000.0	1,040.3	1,000.2	3.0	1.8	148.74	-152.8	92.7	178.7	173.5	5.27	33.896	
1,022.4	1,022.4	1,062.5	1,022.4	3.0	1.9	148.83	-152.9	92.5	178.7	173.4	5.33	33.504	
1,100.0	1,100.0	1,138.8	1,098.7	3.1	2.0	149.01	-153.4	92.1	178.9	173.4	5.54	32.278 ES	
1,200.0	1,200.0	1,237.9	1,197.8	3.3	2.0	148.62	-153.6	93.7	179.9	174.1	5.78	31.151	
1,300.0	1,300.0	1,338.1	1,298.0	3.5	2.1	147.79	-153.2	96.5	181.1	175.1	6.00	30.195	
1,400.0	1,400.0	1,438.0	1,397.8	3.6	2.1	147.05	-152.9	99.1	182.2	176.0	6.21	29.327	
1,500.0	1,500.0	1,539.1	1,499.0	3.8	2.2	146.30	-152.4	101.6	183.2	176.8	6.43	28.502	
1,600.0	1,600.0	1,641.9	1,601.7	3.9	2.2	145.85	-151.4	102.7	183.0	176.3	6.64	27.576	
1,700.0	1,700.0	1,741.9	1,701.7	4.1	2.3	145.50	-150.0	103.1	182.0	175.2	6.84	26.622	
1,800.0	1,800.0	1,841.7	1,801.5	4.2	2.4	145.12	-148.6	103.6	181.1	174.1	7.04	25.737	
1,832.8	1,832.8	1,874.4	1,834.2	4.2	2.4	-133.15	-148.2	103.8	181.0	173.9	7.11	25.452	
1,900.0	1,900.0	1,941.6	1,901.3	4.3	2.4	-133.73	-147.3	104.1	181.6	174.3	7.28	24.953	
2,000.0	1,999.8	2,041.7	2,001.5	4.5	2.5	-135.15	-146.1	104.3	184.4	176.8	7.59	24.281	
2,100.0	2,099.5	2,134.7	2,094.4	4.7	2.6	-137.05	-145.9	105.3	191.2	183.3	7.90	24.196 SF	
2,200.0	2,198.7	2,225.0	2,184.6	4.9	2.6	-139.14	-149.2	108.7	205.5	197.3	8.21	25.026	
2,300.0	2,297.5	2,320.1	2,279.5	5.1	2.7	-141.37	-155.1	113.7	225.6	217.1	8.53	26.445	
2,400.0	2,395.6	2,411.5	2,370.5	5.4	2.8	-143.54	-161.1	118.7	249.3	240.4	8.86	28.145	
2,500.0	2,493.1	2,503.9	2,462.3	5.6	2.9	-145.66	-168.8	125.5	278.6	269.4	9.20	30.295	
2,514.5	2,507.1	2,517.9	2,476.2	5.6	2.9	-145.97	-170.0	126.5	283.1	273.9	9.22	30.690	
2,600.0	2,590.0	2,599.7	2,557.5	5.8	2.9	-147.92	-176.6	132.2	309.8	300.3	9.47	32.695	
2,700.0	2,686.9	2,686.0	2,643.3	6.0	3.0	-149.79	-183.3	139.1	341.9	332.1	9.73	35.119	
2,800.0	2,783.8	2,770.5	2,727.0	6.1	3.1	-151.75	-189.1	149.3	377.0	367.0	10.00	37.708	
2,900.0	2,880.7	2,861.1	2,816.3	6.3	3.3	-154.03	-193.2	163.5	414.1	403.9	10.28	40.274	
3,000.0	2,977.6	2,952.6	2,906.6	6.5	3.4	-156.27	-195.3	178.7	451.5	440.9	10.58	42.686	
3,100.0	3,074.5	3,044.5	2,997.1	6.7	3.5	-158.17	-197.6	194.0	489.5	478.6	10.88	44.999	
3,200.0	3,171.4	3,134.4	3,085.8	6.9	3.6	-159.74	-200.0	209.0	527.9	516.8	11.18	47.229	
3,300.0	3,268.3	3,224.0	3,174.0	7.1	3.7	-161.07	-202.7	224.0	566.9	555.5	11.48	49.367	
3,400.0	3,365.2	3,310.1	3,258.7	7.3	3.9	-162.27	-204.9	239.2	606.8	595.0	11.78	51.493	
3,500.0	3,462.1	3,395.7	3,342.8	7.4	4.0	-163.47	-205.8	255.6	647.5	635.4	12.09	53.573	
3,600.0	3,559.0	3,483.7	3,429.1	7.6	4.2	-164.54	-207.4	272.7	689.1	676.7	12.40	55.554	
3,700.0	3,655.9	3,572.7	3,516.3	7.8	4.3	-165.45	-209.6	290.0	731.0	718.3	12.73	57.425	
3,800.0	3,752.8	3,665.8	3,607.7	8.0	4.5	-166.27	-212.1	308.0	773.0	759.9	13.08	59.120	
3,900.0	3,849.7	3,768.6	3,708.7	8.2	4.6	-167.07	-214.8	326.9	814.3	800.9	13.46	60.517	
4,000.0	3,946.7	3,865.0	3,803.7	8.5	4.8	-167.73	-216.9	343.2	854.3	840.5	13.82	61.830	
4,100.0	4,043.6	3,946.6	3,884.1	8.7	4.9	-168.23	-218.9	357.4	894.8	880.7	14.13	63.309	
4,200.0	4,140.5	4,017.5	3,953.5	8.9	5.1	-168.64	-221.1	371.2	937.3	922.9	14.42	65.006	
4,300.0	4,237.4	4,105.8	4,040.0	9.1	5.2	-169.13	-223.7	389.0	980.6	965.8	14.77	66.399	

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL @ 3243.0usft

Offset Depths are relative to Offset Datum

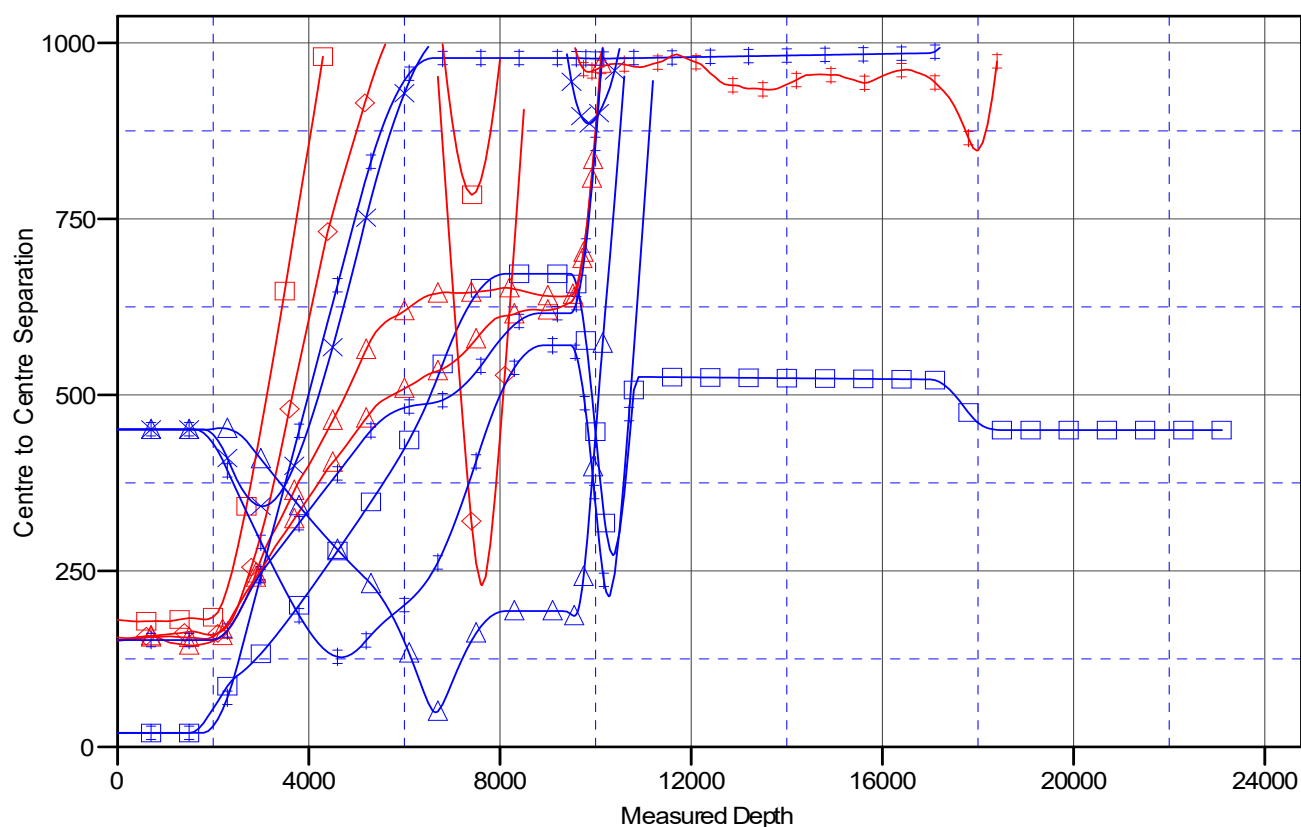
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: _THUNDERDOME FED COM 501H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.26°

Ladder Plot



LEGEND

_THUNDERDOME FED COM 51H, OWB, PWP0 V0
 ROADRUNNER FEDERAL COM 23 ILL 005H, ST01, AWP V0
 THUNDERDOME FED COM 70H, OWB, AWP V0
 THUNDERDOME FED COM 70H, OWB, AWP V0
 _THUNDERDOME FED COM 52H, OWB, PWP0 V0

THUNDERDOME FED COM 70H, OWB, AWP V0
 THUNDERDOME FED COM 70H, OWB, AWP V0
 FORTY NINER RIDGE UNIT 10H, OWB, AWP V0
 FORTY NINER RIDGE UNIT 2223 III FEDERAL COM 15H, OWB, AWP V0

_FURY ROAD FED COM 502H, OWB, PWP0 V0
 _FURY ROAD FED COM 52H, OWB, PWP0 V0
 _FURY ROAD FED COM 501H, OWB, PWP0 V0

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

ConocoPhillips

Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Project:	ATLAS PROSPECT (DBW)	TVD Reference:	GL @ 3243.0usft
Reference Site:	THUNDERDOME PROJECT	MD Reference:	GL @ 3243.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDT 17 Permian Prod
Reference Design:	PWP0	Offset TVD Reference:	Reference Datum

Reference Depths are relative to GL @ 3243.0usft

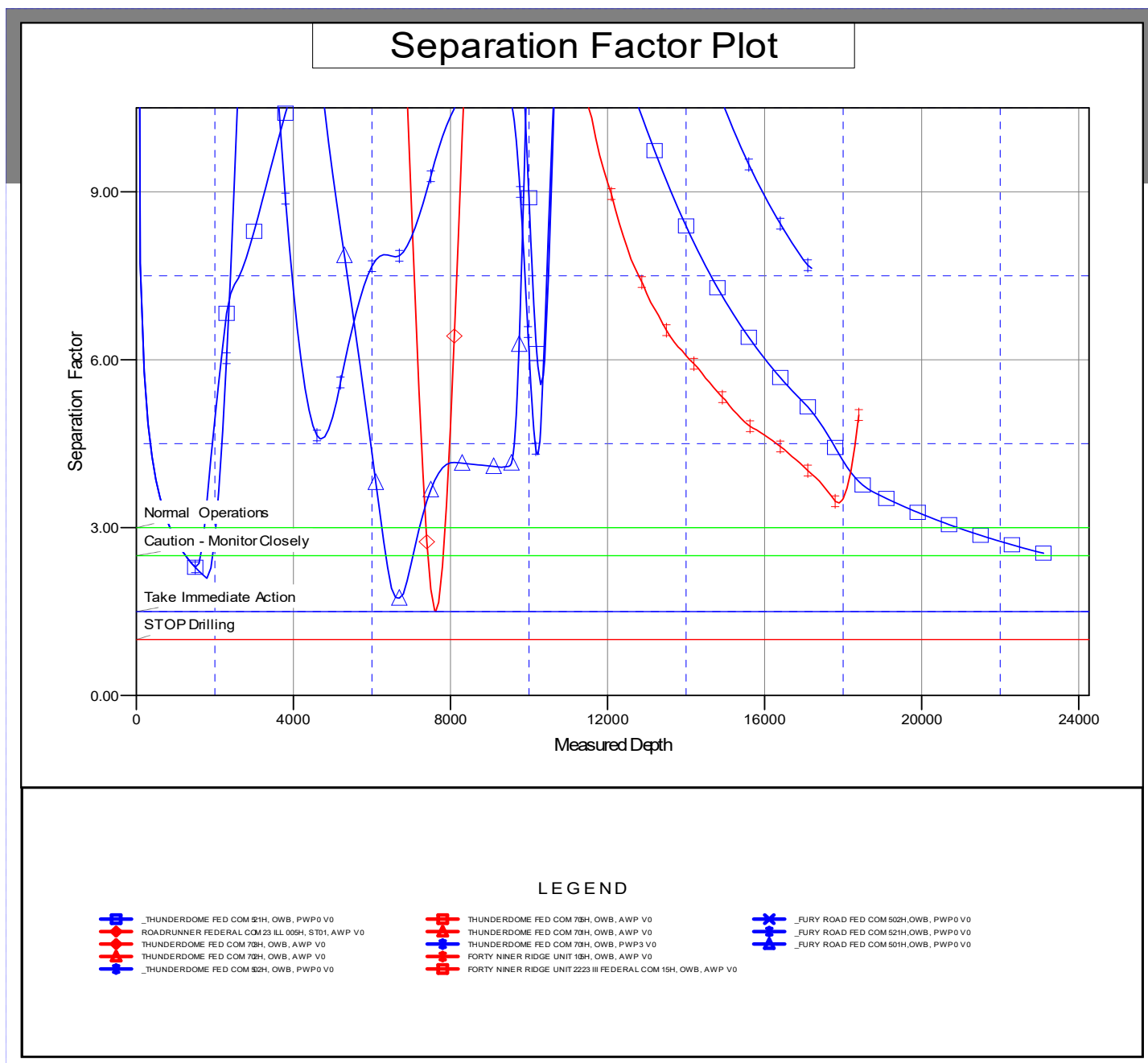
Offset Depths are relative to Offset Datum

Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: THUNDERDOME FED COM 501H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30

Grid Convergence at Surface is: 0.26°



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

DELAWARE BASIN WEST

ATLAS PROSPECT (DBW)

THUNDERDOME PROJECT

_THUNDERDOME FED COM 501H

OWB

Plan: PWP0

Standard Planning Report

04 March, 2025

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2022	12/2/2022	6.70	59.96	47,539.15577655

Design	PWP0			
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	354.75

Plan Survey Tool Program		Date	3/4/2025		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	1,800.0 PWP0 (OWB)	r.5 SDI_KPR_WL_NS-CT SDI Keeper Wireline Gyrocomp		
2	1,800.0	23,105.7 PWP0 (OWB)	r.5 MWD+IFR1+SAG+FDIR OWSG MWD + IFR1 + SAG +		

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	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,514.5	14.29	278.10	2,507.1	12.5	-87.8	2.00	2.00	0.00	278.10	
5,175.5	14.29	278.10	5,085.8	105.0	-738.0	0.00	0.00	0.00	0.00	
6,604.5	0.00	0.00	6,500.0	130.0	-913.5	1.00	-1.00	0.00	180.00	
9,477.0	0.00	0.00	9,372.5	130.0	-913.5	0.00	0.00	0.00	0.00	
10,227.0	90.00	359.72	9,850.0	607.5	-915.9	12.00	12.00	0.00	359.72	
16,997.0	90.00	359.72	9,850.0	7,377.4	-948.9	0.00	0.00	0.00	0.00	
17,782.0	90.00	344.02	9,850.0	8,152.1	-1,059.6	2.00	0.00	-2.00	-90.00	
17,980.0	90.00	344.02	9,850.0	8,342.4	-1,114.1	0.00	0.00	0.00	0.00	
18,764.8	90.00	359.72	9,850.0	9,117.0	-1,224.8	2.00	0.00	2.00	90.00	
23,106.5	90.00	359.72	9,850.0	13,458.6	-1,246.2	0.00	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_ THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	2.00	278.10	1,900.0	0.2	-1.7	0.4	2.00	2.00	0.00
2,000.0	4.00	278.10	1,999.8	1.0	-6.9	1.6	2.00	2.00	0.00
2,100.0	6.00	278.10	2,099.5	2.2	-15.5	3.6	2.00	2.00	0.00
2,200.0	8.00	278.10	2,198.7	3.9	-27.6	6.4	2.00	2.00	0.00
2,300.0	10.00	278.10	2,297.5	6.1	-43.1	10.0	2.00	2.00	0.00
2,400.0	12.00	278.10	2,395.6	8.8	-62.0	14.5	2.00	2.00	0.00
2,500.0	14.00	278.10	2,493.1	12.0	-84.2	19.6	2.00	2.00	0.00
2,514.5	14.29	278.10	2,507.1	12.5	-87.8	20.5	2.00	2.00	0.00
2,600.0	14.29	278.10	2,590.0	15.5	-108.6	25.3	0.00	0.00	0.00
2,700.0	14.29	278.10	2,686.9	18.9	-133.1	31.0	0.00	0.00	0.00
2,800.0	14.29	278.10	2,783.8	22.4	-157.5	36.7	0.00	0.00	0.00
2,900.0	14.29	278.10	2,880.7	25.9	-182.0	42.4	0.00	0.00	0.00
3,000.0	14.29	278.10	2,977.6	29.4	-206.4	48.1	0.00	0.00	0.00
3,100.0	14.29	278.10	3,074.5	32.9	-230.8	53.8	0.00	0.00	0.00
3,200.0	14.29	278.10	3,171.4	36.3	-255.3	59.5	0.00	0.00	0.00
3,300.0	14.29	278.10	3,268.3	39.8	-279.7	65.2	0.00	0.00	0.00
3,400.0	14.29	278.10	3,365.2	43.3	-304.1	70.9	0.00	0.00	0.00
3,500.0	14.29	278.10	3,462.1	46.8	-328.6	76.6	0.00	0.00	0.00
3,600.0	14.29	278.10	3,559.0	50.2	-353.0	82.3	0.00	0.00	0.00
3,700.0	14.29	278.10	3,655.9	53.7	-377.5	88.0	0.00	0.00	0.00
3,800.0	14.29	278.10	3,752.8	57.2	-401.9	93.7	0.00	0.00	0.00
3,900.0	14.29	278.10	3,849.7	60.7	-426.3	99.4	0.00	0.00	0.00
4,000.0	14.29	278.10	3,946.7	64.2	-450.8	105.1	0.00	0.00	0.00
4,100.0	14.29	278.10	4,043.6	67.6	-475.2	110.8	0.00	0.00	0.00
4,200.0	14.29	278.10	4,140.5	71.1	-499.6	116.5	0.00	0.00	0.00
4,300.0	14.29	278.10	4,237.4	74.6	-524.1	122.2	0.00	0.00	0.00
4,400.0	14.29	278.10	4,334.3	78.1	-548.5	127.9	0.00	0.00	0.00
4,500.0	14.29	278.10	4,431.2	81.5	-572.9	133.6	0.00	0.00	0.00
4,600.0	14.29	278.10	4,528.1	85.0	-597.4	139.3	0.00	0.00	0.00
4,700.0	14.29	278.10	4,625.0	88.5	-621.8	145.0	0.00	0.00	0.00
4,800.0	14.29	278.10	4,721.9	92.0	-646.3	150.7	0.00	0.00	0.00
4,900.0	14.29	278.10	4,818.8	95.5	-670.7	156.4	0.00	0.00	0.00
5,000.0	14.29	278.10	4,915.7	98.9	-695.1	162.1	0.00	0.00	0.00
5,100.0	14.29	278.10	5,012.6	102.4	-719.6	167.8	0.00	0.00	0.00
5,175.5	14.29	278.10	5,085.8	105.0	-738.0	172.1	0.00	0.00	0.00

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Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_ THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.0	14.04	278.10	5,109.5	105.9	-744.0	173.5	1.00	-1.00	0.00
5,300.0	13.04	278.10	5,206.8	109.2	-767.1	178.9	1.00	-1.00	0.00
5,400.0	12.04	278.10	5,304.4	112.2	-788.6	183.9	1.00	-1.00	0.00
5,500.0	11.04	278.10	5,402.3	115.1	-808.5	188.5	1.00	-1.00	0.00
5,600.0	10.04	278.10	5,500.6	117.6	-826.6	192.8	1.00	-1.00	0.00
5,700.0	9.04	278.10	5,599.3	120.0	-843.0	196.6	1.00	-1.00	0.00
5,800.0	8.04	278.10	5,698.2	122.1	-857.7	200.0	1.00	-1.00	0.00
5,900.0	7.04	278.10	5,797.3	123.9	-870.7	203.1	1.00	-1.00	0.00
6,000.0	6.04	278.10	5,896.6	125.5	-882.0	205.7	1.00	-1.00	0.00
6,100.0	5.04	278.10	5,996.2	126.9	-891.6	207.9	1.00	-1.00	0.00
6,200.0	4.04	278.10	6,095.8	128.0	-899.4	209.7	1.00	-1.00	0.00
6,300.0	3.04	278.10	6,195.7	128.9	-905.5	211.2	1.00	-1.00	0.00
6,400.0	2.04	278.10	6,295.6	129.5	-909.9	212.2	1.00	-1.00	0.00
6,500.0	1.04	278.10	6,395.5	129.9	-912.6	212.8	1.00	-1.00	0.00
6,600.0	0.04	278.10	6,495.5	130.0	-913.5	213.0	1.00	-1.00	0.00
6,604.5	0.00	0.00	6,500.0	130.0	-913.5	213.0	1.00	-1.00	0.00
6,700.0	0.00	0.00	6,595.5	130.0	-913.5	213.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,695.5	130.0	-913.5	213.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,795.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,895.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,100.0	0.00	0.00	6,995.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,095.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,195.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,295.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,395.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,495.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,595.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,695.5	130.0	-913.5	213.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,795.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,000.0	0.00	0.00	7,895.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,100.0	0.00	0.00	7,995.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,095.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,195.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,295.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,395.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,495.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,595.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,695.5	130.0	-913.5	213.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,795.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,000.0	0.00	0.00	8,895.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,100.0	0.00	0.00	8,995.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,095.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,195.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,295.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,477.0	0.00	0.00	9,372.5	130.0	-913.5	213.0	0.00	0.00	0.00
9,500.0	2.76	359.72	9,395.5	130.6	-913.5	213.6	12.00	12.00	0.00
9,600.0	14.76	359.72	9,494.2	145.8	-913.6	228.7	12.00	12.00	0.00
9,700.0	26.76	359.72	9,587.5	181.2	-913.8	264.0	12.00	12.00	0.00
9,800.0	38.76	359.72	9,671.4	235.2	-914.0	317.8	12.00	12.00	0.00
9,900.0	50.76	359.72	9,742.3	305.5	-914.4	387.8	12.00	12.00	0.00
10,000.0	62.76	359.72	9,797.0	388.9	-914.8	471.0	12.00	12.00	0.00
10,100.0	74.76	359.72	9,833.2	482.0	-915.2	563.7	12.00	12.00	0.00
10,200.0	86.76	359.72	9,849.2	580.5	-915.7	661.8	12.00	12.00	0.00
10,227.0	90.00	359.72	9,850.0	607.5	-915.9	688.7	12.00	12.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_ THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,300.0	90.00	359.72	9,850.0	680.5	-916.2	761.4	0.00	0.00	0.00
10,400.0	90.00	359.72	9,850.0	780.5	-916.7	861.1	0.00	0.00	0.00
10,500.0	90.00	359.72	9,850.0	880.5	-917.2	960.7	0.00	0.00	0.00
10,600.0	90.00	359.72	9,850.0	980.5	-917.7	1,060.3	0.00	0.00	0.00
10,700.0	90.00	359.72	9,850.0	1,080.5	-918.2	1,159.9	0.00	0.00	0.00
10,800.0	90.00	359.72	9,850.0	1,180.5	-918.7	1,259.6	0.00	0.00	0.00
10,900.0	90.00	359.72	9,850.0	1,280.5	-919.2	1,359.2	0.00	0.00	0.00
11,000.0	90.00	359.72	9,850.0	1,380.5	-919.6	1,458.8	0.00	0.00	0.00
11,100.0	90.00	359.72	9,850.0	1,480.5	-920.1	1,558.4	0.00	0.00	0.00
11,200.0	90.00	359.72	9,850.0	1,580.5	-920.6	1,658.1	0.00	0.00	0.00
11,300.0	90.00	359.72	9,850.0	1,680.5	-921.1	1,757.7	0.00	0.00	0.00
11,400.0	90.00	359.72	9,850.0	1,780.5	-921.6	1,857.3	0.00	0.00	0.00
11,500.0	90.00	359.72	9,850.0	1,880.5	-922.1	1,956.9	0.00	0.00	0.00
11,600.0	90.00	359.72	9,850.0	1,980.5	-922.6	2,056.6	0.00	0.00	0.00
11,700.0	90.00	359.72	9,850.0	2,080.5	-923.1	2,156.2	0.00	0.00	0.00
11,800.0	90.00	359.72	9,850.0	2,180.5	-923.5	2,255.8	0.00	0.00	0.00
11,900.0	90.00	359.72	9,850.0	2,280.5	-924.0	2,355.4	0.00	0.00	0.00
12,000.0	90.00	359.72	9,850.0	2,380.5	-924.5	2,455.1	0.00	0.00	0.00
12,100.0	90.00	359.72	9,850.0	2,480.5	-925.0	2,554.7	0.00	0.00	0.00
12,200.0	90.00	359.72	9,850.0	2,580.5	-925.5	2,654.3	0.00	0.00	0.00
12,300.0	90.00	359.72	9,850.0	2,680.5	-926.0	2,753.9	0.00	0.00	0.00
12,400.0	90.00	359.72	9,850.0	2,780.5	-926.5	2,853.6	0.00	0.00	0.00
12,500.0	90.00	359.72	9,850.0	2,880.5	-927.0	2,953.2	0.00	0.00	0.00
12,600.0	90.00	359.72	9,850.0	2,980.5	-927.5	3,052.8	0.00	0.00	0.00
12,700.0	90.00	359.72	9,850.0	3,080.5	-927.9	3,152.4	0.00	0.00	0.00
12,800.0	90.00	359.72	9,850.0	3,180.5	-928.4	3,252.1	0.00	0.00	0.00
12,900.0	90.00	359.72	9,850.0	3,280.5	-928.9	3,351.7	0.00	0.00	0.00
13,000.0	90.00	359.72	9,850.0	3,380.5	-929.4	3,451.3	0.00	0.00	0.00
13,100.0	90.00	359.72	9,850.0	3,480.5	-929.9	3,550.9	0.00	0.00	0.00
13,200.0	90.00	359.72	9,850.0	3,580.5	-930.4	3,650.6	0.00	0.00	0.00
13,300.0	90.00	359.72	9,850.0	3,680.5	-930.9	3,750.2	0.00	0.00	0.00
13,400.0	90.00	359.72	9,850.0	3,780.5	-931.4	3,849.8	0.00	0.00	0.00
13,500.0	90.00	359.72	9,850.0	3,880.5	-931.9	3,949.4	0.00	0.00	0.00
13,600.0	90.00	359.72	9,850.0	3,980.5	-932.3	4,049.0	0.00	0.00	0.00
13,700.0	90.00	359.72	9,850.0	4,080.5	-932.8	4,148.7	0.00	0.00	0.00
13,800.0	90.00	359.72	9,850.0	4,180.4	-933.3	4,248.3	0.00	0.00	0.00
13,900.0	90.00	359.72	9,850.0	4,280.4	-933.8	4,347.9	0.00	0.00	0.00
14,000.0	90.00	359.72	9,850.0	4,380.4	-934.3	4,447.5	0.00	0.00	0.00
14,100.0	90.00	359.72	9,850.0	4,480.4	-934.8	4,547.2	0.00	0.00	0.00
14,200.0	90.00	359.72	9,850.0	4,580.4	-935.3	4,646.8	0.00	0.00	0.00
14,300.0	90.00	359.72	9,850.0	4,680.4	-935.8	4,746.4	0.00	0.00	0.00
14,400.0	90.00	359.72	9,850.0	4,780.4	-936.3	4,846.0	0.00	0.00	0.00
14,500.0	90.00	359.72	9,850.0	4,880.4	-936.7	4,945.7	0.00	0.00	0.00
14,600.0	90.00	359.72	9,850.0	4,980.4	-937.2	5,045.3	0.00	0.00	0.00
14,700.0	90.00	359.72	9,850.0	5,080.4	-937.7	5,144.9	0.00	0.00	0.00
14,800.0	90.00	359.72	9,850.0	5,180.4	-938.2	5,244.5	0.00	0.00	0.00
14,900.0	90.00	359.72	9,850.0	5,280.4	-938.7	5,344.2	0.00	0.00	0.00
15,000.0	90.00	359.72	9,850.0	5,380.4	-939.2	5,443.8	0.00	0.00	0.00
15,100.0	90.00	359.72	9,850.0	5,480.4	-939.7	5,543.4	0.00	0.00	0.00
15,200.0	90.00	359.72	9,850.0	5,580.4	-940.2	5,643.0	0.00	0.00	0.00
15,300.0	90.00	359.72	9,850.0	5,680.4	-940.7	5,742.7	0.00	0.00	0.00
15,400.0	90.00	359.72	9,850.0	5,780.4	-941.1	5,842.3	0.00	0.00	0.00
15,500.0	90.00	359.72	9,850.0	5,880.4	-941.6	5,941.9	0.00	0.00	0.00
15,600.0	90.00	359.72	9,850.0	5,980.4	-942.1	6,041.5	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_ THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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)	
15,700.0	90.00	359.72	9,850.0	6,080.4	-942.6	6,141.2	0.00	0.00	0.00	
15,800.0	90.00	359.72	9,850.0	6,180.4	-943.1	6,240.8	0.00	0.00	0.00	
15,900.0	90.00	359.72	9,850.0	6,280.4	-943.6	6,340.4	0.00	0.00	0.00	
16,000.0	90.00	359.72	9,850.0	6,380.4	-944.1	6,440.0	0.00	0.00	0.00	
16,100.0	90.00	359.72	9,850.0	6,480.4	-944.6	6,539.7	0.00	0.00	0.00	
16,200.0	90.00	359.72	9,850.0	6,580.4	-945.1	6,639.3	0.00	0.00	0.00	
16,300.0	90.00	359.72	9,850.0	6,680.4	-945.5	6,738.9	0.00	0.00	0.00	
16,400.0	90.00	359.72	9,850.0	6,780.4	-946.0	6,838.5	0.00	0.00	0.00	
16,500.0	90.00	359.72	9,850.0	6,880.4	-946.5	6,938.2	0.00	0.00	0.00	
16,600.0	90.00	359.72	9,850.0	6,980.4	-947.0	7,037.8	0.00	0.00	0.00	
16,700.0	90.00	359.72	9,850.0	7,080.4	-947.5	7,137.4	0.00	0.00	0.00	
16,800.0	90.00	359.72	9,850.0	7,180.4	-948.0	7,237.0	0.00	0.00	0.00	
16,900.0	90.00	359.72	9,850.0	7,280.4	-948.5	7,336.6	0.00	0.00	0.00	
16,997.0	90.00	359.72	9,850.0	7,377.4	-948.9	7,433.3	0.00	0.00	0.00	
17,000.0	90.00	359.66	9,850.0	7,380.4	-949.0	7,436.3	2.00	0.00	-2.00	
17,100.0	90.00	357.66	9,850.0	7,480.4	-951.3	7,536.0	2.00	0.00	-2.00	
17,200.0	90.00	355.66	9,850.0	7,580.2	-957.1	7,636.0	2.00	0.00	-2.00	
17,300.0	90.00	353.66	9,850.0	7,679.8	-966.4	7,736.0	2.00	0.00	-2.00	
17,400.0	90.00	351.66	9,850.0	7,778.9	-979.2	7,835.9	2.00	0.00	-2.00	
17,500.0	90.00	349.66	9,850.0	7,877.6	-995.4	7,935.6	2.00	0.00	-2.00	
17,600.0	90.00	347.66	9,850.0	7,975.7	-1,015.1	8,035.1	2.00	0.00	-2.00	
17,700.0	90.00	345.66	9,850.0	8,072.9	-1,038.2	8,134.1	2.00	0.00	-2.00	
17,782.0	90.00	344.02	9,850.0	8,152.1	-1,059.6	8,214.8	2.00	0.00	-2.00	
17,800.0	90.00	344.02	9,850.0	8,169.4	-1,064.6	8,232.5	0.00	0.00	0.00	
17,900.0	90.00	344.02	9,850.0	8,265.5	-1,092.1	8,330.8	0.00	0.00	0.00	
17,980.0	90.00	344.02	9,850.0	8,342.4	-1,114.1	8,409.4	0.00	0.00	0.00	
18,000.0	90.00	344.42	9,850.0	8,361.7	-1,119.6	8,429.0	2.00	0.00	2.00	
18,100.0	90.00	346.42	9,850.0	8,458.5	-1,144.7	8,527.7	2.00	0.00	2.00	
18,200.0	90.00	348.42	9,850.0	8,556.1	-1,166.5	8,626.9	2.00	0.00	2.00	
18,300.0	90.00	350.42	9,850.0	8,654.4	-1,184.9	8,726.5	2.00	0.00	2.00	
18,400.0	90.00	352.42	9,850.0	8,753.2	-1,199.8	8,826.3	2.00	0.00	2.00	
18,500.0	90.00	354.42	9,850.0	8,852.6	-1,211.3	8,926.2	2.00	0.00	2.00	
18,600.0	90.00	356.42	9,850.0	8,952.2	-1,219.2	9,026.2	2.00	0.00	2.00	
18,700.0	90.00	358.42	9,850.0	9,052.1	-1,223.7	9,126.1	2.00	0.00	2.00	
18,764.8	90.00	359.72	9,850.0	9,117.0	-1,224.8	9,190.8	2.00	0.00	2.00	
18,800.0	90.00	359.72	9,850.0	9,152.1	-1,225.0	9,225.8	0.00	0.00	0.00	
18,900.0	90.00	359.72	9,850.0	9,252.1	-1,225.5	9,325.4	0.00	0.00	0.00	
19,000.0	90.00	359.72	9,850.0	9,352.1	-1,226.0	9,425.1	0.00	0.00	0.00	
19,100.0	90.00	359.72	9,850.0	9,452.1	-1,226.4	9,524.7	0.00	0.00	0.00	
19,200.0	90.00	359.72	9,850.0	9,552.1	-1,226.9	9,624.3	0.00	0.00	0.00	
19,300.0	90.00	359.72	9,850.0	9,652.1	-1,227.4	9,723.9	0.00	0.00	0.00	
19,400.0	90.00	359.72	9,850.0	9,752.1	-1,227.9	9,823.6	0.00	0.00	0.00	
19,500.0	90.00	359.72	9,850.0	9,852.1	-1,228.4	9,923.2	0.00	0.00	0.00	
19,600.0	90.00	359.72	9,850.0	9,952.1	-1,228.9	10,022.8	0.00	0.00	0.00	
19,700.0	90.00	359.72	9,850.0	10,052.1	-1,229.4	10,122.4	0.00	0.00	0.00	
19,800.0	90.00	359.72	9,850.0	10,152.1	-1,229.9	10,222.1	0.00	0.00	0.00	
19,900.0	90.00	359.72	9,850.0	10,252.1	-1,230.4	10,321.7	0.00	0.00	0.00	
20,000.0	90.00	359.72	9,850.0	10,352.1	-1,230.9	10,421.3	0.00	0.00	0.00	
20,100.0	90.00	359.72	9,850.0	10,452.1	-1,231.4	10,520.9	0.00	0.00	0.00	
20,200.0	90.00	359.72	9,850.0	10,552.1	-1,231.9	10,620.6	0.00	0.00	0.00	
20,300.0	90.00	359.72	9,850.0	10,652.1	-1,232.4	10,720.2	0.00	0.00	0.00	
20,400.0	90.00	359.72	9,850.0	10,752.1	-1,232.9	10,819.8	0.00	0.00	0.00	
20,500.0	90.00	359.72	9,850.0	10,852.1	-1,233.4	10,919.4	0.00	0.00	0.00	
20,600.0	90.00	359.72	9,850.0	10,952.1	-1,233.9	11,019.0	0.00	0.00	0.00	

ConocoPhillips
Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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)	
20,700.0	90.00	359.72	9,850.0	11,052.1	-1,234.4	11,118.7	0.00	0.00	0.00	
20,800.0	90.00	359.72	9,850.0	11,152.1	-1,234.8	11,218.3	0.00	0.00	0.00	
20,900.0	90.00	359.72	9,850.0	11,252.1	-1,235.3	11,317.9	0.00	0.00	0.00	
21,000.0	90.00	359.72	9,850.0	11,352.1	-1,235.8	11,417.5	0.00	0.00	0.00	
21,100.0	90.00	359.72	9,850.0	11,452.1	-1,236.3	11,517.2	0.00	0.00	0.00	
21,200.0	90.00	359.72	9,850.0	11,552.1	-1,236.8	11,616.8	0.00	0.00	0.00	
21,300.0	90.00	359.72	9,850.0	11,652.1	-1,237.3	11,716.4	0.00	0.00	0.00	
21,400.0	90.00	359.72	9,850.0	11,752.1	-1,237.8	11,816.0	0.00	0.00	0.00	
21,500.0	90.00	359.72	9,850.0	11,852.1	-1,238.3	11,915.7	0.00	0.00	0.00	
21,600.0	90.00	359.72	9,850.0	11,952.1	-1,238.8	12,015.3	0.00	0.00	0.00	
21,700.0	90.00	359.72	9,850.0	12,052.1	-1,239.3	12,114.9	0.00	0.00	0.00	
21,800.0	90.00	359.72	9,850.0	12,152.1	-1,239.8	12,214.5	0.00	0.00	0.00	
21,900.0	90.00	359.72	9,850.0	12,252.1	-1,240.3	12,314.2	0.00	0.00	0.00	
22,000.0	90.00	359.72	9,850.0	12,352.1	-1,240.8	12,413.8	0.00	0.00	0.00	
22,100.0	90.00	359.72	9,850.0	12,452.1	-1,241.3	12,513.4	0.00	0.00	0.00	
22,200.0	90.00	359.72	9,850.0	12,552.1	-1,241.8	12,613.0	0.00	0.00	0.00	
22,300.0	90.00	359.72	9,850.0	12,652.1	-1,242.3	12,712.7	0.00	0.00	0.00	
22,400.0	90.00	359.72	9,850.0	12,752.1	-1,242.8	12,812.3	0.00	0.00	0.00	
22,500.0	90.00	359.72	9,850.0	12,852.1	-1,243.3	12,911.9	0.00	0.00	0.00	
22,600.0	90.00	359.72	9,850.0	12,952.1	-1,243.7	13,011.5	0.00	0.00	0.00	
22,700.0	90.00	359.72	9,850.0	13,052.1	-1,244.2	13,111.2	0.00	0.00	0.00	
22,800.0	90.00	359.72	9,850.0	13,152.1	-1,244.7	13,210.8	0.00	0.00	0.00	
22,900.0	90.00	359.72	9,850.0	13,252.1	-1,245.2	13,310.4	0.00	0.00	0.00	
23,000.0	90.00	359.72	9,850.0	13,352.1	-1,245.7	13,410.0	0.00	0.00	0.00	
23,100.0	90.00	359.72	9,850.0	13,452.1	-1,246.2	13,509.7	0.00	0.00	0.00	
23,106.5	90.00	359.72	9,850.0	13,458.6	-1,246.2	13,516.2	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
POI 2_THUNDERDOME	0.00	164.02	9,850.0	8,716.5	-1,213.3	478,109.95	646,624.07	32° 18' 48.773 N	103° 51' 31.408 W
- plan misses target center by 18.4usft at 18365.7usft MD (9850.0 TVD, 8719.3 N, -1195.1 E)									
- Rectangle (sides W100.0 H1,018.6 D20.0)									
PBHL (THUNDERDOME	0.00	179.72	9,850.0	13,458.2	-1,236.2	482,851.62	646,601.12	32° 19' 35.697 N	103° 51' 31.431 W
- plan misses target center by 10.0usft at 23106.1usft MD (9850.0 TVD, 13458.2 N, -1246.2 E)									
- Rectangle (sides W100.0 H4,741.7 D20.0)									
LTP (THUNDERDOME I	90.00	359.77	9,850.0	13,408.2	-1,235.6	482,801.62	646,601.73	32° 19' 35.203 N	103° 51' 31.427 W
- plan misses target center by 10.4usft at 23056.1usft MD (9850.0 TVD, 13408.2 N, -1246.0 E)									
- Circle (radius 50.0)									
FTP (THUNDERDOME I	0.00	0.00	9,850.0	381.3	-905.3	469,774.67	646,932.03	32° 17' 26.275 N	103° 51' 28.251 W
- plan misses target center by 51.9usft at 10012.0usft MD (9802.4 TVD, 399.7 N, -914.8 E)									
- Circle (radius 50.0)									
POI 1_THUNDERDOME	0.00	179.78	9,850.0	7,737.3	-933.0	477,130.69	646,904.40	32° 18' 39.070 N	103° 51' 28.192 W
- plan misses target center by 40.1usft at 17352.8usft MD (9850.0 TVD, 7732.2 N, -972.7 E)									
- Rectangle (sides W100.0 H7,356.0 D20.0)									

ConocoPhillips

Planning Report

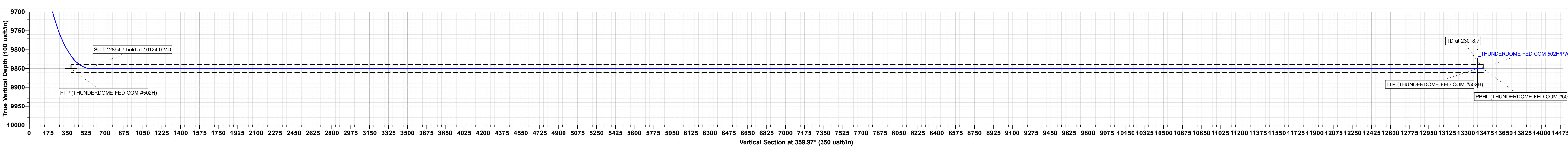
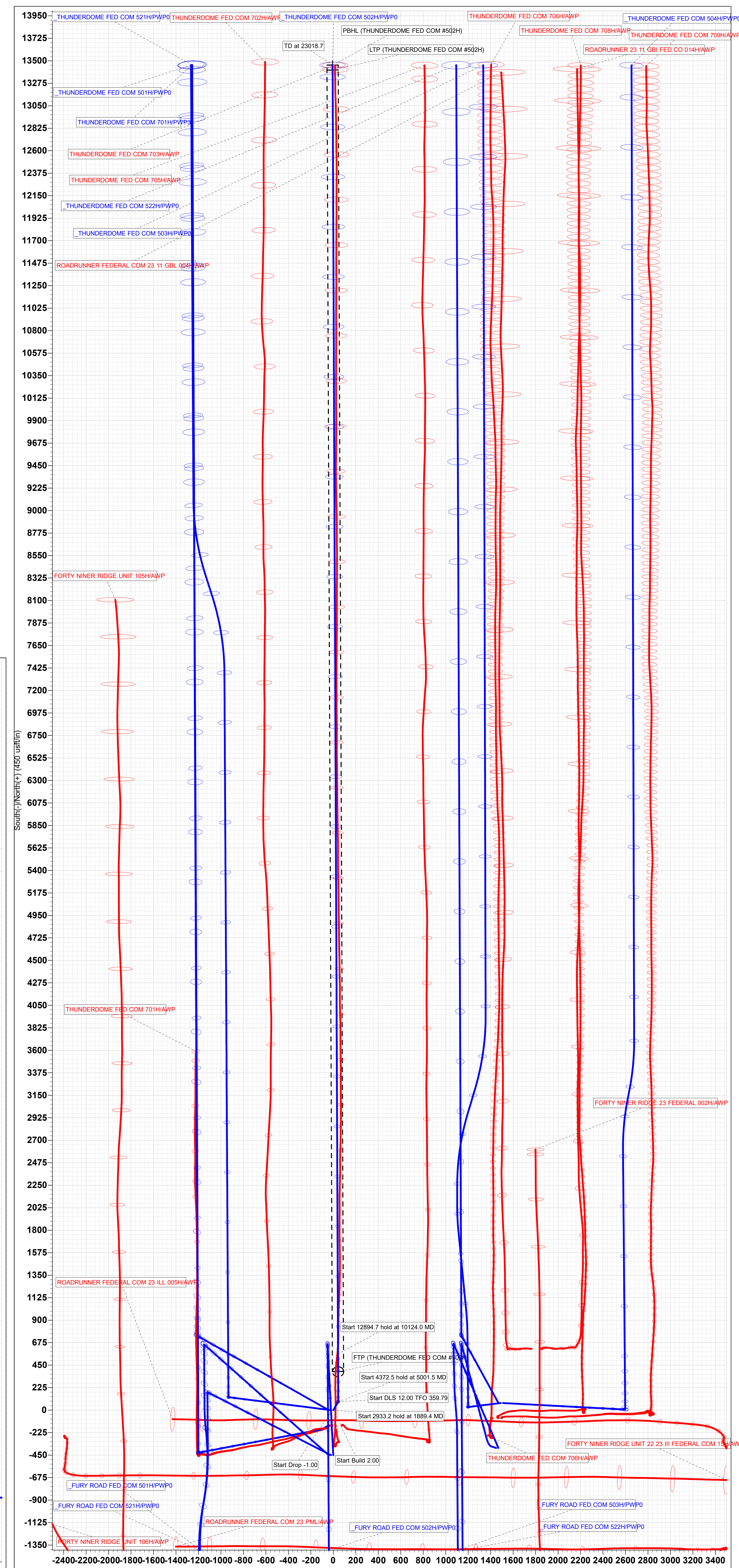
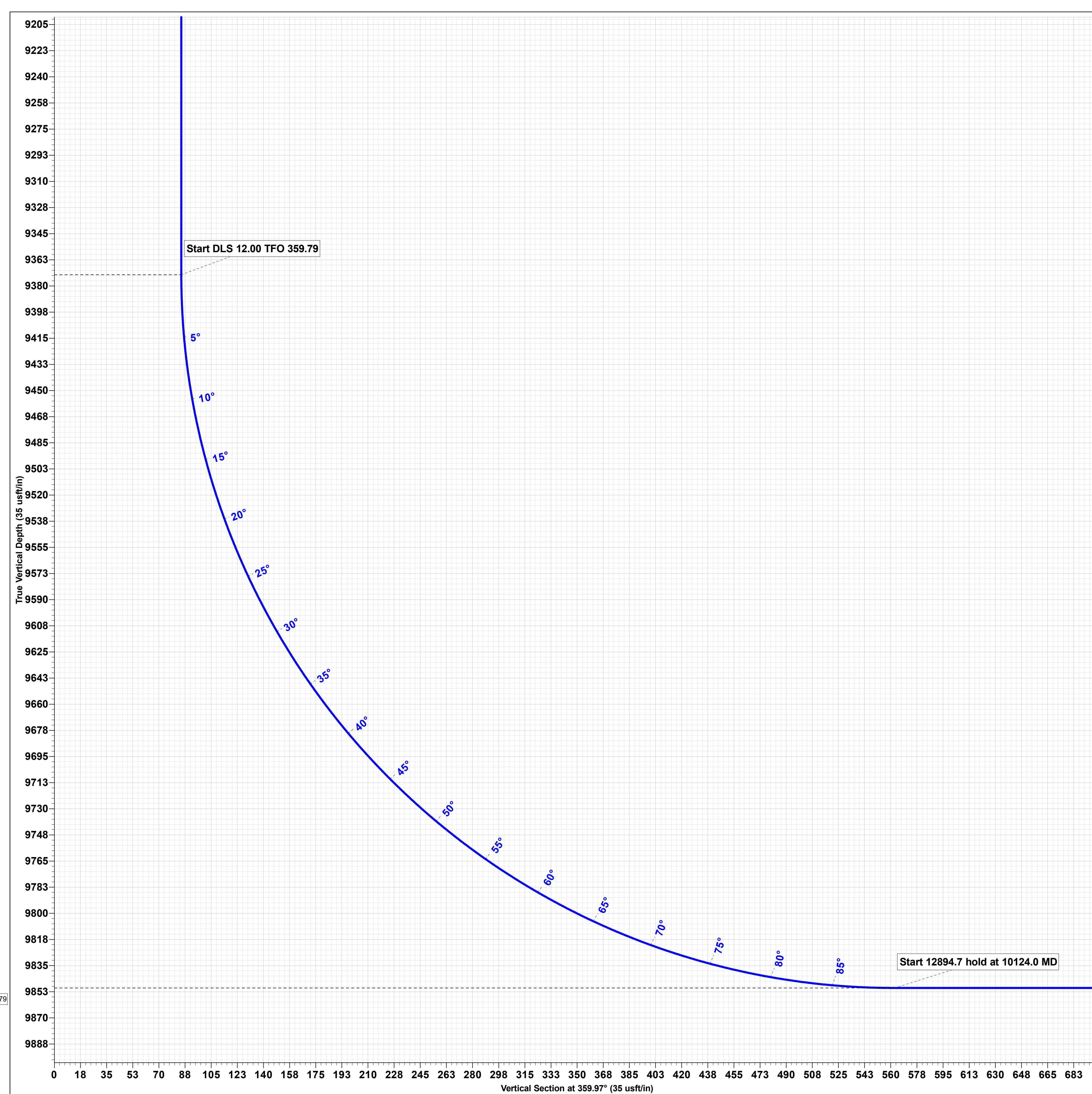
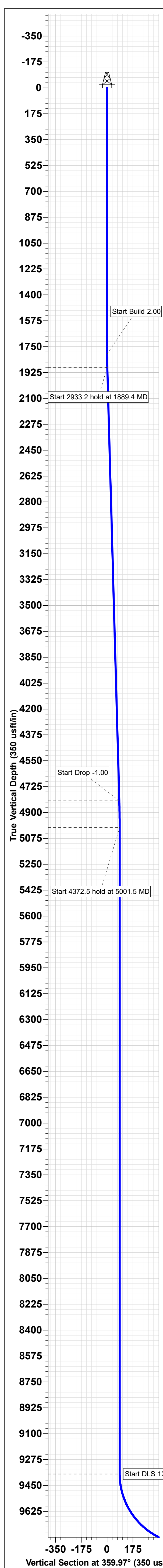
Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 501H
Company:	DELAWARE BASIN WEST	TVD Reference:	GL @ 3243.0usft
Project:	ATLAS PROSPECT (DBW)	MD Reference:	GL @ 3243.0usft
Site:	THUNDERDOME PROJECT	North Reference:	Grid
Well:	_THUNDERDOME FED COM 501H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	23,106.6	9,850.0	5-1/2" Production Casing	5-1/2	6-3/4

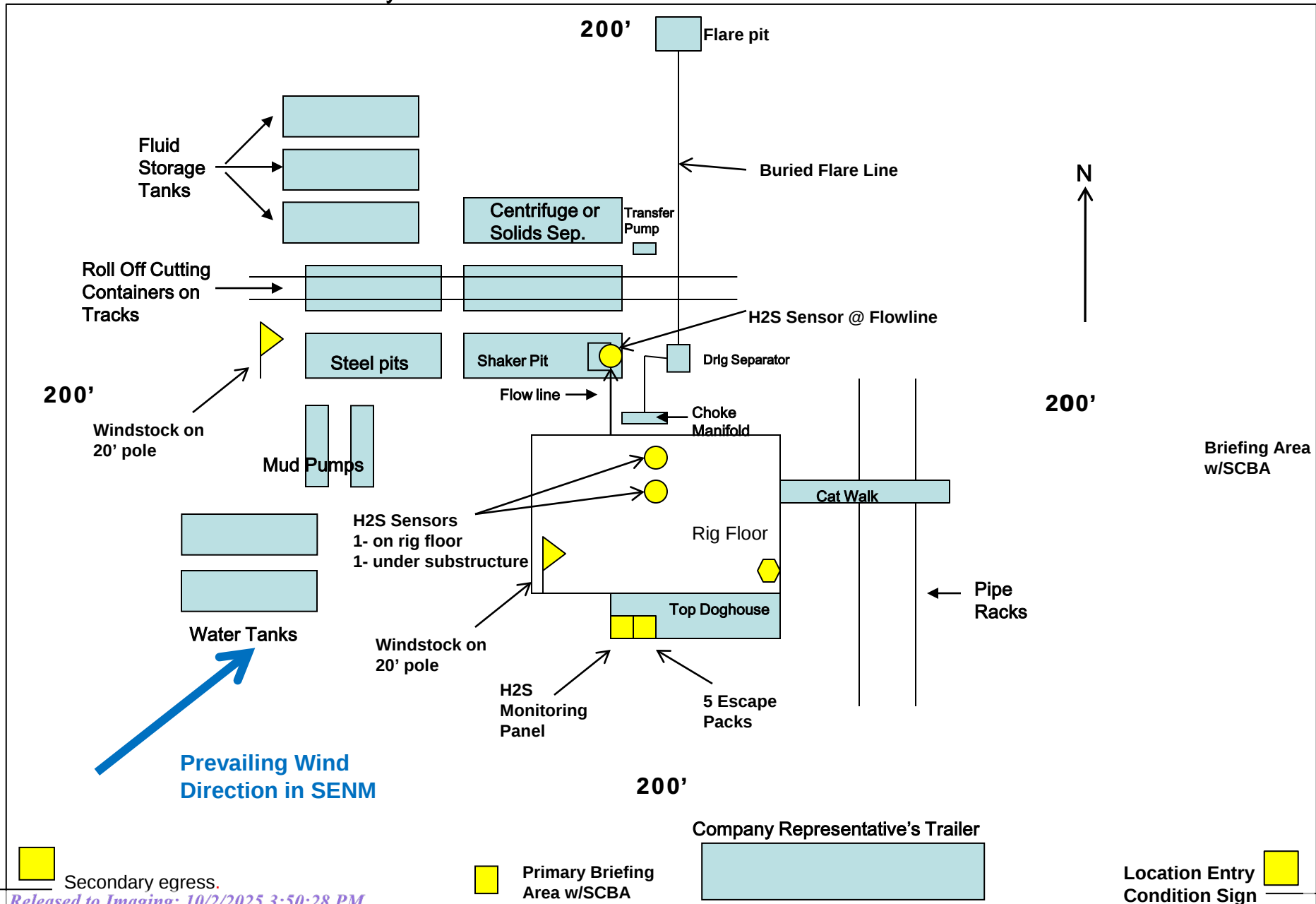


Project: ATLAS PROSPECT (DBW)
Site: THUNDERDOME PROJECT
Well: THUNDERDOME FED COM 502H
Wellbore: ØWB
Design: PWP0

SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0
1889.4	1.79	27.35	1889.4	1.2	0.6	2.00	27.35	1.2
4822.6	1.79	27.35	4821.2	82.5	42.7	0.00	0.00	82.5
5001.5	0.00	0.00	5000.0	85.0	44.0	1.00	180.00	85.0
9374.0	0.00	0.00	9372.5	85.0	44.0	0.00	0.00	85.0
10124.0	90.00	359.79	9850.0	562.5	42.2	12.00	359.79	562.5
23018.7	90.00	359.79	9850.0	13457.1	-6.1	0.00	0.00	13457.1



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



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

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CONOCOPHILLIPS COMPANY
WELL NAME & NO.:	THUNDERDOME FED COM 501H
LOCATION:	Section 23, T.23 S., R.30 E., NMP
COUNTY:	Eddy County, New Mexico

COA

H ₂ S	☐ No			☒ Yes
Potash / WIPP	☐ None	☐ Secretary	☒ R-111-Q	☐ Open Annulus ☐ WIPP
Cave / Karst	☒ Low	☐ Medium	☐ High	☐ Critical
Wellhead	☐ Conventional	☒ Multibowl	☐ Both	☐ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☒ EchoMeter	☐ DV Tool
Special Req	☐ Capitan Reef	☐ Water Disposal	☒ COM	☐ Unit
Waste Prev.	☐ Self-Certification	☒ Waste Min. Plan	☐ APD Submitted prior to 06/10/2024	
Additional Language	☒ Flex Hose ☐ Four-String	☐ Casing Clearance ☒ Offline Cementing	☐ Pilot Hole ☐ Fluid-Filled	☒ Break Testing

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated AT SPUD. As a result, the Hydrogen Sulfide area must meet 43 CFR part 3170 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

APD is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the updated order.

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **250 feet** (a minimum of 70 feet (Eddy 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 minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

Option 1 (Primary + Post Frac Bradenhead):

- **A monitored open annulus will be incorporated during completion by leaving the Intermediate x Production annulus un-cemented and monitored inside the Intermediate String.** Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within **180 days**.

Operator has proposed to pump down **intermediate x production** annulus post completion. **Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus OR operator shall run a CBL from TD of the intermediate 2/production casing to surface after the second stage BH to verify TOC.** Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry during second stage bradenhead when running Echo-meter if cement is required to surface. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

Operator has proposed an open annulus completion in R-111-Q. Operator shall provide a method of verification pre-completion top of cement. **Submit results to the BLM. Pressure monitoring device and Pressure Safety Valves must be installed at surface on both the intermediate annulus and the production annulus for the life of the well.**

In the event of a casing failure during completion, the operator must contact the BLM at (575-706-2779) and (575-361-2822 Eddy County).

- **After bradenhead mentioned above** cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, Capitan Reef, or potash.**
 - **Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.**

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 **13-3/8 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 43 CFR 3171 and 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.

BOPE Break Testing Variance

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (575-706-2779) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (575-361-2822 Eddy County) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per 43 CFR 3172.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Contact the BLM prior to the commencement of any offline cementing procedure.

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)

Contact Eddy County Petroleum Engineering Inspection Staff:

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;
BLM_NM_CFO_DrillingNotifications@BLM.GOV; (575) 361-2822

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
 - i. Notify the BLM when moving in and removing the Spudder Rig.
 - ii. 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.
 - iii. BOP/BOPE test to be conducted per **43 CFR 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. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

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 of both lead and tail cement, 2) until cement has been in place at least 8 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-Q 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 3172**.
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:

- i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - ii. 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.
 - iii. Manufacturer representative shall install the test plug for the initial BOP test.
 - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - v. 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.
 - i. 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).
 - ii. 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.)
 - iii. 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 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 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- iv. 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.
- v. The results of the test shall be reported to the appropriate BLM office.
- vi. 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.
- vii. 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.
- viii. 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 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.

JS 7/29/2025

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
<https://www.emnrd.nm.gov/ocd/contact-us>

State of New Mexico

Energy, Minerals and Natural Resources

Oil Conservation Division

1220 S. St Francis Dr.

Santa Fe, NM 87505

ACKNOWLEDGMENTS

Action 508992

ACKNOWLEDGMENTS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 508992
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

ACKNOWLEDGMENTS

☒	I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well.
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State of New Mexico
Energy, Minerals and Natural Resources
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1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 508992

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 508992
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
stanwagner	Cement is required to circulate on both surface and intermediate1 strings of casing.	9/24/2025
stanwagner	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	9/24/2025
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	10/2/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	10/2/2025
ward.rikala	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.	10/2/2025
ward.rikala	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.	10/2/2025
ward.rikala	Operator must comply with all of the R-111-Q requirements.	10/2/2025