

Form 3160-3
(October 2024)

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No.
2. Name of Operator		9. API Well No. 30-015-57690
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

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

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

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

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

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



(Continued on page 2)

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

0. SHL: NESW / 2360 FSL / 1494 FWL / TWSP: 23S / RANGE: 30E / SECTION: 23 / LAT: 32.289692 / LONG: -103.855475 (TVD: 0 feet, MD: 0 feet)

PPP: SWNW / 2540 FNL / 330 FWL / TWSP: 23S / RANGE: 30E / SECTION: 23 / LAT: 32.290767 / LONG: -103.859248 (TVD: 10044 feet, MD: 10216 feet)

PPP: SWNW / 0 FNL / 330 FWL / TWSP: 23S / RANGE: 30E / SECTION: 14 / LAT: 32.297749 / LONG: -103.859289 (TVD: 10300 feet, MD: 12756 feet)

BHL: NWNW / 50 FNL / 330 FWL / TWSP: 23S / RANGE: 30E / SECTION: 11 / LAT: 32.326705 / LONG: -103.85922 (TVD: 10300 feet, MD: 22973 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: <input checked="" type="checkbox"/> Initial Submittal <input type="checkbox"/> Amended Report <input type="checkbox"/> As Drilled
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WELL LOCATION INFORMATION

API Number 30-015- 57690	Pool Code 24720 - 96526	Pool Name Forty Niner Ridge; Bone Spring West
Property Code 336009	Property Name THUNDERDOME FED COM	Well Number 521H
OGRID No. 217817	Operator Name CONOCOPHILLIPS COMPANY	Ground Level Elevation 3,251.67'
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal		Mineral Owner: <input type="checkbox"/> State <input type="checkbox"/> Fee <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
K	23	23S	30E		2,360' FSL	1,494' FWL	32.289692°	-103.855475°	EDDY

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
D	11	23S	30E		50' FNL	330' FWL	32.326705°	-103.859220°	EDDY

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: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
K	23	23S	30E		2,360' FSL	1,494' FWL	32.289692°	-103.855475°	EDDY

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
E	23	23S	30E		2,540' FNL	330' FWL	32.290767°	-103.859248°	EDDY

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
D	11	23S	30E		100' FNL	330' FWL	32.326568°	-103.859219°	EDDY

Unitized Area or Area of Uniform Interest	Spacing Unit Type <input checked="" type="checkbox"/> Horizontal <input type="checkbox"/> Vertical	Ground Floor Elevation:
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<p>OPERATOR CERTIFICATIONS</p> <p>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.</p> <p>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.</p>	<p>SURVEYOR CERTIFICATIONS</p> <p>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.</p> <div style="text-align: center;">  <p style="color: red; font-size: small;">Date: 2/24/2025</p> </div>	
Signature <i>Stan Wagner</i>	Date 9/17/2025	Signature and Seal of Professional Surveyor
Printed Name Stan Wagner	Email Address	Certificate Number 12177
		Date of Survey 2/24/2025

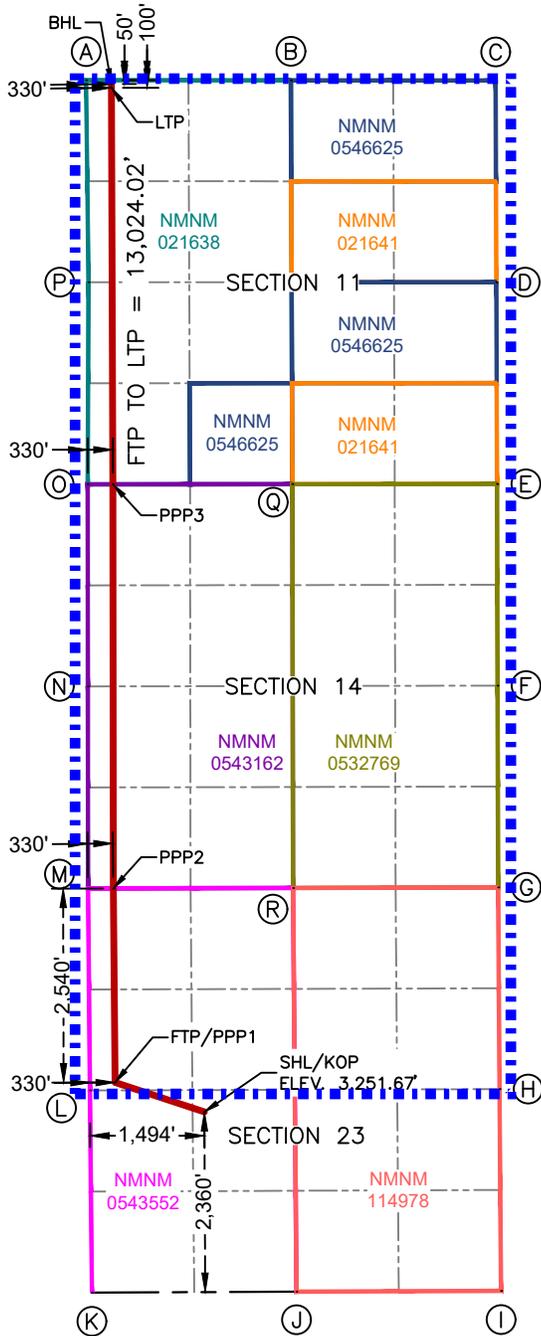
Note: No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

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 521H



SURFACE HOLE LOCATION & KICK-OFF POINT
 2,360' FSL & 1,494' FWL
 ELEV.=3,251.67'

NAD 83 X = 689,001.12'
 NAD 83 Y = 469,451.70'
 NAD 83 LAT = 32.289692°
 NAD 83 LONG = -103.855475°

PENETRATION POINT 3
 0' FNL & 330' FWL
 NAD 83 X = 687,805.07'
 NAD 83 Y = 477,669.56'
 NAD 83 LAT = 32.312296°
 NAD 83 LONG = -103.859227°

FIRST TAKE POINT & PENETRATION POINT 1
 2,540' FNL & 330' FWL
 NAD 83 X = 687,833.31'
 NAD 83 Y = 469,837.58'
 NAD 83 LAT = 32.290767°
 NAD 83 LONG = -103.859248°

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°

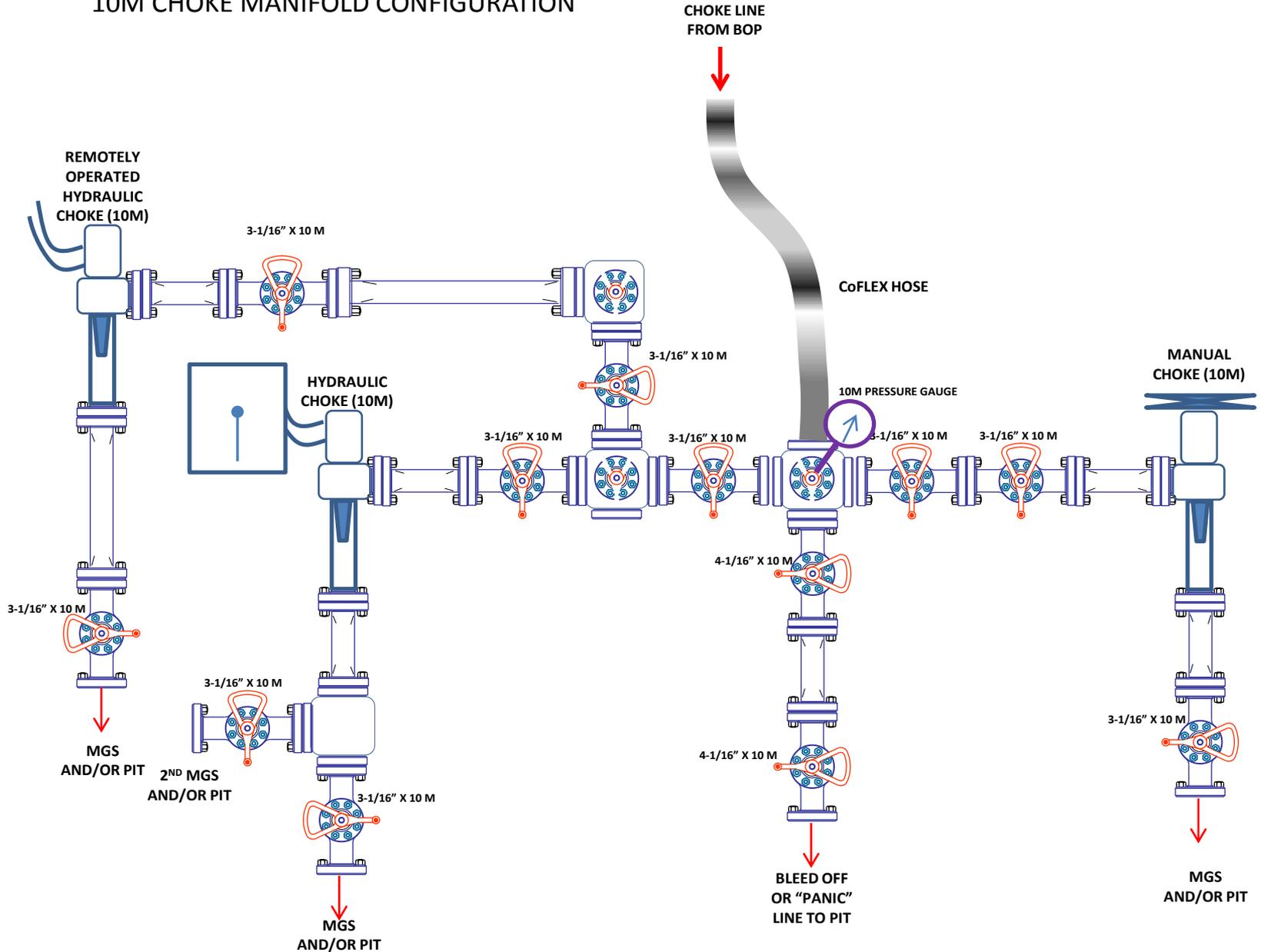
PENETRATION POINT 2
 0' FNL & 330' FWL
 NAD 83 X = 687,809.50'
 NAD 83 Y = 472,377.52'
 NAD 83 LAT = 32.297749°
 NAD 83 LONG = -103.859289°

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°

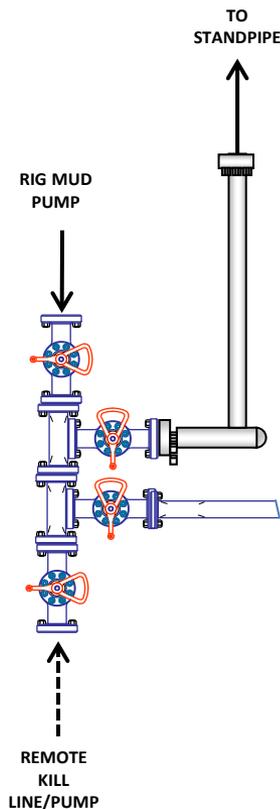
**CORNER COORDINATES
 NEW MEXICO EAST - NAD 83**

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'		

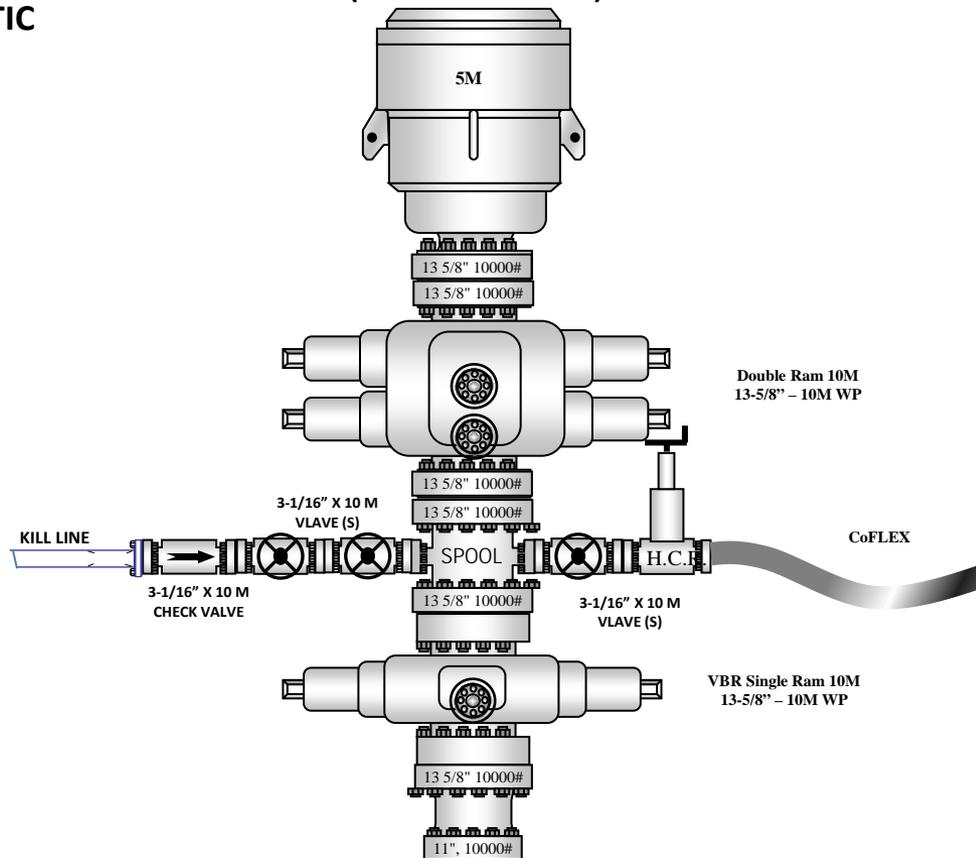
10M CHOKE MANIFOLD CONFIGURATION



10M REMOTE KILL SCHEMATIC



10M BOP Stack (5M Annular)



COG Operating, LLC - Thunderdome Fed Com #521H

1. Geologic Formations

TVD of target	10,300' EOL	Pilot hole depth	NA
MD at TD:	22,973'	Deepest expected fresh water:	103'

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	3609	Salt Water	
Lamar	3766	Salt Water	
Bell Canyon	3846	Oil/Gas	
Brushy Canyon	6020	Oil/Gas	
Bone Spring Lime	7605	Oil/Gas	
1st Bone Spring Sand	8655	Oil/Gas	
2nd Bone Spring Sand	9391	Oil/Gas	
3rd Bone Spring Sand	9823	Target	

Potash well archetype: 4-String Design Open 1st Int x 2nd Int Annulus w/ ICP 2 below relief zone (Figure D). 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 Body	SF Joint
	From	To								
17.50"	0	200	13.375"	54.5	J55	BTC	12.35	38.17	78.26	83.39
12.25"	0	3716	10.75"	45.5	J55	BTC	1.28	1.81	6.49	6.15
9.875"	0	7500	7.625"	29.7	L80-ICY	BTC	1.71	1.18	3.26	3.29
8.750"	7500	9850	7.625"	29.7	P110 ICY	W513	1.41	1.53	3.21	1.91
6.75"	0	9650	5.5"	23	P110 CY	BTC	2.15	2.50	3.28	3.26
6.75"	9650	22,973	5.5"	23	P110 CY	W441	2.01	2.34	3.08	2.98
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

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

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

Intend to use new casing meeting API standards.

COG Operating, LLC - Thunderdome Fed Com #521H

	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?	
If yes, does production casing cement tie back a minimum of 50' above the Reef?	N
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	N
Is well located in R-111-P and SOPA?	
If yes, are the first three strings cemented to surface?	Y
Is 2 nd string set 100' to 600' below the base of salt?	N
	Y
Is well located in high Cave/Karst?	
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	
If yes, are there three strings cemented to surface?	N

COG Operating, LLC - Thunderdome Fed Com #521H

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf	119	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl ₂
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl ₂
Inter 1	464	12.8	2.26	12.84	12	Lead: Class C + 5% Gel + 1% CaCl ₂
	250	14.8	1.2	5.35	10	50:50 Class H Premium
Inter 2						
	351	14.8	1.35	6.6	10	Tail: Class H - Single Slurry
Prod						
	1046	13.2	1.24	5.7	19	Tail: 50:50:2 Class H Blend Single Slurry

Intermediate #1 Salt string cemented to surface. Drill out to wait for 500PSI compressive strength.

Intermediate #2 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. Drill out of intermediate to wait for 500psi compressive strength.

Production cement tied back 1000' into intermediate 2 string but not above engineered weak point with minimal excess to ensure annulus remains open.

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results

Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
2nd Intermediate	4,716'	0%
Production	8,850'	10% OH in Lateral (KOP to EOL)

COG Operating, LLC - Thunderdome Fed Com #521H

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 skirts (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	2500psi
			Blind Ram	x	5000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		
9-7/8"	13-5/8"	5M	Annular	x	2500psi
			Blind Ram	x	5000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		
6-3/4"	13-5/8"	10M	5M Annular	x	5000psi
			Blind Ram	x	10000psi
			Pipe Ram	x	
			Double Ram	x	
			Other*		

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

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

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
N	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

COG Operating, LLC - Thunderdome Fed Com #521H

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	9.8 - 10	28-34	N/C
Surf csg	10 3/4" Int 1 shoe	Saturated Brine	10	28-34	N/C
10 3/4" Int1 shoe	7-5/8" Int 2 shoe	Cut Brine	8.4 - 9.3	28-34	N/C
7-5/8" Int 2 shoe	Lateral TD	OBM	9.6 - 13.5	35-45	<20

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

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

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

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

COG Operating, LLC - Thunderdome Fed Com #521H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7235 psi at 10300' TVD
Abnormal Temperature	NO 160 Deg. F.

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

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

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

8. Other Facets of Operation

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

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

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

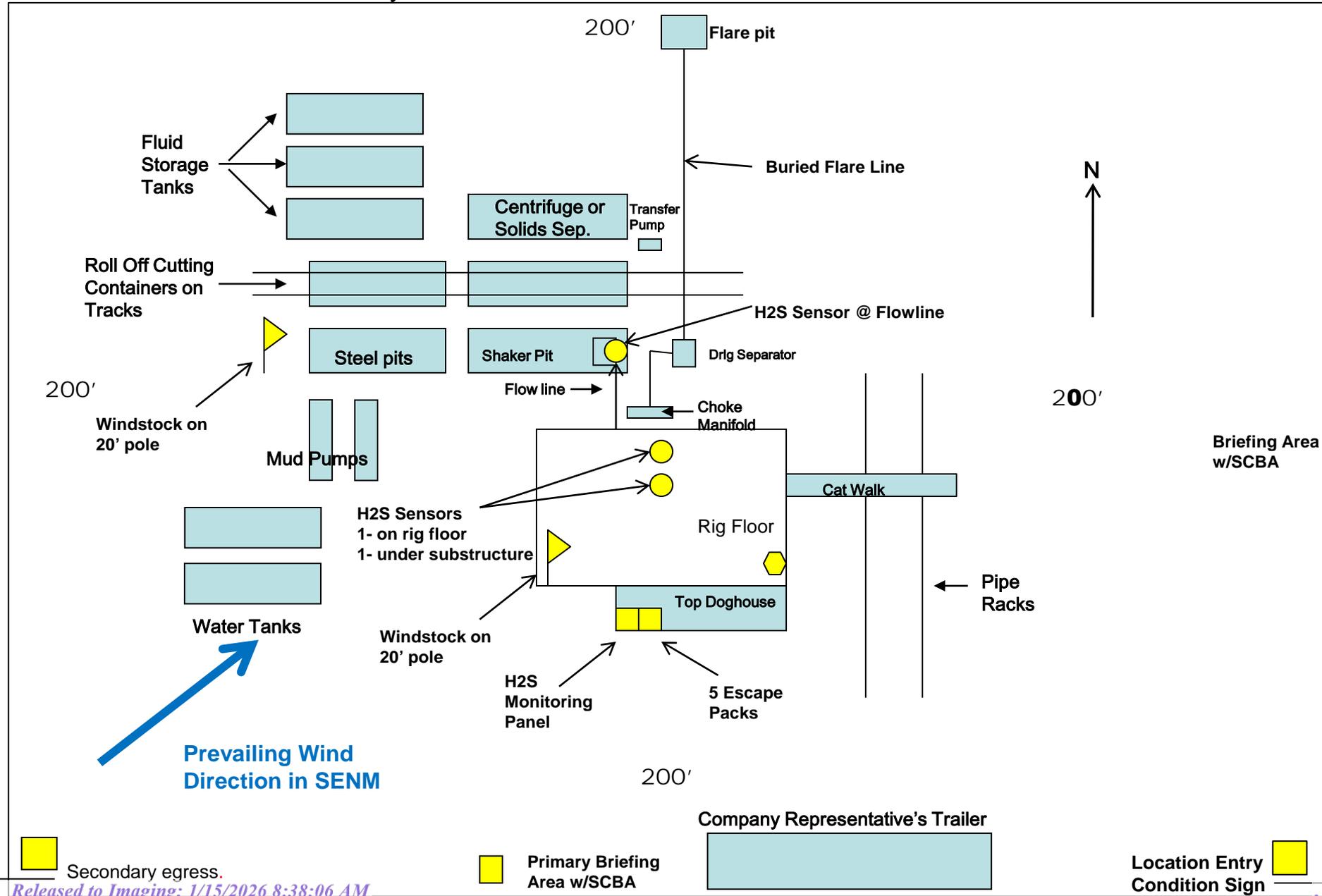
	<u>OFFICE</u>	<u>MOBILE</u>
COG OPERATING LLC OFFICE	575-748-6940	
Dallas Daley	432-818-2329	432-631-6977

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

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

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



Secondary egress.



Primary Briefing Area w/SCBA



Location Entry Condition Sign

DELAWARE BASIN WEST

**ATLAS PROSPECT (DBW)
THUNDERDOME PROJECT
_THUNDERDOME FED COM 521H**

OWB

Plan: PWP0

Standard Planning Report

29 April, 2025

ConocoPhillips Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 521H
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 521H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	ATLAS PROSPECT (DBW)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	THUNDERDOME PROJECT				
Site Position:	Northing:	469,664.63 usft	Latitude:	32° 17' 25.094 N	
From:	Map	Easting:	649,012.95 usft	Longitude:	103° 51' 4.015 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	_THUNDERDOME FED COM 521H					
Well Position	+N/-S	0.0 usft	Northing:	469,393.41 usft	Latitude:	32° 17' 22.463 N
	+E/-W	0.0 usft	Easting:	647,817.37 usft	Longitude:	103° 51' 17.957 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft	Ground Level:	3,243.0 usft
Grid Convergence:	0.26 °					

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2024	2/24/2025	6.53	59.89	47,266.93071372

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	354.84

Plan Survey Tool Program	Date	2/25/2025			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	22,973.3 PWP0 (OWB)	r.5 MWD+IFR1	OWSG MWD + IFR1 rev.5	

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	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,216.9	14.34	302.44	2,209.5	47.9	-75.3	2.00	2.00	0.00	302.44	
6,729.1	14.34	302.44	6,581.1	647.3	-1,018.4	0.00	0.00	0.00	0.00	
8,162.9	0.00	0.01	8,000.0	743.0	-1,169.0	1.00	-1.00	0.00	180.00	
9,985.4	0.00	0.01	9,822.5	743.0	-1,169.0	0.00	0.00	0.00	0.01	
10,735.4	90.00	359.79	10,300.0	1,220.5	-1,170.8	12.00	12.00	-0.03	359.79	
22,973.3	90.00	359.79	10,300.0	13,458.2	-1,216.2	0.00	0.00	0.00	0.00	PBHL_THUNDERDO

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 521H
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 521H	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	2.00	302.44	1,600.0	0.9	-1.5	1.1	2.00	2.00	0.00
1,700.0	4.00	302.44	1,699.8	3.7	-5.9	4.3	2.00	2.00	0.00
1,800.0	6.00	302.44	1,799.5	8.4	-13.2	9.6	2.00	2.00	0.00
1,900.0	8.00	302.44	1,898.7	15.0	-23.5	17.0	2.00	2.00	0.00
2,000.0	10.00	302.44	1,997.5	23.3	-36.7	26.6	2.00	2.00	0.00
2,100.0	12.00	302.44	2,095.6	33.6	-52.8	38.2	2.00	2.00	0.00
2,200.0	14.00	302.44	2,193.1	45.6	-71.8	51.9	2.00	2.00	0.00
2,216.9	14.34	302.44	2,209.5	47.9	-75.3	54.5	2.00	2.00	0.00
2,300.0	14.34	302.44	2,290.0	58.9	-92.7	67.0	0.00	0.00	0.00
2,400.0	14.34	302.44	2,386.8	72.2	-113.6	82.1	0.00	0.00	0.00
2,500.0	14.34	302.44	2,483.7	85.5	-134.5	97.2	0.00	0.00	0.00
2,600.0	14.34	302.44	2,580.6	98.8	-155.4	112.3	0.00	0.00	0.00
2,700.0	14.34	302.44	2,677.5	112.0	-176.3	127.5	0.00	0.00	0.00
2,800.0	14.34	302.44	2,774.4	125.3	-197.2	142.6	0.00	0.00	0.00
2,900.0	14.34	302.44	2,871.3	138.6	-218.1	157.7	0.00	0.00	0.00
3,000.0	14.34	302.44	2,968.1	151.9	-239.0	172.8	0.00	0.00	0.00
3,100.0	14.34	302.44	3,065.0	165.2	-259.9	187.9	0.00	0.00	0.00
3,200.0	14.34	302.44	3,161.9	178.5	-280.8	203.0	0.00	0.00	0.00
3,300.0	14.34	302.44	3,258.8	191.7	-301.7	218.1	0.00	0.00	0.00
3,400.0	14.34	302.44	3,355.7	205.0	-322.6	233.2	0.00	0.00	0.00
3,500.0	14.34	302.44	3,452.6	218.3	-343.5	248.3	0.00	0.00	0.00
3,600.0	14.34	302.44	3,549.5	231.6	-364.4	263.5	0.00	0.00	0.00
3,700.0	14.34	302.44	3,646.3	244.9	-385.3	278.6	0.00	0.00	0.00
3,800.0	14.34	302.44	3,743.2	258.2	-406.2	293.7	0.00	0.00	0.00
3,900.0	14.34	302.44	3,840.1	271.4	-427.1	308.8	0.00	0.00	0.00
4,000.0	14.34	302.44	3,937.0	284.7	-448.0	323.9	0.00	0.00	0.00
4,100.0	14.34	302.44	4,033.9	298.0	-468.9	339.0	0.00	0.00	0.00
4,200.0	14.34	302.44	4,130.8	311.3	-489.8	354.1	0.00	0.00	0.00
4,300.0	14.34	302.44	4,227.7	324.6	-510.7	369.2	0.00	0.00	0.00
4,400.0	14.34	302.44	4,324.5	337.9	-531.6	384.3	0.00	0.00	0.00
4,500.0	14.34	302.44	4,421.4	351.2	-552.5	399.5	0.00	0.00	0.00
4,600.0	14.34	302.44	4,518.3	364.4	-573.4	414.6	0.00	0.00	0.00
4,700.0	14.34	302.44	4,615.2	377.7	-594.3	429.7	0.00	0.00	0.00
4,800.0	14.34	302.44	4,712.1	391.0	-615.2	444.8	0.00	0.00	0.00
4,900.0	14.34	302.44	4,809.0	404.3	-636.1	459.9	0.00	0.00	0.00
5,000.0	14.34	302.44	4,905.8	417.6	-657.0	475.0	0.00	0.00	0.00
5,100.0	14.34	302.44	5,002.7	430.9	-677.9	490.1	0.00	0.00	0.00
5,200.0	14.34	302.44	5,099.6	444.1	-698.8	505.2	0.00	0.00	0.00

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 521H
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 521H	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)	
5,300.0	14.34	302.44	5,196.5	457.4	-719.7	520.3	0.00	0.00	0.00	
5,400.0	14.34	302.44	5,293.4	470.7	-740.6	535.5	0.00	0.00	0.00	
5,500.0	14.34	302.44	5,390.3	484.0	-761.5	550.6	0.00	0.00	0.00	
5,600.0	14.34	302.44	5,487.2	497.3	-782.4	565.7	0.00	0.00	0.00	
5,700.0	14.34	302.44	5,584.0	510.6	-803.3	580.8	0.00	0.00	0.00	
5,800.0	14.34	302.44	5,680.9	523.8	-824.2	595.9	0.00	0.00	0.00	
5,900.0	14.34	302.44	5,777.8	537.1	-845.1	611.0	0.00	0.00	0.00	
6,000.0	14.34	302.44	5,874.7	550.4	-866.0	626.1	0.00	0.00	0.00	
6,100.0	14.34	302.44	5,971.6	563.7	-886.9	641.2	0.00	0.00	0.00	
6,200.0	14.34	302.44	6,068.5	577.0	-907.8	656.3	0.00	0.00	0.00	
6,300.0	14.34	302.44	6,165.4	590.3	-928.7	671.5	0.00	0.00	0.00	
6,400.0	14.34	302.44	6,262.2	603.5	-949.6	686.6	0.00	0.00	0.00	
6,500.0	14.34	302.44	6,359.1	616.8	-970.5	701.7	0.00	0.00	0.00	
6,600.0	14.34	302.44	6,456.0	630.1	-991.4	716.8	0.00	0.00	0.00	
6,700.0	14.34	302.44	6,552.9	643.4	-1,012.3	731.9	0.00	0.00	0.00	
6,729.1	14.34	302.44	6,581.1	647.3	-1,018.4	736.3	0.00	0.00	0.00	
6,800.0	13.63	302.44	6,649.9	656.5	-1,032.8	746.8	1.00	-1.00	0.00	
6,900.0	12.63	302.44	6,747.3	668.6	-1,052.0	760.6	1.00	-1.00	0.00	
7,000.0	11.63	302.44	6,845.0	679.9	-1,069.7	773.4	1.00	-1.00	0.00	
7,100.0	10.63	302.44	6,943.2	690.3	-1,086.0	785.2	1.00	-1.00	0.00	
7,200.0	9.63	302.44	7,041.6	699.7	-1,100.9	795.9	1.00	-1.00	0.00	
7,300.0	8.63	302.44	7,140.3	708.2	-1,114.3	805.6	1.00	-1.00	0.00	
7,400.0	7.63	302.44	7,239.3	715.8	-1,126.2	814.3	1.00	-1.00	0.00	
7,500.0	6.63	302.44	7,338.5	722.5	-1,136.7	821.8	1.00	-1.00	0.00	
7,600.0	5.63	302.44	7,438.0	728.2	-1,145.7	828.3	1.00	-1.00	0.00	
7,700.0	4.63	302.44	7,537.6	733.0	-1,153.2	833.8	1.00	-1.00	0.00	
7,800.0	3.63	302.44	7,637.3	736.8	-1,159.3	838.2	1.00	-1.00	0.00	
7,900.0	2.63	302.44	7,737.2	739.8	-1,163.9	841.5	1.00	-1.00	0.00	
8,000.0	1.63	302.44	7,837.1	741.8	-1,167.0	843.8	1.00	-1.00	0.00	
8,100.0	0.63	302.44	7,937.1	742.8	-1,168.7	845.0	1.00	-1.00	0.00	
8,162.9	0.00	0.01	8,000.0	743.0	-1,169.0	845.2	1.00	-1.00	0.00	
8,200.0	0.00	0.00	8,037.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,137.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,237.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,337.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,437.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,537.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,637.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,737.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,837.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,100.0	0.00	0.00	8,937.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,037.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,137.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,237.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,337.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,437.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,537.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,637.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,737.1	743.0	-1,169.0	845.2	0.00	0.00	0.00	
9,985.4	0.00	0.01	9,822.5	743.0	-1,169.0	845.2	0.00	0.00	0.00	
10,000.0	1.75	359.79	9,837.1	743.2	-1,169.0	845.4	12.00	12.00	0.00	
10,100.0	13.75	359.79	9,936.0	756.7	-1,169.1	858.8	12.00	12.00	0.00	
10,200.0	25.75	359.79	10,029.9	790.4	-1,169.2	892.4	12.00	12.00	0.00	
10,300.0	37.75	359.79	10,114.8	842.9	-1,169.4	944.8	12.00	12.00	0.00	

ConocoPhillips

Planning Report

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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 521H	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)
10,400.0	49.75	359.79	10,186.9	912.0	-1,169.6	1,013.5	12.00	12.00	0.00
10,500.0	61.75	359.79	10,243.1	994.5	-1,169.9	1,095.7	12.00	12.00	0.00
10,600.0	73.75	359.79	10,280.9	1,086.8	-1,170.3	1,187.8	12.00	12.00	0.00
10,700.0	85.75	359.79	10,298.7	1,185.1	-1,170.6	1,285.6	12.00	12.00	0.00
10,735.4	90.00	359.79	10,300.0	1,220.5	-1,170.8	1,320.9	12.00	12.00	0.00
10,800.0	90.00	359.79	10,300.0	1,285.0	-1,171.0	1,385.2	0.00	0.00	0.00
10,900.0	90.00	359.79	10,300.0	1,385.0	-1,171.4	1,484.8	0.00	0.00	0.00
11,000.0	90.00	359.79	10,300.0	1,485.0	-1,171.8	1,584.5	0.00	0.00	0.00
11,100.0	90.00	359.79	10,300.0	1,585.0	-1,172.1	1,684.1	0.00	0.00	0.00
11,200.0	90.00	359.79	10,300.0	1,685.0	-1,172.5	1,783.7	0.00	0.00	0.00
11,300.0	90.00	359.79	10,300.0	1,785.0	-1,172.9	1,883.3	0.00	0.00	0.00
11,400.0	90.00	359.79	10,300.0	1,885.0	-1,173.2	1,983.0	0.00	0.00	0.00
11,500.0	90.00	359.79	10,300.0	1,985.0	-1,173.6	2,082.6	0.00	0.00	0.00
11,600.0	90.00	359.79	10,300.0	2,085.0	-1,174.0	2,182.2	0.00	0.00	0.00
11,700.0	90.00	359.79	10,300.0	2,185.0	-1,174.4	2,281.9	0.00	0.00	0.00
11,800.0	90.00	359.79	10,300.0	2,285.0	-1,174.7	2,381.5	0.00	0.00	0.00
11,900.0	90.00	359.79	10,300.0	2,385.0	-1,175.1	2,481.1	0.00	0.00	0.00
12,000.0	90.00	359.79	10,300.0	2,485.0	-1,175.5	2,580.7	0.00	0.00	0.00
12,100.0	90.00	359.79	10,300.0	2,585.0	-1,175.8	2,680.4	0.00	0.00	0.00
12,200.0	90.00	359.79	10,300.0	2,685.0	-1,176.2	2,780.0	0.00	0.00	0.00
12,300.0	90.00	359.79	10,300.0	2,785.0	-1,176.6	2,879.6	0.00	0.00	0.00
12,400.0	90.00	359.79	10,300.0	2,885.0	-1,177.0	2,979.2	0.00	0.00	0.00
12,500.0	90.00	359.79	10,300.0	2,985.0	-1,177.3	3,078.9	0.00	0.00	0.00
12,600.0	90.00	359.79	10,300.0	3,085.0	-1,177.7	3,178.5	0.00	0.00	0.00
12,700.0	90.00	359.79	10,300.0	3,185.0	-1,178.1	3,278.1	0.00	0.00	0.00
12,800.0	90.00	359.79	10,300.0	3,285.0	-1,178.4	3,377.7	0.00	0.00	0.00
12,900.0	90.00	359.79	10,300.0	3,385.0	-1,178.8	3,477.4	0.00	0.00	0.00
13,000.0	90.00	359.79	10,300.0	3,485.0	-1,179.2	3,577.0	0.00	0.00	0.00
13,100.0	90.00	359.79	10,300.0	3,585.0	-1,179.6	3,676.6	0.00	0.00	0.00
13,200.0	90.00	359.79	10,300.0	3,685.0	-1,179.9	3,776.3	0.00	0.00	0.00
13,300.0	90.00	359.79	10,300.0	3,785.0	-1,180.3	3,875.9	0.00	0.00	0.00
13,400.0	90.00	359.79	10,300.0	3,885.0	-1,180.7	3,975.5	0.00	0.00	0.00
13,500.0	90.00	359.79	10,300.0	3,985.0	-1,181.0	4,075.1	0.00	0.00	0.00
13,600.0	90.00	359.79	10,300.0	4,085.0	-1,181.4	4,174.8	0.00	0.00	0.00
13,700.0	90.00	359.79	10,300.0	4,185.0	-1,181.8	4,274.4	0.00	0.00	0.00
13,800.0	90.00	359.79	10,300.0	4,285.0	-1,182.2	4,374.0	0.00	0.00	0.00
13,900.0	90.00	359.79	10,300.0	4,385.0	-1,182.5	4,473.6	0.00	0.00	0.00
14,000.0	90.00	359.79	10,300.0	4,485.0	-1,182.9	4,573.3	0.00	0.00	0.00
14,100.0	90.00	359.79	10,300.0	4,585.0	-1,183.3	4,672.9	0.00	0.00	0.00
14,200.0	90.00	359.79	10,300.0	4,685.0	-1,183.6	4,772.5	0.00	0.00	0.00
14,300.0	90.00	359.79	10,300.0	4,785.0	-1,184.0	4,872.2	0.00	0.00	0.00
14,400.0	90.00	359.79	10,300.0	4,885.0	-1,184.4	4,971.8	0.00	0.00	0.00
14,500.0	90.00	359.79	10,300.0	4,985.0	-1,184.8	5,071.4	0.00	0.00	0.00
14,600.0	90.00	359.79	10,300.0	5,085.0	-1,185.1	5,171.0	0.00	0.00	0.00
14,700.0	90.00	359.79	10,300.0	5,185.0	-1,185.5	5,270.7	0.00	0.00	0.00
14,800.0	90.00	359.79	10,300.0	5,285.0	-1,185.9	5,370.3	0.00	0.00	0.00
14,900.0	90.00	359.79	10,300.0	5,385.0	-1,186.2	5,469.9	0.00	0.00	0.00
15,000.0	90.00	359.79	10,300.0	5,485.0	-1,186.6	5,569.5	0.00	0.00	0.00
15,100.0	90.00	359.79	10,300.0	5,585.0	-1,187.0	5,669.2	0.00	0.00	0.00
15,200.0	90.00	359.79	10,300.0	5,685.0	-1,187.4	5,768.8	0.00	0.00	0.00
15,300.0	90.00	359.79	10,300.0	5,785.0	-1,187.7	5,868.4	0.00	0.00	0.00
15,400.0	90.00	359.79	10,300.0	5,885.0	-1,188.1	5,968.0	0.00	0.00	0.00
15,500.0	90.00	359.79	10,300.0	5,985.0	-1,188.5	6,067.7	0.00	0.00	0.00
15,600.0	90.00	359.79	10,300.0	6,085.0	-1,188.9	6,167.3	0.00	0.00	0.00

ConocoPhillips Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 521H
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 521H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

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	359.79	10,300.0	6,185.0	-1,189.2	6,266.9	0.00	0.00	0.00	
15,800.0	90.00	359.79	10,300.0	6,285.0	-1,189.6	6,366.6	0.00	0.00	0.00	
15,900.0	90.00	359.79	10,300.0	6,385.0	-1,190.0	6,466.2	0.00	0.00	0.00	
16,000.0	90.00	359.79	10,300.0	6,485.0	-1,190.3	6,565.8	0.00	0.00	0.00	
16,100.0	90.00	359.79	10,300.0	6,585.0	-1,190.7	6,665.4	0.00	0.00	0.00	
16,200.0	90.00	359.79	10,300.0	6,685.0	-1,191.1	6,765.1	0.00	0.00	0.00	
16,300.0	90.00	359.79	10,300.0	6,785.0	-1,191.5	6,864.7	0.00	0.00	0.00	
16,400.0	90.00	359.79	10,300.0	6,885.0	-1,191.8	6,964.3	0.00	0.00	0.00	
16,500.0	90.00	359.79	10,300.0	6,985.0	-1,192.2	7,063.9	0.00	0.00	0.00	
16,600.0	90.00	359.79	10,300.0	7,085.0	-1,192.6	7,163.6	0.00	0.00	0.00	
16,700.0	90.00	359.79	10,300.0	7,185.0	-1,192.9	7,263.2	0.00	0.00	0.00	
16,800.0	90.00	359.79	10,300.0	7,285.0	-1,193.3	7,362.8	0.00	0.00	0.00	
16,900.0	90.00	359.79	10,300.0	7,385.0	-1,193.7	7,462.5	0.00	0.00	0.00	
17,000.0	90.00	359.79	10,300.0	7,485.0	-1,194.1	7,562.1	0.00	0.00	0.00	
17,100.0	90.00	359.79	10,300.0	7,585.0	-1,194.4	7,661.7	0.00	0.00	0.00	
17,200.0	90.00	359.79	10,300.0	7,685.0	-1,194.8	7,761.3	0.00	0.00	0.00	
17,300.0	90.00	359.79	10,300.0	7,785.0	-1,195.2	7,861.0	0.00	0.00	0.00	
17,400.0	90.00	359.79	10,300.0	7,885.0	-1,195.5	7,960.6	0.00	0.00	0.00	
17,500.0	90.00	359.79	10,300.0	7,985.0	-1,195.9	8,060.2	0.00	0.00	0.00	
17,600.0	90.00	359.79	10,300.0	8,085.0	-1,196.3	8,159.8	0.00	0.00	0.00	
17,700.0	90.00	359.79	10,300.0	8,185.0	-1,196.7	8,259.5	0.00	0.00	0.00	
17,800.0	90.00	359.79	10,300.0	8,285.0	-1,197.0	8,359.1	0.00	0.00	0.00	
17,900.0	90.00	359.79	10,300.0	8,385.0	-1,197.4	8,458.7	0.00	0.00	0.00	
18,000.0	90.00	359.79	10,300.0	8,485.0	-1,197.8	8,558.3	0.00	0.00	0.00	
18,100.0	90.00	359.79	10,300.0	8,585.0	-1,198.1	8,658.0	0.00	0.00	0.00	
18,200.0	90.00	359.79	10,300.0	8,685.0	-1,198.5	8,757.6	0.00	0.00	0.00	
18,300.0	90.00	359.79	10,300.0	8,785.0	-1,198.9	8,857.2	0.00	0.00	0.00	
18,400.0	90.00	359.79	10,300.0	8,885.0	-1,199.3	8,956.9	0.00	0.00	0.00	
18,500.0	90.00	359.79	10,300.0	8,985.0	-1,199.6	9,056.5	0.00	0.00	0.00	
18,600.0	90.00	359.79	10,300.0	9,085.0	-1,200.0	9,156.1	0.00	0.00	0.00	
18,700.0	90.00	359.79	10,300.0	9,185.0	-1,200.4	9,255.7	0.00	0.00	0.00	
18,800.0	90.00	359.79	10,300.0	9,285.0	-1,200.7	9,355.4	0.00	0.00	0.00	
18,900.0	90.00	359.79	10,300.0	9,385.0	-1,201.1	9,455.0	0.00	0.00	0.00	
19,000.0	90.00	359.79	10,300.0	9,485.0	-1,201.5	9,554.6	0.00	0.00	0.00	
19,100.0	90.00	359.79	10,300.0	9,585.0	-1,201.9	9,654.2	0.00	0.00	0.00	
19,200.0	90.00	359.79	10,300.0	9,685.0	-1,202.2	9,753.9	0.00	0.00	0.00	
19,300.0	90.00	359.79	10,300.0	9,785.0	-1,202.6	9,853.5	0.00	0.00	0.00	
19,400.0	90.00	359.79	10,300.0	9,885.0	-1,203.0	9,953.1	0.00	0.00	0.00	
19,500.0	90.00	359.79	10,300.0	9,985.0	-1,203.3	10,052.8	0.00	0.00	0.00	
19,600.0	90.00	359.79	10,300.0	10,085.0	-1,203.7	10,152.4	0.00	0.00	0.00	
19,700.0	90.00	359.79	10,300.0	10,185.0	-1,204.1	10,252.0	0.00	0.00	0.00	
19,800.0	90.00	359.79	10,300.0	10,285.0	-1,204.5	10,351.6	0.00	0.00	0.00	
19,900.0	90.00	359.79	10,300.0	10,385.0	-1,204.8	10,451.3	0.00	0.00	0.00	
20,000.0	90.00	359.79	10,300.0	10,485.0	-1,205.2	10,550.9	0.00	0.00	0.00	
20,100.0	90.00	359.79	10,300.0	10,585.0	-1,205.6	10,650.5	0.00	0.00	0.00	
20,200.0	90.00	359.79	10,300.0	10,685.0	-1,205.9	10,750.1	0.00	0.00	0.00	
20,300.0	90.00	359.79	10,300.0	10,785.0	-1,206.3	10,849.8	0.00	0.00	0.00	
20,400.0	90.00	359.79	10,300.0	10,885.0	-1,206.7	10,949.4	0.00	0.00	0.00	
20,500.0	90.00	359.79	10,300.0	10,985.0	-1,207.1	11,049.0	0.00	0.00	0.00	
20,600.0	90.00	359.79	10,300.0	11,085.0	-1,207.4	11,148.6	0.00	0.00	0.00	
20,700.0	90.00	359.79	10,300.0	11,185.0	-1,207.8	11,248.3	0.00	0.00	0.00	
20,800.0	90.00	359.79	10,300.0	11,285.0	-1,208.2	11,347.9	0.00	0.00	0.00	
20,900.0	90.00	359.79	10,300.0	11,385.0	-1,208.5	11,447.5	0.00	0.00	0.00	
21,000.0	90.00	359.79	10,300.0	11,485.0	-1,208.9	11,547.2	0.00	0.00	0.00	

ConocoPhillips

Planning Report

Database:	EDT 17 Permian Prod	Local Co-ordinate Reference:	Well _ THUNDERDOME FED COM 521H
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 521H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

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)	
21,100.0	90.00	359.79	10,300.0	11,585.0	-1,209.3	11,646.8	0.00	0.00	0.00	
21,200.0	90.00	359.79	10,300.0	11,685.0	-1,209.7	11,746.4	0.00	0.00	0.00	
21,300.0	90.00	359.79	10,300.0	11,785.0	-1,210.0	11,846.0	0.00	0.00	0.00	
21,400.0	90.00	359.79	10,300.0	11,885.0	-1,210.4	11,945.7	0.00	0.00	0.00	
21,500.0	90.00	359.79	10,300.0	11,985.0	-1,210.8	12,045.3	0.00	0.00	0.00	
21,600.0	90.00	359.79	10,300.0	12,085.0	-1,211.1	12,144.9	0.00	0.00	0.00	
21,700.0	90.00	359.79	10,300.0	12,185.0	-1,211.5	12,244.5	0.00	0.00	0.00	
21,800.0	90.00	359.79	10,300.0	12,285.0	-1,211.9	12,344.2	0.00	0.00	0.00	
21,900.0	90.00	359.79	10,300.0	12,385.0	-1,212.3	12,443.8	0.00	0.00	0.00	
22,000.0	90.00	359.79	10,300.0	12,485.0	-1,212.6	12,543.4	0.00	0.00	0.00	
22,100.0	90.00	359.79	10,300.0	12,585.0	-1,213.0	12,643.0	0.00	0.00	0.00	
22,200.0	90.00	359.79	10,300.0	12,685.0	-1,213.4	12,742.7	0.00	0.00	0.00	
22,300.0	90.00	359.79	10,300.0	12,785.0	-1,213.7	12,842.3	0.00	0.00	0.00	
22,400.0	90.00	359.79	10,300.0	12,884.9	-1,214.1	12,941.9	0.00	0.00	0.00	
22,500.0	90.00	359.79	10,300.0	12,984.9	-1,214.5	13,041.6	0.00	0.00	0.00	
22,600.0	90.00	359.79	10,300.0	13,084.9	-1,214.9	13,141.2	0.00	0.00	0.00	
22,700.0	90.00	359.79	10,300.0	13,184.9	-1,215.2	13,240.8	0.00	0.00	0.00	
22,800.0	90.00	359.79	10,300.0	13,284.9	-1,215.6	13,340.4	0.00	0.00	0.00	
22,900.0	90.00	359.79	10,300.0	13,384.9	-1,216.0	13,440.1	0.00	0.00	0.00	
22,973.3	90.00	359.79	10,300.0	13,458.2	-1,216.2	13,513.1	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	
LTP_THUNDERDOME F - hit/miss target - Shape	90.00	359.79	10,300.0	13,408.2	-1,215.6	482,801.62	646,601.73	32° 19' 35.203 N	103° 51' 31.427 W	- plan misses target center by 23.3usft at 22900.0usft MD (10300.0 TVD, 13384.9 N, -1216.0 E) - Circle (radius 50.0)
PBHL_THUNDERDOME - plan hits target center - Rectangle (sides W100.0 H13,073.7 D20.0)	0.00	179.79	10,300.0	13,458.2	-1,216.2	482,851.62	646,601.12	32° 19' 35.697 N	103° 51' 31.431 W	
FTP_THUNDERDOME I - plan misses target center by 485.8usft at 10216.2usft MD (10044.4 TVD, 797.7 N, -1169.2 E) - Circle (radius 50.0)	0.00	0.00	10,300.0	384.6	-1,167.3	469,778.01	646,650.03	32° 17' 26.320 N	103° 51' 31.536 W	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
22,973.3	10,300.0	5-1/2" Production Casing	5-1/2	6		

DELAWARE BASIN WEST

**ATLAS PROSPECT (DBW)
THUNDERDOME PROJECT
_THUNDERDOME FED COM 521H**

**OWB
PWP0**

Anticollision Report

29 April, 2025

ConocoPhillips Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well_THUNDERDOME FED COM 521H
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 521H	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	2/25/2025		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	22,973.3	PWP0 (OWB)	r.5 MWD+IFR1	OWSG MWD + IFR1 rev.5

Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Summary						
Offset Well - Wellbore - Design						
FURY ROAD PROJECT						
FURY ROAD FED COM 501H - OWB - PWP1	9,410.0	9,457.3	232.4	179.4	4.379	CC, ES, SF
FURY ROAD FED COM 502H - OWB - PWP1	2,415.5	2,539.6	406.0	391.8	28.546	CC, ES
FURY ROAD FED COM 502H - OWB - PWP1	3,400.0	3,487.2	485.8	465.7	24.218	SF
FURY ROAD FED COM 521H - OWB - PWP1	6,912.8	6,991.8	158.4	121.4	4.278	CC
FURY ROAD FED COM 521H - OWB - PWP1	7,000.0	7,076.5	158.8	120.9	4.188	ES
FURY ROAD FED COM 521H - OWB - PWP1	7,300.0	7,366.9	166.3	125.2	4.051	SF
IRON THRONE PROJECT						
FORTY NINER RIDGE UNIT 105H - OWB - AWP	9,905.0	12,203.2	691.8	615.7	9.092	CC, ES
FORTY NINER RIDGE UNIT 105H - OWB - AWP	17,500.0	19,399.0	888.6	666.5	4.001	SF
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						Out of range
THUNDERDOME PROJECT						
_THUNDERDOME FED COM 501H - OWB - PWP0	1,500.0	1,500.0	20.0	11.3	2.299	Caution - Monitor Closely, CC, ES, SF
_THUNDERDOME FED COM 502H - OWB - PWP0	1,500.0	1,500.0	40.0	30.0	3.994	CC, ES
_THUNDERDOME FED COM 502H - OWB - PWP0	1,600.0	1,600.0	41.5	31.1	3.982	SF
_THUNDERDOME FED COM 503H - OWB - PWP0						Out of range
_THUNDERDOME FED COM 522H - OWB - PWP0						Out of range
ROADRUNNER FEDERAL COM 23 ILL 005H - ST01 - A	7,633.9	12,102.7	826.7	662.0	5.021	CC, ES, SF
THUNDERDOME FED COM 701H - OWB - AWP	0.0	40.0	150.5	149.8	223.029	CC
THUNDERDOME FED COM 701H - OWB - AWP	1,504.4	1,544.6	154.1	146.3	19.557	ES
THUNDERDOME FED COM 701H - OWB - AWP	22,973.3	24,978.4	917.9	738.8	5.126	SF
THUNDERDOME FED COM 702H - OWB - AWP	1,527.5	1,568.7	146.7	138.7	18.410	CC, ES
THUNDERDOME FED COM 702H - OWB - AWP	1,700.0	1,738.6	152.2	143.7	17.894	SF
THUNDERDOME FED COM 703H - OWB - AWP	200.0	240.0	160.8	157.8	53.403	CC
THUNDERDOME FED COM 703H - OWB - AWP	300.0	339.1	161.2	157.6	45.137	ES
THUNDERDOME FED COM 703H - OWB - AWP	1,800.0	1,842.9	179.6	170.6	19.960	SF
THUNDERDOME FED COM 705H - OWB - AWP	1,037.8	1,077.9	189.8	183.3	28.812	CC
THUNDERDOME FED COM 705H - OWB - AWP	1,100.0	1,138.7	190.0	183.2	28.005	ES
THUNDERDOME FED COM 705H - OWB - AWP	1,800.0	1,841.1	208.3	199.3	23.184	SF
THUNDERDOME FED COM 706H - ST01 - AWP						Out of range

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 501H - OWB - PWP1														Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-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		
0.0	0.0	32.0	0.0	0.0	0.3	177.47	-450.1	19.9	450.5	449.7	0.87	515.660			
100.0	100.0	132.0	100.0	1.2	1.1	177.47	-450.1	19.9	450.5	447.8	2.74	164.219			
200.0	200.0	232.0	200.0	1.7	1.6	177.47	-450.1	19.9	450.5	446.7	3.79	118.861			
300.0	300.0	332.0	300.0	2.1	2.0	177.47	-450.1	19.9	450.5	446.0	4.58	98.422			
400.0	400.0	432.0	400.0	2.4	2.4	177.47	-450.1	19.9	450.5	445.3	5.24	85.975			
500.0	500.0	532.0	500.0	2.7	2.7	177.47	-450.1	19.9	450.5	444.7	5.83	77.335			
600.0	600.0	632.0	600.0	3.0	3.0	177.47	-450.1	19.9	450.5	444.2	6.36	70.868			
700.0	700.0	732.0	700.0	3.2	3.2	177.47	-450.1	19.9	450.5	443.7	6.85	65.784			
800.0	800.0	832.0	800.0	3.5	3.4	177.47	-450.1	19.9	450.5	443.2	7.31	61.646			
900.0	900.0	932.0	900.0	3.7	3.7	177.47	-450.1	19.9	450.5	442.8	7.74	58.188			
1,000.0	1,000.0	1,032.0	1,000.0	3.9	3.9	177.47	-450.1	19.9	450.5	442.4	8.16	55.242			
1,100.0	1,100.0	1,132.0	1,100.0	4.1	4.1	177.47	-450.1	19.9	450.5	442.0	8.55	52.689			
1,200.0	1,200.0	1,232.0	1,200.0	4.3	4.3	177.47	-450.1	19.9	450.5	441.6	8.93	50.449			
1,300.0	1,300.0	1,332.0	1,300.0	4.5	4.5	177.47	-450.1	19.9	450.5	441.2	9.30	48.461			
1,400.0	1,400.0	1,432.0	1,400.0	4.7	4.6	177.47	-450.1	19.9	450.5	440.9	9.65	46.681			
1,500.0	1,500.0	1,536.2	1,504.2	4.8	4.8	177.49	-449.9	19.7	450.4	440.4	10.02	44.961			
1,600.0	1,600.0	1,649.3	1,617.3	5.1	5.1	-124.86	-447.3	17.1	449.0	438.6	10.44	42.998			
1,700.0	1,699.8	1,762.3	1,730.0	5.4	5.4	-124.82	-441.6	11.4	446.7	435.8	10.84	41.197			
1,800.0	1,799.5	1,875.2	1,842.1	5.6	5.7	-124.82	-432.7	2.6	443.5	432.2	11.24	39.463			
1,900.0	1,898.7	1,987.9	1,953.6	5.9	5.9	-124.87	-420.7	-9.4	439.3	427.7	11.63	37.775			
2,000.0	1,997.5	2,100.4	2,064.1	6.3	6.2	-124.96	-405.6	-24.3	434.3	422.3	12.03	36.113			
2,100.0	2,095.6	2,212.7	2,173.4	6.6	6.4	-125.10	-387.5	-42.3	428.4	415.9	12.42	34.503			
2,200.0	2,193.1	2,316.6	2,273.8	7.0	6.5	-125.35	-368.6	-61.1	422.2	409.5	12.75	33.120			
2,216.9	2,209.5	2,333.5	2,290.1	7.0	6.6	-125.43	-365.5	-64.2	421.3	408.5	12.80	32.922			
2,300.0	2,290.0	2,416.5	2,370.3	7.2	6.7	-125.75	-350.3	-79.3	417.2	404.1	13.13	31.774			
2,400.0	2,386.8	2,516.3	2,466.7	7.6	6.9	-126.16	-332.0	-97.5	412.3	398.7	13.55	30.425			
2,500.0	2,483.7	2,616.1	2,563.1	7.9	7.0	-126.57	-313.6	-115.7	407.3	393.4	13.99	29.122			
2,600.0	2,580.6	2,716.0	2,659.6	8.3	7.2	-126.99	-295.3	-133.9	402.5	388.0	14.44	27.866			
2,700.0	2,677.5	2,815.8	2,756.0	8.6	7.3	-127.43	-277.0	-152.1	397.6	382.7	14.91	26.660			
2,800.0	2,774.4	2,915.6	2,852.4	9.0	7.5	-127.87	-258.6	-170.4	392.7	377.3	15.40	25.505			
2,900.0	2,871.3	3,015.5	2,948.9	9.4	7.7	-128.33	-240.3	-188.6	387.9	372.0	15.90	24.398			
3,000.0	2,968.1	3,115.3	3,045.3	9.8	7.9	-128.79	-222.0	-206.8	383.1	366.7	16.41	23.342			
3,100.0	3,065.0	3,215.2	3,141.7	10.2	8.0	-129.27	-203.6	-225.0	378.3	361.4	16.94	22.333			
3,200.0	3,161.9	3,315.0	3,238.2	10.6	8.2	-129.76	-185.3	-243.2	373.6	356.1	17.48	21.370			
3,300.0	3,258.8	3,414.8	3,334.6	11.1	8.4	-130.26	-167.0	-261.4	368.8	350.8	18.03	20.453			
3,400.0	3,355.7	3,514.7	3,431.0	11.5	8.6	-130.78	-148.6	-279.6	364.2	345.6	18.60	19.579			
3,500.0	3,452.6	3,614.5	3,527.5	11.9	8.8	-131.31	-130.3	-297.8	359.5	340.3	19.18	18.746			
3,600.0	3,549.5	3,714.3	3,623.9	12.4	9.0	-131.85	-112.0	-316.0	354.9	335.1	19.77	17.953			
3,700.0	3,646.3	3,814.2	3,720.3	12.8	9.2	-132.41	-93.7	-334.3	350.3	329.9	20.37	17.197			
3,800.0	3,743.2	3,914.0	3,816.8	13.2	9.4	-132.98	-75.3	-352.5	345.7	324.7	20.98	16.478			
3,900.0	3,840.1	4,013.8	3,913.2	13.7	9.6	-133.57	-57.0	-370.7	341.2	319.6	21.60	15.792			
4,000.0	3,937.0	4,113.7	4,009.6	14.1	9.8	-134.17	-38.7	-388.9	336.7	314.4	22.24	15.139			
4,100.0	4,033.9	4,213.5	4,106.1	14.6	10.0	-134.79	-20.3	-407.1	332.2	309.3	22.88	14.517			
4,200.0	4,130.8	4,313.3	4,202.5	15.1	10.2	-135.43	-2.0	-425.3	327.8	304.3	23.54	13.925			
4,300.0	4,227.7	4,413.2	4,298.9	15.5	10.4	-136.08	16.3	-443.5	323.4	299.2	24.21	13.360			
4,400.0	4,324.5	4,513.0	4,395.4	16.0	10.6	-136.76	34.7	-461.7	319.1	294.2	24.89	12.821			
4,500.0	4,421.4	4,612.8	4,491.8	16.4	10.8	-137.45	53.0	-479.9	314.8	289.2	25.58	12.307			
4,600.0	4,518.3	4,712.7	4,588.2	16.9	11.0	-138.15	71.3	-498.1	310.6	284.3	26.28	11.818			
4,700.0	4,615.2	4,812.5	4,684.7	17.4	11.2	-138.88	89.7	-516.4	306.4	279.4	26.99	11.351			
4,800.0	4,712.1	4,912.4	4,781.1	17.8	11.4	-139.63	108.0	-534.6	302.3	274.5	27.72	10.905			
4,900.0	4,809.0	5,012.2	4,877.5	18.3	11.6	-140.40	126.3	-552.8	298.2	269.7	28.45	10.480			

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 501H - OWB - PWP1													Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-r.5 MWD+IFR1+SAG+FDIR													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis (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	4,905.8	5,112.0	4,974.0	18.8	11.8	-141.19	144.6	-571.0	294.1	264.9	29.20	10.074				
5,100.0	5,002.7	5,211.9	5,070.4	19.3	12.0	-142.00	163.0	-589.2	290.2	260.2	29.95	9.687				
5,200.0	5,099.6	5,311.7	5,166.8	19.7	12.3	-142.84	181.3	-607.4	286.3	255.5	30.72	9.318				
5,300.0	5,196.5	5,411.5	5,263.3	20.2	12.5	-143.69	199.6	-625.6	282.4	250.9	31.50	8.965				
5,400.0	5,293.4	5,511.4	5,359.7	20.7	12.7	-144.57	218.0	-643.8	278.6	246.3	32.29	8.629				
5,500.0	5,390.3	5,611.2	5,456.1	21.1	12.9	-145.48	236.3	-662.0	274.9	241.8	33.09	8.308				
5,600.0	5,487.2	5,711.0	5,552.6	21.6	13.1	-146.41	254.6	-680.3	271.3	237.4	33.90	8.002				
5,700.0	5,584.0	5,810.9	5,649.0	22.1	13.3	-147.36	273.0	-698.5	267.7	233.0	34.72	7.711				
5,800.0	5,680.9	5,910.7	5,745.4	22.6	13.6	-148.34	291.3	-716.7	264.2	228.6	35.55	7.432				
5,900.0	5,777.8	6,010.5	5,841.9	23.1	13.8	-149.34	309.6	-734.9	260.8	224.4	36.38	7.167				
6,000.0	5,874.7	6,110.4	5,938.3	23.5	14.0	-150.38	328.0	-753.1	257.4	220.2	37.23	6.914				
6,100.0	5,971.6	6,210.2	6,034.7	24.0	14.2	-151.43	346.3	-771.3	254.2	216.1	38.09	6.674				
6,200.0	6,068.5	6,310.0	6,131.2	24.5	14.4	-152.52	364.6	-789.5	251.0	212.1	38.95	6.445				
6,300.0	6,165.4	6,409.9	6,227.6	25.0	14.7	-153.63	383.0	-807.7	248.0	208.1	39.82	6.227				
6,400.0	6,262.2	6,509.7	6,324.0	25.5	14.9	-154.77	401.3	-825.9	245.0	204.3	40.70	6.020				
6,500.0	6,359.1	6,609.6	6,420.5	25.9	15.1	-155.94	419.6	-844.2	242.1	200.5	41.58	5.823				
6,600.0	6,456.0	6,709.4	6,516.9	26.4	15.3	-157.13	437.9	-862.4	239.3	196.9	42.46	5.637				
6,700.0	6,552.9	6,806.0	6,610.4	26.9	15.5	-158.34	455.3	-879.6	237.2	193.9	43.34	5.473				
6,729.1	6,581.1	6,834.0	6,637.5	27.1	15.6	-158.70	460.1	-884.4	236.9	193.3	43.60	5.435				
6,800.0	6,649.9	6,902.0	6,703.6	27.4	15.7	-159.57	471.5	-895.7	236.4	192.2	44.22	5.347				
6,900.0	6,747.3	6,997.9	6,797.2	27.9	15.9	-160.73	486.6	-910.7	235.8	190.8	45.07	5.233				
7,000.0	6,845.0	7,093.9	6,891.1	28.3	16.1	-161.80	500.5	-924.5	235.4	189.5	45.88	5.130				
7,100.0	6,943.2	7,189.9	6,985.4	28.8	16.3	-162.79	513.3	-937.3	235.0	188.3	46.65	5.037				
7,200.0	7,041.6	7,285.9	7,079.9	29.2	16.5	-163.70	525.1	-948.9	234.7	187.3	47.39	4.952				
7,300.0	7,140.3	7,381.9	7,174.8	29.7	16.7	-164.51	535.6	-959.4	234.4	186.3	48.09	4.874				
7,400.0	7,239.3	7,477.9	7,269.9	30.1	16.9	-165.25	545.1	-968.8	234.2	185.4	48.75	4.804				
7,500.0	7,338.5	7,574.0	7,365.2	30.5	17.1	-165.89	553.4	-977.1	234.0	184.6	49.36	4.740				
7,600.0	7,438.0	7,670.0	7,460.7	30.9	17.3	-166.44	560.6	-984.2	233.8	183.8	49.94	4.681				
7,700.0	7,537.6	7,766.1	7,556.4	31.3	17.4	-166.90	566.7	-990.3	233.6	183.1	50.47	4.628				
7,800.0	7,637.3	7,862.2	7,652.2	31.7	17.6	-167.28	571.6	-995.2	233.4	182.4	50.96	4.580				
7,900.0	7,737.2	7,958.2	7,748.1	32.0	17.7	-167.56	575.4	-998.9	233.2	181.8	51.39	4.537				
8,000.0	7,837.1	8,054.3	7,844.2	32.4	17.9	-167.76	578.0	-1,001.5	232.9	181.2	51.76	4.500				
8,100.0	7,937.1	8,150.4	7,940.2	32.6	18.0	-167.86	579.5	-1,003.0	232.7	180.6	52.05	4.470				
8,162.9	8,000.0	8,210.9	8,000.7	32.7	18.1	134.56	579.9	-1,003.4	232.5	180.4	52.11	4.461				
8,187.0	8,024.0	8,234.2	8,024.0	32.7	18.1	134.56	579.9	-1,003.4	232.4	180.3	52.10	4.462				
8,200.0	8,037.1	8,247.3	8,037.1	32.7	18.1	134.56	579.9	-1,003.4	232.4	180.3	52.10	4.461				
8,300.0	8,137.1	8,347.3	8,137.1	32.8	18.2	134.56	579.9	-1,003.4	232.4	180.3	52.18	4.455				
8,400.0	8,237.1	8,447.3	8,237.1	32.8	18.2	134.56	579.9	-1,003.4	232.4	180.2	52.26	4.448				
8,500.0	8,337.1	8,547.3	8,337.1	32.8	18.3	134.56	579.9	-1,003.4	232.4	180.1	52.34	4.441				
8,600.0	8,437.1	8,647.3	8,437.1	32.9	18.3	134.56	579.9	-1,003.4	232.4	180.0	52.42	4.434				
8,700.0	8,537.1	8,747.3	8,537.1	32.9	18.4	134.56	579.9	-1,003.4	232.4	179.9	52.50	4.427				
8,800.0	8,637.1	8,847.3	8,637.1	32.9	18.5	134.56	579.9	-1,003.4	232.4	179.9	52.58	4.420				
8,900.0	8,737.1	8,947.3	8,737.1	33.0	18.5	134.56	579.9	-1,003.4	232.4	179.8	52.67	4.413				
9,000.0	8,837.1	9,047.3	8,837.1	33.0	18.6	134.56	579.9	-1,003.4	232.4	179.7	52.75	4.406				
9,100.0	8,937.1	9,147.3	8,937.1	33.0	18.6	134.56	579.9	-1,003.4	232.4	179.6	52.83	4.400				
9,200.0	9,037.1	9,247.3	9,037.1	33.1	18.7	134.56	579.9	-1,003.4	232.4	179.5	52.92	4.393				
9,300.0	9,137.1	9,347.3	9,137.1	33.1	18.8	134.56	579.9	-1,003.4	232.4	179.4	53.00	4.386				
9,400.0	9,237.1	9,447.3	9,237.1	33.1	18.8	134.56	579.9	-1,003.4	232.4	179.4	53.08	4.379				
9,410.0	9,247.1	9,457.3	9,247.1	33.1	18.8	134.56	579.9	-1,003.4	232.4	179.4	53.09	4.379 CC, ES, SF				
9,500.0	9,337.1	9,531.9	9,321.7	33.2	18.8	134.92	577.9	-1,003.4	234.4	181.9	52.49	4.465				
9,600.0	9,437.1	9,604.1	9,392.8	33.2	18.9	136.92	565.8	-1,003.3	246.6	195.6	51.01	4.834				

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 501H - OWB - PWP1													Offset Site Error:	0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
Reference: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-r.5 MWD+IFR1+SAG+FDIR													Rule Assigned:	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (usft)	Separation Factor	Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
9,700.0	9,537.1	9,675.0	9,460.0	33.2	18.9	140.25	543.6	-1,003.2	270.5	221.3	49.19	5.499		
9,800.0	9,637.1	9,731.6	9,511.0	33.3	18.9	143.47	519.0	-1,003.0	306.0	259.3	46.71	6.551		
9,900.0	9,737.1	9,784.5	9,555.6	33.3	18.9	146.65	490.6	-1,002.9	352.5	308.0	44.48	7.925		
9,985.4	9,822.5	9,825.0	9,587.4	33.3	18.9	149.05	465.7	-1,002.7	399.8	356.9	42.85	9.329		
10,000.0	9,837.1	9,825.0	9,587.4	33.3	18.9	148.57	465.7	-1,002.7	408.7	366.2	42.42	9.633		
10,025.0	9,862.0	9,839.9	9,598.6	33.4	19.0	148.21	455.8	-1,002.7	424.8	382.6	42.22	10.063		
10,050.0	9,886.9	9,850.0	9,606.0	33.4	19.0	147.40	448.9	-1,002.6	442.3	400.4	41.92	10.550		
10,075.0	9,911.5	9,856.8	9,610.9	33.5	19.0	146.13	444.2	-1,002.6	460.9	419.3	41.60	11.079		
10,100.0	9,936.0	9,863.9	9,616.0	33.6	19.0	144.63	439.2	-1,002.6	480.5	439.2	41.34	11.623		
10,125.0	9,960.1	9,875.0	9,623.7	33.6	19.0	143.27	431.3	-1,002.5	501.1	459.9	41.22	12.156		
10,150.0	9,983.8	9,875.0	9,623.7	33.7	19.0	140.24	431.3	-1,002.5	522.4	481.5	40.90	12.771		
10,175.0	10,007.1	9,875.0	9,623.7	33.8	19.0	136.47	431.3	-1,002.5	544.5	503.9	40.64	13.397		
10,200.0	10,029.9	9,883.7	9,629.7	33.9	19.0	133.32	424.9	-1,002.5	567.1	526.5	40.60	13.969		
10,225.0	10,052.1	9,886.7	9,631.7	33.9	19.0	128.34	422.7	-1,002.5	590.2	549.8	40.47	14.583		
10,250.0	10,073.7	9,889.0	9,633.2	34.0	19.0	122.00	421.0	-1,002.4	613.8	573.4	40.37	15.203		
10,275.0	10,094.6	9,890.7	9,634.3	34.1	19.0	114.02	419.7	-1,002.4	637.6	597.3	40.29	15.827		
10,300.0	10,114.8	9,891.7	9,635.0	34.2	19.0	104.24	419.0	-1,002.4	661.7	621.5	40.22	16.453		
10,325.0	10,134.2	9,892.1	9,635.3	34.2	19.0	92.84	418.7	-1,002.4	685.9	645.7	40.16	17.078		
10,350.0	10,152.7	9,891.9	9,635.2	34.3	19.0	80.58	418.8	-1,002.4	710.2	670.1	40.12	17.702		
10,375.0	10,170.3	9,891.3	9,634.7	34.4	19.0	68.59	419.3	-1,002.4	734.5	694.4	40.09	18.322		
10,400.0	10,186.9	9,890.2	9,634.0	34.4	19.0	57.88	420.1	-1,002.4	758.7	718.6	40.06	18.937		
10,425.0	10,202.6	9,888.6	9,632.9	34.5	19.0	48.90	421.3	-1,002.4	782.8	742.7	40.05	19.546		
10,450.0	10,217.2	9,886.5	9,631.6	34.6	19.0	41.64	422.8	-1,002.5	806.6	766.6	40.04	20.147		
10,475.0	10,230.7	9,884.1	9,629.9	34.6	19.0	35.85	424.6	-1,002.5	830.3	790.3	40.03	20.740		
10,500.0	10,243.1	9,875.0	9,623.7	34.7	19.0	30.68	431.3	-1,002.5	853.7	813.8	39.96	21.363		
10,525.0	10,254.3	9,875.0	9,623.7	34.7	19.0	27.30	431.3	-1,002.5	876.7	836.7	40.00	21.915		
10,550.0	10,264.4	9,875.0	9,623.7	34.8	19.0	24.53	431.3	-1,002.5	899.3	859.2	40.05	22.453		
10,575.0	10,273.3	9,875.0	9,623.7	34.8	19.0	22.22	431.3	-1,002.5	921.5	881.4	40.10	22.978		
10,600.0	10,280.9	9,875.0	9,623.7	34.9	19.0	20.29	431.3	-1,002.5	943.3	903.1	40.16	23.489		
10,625.0	10,287.3	9,862.8	9,615.2	34.9	19.0	18.29	440.0	-1,002.6	964.4	924.3	40.09	24.055		
10,650.0	10,292.3	9,850.0	9,606.0	35.0	19.0	16.64	448.9	-1,002.6	985.2	945.1	40.03	24.613		

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 502H - OWB - PWP1													Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-r.5 MWD+IFR1+SAG+FDIR													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis 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	32.0	0.0	0.0	0.3	174.94	-450.0	39.9	451.8	450.9	0.87	517.061				
100.0	100.0	132.0	100.0	1.2	1.1	174.94	-450.0	39.9	451.8	449.0	2.74	164.665				
200.0	200.0	232.0	200.0	1.7	1.6	174.94	-450.0	39.9	451.8	448.0	3.79	119.184				
300.0	300.0	332.0	300.0	2.1	2.0	174.94	-450.0	39.9	451.8	447.2	4.58	98.689				
400.0	400.0	432.0	400.0	2.4	2.4	174.94	-450.0	39.9	451.8	446.5	5.24	86.209				
500.0	500.0	532.0	500.0	2.7	2.7	174.94	-450.0	39.9	451.8	445.9	5.83	77.545				
600.0	600.0	632.0	600.0	3.0	3.0	174.94	-450.0	39.9	451.8	445.4	6.36	71.061				
700.0	700.0	732.0	700.0	3.2	3.2	174.94	-450.0	39.9	451.8	444.9	6.85	65.963				
800.0	800.0	832.0	800.0	3.5	3.4	174.94	-450.0	39.9	451.8	444.5	7.31	61.813				
900.0	900.0	932.0	900.0	3.7	3.7	174.94	-450.0	39.9	451.8	444.0	7.74	58.347				
1,000.0	1,000.0	1,032.0	1,000.0	3.9	3.9	174.94	-450.0	39.9	451.8	443.6	8.16	55.392				
1,100.0	1,100.0	1,132.0	1,100.0	4.1	4.1	174.94	-450.0	39.9	451.8	443.2	8.55	52.832				
1,200.0	1,200.0	1,232.0	1,200.0	4.3	4.3	174.94	-450.0	39.9	451.8	442.8	8.93	50.586				
1,300.0	1,300.0	1,332.0	1,300.0	4.5	4.5	174.94	-450.0	39.9	451.8	442.5	9.30	48.593				
1,400.0	1,400.0	1,432.0	1,400.0	4.7	4.6	174.94	-450.0	39.9	451.8	442.1	9.65	46.808				
1,500.0	1,500.0	1,537.8	1,505.8	4.8	4.9	174.93	-449.8	39.9	451.6	441.5	10.04	44.988				
1,600.0	1,600.0	1,655.9	1,623.8	5.1	5.2	-127.87	-445.8	40.4	449.3	438.8	10.52	42.724				
1,700.0	1,699.8	1,773.5	1,741.0	5.4	5.4	-128.81	-437.1	41.6	445.3	434.3	10.97	40.600				
1,800.0	1,799.5	1,890.3	1,857.1	5.6	5.7	-130.36	-423.7	43.4	439.6	428.2	11.41	38.531				
1,900.0	1,898.7	2,006.1	1,971.5	5.9	6.0	-132.54	-405.8	45.9	432.6	420.8	11.85	36.505				
2,000.0	1,997.5	2,120.5	2,083.7	6.3	6.2	-135.34	-383.7	48.9	424.8	412.5	12.30	34.526				
2,100.0	2,095.6	2,233.3	2,193.3	6.6	6.5	-138.79	-357.5	52.5	416.6	403.9	12.73	32.717				
2,200.0	2,193.1	2,332.1	2,288.7	7.0	6.6	-142.34	-332.2	55.9	410.2	397.0	13.17	31.154				
2,216.9	2,209.5	2,348.4	2,304.5	7.0	6.6	-142.96	-328.1	56.5	409.5	396.3	13.23	30.956				
2,300.0	2,290.0	2,428.3	2,381.7	7.2	6.7	-145.98	-307.5	59.3	407.2	393.6	13.63	29.879				
2,400.0	2,386.8	2,524.6	2,474.7	7.6	6.9	-149.65	-282.9	62.7	406.0	391.9	14.14	28.716				
2,415.5	2,401.9	2,539.6	2,489.2	7.6	6.9	-150.23	-279.0	63.2	406.0	391.8	14.22	28.546 CC, ES				
2,500.0	2,483.7	2,620.9	2,567.7	7.9	7.0	-153.33	-258.2	66.0	406.6	391.9	14.68	27.701				
2,600.0	2,580.6	2,717.1	2,660.7	8.3	7.2	-156.98	-233.5	69.4	409.0	393.8	15.24	26.833				
2,700.0	2,677.5	2,813.4	2,753.7	8.6	7.3	-160.58	-208.8	72.7	413.2	397.4	15.83	26.108				
2,800.0	2,774.4	2,909.6	2,846.6	9.0	7.5	-164.10	-184.1	76.1	419.1	402.7	16.43	25.516				
2,900.0	2,871.3	3,005.9	2,939.6	9.4	7.7	-167.51	-159.4	79.5	426.7	409.6	17.03	25.050				
3,000.0	2,968.1	3,102.2	3,032.6	9.8	7.8	-170.80	-134.8	82.8	435.8	418.1	17.64	24.700				
3,100.0	3,065.0	3,198.4	3,125.6	10.2	8.0	-173.96	-110.1	86.2	446.3	428.1	18.25	24.452				
3,200.0	3,161.9	3,294.7	3,218.6	10.6	8.2	-176.97	-85.4	89.6	458.3	439.4	18.86	24.297				
3,300.0	3,258.8	3,390.9	3,311.5	11.1	8.4	-179.83	-60.7	92.9	471.4	452.0	19.46	24.222				
3,400.0	3,355.7	3,487.2	3,404.5	11.5	8.6	177.46	-36.0	96.3	485.8	465.7	20.06	24.218 SF				
3,500.0	3,452.6	3,583.5	3,497.5	11.9	8.7	174.91	-11.3	99.7	501.1	480.5	20.65	24.274				
3,600.0	3,549.5	3,679.7	3,590.5	12.4	8.9	172.51	13.3	103.0	517.5	496.3	21.23	24.381				
3,700.0	3,646.3	3,776.0	3,683.5	12.8	9.1	170.25	38.0	106.4	534.7	512.9	21.80	24.531				
3,800.0	3,743.2	3,872.2	3,776.4	13.2	9.3	168.13	62.7	109.8	552.7	530.4	22.36	24.716				
3,900.0	3,840.1	3,968.5	3,869.4	13.7	9.5	166.13	87.4	113.1	571.5	548.5	22.92	24.932				
4,000.0	3,937.0	4,064.8	3,962.4	14.1	9.7	164.27	112.1	116.5	590.9	567.4	23.47	25.171				
4,100.0	4,033.9	4,161.0	4,055.4	14.6	9.9	162.52	136.8	119.9	610.8	586.8	24.02	25.430				
4,200.0	4,130.8	4,257.3	4,148.4	15.1	10.1	160.87	161.4	123.2	631.3	606.8	24.56	25.704				
4,300.0	4,227.7	4,353.5	4,241.3	15.5	10.2	159.33	186.1	126.6	652.3	627.2	25.10	25.990				
4,400.0	4,324.5	4,449.8	4,334.3	16.0	10.4	157.89	210.8	130.0	673.7	648.1	25.63	26.285				
4,500.0	4,421.4	4,546.1	4,427.3	16.4	10.6	156.53	235.5	133.3	695.5	669.4	26.16	26.586				
4,600.0	4,518.3	4,642.3	4,520.3	16.9	10.8	155.25	260.2	136.7	717.7	691.0	26.69	26.892				
4,700.0	4,615.2	4,738.6	4,613.3	17.4	11.0	154.05	284.9	140.1	740.2	713.0	27.21	27.201				
4,800.0	4,712.1	4,834.8	4,706.2	17.8	11.2	152.91	309.5	143.4	763.0	735.3	27.74	27.510				

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 521H
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 521H	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 - PWP1													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1500-r.5 MWD+IFR1+SAG+FDIR, 9488-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error: 0.0 usft
Reference													
Offset													
Semi Major Axis													
Offset Wellbore Centre													
Distance													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning
4,900.0	4,809.0	4,931.1	4,799.2	18.3	11.4	151.84	334.2	146.8	786.1	757.8	28.26	27.820	
5,000.0	4,905.8	5,027.4	4,892.2	18.8	11.6	150.84	358.9	150.2	809.4	780.6	28.78	28.128	
5,100.0	5,002.7	5,123.6	4,985.2	19.3	11.8	149.88	383.6	153.5	832.9	803.7	29.29	28.434	
5,200.0	5,099.6	5,219.9	5,078.2	19.7	12.0	148.98	408.3	156.9	856.7	826.9	29.81	28.738	
5,300.0	5,196.5	5,316.1	5,171.1	20.2	12.2	148.13	433.0	160.3	880.7	850.3	30.33	29.037	
5,400.0	5,293.4	5,412.5	5,264.2	20.7	12.5	147.32	457.7	163.6	904.8	873.9	30.85	29.328	
5,500.0	5,390.3	5,510.9	5,359.5	21.1	12.7	146.59	482.0	167.0	929.0	897.6	31.38	29.606	
5,600.0	5,487.2	5,609.9	5,455.8	21.6	12.9	146.00	504.9	170.1	953.0	921.1	31.92	29.854	
5,700.0	5,584.0	5,709.2	5,552.7	22.1	13.1	145.54	526.2	173.0	976.9	944.4	32.48	30.077	

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 521H - OWB - PWP1													Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1000-r.5 MWD+IFR1+SAG+FDIR, 10008-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft		
Reference													Rule Assigned:			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis 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	32.0	0.0	0.0	0.3	-179.98	-450.2	-0.1	450.2	449.3	0.87	515.262				
100.0	100.0	132.0	100.0	1.2	1.1	-179.98	-450.2	-0.1	450.2	447.4	2.74	164.092				
200.0	200.0	232.0	200.0	1.7	1.6	-179.98	-450.2	-0.1	450.2	446.4	3.79	118.769				
300.0	300.0	332.0	300.0	2.1	2.0	-179.98	-450.2	-0.1	450.2	445.6	4.58	98.346				
400.0	400.0	432.0	400.0	2.4	2.4	-179.98	-450.2	-0.1	450.2	444.9	5.24	85.909				
500.0	500.0	532.0	500.0	2.7	2.7	-179.98	-450.2	-0.1	450.2	444.4	5.83	77.275				
600.0	600.0	632.0	600.0	3.0	3.0	-179.98	-450.2	-0.1	450.2	443.8	6.36	70.813				
700.0	700.0	732.0	700.0	3.2	3.2	-179.98	-450.2	-0.1	450.2	443.3	6.85	65.733				
800.0	800.0	832.0	800.0	3.5	3.4	-179.98	-450.2	-0.1	450.2	442.9	7.31	61.598				
900.0	900.0	932.0	900.0	3.7	3.7	-179.98	-450.2	-0.1	450.2	442.4	7.74	58.144				
1,000.0	1,000.0	1,033.8	1,001.8	3.9	3.9	-179.96	-450.1	-0.3	450.1	442.0	8.16	55.153				
1,100.0	1,100.0	1,139.4	1,107.3	4.1	4.2	-179.58	-449.0	-3.3	449.1	440.5	8.57	52.412				
1,200.0	1,200.0	1,244.6	1,212.3	4.3	4.5	-178.72	-446.6	-9.9	446.9	438.0	8.90	50.196				
1,300.0	1,300.0	1,357.3	1,324.4	4.5	4.7	-177.36	-441.7	-20.4	442.8	433.6	9.23	47.977				
1,400.0	1,400.0	1,469.5	1,435.5	4.7	4.9	-175.60	-433.2	-33.4	435.9	426.3	9.61	45.371				
1,500.0	1,500.0	1,580.4	1,544.7	4.8	5.2	-173.40	-421.4	-48.8	426.6	416.6	9.97	42.770				
1,600.0	1,600.0	1,690.1	1,651.9	5.1	5.5	-113.59	-406.5	-66.5	415.8	405.5	10.34	40.209				
1,700.0	1,699.8	1,796.9	1,755.4	5.4	5.7	-111.37	-388.8	-86.0	404.4	393.8	10.63	38.062				
1,800.0	1,799.5	1,895.4	1,850.5	5.6	5.9	-109.54	-371.5	-104.7	394.1	383.1	10.97	35.921				
1,900.0	1,898.7	1,994.3	1,946.1	5.9	6.0	-108.06	-354.1	-123.5	385.3	374.0	11.31	34.075				
2,000.0	1,997.5	2,093.7	2,042.1	6.3	6.2	-106.98	-336.6	-142.4	377.8	366.2	11.65	32.433				
2,100.0	2,095.6	2,193.4	2,138.4	6.6	6.4	-106.34	-319.1	-161.4	371.5	359.5	12.00	30.952				
2,200.0	2,193.1	2,293.2	2,234.8	7.0	6.6	-106.18	-301.6	-180.4	366.2	353.8	12.37	29.602				
2,216.9	2,209.5	2,310.1	2,251.1	7.0	6.6	-106.20	-298.6	-183.6	365.4	353.0	12.42	29.426				
2,300.0	2,290.0	2,393.1	2,331.3	7.2	6.8	-106.28	-284.0	-199.4	361.5	348.8	12.73	28.395				
2,400.0	2,386.8	2,493.0	2,427.8	7.6	7.0	-106.37	-266.5	-218.4	356.9	343.8	13.12	27.199				
2,500.0	2,483.7	2,592.9	2,524.3	7.9	7.2	-106.46	-249.0	-237.4	352.2	338.7	13.52	26.054				
2,600.0	2,580.6	2,692.8	2,620.8	8.3	7.3	-106.56	-231.4	-256.4	347.6	333.7	13.93	24.960				
2,700.0	2,677.5	2,792.7	2,717.2	8.6	7.5	-106.66	-213.9	-275.4	343.0	328.6	14.34	23.916				
2,800.0	2,774.4	2,892.6	2,813.7	9.0	7.7	-106.76	-196.3	-294.4	338.3	323.5	14.76	22.919				
2,900.0	2,871.3	2,992.5	2,910.2	9.4	7.9	-106.86	-178.8	-313.4	333.7	318.5	15.19	21.969				
3,000.0	2,968.1	3,092.3	3,006.7	9.8	8.1	-106.97	-161.2	-332.3	329.0	313.4	15.62	21.062				
3,100.0	3,065.0	3,192.2	3,103.2	10.2	8.3	-107.08	-143.7	-351.3	324.4	308.3	16.06	20.197				
3,200.0	3,161.9	3,292.1	3,199.7	10.6	8.5	-107.20	-126.1	-370.3	319.7	303.2	16.51	19.372				
3,300.0	3,258.8	3,392.0	3,296.2	11.1	8.8	-107.31	-108.6	-389.3	315.1	298.1	16.95	18.585				
3,400.0	3,355.7	3,491.9	3,392.6	11.5	9.0	-107.43	-91.1	-408.3	310.5	293.1	17.41	17.833				
3,500.0	3,452.6	3,591.8	3,489.1	11.9	9.2	-107.56	-73.5	-427.3	305.8	288.0	17.87	17.115				
3,600.0	3,549.5	3,691.7	3,585.6	12.4	9.4	-107.68	-56.0	-446.3	301.2	282.9	18.33	16.430				
3,700.0	3,646.3	3,791.6	3,682.1	12.8	9.6	-107.82	-38.4	-465.3	296.6	277.8	18.80	15.775				
3,800.0	3,743.2	3,891.5	3,778.6	13.2	9.8	-107.95	-20.9	-484.3	291.9	272.7	19.27	15.148				
3,900.0	3,840.1	3,991.4	3,875.1	13.7	10.0	-108.09	-3.3	-503.3	287.3	267.5	19.75	14.549				
4,000.0	3,937.0	4,091.3	3,971.6	14.1	10.2	-108.24	14.2	-522.3	282.7	262.4	20.23	13.975				
4,100.0	4,033.9	4,191.1	4,068.0	14.6	10.4	-108.39	31.8	-541.3	278.0	257.3	20.71	13.425				
4,200.0	4,130.8	4,291.0	4,164.5	15.1	10.7	-108.54	49.3	-560.3	273.4	252.2	21.20	12.898				
4,300.0	4,227.7	4,390.9	4,261.0	15.5	10.9	-108.70	66.8	-579.3	268.8	247.1	21.69	12.393				
4,400.0	4,324.5	4,490.8	4,357.5	16.0	11.1	-108.87	84.4	-598.3	264.2	242.0	22.18	11.908				
4,500.0	4,421.4	4,590.7	4,454.0	16.4	11.3	-109.04	101.9	-617.3	259.6	236.9	22.68	11.443				
4,600.0	4,518.3	4,690.6	4,550.5	16.9	11.5	-109.22	119.5	-636.3	254.9	231.8	23.18	10.996				
4,700.0	4,615.2	4,790.5	4,647.0	17.4	11.7	-109.40	137.0	-655.3	250.3	226.6	23.69	10.567				
4,800.0	4,712.1	4,890.4	4,743.4	17.8	12.0	-109.60	154.6	-674.3	245.7	221.5	24.20	10.153				
4,900.0	4,809.0	4,990.3	4,839.9	18.3	12.2	-109.80	172.1	-693.3	241.1	216.4	24.71	9.756				

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 521H - OWB - PWP1														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1000-r.5 MWD+IFR1+SAG+FDIR, 1000r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis (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	4,905.8	5,090.2	4,936.4	18.8	12.4	-110.00	189.7	-712.3	236.5	211.3	25.23	9.373					
5,100.0	5,002.7	5,190.0	5,032.9	19.3	12.6	-110.22	207.2	-731.3	231.9	206.2	25.75	9.005					
5,200.0	5,099.6	5,289.9	5,129.4	19.7	12.8	-110.44	224.7	-750.3	227.3	201.0	26.28	8.649					
5,300.0	5,196.5	5,389.8	5,225.9	20.2	13.1	-110.67	242.3	-769.3	222.7	195.9	26.81	8.307					
5,400.0	5,293.4	5,489.7	5,322.3	20.7	13.3	-110.92	259.8	-788.3	218.1	190.8	27.35	7.977					
5,500.0	5,390.3	5,589.6	5,418.8	21.1	13.5	-111.17	277.4	-807.3	213.5	185.6	27.89	7.658					
5,600.0	5,487.2	5,689.5	5,515.3	21.6	13.7	-111.43	294.9	-826.2	209.0	180.5	28.43	7.350					
5,700.0	5,584.0	5,789.4	5,611.8	22.1	14.0	-111.71	312.5	-845.2	204.4	175.4	28.98	7.052					
5,800.0	5,680.9	5,889.3	5,708.3	22.6	14.2	-112.00	330.0	-864.2	199.8	170.3	29.54	6.765					
5,900.0	5,777.8	5,989.2	5,804.8	23.1	14.4	-112.30	347.6	-883.2	195.2	165.1	30.10	6.486					
6,000.0	5,874.7	6,089.1	5,901.3	23.5	14.6	-112.62	365.1	-902.2	190.7	160.0	30.67	6.217					
6,100.0	5,971.6	6,188.9	5,997.7	24.0	14.9	-112.95	382.7	-921.2	186.1	154.9	31.24	5.957					
6,200.0	6,068.5	6,288.8	6,094.2	24.5	15.1	-113.30	400.2	-940.2	181.6	149.7	31.83	5.705					
6,300.0	6,165.4	6,388.7	6,190.7	25.0	15.3	-113.66	417.7	-959.2	177.0	144.6	32.42	5.461					
6,400.0	6,262.2	6,488.6	6,287.2	25.5	15.5	-114.05	435.3	-978.2	172.5	139.5	33.01	5.225					
6,500.0	6,359.1	6,588.5	6,383.7	25.9	15.8	-114.46	452.8	-997.2	168.0	134.3	33.62	4.996					
6,600.0	6,456.0	6,687.2	6,479.1	26.4	16.0	-114.97	470.0	-1,015.7	163.6	129.4	34.24	4.779					
6,700.0	6,552.9	6,784.7	6,573.9	26.9	16.2	-116.15	485.4	-1,032.5	160.6	125.6	35.03	4.586					
6,729.1	6,581.1	6,813.0	6,601.5	27.1	16.3	-116.63	489.6	-1,037.0	160.1	124.8	35.28	4.537					
6,800.0	6,649.9	6,882.1	6,669.1	27.4	16.4	-117.93	499.2	-1,047.5	159.1	123.1	35.94	4.426					
6,900.0	6,747.3	6,979.4	6,764.7	27.9	16.6	-119.92	511.4	-1,060.6	158.4	121.5	36.91	4.293					
6,912.8	6,759.8	6,991.8	6,777.0	27.9	16.7	-120.19	512.8	-1,062.2	158.4	121.4	37.04	4.278 CC					
7,000.0	6,845.0	7,076.5	6,860.7	28.3	16.8	-122.08	521.9	-1,072.0	158.8	120.9	37.93	4.188 ES					
7,100.0	6,943.2	7,173.5	6,956.8	28.8	17.1	-124.35	530.7	-1,081.5	160.2	121.3	38.96	4.112					
7,200.0	7,041.6	7,270.3	7,053.0	29.2	17.2	-126.71	537.8	-1,089.2	162.7	122.7	40.01	4.066					
7,300.0	7,140.3	7,366.9	7,149.3	29.7	17.4	-129.09	543.3	-1,095.2	166.3	125.2	41.05	4.051 SF					
7,400.0	7,239.3	7,463.3	7,245.5	30.1	17.6	-131.46	547.1	-1,099.3	170.9	128.9	42.05	4.065					
7,500.0	7,338.5	7,559.4	7,341.5	30.5	17.7	-133.77	549.3	-1,101.6	176.7	133.7	43.01	4.109					
7,600.0	7,438.0	7,655.9	7,438.0	30.9	17.8	-136.00	549.8	-1,102.2	183.6	139.7	43.90	4.182					
7,700.0	7,537.6	7,755.5	7,537.6	31.3	17.9	-137.91	549.8	-1,102.2	190.1	145.4	44.77	4.247					
7,800.0	7,637.3	7,855.2	7,637.3	31.7	17.9	-139.36	549.8	-1,102.2	195.5	150.0	45.53	4.295					
7,900.0	7,737.2	7,955.1	7,737.2	32.0	18.0	-140.40	549.8	-1,102.2	199.7	153.6	46.16	4.327					
8,000.0	7,837.1	8,055.0	7,837.1	32.4	18.1	-141.09	549.8	-1,102.2	202.6	155.9	46.67	4.341					
8,100.0	7,937.1	8,155.0	7,937.1	32.6	18.1	-141.45	549.8	-1,102.2	204.1	157.1	47.06	4.337					
8,162.9	8,000.0	8,217.9	8,000.0	32.7	18.2	160.93	549.8	-1,102.2	204.4	157.2	47.19	4.332					
8,200.0	8,037.1	8,255.0	8,037.1	32.7	18.2	160.93	549.8	-1,102.2	204.4	157.2	47.21	4.329					
8,300.0	8,137.1	8,355.0	8,137.1	32.8	18.2	160.93	549.8	-1,102.2	204.4	157.1	47.31	4.321					
8,400.0	8,237.1	8,455.0	8,237.1	32.8	18.3	160.93	549.8	-1,102.2	204.4	157.0	47.40	4.312					
8,500.0	8,337.1	8,555.0	8,337.1	32.8	18.4	160.93	549.8	-1,102.2	204.4	156.9	47.50	4.303					
8,600.0	8,437.1	8,655.0	8,437.1	32.9	18.4	160.93	549.8	-1,102.2	204.4	156.8	47.59	4.295					
8,700.0	8,537.1	8,755.0	8,537.1	32.9	18.5	160.93	549.8	-1,102.2	204.4	156.7	47.69	4.286					
8,800.0	8,637.1	8,855.0	8,637.1	32.9	18.5	160.93	549.8	-1,102.2	204.4	156.6	47.79	4.277					
8,900.0	8,737.1	8,955.0	8,737.1	33.0	18.6	160.93	549.8	-1,102.2	204.4	156.5	47.88	4.269					
9,000.0	8,837.1	9,055.0	8,837.1	33.0	18.7	160.93	549.8	-1,102.2	204.4	156.4	47.98	4.260					
9,100.0	8,937.1	9,155.0	8,937.1	33.0	18.7	160.93	549.8	-1,102.2	204.4	156.3	48.08	4.251					
9,200.0	9,037.1	9,255.0	9,037.1	33.1	18.8	160.93	549.8	-1,102.2	204.4	156.2	48.18	4.243					
9,300.0	9,137.1	9,355.0	9,137.1	33.1	18.8	160.93	549.8	-1,102.2	204.4	156.1	48.28	4.234					
9,400.0	9,237.1	9,455.0	9,237.1	33.1	18.9	160.93	549.8	-1,102.2	204.4	156.0	48.37	4.226					
9,500.0	9,337.1	9,555.0	9,337.1	33.2	19.0	160.93	549.8	-1,102.2	204.4	155.9	48.47	4.217					
9,600.0	9,437.1	9,655.0	9,437.1	33.2	19.0	160.93	549.8	-1,102.2	204.4	155.8	48.57	4.208					
9,700.0	9,537.1	9,755.0	9,537.1	33.2	19.1	160.93	549.8	-1,102.2	204.4	155.7	48.67	4.200					

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 521H
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 521H	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: FURY ROAD PROJECT - FURY ROAD FED COM 521H - OWB - PWP1														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR, 1000-r.5 MWD+IFR1+SAG+FDIR, 10008-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Offset Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference Offset (usft)		Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning				
9,800.0	9,637.1	9,855.0	9,637.1	33.3	19.1	160.93	549.8	-1,102.2	204.4	155.6	48.77	4.191					
9,900.0	9,737.1	9,955.0	9,737.1	33.3	19.2	160.93	549.8	-1,102.2	204.4	155.5	48.87	4.182					
9,908.5	9,745.6	9,963.5	9,745.6	33.3	19.2	160.93	549.8	-1,102.2	204.4	155.5	48.88	4.182					
9,985.4	9,822.5	10,031.2	9,813.3	33.3	19.3	160.98	549.3	-1,102.2	205.1	156.5	48.58	4.222					
10,000.0	9,837.1	10,041.5	9,823.6	33.3	19.3	161.22	548.7	-1,102.2	206.1	157.7	48.41	4.258					
10,025.0	9,862.0	10,059.0	9,841.0	33.4	19.3	161.31	547.1	-1,102.2	209.6	161.4	48.11	4.355					
10,050.0	9,886.9	10,075.0	9,856.9	33.4	19.3	161.42	545.2	-1,102.2	215.0	167.3	47.74	4.505					
10,075.0	9,911.5	10,092.6	9,874.3	33.5	19.3	161.59	542.4	-1,102.2	222.5	175.1	47.42	4.693					
10,100.0	9,936.0	10,108.4	9,889.7	33.6	19.3	161.74	539.4	-1,102.2	232.0	185.0	47.04	4.932					
10,125.0	9,960.1	10,125.0	9,906.0	33.6	19.3	161.93	535.6	-1,102.1	243.3	196.6	46.73	5.208					
10,150.0	9,983.8	10,137.2	9,917.8	33.7	19.3	161.91	532.5	-1,102.1	256.4	210.1	46.27	5.542					
10,175.0	10,007.1	10,150.0	9,930.0	33.8	19.3	161.88	529.0	-1,102.1	271.1	225.3	45.90	5.908					
10,200.0	10,029.9	10,162.0	9,941.5	33.9	19.3	161.75	525.3	-1,102.1	287.4	241.8	45.55	6.309					
10,225.0	10,052.1	10,175.0	9,953.8	33.9	19.3	161.63	521.0	-1,102.0	305.0	259.7	45.31	6.732					
10,250.0	10,073.7	10,182.4	9,960.7	34.0	19.3	161.03	518.5	-1,102.0	323.9	279.0	44.94	7.207					
10,275.0	10,094.6	10,191.0	9,968.7	34.1	19.3	160.37	515.3	-1,102.0	343.9	299.2	44.68	7.697					
10,300.0	10,114.8	10,200.0	9,977.0	34.2	19.3	159.57	511.9	-1,102.0	364.8	320.4	44.49	8.201					
10,325.0	10,134.2	10,200.0	9,977.0	34.2	19.3	157.59	511.9	-1,102.0	386.7	342.6	44.10	8.769					
10,350.0	10,152.7	10,210.6	9,986.7	34.3	19.3	156.36	507.7	-1,102.0	409.2	365.1	44.06	9.288					
10,375.0	10,170.3	10,215.2	9,990.9	34.4	19.3	153.91	505.7	-1,102.0	432.4	388.5	43.91	9.848					
10,400.0	10,186.9	10,225.0	9,999.8	34.4	19.3	151.63	501.5	-1,101.9	456.1	412.2	43.92	10.386					
10,425.0	10,202.6	10,225.0	9,999.8	34.5	19.3	146.23	501.5	-1,101.9	480.2	436.4	43.74	10.978					
10,450.0	10,217.2	10,225.0	9,999.8	34.6	19.3	138.13	501.5	-1,101.9	504.5	460.9	43.60	11.573					
10,475.0	10,230.7	10,225.0	9,999.8	34.6	19.3	125.49	501.5	-1,101.9	529.1	485.7	43.49	12.167					
10,500.0	10,243.1	10,225.0	9,999.8	34.7	19.3	106.10	501.5	-1,101.9	553.9	510.5	43.41	12.758					
10,525.0	10,254.3	10,225.0	9,999.8	34.7	19.3	81.12	501.5	-1,101.9	578.7	535.4	43.36	13.346					
10,550.0	10,264.4	10,225.0	9,999.8	34.8	19.3	58.18	501.5	-1,101.9	603.5	560.2	43.34	13.927					
10,575.0	10,273.3	10,225.0	9,999.8	34.8	19.3	42.20	501.5	-1,101.9	628.3	585.0	43.32	14.502					
10,600.0	10,280.9	10,225.0	9,999.8	34.9	19.3	31.97	501.5	-1,101.9	652.9	609.6	43.33	15.069					
10,625.0	10,287.3	10,225.0	9,999.8	34.9	19.3	25.29	501.5	-1,101.9	677.4	634.0	43.35	15.626					
10,650.0	10,292.3	10,225.0	9,999.8	35.0	19.3	20.71	501.5	-1,101.9	701.6	658.2	43.38	16.174					
10,675.0	10,296.1	10,216.1	9,991.7	35.0	19.3	16.79	505.4	-1,102.0	725.4	682.1	43.28	16.760					
10,700.0	10,298.7	10,212.9	9,988.8	35.0	19.3	14.35	506.7	-1,102.0	748.9	705.6	43.28	17.303					
10,725.0	10,299.9	10,209.3	9,985.6	35.0	19.3	12.48	508.2	-1,102.0	772.1	728.8	43.29	17.834					
10,735.4	10,300.0	10,207.8	9,984.1	35.0	19.3	11.83	508.8	-1,102.0	781.6	738.3	43.30	18.053					
10,800.0	10,300.0	10,200.0	9,977.0	35.1	19.3	11.58	511.9	-1,102.0	840.7	797.4	43.36	19.390					
10,900.0	10,300.0	10,185.1	9,963.2	35.2	19.3	11.11	517.5	-1,102.0	933.2	889.8	43.40	21.503					

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 521H
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 521H	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														Rule Assigned:		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)							
9,200.0	9,037.1	12,213.8	9,741.9	33.1	45.5	-89.35	750.9	-1,860.8	987.6	925.5	62.13	15.896					
9,300.0	9,137.1	12,212.1	9,741.9	33.1	45.5	-89.48	749.3	-1,860.8	918.9	854.6	64.35	14.280					
9,400.0	9,237.1	12,210.5	9,741.9	33.1	45.5	-89.61	747.7	-1,860.8	856.4	789.7	66.76	12.828					
9,500.0	9,337.1	12,209.0	9,742.0	33.2	45.4	-89.74	746.1	-1,860.8	801.6	732.3	69.27	11.572					
9,600.0	9,437.1	12,207.5	9,742.0	33.2	45.4	-89.87	744.6	-1,860.8	756.0	684.3	71.70	10.543					
9,700.0	9,537.1	12,206.0	9,742.0	33.2	45.4	-89.99	743.2	-1,860.8	721.5	647.6	73.83	9.772					
9,800.0	9,637.1	12,204.6	9,742.0	33.3	45.4	-90.10	741.7	-1,860.8	699.7	624.3	75.37	9.284					
9,900.0	9,737.1	12,203.2	9,742.0	33.3	45.3	-90.22	740.4	-1,860.8	691.8	615.7	76.07	9.094					
9,905.0	9,742.0	12,203.2	9,742.0	33.3	45.3	-90.22	740.3	-1,860.8	691.8	615.7	76.08	9.092 CC, ES					
9,985.4	9,822.5	12,202.1	9,742.0	33.3	45.3	-90.31	739.2	-1,860.7	696.4	620.5	75.93	9.172					
10,000.0	9,837.1	12,202.1	9,742.0	33.3	45.3	-89.88	739.2	-1,860.7	698.3	622.4	75.85	9.206					
10,025.0	9,862.0	12,203.2	9,742.0	33.4	45.3	-89.33	740.3	-1,860.8	702.1	626.4	75.67	9.278					
10,050.0	9,886.9	12,205.4	9,742.0	33.4	45.4	-88.57	742.5	-1,860.8	706.8	631.3	75.47	9.365					
10,075.0	9,911.5	12,208.9	9,742.0	33.5	45.4	-87.61	746.0	-1,860.8	712.3	637.0	75.25	9.465					
10,100.0	9,936.0	12,213.6	9,741.9	33.6	45.5	-86.46	750.7	-1,860.8	718.5	643.5	75.01	9.578					
10,125.0	9,960.1	12,219.5	9,741.8	33.6	45.6	-85.13	756.6	-1,860.8	725.4	650.6	74.76	9.703					
10,150.0	9,983.8	12,226.5	9,741.7	33.7	45.7	-83.63	763.6	-1,860.9	732.9	658.4	74.50	9.838					
10,175.0	10,007.1	12,234.6	9,741.5	33.8	45.8	-81.99	771.7	-1,860.9	741.0	666.8	74.24	9.981					
10,200.0	10,029.9	12,243.8	9,741.3	33.9	46.0	-80.23	780.9	-1,860.9	749.6	675.6	73.99	10.131					
10,225.0	10,052.1	12,254.1	9,741.1	33.9	46.2	-78.36	791.2	-1,861.0	758.5	684.8	73.75	10.286					
10,250.0	10,073.7	12,265.4	9,740.9	34.0	46.3	-76.42	802.5	-1,861.1	767.8	694.3	73.51	10.444					
10,275.0	10,094.6	12,277.7	9,740.6	34.1	46.5	-74.42	814.8	-1,861.1	777.3	704.0	73.30	10.604					
10,300.0	10,114.8	12,292.8	9,740.2	34.2	46.8	-72.28	829.9	-1,861.2	786.9	713.7	73.17	10.755					
10,325.0	10,134.2	12,314.5	9,739.8	34.2	47.1	-69.85	851.6	-1,861.4	796.4	723.2	73.21	10.878					
10,350.0	10,152.7	12,338.3	9,739.7	34.3	47.5	-67.45	875.4	-1,861.4	805.8	732.5	73.31	10.991					
10,375.0	10,170.3	12,364.0	9,739.9	34.4	47.9	-65.14	901.1	-1,861.4	814.8	741.3	73.47	11.090					
10,400.0	10,186.9	12,391.7	9,740.4	34.4	48.3	-62.94	928.8	-1,861.2	823.4	749.7	73.69	11.173					
10,425.0	10,202.6	12,407.0	9,740.7	34.5	48.6	-61.41	944.1	-1,861.2	831.6	758.0	73.60	11.298					
10,450.0	10,217.2	12,426.4	9,741.1	34.6	48.9	-59.85	963.4	-1,861.1	839.4	765.8	73.64	11.399					
10,475.0	10,230.7	12,446.3	9,741.4	34.6	49.2	-58.40	983.4	-1,861.0	846.8	773.1	73.71	11.489					
10,500.0	10,243.1	12,466.9	9,741.7	34.7	49.5	-57.07	1,004.0	-1,860.8	853.7	779.9	73.81	11.567					
10,525.0	10,254.3	12,488.8	9,741.9	34.7	49.9	-55.85	1,025.8	-1,860.7	860.1	786.1	73.96	11.629					
10,550.0	10,264.4	12,511.9	9,742.1	34.8	50.3	-54.75	1,048.9	-1,860.6	865.8	791.7	74.17	11.674					
10,575.0	10,273.3	12,535.4	9,742.2	34.8	50.6	-53.79	1,072.5	-1,860.3	870.9	796.5	74.40	11.705					
10,600.0	10,280.9	12,559.3	9,742.2	34.9	51.0	-52.96	1,096.4	-1,860.0	875.2	800.5	74.68	11.720					
10,625.0	10,287.3	12,582.4	9,742.3	34.9	51.4	-52.29	1,119.5	-1,859.7	878.8	803.9	74.95	11.725					
10,650.0	10,292.3	12,604.5	9,742.2	35.0	51.7	-51.76	1,141.6	-1,859.5	881.7	806.5	75.24	11.719					
10,675.0	10,296.1	12,626.9	9,742.1	35.0	52.1	-51.37	1,163.9	-1,859.3	883.9	808.3	75.55	11.699					
10,700.0	10,298.7	12,649.4	9,742.0	35.0	52.5	-51.11	1,186.4	-1,859.1	885.3	809.4	75.91	11.663					
10,725.0	10,299.9	12,672.6	9,741.9	35.0	52.8	-50.97	1,209.6	-1,859.0	886.0	809.7	76.31	11.611					
10,735.4	10,300.0	12,682.9	9,741.8	35.0	53.0	-50.95	1,220.0	-1,858.9	886.0	809.5	76.50	11.583					
10,800.0	10,300.0	12,746.7	9,741.7	35.1	54.0	-50.94	1,283.8	-1,858.9	885.9	808.2	77.71	11.400					
10,830.8	10,300.0	12,776.2	9,741.7	35.1	54.5	-50.94	1,313.2	-1,859.0	885.9	807.6	78.28	11.316					
10,900.0	10,300.0	12,840.6	9,742.4	35.2	55.5	-51.00	1,377.7	-1,860.0	886.1	806.5	79.56	11.138					
11,000.0	10,300.0	12,936.1	9,744.0	35.3	57.1	-51.18	1,473.1	-1,862.6	886.9	805.4	81.51	10.881					
11,100.0	10,300.0	13,035.5	9,745.2	35.4	58.7	-51.33	1,572.4	-1,865.4	888.0	804.4	83.57	10.626					
11,200.0	10,300.0	13,127.5	9,744.9	35.6	60.2	-51.39	1,664.4	-1,867.4	889.5	804.1	85.42	10.413					
11,300.0	10,300.0	13,219.9	9,743.8	35.8	61.7	-51.41	1,756.8	-1,869.7	892.0	804.7	87.29	10.219					
11,400.0	10,300.0	13,322.2	9,744.7	36.0	63.3	-51.63	1,859.0	-1,874.5	894.8	805.3	89.52	9.996					
11,500.0	10,300.0	13,421.0	9,745.7	36.3	64.9	-51.84	1,957.6	-1,879.0	897.5	805.8	91.68	9.790					
11,600.0	10,300.0	13,577.1	9,751.2	36.6	67.5	-52.20	2,113.6	-1,881.6	895.9	800.7	95.20	9.410					

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 521H
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 521H	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		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)					
11,700.0	10,300.0	13,687.7	9,755.2	36.9	69.3	-52.30	2,224.1	-1,879.3	891.8	794.3	97.53	9.144			
11,800.0	10,300.0	13,763.8	9,757.1	37.2	70.5	-52.31	2,300.2	-1,877.5	888.1	788.9	99.18	8.954			
11,855.9	10,300.0	13,802.0	9,756.3	37.4	71.1	-52.23	2,338.3	-1,876.5	887.6	787.6	99.94	8.881			
11,900.0	10,300.0	13,838.2	9,754.6	37.6	71.7	-52.09	2,374.4	-1,875.5	887.8	787.2	100.60	8.825			
12,000.0	10,300.0	13,926.4	9,748.0	38.0	73.1	-51.64	2,462.4	-1,872.8	889.6	787.5	102.12	8.711			
12,100.0	10,300.0	14,089.3	9,741.7	38.4	75.8	-51.11	2,625.1	-1,868.2	890.3	785.2	105.14	8.468			
12,200.0	10,300.0	14,187.1	9,741.4	38.9	77.4	-50.86	2,722.7	-1,862.6	885.8	778.7	107.01	8.277			
12,300.0	10,300.0	14,278.3	9,739.6	39.4	78.8	-50.51	2,813.7	-1,856.7	881.7	773.0	108.69	8.112			
12,400.0	10,300.0	14,383.8	9,739.2	39.9	80.5	-50.25	2,919.0	-1,851.4	877.8	767.1	110.70	7.930			
12,500.0	10,300.0	14,478.3	9,737.7	40.4	82.1	-49.92	3,013.4	-1,845.7	873.9	761.5	112.46	7.771			
12,600.0	10,300.0	14,572.5	9,737.9	41.0	83.6	-49.78	3,107.5	-1,842.4	870.8	756.4	114.36	7.614			
12,700.0	10,300.0	14,672.1	9,742.0	41.6	85.2	-49.97	3,206.9	-1,842.4	867.8	751.2	116.63	7.441			
12,800.0	10,300.0	14,760.1	9,745.4	42.2	86.7	-50.16	3,294.8	-1,843.2	865.8	747.1	118.69	7.294			
12,900.0	10,300.0	14,855.5	9,746.0	42.8	88.2	-50.16	3,390.3	-1,842.7	864.6	743.9	120.74	7.161			
13,000.0	10,300.0	14,951.4	9,743.9	43.5	89.8	-49.93	3,486.1	-1,840.2	863.8	741.2	122.60	7.046			
13,019.3	10,300.0	14,967.1	9,743.4	43.6	90.1	-49.88	3,501.8	-1,839.8	863.8	740.9	122.90	7.028			
13,100.0	10,300.0	15,035.4	9,741.3	44.1	91.2	-49.74	3,570.0	-1,839.1	864.5	740.2	124.23	6.959			
13,200.0	10,300.0	15,168.8	9,744.5	44.8	93.4	-49.93	3,703.4	-1,840.4	863.2	735.9	127.24	6.784			
13,300.0	10,300.0	15,275.3	9,749.0	45.5	95.1	-50.17	3,809.8	-1,840.9	860.5	730.8	129.71	6.634			
13,400.0	10,300.0	15,375.3	9,754.0	46.2	96.7	-50.41	3,909.6	-1,841.0	857.1	725.0	132.10	6.489			
13,500.0	10,300.0	15,460.0	9,757.4	46.9	98.1	-50.59	3,994.3	-1,841.4	854.7	720.5	134.17	6.370			
13,565.5	10,300.0	15,513.0	9,758.4	47.4	99.0	-50.66	4,047.3	-1,841.9	854.3	718.9	135.41	6.309			
13,600.0	10,300.0	15,542.1	9,758.5	47.6	99.5	-50.67	4,076.4	-1,842.3	854.4	718.4	136.06	6.280			
13,700.0	10,300.0	15,623.0	9,757.6	48.4	100.8	-50.67	4,157.3	-1,843.6	856.1	718.3	137.80	6.213			
13,800.0	10,300.0	15,701.2	9,754.7	49.1	102.1	-50.62	4,235.3	-1,846.1	860.6	721.2	139.36	6.175			
13,900.0	10,300.0	15,834.1	9,752.4	49.9	104.3	-50.66	4,368.1	-1,850.4	863.8	721.4	142.44	6.065			
14,000.0	10,300.0	15,930.8	9,754.3	50.7	105.9	-50.89	4,464.8	-1,854.1	865.2	720.4	144.81	5.975			
14,100.0	10,300.0	16,018.2	9,754.1	51.4	107.3	-51.01	4,552.1	-1,857.5	868.1	721.3	146.83	5.912			
14,200.0	10,300.0	16,134.1	9,753.6	52.2	109.2	-51.17	4,667.9	-1,862.3	871.4	721.9	149.59	5.826			
14,300.0	10,300.0	16,262.8	9,758.5	53.0	111.3	-51.57	4,796.4	-1,866.5	871.3	718.5	152.81	5.702			
14,355.9	10,300.0	16,304.8	9,759.3	53.5	112.0	-51.62	4,838.4	-1,866.9	870.9	717.0	153.84	5.661			
14,400.0	10,300.0	16,338.8	9,759.0	53.8	112.6	-51.61	4,872.3	-1,867.1	871.1	716.5	154.61	5.634			
14,500.0	10,300.0	16,433.9	9,756.7	54.6	114.1	-51.50	4,967.4	-1,867.7	872.8	716.2	156.60	5.573			
14,600.0	10,300.0	16,536.9	9,754.5	55.5	115.8	-51.40	5,070.5	-1,868.3	874.4	715.6	158.78	5.507			
14,700.0	10,300.0	16,644.6	9,752.4	56.3	117.6	-51.27	5,178.2	-1,868.3	875.3	714.3	161.02	5.436			
14,800.0	10,300.0	16,742.6	9,750.5	57.1	119.2	-51.15	5,276.1	-1,868.0	876.0	712.9	163.06	5.372			
14,900.0	10,300.0	16,855.3	9,751.7	57.9	121.1	-51.25	5,388.7	-1,869.3	875.9	710.3	165.64	5.288			
15,000.0	10,300.0	16,962.8	9,752.4	58.8	122.8	-51.24	5,496.3	-1,868.7	874.7	706.7	167.99	5.207			
15,100.0	10,300.0	17,051.0	9,751.0	59.6	124.3	-51.05	5,584.4	-1,866.2	873.3	703.5	169.78	5.144			
15,105.7	10,300.0	17,054.8	9,750.9	59.7	124.3	-51.04	5,588.2	-1,866.1	873.3	703.4	169.86	5.141			
15,200.0	10,300.0	17,118.8	9,747.2	60.4	125.4	-50.79	5,652.1	-1,864.8	875.0	704.0	170.97	5.118			
15,300.0	10,300.0	17,222.9	9,739.2	61.3	127.1	-50.28	5,755.9	-1,862.7	878.0	705.4	172.65	5.086			
15,400.0	10,300.0	17,307.0	9,730.2	62.1	128.5	-49.71	5,839.4	-1,860.0	882.2	708.5	173.70	5.079			
15,500.0	10,300.0	17,381.6	9,719.1	63.0	129.7	-49.03	5,913.1	-1,857.1	888.7	714.4	174.22	5.101			
15,600.0	10,300.0	17,527.3	9,703.9	63.9	132.1	-48.17	6,057.7	-1,854.8	894.2	717.6	176.57	5.064			
15,700.0	10,300.0	17,634.8	9,703.6	64.7	133.8	-48.30	6,165.2	-1,858.6	896.7	717.6	179.11	5.006			
15,800.0	10,300.0	17,740.0	9,705.7	65.6	135.6	-48.57	6,270.3	-1,862.8	898.1	716.3	181.78	4.940			
15,900.0	10,300.0	17,842.5	9,707.8	66.5	137.3	-48.82	6,372.7	-1,866.8	899.4	715.0	184.39	4.878			
16,000.0	10,300.0	17,958.0	9,711.5	67.3	139.2	-49.15	6,488.0	-1,871.0	899.8	712.5	187.35	4.803			
16,100.0	10,300.0	18,061.7	9,717.0	68.2	140.9	-49.56	6,591.6	-1,874.9	898.9	708.7	190.20	4.726			
16,200.0	10,300.0	18,164.4	9,721.7	69.1	142.6	-49.89	6,694.0	-1,877.7	897.7	704.8	192.93	4.653			

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 521H
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 521H	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		Rule Assigned: 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)			
16,300.0	10,300.0	18,263.8	9,725.4	70.0	144.2	-50.14	6,793.4	-1,879.6	896.5	701.0	195.50	4.586		
16,400.0	10,300.0	18,375.8	9,730.4	70.9	146.1	-50.44	6,905.3	-1,881.4	894.6	696.3	198.34	4.510		
16,500.0	10,300.0	18,478.9	9,734.5	71.7	147.8	-50.62	7,008.3	-1,881.1	891.6	690.7	200.87	4.439		
16,600.0	10,300.0	18,567.0	9,734.6	72.6	149.2	-50.52	7,096.3	-1,879.0	889.4	686.6	202.80	4.386		
16,700.0	10,300.0	18,659.9	9,733.6	73.5	150.7	-50.39	7,189.3	-1,877.3	888.3	683.6	204.72	4.339		
16,800.0	10,300.0	18,771.5	9,731.6	74.4	152.6	-50.16	7,300.8	-1,874.6	887.5	680.7	206.78	4.292		
16,900.0	10,300.0	18,897.9	9,733.9	75.3	154.6	-50.08	7,427.0	-1,870.5	883.4	674.2	209.15	4.224		
17,000.0	10,300.0	18,987.6	9,737.0	76.2	156.1	-50.12	7,516.6	-1,867.9	878.6	667.3	211.34	4.157		
17,100.0	10,300.0	19,059.0	9,739.5	77.1	157.3	-50.22	7,588.1	-1,867.7	876.1	662.7	213.38	4.106		
17,115.5	10,300.0	19,069.0	9,739.7	77.2	157.4	-50.24	7,598.0	-1,867.9	876.0	662.4	213.66	4.100		
17,200.0	10,300.0	19,127.3	9,740.2	78.0	158.4	-50.34	7,656.3	-1,869.9	877.5	662.3	215.15	4.078		
17,300.0	10,300.0	19,227.2	9,741.2	78.9	160.1	-50.59	7,756.0	-1,875.0	880.5	662.7	217.80	4.043		
17,400.0	10,300.0	19,323.4	9,742.7	79.8	161.7	-50.86	7,852.1	-1,880.1	883.3	662.9	220.40	4.008		
17,500.0	10,300.0	19,399.0	9,741.3	80.7	162.9	-50.95	7,927.6	-1,884.6	888.6	666.5	222.11	4.001 SF		
17,600.0	10,300.0	19,478.8	9,738.1	81.6	164.2	-51.02	8,007.1	-1,890.4	896.5	672.7	223.79	4.006		
17,700.0	10,300.0	19,567.7	9,734.8	82.5	165.7	-51.17	8,095.6	-1,898.6	905.7	679.8	225.89	4.009		
17,800.0	10,300.0	19,580.0	9,734.3	83.4	165.9	-51.20	8,107.8	-1,899.8	919.4	695.6	223.77	4.109		
17,900.0	10,300.0	19,580.0	9,734.3	84.3	165.9	-51.20	8,107.8	-1,899.8	943.5	724.6	218.92	4.310		
18,000.0	10,300.0	19,580.0	9,734.3	85.3	165.9	-51.20	8,107.8	-1,899.8	977.3	765.0	212.34	4.602		

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 521H
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 521H	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 501H - OWB - PWP0														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR														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 (°)	+N/-S (usft)	+E/-W (usft)	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	90.00	0.0	20.0	20.0	19.5	0.48	41.715					
100.0	100.0	100.0	100.0	1.2	0.9	90.00	0.0	20.0	20.0	17.4	2.56	7.818					
200.0	200.0	200.0	200.0	1.7	1.2	90.00	0.0	20.0	20.0	16.6	3.42	5.842					
300.0	300.0	300.0	300.0	2.1	1.5	90.00	0.0	20.0	20.0	15.9	4.09	4.889					
400.0	400.0	400.0	400.0	2.4	1.8	90.00	0.0	20.0	20.0	15.3	4.66	4.296					
500.0	500.0	500.0	500.0	2.7	2.0	90.00	0.0	20.0	20.0	14.8	5.16	3.879					
600.0	600.0	600.0	600.0	3.0	2.2	90.00	0.0	20.0	20.0	14.4	5.61	3.565					
700.0	700.0	700.0	700.0	3.2	2.4	90.00	0.0	20.0	20.0	14.0	6.03	3.317					
800.0	800.0	800.0	800.0	3.5	2.6	90.00	0.0	20.0	20.0	13.6	6.42	3.115					
900.0	900.0	900.0	900.0	3.7	2.8	90.00	0.0	20.0	20.0	13.2	6.79	2.945 Normal Operations					
1,000.0	1,000.0	1,000.0	1,000.0	3.9	3.0	90.00	0.0	20.0	20.0	12.9	7.14	2.801 Normal Operations					
1,100.0	1,100.0	1,100.0	1,100.0	4.1	3.1	90.00	0.0	20.0	20.0	12.5	7.48	2.675 Normal Operations					
1,200.0	1,200.0	1,200.0	1,200.0	4.3	3.3	90.00	0.0	20.0	20.0	12.2	7.80	2.565 Normal Operations					
1,300.0	1,300.0	1,300.0	1,300.0	4.5	3.5	90.00	0.0	20.0	20.0	11.9	8.11	2.467 Caution - Monitor Closely					
1,400.0	1,400.0	1,400.0	1,400.0	4.7	3.6	90.00	0.0	20.0	20.0	11.6	8.41	2.379 Caution - Monitor Closely					
1,500.0	1,500.0	1,500.0	1,500.0	4.8	3.8	90.00	0.0	20.0	20.0	11.3	8.70	2.299 Caution - Monitor Closely, CC, ES, SF					
1,600.0	1,600.0	1,600.0	1,600.0	5.1	3.9	150.04	0.0	20.0	21.5	12.4	9.06	2.372 Caution - Monitor Closely					
1,700.0	1,699.8	1,699.8	1,699.8	5.4	4.1	155.74	0.0	20.0	26.2	16.7	9.45	2.768 Normal Operations					
1,800.0	1,799.5	1,799.5	1,799.5	5.6	4.2	161.68	0.0	20.0	34.3	24.4	9.88	3.473					
1,900.0	1,898.7	1,900.2	1,900.2	5.9	4.3	166.89	0.2	18.3	44.3	33.9	10.42	4.253					
2,000.0	1,997.5	2,001.3	2,001.2	6.3	4.5	171.73	1.0	13.0	54.6	43.6	11.05	4.946					
2,100.0	2,095.6	2,102.6	2,102.1	6.6	4.7	176.34	2.3	4.2	65.4	53.7	11.67	5.601					
2,200.0	2,193.1	2,204.2	2,202.8	7.0	4.9	-179.25	4.0	-8.2	76.7	64.4	12.30	6.236					
2,216.9	2,209.5	2,221.4	2,219.9	7.0	4.9	-178.52	4.4	-10.6	78.6	66.3	12.37	6.357					
2,300.0	2,290.0	2,306.0	2,303.4	7.2	5.1	-174.96	6.3	-24.1	87.5	74.6	12.82	6.823					
2,400.0	2,386.8	2,408.2	2,403.7	7.6	5.4	-170.48	9.1	-43.7	95.7	82.3	13.35	7.168					
2,500.0	2,483.7	2,510.6	2,503.3	7.9	5.6	-165.49	12.4	-66.8	101.5	87.7	13.84	7.336					
2,600.0	2,580.6	2,610.1	2,599.8	8.3	5.8	-160.51	15.8	-91.1	106.7	92.3	14.31	7.451					
2,700.0	2,677.5	2,709.6	2,696.2	8.6	6.0	-156.01	19.3	-115.4	112.5	97.7	14.77	7.617					
2,800.0	2,774.4	2,809.0	2,792.5	9.0	6.1	-151.98	22.7	-139.7	119.0	103.8	15.21	7.821					
2,900.0	2,871.3	2,908.5	2,888.9	9.4	6.3	-148.37	26.2	-164.0	126.0	110.3	15.65	8.051					
3,000.0	2,968.1	3,008.0	2,985.3	9.8	6.5	-145.16	29.7	-188.3	133.4	117.3	16.07	8.301					
3,100.0	3,065.0	3,107.4	3,081.7	10.2	6.7	-142.29	33.1	-212.6	141.2	124.7	16.50	8.562					
3,200.0	3,161.9	3,206.9	3,178.1	10.6	6.9	-139.72	36.6	-236.9	149.4	132.5	16.92	8.830					
3,300.0	3,258.8	3,306.3	3,274.4	11.1	7.1	-137.43	40.0	-261.3	157.8	140.4	17.34	9.102					
3,400.0	3,355.7	3,405.8	3,370.8	11.5	7.3	-135.37	43.5	-285.6	166.4	148.7	17.76	9.373					
3,500.0	3,452.6	3,505.2	3,467.2	11.9	7.5	-133.51	46.9	-309.9	175.2	157.1	18.18	9.642					
3,600.0	3,549.5	3,604.7	3,563.6	12.4	7.7	-131.83	50.4	-334.2	184.2	165.6	18.60	9.907					
3,700.0	3,646.3	3,704.2	3,660.0	12.8	7.9	-130.31	53.9	-358.5	193.4	174.3	19.02	10.167					
3,800.0	3,743.2	3,803.6	3,756.3	13.2	8.1	-128.93	57.3	-382.8	202.6	183.2	19.44	10.421					
3,900.0	3,840.1	3,903.1	3,852.7	13.7	8.3	-127.67	60.8	-407.1	212.0	192.1	19.87	10.668					
4,000.0	3,937.0	4,002.5	3,949.1	14.1	8.5	-126.51	64.2	-431.4	221.4	201.1	20.30	10.908					
4,100.0	4,033.9	4,102.0	4,045.5	14.6	8.7	-125.45	67.7	-455.7	231.0	210.2	20.73	11.141					
4,200.0	4,130.8	4,201.4	4,141.9	15.1	8.9	-124.48	71.2	-480.0	240.6	219.4	21.17	11.367					
4,300.0	4,227.7	4,300.9	4,238.2	15.5	9.1	-123.57	74.6	-504.3	250.3	228.7	21.60	11.586					
4,400.0	4,324.5	4,400.4	4,334.6	16.0	9.3	-122.74	78.1	-528.6	260.0	238.0	22.04	11.797					
4,500.0	4,421.4	4,499.8	4,431.0	16.4	9.5	-121.97	81.5	-552.9	269.8	247.3	22.48	12.002					
4,600.0	4,518.3	4,599.3	4,527.4	16.9	9.7	-121.25	85.0	-577.2	279.6	256.7	22.92	12.199					
4,700.0	4,615.2	4,698.7	4,623.8	17.4	9.9	-120.58	88.5	-601.5	289.5	266.1	23.36	12.390					
4,800.0	4,712.1	4,798.2	4,720.1	17.8	10.1	-119.95	91.9	-625.8	299.4	275.6	23.81	12.574					
4,900.0	4,809.0	4,897.6	4,816.5	18.3	10.3	-119.37	95.4	-650.1	309.3	285.1	24.26	12.752					

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 521H
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 521H	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 501H - OWB - PWPO														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (usft)	Separation Factor	Warning				
		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	4,905.8	4,997.1	4,912.9	18.8	10.6	-118.82	98.8	-674.4	319.3	294.6	24.71	12.924					
5,100.0	5,002.7	5,096.5	5,009.3	19.3	10.8	-118.30	102.3	-698.7	329.3	304.1	25.16	13.090					
5,200.0	5,099.6	5,195.9	5,105.6	19.7	11.0	-117.82	105.7	-723.0	339.3	313.7	25.59	13.262					
5,300.0	5,196.5	5,295.0	5,201.9	20.2	11.2	-117.56	109.0	-746.0	349.4	323.4	26.06	13.406					
5,400.0	5,293.4	5,394.0	5,298.5	20.7	11.4	-117.60	112.1	-767.4	359.7	333.1	26.58	13.532					
5,500.0	5,390.3	5,493.0	5,395.5	21.1	11.6	-117.89	114.9	-787.1	370.0	342.9	27.13	13.639					
5,600.0	5,487.2	5,591.9	5,492.7	21.6	11.8	-118.43	117.4	-805.2	380.6	352.8	27.72	13.728					
5,700.0	5,584.0	5,690.6	5,590.0	22.1	12.0	-119.18	119.8	-821.5	391.3	362.9	28.35	13.801					
5,800.0	5,680.9	5,789.1	5,687.3	22.6	12.2	-120.14	121.9	-836.2	402.2	373.2	29.02	13.862					
5,900.0	5,777.8	5,887.3	5,784.6	23.1	12.4	-121.27	123.7	-849.1	413.5	383.8	29.72	13.913					
6,000.0	5,874.7	5,985.1	5,881.8	23.5	12.6	-122.57	125.3	-860.4	425.2	394.7	30.47	13.956					
6,100.0	5,971.6	6,082.5	5,978.7	24.0	12.7	-124.00	126.7	-870.0	437.4	406.2	31.25	13.997					
6,200.0	6,068.5	6,179.5	6,075.4	24.5	12.9	-125.56	127.8	-877.9	450.2	418.2	32.07	14.039					
6,300.0	6,165.4	6,275.9	6,171.6	25.0	13.1	-127.22	128.7	-884.2	463.8	430.8	32.92	14.086					
6,400.0	6,262.2	6,371.8	6,267.4	25.5	13.2	-128.97	129.4	-888.9	478.1	444.3	33.81	14.143					
6,500.0	6,359.1	6,467.1	6,362.6	25.9	13.4	-130.79	129.8	-891.9	493.4	458.6	34.71	14.212					
6,600.0	6,456.0	6,561.7	6,457.3	26.4	13.5	-132.65	130.0	-893.4	509.6	474.0	35.64	14.301					
6,700.0	6,552.9	6,657.4	6,552.9	26.9	13.6	-134.56	130.0	-893.5	526.9	490.4	36.58	14.405					
6,729.1	6,581.1	6,685.6	6,581.1	27.1	13.6	-135.10	130.0	-893.5	532.1	495.3	36.85	14.441					
6,800.0	6,649.9	6,754.4	6,649.9	27.4	13.6	-136.44	130.0	-893.5	544.6	507.1	37.50	14.523					
6,900.0	6,747.3	6,851.8	6,747.3	27.9	13.7	-138.14	130.0	-893.5	561.4	523.1	38.38	14.629					
7,000.0	6,845.0	6,949.5	6,845.0	28.3	13.7	-139.62	130.0	-893.5	577.4	538.2	39.22	14.724					
7,100.0	6,943.2	7,047.6	6,943.2	28.8	13.8	-140.92	130.0	-893.5	592.4	552.4	40.01	14.807					
7,200.0	7,041.6	7,146.1	7,041.6	29.2	13.8	-142.05	130.0	-893.5	606.2	565.5	40.76	14.874					
7,300.0	7,140.3	7,244.8	7,140.3	29.7	13.9	-143.02	130.0	-893.5	618.9	577.4	41.47	14.924					
7,400.0	7,239.3	7,343.8	7,239.3	30.1	14.0	-143.86	130.0	-893.5	630.3	588.1	42.14	14.956					
7,500.0	7,338.5	7,443.0	7,338.5	30.5	14.0	-144.57	130.0	-893.5	640.4	597.6	42.78	14.971					
7,600.0	7,438.0	7,542.5	7,438.0	30.9	14.1	-145.17	130.0	-893.5	649.1	605.8	43.37	14.966					
7,700.0	7,537.6	7,642.1	7,537.6	31.3	14.1	-145.65	130.0	-893.5	656.5	612.6	43.93	14.944					
7,800.0	7,637.3	7,741.8	7,637.3	31.7	14.2	-146.04	130.0	-893.5	662.5	618.0	44.45	14.905					
7,900.0	7,737.2	7,841.6	7,737.2	32.0	14.3	-146.33	130.0	-893.5	667.0	622.1	44.92	14.850					
8,000.0	7,837.1	7,941.6	7,837.1	32.4	14.3	-146.52	130.0	-893.5	670.1	624.8	45.33	14.781					
8,100.0	7,937.1	8,041.6	7,937.1	32.6	14.4	-146.62	130.0	-893.5	671.7	626.1	45.69	14.704					
8,162.9	8,000.0	8,104.5	8,000.0	32.7	14.4	-155.80	130.0	-893.5	672.0	626.2	45.80	14.672					
8,200.0	8,037.1	8,141.6	8,037.1	32.7	14.4	-155.80	130.0	-893.5	672.0	626.2	45.83	14.664					
8,300.0	8,137.1	8,241.6	8,137.1	32.8	14.5	-155.80	130.0	-893.5	672.0	626.1	45.92	14.636					
8,400.0	8,237.1	8,341.6	8,237.1	32.8	14.6	-155.80	130.0	-893.5	672.0	626.0	46.01	14.607					
8,500.0	8,337.1	8,441.6	8,337.1	32.8	14.6	-155.80	130.0	-893.5	672.0	625.9	46.10	14.578					
8,600.0	8,437.1	8,541.6	8,437.1	32.9	14.7	-155.80	130.0	-893.5	672.0	625.8	46.19	14.549					
8,700.0	8,537.1	8,641.6	8,537.1	32.9	14.7	-155.80	130.0	-893.5	672.0	625.7	46.28	14.520					
8,800.0	8,637.1	8,741.6	8,637.1	32.9	14.8	-155.80	130.0	-893.5	672.0	625.7	46.37	14.491					
8,900.0	8,737.1	8,841.6	8,737.1	33.0	14.9	-155.80	130.0	-893.5	672.0	625.6	46.47	14.462					
9,000.0	8,837.1	8,941.6	8,837.1	33.0	14.9	-155.80	130.0	-893.5	672.0	625.5	46.56	14.434					
9,100.0	8,937.1	9,041.6	8,937.1	33.0	15.0	-155.80	130.0	-893.5	672.0	625.4	46.65	14.405					
9,200.0	9,037.1	9,141.6	9,037.1	33.1	15.1	-155.80	130.0	-893.5	672.0	625.3	46.75	14.376					
9,300.0	9,137.1	9,241.6	9,137.1	33.1	15.1	-155.80	130.0	-893.5	672.0	625.2	46.84	14.347					
9,400.0	9,237.1	10,363.8	9,850.0	33.1	16.1	89.72	744.3	-896.5	670.7	628.3	42.41	15.814					
9,500.0	9,337.1	10,363.8	9,850.0	33.2	16.1	89.72	744.3	-896.5	580.8	537.3	43.50	13.352					
9,600.0	9,437.1	10,363.8	9,850.0	33.2	16.1	89.72	744.3	-896.5	494.7	449.9	44.81	11.039					
9,700.0	9,537.1	10,363.8	9,850.0	33.2	16.1	89.72	744.3	-896.5	414.9	368.5	46.38	8.946					
9,800.0	9,637.1	10,363.8	9,850.0	33.3	16.1	89.72	744.3	-896.5	345.8	297.8	48.02	7.200					

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 521H
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 521H	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 501H - OWB - PWP0														Offset Site Error: 0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR														Offset Well Error: 0.0 usft
Reference														Rule Assigned:
Offset														Warning
Semi Major Axis														
Highside														
Offset Wellbore Centre														
Distance														
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre	Offset Wellbore Centre	Between	Between	No-Go	Separation		
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	+N/-S	+E/-W	Centres	Ellipses	Distance	Factor		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
9,900.0	9,737.1	10,363.8	9,850.0	33.3	16.1	89.72	744.3	-896.5	294.9	245.9	49.01	6.017		
9,985.4	9,822.5	10,363.8	9,850.0	33.3	16.1	89.72	744.3	-896.5	273.9	225.6	48.28	5.672		
10,000.0	9,837.1	10,364.1	9,850.0	33.3	16.1	90.02	744.6	-896.5	272.8	224.8	47.96	5.687		
10,012.9	9,850.0	10,364.6	9,850.0	33.4	16.1	89.93	745.1	-896.5	272.5	224.8	47.64	5.720		
10,025.0	9,862.0	10,365.5	9,850.0	33.4	16.1	89.72	746.0	-896.5	272.7	225.4	47.30	5.766		
10,050.0	9,886.9	10,368.2	9,850.0	33.4	16.1	88.89	748.7	-896.6	275.0	228.4	46.52	5.910		
10,075.0	9,911.5	10,372.2	9,850.0	33.5	16.1	87.52	752.7	-896.6	279.3	233.7	45.66	6.117		
10,100.0	9,936.0	10,377.5	9,850.0	33.6	16.1	85.64	758.0	-896.6	285.7	240.9	44.78	6.381		
10,125.0	9,960.1	10,384.1	9,850.0	33.6	16.1	83.29	764.6	-896.6	293.9	250.0	43.90	6.693		
10,150.0	9,983.8	10,391.9	9,850.0	33.7	16.1	80.51	772.4	-896.7	303.6	260.5	43.08	7.047		
10,175.0	10,007.1	10,401.0	9,850.0	33.8	16.2	77.37	781.5	-896.7	314.5	272.2	42.32	7.432		
10,200.0	10,029.9	10,411.2	9,850.0	33.9	16.2	73.93	791.7	-896.8	326.5	284.8	41.64	7.840		
10,225.0	10,052.1	10,422.7	9,850.0	33.9	16.2	70.30	803.2	-896.8	339.2	298.2	41.05	8.263		
10,250.0	10,073.7	10,435.3	9,850.0	34.0	16.3	66.57	815.8	-896.9	352.5	312.0	40.55	8.694		
10,275.0	10,094.6	10,449.0	9,850.0	34.1	16.3	62.84	829.5	-896.9	366.1	326.0	40.12	9.125		
10,300.0	10,114.8	10,463.8	9,850.0	34.2	16.4	59.20	844.3	-897.0	379.9	340.1	39.77	9.553		
10,325.0	10,134.2	10,479.6	9,850.0	34.2	16.4	55.70	860.1	-897.1	393.6	354.1	39.47	9.972		
10,350.0	10,152.7	10,496.4	9,850.0	34.3	16.5	52.42	876.9	-897.2	407.2	367.9	39.23	10.379		
10,375.0	10,170.3	10,514.1	9,850.0	34.4	16.5	49.39	894.6	-897.3	420.4	381.4	39.04	10.769		
10,400.0	10,186.9	10,532.8	9,850.0	34.4	16.6	46.61	913.3	-897.4	433.2	394.3	38.88	11.141		
10,425.0	10,202.6	10,552.3	9,850.0	34.5	16.7	44.11	932.8	-897.5	445.5	406.7	38.76	11.493		
10,450.0	10,217.2	10,572.6	9,850.0	34.6	16.8	41.87	953.1	-897.6	457.1	418.4	38.67	11.822		
10,475.0	10,230.7	10,593.6	9,850.0	34.6	16.8	39.89	974.1	-897.7	468.0	429.4	38.59	12.127		
10,500.0	10,243.1	10,615.3	9,850.0	34.7	16.9	38.15	995.8	-897.8	478.1	439.6	38.54	12.406		
10,525.0	10,254.3	10,637.6	9,850.0	34.7	17.0	36.64	1,018.1	-897.9	487.4	448.9	38.51	12.658		
10,550.0	10,264.4	10,660.5	9,850.0	34.8	17.1	35.34	1,041.0	-898.0	495.8	457.3	38.49	12.883		
10,575.0	10,273.3	10,683.9	9,850.0	34.8	17.2	34.24	1,064.4	-898.1	503.2	464.7	38.47	13.079		
10,600.0	10,280.9	10,707.7	9,850.0	34.9	17.3	33.33	1,088.2	-898.2	509.6	471.1	38.47	13.246		
10,625.0	10,287.3	10,731.9	9,850.0	34.9	17.4	32.58	1,112.3	-898.3	515.0	476.5	38.48	13.383		
10,650.0	10,292.3	10,756.3	9,850.0	35.0	17.5	32.00	1,136.8	-898.4	519.3	480.8	38.50	13.490		
10,675.0	10,296.1	10,781.0	9,850.0	35.0	17.6	31.57	1,161.5	-898.6	522.5	484.0	38.52	13.566		
10,700.0	10,298.7	10,805.9	9,850.0	35.0	17.7	31.29	1,186.4	-898.7	524.7	486.1	38.54	13.612		
10,725.0	10,299.9	10,830.9	9,850.0	35.0	17.8	31.16	1,211.4	-898.8	525.7	487.1	38.58	13.627		
10,735.4	10,300.0	10,841.3	9,850.0	35.0	17.9	31.14	1,221.8	-898.9	525.8	487.2	38.59	13.625		
10,800.0	10,300.0	10,905.9	9,850.0	35.1	18.2	31.14	1,286.4	-899.2	525.7	487.0	38.69	13.590		
10,900.0	10,300.0	11,005.9	9,850.0	35.2	18.7	31.12	1,386.4	-899.7	525.7	486.8	38.89	13.518		
11,000.0	10,300.0	11,105.9	9,850.0	35.3	19.2	31.11	1,486.4	-900.2	525.6	486.5	39.14	13.429		
11,100.0	10,300.0	11,205.9	9,850.0	35.4	19.8	31.10	1,586.4	-900.6	525.6	486.1	39.44	13.324		
11,200.0	10,300.0	11,305.9	9,850.0	35.6	20.3	31.09	1,686.4	-901.1	525.5	485.7	39.80	13.203		
11,300.0	10,300.0	11,405.9	9,850.0	35.8	20.9	31.08	1,786.4	-901.6	525.4	485.2	40.20	13.070		
11,400.0	10,300.0	11,505.9	9,850.0	36.0	21.5	31.07	1,886.4	-902.1	525.4	484.7	40.65	12.923		
11,500.0	10,300.0	11,605.9	9,850.0	36.3	22.1	31.06	1,986.3	-902.6	525.3	484.2	41.15	12.766		
11,600.0	10,300.0	11,705.9	9,850.0	36.6	22.8	31.05	2,086.3	-903.1	525.3	483.6	41.69	12.599		
11,700.0	10,300.0	11,805.9	9,850.0	36.9	23.4	31.04	2,186.3	-903.6	525.2	482.9	42.27	12.425		
11,800.0	10,300.0	11,905.9	9,850.0	37.2	24.1	31.03	2,286.3	-904.1	525.1	482.2	42.89	12.243		
11,900.0	10,300.0	12,005.9	9,850.0	37.6	24.8	31.01	2,386.3	-904.6	525.1	481.5	43.55	12.056		
12,000.0	10,300.0	12,105.9	9,850.0	38.0	25.4	31.00	2,486.3	-905.0	525.0	480.8	44.25	11.864		
12,100.0	10,300.0	12,205.9	9,850.0	38.4	26.1	30.99	2,586.3	-905.5	525.0	480.0	44.98	11.670		
12,200.0	10,300.0	12,305.9	9,850.0	38.9	26.8	30.98	2,686.3	-906.0	524.9	479.1	45.75	11.473		
12,300.0	10,300.0	12,405.9	9,850.0	39.4	27.6	30.97	2,786.3	-906.5	524.8	478.3	46.55	11.275		
12,400.0	10,300.0	12,505.9	9,850.0	39.9	28.3	30.96	2,886.3	-907.0	524.8	477.4	47.38	11.077		

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 521H
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 521H	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 501H - OWB - PWP0														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Reference	Vertical Reference	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (usft)	Separation Factor	Warning				
Depth (usft)	Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)							
12,500.0	10,300.0	12,605.9	9,850.0	40.4	29.0	30.95	2,986.3	-907.5	524.7	476.5	48.23	10.879					
12,600.0	10,300.0	12,705.9	9,850.0	41.0	29.8	30.94	3,086.3	-908.0	524.7	475.5	49.12	10.682					
12,700.0	10,300.0	12,805.9	9,850.0	41.6	30.5	30.93	3,186.3	-908.5	524.6	474.6	50.02	10.487					
12,800.0	10,300.0	12,905.9	9,850.0	42.2	31.2	30.92	3,286.3	-909.0	524.5	473.6	50.96	10.294					
12,900.0	10,300.0	13,005.9	9,850.0	42.8	32.0	30.91	3,386.3	-909.4	524.5	472.6	51.91	10.103					
13,000.0	10,300.0	13,105.9	9,850.0	43.5	32.8	30.89	3,486.3	-909.9	524.4	471.5	52.89	9.915					
13,100.0	10,300.0	13,205.9	9,850.0	44.1	33.5	30.88	3,586.3	-910.4	524.4	470.5	53.89	9.730					
13,200.0	10,300.0	13,305.9	9,850.0	44.8	34.3	30.87	3,686.3	-910.9	524.3	469.4	54.90	9.549					
13,300.0	10,300.0	13,405.9	9,850.0	45.5	35.1	30.86	3,786.3	-911.4	524.2	468.3	55.94	9.371					
13,400.0	10,300.0	13,505.9	9,850.0	46.2	35.9	30.85	3,886.3	-911.9	524.2	467.2	56.99	9.197					
13,500.0	10,300.0	13,605.9	9,850.0	46.9	36.6	30.84	3,986.3	-912.4	524.1	466.1	58.06	9.027					
13,600.0	10,300.0	13,705.9	9,850.0	47.6	37.4	30.83	4,086.3	-912.9	524.1	464.9	59.14	8.861					
13,700.0	10,300.0	13,805.9	9,850.0	48.4	38.2	30.82	4,186.3	-913.4	524.0	463.8	60.24	8.698					
13,800.0	10,300.0	13,905.9	9,850.0	49.1	39.0	30.81	4,286.3	-913.8	523.9	462.6	61.35	8.540					
13,900.0	10,300.0	14,005.9	9,850.0	49.9	39.8	30.80	4,386.3	-914.3	523.9	461.4	62.48	8.385					
14,000.0	10,300.0	14,105.9	9,850.0	50.7	40.6	30.78	4,486.3	-914.8	523.8	460.2	63.61	8.235					
14,100.0	10,300.0	14,205.9	9,850.0	51.4	41.4	30.77	4,586.3	-915.3	523.8	459.0	64.76	8.088					
14,200.0	10,300.0	14,305.9	9,850.0	52.2	42.2	30.76	4,686.3	-915.8	523.7	457.8	65.92	7.945					
14,300.0	10,300.0	14,405.9	9,850.0	53.0	43.0	30.75	4,786.3	-916.3	523.6	456.5	67.09	7.805					
14,400.0	10,300.0	14,505.9	9,850.0	53.8	43.8	30.74	4,886.3	-916.8	523.6	455.3	68.27	7.670					
14,500.0	10,300.0	14,605.9	9,850.0	54.6	44.6	30.73	4,986.3	-917.3	523.5	454.1	69.45	7.538					
14,600.0	10,300.0	14,705.9	9,850.0	55.5	45.4	30.72	5,086.3	-917.7	523.5	452.8	70.65	7.409					
14,700.0	10,300.0	14,805.9	9,850.0	56.3	46.2	30.71	5,186.3	-918.2	523.4	451.5	71.86	7.284					
14,800.0	10,300.0	14,905.9	9,850.0	57.1	47.1	30.70	5,286.3	-918.7	523.3	450.3	73.07	7.162					
14,900.0	10,300.0	15,005.9	9,850.0	57.9	47.9	30.68	5,386.3	-919.2	523.3	449.0	74.29	7.044					
15,000.0	10,300.0	15,105.9	9,850.0	58.8	48.7	30.67	5,486.3	-919.7	523.2	447.7	75.52	6.928					
15,100.0	10,300.0	15,205.9	9,850.0	59.6	49.5	30.66	5,586.3	-920.2	523.2	446.4	76.75	6.816					
15,200.0	10,300.0	15,305.9	9,850.0	60.4	50.3	30.65	5,686.3	-920.7	523.1	445.1	77.99	6.707					
15,300.0	10,300.0	15,405.9	9,850.0	61.3	51.2	30.64	5,786.3	-921.2	523.0	443.8	79.24	6.601					
15,400.0	10,300.0	15,505.9	9,850.0	62.1	52.0	30.63	5,886.3	-921.7	523.0	442.5	80.49	6.497					
15,500.0	10,300.0	15,605.9	9,850.0	63.0	52.8	30.62	5,986.3	-922.1	522.9	441.2	81.75	6.397					
15,600.0	10,300.0	15,705.9	9,850.0	63.9	53.6	30.61	6,086.3	-922.6	522.9	439.8	83.01	6.298					
15,700.0	10,300.0	15,805.9	9,850.0	64.7	54.5	30.60	6,186.3	-923.1	522.8	438.5	84.28	6.203					
15,800.0	10,300.0	15,905.9	9,850.0	65.6	55.3	30.59	6,286.3	-923.6	522.7	437.2	85.56	6.110					
15,900.0	10,300.0	16,005.9	9,850.0	66.5	56.1	30.57	6,386.3	-924.1	522.7	435.8	86.83	6.019					
16,000.0	10,300.0	16,105.9	9,850.0	67.3	57.0	30.56	6,486.3	-924.6	522.6	434.5	88.12	5.931					
16,100.0	10,300.0	16,205.9	9,850.0	68.2	57.8	30.55	6,586.3	-925.1	522.6	433.2	89.40	5.845					
16,200.0	10,300.0	16,305.9	9,850.0	69.1	58.6	30.54	6,686.3	-925.6	522.5	431.8	90.69	5.761					
16,300.0	10,300.0	16,405.9	9,850.0	70.0	59.4	30.53	6,786.3	-926.1	522.4	430.5	91.99	5.680					
16,400.0	10,300.0	16,505.9	9,850.0	70.9	60.3	30.52	6,886.3	-926.5	522.4	429.1	93.29	5.600					
16,500.0	10,300.0	16,605.9	9,850.0	71.7	61.1	30.51	6,986.3	-927.0	522.3	427.7	94.59	5.522					
16,600.0	10,300.0	16,705.9	9,850.0	72.6	62.0	30.50	7,086.3	-927.5	522.3	426.4	95.89	5.446					
16,700.0	10,300.0	16,805.9	9,850.0	73.5	62.8	30.49	7,186.3	-928.0	522.2	425.0	97.20	5.373					
16,800.0	10,300.0	16,905.9	9,850.0	74.4	63.6	30.47	7,286.3	-928.5	522.2	423.6	98.51	5.301					
16,900.0	10,300.0	17,006.8	9,850.0	75.3	64.5	30.46	7,387.2	-929.0	522.1	422.2	99.85	5.229					
17,000.0	10,300.0	17,116.9	9,850.0	76.2	65.4	30.21	7,497.2	-932.0	520.9	419.5	101.38	5.138					
17,100.0	10,300.0	17,226.6	9,850.0	77.1	66.3	29.56	7,606.7	-939.3	517.8	415.1	102.71	5.041					
17,200.0	10,300.0	17,335.7	9,850.0	78.0	67.3	28.50	7,715.2	-950.6	512.9	409.0	103.85	4.939					
17,300.0	10,300.0	17,443.8	9,850.0	78.9	68.2	27.01	7,822.2	-965.9	506.4	401.6	104.84	4.831					
17,400.0	10,300.0	17,550.6	9,850.0	79.8	69.1	25.09	7,927.3	-985.0	498.7	393.0	105.70	4.718					
17,500.0	10,300.0	17,655.8	9,850.0	80.7	70.0	22.73	8,030.1	-1,007.6	489.9	383.4	106.51	4.600					

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 521H
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 521H	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 501H - OWB - PWPO														Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR														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 (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning				
17,600.0	10,300.0	17,759.3	9,850.0	81.6	70.9	19.91	8,130.2	-1,033.4	480.7	373.3	107.37	4.477					
17,700.0	10,300.0	17,856.9	9,850.0	82.5	71.7	16.88	8,224.1	-1,060.2	471.9	363.5	108.34	4.356					
17,800.0	10,300.0	17,953.1	9,850.0	83.4	72.5	13.79	8,316.6	-1,086.7	464.4	354.9	109.56	4.239					
17,900.0	10,300.0	18,047.3	9,850.0	84.3	73.3	10.77	8,407.3	-1,111.9	458.6	347.6	111.02	4.131					
18,000.0	10,300.0	18,142.0	9,850.0	85.3	74.1	8.04	8,499.3	-1,134.3	454.7	342.0	112.70	4.035					
18,100.0	10,300.0	18,238.1	9,850.0	86.2	75.0	5.62	8,593.4	-1,153.9	452.3	337.7	114.56	3.948					
18,200.0	10,300.0	18,335.5	9,850.0	87.1	75.8	3.56	8,689.3	-1,170.6	450.9	334.4	116.48	3.871					
18,300.0	10,300.0	18,433.8	9,850.0	88.0	76.6	1.89	8,786.8	-1,184.1	450.3	331.9	118.39	3.803					
18,400.0	10,300.0	18,533.0	9,850.0	88.9	77.5	0.64	8,885.4	-1,194.3	450.0	329.8	120.20	3.744					
18,472.3	10,300.0	18,605.1	9,850.0	89.6	78.1	0.00	8,957.3	-1,199.5	450.0	328.6	121.41	3.707					
18,500.0	10,300.0	18,632.7	9,850.0	89.8	78.4	-0.19	8,984.9	-1,201.1	450.0	328.2	121.84	3.694					
18,600.0	10,300.0	18,732.8	9,850.0	90.8	79.2	-0.57	9,084.9	-1,204.5	450.0	326.8	123.26	3.651					
18,700.0	10,300.0	18,832.8	9,850.0	91.7	80.1	-0.61	9,185.0	-1,205.1	450.0	325.6	124.48	3.615					
18,800.0	10,300.0	18,932.8	9,850.0	92.6	80.9	-0.62	9,285.0	-1,205.6	450.0	324.4	125.70	3.580					
18,900.0	10,300.0	19,032.8	9,850.0	93.5	81.7	-0.64	9,385.0	-1,206.1	450.0	323.1	126.91	3.546					
19,000.0	10,300.0	19,132.8	9,850.0	94.4	82.6	-0.65	9,485.0	-1,206.6	450.0	321.9	128.13	3.513					
19,100.0	10,300.0	19,232.8	9,850.0	95.4	83.4	-0.67	9,584.9	-1,207.1	450.0	320.7	129.34	3.479					
19,200.0	10,300.0	19,332.8	9,850.0	96.3	84.3	-0.68	9,684.9	-1,207.6	450.0	319.5	130.56	3.447					
19,300.0	10,300.0	19,432.8	9,850.0	97.2	85.1	-0.70	9,784.9	-1,208.1	450.1	318.3	131.78	3.415					
19,400.0	10,300.0	19,532.8	9,850.0	98.1	86.0	-0.71	9,884.9	-1,208.6	450.1	317.0	133.00	3.384					
19,500.0	10,300.0	19,632.8	9,850.0	99.1	86.8	-0.73	9,984.9	-1,209.1	450.1	315.8	134.22	3.353					
19,600.0	10,300.0	19,732.8	9,850.0	100.0	87.7	-0.75	10,084.9	-1,209.6	450.1	314.6	135.45	3.323					
19,700.0	10,300.0	19,832.8	9,850.0	100.9	88.5	-0.76	10,184.9	-1,210.1	450.1	313.4	136.67	3.293					
19,800.0	10,300.0	19,932.8	9,850.0	101.9	89.4	-0.78	10,284.9	-1,210.6	450.1	312.2	137.89	3.264					
19,900.0	10,300.0	20,032.8	9,850.0	102.8	90.2	-0.79	10,384.9	-1,211.1	450.1	310.9	139.12	3.235					
20,000.0	10,300.0	20,132.8	9,850.0	103.7	91.1	-0.81	10,484.9	-1,211.6	450.1	309.7	140.35	3.207					
20,100.0	10,300.0	20,232.8	9,850.0	104.6	91.9	-0.82	10,584.9	-1,212.0	450.1	308.5	141.57	3.179					
20,200.0	10,300.0	20,332.8	9,850.0	105.6	92.8	-0.84	10,684.9	-1,212.5	450.1	307.3	142.80	3.152					
20,300.0	10,300.0	20,432.8	9,850.0	106.5	93.6	-0.86	10,784.9	-1,213.0	450.1	306.0	144.03	3.125					
20,400.0	10,300.0	20,532.8	9,850.0	107.4	94.5	-0.87	10,884.9	-1,213.5	450.1	304.8	145.26	3.098					
20,500.0	10,300.0	20,632.8	9,850.0	108.4	95.3	-0.89	10,984.9	-1,214.0	450.1	303.6	146.49	3.072					
20,600.0	10,300.0	20,732.8	9,850.0	109.3	96.2	-0.90	11,084.9	-1,214.5	450.1	302.3	147.72	3.047					
20,700.0	10,300.0	20,832.8	9,850.0	110.3	97.0	-0.92	11,184.9	-1,215.0	450.1	301.1	148.95	3.022					
20,800.0	10,300.0	20,932.8	9,850.0	111.2	97.9	-0.93	11,284.9	-1,215.5	450.1	299.9	150.19	2.997 Normal Operations					
20,900.0	10,300.0	21,032.8	9,850.0	112.1	98.7	-0.95	11,384.9	-1,216.0	450.1	298.7	151.42	2.972 Normal Operations					
21,000.0	10,300.0	21,132.8	9,850.0	113.1	99.6	-0.96	11,484.9	-1,216.5	450.1	297.4	152.65	2.948 Normal Operations					
21,100.0	10,300.0	21,232.8	9,850.0	114.0	100.4	-0.98	11,584.9	-1,217.0	450.1	296.2	153.89	2.925 Normal Operations					
21,200.0	10,300.0	21,332.8	9,850.0	114.9	101.3	-1.00	11,684.9	-1,217.5	450.1	295.0	155.12	2.901 Normal Operations					
21,300.0	10,300.0	21,432.8	9,850.0	115.9	102.1	-1.01	11,784.9	-1,218.0	450.1	293.7	156.36	2.878 Normal Operations					
21,400.0	10,300.0	21,532.8	9,850.0	116.8	103.0	-1.03	11,884.9	-1,218.5	450.1	292.5	157.60	2.856 Normal Operations					
21,500.0	10,300.0	21,632.8	9,850.0	117.8	103.8	-1.04	11,984.9	-1,219.0	450.1	291.2	158.84	2.834 Normal Operations					
21,600.0	10,300.0	21,732.8	9,850.0	118.7	104.7	-1.06	12,084.9	-1,219.5	450.1	290.0	160.07	2.812 Normal Operations					
21,700.0	10,300.0	21,832.8	9,850.0	119.6	105.5	-1.07	12,184.9	-1,220.0	450.1	288.8	161.31	2.790 Normal Operations					
21,800.0	10,300.0	21,932.8	9,850.0	120.6	106.4	-1.09	12,284.9	-1,220.4	450.1	287.5	162.55	2.769 Normal Operations					
21,900.0	10,300.0	22,032.8	9,850.0	121.5	107.2	-1.11	12,384.9	-1,220.9	450.1	286.3	163.79	2.748 Normal Operations					
22,000.0	10,300.0	22,132.8	9,850.0	122.5	108.1	-1.12	12,484.9	-1,221.4	450.1	285.1	165.03	2.727 Normal Operations					
22,100.0	10,300.0	22,232.8	9,850.0	123.4	108.9	-1.14	12,584.9	-1,221.9	450.1	283.8	166.27	2.707 Normal Operations					
22,200.0	10,300.0	22,332.8	9,850.0	124.4	109.8	-1.15	12,684.9	-1,222.4	450.1	282.6	167.51	2.687 Normal Operations					
22,300.0	10,300.0	22,432.8	9,850.0	125.3	110.6	-1.17	12,784.9	-1,222.9	450.1	281.3	168.76	2.667 Normal Operations					
22,400.0	10,300.0	22,532.8	9,850.0	126.2	111.5	-1.18	12,884.9	-1,223.4	450.1	280.1	170.00	2.648 Normal Operations					
22,500.0	10,300.0	22,632.8	9,850.0	127.2	112.3	-1.20	12,984.9	-1,223.9	450.1	278.9	171.24	2.628 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 521H
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 521H	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 501H - OWB - PWP0													Offset Site Error: 0.0 usft
Survey Program: 0-r.5 SDI_KPR_WL_NS-CT, 1800-r.5 MWD+IFR1+SAG+FDIR										Rule Assigned:		Offset Well Error: 0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference Offset (usft) (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
22,600.0	10,300.0	22,732.8	9,850.0	128.1	113.2	-1.21	13,084.9	-1,224.4	450.1	277.6	172.49	2.610	Normal Operations
22,700.0	10,300.0	22,832.8	9,850.0	129.1	114.0	-1.23	13,184.9	-1,224.9	450.1	276.4	173.73	2.591	Normal Operations
22,800.0	10,300.0	22,932.8	9,850.0	130.0	114.9	-1.25	13,284.9	-1,225.4	450.1	275.1	174.97	2.572	Normal Operations
22,900.0	10,300.0	23,032.8	9,850.0	131.0	115.7	-1.26	13,384.9	-1,225.9	450.1	273.9	176.17	2.555	Normal Operations
22,973.3	10,300.0	23,106.1	9,850.0	131.7	116.2	-1.27	13,458.2	-1,226.2	450.1	273.1	176.97	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 521H
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 521H	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 502H - OWB - PWPO													Offset Site Error:	0.0 usft		
Survey Program: 0-r.5 MWD+IFR1+SAG+FDIR													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning			
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	40.0	40.0	39.5	0.48	83.430				
100.0	100.0	100.0	100.0	1.2	1.2	90.00	0.0	40.0	40.0	37.1	2.87	13.953				
200.0	200.0	200.0	200.0	1.7	1.7	90.00	0.0	40.0	40.0	36.1	3.86	10.353				
300.0	300.0	300.0	300.0	2.1	2.1	90.00	0.0	40.0	40.0	35.4	4.63	8.633				
400.0	400.0	400.0	400.0	2.4	2.4	90.00	0.0	40.0	40.0	34.7	5.29	7.566				
500.0	500.0	500.0	500.0	2.7	2.7	90.00	0.0	40.0	40.0	34.1	5.87	6.819				
600.0	600.0	600.0	600.0	3.0	3.0	90.00	0.0	40.0	40.0	33.6	6.39	6.256				
700.0	700.0	700.0	700.0	3.2	3.2	90.00	0.0	40.0	40.0	33.1	6.88	5.812				
800.0	800.0	800.0	800.0	3.5	3.5	90.00	0.0	40.0	40.0	32.7	7.34	5.450				
900.0	900.0	900.0	900.0	3.7	3.7	90.00	0.0	40.0	40.0	32.2	7.77	5.147				
1,000.0	1,000.0	1,000.0	1,000.0	3.9	3.9	90.00	0.0	40.0	40.0	31.8	8.18	4.889				
1,100.0	1,100.0	1,100.0	1,100.0	4.1	4.1	90.00	0.0	40.0	40.0	31.4	8.58	4.664				
1,200.0	1,200.0	1,200.0	1,200.0	4.3	4.3	90.00	0.0	40.0	40.0	31.0	8.95	4.467				
1,300.0	1,300.0	1,300.0	1,300.0	4.5	4.5	90.00	0.0	40.0	40.0	30.7	9.32	4.292				
1,400.0	1,400.0	1,400.0	1,400.0	4.7	4.7	90.00	0.0	40.0	40.0	30.3	9.67	4.135				
1,500.0	1,500.0	1,500.0	1,500.0	4.8	4.8	90.00	0.0	40.0	40.0	30.0	10.02	3.994 CC, ES				
1,600.0	1,600.0	1,600.0	1,600.0	5.1	5.0	148.84	0.0	40.0	41.5	31.1	10.42	3.982 SF				
1,700.0	1,699.8	1,699.8	1,699.8	5.4	5.2	152.17	0.0	40.0	46.0	35.2	10.83	4.253				
1,800.0	1,799.5	1,799.5	1,799.5	5.6	5.3	156.43	0.0	40.0	53.9	42.6	11.26	4.789				
1,900.0	1,898.7	1,898.2	1,898.2	5.9	5.5	159.19	1.5	40.8	65.7	54.0	11.68	5.626				
2,000.0	1,997.5	1,996.9	1,996.9	6.3	5.7	160.89	4.2	42.2	81.2	69.0	12.20	6.653				
2,100.0	2,095.6	2,095.1	2,095.0	6.6	5.9	162.62	6.9	43.6	100.0	87.4	12.69	7.886				
2,200.0	2,193.1	2,192.5	2,192.4	7.0	6.0	164.23	9.6	45.0	122.2	109.0	13.19	9.270				
2,216.9	2,209.5	2,208.9	2,208.8	7.0	6.1	164.48	10.1	45.2	126.3	113.1	13.25	9.533				
2,300.0	2,290.0	2,289.5	2,289.2	7.2	6.2	165.63	12.3	46.4	146.6	133.0	13.62	10.765				
2,400.0	2,386.8	2,386.4	2,386.1	7.6	6.3	166.66	15.0	47.8	171.2	157.1	14.09	12.149				
2,500.0	2,483.7	2,483.3	2,483.0	7.9	6.5	167.43	17.7	49.2	195.7	181.2	14.57	13.430				
2,600.0	2,580.6	2,580.2	2,579.8	8.3	6.6	168.02	20.4	50.5	220.3	205.3	15.08	14.616				
2,700.0	2,677.5	2,677.1	2,676.7	8.6	6.8	168.50	23.1	51.9	244.9	229.4	15.59	15.711				
2,800.0	2,774.4	2,774.0	2,773.5	9.0	6.9	168.89	25.8	53.3	269.6	253.4	16.12	16.724				
2,900.0	2,871.3	2,870.9	2,870.4	9.4	7.0	169.22	28.4	54.7	294.2	277.5	16.66	17.660				
3,000.0	2,968.1	2,967.8	2,967.3	9.8	7.2	169.49	31.1	56.1	318.8	301.6	17.21	18.525				
3,100.0	3,065.0	3,064.7	3,064.1	10.2	7.3	169.73	33.8	57.5	343.5	325.7	17.77	19.327				
3,200.0	3,161.9	3,161.6	3,161.0	10.6	7.5	169.93	36.5	58.9	368.1	349.8	18.34	20.069				
3,300.0	3,258.8	3,258.5	3,257.8	11.1	7.6	170.11	39.2	60.3	392.8	373.9	18.92	20.758				
3,400.0	3,355.7	3,355.4	3,354.7	11.5	7.8	170.26	41.9	61.7	417.4	397.9	19.51	21.398				
3,500.0	3,452.6	3,452.3	3,451.6	11.9	7.9	170.40	44.6	63.0	442.1	422.0	20.10	21.993				
3,600.0	3,549.5	3,549.2	3,548.4	12.4	8.1	170.53	47.2	64.4	466.8	446.1	20.70	22.548				
3,700.0	3,646.3	3,646.1	3,645.3	12.8	8.2	170.64	49.9	65.8	491.4	470.1	21.31	23.065				
3,800.0	3,743.2	3,743.1	3,742.1	13.2	8.3	170.74	52.6	67.2	516.1	494.2	21.92	23.548				
3,900.0	3,840.1	3,840.0	3,839.0	13.7	8.5	170.83	55.3	68.6	540.8	518.2	22.53	23.999				
4,000.0	3,937.0	3,936.9	3,935.9	14.1	8.6	170.92	58.0	70.0	565.4	542.3	23.15	24.422				
4,100.0	4,033.9	4,033.8	4,032.7	14.6	8.8	171.00	60.7	71.4	590.1	566.3	23.78	24.819				
4,200.0	4,130.8	4,130.7	4,129.6	15.1	8.9	171.07	63.4	72.8	614.8	590.4	24.40	25.192				
4,300.0	4,227.7	4,227.6	4,226.4	15.5	9.1	171.13	66.0	74.2	639.4	614.4	25.03	25.542				
4,400.0	4,324.5	4,324.5	4,323.3	16.0	9.2	171.19	68.7	75.5	664.1	638.4	25.67	25.872				
4,500.0	4,421.4	4,421.4	4,420.2	16.4	9.3	171.25	71.4	76.9	688.8	662.5	26.31	26.183				
4,600.0	4,518.3	4,518.3	4,517.0	16.9	9.5	171.30	74.1	78.3	713.5	686.5	26.95	26.476				
4,700.0	4,615.2	4,615.2	4,613.9	17.4	9.6	171.35	76.8	79.7	738.1	710.5	27.59	26.754				
4,800.0	4,712.1	4,712.1	4,710.7	17.8	9.8	171.40	79.5	81.1	762.8	734.6	28.24	27.016				
4,900.0	4,809.0	4,809.0	4,807.6	18.3	9.9	171.44	82.2	82.5	787.5	758.6	28.88	27.268				

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 521H
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 521H	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)	No-Go Distance (usft)		
5,000.0	4,905.8	4,906.6	4,905.1	18.8	10.0	171.52	84.3	83.6	812.1	782.6	29.52	27.510	
5,100.0	5,002.7	5,004.2	5,002.7	19.3	10.1	171.72	85.0	84.0	836.7	806.5	30.18	27.719	
5,200.0	5,099.6	5,101.1	5,099.6	19.7	10.2	171.96	85.0	84.0	861.2	830.4	30.85	27.920	
5,300.0	5,196.5	5,198.0	5,196.5	20.2	10.3	172.18	85.0	84.0	885.7	854.2	31.51	28.112	
5,400.0	5,293.4	5,294.9	5,293.4	20.7	10.4	172.39	85.0	84.0	910.3	878.1	32.17	28.294	
5,500.0	5,390.3	5,391.7	5,390.3	21.1	10.5	172.59	85.0	84.0	934.9	902.0	32.84	28.468	
5,600.0	5,487.2	5,488.6	5,487.2	21.6	10.6	172.79	85.0	84.0	959.4	925.9	33.51	28.635	
5,700.0	5,584.0	5,585.5	5,584.0	22.1	10.7	172.97	85.0	84.0	984.0	949.9	34.17	28.794	

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 521H
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 521H	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											Rule Assigned:		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)				
7,100.0	6,943.2	12,067.8	7,511.6	28.8	114.8	-123.90	-96.7	-1,147.8	972.7	835.0	137.75	7.062		
7,200.0	7,041.6	12,077.1	7,511.2	29.2	115.0	-122.82	-96.3	-1,157.1	925.9	780.9	144.99	6.386		
7,300.0	7,140.3	12,085.2	7,510.8	29.7	115.2	-121.91	-95.9	-1,165.2	886.8	735.1	151.72	5.845		
7,400.0	7,239.3	12,091.9	7,510.5	30.1	115.4	-121.17	-95.6	-1,171.9	856.8	699.3	157.50	5.440		
7,500.0	7,338.5	12,097.4	7,510.2	30.5	115.5	-120.62	-95.4	-1,177.4	836.7	674.9	161.83	5.170		
7,600.0	7,438.0	12,101.6	7,510.1	30.9	115.6	-120.25	-95.2	-1,181.6	827.4	663.1	164.30	5.036		
7,633.9	7,471.7	12,102.7	7,510.0	31.1	115.6	-120.16	-95.2	-1,182.7	826.7	662.0	164.66	5.021	CC, ES, SF	
7,700.0	7,537.6	12,104.5	7,509.9	31.3	115.7	-120.06	-95.1	-1,184.5	829.2	664.5	164.67	5.035		
7,800.0	7,637.3	12,106.1	7,509.9	31.7	115.7	-120.07	-95.1	-1,186.0	842.0	679.1	162.94	5.168		
7,900.0	7,737.2	12,106.3	7,509.8	32.0	115.7	-120.26	-95.1	-1,186.3	865.5	706.1	159.38	5.430		
8,000.0	7,837.1	12,105.2	7,509.9	32.4	115.7	-120.64	-95.1	-1,185.1	898.7	744.3	154.39	5.821		
8,100.0	7,937.1	12,102.7	7,510.0	32.6	115.6	-121.21	-95.2	-1,182.7	940.7	792.2	148.44	6.337		
8,162.9	8,000.0	12,100.4	7,510.1	32.7	115.6	-179.22	-95.3	-1,180.4	971.0	826.6	144.40	6.725		
8,200.0	8,037.1	12,098.9	7,510.2	32.7	115.5	-179.32	-95.4	-1,178.9	990.2	848.3	141.96	6.975		

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 521H
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 521H	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, 385-r.5 MWD+IFR1+SAG+FDIR, 7662-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
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	0.1	180.00	-150.5	0.0	150.5	149.8	0.67	223.029	CC	
100.0	100.0	140.0	100.0	1.2	0.4	-179.69	-150.5	-0.8	150.5	148.2	2.27	66.413		
115.1	115.1	155.1	115.1	1.3	0.5	-179.62	-150.5	-1.0	150.5	148.1	2.38	63.273		
200.0	200.0	239.7	199.6	1.7	0.6	-179.24	-150.6	-2.0	150.7	147.7	3.00	50.210		
300.0	300.0	339.0	299.0	2.1	0.8	-178.79	-150.9	-3.2	150.9	147.4	3.57	42.285		
400.0	400.0	438.8	398.8	2.4	1.0	-178.41	-151.7	-4.2	151.7	147.6	4.11	36.894		
500.0	500.0	538.8	498.8	2.7	1.2	-178.16	-152.5	-4.9	152.6	148.0	4.58	33.281		
600.0	600.0	639.0	599.0	3.0	1.3	-178.01	-153.2	-5.3	153.3	148.3	5.02	30.571		
700.0	700.0	739.4	699.4	3.2	1.5	-177.85	-153.7	-5.8	153.9	148.4	5.41	28.414		
800.0	800.0	839.7	799.6	3.5	1.6	-177.68	-154.0	-6.2	154.1	148.4	5.79	26.632		
900.0	900.0	939.9	899.8	3.7	1.7	-177.39	-154.2	-7.0	154.3	148.2	6.14	25.145		
1,000.0	1,000.0	1,039.5	999.4	3.9	1.9	-177.10	-154.3	-7.8	154.5	148.1	6.47	23.881		
1,100.0	1,100.0	1,140.0	1,100.0	4.1	2.0	-177.15	-154.6	-7.7	154.8	148.0	6.79	22.815		
1,200.0	1,200.0	1,240.4	1,200.3	4.3	2.0	-178.00	-154.6	-5.4	154.7	147.6	7.07	21.887		
1,300.0	1,300.0	1,340.5	1,300.4	4.5	2.1	-178.79	-154.4	-3.3	154.4	147.1	7.34	21.039		
1,400.0	1,400.0	1,440.3	1,400.2	4.7	2.1	-179.48	-154.3	-1.4	154.3	146.7	7.61	20.277		
1,500.0	1,500.0	1,540.2	1,500.0	4.8	2.2	179.74	-154.1	0.7	154.1	146.3	7.87	19.588		
1,504.4	1,504.4	1,544.6	1,504.5	4.8	2.2	-122.73	-154.1	0.8	154.1	146.3	7.88	19.557	ES	
1,600.0	1,600.0	1,640.5	1,600.3	5.1	2.3	-124.00	-154.1	2.8	155.1	146.9	8.16	19.001		
1,700.0	1,699.8	1,740.6	1,700.4	5.4	2.3	-126.35	-153.6	5.0	157.7	149.3	8.46	18.651		
1,800.0	1,799.5	1,839.6	1,799.4	5.6	2.4	-129.50	-153.2	7.2	162.9	154.1	8.78	18.557		
1,900.0	1,898.7	1,937.5	1,897.3	5.9	2.5	-132.92	-153.4	8.6	171.4	162.3	9.14	18.755		
2,000.0	1,997.5	2,034.0	1,993.8	6.3	2.6	-135.41	-155.5	6.4	184.0	174.5	9.53	19.314		
2,100.0	2,095.6	2,132.2	2,091.7	6.6	2.6	-137.17	-159.1	0.7	200.0	190.1	9.93	20.137		
2,200.0	2,193.1	2,229.2	2,188.4	7.0	2.7	-139.22	-162.6	-4.8	218.8	208.5	10.38	21.080		
2,216.9	2,209.5	2,244.8	2,204.1	7.0	2.7	-139.57	-163.3	-5.7	222.4	212.0	10.44	21.312		
2,300.0	2,290.0	2,321.1	2,280.2	7.2	2.8	-141.46	-167.1	-9.2	241.1	230.3	10.79	22.356		
2,400.0	2,386.8	2,416.8	2,375.5	7.6	2.9	-143.35	-174.1	-13.4	266.1	254.9	11.24	23.680		
2,500.0	2,483.7	2,525.1	2,482.9	7.9	3.0	-143.81	-181.9	-25.1	288.9	277.2	11.70	24.689		
2,600.0	2,580.6	2,623.8	2,580.3	8.3	3.1	-143.58	-187.7	-39.6	309.0	296.8	12.14	25.459		
2,700.0	2,677.5	2,723.5	2,678.7	8.6	3.2	-143.37	-193.6	-54.3	329.1	316.5	12.59	26.136		
2,800.0	2,774.4	2,828.2	2,781.7	9.0	3.3	-142.78	-199.1	-72.5	347.7	334.6	13.06	26.629		
2,900.0	2,871.3	2,924.9	2,876.6	9.4	3.5	-142.15	-204.0	-90.3	365.7	352.2	13.51	27.062		
3,000.0	2,968.1	3,022.1	2,972.1	9.8	3.6	-141.64	-209.1	-107.6	384.2	370.2	13.98	27.474		
3,100.0	3,065.0	3,118.2	3,066.6	10.2	3.7	-141.26	-214.4	-124.2	403.1	388.6	14.47	27.863		
3,200.0	3,161.9	3,215.5	3,162.4	10.6	3.9	-140.92	-220.0	-140.8	422.3	407.4	14.96	28.231		
3,300.0	3,258.8	3,313.1	3,258.5	11.1	4.0	-140.70	-225.6	-156.7	441.8	426.4	15.47	28.564		
3,400.0	3,355.7	3,422.1	3,365.9	11.5	4.2	-140.50	-230.1	-174.9	459.7	443.6	16.02	28.698		
3,500.0	3,452.6	3,518.1	3,460.2	11.9	4.3	-140.21	-234.0	-192.0	477.1	460.5	16.53	28.866		
3,600.0	3,549.5	3,614.4	3,554.7	12.4	4.5	-139.82	-238.7	-210.0	495.0	478.0	17.04	29.057		
3,700.0	3,646.3	3,713.4	3,651.9	12.8	4.7	-139.46	-243.6	-228.3	513.1	495.5	17.56	29.222		
3,800.0	3,743.2	3,811.0	3,747.8	13.2	4.8	-139.18	-248.2	-246.0	531.1	513.0	18.08	29.370		
3,900.0	3,840.1	3,908.3	3,843.4	13.7	5.0	-138.93	-253.0	-263.5	549.4	530.8	18.61	29.516		
4,000.0	3,937.0	4,007.7	3,940.5	14.1	5.2	-138.44	-258.6	-283.5	567.6	548.5	19.13	29.666		
4,100.0	4,033.9	4,104.6	4,034.7	14.6	5.4	-137.72	-264.7	-305.7	585.9	566.3	19.63	29.849		
4,200.0	4,130.8	4,198.5	4,125.8	15.1	5.5	-137.03	-271.2	-327.4	604.7	584.6	20.11	30.069		
4,300.0	4,227.7	4,293.5	4,218.0	15.5	5.7	-136.37	-278.3	-349.2	624.2	603.6	20.60	30.305		
4,400.0	4,324.5	4,394.4	4,315.9	16.0	5.9	-135.71	-285.8	-372.5	643.7	622.6	21.11	30.498		
4,500.0	4,421.4	4,509.8	4,427.8	16.4	6.1	-134.97	-293.2	-399.7	662.2	640.6	21.66	30.573		
4,600.0	4,518.3	4,605.9	4,520.9	16.9	6.3	-134.39	-297.8	-422.7	679.2	657.0	22.15	30.661		
4,700.0	4,615.2	4,700.0	4,612.2	17.4	6.5	-133.86	-302.8	-445.0	696.7	674.1	22.64	30.777		

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 521H
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 521H	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, 385-r.5 MWD+IFR1+SAG+FDIR, 7662-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (usft)	Separation Factor	Warning				
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)							
4,800.0	4,712.1	4,795.0	4,704.4	17.8	6.7	-133.33	-308.4	-467.7	714.8	691.7	23.13	30.908					
4,900.0	4,809.0	4,892.1	4,798.5	18.3	6.9	-132.83	-314.4	-490.5	733.4	709.7	23.63	31.040					
5,000.0	4,905.8	4,992.9	4,896.4	18.8	7.1	-132.38	-320.4	-513.8	751.8	727.6	24.14	31.136					
5,100.0	5,002.7	5,091.8	4,992.6	19.3	7.3	-132.00	-325.9	-536.2	769.9	745.3	24.66	31.222					
5,200.0	5,099.6	5,188.5	5,086.6	19.7	7.5	-131.63	-331.3	-558.2	788.2	763.0	25.17	31.318					
5,300.0	5,196.5	5,285.5	5,180.9	20.2	7.7	-131.29	-336.9	-580.2	806.7	781.0	25.68	31.414					
5,400.0	5,293.4	5,378.8	5,271.8	20.7	7.9	-131.02	-342.6	-600.6	825.6	799.4	26.18	31.531					
5,500.0	5,390.3	5,501.9	5,391.7	21.1	8.2	-130.68	-349.1	-627.7	843.8	817.0	26.80	31.488					
5,600.0	5,487.2	5,601.7	5,488.8	21.6	8.4	-130.40	-352.3	-650.4	859.8	832.4	27.32	31.469					
5,700.0	5,584.0	5,696.6	5,581.2	22.1	8.6	-130.15	-355.7	-671.7	876.2	848.4	27.83	31.482					
5,800.0	5,680.9	5,792.5	5,674.6	22.6	8.8	-129.89	-359.4	-693.5	892.8	864.5	28.34	31.502					
5,900.0	5,777.8	5,885.5	5,765.0	23.1	9.0	-129.61	-363.5	-714.9	910.1	881.2	28.84	31.557					
6,000.0	5,874.7	5,979.5	5,856.2	23.5	9.2	-129.32	-368.2	-736.9	927.8	898.5	29.34	31.625					
6,100.0	5,971.6	6,075.5	5,949.3	24.0	9.4	-129.02	-373.5	-759.6	946.0	916.2	29.84	31.702					
6,200.0	6,068.5	6,173.1	6,044.2	24.5	9.6	-128.75	-378.7	-782.2	964.3	933.9	30.35	31.766					
6,300.0	6,165.4	6,268.0	6,136.9	25.0	9.8	-128.67	-383.7	-801.4	982.7	951.8	30.89	31.815					
10,500.0	10,243.1	12,503.8	11,239.8	34.7	18.8	-179.50	959.2	-1,177.6	997.4	949.2	48.15	20.715					
10,525.0	10,254.3	12,521.4	11,240.5	34.7	18.8	-179.54	976.8	-1,177.1	987.0	938.7	48.29	20.440					
10,550.0	10,264.4	12,539.4	11,241.3	34.8	18.9	-179.59	994.8	-1,176.6	977.9	929.5	48.43	20.193					
10,575.0	10,273.3	12,557.8	11,242.2	34.8	19.0	-179.62	1,013.2	-1,176.1	970.2	921.6	48.57	19.974					
10,600.0	10,280.9	12,581.0	11,243.5	34.9	19.1	-179.67	1,036.3	-1,175.5	963.9	915.2	48.70	19.792					
10,625.0	10,287.3	12,609.4	11,245.0	34.9	19.2	-179.72	1,064.6	-1,174.8	958.9	910.0	48.81	19.643					
10,650.0	10,292.3	12,646.5	11,246.5	35.0	19.4	-179.78	1,101.7	-1,173.9	954.8	905.9	48.89	19.531					
10,675.0	10,296.1	12,683.7	11,247.6	35.0	19.6	-179.84	1,138.9	-1,173.0	951.7	902.7	48.96	19.440					
10,700.0	10,298.7	12,706.1	11,248.1	35.0	19.7	-179.88	1,161.2	-1,172.6	949.8	900.7	49.09	19.347					
10,722.1	10,299.8	12,725.4	11,248.6	35.0	19.8	-179.90	1,180.5	-1,172.3	949.2	900.0	49.22	19.288					
10,725.0	10,299.9	12,727.9	11,248.7	35.0	19.8	-179.90	1,183.1	-1,172.2	949.2	900.0	49.23	19.281					
10,735.4	10,300.0	12,737.1	11,249.0	35.0	19.9	-179.91	1,192.2	-1,172.1	949.4	900.2	49.29	19.263					
10,800.0	10,300.0	12,803.5	11,251.1	35.1	20.2	-179.97	1,258.6	-1,171.5	951.5	901.9	49.59	19.188					
10,900.0	10,300.0	12,933.8	11,252.5	35.2	20.9	179.93	1,388.9	-1,170.3	952.6	902.6	49.93	19.077					
11,000.0	10,300.0	13,047.7	11,251.1	35.3	21.6	179.90	1,502.8	-1,170.2	951.3	900.9	50.36	18.889					
11,100.0	10,300.0	13,167.4	11,247.3	35.4	22.3	179.96	1,622.4	-1,171.5	948.1	897.3	50.76	18.677					
11,200.0	10,300.0	13,261.8	11,243.8	35.6	22.9	-179.97	1,716.8	-1,173.2	944.3	893.0	51.34	18.394					
11,300.0	10,300.0	13,357.4	11,241.0	35.8	23.6	-179.87	1,812.2	-1,175.1	941.4	889.5	51.93	18.130					
11,400.0	10,300.0	13,466.6	11,237.3	36.0	24.3	-179.77	1,921.4	-1,177.2	938.1	885.6	52.44	17.888					
11,500.0	10,300.0	13,572.0	11,232.8	36.3	25.0	-179.57	2,026.6	-1,180.8	933.8	880.8	52.98	17.626					
11,600.0	10,300.0	13,664.8	11,228.9	36.6	25.7	-179.34	2,119.2	-1,184.9	929.6	876.0	53.62	17.338					
11,700.0	10,300.0	13,751.1	11,226.3	36.9	26.3	-179.17	2,205.4	-1,187.8	926.6	872.3	54.35	17.051					
11,800.0	10,300.0	13,856.4	11,223.9	37.2	27.0	-179.04	2,310.7	-1,190.4	924.4	869.5	54.96	16.821					
11,900.0	10,300.0	13,960.6	11,220.8	37.6	27.8	-179.10	2,414.9	-1,189.7	921.4	865.7	55.65	16.558					
12,000.0	10,300.0	14,047.0	11,217.7	38.0	28.4	-179.17	2,501.2	-1,188.8	918.0	861.5	56.50	16.248					
12,100.0	10,300.0	14,138.0	11,216.8	38.4	29.1	-179.18	2,592.2	-1,189.0	917.0	859.6	57.36	15.985					
12,107.2	10,300.0	14,138.0	11,216.8	38.5	29.1	-179.18	2,592.2	-1,189.0	916.9	859.5	57.47	15.954					
12,200.0	10,300.0	14,197.8	11,218.4	38.9	29.5	-179.12	2,651.9	-1,190.2	919.1	860.7	58.41	15.735					
12,300.0	10,300.0	14,307.3	11,222.4	39.4	30.4	-179.05	2,761.3	-1,191.7	922.9	863.8	59.13	15.609					
12,400.0	10,300.0	14,401.0	11,225.0	39.9	31.1	-179.14	2,854.9	-1,190.8	925.6	865.6	60.01	15.425					
12,500.0	10,300.0	14,515.7	11,227.9	40.4	31.9	-179.24	2,969.6	-1,189.6	928.1	867.4	60.76	15.275					
12,600.0	10,300.0	14,622.6	11,229.3	41.0	32.7	-179.39	3,076.5	-1,187.6	929.4	867.8	61.60	15.088					
12,700.0	10,300.0	14,732.0	11,229.8	41.6	33.6	-179.48	3,185.9	-1,186.5	929.8	867.4	62.41	14.898					
12,800.0	10,300.0	14,833.0	11,229.5	42.2	34.3	-179.51	3,286.9	-1,186.5	929.5	866.2	63.28	14.689					
12,900.0	10,300.0	14,972.1	11,226.3	42.8	35.4	-179.58	3,425.9	-1,185.8	927.3	863.4	63.88	14.515					

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 521H
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 521H	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, 385-r.5 MWD+IFR1+SAG+FDIR, 7662-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		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)							
13,000.0	10,300.0	15,052.4	11,223.7	43.5	36.0	-179.68	3,506.1	-1,184.5	924.0	859.0	64.98	14.220					
13,100.0	10,300.0	15,153.1	11,221.3	44.1	36.8	-179.85	3,606.9	-1,182.1	921.6	855.6	65.94	13.977					
13,200.0	10,300.0	15,244.2	11,219.6	44.8	37.5	179.99	3,697.9	-1,179.8	919.7	852.7	66.99	13.730					
13,300.0	10,300.0	15,339.4	11,218.6	45.5	38.3	179.87	3,793.1	-1,178.2	918.7	850.7	68.00	13.510					
13,400.0	10,300.0	15,463.2	11,216.5	46.2	39.3	179.81	3,916.8	-1,177.7	917.1	848.4	68.76	13.339					
13,500.0	10,300.0	15,574.8	11,211.4	46.9	40.2	179.74	4,028.3	-1,177.0	912.5	842.9	69.62	13.107					
13,600.0	10,300.0	15,651.7	11,208.6	47.6	40.8	179.64	4,105.1	-1,175.8	908.8	838.0	70.84	12.829					
13,700.0	10,300.0	15,748.3	11,207.1	48.4	41.5	179.54	4,201.7	-1,174.6	907.3	835.4	71.88	12.622					
13,800.0	10,300.0	15,841.4	11,205.5	49.1	42.3	179.45	4,294.8	-1,173.6	905.6	832.7	72.96	12.413					
13,847.1	10,300.0	15,878.7	11,205.3	49.5	42.6	179.44	4,332.1	-1,173.5	905.3	831.8	73.51	12.315					
13,900.0	10,300.0	15,915.9	11,205.6	49.9	42.9	179.43	4,369.3	-1,173.4	905.8	831.6	74.17	12.212					
14,000.0	10,300.0	16,001.1	11,208.2	50.7	43.6	179.40	4,454.4	-1,173.2	908.8	833.5	75.30	12.069					
14,100.0	10,300.0	16,108.3	11,211.5	51.4	44.4	179.42	4,561.7	-1,174.0	911.9	835.6	76.25	11.959					
14,200.0	10,300.0	16,187.8	11,214.0	52.2	45.1	179.54	4,641.1	-1,176.2	915.2	837.8	77.36	11.830					
14,300.0	10,300.0	16,266.2	11,219.0	53.0	45.7	179.78	4,719.2	-1,180.2	921.4	843.0	78.40	11.752					
14,400.0	10,300.0	16,421.7	11,227.5	53.8	47.0	179.95	4,874.4	-1,183.6	927.6	848.5	79.07	11.730					
14,500.0	10,300.0	16,529.8	11,228.8	54.6	47.9	179.84	4,982.4	-1,182.2	928.8	848.8	80.09	11.598					
14,600.0	10,300.0	16,661.5	11,227.2	55.5	49.0	179.62	5,114.1	-1,179.1	927.7	846.7	80.94	11.461					
14,700.0	10,300.0	16,767.0	11,222.9	56.3	49.8	179.48	5,219.5	-1,177.3	923.6	841.6	81.99	11.265					
14,800.0	10,300.0	16,858.0	11,219.7	57.1	50.6	179.39	5,310.4	-1,176.2	920.2	837.0	83.17	11.064					
14,900.0	10,300.0	16,934.8	11,218.8	57.9	51.2	179.33	5,387.2	-1,175.6	918.9	834.4	84.46	10.879					
14,916.4	10,300.0	16,949.0	11,218.8	58.1	51.3	179.33	5,401.4	-1,175.6	918.9	834.2	84.66	10.854					
15,000.0	10,300.0	17,015.5	11,219.5	58.8	51.9	179.34	5,467.9	-1,176.0	919.7	834.0	85.67	10.735					
15,100.0	10,300.0	17,107.2	11,221.8	59.6	52.6	179.43	5,559.5	-1,177.7	922.2	835.4	86.77	10.629					
15,200.0	10,300.0	17,197.0	11,224.7	60.4	53.4	179.53	5,649.3	-1,179.6	925.4	837.6	87.86	10.533					
15,300.0	10,300.0	17,328.2	11,228.2	61.3	54.5	179.68	5,780.4	-1,182.5	928.2	839.6	88.68	10.468					
15,400.0	10,300.0	17,416.6	11,229.5	62.1	55.2	179.74	5,868.8	-1,183.8	929.7	839.8	89.82	10.350					
15,500.0	10,300.0	17,512.4	11,231.7	63.0	56.0	179.88	5,964.5	-1,186.5	932.0	841.1	90.88	10.255					
15,600.0	10,300.0	17,619.8	11,232.9	63.9	56.9	179.97	6,071.9	-1,188.3	933.0	841.1	91.89	10.153					
15,700.0	10,300.0	17,720.1	11,235.1	64.7	57.7	-179.98	6,172.2	-1,189.6	935.2	842.3	92.97	10.060					
15,800.0	10,300.0	17,867.7	11,233.0	65.6	58.9	179.79	6,319.6	-1,186.3	933.7	839.9	93.76	9.958					
15,900.0	10,300.0	17,963.7	11,229.7	66.5	59.7	179.62	6,415.5	-1,184.0	930.2	835.2	94.98	9.794					
16,000.0	10,300.0	18,059.0	11,226.7	67.3	60.5	179.55	6,510.9	-1,183.1	927.1	830.9	96.17	9.640					
16,100.0	10,300.0	18,145.2	11,224.8	68.2	61.3	179.56	6,597.0	-1,183.7	924.9	827.5	97.41	9.495					
16,150.0	10,300.0	18,183.2	11,224.6	68.7	61.6	179.60	6,635.0	-1,184.5	924.6	826.5	98.05	9.429					
16,200.0	10,300.0	18,232.1	11,224.8	69.1	62.0	179.68	6,683.9	-1,185.9	924.9	826.3	98.59	9.381					
16,300.0	10,300.0	18,380.8	11,220.0	70.0	63.2	179.69	6,832.5	-1,186.6	921.2	822.0	99.23	9.284					
16,400.0	10,300.0	18,451.0	11,217.2	70.9	63.8	179.67	6,902.6	-1,186.6	917.4	816.7	100.70	9.110					
16,452.6	10,300.0	18,486.0	11,216.9	71.3	64.1	179.66	6,937.6	-1,186.6	916.9	815.4	101.46	9.037					
16,500.0	10,300.0	18,533.4	11,216.9	71.7	64.5	179.64	6,985.0	-1,186.4	917.0	815.0	102.01	8.989					
16,600.0	10,300.0	18,651.6	11,216.0	72.6	65.5	179.43	7,103.2	-1,183.6	916.3	813.2	103.07	8.890					
16,700.0	10,300.0	18,737.2	11,214.7	73.5	66.2	179.24	7,188.7	-1,180.9	914.8	810.4	104.43	8.760					
16,713.4	10,300.0	18,747.9	11,214.7	73.6	66.3	179.22	7,199.5	-1,180.5	914.8	810.1	104.62	8.744					
16,800.0	10,300.0	18,804.7	11,215.4	74.4	66.8	179.12	7,256.2	-1,179.1	916.0	810.1	105.87	8.652					
16,900.0	10,300.0	18,899.4	11,219.8	75.3	67.6	179.08	7,350.8	-1,178.7	920.6	813.5	107.08	8.597					
17,000.0	10,300.0	19,023.4	11,222.4	76.2	68.6	179.10	7,474.7	-1,179.4	922.6	814.5	108.07	8.536					
17,100.0	10,300.0	19,152.2	11,220.6	77.1	69.7	179.08	7,603.6	-1,179.8	920.9	811.9	108.99	8.449					
17,176.3	10,300.0	19,210.0	11,220.0	77.8	70.2	179.12	7,661.3	-1,180.5	920.2	810.1	110.02	8.363					
17,200.0	10,300.0	19,227.3	11,220.1	78.0	70.4	179.14	7,678.6	-1,180.9	920.2	809.9	110.34	8.340					
17,300.0	10,300.0	19,305.9	11,221.7	78.9	71.0	179.21	7,757.2	-1,182.3	922.2	810.6	111.60	8.264					
17,400.0	10,300.0	19,436.1	11,223.6	79.8	72.1	179.39	7,887.3	-1,185.7	923.7	811.3	112.46	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 521H
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 521H	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, 385-r.5 MWD+IFR1+SAG+FDIR, 7662-r.5 MWD+IFR1+SAG+FDIR														Rule Assigned:		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)							
17,500.0	10,300.0	19,561.1	11,221.5	80.7	73.2	179.58	8,012.2	-1,189.3	921.9	808.6	113.28	8.139					
17,569.8	10,300.0	19,603.7	11,220.7	81.3	73.5	179.61	8,054.8	-1,189.9	920.7	806.3	114.35	8.051					
17,600.0	10,300.0	19,619.5	11,220.8	81.6	73.7	179.64	8,070.6	-1,190.4	920.9	806.1	114.81	8.021					
17,700.0	10,300.0	19,680.6	11,223.4	82.5	74.2	179.80	8,131.5	-1,193.2	925.0	808.9	116.10	7.967					
17,800.0	10,300.0	19,783.5	11,229.1	83.4	75.1	179.94	8,234.3	-1,195.8	930.5	813.3	117.20	7.940					
17,900.0	10,300.0	19,918.0	11,235.3	84.3	76.2	-179.96	8,368.6	-1,198.0	935.4	817.3	118.16	7.917					
18,000.0	10,300.0	20,022.4	11,236.6	85.3	77.1	-179.97	8,473.0	-1,198.1	936.7	817.4	119.30	7.852					
18,100.0	10,300.0	20,144.4	11,236.7	86.2	78.1	179.90	8,595.0	-1,196.5	936.8	816.4	120.35	7.784					
18,200.0	10,300.0	20,260.7	11,234.4	87.1	79.1	179.70	8,711.2	-1,193.7	934.8	813.3	121.45	7.696					
18,300.0	10,300.0	20,398.1	11,227.9	88.0	80.3	179.37	8,848.4	-1,188.9	930.2	807.9	122.30	7.606					
18,400.0	10,300.0	20,502.6	11,219.9	88.9	81.1	179.06	8,952.5	-1,184.4	922.5	798.9	123.55	7.466					
18,500.0	10,300.0	20,577.1	11,215.3	89.8	81.8	178.87	9,026.7	-1,181.7	916.5	791.3	125.19	7.321					
18,600.0	10,300.0	20,652.0	11,213.4	90.8	82.4	178.74	9,101.6	-1,180.0	913.7	787.0	126.73	7.210					
18,700.0	10,300.0	20,736.5	11,213.0	91.7	83.1	178.65	9,186.1	-1,178.8	913.3	785.2	128.10	7.129					
18,714.4	10,300.0	20,749.7	11,213.0	91.8	83.2	178.63	9,199.3	-1,178.6	913.3	785.0	128.29	7.119					
18,800.0	10,300.0	20,825.5	11,213.4	92.6	83.9	178.56	9,275.1	-1,177.8	913.7	784.3	129.41	7.061					
18,900.0	10,300.0	20,909.0	11,215.0	93.5	84.6	178.54	9,358.5	-1,177.7	915.7	785.0	130.70	7.006					
19,000.0	10,300.0	21,021.7	11,217.6	94.4	85.5	178.57	9,471.3	-1,178.5	918.0	786.2	131.80	6.965					
19,100.0	10,300.0	21,111.5	11,219.6	95.4	86.3	178.62	9,561.0	-1,179.6	920.2	787.2	133.02	6.918					
19,200.0	10,300.0	21,258.7	11,220.0	96.3	87.5	178.70	9,708.2	-1,181.5	920.5	786.7	133.79	6.880					
19,300.0	10,300.0	21,341.8	11,218.0	97.2	88.2	178.72	9,791.2	-1,182.1	918.3	783.1	135.15	6.795					
19,319.8	10,300.0	21,355.4	11,218.0	97.4	88.4	178.73	9,804.9	-1,182.3	918.2	782.8	135.43	6.780					
19,400.0	10,300.0	21,432.4	11,218.5	98.1	89.0	178.83	9,881.8	-1,184.1	918.7	782.3	136.36	6.737					
19,500.0	10,300.0	21,531.6	11,218.7	99.1	89.9	178.97	9,980.9	-1,186.8	918.9	781.4	137.49	6.684					
19,600.0	10,300.0	21,645.6	11,218.7	100.0	90.8	179.15	10,094.9	-1,190.1	918.9	780.4	138.47	6.636					
19,700.0	10,300.0	21,749.5	11,217.2	100.9	91.7	179.31	10,198.8	-1,193.0	917.4	777.9	139.54	6.575					
19,800.0	10,300.0	21,839.8	11,216.5	101.9	92.5	179.46	10,289.0	-1,195.9	916.6	775.8	140.74	6.512					
19,900.0	10,300.0	21,944.2	11,215.8	102.8	93.4	179.67	10,393.4	-1,199.7	915.9	774.1	141.79	6.459					
20,000.0	10,300.0	22,036.4	11,215.0	103.7	94.2	179.83	10,485.5	-1,202.5	915.0	772.0	142.98	6.399					
20,004.4	10,300.0	22,039.6	11,215.0	103.8	94.2	179.83	10,488.7	-1,202.6	915.0	771.9	143.05	6.396					
20,100.0	10,300.0	22,113.3	11,216.1	104.6	94.8	179.98	10,562.4	-1,205.2	916.4	772.1	144.27	6.352					
20,200.0	10,300.0	22,213.7	11,218.4	105.6	95.7	-179.86	10,662.7	-1,208.1	918.7	773.3	145.39	6.319					
20,300.0	10,300.0	22,307.2	11,221.1	106.5	96.5	-179.76	10,756.1	-1,210.1	921.6	775.0	146.57	6.287					
20,400.0	10,300.0	22,436.3	11,224.1	107.4	97.6	-179.73	10,885.1	-1,211.0	924.1	776.5	147.59	6.262					
20,500.0	10,300.0	22,568.9	11,221.2	108.4	98.7	-179.95	11,017.7	-1,208.0	921.8	773.3	148.55	6.205					
20,600.0	10,300.0	22,667.2	11,217.6	109.3	99.5	179.88	11,116.0	-1,205.7	918.2	768.3	149.85	6.127					
20,700.0	10,300.0	22,758.3	11,215.2	110.3	100.3	179.72	11,206.9	-1,203.4	915.5	764.2	151.24	6.053					
20,800.0	10,300.0	22,859.1	11,212.6	111.2	101.2	179.53	11,307.6	-1,200.7	912.9	760.4	152.54	5.985					
20,900.0	10,300.0	22,964.4	11,209.9	112.1	102.1	179.36	11,413.0	-1,198.4	910.4	756.7	153.76	5.921					
21,000.0	10,300.0	23,070.8	11,206.0	113.1	103.0	179.13	11,519.2	-1,195.3	906.8	751.8	155.00	5.850					
21,100.0	10,300.0	23,174.3	11,201.9	114.0	103.9	178.90	11,622.6	-1,192.1	902.9	746.6	156.28	5.777					
21,200.0	10,300.0	23,260.4	11,198.8	114.9	104.6	178.77	11,708.6	-1,190.5	899.4	741.6	157.74	5.702					
21,300.0	10,300.0	23,347.1	11,197.2	115.9	105.3	178.74	11,795.3	-1,190.3	897.5	738.4	159.11	5.641					
21,400.0	10,300.0	23,441.6	11,196.5	116.8	106.2	178.73	11,889.8	-1,190.5	896.8	736.4	160.38	5.591					
21,439.5	10,300.0	23,476.4	11,196.4	117.2	106.5	178.69	11,924.6	-1,190.1	896.6	735.7	160.92	5.572					
21,500.0	10,300.0	23,525.1	11,196.7	117.8	106.9	178.64	11,973.2	-1,189.4	897.0	735.2	161.77	5.545					
21,600.0	10,300.0	23,622.6	11,198.3	118.7	107.7	178.48	12,070.8	-1,187.2	898.8	735.7	163.08	5.511					
21,700.0	10,300.0	23,753.7	11,198.2	119.6	108.8	178.09	12,201.7	-1,181.7	898.8	734.6	164.26	5.472					
21,800.0	10,300.0	23,860.6	11,194.8	120.6	109.7	177.61	12,308.3	-1,174.6	895.9	730.2	165.69	5.407					
21,900.0	10,300.0	23,948.8	11,193.2	121.5	110.5	177.37	12,396.5	-1,171.3	894.2	727.1	167.18	5.349					
22,000.0	10,300.0	24,043.6	11,192.0	122.5	111.3	177.26	12,491.3	-1,170.0	893.0	724.5	168.51	5.299					

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 521H
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 521H	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, 385-r.5 MWD+IFR1+SAG+FDIR, 7662-r.5 MWD+IFR1+SAG+FDIR													Offset Well Error:	0.0 usft
Reference:													Rule Assigned:	
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		
22,032.5	10,300.0	24,070.0	11,191.9	122.8	111.5	177.28	12,517.6	-1,170.4	892.9	724.0	168.95	5.285		
22,100.0	10,300.0	24,126.0	11,192.4	123.4	112.0	177.40	12,573.5	-1,172.4	893.4	723.6	169.78	5.262		
22,200.0	10,300.0	24,216.1	11,194.4	124.4	112.8	177.70	12,663.5	-1,177.4	895.4	724.6	170.87	5.241		
22,300.0	10,300.0	24,316.6	11,196.9	125.3	113.6	178.09	12,763.7	-1,183.8	897.7	725.8	171.86	5.223		
22,400.0	10,300.0	24,408.3	11,199.6	126.2	114.4	178.40	12,855.3	-1,188.9	900.4	727.5	172.93	5.207		
22,500.0	10,300.0	24,504.6	11,203.3	127.2	115.2	178.73	12,951.4	-1,194.3	904.2	730.2	173.98	5.197		
22,600.0	10,300.0	24,615.1	11,207.0	128.1	116.2	179.04	13,061.7	-1,199.6	907.4	732.4	175.00	5.185		
22,700.0	10,300.0	24,727.1	11,209.2	129.1	117.1	179.31	13,173.6	-1,204.2	909.3	733.3	176.02	5.166		
22,800.0	10,300.0	24,806.1	11,211.0	130.0	117.8	179.51	13,252.5	-1,207.6	911.6	734.4	177.23	5.144		
22,900.0	10,300.0	24,910.4	11,214.9	131.0	118.7	179.86	13,356.5	-1,213.6	915.3	737.0	178.26	5.135		
22,973.3	10,300.0	24,978.4	11,217.2	131.7	119.3	-179.89	13,424.4	-1,218.0	917.9	738.8	179.04	5.126 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 521H
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 521H	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: 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													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	39.7	-0.3	0.0	0.1	168.74	-150.5	30.0	153.5	152.8	0.67	227.809		
100.0	100.0	139.0	99.0	1.2	0.4	169.00	-151.1	29.4	153.9	151.7	2.27	67.898		
200.0	200.0	238.4	198.4	1.7	0.6	169.09	-152.1	29.3	154.9	151.9	3.01	51.399		
300.0	300.0	337.9	297.9	2.1	0.8	169.18	-153.4	29.3	156.1	152.5	3.60	43.336		
400.0	400.0	437.9	397.9	2.4	1.0	169.12	-154.7	29.7	157.5	153.4	4.13	38.150		
500.0	500.0	538.4	498.4	2.7	1.1	169.16	-155.9	29.9	158.8	154.2	4.60	34.504		
600.0	600.0	639.0	599.0	3.0	1.3	169.14	-156.7	30.1	159.6	154.5	5.03	31.704		
700.0	700.0	739.5	699.4	3.2	1.4	169.17	-157.2	30.1	160.1	154.6	5.43	29.461		
800.0	800.0	843.7	803.7	3.5	1.5	169.09	-156.1	30.1	159.1	153.3	5.78	27.506		
900.0	900.0	944.0	904.0	3.7	1.6	168.97	-153.5	29.9	156.4	150.3	6.11	25.616		
1,000.0	1,000.0	1,045.2	1,005.1	3.9	1.7	168.71	-150.5	30.0	153.5	147.1	6.42	23.904		
1,100.0	1,100.0	1,142.5	1,102.3	4.1	1.8	168.56	-147.7	29.9	150.8	144.0	6.73	22.400		
1,200.0	1,200.0	1,241.7	1,201.5	4.3	1.9	168.70	-146.8	29.3	149.7	142.6	7.03	21.296		
1,300.0	1,300.0	1,341.7	1,301.6	4.5	2.0	168.89	-145.8	28.6	148.6	141.3	7.32	20.305		
1,400.0	1,400.0	1,441.6	1,401.4	4.7	2.1	169.10	-145.0	27.9	147.6	140.0	7.60	19.415		
1,500.0	1,500.0	1,541.3	1,501.1	4.8	2.2	169.33	-144.2	27.2	146.8	138.9	7.88	18.623		
1,527.5	1,527.5	1,568.7	1,528.5	4.9	2.2	-133.07	-144.1	26.9	146.7	138.7	7.97	18.410	CC, ES	
1,600.0	1,600.0	1,639.1	1,598.9	5.1	2.3	-133.28	-144.0	26.3	147.6	139.4	8.20	17.990		
1,700.0	1,699.8	1,738.6	1,698.4	5.4	2.3	-134.44	-145.1	26.0	152.2	143.7	8.51	17.894	SF	
1,800.0	1,799.5	1,838.0	1,797.8	5.6	2.4	-136.27	-146.2	25.4	159.4	150.5	8.83	18.040		
1,900.0	1,898.7	1,937.0	1,896.7	5.9	2.5	-138.58	-147.6	24.5	169.5	160.3	9.20	18.430		
2,000.0	1,997.5	2,035.9	1,995.7	6.3	2.5	-141.25	-149.0	23.6	182.6	173.0	9.60	19.027		
2,100.0	2,095.6	2,134.2	2,094.0	6.6	2.6	-144.14	-150.3	22.8	198.8	188.7	10.04	19.797		
2,200.0	2,193.1	2,232.6	2,192.3	7.0	2.7	-147.08	-151.2	21.9	218.0	207.5	10.53	20.706		
2,216.9	2,209.5	2,248.8	2,208.5	7.0	2.7	-147.56	-151.4	21.7	221.6	211.0	10.59	20.926		
2,300.0	2,290.0	2,328.5	2,288.2	7.2	2.8	-149.87	-152.3	20.9	239.9	228.9	10.96	21.876		
2,400.0	2,386.8	2,425.9	2,385.6	7.6	2.9	-152.24	-153.7	19.9	262.4	251.0	11.44	22.941		
2,500.0	2,483.7	2,528.0	2,487.7	7.9	3.0	-154.10	-154.8	17.3	284.2	272.2	11.94	23.796		
2,600.0	2,580.6	2,629.6	2,589.1	8.3	3.1	-155.32	-155.5	12.2	304.7	292.2	12.46	24.454		
2,700.0	2,677.5	2,724.4	2,683.7	8.6	3.2	-156.17	-156.3	6.6	324.8	311.8	12.97	25.037		
2,800.0	2,774.4	2,814.9	2,774.1	9.0	3.3	-156.75	-158.6	1.4	346.5	333.0	13.48	25.699		
2,900.0	2,871.3	2,904.0	2,862.9	9.4	3.4	-156.97	-163.5	-4.1	370.3	356.4	13.98	26.485		
3,000.0	2,968.1	3,008.3	2,966.5	9.8	3.6	-156.80	-171.6	-12.2	395.1	380.6	14.54	27.171		
3,100.0	3,065.0	3,109.1	3,066.7	10.2	3.7	-156.54	-178.3	-21.7	418.0	402.9	15.10	27.686		
3,200.0	3,161.9	3,225.2	3,182.0	10.6	3.9	-156.32	-182.9	-34.5	437.7	422.0	15.71	27.856		
3,300.0	3,258.8	3,331.0	3,287.1	11.1	4.0	-156.42	-183.0	-46.2	454.4	438.1	16.32	27.850		
3,400.0	3,355.7	3,425.0	3,380.6	11.5	4.1	-156.60	-183.0	-55.8	471.6	454.7	16.90	27.906		
3,500.0	3,452.6	3,519.8	3,475.0	11.9	4.3	-156.75	-183.8	-65.1	489.6	472.1	17.49	27.998		
3,600.0	3,549.5	3,617.4	3,572.1	12.4	4.4	-156.85	-185.1	-74.6	508.1	490.0	18.09	28.085		
3,700.0	3,646.3	3,712.6	3,666.8	12.8	4.6	-156.97	-186.4	-83.8	526.6	507.9	18.69	28.176		
3,800.0	3,743.2	3,825.4	3,779.1	13.2	4.8	-157.08	-187.9	-94.9	545.1	525.8	19.36	28.153		
3,900.0	3,840.1	3,929.6	3,882.2	13.7	4.9	-156.74	-189.4	-109.9	561.0	541.1	19.98	28.075		
4,000.0	3,937.0	4,011.3	3,962.6	14.1	5.1	-156.19	-192.6	-124.1	577.5	556.9	20.51	28.153		
4,100.0	4,033.9	4,102.1	4,051.5	14.6	5.2	-155.32	-199.6	-140.9	596.2	575.2	21.04	28.332		
4,200.0	4,130.8	4,195.7	4,142.9	15.1	5.4	-154.33	-208.8	-158.8	616.6	595.0	21.57	28.583		
4,300.0	4,227.7	4,294.7	4,239.5	15.5	5.6	-153.34	-218.6	-177.9	637.1	615.0	22.12	28.800		
4,400.0	4,324.5	4,392.8	4,335.5	16.0	5.8	-152.50	-227.4	-196.2	657.4	634.7	22.68	28.990		
4,500.0	4,421.4	4,490.2	4,430.9	16.4	6.0	-151.76	-236.1	-213.8	677.9	654.7	23.23	29.183		
4,600.0	4,518.3	4,589.6	4,528.7	16.9	6.2	-151.22	-243.7	-230.3	698.3	674.5	23.81	29.327		
4,700.0	4,615.2	4,688.7	4,626.0	17.4	6.3	-150.66	-251.3	-247.2	718.5	694.1	24.39	29.463		
4,800.0	4,712.1	4,778.0	4,713.8	17.8	6.5	-150.22	-258.4	-261.9	739.3	714.4	24.92	29.663		

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 521H
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 521H	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													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	4,809.0	4,873.3	4,807.6	18.3	6.7	-149.85	-266.3	-276.4	761.0	735.5	25.49	29.849		
5,000.0	4,905.8	4,970.6	4,903.4	18.8	6.9	-149.47	-274.5	-291.4	782.7	756.7	26.07	30.021		
5,100.0	5,002.7	5,065.6	4,996.9	19.3	7.1	-149.11	-282.8	-306.1	804.7	778.0	26.64	30.205		
5,200.0	5,099.6	5,161.9	5,091.6	19.7	7.2	-148.75	-291.4	-321.0	827.0	799.7	27.21	30.387		
5,300.0	5,196.5	5,265.2	5,193.4	20.2	7.4	-148.42	-300.3	-336.8	849.0	821.1	27.83	30.508		
5,400.0	5,293.4	5,375.1	5,301.7	20.7	7.7	-148.12	-308.6	-353.5	870.1	841.7	28.48	30.557		
5,500.0	5,390.3	5,489.8	5,414.5	21.1	7.9	-147.74	-315.3	-373.3	888.9	859.8	29.13	30.512		
5,600.0	5,487.2	5,586.3	5,509.3	21.6	8.1	-147.41	-320.9	-390.4	907.5	877.8	29.71	30.543		
5,700.0	5,584.0	5,686.0	5,607.1	22.1	8.3	-147.06	-326.8	-408.5	926.1	895.8	30.30	30.565		
5,800.0	5,680.9	5,783.8	5,703.1	22.6	8.5	-146.68	-332.8	-426.8	944.6	913.7	30.87	30.596		
5,900.0	5,777.8	5,870.9	5,788.3	23.1	8.6	-146.34	-338.5	-443.4	963.5	932.1	31.40	30.687		
6,000.0	5,874.7	5,949.0	5,865.1	23.5	8.8	-146.11	-344.8	-456.4	984.5	952.6	31.89	30.873		

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 521H
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 521H	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													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		No-Go Distance (usft)	Separation Factor	Warning			
		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	40.6	0.6	0.0	0.1	158.27	-150.4	59.9	161.9	161.2	0.68	238.217				
100.0	100.0	141.3	101.3	1.2	0.4	158.36	-149.8	59.4	161.1	158.9	2.27	70.907				
200.0	200.0	240.0	200.0	1.7	0.6	158.55	-149.6	58.8	160.8	157.8	3.01	53.403	CC			
204.4	204.4	244.4	204.4	1.7	0.6	158.56	-149.7	58.8	160.8	157.7	3.04	52.955				
300.0	300.0	339.1	299.1	2.1	0.7	158.61	-150.1	58.8	161.2	157.6	3.57	45.137	ES			
400.0	400.0	438.5	398.5	2.4	0.9	158.62	-150.9	59.1	162.1	158.0	4.08	39.733				
500.0	500.0	538.8	498.8	2.7	1.0	158.51	-151.5	59.7	162.9	158.3	4.55	35.759				
600.0	600.0	638.9	598.9	3.0	1.2	158.32	-152.0	60.4	163.6	158.6	4.99	32.794				
700.0	700.0	738.9	698.9	3.2	1.4	158.14	-152.4	61.2	164.3	158.9	5.39	30.479				
800.0	800.0	839.0	799.0	3.5	1.5	158.01	-152.9	61.8	164.9	159.1	5.77	28.588				
900.0	900.0	939.2	899.2	3.7	1.7	157.99	-153.4	62.0	165.4	159.3	6.13	27.002				
1,000.0	1,000.0	1,039.0	999.0	3.9	1.8	158.05	-153.9	62.0	166.0	159.5	6.47	25.662				
1,100.0	1,100.0	1,138.7	1,098.7	4.1	1.9	158.12	-154.7	62.1	166.7	159.9	6.80	24.525				
1,200.0	1,200.0	1,239.0	1,199.0	4.3	2.0	158.22	-155.5	62.1	167.4	160.3	7.12	23.526				
1,300.0	1,300.0	1,338.9	1,298.9	4.5	2.2	158.34	-156.2	62.0	168.0	160.6	7.42	22.639				
1,400.0	1,400.0	1,438.7	1,398.7	4.7	2.3	158.46	-157.0	62.0	168.8	161.1	7.72	21.858				
1,500.0	1,500.0	1,538.6	1,498.6	4.8	2.4	158.61	-157.9	61.8	169.6	161.6	8.01	21.160				
1,600.0	1,600.0	1,639.7	1,599.7	5.1	2.5	-143.93	-158.8	61.5	171.7	163.3	8.37	20.508				
1,700.0	1,699.8	1,743.9	1,703.9	5.4	2.5	-145.00	-157.4	61.1	174.6	165.9	8.68	20.115				
1,800.0	1,799.5	1,842.9	1,802.9	5.6	2.6	-146.62	-155.3	60.6	179.6	170.6	9.00	19.960	SF			
1,900.0	1,898.7	1,942.5	1,902.4	5.9	2.6	-148.60	-153.6	59.9	188.1	178.7	9.36	20.104				
2,000.0	1,997.5	2,041.7	2,001.5	6.3	2.6	-150.85	-151.8	59.1	199.6	189.9	9.75	20.469				
2,100.0	2,095.6	2,140.5	2,100.3	6.6	2.6	-153.14	-150.0	57.9	214.5	204.3	10.19	21.043				
2,200.0	2,193.1	2,238.5	2,198.3	7.0	2.6	-155.46	-148.2	56.7	232.6	222.0	10.67	21.799				
2,216.9	2,209.5	2,255.0	2,214.8	7.0	2.7	-155.86	-147.9	56.5	236.1	225.3	10.73	22.001				
2,300.0	2,290.0	2,335.7	2,295.5	7.2	2.7	-157.86	-146.1	55.9	253.3	242.2	11.09	22.832				
2,400.0	2,386.8	2,431.6	2,391.4	7.6	2.7	-159.93	-144.1	55.3	274.5	262.9	11.55	23.756				
2,500.0	2,483.7	2,521.3	2,481.1	7.9	2.8	-161.49	-143.5	55.2	297.3	285.3	12.02	24.731				
2,600.0	2,580.6	2,619.1	2,578.9	8.3	2.9	-162.75	-144.6	55.0	321.7	309.2	12.53	25.673				
2,700.0	2,677.5	2,716.7	2,676.5	8.6	2.9	-163.88	-145.2	54.8	345.8	332.7	13.06	26.483				
2,800.0	2,774.4	2,813.2	2,773.0	9.0	3.0	-164.90	-145.7	54.8	370.1	356.5	13.60	27.216				
2,900.0	2,871.3	2,908.6	2,868.3	9.4	3.1	-165.79	-146.1	55.0	394.5	380.4	14.15	27.887				
3,000.0	2,968.1	2,996.1	2,955.8	9.8	3.1	-166.39	-148.0	55.3	420.4	405.7	14.67	28.652				
3,100.0	3,065.0	3,082.1	3,041.7	10.2	3.2	-166.71	-152.2	55.8	448.2	433.0	15.19	29.506				
3,200.0	3,161.9	3,163.1	3,122.5	10.6	3.3	-166.78	-158.9	56.6	478.7	463.1	15.68	30.528				
3,300.0	3,258.8	3,247.9	3,206.8	11.1	3.4	-166.70	-168.1	58.1	511.5	495.3	16.19	31.585				
3,400.0	3,355.7	3,336.1	3,294.2	11.5	3.5	-166.51	-179.5	60.0	545.9	529.2	16.73	32.625				
3,500.0	3,452.6	3,424.4	3,381.7	11.9	3.6	-166.42	-191.1	63.1	581.3	564.0	17.28	33.634				
3,600.0	3,549.5	3,513.9	3,470.2	12.4	3.7	-166.33	-203.3	66.6	617.4	599.6	17.85	34.594				
3,700.0	3,646.3	3,612.9	3,568.1	12.8	3.8	-166.10	-218.1	69.5	653.7	635.3	18.48	35.373				
3,800.0	3,743.2	3,708.5	3,662.5	13.2	4.0	-165.71	-233.2	70.2	689.1	670.0	19.09	36.097				
3,900.0	3,840.1	3,803.9	3,756.8	13.7	4.1	-165.46	-247.3	71.5	724.3	704.6	19.71	36.749				
4,000.0	3,937.0	3,899.1	3,851.1	14.1	4.2	-165.32	-260.4	73.5	759.2	738.9	20.33	37.337				
4,100.0	4,033.9	3,991.1	3,942.3	14.6	4.4	-165.26	-272.5	75.9	794.1	773.2	20.95	37.915				
4,200.0	4,130.8	4,082.9	4,033.2	15.1	4.5	-165.22	-284.7	78.7	829.4	807.8	21.56	38.467				
4,300.0	4,227.7	4,178.0	4,127.5	15.5	4.7	-165.23	-296.8	82.1	864.6	842.4	22.20	38.938				
4,400.0	4,324.5	4,286.7	4,235.3	16.0	4.8	-165.32	-309.2	86.3	899.1	876.2	22.94	39.187				
4,500.0	4,421.4	4,449.1	4,397.4	16.4	5.0	-165.71	-318.7	89.7	928.3	904.3	23.99	38.690				
4,600.0	4,518.3	4,548.1	4,496.4	16.9	5.2	-166.04	-321.3	91.0	955.1	930.4	24.67	38.711				
4,700.0	4,615.2	4,666.9	4,615.1	17.4	5.2	-166.51	-321.5	92.2	979.9	954.4	25.43	38.537				

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 521H
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 521H	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													Rule Assigned:		Offset Well Error:	0.0 usft
Measured Reference Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	No-Go Distance (usft)	Separation Factor	Warning		
0.0	0.0	40.7	0.7	0.0	0.1	141.41		-150.3	120.0	192.3	191.7	0.68	282.854			
100.0	100.0	141.3	101.3	1.2	0.4	141.38		-149.8	119.7	191.7	189.4	2.27	84.346			
200.0	200.0	241.0	201.0	1.7	0.6	141.30		-149.1	119.5	191.1	188.1	3.02	63.266			
300.0	300.0	341.3	301.3	2.1	0.8	141.34		-148.8	119.0	190.5	186.9	3.61	52.788			
400.0	400.0	440.5	400.5	2.4	1.0	141.45		-148.6	118.4	190.0	185.9	4.13	46.015			
450.9	450.9	490.9	450.9	2.6	1.0	141.58		-148.8	118.1	190.0	185.6	4.37	43.488			
500.0	500.0	539.9	499.9	2.7	1.1	141.74		-149.2	117.7	190.0	185.4	4.60	41.343			
600.0	600.0	639.9	599.9	3.0	1.3	142.12		-150.0	116.7	190.1	185.1	5.02	37.864			
700.0	700.0	740.0	700.0	3.2	1.4	142.45		-150.7	115.9	190.1	184.7	5.41	35.116			
800.0	800.0	839.9	799.8	3.5	1.5	142.82		-151.5	114.9	190.1	184.4	5.78	32.880			
900.0	900.0	940.4	900.4	3.7	1.7	143.22		-152.3	113.9	190.1	184.0	6.13	30.999			
1,000.0	1,000.0	1,040.5	1,000.5	3.9	1.8	143.58		-152.8	112.7	189.9	183.4	6.47	29.358			
1,037.8	1,037.8	1,077.9	1,037.8	4.0	1.9	143.71		-153.0	112.4	189.8	183.3	6.59	28.812	CC		
1,100.0	1,100.0	1,138.7	1,098.6	4.1	2.0	143.84		-153.4	112.1	190.0	183.2	6.78	28.005	ES		
1,200.0	1,200.0	1,237.3	1,197.3	4.3	2.0	143.49		-153.6	113.7	191.1	184.0	7.07	27.038			
1,300.0	1,300.0	1,337.5	1,297.4	4.5	2.1	142.75		-153.2	116.5	192.5	185.1	7.34	26.220			
1,400.0	1,400.0	1,437.4	1,397.3	4.7	2.1	142.09		-152.9	119.1	193.8	186.2	7.61	25.483			
1,500.0	1,500.0	1,538.7	1,498.6	4.8	2.2	141.41		-152.4	121.6	195.0	187.1	7.87	24.783			
1,600.0	1,600.0	1,641.8	1,601.6	5.1	2.2	-161.62		-151.4	122.7	196.6	188.3	8.23	23.879			
1,700.0	1,699.8	1,741.7	1,701.5	5.4	2.3	-162.41		-150.0	123.1	200.7	192.1	8.60	23.347			
1,800.0	1,799.5	1,841.1	1,800.9	5.6	2.4	-163.43		-148.6	123.6	208.3	199.3	8.98	23.184	SF		
1,900.0	1,898.7	1,940.3	1,900.1	5.9	2.4	-164.59		-147.3	124.1	219.4	210.0	9.40	23.343			
2,000.0	1,997.5	2,039.7	1,999.5	6.3	2.5	-165.79		-146.1	124.3	233.8	223.9	9.84	23.754			
2,100.0	2,095.6	2,130.0	2,089.8	6.6	2.5	-166.88		-145.8	125.2	252.8	242.5	10.30	24.549			
2,200.0	2,193.1	2,216.1	2,175.7	7.0	2.6	-167.74		-148.7	128.3	279.5	268.8	10.76	25.973			
2,216.9	2,209.5	2,229.0	2,188.7	7.0	2.6	-167.84		-149.4	128.9	284.7	273.9	10.81	26.330			
2,300.0	2,290.0	2,305.8	2,265.2	7.2	2.7	-168.50		-154.2	133.0	311.4	300.2	11.16	27.910			
2,400.0	2,386.8	2,397.3	2,356.3	7.6	2.8	-169.14		-160.0	137.8	343.6	332.0	11.59	29.643			
2,500.0	2,483.7	2,483.0	2,441.5	7.9	2.8	-169.63		-167.0	143.9	378.2	366.2	12.03	31.446			
2,600.0	2,580.6	2,579.3	2,537.2	8.3	2.9	-170.07		-175.0	150.8	413.0	400.4	12.53	32.956			
2,700.0	2,677.5	2,668.7	2,626.2	8.6	3.0	-170.50		-182.0	157.5	447.8	434.8	13.02	34.383			
2,800.0	2,774.4	2,749.1	2,705.9	9.0	3.1	-171.13		-187.7	166.5	484.7	471.2	13.49	35.940			
2,900.0	2,871.3	2,837.2	2,792.8	9.4	3.2	-172.15		-192.3	179.7	523.3	509.3	14.01	37.365			
3,000.0	2,968.1	2,932.0	2,886.3	9.8	3.3	-173.38		-194.9	195.2	561.7	547.1	14.58	38.531			
3,100.0	3,065.0	3,023.8	2,976.7	10.2	3.5	-174.47		-197.1	210.6	600.3	585.1	15.14	39.643			
3,200.0	3,161.9	3,113.8	3,065.5	10.6	3.6	-175.39		-199.4	225.6	639.1	623.4	15.71	40.685			
3,300.0	3,258.8	3,203.5	3,153.9	11.1	3.7	-176.18		-202.1	240.6	678.3	662.0	16.28	41.662			
3,400.0	3,355.7	3,290.3	3,239.3	11.5	3.8	-176.91		-204.5	255.6	718.0	701.2	16.84	42.628			
3,500.0	3,452.6	3,378.5	3,325.9	11.9	4.0	-177.73		-205.6	272.2	758.2	740.8	17.42	43.521			
3,600.0	3,549.5	3,464.9	3,410.6	12.4	4.1	-178.45		-207.0	289.0	799.2	781.2	17.99	44.411			
3,700.0	3,646.3	3,553.0	3,497.0	12.8	4.3	-179.09		-209.1	306.2	840.6	822.0	18.59	45.227			
3,800.0	3,743.2	3,645.4	3,587.7	13.2	4.4	-179.66		-211.6	324.1	882.1	862.9	19.21	45.918			
3,900.0	3,840.1	3,746.9	3,687.3	13.7	4.6	179.78		-214.2	343.1	923.2	903.3	19.90	46.390			
4,000.0	3,937.0	3,850.4	3,789.2	14.1	4.8	179.31		-216.6	360.8	962.9	942.3	20.61	46.729			

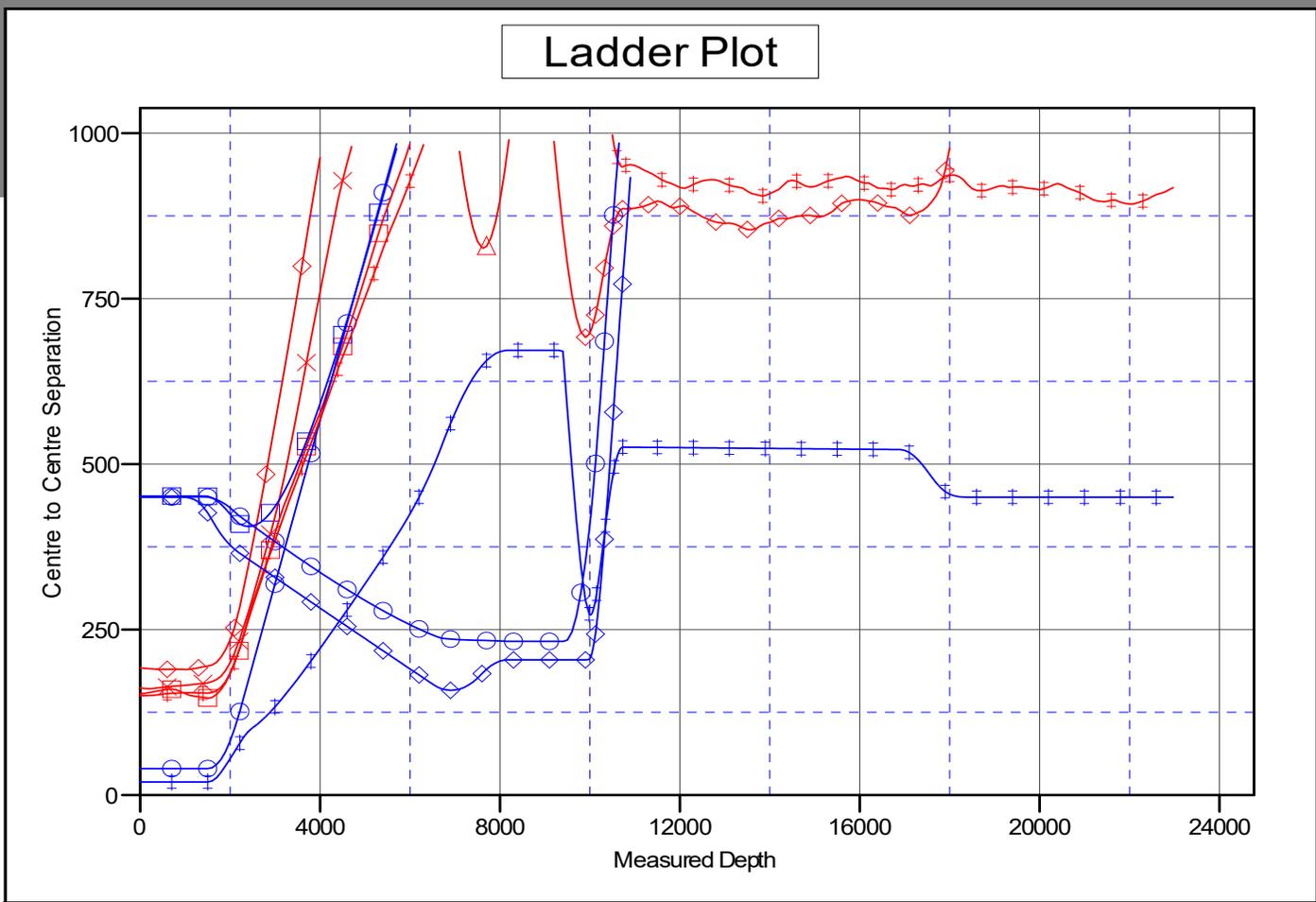
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

ConocoPhillips Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 521H
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 521H	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 521H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.26°



LEGEND

- ▲ ROADRUNNER FEDERAL COM 23 ILL 005H, ST01, AWP V0
▲ THUNDERDOME FED COM 703H, OWB, AWP V0
▲ THUNDERDOME FED COM 811H, OWB, PWP0 V0
▲ THUNDERDOME FED COM 702H, OWB, AWP V0
- _THUNDERDOME FED COM 822H, OWB, PWP0 V0
● THUNDERDOME FED COM 703H, OWB, AWP V0
● THUNDERDOME FED COM 703H, OWB, AWP V0
● FORTY NINER RIDGE UNIT 105H, OWB, AWP V0
- FURY ROAD FED COM 501H, OWB, PWP1 V0
■ FURY ROAD FED COM 502H, OWB, PWP1 V0
■ FURY ROAD FED COM 521H, OWB, PWP1 V0

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

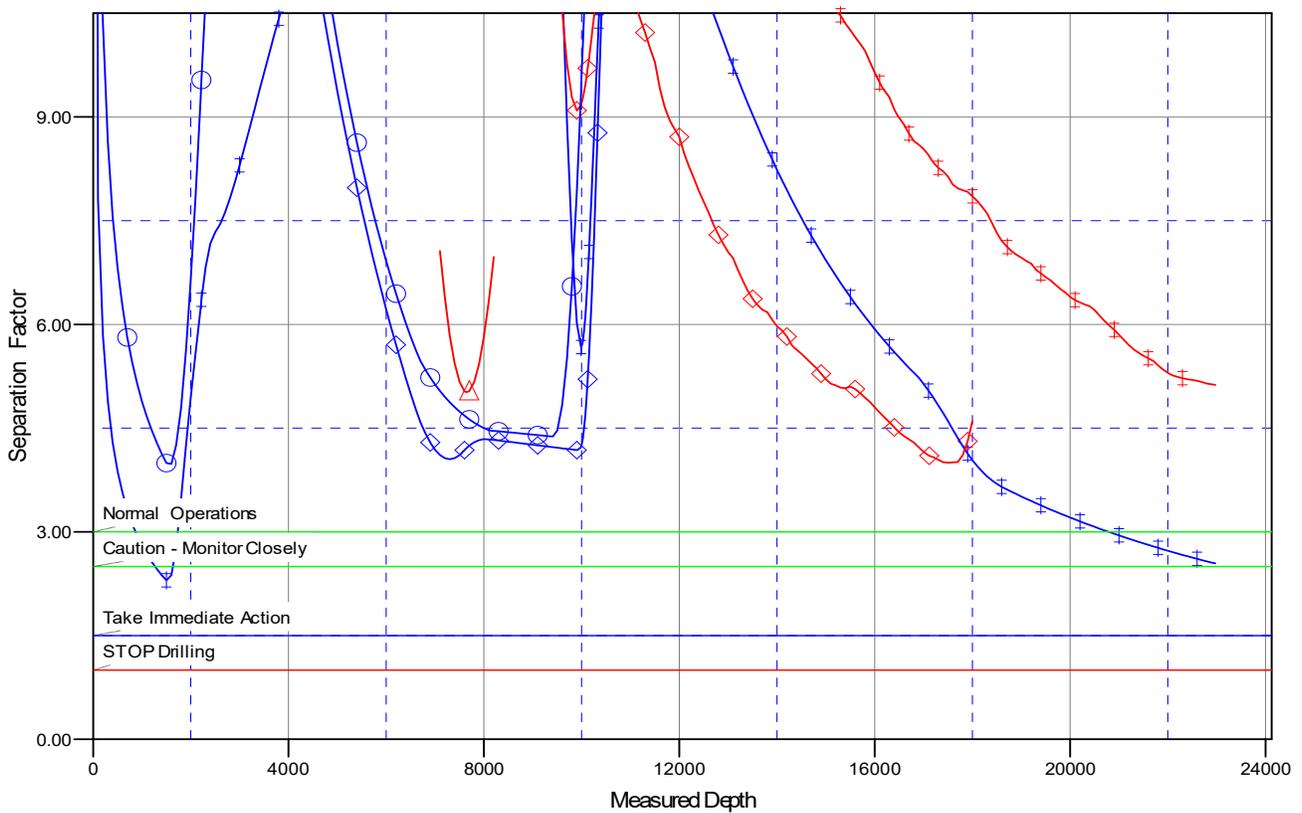
ConocoPhillips Anticollision Report

Company:	DELAWARE BASIN WEST	Local Co-ordinate Reference:	Well _THUNDERDOME FED COM 521H
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 521H	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 521H
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
 Grid Convergence at Surface is: 0.26°

Separation Factor Plot



LEGEND

- ◆ ROADRUNNER FEDERAL COM 23 ILL 025H, ST01, AWP V0
◆ THUNDERDOME FED COM 703H, OWB, AWP V0
◆ THUNDERDOME FED COM 511H, OWB, PWP0 V0
◆ THUNDERDOME FED COM 702H, OWB, AWP V0
- ◆ _THUNDERDOME FED COM 521H, OWB, PWP0 V0
◆ THUNDERDOME FED COM 522H, OWB, PWP0 V0
◆ THUNDERDOME FED COM 704H, OWB, AWP V0
◆ FORTY NINER RIDGE UNIT 105H, OWB, AWP V0
- ◆ FURY ROAD FED COM 501H, OWB, PWP1 V0
◆ FURY ROAD FED COM 502H, OWB, PWP1 V0
◆ FURY ROAD FED COM 521H, OWB, PWP1 V0

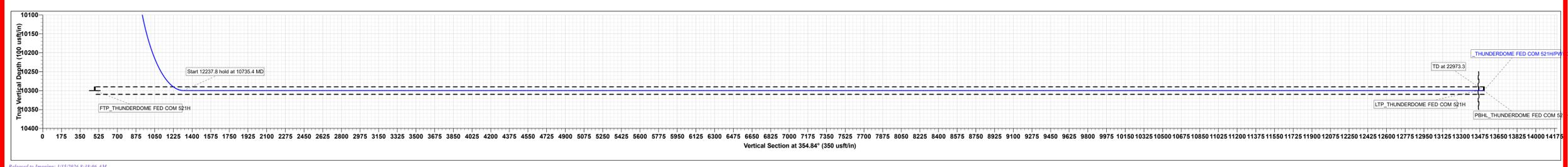
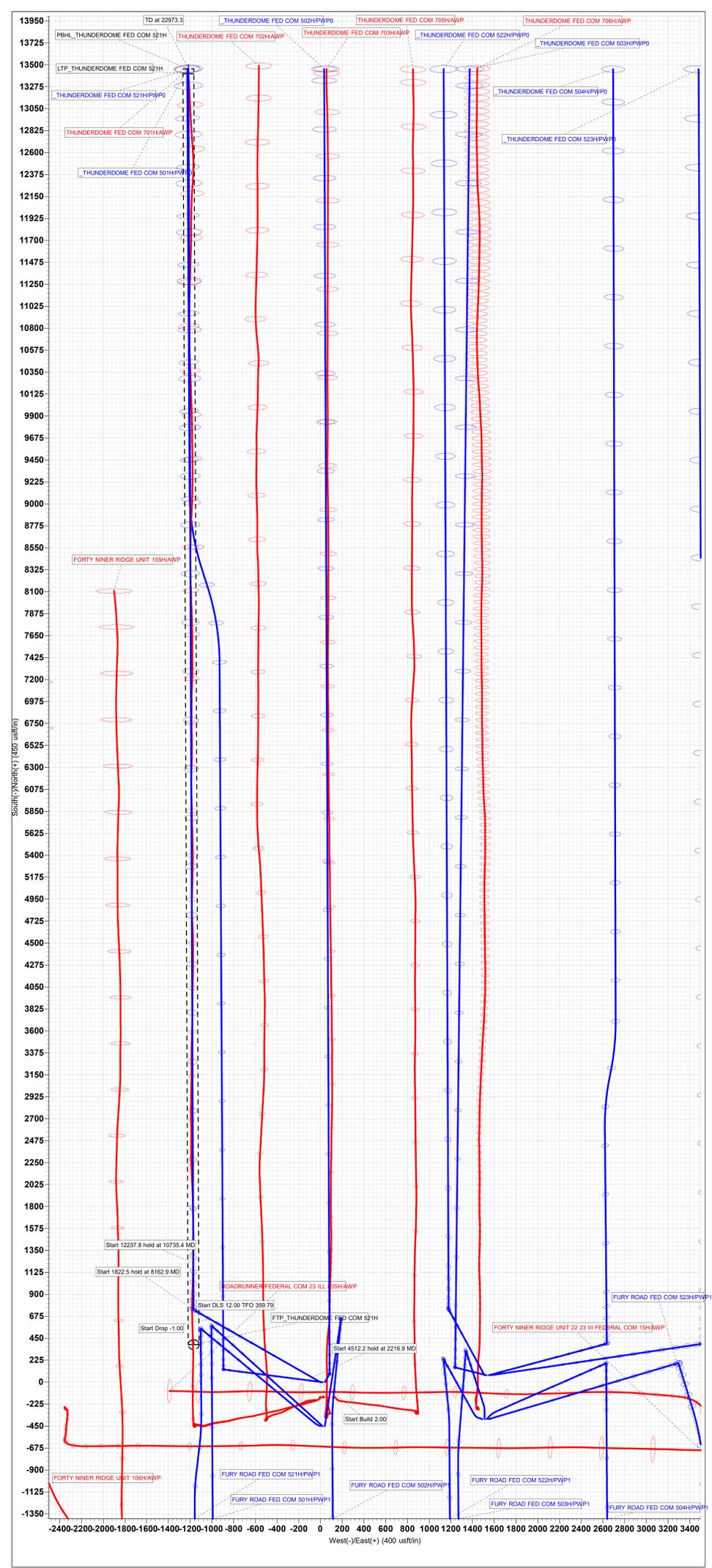
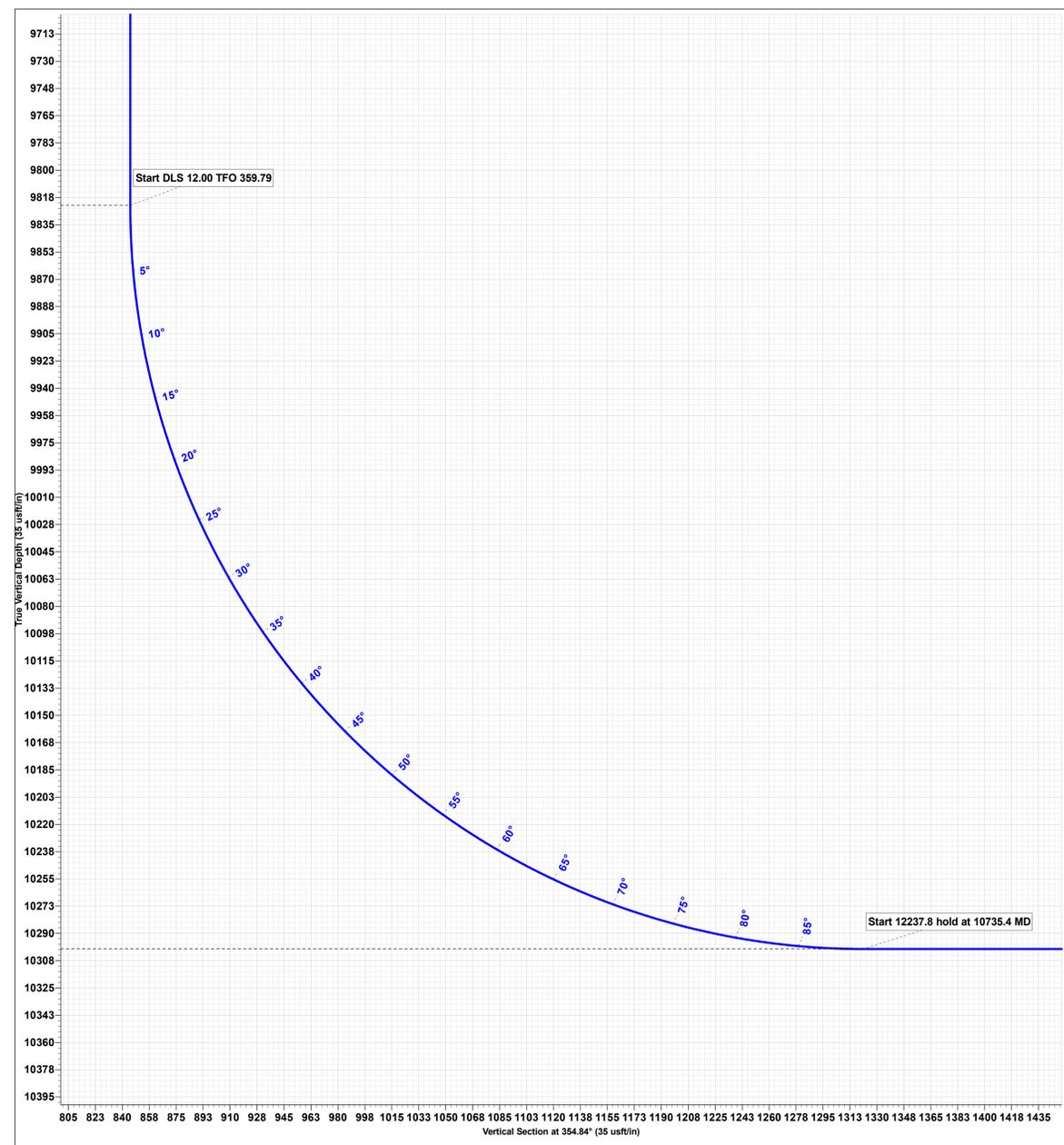
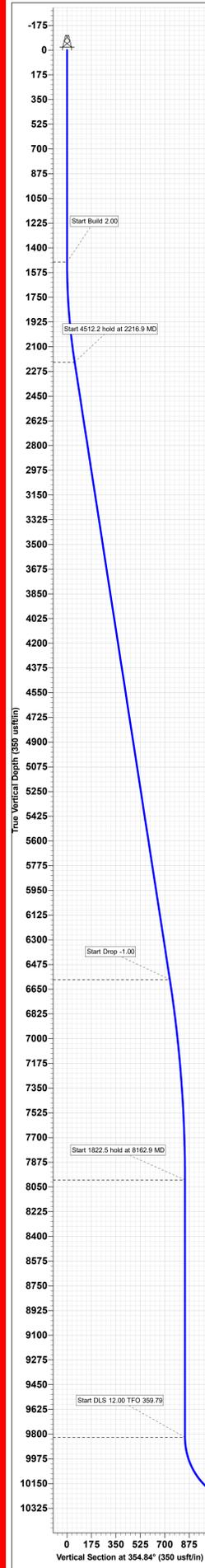
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Project: ATLAS PROSPECT (DBW)
 Site: THUNDERDOME PROJECT
 Well: THUNDERDOME FED COM 521H
 Wellbore: OWB
 Design: PWP0

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0
2216.9	14.34	302.44	2209.5	47.9	-75.3	2.00	302.44	54.5
6729.1	14.34	302.44	6581.1	647.3	-1018.4	0.00	0.00	736.3
8162.9	0.00	0.00	8000.0	743.0	-1169.0	1.00	180.00	845.2
9985.4	0.00	0.00	9822.5	743.0	-1169.0	0.00	0.00	845.2
10735.4	90.00	359.79	10300.0	1220.5	-1170.8	12.00	359.79	1320.9
22973.3	90.00	359.79	10300.0	13458.2	-1216.3	0.00	0.00	13513.1



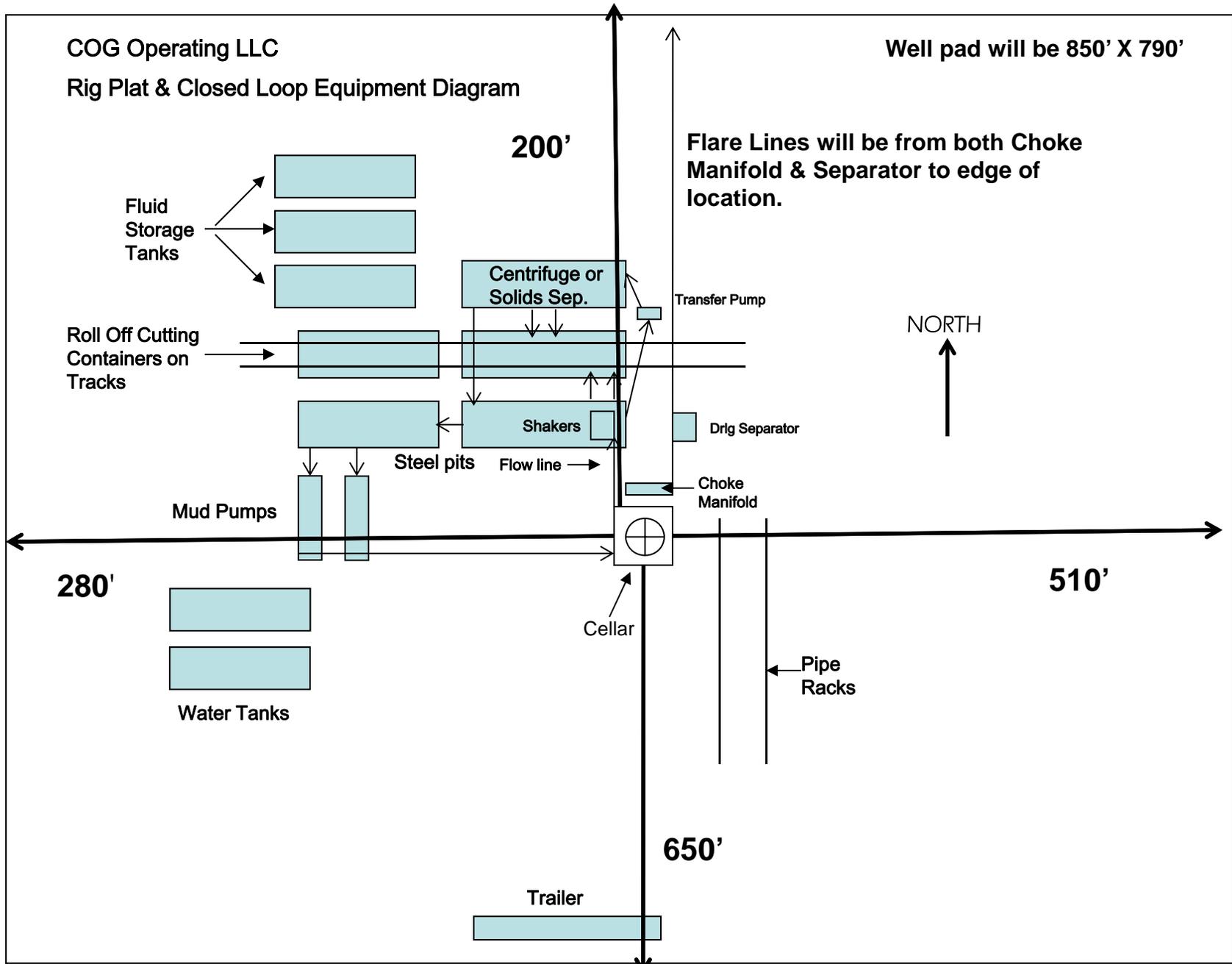


Exhibit 1

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

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

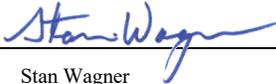
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(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: 09/16/2025
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

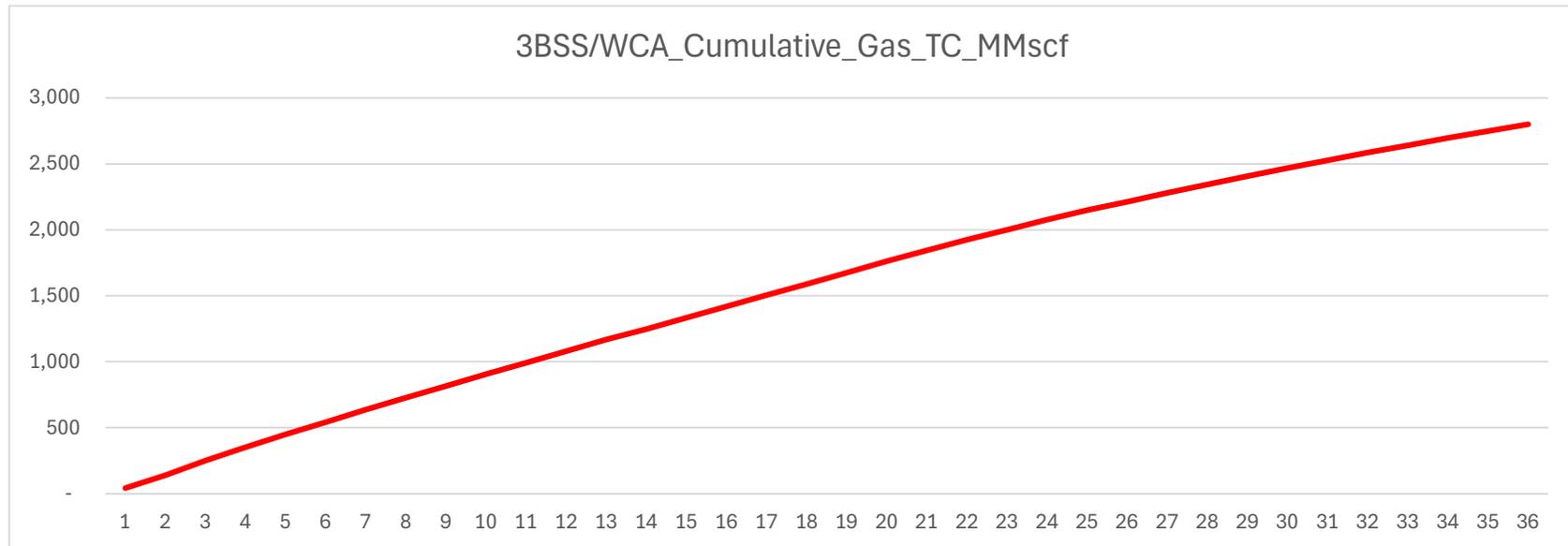
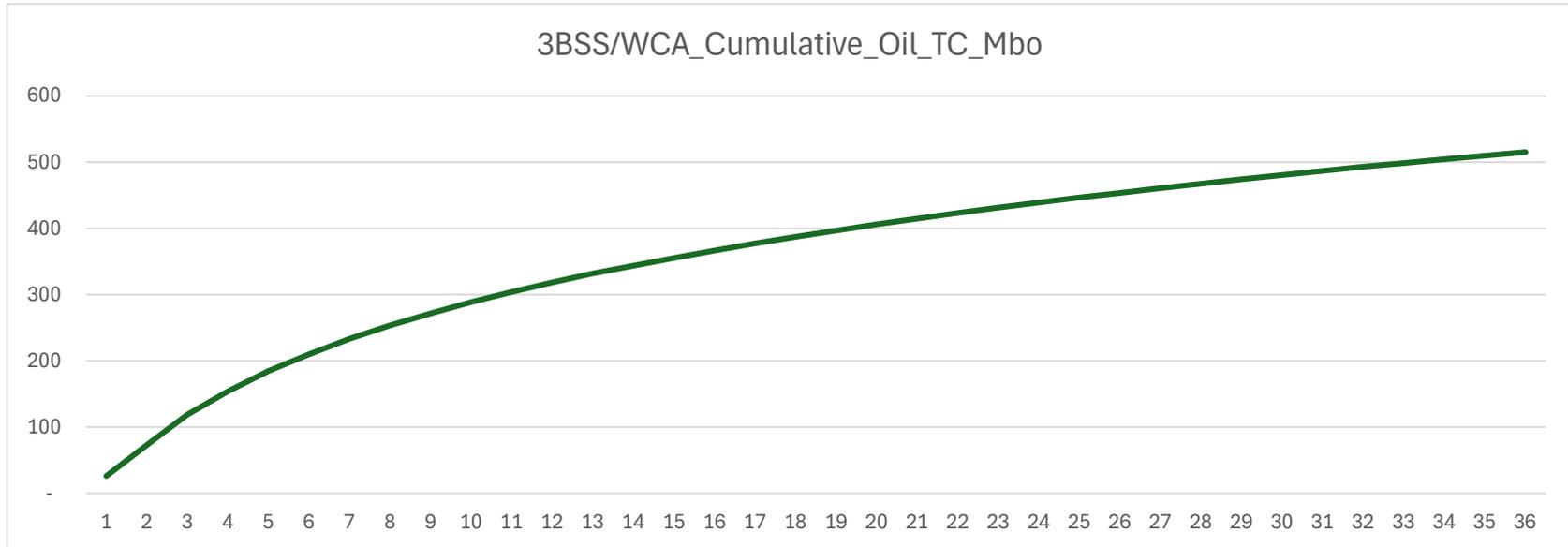
- Operator will curtail or shut in production, within reasonable limits, during upset conditions to minimize venting and flaring.
- When feasible, Operator will use equipment to capture gas that would otherwise be vented or flared.
- During completions and production operations Operator will minimize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



PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CONOCOPHILLIPS COMPANY
WELL NAME & NO.:	THUNDERDOME FED COM 521H
LOCATION:	Section 23, T.23 S., R.30 E., NMP
COUNTY:	Eddy County, New Mexico

COA

H ₂ S	<input type="radio"/> No	<input checked="" type="radio"/> Yes	
Potash / WIPP	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-Q <input type="checkbox"/> Open Annulus 4-String Design: Open 1st Int x 2nd Annulus (ICP 2 below Relief Zone) <input type="checkbox"/> WIPP
Cave / Karst	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High <input type="radio"/> Critical
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both <input type="radio"/> Diverter
Cementing	<input type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input checked="" type="checkbox"/> EchoMeter <input type="checkbox"/> DV Tool
Special Req	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM <input type="checkbox"/> Unit
Waste Prev.	<input type="radio"/> Self-Certification	<input checked="" type="radio"/> Waste Min. Plan	<input type="radio"/> APD Submitted prior to 06/10/2024
Additional Language	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole <input checked="" type="checkbox"/> Break Testing
	<input checked="" type="checkbox"/> Four-String	<input type="checkbox"/> Offline Cementing	<input checked="" type="checkbox"/> Fluid-Filled

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 **200 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **10-3/4** 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.**

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Option 1 (Primary + Post Frac Bradenhead):

- **A monitored open annulus will be incorporated during completion by leaving the Intermediate 2 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 2 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.**
- **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.**

4. 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.

Casing Clearance

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

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

GENERAL REQUIREMENTS

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

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

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](mailto: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 11/19/2025

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 530815

ACKNOWLEDGMENTS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 530815
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

ACKNOWLEDGMENTS

<input checked="" type="checkbox"/>	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 530815

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 530815
	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.	12/1/2025
stanwagner	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	12/1/2025
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	1/15/2026
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	1/15/2026
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.	1/15/2026
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.	1/15/2026
ward.rikala	Operator must comply with all of the R-111-Q requirements.	1/15/2026