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State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

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

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.) 1. Type of Well: Oil Well ☐ Gas Well ☒ Other		WELL API NO. 30-015-55709
2. Name of Operator Permian Resources Operating, LLC		5. Indicate Type of Lease STATE ☒ FEE ☐
3. Address of Operator 300 N. Marienfeld St Ste 1000 Midland, TX 79701		6. State Oil & Gas Lease No.
4. Well Location Unit Letter <u>E</u> : 2233 feet from the North line and 1172 feet from the West line Section 33 Township 21S Range 27E NMPM County Eddy		7. Lease Name or Unit Agreement Name Fred State Com
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3123' GL		8. Well Number 221H
		9. OGRID Number 372165
		10. Pool name or Wildcat Carlsbad; Wolfcamp, East (Gas)

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Permian Resources Operating, LLC requests permission to make the following changes to the original APD: SHL/FTP/LTP/BHL Change, MD/TVD Change, Acreage Change, Defining Well Change

See attachment for details.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Stephanie Rabadue TITLE Regulatory Analyst DATE 11/25/2025

Type or print name Stephanie Rabadue E-mail address: stephanie.rabadue@permianres.com PHONE: 432-695-1115

For State Use Only

APPROVED BY: _____ TITLE _____ DATE _____

Conditions of Approval (if any):

Permian Resources Operating, LLC requests permission to make the following changes to the original APD: SHL/FTP/LTP/BHL Change, MD/TVD Change, Acreage Change, Defining Well Change

SHL: Revised

Change From: 2233'FNL & 1172'FWL, E-33-21S-27E

Change To: 2017'FNL & 1184'FWL, E-33-21S-27E

FTP: Revised

Change From: 330'FNL & 330'FEL, A-32-21S-27E

Change To: 1380'FNL & 100'FEL, H-32-21S-27E

LTP: Revised

Change From: 330'FNL & 330'FWL, E-36-21S-26E

Change To: 1380'FNL & 100'FWL, E-36-21S-26E

BHL: Revised

Change From: 330'FNL & 330'FWL, E-36-21S-26E

Change To: 1380'FNL & 100'FWL, E-36-21S-26E

TVD/MD: Revised

Change From: 8840' TVD / 24,535' MD

Change To: 8840' TVD / 24,299' MD

Acreage: Revised

Change From: 480

Change To: 1908.2

Defining Well: Revised

Change From: Defining

Change To: Infill

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

WELL LOCATION INFORMATION

API Number 30-015-55709	Pool Code 74160	Pool Name Carlsbad; Wolfcamp, East (Gas)
Property Code 335408	Property Name FRED STATE COM	Well Number 221H
OGRID No. 372165	Operator Name PERMIAN RESOURCES OPERATING, LLC	Ground Level Elevation 3,123'
Surface Owner: ☐ State ☒ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☒ Fee ☐ Tribal ☐ Federal

Surface Location

UL E	Section 33	Township 21S	Range 27E	Lot	Ft. from N/S 2,017' FNL	Ft. from E/W 1,184' FWL	Latitude 32.438078°	Longitude -104.199657°	County EDDY
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Bottom Hole Location

UL E	Section 36	Township 21S	Range 26E	Lot	Ft. from N/S 1,380' FNL	Ft. from E/W 100' FWL	Latitude 32.439869°	Longitude -104.254172°	County EDDY
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Dedicated Acres 1,908.20	Infill or Defining Well Infill	Defining Well API 30-015-55714	Overlapping Spacing Unit (Y/N) Y	Consolidation Code C, O
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☒ No	

Kick Off Point (KOP)

UL E	Section 33	Township 21S	Range 27E	Lot	Ft. from N/S 2,017' FNL	Ft. from E/W 1,184' FWL	Latitude 32.438078°	Longitude -104.199657°	County EDDY
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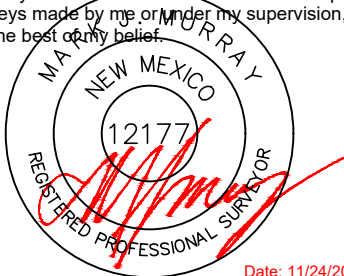
First Take Point (FTP)

UL H	Section 32	Township 21S	Range 27E	Lot	Ft. from N/S 1,380' FNL	Ft. from E/W 100' FEL	Latitude 32.439791°	Longitude -104.203829°	County EDDY
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Last Take Point (LTP)

UL E	Section 36	Township 21S	Range 26E	Lot	Ft. from N/S 1,380' FNL	Ft. from E/W 100' FWL	Latitude 32.439869°	Longitude -104.254172°	County EDDY
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Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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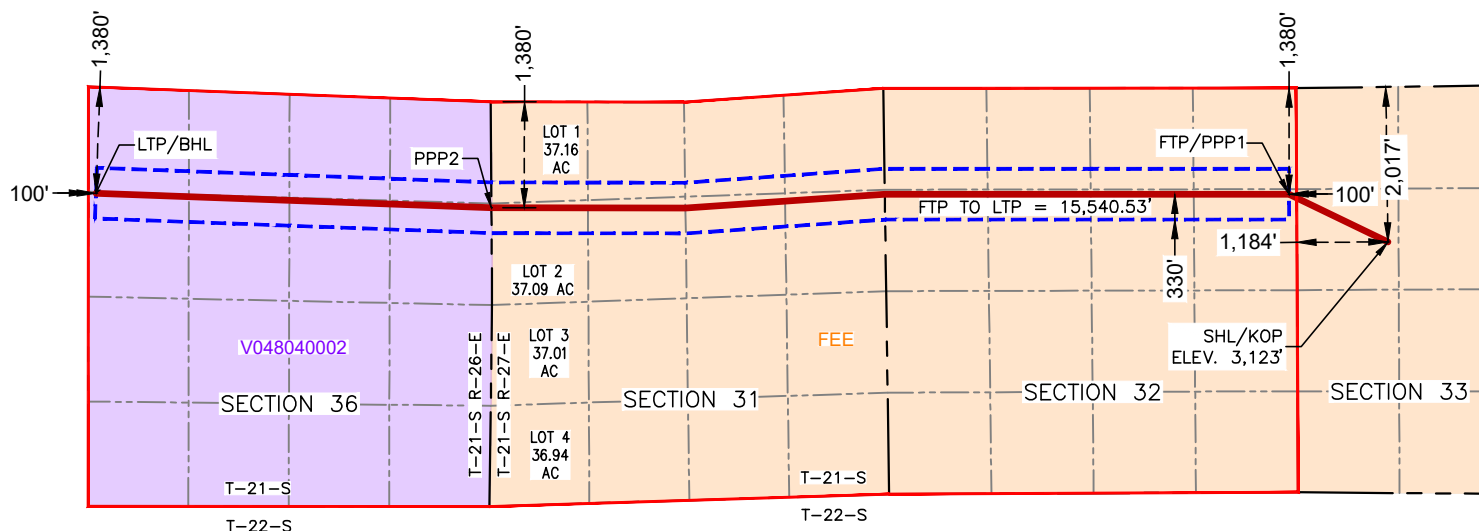
OPERATOR CERTIFICATIONS I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and, if the well is a vertical or directional well, that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of a working interest or unleased mineral interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division. <i>Stephanie Rabadue</i> 11/25/2025		SURVEYOR CERTIFICATIONS I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  Date: 11/24/2025	
Signature Stephanie Rabadue		Signature and Seal of Professional Surveyor	
Printed Name stephanie.rabadue@permianres.com		Certificate Number 12177	Date of Survey 11/24/2025
Email Address		Revision Number 3	

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.

**FRED STATE COM 221H**

**SURFACE HOLE LOCATION
& KICK-OFF POINT
2,017' FNL & 1,184' FWL
ELEV. = 3,123'**

NAD 83 X = 582,577.22'
NAD 83 Y = 523,129.74'
NAD 83 LAT = 32.438078°
NAD 83 LONG = -104.199657°
NAD 27 X = 541,396.08'
NAD 27 Y = 523,069.64'
NAD 27 LAT = 32.437960°
NAD 27 LONG = -104.199154°

**FIRST TAKE POINT &
PENETRATION POINT 1
1,380' FNL & 100' FEL**

NAD 83 X = 581,289.58'
NAD 83 Y = 523,751.27'
NAD 83 LAT = 32.439791°
NAD 83 LONG = -104.203829°
NAD 27 X = 540,108.46'
NAD 27 Y = 523,691.16'
NAD 27 LAT = 32.439673°
NAD 27 LONG = -104.203325°

**PENETRATION POINT 2
1,380' FNL & 0' FEL**

NAD 83 X = 570,907.24'
NAD 83 Y = 523,574.08'
NAD 83 LAT = 32.439334°
NAD 83 LONG = -104.237484°
NAD 27 X = 529,726.21'
NAD 27 Y = 523,514.09°
NAD 27 LAT = 32.439216°
NAD 27 LONG = -104.236979°

**LAST TAKE POINT &
BOTTOM HOLE LOCATION
1,380' FNL & 100' FWL**

NAD 83 X = 565,758.85'
NAD 83 Y = 523,764.51'
NAD 83 LAT = 32.439869°
NAD 83 LONG = -104.254172°
NAD 27 X = 524,577.89'
NAD 27 Y = 523,704.57°
NAD 27 LAT = 32.439752°
NAD 27 LONG = -104.253666°

Permian Resources - Fred State Com 221H

1. Geologic Formations

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	2922	230	No
Top of Salt	Salt	2672	480	No
Tansill	Sandstone	2522	630	No
Yates	Anhydrite/Shale	2253	899	No
Seven Rivers	Limestone	2002	1150	No
Capitan	Sandstone	1922	1230	No
Delaware Sands	Sandstone	532	2620	No
Brushy Canyon	Sandstone	-1708	4860	No
Bone Spring Lime	Limestone/Shale	-1928	5080	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-3141	6293	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-5908	9060	No
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-5253	8405	No
Wolfcamp	Shale	-5583	8735	Yes

2. Blowout Prevention

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12.25	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
9.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
7.875	13-5/8"	5M	Annular	x	2500 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: BOPE will meet all requirements for above listed system per 43 CFR 3172. BOPE with working pressure ratings in excess of anticipated maximum surface pressure will be utilized for well control from drill out of surface casing to TMD. 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 of the components installed will be functional, tested, and will meet all requirements per 43 CFR 3172. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing of the surface x intermediate annulus without breaking the connection between the BOP & wellhead. A variance is requested to utilize a flexible choke line (flexhose) from the BOP to choke manifold.

Requesting Variance? YES

Variance request: Multibowl Wellhead, Flexhose, Breaktesting, Offline Cementing Variances. Attachments in Section 8.

Testing Procedure: Operator requests to ONLY test broken pressure seals per API Standard 53 and the attachments in Section 8. The BOP test shall be performed before drilling out of the surface casing shoe and will occur at a minimum: a. when initially installed, b. whenever any seal subject to test pressure is broken, c. following related repairs, d. at 21-day intervals. Testing of the ram type preventer(s) and annual type preventer(s) shall be tested per 43 CFR 3172. The BOPE configuration, choke manifold layout, and accumulator system will be in compliance with 43 CFR 3172. Bleed lines will discharge 100' from wellhead in non-H2S scenarios and 150' from wellhead in H2S scenarios.

Choke Diagram Attachment: 5M Choke Manifold
BOP Diagram Attachment: BOP Schematics

3. Casing

String	Hole Size	Casing Size	Top	Bottom	Top TVD	Bottom TVD	Length	Grade	Weight	Connection	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
Surface	17.5	13.375	0	300	0	300	300	J55	54.5	BTC	7.62	8.26	Dry	7.81	Dry	7.33
Intermediate 1	12.25	10.75	0	790	0	790	790	J55	45.5	BTC	12.14	3.36	Dry	7.82	Dry	5.26
Intermediate 2	9.875	8.625	0	2620	0	2620	2620	P110 HS	32	MO-FXL	5.79	2.53	Dry	4.29	Dry	6.22
Production	7.875	5.5	0	9465	0	8840	9465	P110RY	20	GeoConn	1.63	1.70	Dry	1.97	Dry	1.97
Production	7.875	5.5	9465	24299	8840	8840	14834	P110RY	20	GeoConn	1.63	1.70	Dry	1.97	Dry	1.97
BLM Min Safety Factor											1.125	1		1.6		1.6

Non API casing spec sheets and casing design assumptions attached.

4. Cement

String	Lead/Tail	Top MD	Bottom MD	Quantity (sx)	Yield	Density	Cu Ft	Excess %	Cement Type	Additives
Surface	Tail	0	300	240	1.34	14.8	320	50%	Class C	Accelerator
Intermediate 1	Lead	0	630	100	1.88	12.9	170	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 1	Tail	630	790	40	1.34	14.8	50	50%	Class C	Retarder
Intermediate 2	Lead	0	2090	130	2.96	11	360	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate 2	Tail	2090	2620	70	1.33	14.8	90	25%	Class C	Salt
Production	Lead	2120	8500	640	2.41	11.5	1520	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	8500	24299	1990	1.73	12.5	3430	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

Permian Resources requests to pump a two-stage cement job on the 8-5/8" intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Cherry Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If cement is not visually confirmed to circulate to surface, the final cement top after the second stage job will be verified by Echo-meter. If necessary, a top out consisting of 1,500 sack of Class C cement + 3% Salt + Bentonite Gel (2.30 yld, 12.9 ppg) will be executed as a contingency. If cement is still unable to circulate to surface, another Echo-meter run will be performed for cement top verification.

Permian Resources will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

Permian Resources will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

Permian Resources requests to pump an Optional Lead if well conditions dictate in an attempt to bring cement inside the surface casing. If cement reaches the desired height, the BLM will be notified and the second stage bradenhead squeeze and subsequent TOC verification will be negated.

Permian Resources requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure the first stage cement job is cemented properly and the well is static with floats holding and no pressure on the csg annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

5. Circulating Medium

Mud System Type: Closed

Will an air or gas system be used: No

Describe what will be on location to control well or mitigate other conditions: Sufficient quantities of mud materials will be on the well site at all times for the purpose of assuring well control and maintaining wellbore integrity. Surface interval will employ fresh water mud. The intermediate hole will utilize a saturated brine fluid to inhibit salt washout. The production hole will employ brine based and oil base fluid to inhibit formation reactivity and of the appropriate density to maintain well control.

Describe the mud monitoring system utilized: Centrifuge separation system. Open tank monitoring with EDR will be used for drilling fluids and return volumes. Open tank monitoring will be used for cement and cuttings return volumes. Mud properties will be monitored at least every 24 hours using industry accepted mud check practices.

Cuttings Volume: 9210 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	300	Spud Mud	8.6	9.5
300	790	Salt Saturated	10	10
790	2620	Fresh Water	8.6	9.5
2620	9465	Oil Based Mud	9	10

6. Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will utilize MWD/LWD from intermediate hole to TD of the well.

List of open and cased hole logs run in the well:

DIRECTIONAL SURVEY

Coring operation description for the well:

N/A

7. Pressure

Anticipated Bottom Hole Pressure	4600	psi
Anticipated Surface Pressure	2652	psi
Anticipated Bottom Hole Temperature	145	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

PERMIAN

R E S O U R C E S

NEW MEXICO

(SP) EDDY

FRED PROJECT

FRED STATE COM 221H

OWB

Plan: PWP0

Standard Planning Report - Geographic

21 November, 2025

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Project	(SP) EDDY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		FRED PROJECT				
Site Position:		Northing:	523,162.55	usft	Latitude:	32° 26' 17.407 N
From:	Map	Easting:	582,566.25	usft	Longitude:	104° 11' 58.894 W
Position Uncertainty:		0.0	usft	Slot Radius:	13-3/16	"

Well	FRED STATE COM 221H					
Well Position	+N/-S	0.0 usft	Northing:	523,129.74 usft	Latitude:	32° 26' 17.082 N
	+E/-W	0.0 usft	Easting:	582,577.22 usft	Longitude:	104° 11' 58.767 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,123.0 usft
Grid Convergence:		0.07 °				

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.05	60.33	48,853.71187083

Design	PWP0			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	272.16

Plan Survey Tool Program	Date	11/21/2025		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	24,298.3 PWP0 (OWB)	MWD	
			OWSG_Rev2_ MWD - Standal	

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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	
520.8	10.42	295.77	518.0	20.5	-42.5	2.00	2.00	0.00	295.77	
7,906.6	10.42	295.77	7,782.0	601.0	-1,245.1	0.00	0.00	0.00	0.00	
8,427.5	0.00	0.01	8,300.0	621.5	-1,287.6	2.00	-2.00	0.00	180.00	
8,490.0	0.00	0.01	8,362.5	621.5	-1,287.6	0.00	0.00	0.00	0.01	
9,239.9	90.00	269.02	8,840.0	613.4	-1,765.0	12.00	12.00	-12.13	269.02	
19,146.3	90.00	269.02	8,840.0	444.3	-11,670.0	0.00	0.00	0.00	0.00	PP2-FSC 221H
19,303.5	90.00	272.17	8,840.0	446.0	-11,827.2	2.00	0.00	2.00	90.00	
24,298.3	90.00	272.17	8,840.0	634.8	-16,818.4	0.00	0.00	0.00	0.00	LTP/BHL-FSC 221H

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	523,129.74	582,577.22	32° 26' 17.082 N	104° 11' 58.767 W
100.0	2.00	295.77	100.0	0.8	-1.6	523,130.50	582,575.65	32° 26' 17.089 N	104° 11' 58.785 W
200.0	4.00	295.77	199.8	3.0	-6.3	523,132.78	582,570.94	32° 26' 17.112 N	104° 11' 58.840 W
300.0	6.00	295.77	299.5	6.8	-14.1	523,136.56	582,563.09	32° 26' 17.149 N	104° 11' 58.932 W
400.0	8.00	295.77	398.7	12.1	-25.1	523,141.86	582,552.12	32° 26' 17.202 N	104° 11' 59.060 W
500.0	10.00	295.77	497.5	18.9	-39.2	523,148.66	582,538.03	32° 26' 17.269 N	104° 11' 59.224 W
520.8	10.42	295.77	518.0	20.5	-42.5	523,150.27	582,534.70	32° 26' 17.285 N	104° 11' 59.263 W
Start 7385.8 hold at 520.8 MD									
600.0	10.42	295.77	595.8	26.7	-55.4	523,156.49	582,521.81	32° 26' 17.347 N	104° 11' 59.413 W
700.0	10.42	295.77	694.2	34.6	-71.7	523,164.35	582,505.53	32° 26' 17.425 N	104° 11' 59.603 W
800.0	10.42	295.77	792.5	42.5	-88.0	523,172.21	582,489.25	32° 26' 17.503 N	104° 11' 59.793 W
900.0	10.42	295.77	890.9	50.3	-104.3	523,180.07	582,472.96	32° 26' 17.581 N	104° 11' 59.983 W
1,000.0	10.42	295.77	989.2	58.2	-120.5	523,187.93	582,456.68	32° 26' 17.659 N	104° 12' 0.172 W
1,100.0	10.42	295.77	1,087.6	66.0	-136.8	523,195.79	582,440.40	32° 26' 17.737 N	104° 12' 0.362 W
1,200.0	10.42	295.77	1,185.9	73.9	-153.1	523,203.64	582,424.12	32° 26' 17.815 N	104° 12' 0.552 W
1,300.0	10.42	295.77	1,284.3	81.8	-169.4	523,211.50	582,407.83	32° 26' 17.893 N	104° 12' 0.742 W
1,400.0	10.42	295.77	1,382.6	89.6	-185.7	523,219.36	582,391.55	32° 26' 17.971 N	104° 12' 0.932 W
1,500.0	10.42	295.77	1,481.0	97.5	-202.0	523,227.22	582,375.27	32° 26' 18.049 N	104° 12' 1.122 W
1,600.0	10.42	295.77	1,579.4	105.3	-218.2	523,235.08	582,358.99	32° 26' 18.127 N	104° 12' 1.312 W
1,700.0	10.42	295.77	1,677.7	113.2	-234.5	523,242.94	582,342.70	32° 26' 18.205 N	104° 12' 1.502 W
1,800.0	10.42	295.77	1,776.1	121.1	-250.8	523,250.80	582,326.42	32° 26' 18.283 N	104° 12' 1.692 W
1,900.0	10.42	295.77	1,874.4	128.9	-267.1	523,258.66	582,310.14	32° 26' 18.361 N	104° 12' 1.882 W
2,000.0	10.42	295.77	1,972.8	136.8	-283.4	523,266.52	582,293.86	32° 26' 18.439 N	104° 12' 2.071 W
2,100.0	10.42	295.77	2,071.1	144.6	-299.7	523,274.38	582,277.57	32° 26' 18.517 N	104° 12' 2.261 W
2,200.0	10.42	295.77	2,169.5	152.5	-315.9	523,282.24	582,261.29	32° 26' 18.595 N	104° 12' 2.451 W
2,300.0	10.42	295.77	2,267.8	160.4	-332.2	523,290.10	582,245.01	32° 26' 18.673 N	104° 12' 2.641 W
2,400.0	10.42	295.77	2,366.2	168.2	-348.5	523,297.96	582,228.72	32° 26' 18.751 N	104° 12' 2.831 W
2,500.0	10.42	295.77	2,464.5	176.1	-364.8	523,305.82	582,212.44	32° 26' 18.829 N	104° 12' 3.021 W
2,600.0	10.42	295.77	2,562.9	183.9	-381.1	523,313.68	582,196.16	32° 26' 18.907 N	104° 12' 3.211 W
2,700.0	10.42	295.77	2,661.2	191.8	-397.3	523,321.54	582,179.88	32° 26' 18.985 N	104° 12' 3.401 W
2,800.0	10.42	295.77	2,759.6	199.7	-413.6	523,329.40	582,163.59	32° 26' 19.063 N	104° 12' 3.591 W
2,900.0	10.42	295.77	2,857.9	207.5	-429.9	523,337.26	582,147.31	32° 26' 19.141 N	104° 12' 3.780 W
3,000.0	10.42	295.77	2,956.3	215.4	-446.2	523,345.11	582,131.03	32° 26' 19.218 N	104° 12' 3.970 W
3,100.0	10.42	295.77	3,054.6	223.2	-462.5	523,352.97	582,114.75	32° 26' 19.296 N	104° 12' 4.160 W
3,200.0	10.42	295.77	3,153.0	231.1	-478.8	523,360.83	582,098.46	32° 26' 19.374 N	104° 12' 4.350 W
3,300.0	10.42	295.77	3,251.3	239.0	-495.0	523,368.69	582,082.18	32° 26' 19.452 N	104° 12' 4.540 W
3,400.0	10.42	295.77	3,349.7	246.8	-511.3	523,376.55	582,065.90	32° 26' 19.530 N	104° 12' 4.730 W
3,500.0	10.42	295.77	3,448.0	254.7	-527.6	523,384.41	582,049.62	32° 26' 19.608 N	104° 12' 4.920 W
3,600.0	10.42	295.77	3,546.4	262.5	-543.9	523,392.27	582,033.33	32° 26' 19.686 N	104° 12' 5.110 W
3,700.0	10.42	295.77	3,644.7	270.4	-560.2	523,400.13	582,017.05	32° 26' 19.764 N	104° 12' 5.300 W
3,800.0	10.42	295.77	3,743.1	278.2	-576.5	523,407.99	582,000.77	32° 26' 19.842 N	104° 12' 5.489 W
3,900.0	10.42	295.77	3,841.4	286.1	-592.7	523,415.85	581,984.49	32° 26' 19.920 N	104° 12' 5.679 W
4,000.0	10.42	295.77	3,939.8	294.0	-609.0	523,423.71	581,968.20	32° 26' 19.998 N	104° 12' 5.869 W
4,100.0	10.42	295.77	4,038.1	301.8	-625.3	523,431.57	581,951.92	32° 26' 20.076 N	104° 12' 6.059 W
4,200.0	10.42	295.77	4,136.5	309.7	-641.6	523,439.43	581,935.64	32° 26' 20.154 N	104° 12' 6.249 W
4,300.0	10.42	295.77	4,234.9	317.5	-657.9	523,447.29	581,919.36	32° 26' 20.232 N	104° 12' 6.439 W
4,400.0	10.42	295.77	4,333.2	325.4	-674.2	523,455.15	581,903.07	32° 26' 20.310 N	104° 12' 6.629 W
4,500.0	10.42	295.77	4,431.6	333.3	-690.4	523,463.01	581,886.79	32° 26' 20.388 N	104° 12' 6.819 W
4,600.0	10.42	295.77	4,529.9	341.1	-706.7	523,470.87	581,870.51	32° 26' 20.466 N	104° 12' 7.009 W
4,700.0	10.42	295.77	4,628.3	349.0	-723.0	523,478.73	581,854.22	32° 26' 20.544 N	104° 12' 7.198 W
4,800.0	10.42	295.77	4,726.6	356.8	-739.3	523,486.58	581,837.94	32° 26' 20.622 N	104° 12' 7.388 W
4,900.0	10.42	295.77	4,825.0	364.7	-755.6	523,494.44	581,821.66	32° 26' 20.700 N	104° 12' 7.578 W
5,000.0	10.42	295.77	4,923.3	372.6	-771.8	523,502.30	581,805.38	32° 26' 20.778 N	104° 12' 7.768 W
5,100.0	10.42	295.77	5,021.7	380.4	-788.1	523,510.16	581,789.09	32° 26' 20.856 N	104° 12' 7.958 W

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Planned Survey										
Measured			Vertical			Map		Map		
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
5,200.0	10.42	295.77	5,120.0	388.3	-804.4	523,518.02	581,772.81	32° 26' 20.934 N	104° 12' 8.148 W	
5,300.0	10.42	295.77	5,218.4	396.1	-820.7	523,525.88	581,756.53	32° 26' 21.012 N	104° 12' 8.338 W	
5,400.0	10.42	295.77	5,316.7	404.0	-837.0	523,533.74	581,740.25	32° 26' 21.090 N	104° 12' 8.528 W	
5,500.0	10.42	295.77	5,415.1	411.9	-853.3	523,541.60	581,723.96	32° 26' 21.168 N	104° 12' 8.718 W	
5,600.0	10.42	295.77	5,513.4	419.7	-869.5	523,549.46	581,707.68	32° 26' 21.246 N	104° 12' 8.908 W	
5,700.0	10.42	295.77	5,611.8	427.6	-885.8	523,557.32	581,691.40	32° 26' 21.324 N	104° 12' 9.097 W	
5,800.0	10.42	295.77	5,710.1	435.4	-902.1	523,565.18	581,675.12	32° 26' 21.402 N	104° 12' 9.287 W	
5,900.0	10.42	295.77	5,808.5	443.3	-918.4	523,573.04	581,658.83	32° 26' 21.480 N	104° 12' 9.477 W	
6,000.0	10.42	295.77	5,906.8	451.2	-934.7	523,580.90	581,642.55	32° 26' 21.558 N	104° 12' 9.667 W	
6,100.0	10.42	295.77	6,005.2	459.0	-951.0	523,588.76	581,626.27	32° 26' 21.636 N	104° 12' 9.857 W	
6,200.0	10.42	295.77	6,103.5	466.9	-967.2	523,596.62	581,609.99	32° 26' 21.714 N	104° 12' 10.047 W	
6,300.0	10.42	295.77	6,201.9	474.7	-983.5	523,604.48	581,593.70	32° 26' 21.792 N	104° 12' 10.237 W	
6,400.0	10.42	295.77	6,300.2	482.6	-999.8	523,612.34	581,577.42	32° 26' 21.870 N	104° 12' 10.427 W	
6,500.0	10.42	295.77	6,398.6	490.5	-1,016.1	523,620.20	581,561.14	32° 26' 21.948 N	104° 12' 10.617 W	
6,600.0	10.42	295.77	6,496.9	498.3	-1,032.4	523,628.05	581,544.86	32° 26' 22.026 N	104° 12' 10.806 W	
6,700.0	10.42	295.77	6,595.3	506.2	-1,048.7	523,635.91	581,528.57	32° 26' 22.103 N	104° 12' 10.996 W	
6,800.0	10.42	295.77	6,693.7	514.0	-1,064.9	523,643.77	581,512.29	32° 26' 22.181 N	104° 12' 11.186 W	
6,900.0	10.42	295.77	6,792.0	521.9	-1,081.2	523,651.63	581,496.01	32° 26' 22.259 N	104° 12' 11.376 W	
7,000.0	10.42	295.77	6,890.4	529.8	-1,097.5	523,659.49	581,479.72	32° 26' 22.337 N	104° 12' 11.566 W	
7,100.0	10.42	295.77	6,988.7	537.6	-1,113.8	523,667.35	581,463.44	32° 26' 22.415 N	104° 12' 11.756 W	
7,200.0	10.42	295.77	7,087.1	545.5	-1,130.1	523,675.21	581,447.16	32° 26' 22.493 N	104° 12' 11.946 W	
7,300.0	10.42	295.77	7,185.4	553.3	-1,146.3	523,683.07	581,430.88	32° 26' 22.571 N	104° 12' 12.136 W	
7,400.0	10.42	295.77	7,283.8	561.2	-1,162.6	523,690.93	581,414.59	32° 26' 22.649 N	104° 12' 12.326 W	
7,500.0	10.42	295.77	7,382.1	569.0	-1,178.9	523,698.79	581,398.31	32° 26' 22.727 N	104° 12' 12.516 W	
7,600.0	10.42	295.77	7,480.5	576.9	-1,195.2	523,706.65	581,382.03	32° 26' 22.805 N	104° 12' 12.705 W	
7,700.0	10.42	295.77	7,578.8	584.8	-1,211.5	523,714.51	581,365.75	32° 26' 22.883 N	104° 12' 12.895 W	
7,800.0	10.42	295.77	7,677.2	592.6	-1,227.8	523,722.37	581,349.46	32° 26' 22.961 N	104° 12' 13.085 W	
7,906.6	10.42	295.77	7,782.0	601.0	-1,245.1	523,730.75	581,332.10	32° 26' 23.044 N	104° 12' 13.288 W	
Start Drop -2.00										
8,000.0	8.55	295.77	7,874.1	607.7	-1,259.0	523,737.44	581,318.25	32° 26' 23.111 N	104° 12' 13.449 W	
8,100.0	6.55	295.77	7,973.3	613.4	-1,270.8	523,743.15	581,306.42	32° 26' 23.167 N	104° 12' 13.587 W	
8,200.0	4.55	295.77	8,072.8	617.6	-1,279.5	523,747.35	581,297.71	32° 26' 23.209 N	104° 12' 13.689 W	
8,300.0	2.55	295.77	8,172.6	620.3	-1,285.1	523,750.04	581,292.14	32° 26' 23.236 N	104° 12' 13.754 W	
8,400.0	0.55	295.77	8,272.5	621.5	-1,287.5	523,751.21	581,289.70	32° 26' 23.247 N	104° 12' 13.782 W	
8,427.5	0.00	0.01	8,300.0	621.5	-1,287.6	523,751.27	581,289.58	32° 26' 23.248 N	104° 12' 13.784 W	
Start 62.5 hold at 8427.5 MD										
8,490.0	0.00	0.00	8,362.5	621.5	-1,287.6	523,751.27	581,289.58	32° 26' 23.248 N	104° 12' 13.784 W	
Start DLS 12.00 TFO 269.02										
8,500.0	1.21	269.02	8,372.5	621.5	-1,287.7	523,751.27	581,289.48	32° 26' 23.248 N	104° 12' 13.785 W	
8,525.0	4.21	269.02	8,397.5	621.5	-1,288.9	523,751.25	581,288.30	32° 26' 23.248 N	104° 12' 13.799 W	
8,550.0	7.21	269.02	8,422.4	621.5	-1,291.4	523,751.21	581,285.81	32° 26' 23.247 N	104° 12' 13.828 W	
8,575.0	10.21	269.02	8,447.1	621.4	-1,295.2	523,751.14	581,282.03	32° 26' 23.247 N	104° 12' 13.872 W	
8,600.0	13.21	269.02	8,471.6	621.3	-1,300.3	523,751.06	581,276.96	32° 26' 23.246 N	104° 12' 13.931 W	
8,625.0	16.21	269.02	8,495.8	621.2	-1,306.6	523,750.95	581,270.61	32° 26' 23.245 N	104° 12' 14.005 W	
8,650.0	19.21	269.02	8,519.6	621.1	-1,314.2	523,750.82	581,263.01	32° 26' 23.244 N	104° 12' 14.094 W	
8,675.0	22.21	269.02	8,543.0	620.9	-1,323.0	523,750.67	581,254.18	32° 26' 23.242 N	104° 12' 14.197 W	
8,700.0	25.21	269.02	8,565.8	620.8	-1,333.1	523,750.50	581,244.13	32° 26' 23.241 N	104° 12' 14.314 W	
8,725.0	28.21	269.02	8,588.2	620.6	-1,344.3	523,750.30	581,232.89	32° 26' 23.239 N	104° 12' 14.445 W	
8,750.0	31.21	269.02	8,609.9	620.4	-1,356.7	523,750.09	581,220.51	32° 26' 23.237 N	104° 12' 14.590 W	
8,775.0	34.21	269.02	8,630.9	620.1	-1,370.2	523,749.86	581,207.00	32° 26' 23.235 N	104° 12' 14.747 W	
8,800.0	37.21	269.02	8,651.2	619.9	-1,384.8	523,749.61	581,192.42	32° 26' 23.233 N	104° 12' 14.917 W	
8,825.0	40.21	269.02	8,670.7	619.6	-1,400.4	523,749.35	581,176.79	32° 26' 23.230 N	104° 12' 15.100 W	
8,850.0	43.21	269.02	8,689.4	619.3	-1,417.1	523,749.06	581,160.16	32° 26' 23.228 N	104° 12' 15.294 W	

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
8,866.0	45.12	269.02	8,700.9	619.1	-1,428.2	523,748.87	581,149.02	32° 26' 23.226 N	104° 12' 15.424 W	
FTP-FSC 221H										
8,875.0	46.21	269.02	8,707.1	619.0	-1,434.6	523,748.76	581,142.58	32° 26' 23.225 N	104° 12' 15.499 W	
8,900.0	49.21	269.02	8,724.0	618.7	-1,453.1	523,748.45	581,124.09	32° 26' 23.222 N	104° 12' 15.715 W	
8,925.0	52.21	269.02	8,739.8	618.4	-1,472.5	523,748.12	581,104.75	32° 26' 23.219 N	104° 12' 15.941 W	
8,950.0	55.21	269.02	8,754.6	618.0	-1,492.6	523,747.77	581,084.60	32° 26' 23.216 N	104° 12' 16.176 W	
8,975.0	58.21	269.02	8,768.3	617.7	-1,513.5	523,747.42	581,063.71	32° 26' 23.212 N	104° 12' 16.419 W	
9,000.0	61.21	269.02	8,780.9	617.3	-1,535.1	523,747.05	581,042.13	32° 26' 23.209 N	104° 12' 16.671 W	
9,025.0	64.21	269.02	8,792.4	616.9	-1,557.3	523,746.67	581,019.92	32° 26' 23.206 N	104° 12' 16.930 W	
9,050.0	67.21	269.02	8,802.7	616.5	-1,580.1	523,746.28	580,997.14	32° 26' 23.202 N	104° 12' 17.196 W	
9,075.0	70.21	269.02	8,811.8	616.1	-1,603.4	523,745.88	580,973.85	32° 26' 23.198 N	104° 12' 17.468 W	
9,100.0	73.21	269.02	8,819.6	615.7	-1,627.1	523,745.48	580,950.12	32° 26' 23.195 N	104° 12' 17.745 W	
9,125.0	76.21	269.02	8,826.2	615.3	-1,651.2	523,745.07	580,926.01	32° 26' 23.191 N	104° 12' 18.026 W	
9,150.0	79.21	269.02	8,831.5	614.9	-1,675.6	523,744.65	580,901.59	32° 26' 23.187 N	104° 12' 18.311 W	
9,175.0	82.21	269.02	8,835.6	614.5	-1,700.3	523,744.23	580,876.93	32° 26' 23.183 N	104° 12' 18.599 W	
9,200.0	85.21	269.02	8,838.3	614.1	-1,725.1	523,743.81	580,852.09	32° 26' 23.179 N	104° 12' 18.889 W	
9,225.0	88.21	269.02	8,839.7	613.6	-1,750.1	523,743.38	580,827.13	32° 26' 23.175 N	104° 12' 19.180 W	
9,239.9	90.00	269.02	8,840.0	613.4	-1,765.0	523,743.12	580,812.19	32° 26' 23.173 N	104° 12' 19.355 W	
Start 9906.4 hold at 9239.9 MD										
9,300.0	90.00	269.02	8,840.0	612.4	-1,825.1	523,742.10	580,752.15	32° 26' 23.164 N	104° 12' 20.055 W	
9,400.0	90.00	269.02	8,840.0	610.7	-1,925.1	523,740.39	580,652.16	32° 26' 23.148 N	104° 12' 21.222 W	
9,500.0	90.00	269.02	8,840.0	608.9	-2,025.0	523,738.69	580,552.18	32° 26' 23.132 N	104° 12' 22.389 W	
9,600.0	90.00	269.02	8,840.0	607.2	-2,125.0	523,736.98	580,452.19	32° 26' 23.116 N	104° 12' 23.556 W	
9,700.0	90.00	269.02	8,840.0	605.5	-2,225.0	523,735.27	580,352.21	32° 26' 23.101 N	104° 12' 24.722 W	
9,800.0	90.00	269.02	8,840.0	603.8	-2,325.0	523,733.57	580,252.22	32° 26' 23.085 N	104° 12' 25.889 W	
9,900.0	90.00	269.02	8,840.0	602.1	-2,425.0	523,731.86	580,152.23	32° 26' 23.069 N	104° 12' 27.056 W	
10,000.0	90.00	269.02	8,840.0	600.4	-2,525.0	523,730.15	580,052.25	32° 26' 23.054 N	104° 12' 28.223 W	
10,100.0	90.00	269.02	8,840.0	598.7	-2,625.0	523,728.45	579,952.26	32° 26' 23.038 N	104° 12' 29.390 W	
10,200.0	90.00	269.02	8,840.0	597.0	-2,724.9	523,726.74	579,852.28	32° 26' 23.022 N	104° 12' 30.556 W	
10,300.0	90.00	269.02	8,840.0	595.3	-2,824.9	523,725.04	579,752.29	32° 26' 23.006 N	104° 12' 31.723 W	
10,400.0	90.00	269.02	8,840.0	593.6	-2,924.9	523,723.33	579,652.31	32° 26' 22.991 N	104° 12' 32.890 W	
10,500.0	90.00	269.02	8,840.0	591.9	-3,024.9	523,721.62	579,552.32	32° 26' 22.975 N	104° 12' 34.057 W	
10,600.0	90.00	269.02	8,840.0	590.2	-3,124.9	523,719.92	579,452.34	32° 26' 22.959 N	104° 12' 35.224 W	
10,700.0	90.00	269.02	8,840.0	588.5	-3,224.9	523,718.21	579,352.35	32° 26' 22.943 N	104° 12' 36.390 W	
10,800.0	90.00	269.02	8,840.0	586.8	-3,324.9	523,716.50	579,252.37	32° 26' 22.928 N	104° 12' 37.557 W	
10,900.0	90.00	269.02	8,840.0	585.1	-3,424.8	523,714.80	579,152.38	32° 26' 22.912 N	104° 12' 38.724 W	
11,000.0	90.00	269.02	8,840.0	583.3	-3,524.8	523,713.09	579,052.39	32° 26' 22.896 N	104° 12' 39.891 W	
11,100.0	90.00	269.02	8,840.0	581.6	-3,624.8	523,711.38	578,952.41	32° 26' 22.880 N	104° 12' 41.057 W	
11,200.0	90.00	269.02	8,840.0	579.9	-3,724.8	523,709.68	578,852.42	32° 26' 22.865 N	104° 12' 42.224 W	
11,300.0	90.00	269.02	8,840.0	578.2	-3,824.8	523,707.97	578,752.44	32° 26' 22.849 N	104° 12' 43.391 W	
11,400.0	90.00	269.02	8,840.0	576.5	-3,924.8	523,706.27	578,652.45	32° 26' 22.833 N	104° 12' 44.558 W	
11,500.0	90.00	269.02	8,840.0	574.8	-4,024.8	523,704.56	578,552.47	32° 26' 22.817 N	104° 12' 45.725 W	
11,600.0	90.00	269.02	8,840.0	573.1	-4,124.7	523,702.85	578,452.48	32° 26' 22.802 N	104° 12' 46.891 W	
11,700.0	90.00	269.02	8,840.0	571.4	-4,224.7	523,701.15	578,352.50	32° 26' 22.786 N	104° 12' 48.058 W	
11,800.0	90.00	269.02	8,840.0	569.7	-4,324.7	523,699.44	578,252.51	32° 26' 22.770 N	104° 12' 49.225 W	
11,900.0	90.00	269.02	8,840.0	568.0	-4,424.7	523,697.73	578,152.53	32° 26' 22.754 N	104° 12' 50.392 W	
12,000.0	90.00	269.02	8,840.0	566.3	-4,524.7	523,696.03	578,052.54	32° 26' 22.738 N	104° 12' 51.559 W	
12,100.0	90.00	269.02	8,840.0	564.6	-4,624.7	523,694.32	577,952.55	32° 26' 22.723 N	104° 12' 52.725 W	
12,200.0	90.00	269.02	8,840.0	562.9	-4,724.7	523,692.61	577,852.57	32° 26' 22.707 N	104° 12' 53.892 W	
12,300.0	90.00	269.02	8,840.0	561.2	-4,824.6	523,690.91	577,752.58	32° 26' 22.691 N	104° 12' 55.059 W	
12,400.0	90.00	269.02	8,840.0	559.5	-4,924.6	523,689.20	577,652.60	32° 26' 22.675 N	104° 12' 56.226 W	
12,500.0	90.00	269.02	8,840.0	557.8	-5,024.6	523,687.49	577,552.61	32° 26' 22.660 N	104° 12' 57.392 W	
12,600.0	90.00	269.02	8,840.0	556.0	-5,124.6	523,685.79	577,452.63	32° 26' 22.644 N	104° 12' 58.559 W	
12,700.0	90.00	269.02	8,840.0	554.3	-5,224.6	523,684.08	577,352.64	32° 26' 22.628 N	104° 12' 59.726 W	

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
12,800.0	90.00	269.02	8,840.0	552.6	-5,324.6	523,682.38	577,252.66	32° 26' 22.612 N	104° 13' 0.893 W	
12,900.0	90.00	269.02	8,840.0	550.9	-5,424.6	523,680.67	577,152.67	32° 26' 22.596 N	104° 13' 2.060 W	
13,000.0	90.00	269.02	8,840.0	549.2	-5,524.5	523,678.96	577,052.69	32° 26' 22.580 N	104° 13' 3.226 W	
13,100.0	90.00	269.02	8,840.0	547.5	-5,624.5	523,677.26	576,952.70	32° 26' 22.565 N	104° 13' 4.393 W	
13,200.0	90.00	269.02	8,840.0	545.8	-5,724.5	523,675.55	576,852.71	32° 26' 22.549 N	104° 13' 5.560 W	
13,300.0	90.00	269.02	8,840.0	544.1	-5,824.5	523,673.84	576,752.73	32° 26' 22.533 N	104° 13' 6.727 W	
13,400.0	90.00	269.02	8,840.0	542.4	-5,924.5	523,672.14	576,652.74	32° 26' 22.517 N	104° 13' 7.894 W	
13,500.0	90.00	269.02	8,840.0	540.7	-6,024.5	523,670.43	576,552.76	32° 26' 22.501 N	104° 13' 9.060 W	
13,600.0	90.00	269.02	8,840.0	539.0	-6,124.4	523,668.72	576,452.77	32° 26' 22.486 N	104° 13' 10.227 W	
13,700.0	90.00	269.02	8,840.0	537.3	-6,224.4	523,667.02	576,352.79	32° 26' 22.470 N	104° 13' 11.394 W	
13,800.0	90.00	269.02	8,840.0	535.6	-6,324.4	523,665.31	576,252.80	32° 26' 22.454 N	104° 13' 12.561 W	
13,900.0	90.00	269.02	8,840.0	533.9	-6,424.4	523,663.61	576,152.82	32° 26' 22.438 N	104° 13' 13.727 W	
14,000.0	90.00	269.02	8,840.0	532.2	-6,524.4	523,661.90	576,052.83	32° 26' 22.422 N	104° 13' 14.894 W	
14,100.0	90.00	269.02	8,840.0	530.5	-6,624.4	523,660.19	575,952.85	32° 26' 22.406 N	104° 13' 16.061 W	
14,200.0	90.00	269.02	8,840.0	528.7	-6,724.4	523,658.49	575,852.86	32° 26' 22.391 N	104° 13' 17.228 W	
14,300.0	90.00	269.02	8,840.0	527.0	-6,824.3	523,656.78	575,752.87	32° 26' 22.375 N	104° 13' 18.395 W	
14,400.0	90.00	269.02	8,840.0	525.3	-6,924.3	523,655.07	575,652.89	32° 26' 22.359 N	104° 13' 19.561 W	
14,500.0	90.00	269.02	8,840.0	523.6	-7,024.3	523,653.37	575,552.90	32° 26' 22.343 N	104° 13' 20.728 W	
14,600.0	90.00	269.02	8,840.0	521.9	-7,124.3	523,651.66	575,452.92	32° 26' 22.327 N	104° 13' 21.895 W	
14,700.0	90.00	269.02	8,840.0	520.2	-7,224.3	523,649.95	575,352.93	32° 26' 22.311 N	104° 13' 23.062 W	
14,800.0	90.00	269.02	8,840.0	518.5	-7,324.3	523,648.25	575,252.95	32° 26' 22.295 N	104° 13' 24.229 W	
14,900.0	90.00	269.02	8,840.0	516.8	-7,424.3	523,646.54	575,152.96	32° 26' 22.279 N	104° 13' 25.395 W	
15,000.0	90.00	269.02	8,840.0	515.1	-7,524.2	523,644.83	575,052.98	32° 26' 22.264 N	104° 13' 26.562 W	
15,100.0	90.00	269.02	8,840.0	513.4	-7,624.2	523,643.13	574,952.99	32° 26' 22.248 N	104° 13' 27.729 W	
15,200.0	90.00	269.02	8,840.0	511.7	-7,724.2	523,641.42	574,853.01	32° 26' 22.232 N	104° 13' 28.896 W	
15,300.0	90.00	269.02	8,840.0	510.0	-7,824.2	523,639.72	574,753.02	32° 26' 22.216 N	104° 13' 30.062 W	
15,400.0	90.00	269.02	8,840.0	508.3	-7,924.2	523,638.01	574,653.04	32° 26' 22.200 N	104° 13' 31.229 W	
15,500.0	90.00	269.02	8,840.0	506.6	-8,024.2	523,636.30	574,553.05	32° 26' 22.184 N	104° 13' 32.396 W	
15,600.0	90.00	269.02	8,840.0	504.9	-8,124.2	523,634.60	574,453.06	32° 26' 22.168 N	104° 13' 33.563 W	
15,700.0	90.00	269.02	8,840.0	503.1	-8,224.1	523,632.89	574,353.08	32° 26' 22.152 N	104° 13' 34.730 W	
15,800.0	90.00	269.02	8,840.0	501.4	-8,324.1	523,631.18	574,253.09	32° 26' 22.137 N	104° 13' 35.896 W	
15,900.0	90.00	269.02	8,840.0	499.7	-8,424.1	523,629.48	574,153.11	32° 26' 22.121 N	104° 13' 37.063 W	
16,000.0	90.00	269.02	8,840.0	498.0	-8,524.1	523,627.77	574,053.12	32° 26' 22.105 N	104° 13' 38.230 W	
16,100.0	90.00	269.02	8,840.0	496.3	-8,624.1	523,626.06	573,953.14	32° 26' 22.089 N	104° 13' 39.397 W	
16,200.0	90.00	269.02	8,840.0	494.6	-8,724.1	523,624.36	573,853.15	32° 26' 22.073 N	104° 13' 40.564 W	
16,300.0	90.00	269.02	8,840.0	492.9	-8,824.1	523,622.65	573,753.17	32° 26' 22.057 N	104° 13' 41.730 W	
16,400.0	90.00	269.02	8,840.0	491.2	-8,924.0	523,620.95	573,653.18	32° 26' 22.041 N	104° 13' 42.897 W	
16,500.0	90.00	269.02	8,840.0	489.5	-9,024.0	523,619.24	573,553.20	32° 26' 22.025 N	104° 13' 44.064 W	
16,600.0	90.00	269.02	8,840.0	487.8	-9,124.0	523,617.53	573,453.21	32° 26' 22.009 N	104° 13' 45.231 W	
16,700.0	90.00	269.02	8,840.0	486.1	-9,224.0	523,615.83	573,353.22	32° 26' 21.993 N	104° 13' 46.397 W	
16,800.0	90.00	269.02	8,840.0	484.4	-9,324.0	523,614.12	573,253.24	32° 26' 21.977 N	104° 13' 47.564 W	
16,900.0	90.00	269.02	8,840.0	482.7	-9,424.0	523,612.41	573,153.25	32° 26' 21.961 N	104° 13' 48.731 W	
17,000.0	90.00	269.02	8,840.0	481.0	-9,524.0	523,610.71	573,053.27	32° 26' 21.946 N	104° 13' 49.898 W	
17,100.0	90.00	269.02	8,840.0	479.3	-9,623.9	523,609.00	572,953.28	32° 26' 21.930 N	104° 13' 51.065 W	
17,200.0	90.00	269.02	8,840.0	477.6	-9,723.9	523,607.29	572,853.30	32° 26' 21.914 N	104° 13' 52.231 W	
17,300.0	90.00	269.02	8,840.0	475.8	-9,823.9	523,605.59	572,753.31	32° 26' 21.898 N	104° 13' 53.398 W	
17,400.0	90.00	269.02	8,840.0	474.1	-9,923.9	523,603.88	572,653.33	32° 26' 21.882 N	104° 13' 54.565 W	
17,500.0	90.00	269.02	8,840.0	472.4	-10,023.9	523,602.17	572,553.34	32° 26' 21.866 N	104° 13' 55.732 W	
17,600.0	90.00	269.02	8,840.0	470.7	-10,123.9	523,600.47	572,453.36	32° 26' 21.850 N	104° 13' 56.898 W	
17,700.0	90.00	269.02	8,840.0	469.0	-10,223.9	523,598.76	572,353.37	32° 26' 21.834 N	104° 13' 58.065 W	
17,800.0	90.00	269.02	8,840.0	467.3	-10,323.8	523,597.06	572,253.38	32° 26' 21.818 N	104° 13' 59.232 W	
17,900.0	90.00	269.02	8,840.0	465.6	-10,423.8	523,595.35	572,153.40	32° 26' 21.802 N	104° 14' 0.399 W	
18,000.0	90.00	269.02	8,840.0	463.9	-10,523.8	523,593.64	572,053.41	32° 26' 21.786 N	104° 14' 1.566 W	
18,100.0	90.00	269.02	8,840.0	462.2	-10,623.8	523,591.94	571,953.43	32° 26' 21.770 N	104° 14' 2.732 W	
18,200.0	90.00	269.02	8,840.0	460.5	-10,723.8	523,590.23	571,853.44	32° 26' 21.754 N	104° 14' 3.899 W	

PERMIAN

RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,300.0	90.00	269.02	8,840.0	458.8	-10,823.8	523,588.52	571,753.46	32° 26' 21.738 N	104° 14' 5.066 W	
18,400.0	90.00	269.02	8,840.0	457.1	-10,923.8	523,586.82	571,653.47	32° 26' 21.722 N	104° 14' 6.233 W	
18,500.0	90.00	269.02	8,840.0	455.4	-11,023.7	523,585.11	571,553.49	32° 26' 21.706 N	104° 14' 7.400 W	
18,600.0	90.00	269.02	8,840.0	453.7	-11,123.7	523,583.40	571,453.50	32° 26' 21.690 N	104° 14' 8.566 W	
18,700.0	90.00	269.02	8,840.0	452.0	-11,223.7	523,581.70	571,353.52	32° 26' 21.674 N	104° 14' 9.733 W	
18,800.0	90.00	269.02	8,840.0	450.2	-11,323.7	523,579.99	571,253.53	32° 26' 21.658 N	104° 14' 10.900 W	
18,900.0	90.00	269.02	8,840.0	448.5	-11,423.7	523,578.29	571,153.54	32° 26' 21.642 N	104° 14' 12.067 W	
19,000.0	90.00	269.02	8,840.0	446.8	-11,523.7	523,576.58	571,053.56	32° 26' 21.626 N	104° 14' 13.233 W	
19,100.0	90.00	269.02	8,840.0	445.1	-11,623.6	523,574.87	570,953.57	32° 26' 21.610 N	104° 14' 14.400 W	
19,146.3	90.00	269.02	8,840.0	444.3	-11,670.0	523,574.08	570,907.24	32° 26' 21.603 N	104° 14' 14.941 W	
Start DLS 2.00 TFO 90.00 - PP2-FSC 221H										
19,200.0	90.00	270.10	8,840.0	443.9	-11,723.6	523,573.67	570,853.58	32° 26' 21.599 N	104° 14' 15.567 W	
19,303.5	90.00	272.17	8,840.0	446.0	-11,827.2	523,575.71	570,750.07	32° 26' 21.620 N	104° 14' 16.775 W	
Start 4994.8 hold at 19303.5 MD										
19,400.0	90.00	272.17	8,840.0	449.6	-11,923.5	523,579.36	570,653.68	32° 26' 21.657 N	104° 14' 17.900 W	
19,500.0	90.00	272.17	8,840.0	453.4	-12,023.5	523,583.14	570,553.75	32° 26' 21.696 N	104° 14' 19.066 W	
19,600.0	90.00	272.17	8,840.0	457.2	-12,123.4	523,586.92	570,453.82	32° 26' 21.734 N	104° 14' 20.232 W	
19,700.0	90.00	272.17	8,840.0	461.0	-12,223.3	523,590.70	570,353.89	32° 26' 21.772 N	104° 14' 21.398 W	
19,800.0	90.00	272.17	8,840.0	464.7	-12,323.3	523,594.48	570,253.96	32° 26' 21.810 N	104° 14' 22.564 W	
19,900.0	90.00	272.17	8,840.0	468.5	-12,423.2	523,598.26	570,154.03	32° 26' 21.849 N	104° 14' 23.730 W	
20,000.0	90.00	272.17	8,840.0	472.3	-12,523.1	523,602.04	570,054.11	32° 26' 21.887 N	104° 14' 24.896 W	
20,100.0	90.00	272.17	8,840.0	476.1	-12,623.0	523,605.82	569,954.18	32° 26' 21.925 N	104° 14' 26.062 W	
20,200.0	90.00	272.17	8,840.0	479.9	-12,723.0	523,609.60	569,854.25	32° 26' 21.964 N	104° 14' 27.228 W	
20,300.0	90.00	272.17	8,840.0	483.6	-12,822.9	523,613.38	569,754.32	32° 26' 22.002 N	104° 14' 28.394 W	
20,400.0	90.00	272.17	8,840.0	487.4	-12,922.8	523,617.16	569,654.39	32° 26' 22.040 N	104° 14' 29.560 W	
20,500.0	90.00	272.17	8,840.0	491.2	-13,022.8	523,620.94	569,554.46	32° 26' 22.078 N	104° 14' 30.726 W	
20,600.0	90.00	272.17	8,840.0	495.0	-13,122.7	523,624.72	569,454.54	32° 26' 22.117 N	104° 14' 31.892 W	
20,700.0	90.00	272.17	8,840.0	498.8	-13,222.6	523,628.50	569,354.61	32° 26' 22.155 N	104° 14' 33.059 W	
20,800.0	90.00	272.17	8,840.0	502.5	-13,322.5	523,632.28	569,254.68	32° 26' 22.193 N	104° 14' 34.225 W	
20,900.0	90.00	272.17	8,840.0	506.3	-13,422.5	523,636.06	569,154.75	32° 26' 22.231 N	104° 14' 35.391 W	
21,000.0	90.00	272.17	8,840.0	510.1	-13,522.4	523,639.84	569,054.82	32° 26' 22.269 N	104° 14' 36.557 W	
21,100.0	90.00	272.17	8,840.0	513.9	-13,622.3	523,643.62	568,954.89	32° 26' 22.308 N	104° 14' 37.723 W	
21,200.0	90.00	272.17	8,840.0	517.7	-13,722.3	523,647.40	568,854.96	32° 26' 22.346 N	104° 14' 38.889 W	
21,300.0	90.00	272.17	8,840.0	521.4	-13,822.2	523,651.18	568,755.04	32° 26' 22.384 N	104° 14' 40.055 W	
21,400.0	90.00	272.17	8,840.0	525.2	-13,922.1	523,654.96	568,655.11	32° 26' 22.422 N	104° 14' 41.221 W	
21,500.0	90.00	272.17	8,840.0	529.0	-14,022.0	523,658.74	568,555.18	32° 26' 22.461 N	104° 14' 42.387 W	
21,600.0	90.00	272.17	8,840.0	532.8	-14,122.0	523,662.52	568,455.25	32° 26' 22.499 N	104° 14' 43.553 W	
21,700.0	90.00	272.17	8,840.0	536.6	-14,221.9	523,666.30	568,355.32	32° 26' 22.537 N	104° 14' 44.719 W	
21,800.0	90.00	272.17	8,840.0	540.3	-14,321.8	523,670.08	568,255.39	32° 26' 22.575 N	104° 14' 45.885 W	
21,900.0	90.00	272.17	8,840.0	544.1	-14,421.8	523,673.86	568,155.46	32° 26' 22.614 N	104° 14' 47.051 W	
22,000.0	90.00	272.17	8,840.0	547.9	-14,521.7	523,677.64	568,055.54	32° 26' 22.652 N	104° 14' 48.217 W	
22,100.0	90.00	272.17	8,840.0	551.7	-14,621.6	523,681.42	567,955.61	32° 26' 22.690 N	104° 14' 49.383 W	
22,200.0	90.00	272.17	8,840.0	555.5	-14,721.5	523,685.20	567,855.68	32° 26' 22.728 N	104° 14' 50.549 W	
22,300.0	90.00	272.17	8,840.0	559.2	-14,821.5	523,688.98	567,755.75	32° 26' 22.766 N	104° 14' 51.716 W	
22,400.0	90.00	272.17	8,840.0	563.0	-14,921.4	523,692.76	567,655.82	32° 26' 22.805 N	104° 14' 52.882 W	
22,500.0	90.00	272.17	8,840.0	566.8	-15,021.3	523,696.54	567,555.89	32° 26' 22.843 N	104° 14' 54.048 W	
22,600.0	90.00	272.17	8,840.0	570.6	-15,121.3	523,700.32	567,455.96	32° 26' 22.881 N	104° 14' 55.214 W	
22,700.0	90.00	272.17	8,840.0	574.4	-15,221.2	523,704.10	567,356.04	32° 26' 22.919 N	104° 14' 56.380 W	
22,800.0	90.00	272.17	8,840.0	578.1	-15,321.1	523,707.88	567,256.11	32° 26' 22.957 N	104° 14' 57.546 W	
22,900.0	90.00	272.17	8,840.0	581.9	-15,421.0	523,711.66	567,156.18	32° 26' 22.995 N	104° 14' 58.712 W	
23,000.0	90.00	272.17	8,840.0	585.7	-15,521.0	523,715.44	567,056.25	32° 26' 23.034 N	104° 14' 59.878 W	
23,100.0	90.00	272.17	8,840.0	589.5	-15,620.9	523,719.22	566,956.32	32° 26' 23.072 N	104° 15' 1.044 W	
23,200.0	90.00	272.17	8,840.0	593.3	-15,720.8	523,723.00	566,856.39	32° 26' 23.110 N	104° 15' 2.210 W	
23,300.0	90.00	272.17	8,840.0	597.0	-15,820.8	523,726.78	566,756.46	32° 26' 23.148 N	104° 15' 3.376 W	

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RESOURCES

Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
23,400.0	90.00	272.17	8,840.0	600.8	-15,920.7	523,730.56	566,656.54	32° 26' 23.186 N	104° 15' 4.542 W	
23,500.0	90.00	272.17	8,840.0	604.6	-16,020.6	523,734.34	566,556.61	32° 26' 23.224 N	104° 15' 5.708 W	
23,600.0	90.00	272.17	8,840.0	608.4	-16,120.5	523,738.12	566,456.68	32° 26' 23.263 N	104° 15' 6.874 W	
23,700.0	90.00	272.17	8,840.0	612.2	-16,220.5	523,741.90	566,356.75	32° 26' 23.301 N	104° 15' 8.041 W	
23,800.0	90.00	272.17	8,840.0	615.9	-16,320.4	523,745.68	566,256.82	32° 26' 23.339 N	104° 15' 9.207 W	
23,900.0	90.00	272.17	8,840.0	619.7	-16,420.3	523,749.46	566,156.89	32° 26' 23.377 N	104° 15' 10.373 W	
24,000.0	90.00	272.17	8,840.0	623.5	-16,520.3	523,753.24	566,056.96	32° 26' 23.415 N	104° 15' 11.539 W	
24,100.0	90.00	272.17	8,840.0	627.3	-16,620.2	523,757.02	565,957.04	32° 26' 23.453 N	104° 15' 12.705 W	
24,200.0	90.00	272.17	8,840.0	631.1	-16,720.1	523,760.80	565,857.11	32° 26' 23.492 N	104° 15' 13.871 W	
24,298.3	90.00	272.17	8,840.0	634.8	-16,818.4	523,764.51	565,758.85	32° 26' 23.529 N	104° 15' 15.017 W	
TD at 24298.3 - LTP/BHL-FSC 221H										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PP2-FSC 221H - plan hits target center - Point	0.00	0.00	8,840.0	444.3	-11,670.0	523,574.08	570,907.24	32° 26' 21.603 N	104° 14' 14.941 W	
FTP-FSC 221H - plan misses target center by 197.8usft at 8866.0usft MD (8700.9 TVD, 619.1 N, -1428.2 E) - Point	0.00	0.00	8,840.0	621.5	-1,287.6	523,751.27	581,289.58	32° 26' 23.248 N	104° 12' 13.784 W	
LTP/BHL-FSC 221H - plan hits target center - Point	0.00	0.00	8,840.0	634.8	-16,818.4	523,764.51	565,758.85	32° 26' 23.529 N	104° 15' 15.017 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
5.0	5.0	RUSTLER				
330.7	330.0	SALADO=T/SALT				
441.7	440.0	CAPITAN				
2,037.9	2,010.0	BYCN				
2,658.1	2,620.0	CYCN				
4,935.6	4,860.0	BYCN				
5,159.3	5,080.0	BSGLM				
6,392.6	6,293.0	FBSG				
7,172.5	7,060.0	SBSG				
8,532.5	8,405.0	TBSG				
8,917.2	8,735.0	WFMP				

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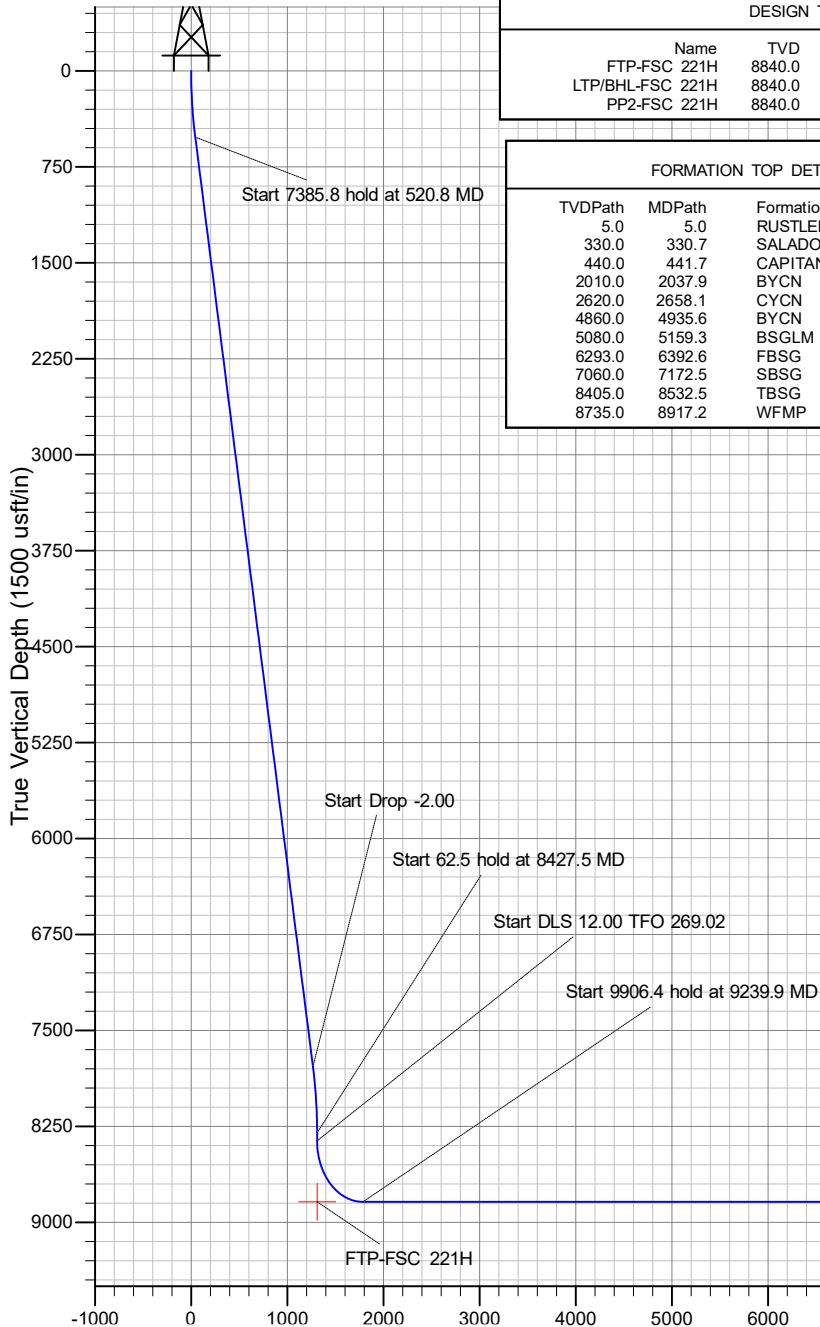
Planning Report - Geographic

Database:	Compass_17	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Company:	NEW MEXICO	TVD Reference:	KB @ 3153.0usft
Project:	(SP) EDDY	MD Reference:	KB @ 3153.0usft
Site:	FRED PROJECT	North Reference:	Grid
Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
520.8	518.0	20.5	-42.5	Start 7385.8 hold at 520.8 MD
7,906.6	7,782.0	601.0	-1,245.1	Start Drop -2.00
8,427.5	8,300.0	621.5	-1,287.6	Start 62.5 hold at 8427.5 MD
8,490.0	8,362.5	621.5	-1,287.6	Start DLS 12.00 TFO 269.02
9,239.9	8,840.0	613.4	-1,765.0	Start 9906.4 hold at 9239.9 MD
19,146.3	8,840.0	444.3	-11,670.0	Start DLS 2.00 TFO 90.00
19,303.5	8,840.0	446.0	-11,827.2	Start 4994.8 hold at 19303.5 MD
24,298.3	8,840.0	634.8	-16,818.4	TD at 24298.3

PERMIAN RESOURCES

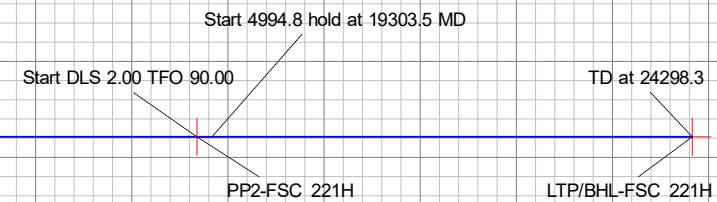
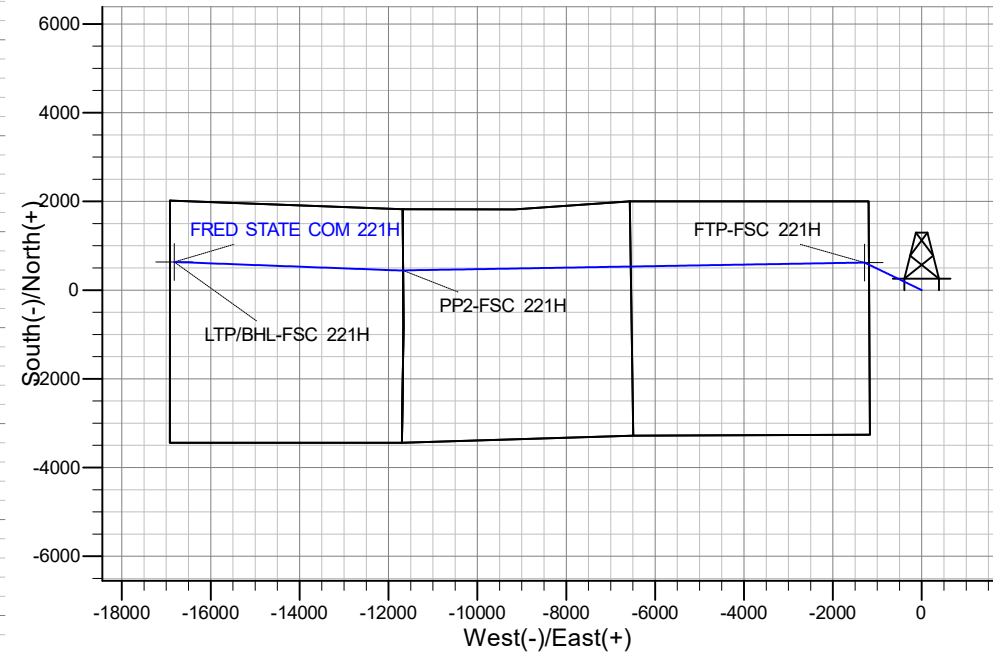
County: (SP) EDDY
Site: FRED PROJECT
Well: FRED STATE COM 221H
GE: 3123.0
Plan: PWP0



DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	
FTP-FSC 221H	8840.0	621.5	-1287.6	523751.27	581289.58	
LTP/BHL-FSC 221H	8840.0	634.8	-16818.4	523764.51	565758.85	
PP2-FSC 221H	8840.0	444.3	-11670.0	523574.08	570907.24	

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
5.0	5.0	RUSTLER
330.0	330.7	SALADO=T/SALT
440.0	441.7	CAPITAN
2010.0	2037.9	BYCN
2620.0	2658.1	CYCN
4860.0	4935.6	BYCN
5080.0	5159.3	BSGLM
6293.0	6392.6	FBSG
7060.0	7172.5	SBSG
8405.0	8532.5	TBSG
8735.0	8917.2	WFMP

SECTION DETAILS							
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.0	
520.8	10.42	295.77	518.0	20.5	-42.5	43.3	Start 7385.8 hold at 520.8 MD
7906.6	10.42	295.77	7782.0	601.0	-1245.1	1266.9	Start Drop -2.00
8427.5	0.00	0.00	8300.0	621.5	-1287.6	1310.2	Start 62.5 hold at 8427.5 MD
8490.0	0.00	0.00	8362.5	621.5	-1287.6	1310.2	Start DLS 12.00 TFO 269.02
9239.9	90.00	269.02	8840.0	613.4	-1765.0	1786.9	Start 9906.4 hold at 9239.9 MD
19146.3	90.00	269.02	8840.0	444.3	-11670.0	11678.4	Start DLS 2.00 TFO 90.00
19303.5	90.00	272.17	8840.0	446.0	-11827.2	11835.6	Start 4994.8 hold at 19303.5 MD
24298.3	90.00	272.17	8840.0	634.8	-16818.4	16830.3	TD at 24298.3



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R E S O U R C E S

NEW MEXICO

(SP) EDDY

FRED PROJECT

FRED STATE COM 221H

OWB

PWP0

Anticollision Report

21 November, 2025

PERMIAN**RESOURCES**

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference	PWP0		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,000.0usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	11/21/2025		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	24,298.3	PWP0 (OWB)	MWD	OWSG_Rev2_ MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
FRED PROJECT						
FRED STATE COM 121H - OWB - PWP0	405.8	403.0	59.4	56.8	22.531	CC, ES
FRED STATE COM 121H - OWB - PWP0	4,100.0	4,107.2	438.0	403.6	12.737	SF
FRED STATE COM 131H - OWB - PWP0	0.0	0.0	33.0			
FRED STATE COM 131H - OWB - PWP0	6,400.0	6,358.7	810.5	755.4	14.710	SF
FRED STATE COM 132H - OWB - PWP0	0.0	0.0	99.0			
FRED STATE COM 132H - OWB - PWP0	1,200.0	1,180.6	233.1	224.7	27.663	SF
FRED STATE COM 222H - OWB - PWP0	0.0	0.0	66.0			
FRED STATE COM 222H - OWB - PWP0	1,600.0	1,575.8	279.2	267.8	24.491	SF

Offset Design:	FRED PROJECT - FRED STATE COM 121H - OWB - PWP0											Offset Site Error:	0.0 usft
Survey Program:	0-MWD											Offset Well Error:	0.0 usft
Reference Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	66.0	0.0	66.0				
100.0	100.0	98.6	98.6	0.1	0.2	65.63	66.0	0.0	65.3	64.9	0.38	172.403	
200.0	199.8	198.4	198.4	0.5	0.6	69.98	66.0	0.0	63.3	62.2	1.10	57.527	
300.0	299.5	298.1	298.1	0.9	1.0	77.73	66.0	0.0	60.8	59.0	1.84	33.107	
400.0	398.7	397.3	397.3	1.3	1.3	89.23	66.0	0.0	59.4	56.9	2.59	22.923	
405.8	404.4	403.0	403.0	1.3	1.3	90.00	66.0	0.0	59.4	56.8	2.64	22.531	CC, ES
500.0	497.5	496.1	496.1	1.7	1.7	103.81	66.0	0.0	61.3	57.9	3.36	18.206	
520.8	518.0	516.6	516.6	1.8	1.7	107.04	66.0	0.0	62.3	58.7	3.53	17.654	
600.0	595.8	594.4	594.4	2.1	2.0	118.52	66.0	0.0	67.9	63.8	4.13	16.444	
700.0	694.2	692.8	692.8	2.6	2.4	130.12	66.0	0.0	78.3	73.4	4.87	16.082	
800.0	792.5	791.1	791.1	3.1	2.7	138.79	66.0	0.0	91.1	85.5	5.59	16.301	
900.0	890.9	889.5	889.5	3.5	3.1	145.24	66.0	0.0	105.4	99.1	6.30	16.734	
1,000.0	989.2	987.8	987.8	4.0	3.4	150.11	66.0	0.0	120.8	113.8	7.01	17.225	
1,100.0	1,087.6	1,086.2	1,086.2	4.4	3.8	153.88	66.0	0.0	136.8	129.1	7.73	17.710	
1,200.0	1,185.9	1,184.5	1,184.5	4.9	4.1	156.85	66.0	0.0	153.3	144.9	8.44	18.164	
1,300.0	1,284.3	1,282.9	1,282.9	5.3	4.5	159.24	66.0	0.0	170.1	161.0	9.16	18.579	
1,400.0	1,382.6	1,381.2	1,381.2	5.8	4.8	161.20	66.0	0.0	187.2	177.3	9.87	18.956	
1,500.0	1,481.0	1,479.6	1,479.6	6.3	5.2	162.83	66.0	0.0	204.4	193.8	10.59	19.295	
1,600.0	1,579.4	1,578.0	1,578.0	6.7	5.5	164.21	66.0	0.0	221.8	210.4	11.31	19.602	
1,700.0	1,677.7	1,676.3	1,676.3	7.2	5.9	165.38	66.0	0.0	239.2	227.2	12.03	19.879	

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

PERMIAN**RESOURCES****Anticollision Report**

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 121H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Distance		Rule Assigned:		Warning					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
1,800.0	1,776.1	1,774.7	1,774.7	7.6	6.3	166.40	66.0	0.0	256.8	244.0	12.76	20.130	
1,900.0	1,874.4	1,873.0	1,873.0	8.1	6.6	167.29	66.0	0.0	274.4	260.9	13.48	20.358	
2,000.0	1,972.8	1,971.4	1,971.4	8.6	7.0	168.07	66.0	0.0	292.1	277.9	14.20	20.567	
2,100.0	2,071.1	2,075.3	2,075.3	9.0	7.3	168.66	66.9	-0.5	309.2	294.2	14.96	20.665	
2,200.0	2,169.5	2,182.4	2,182.2	9.5	7.7	168.72	71.1	-2.8	323.9	308.1	15.74	20.581	
2,300.0	2,267.8	2,290.1	2,289.6	9.9	8.1	168.26	78.9	-7.1	336.0	319.5	16.51	20.349	
2,400.0	2,366.2	2,398.3	2,397.0	10.4	8.5	167.35	90.2	-13.3	345.6	328.3	17.29	19.990	
2,500.0	2,464.5	2,506.5	2,503.8	10.9	8.9	165.99	105.1	-21.6	352.8	334.8	18.07	19.524	
2,600.0	2,562.9	2,614.5	2,609.8	11.3	9.3	164.19	123.5	-31.7	357.8	339.0	18.87	18.966	
2,700.0	2,661.2	2,721.9	2,714.3	11.8	9.7	161.95	145.2	-43.7	360.8	341.2	19.68	18.333	
2,800.0	2,759.6	2,828.5	2,817.0	12.2	10.2	159.26	170.2	-57.5	362.2	341.7	20.53	17.641	
2,900.0	2,857.9	2,934.1	2,917.6	12.7	10.6	156.10	198.2	-72.9	362.3	340.9	21.43	16.908	
3,000.0	2,956.3	3,038.2	3,015.6	13.2	11.1	152.48	228.9	-89.9	361.7	339.3	22.39	16.157	
3,053.2	3,008.6	3,090.1	3,064.1	13.4	11.3	150.54	245.1	-98.8	361.5	338.6	22.92	15.772	
3,100.0	3,054.6	3,135.6	3,106.6	13.6	11.6	148.84	259.2	-106.6	361.7	338.3	23.40	15.457	
3,200.0	3,153.0	3,232.7	3,197.4	14.1	12.1	145.22	289.5	-123.3	363.2	338.7	24.44	14.857	
3,300.0	3,251.3	3,329.9	3,288.3	14.5	12.6	141.64	319.7	-140.0	366.2	340.7	25.52	14.349	
3,400.0	3,349.7	3,427.1	3,379.1	15.0	13.1	138.12	350.0	-156.6	370.7	344.1	26.62	13.927	
3,500.0	3,448.0	3,524.2	3,469.9	15.5	13.6	134.70	380.2	-173.3	376.6	348.9	27.73	13.582	
3,600.0	3,546.4	3,621.4	3,560.7	15.9	14.1	131.40	410.5	-190.0	383.9	355.0	28.85	13.307	
3,700.0	3,644.7	3,718.6	3,651.6	16.4	14.7	128.22	440.7	-206.7	392.5	362.5	29.97	13.095	
3,800.0	3,743.1	3,815.7	3,742.4	16.8	15.3	125.17	471.0	-223.4	402.2	371.2	31.09	12.939	
3,900.0	3,841.4	3,912.9	3,833.2	17.3	15.8	122.28	501.2	-240.1	413.2	381.0	32.20	12.831	
4,000.0	3,939.8	4,010.1	3,924.0	17.8	16.4	119.53	531.5	-256.7	425.1	391.8	33.30	12.766	
4,100.0	4,038.1	4,107.2	4,014.8	18.2	17.0	116.93	561.7	-273.4	438.0	403.6	34.39	12.737 SF	
4,200.0	4,136.5	4,204.4	4,105.7	18.7	17.6	114.48	591.9	-290.1	451.7	416.3	35.46	12.740	
4,300.0	4,234.9	4,301.6	4,196.5	19.1	18.2	112.17	622.2	-306.8	466.3	429.8	36.52	12.768	
4,400.0	4,333.2	4,398.8	4,287.3	19.6	18.7	110.01	652.4	-323.5	481.6	444.0	37.57	12.819	
4,500.0	4,431.6	4,495.9	4,378.1	20.1	19.3	107.97	682.7	-340.2	497.5	458.9	38.60	12.889	
4,600.0	4,529.9	4,593.1	4,469.0	20.5	19.9	106.06	712.9	-356.8	514.0	474.4	39.62	12.973	
4,700.0	4,628.3	4,690.3	4,559.8	21.0	20.5	104.26	743.2	-373.5	531.1	490.4	40.63	13.071	
4,800.0	4,726.6	4,787.4	4,650.6	21.4	21.2	102.58	773.4	-390.2	548.6	507.0	41.63	13.179	
4,900.0	4,825.0	4,884.6	4,741.4	21.9	21.8	101.00	803.7	-406.9	566.6	524.0	42.62	13.295	
5,000.0	4,923.3	4,981.8	4,832.2	22.4	22.4	99.51	833.9	-423.6	585.0	541.4	43.60	13.418	
5,100.0	5,021.7	5,078.9	4,923.1	22.8	23.0	98.12	864.2	-440.3	603.7	559.1	44.57	13.545	
5,200.0	5,120.0	5,176.1	5,013.9	23.3	23.6	96.81	894.4	-457.0	622.8	577.3	45.53	13.677	
5,300.0	5,218.4	5,273.3	5,104.7	23.7	24.2	95.57	924.7	-473.6	642.2	595.7	46.49	13.812	
5,400.0	5,316.7	5,370.5	5,195.5	24.2	24.9	94.41	954.9	-490.3	661.8	614.4	47.45	13.949	
5,500.0	5,415.1	5,467.6	5,286.4	24.7	25.5	93.31	985.2	-507.0	681.7	633.3	48.40	14.087	
5,600.0	5,513.4	5,564.8	5,377.2	25.1	26.1	92.27	1,015.4	-523.7	701.9	652.5	49.34	14.225	
5,700.0	5,611.8	5,662.0	5,468.0	25.6	26.7	91.30	1,045.7	-540.4	722.2	672.0	50.28	14.364	
5,800.0	5,710.1	5,759.1	5,558.8	26.0	27.4	90.37	1,075.9	-557.1	742.8	691.6	51.22	14.503	
5,900.0	5,808.5	5,856.3	5,649.6	26.5	28.0	89.49	1,106.1	-573.7	763.5	711.4	52.15	14.640	
6,000.0	5,906.8	5,953.5	5,740.5	27.0	28.6	88.66	1,136.4	-590.4	784.4	731.3	53.08	14.777	
6,100.0	6,005.2	6,050.6	5,831.3	27.4	29.2	87.88	1,166.6	-607.1	805.4	751.4	54.01	14.912	
6,200.0	6,103.5	6,147.8	5,922.1	27.9	29.9	87.13	1,196.9	-623.8	826.6	771.7	54.94	15.046	
6,300.0	6,201.9	6,245.0	6,012.9	28.3	30.5	86.42	1,227.1	-640.5	847.9	792.1	55.86	15.179	
6,400.0	6,300.2	6,342.2	6,103.8	28.8	31.1	85.74	1,257.4	-657.2	869.3	812.6	56.79	15.309	
6,500.0	6,398.6	6,439.3	6,194.6	29.3	31.8	85.10	1,287.6	-673.8	890.9	833.2	57.71	15.438	
6,600.0	6,496.9	6,536.5	6,285.4	29.7	32.4	84.49	1,317.9	-690.5	912.5	853.9	58.63	15.565	
6,700.0	6,595.3	6,633.7	6,376.2	30.2	33.1	83.90	1,348.1	-707.2	934.3	874.7	59.55	15.689	
6,800.0	6,693.7	6,730.8	6,467.0	30.6	33.7	83.34	1,378.4	-723.9	956.1	895.6	60.47	15.812	

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

PERMIAN
RESOURCES

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 121H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Rule Assigned:		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,900.0	6,792.0	6,828.0	6,557.9	31.1	34.3	82.81	1,408.6	-740.6	978.0	916.6	61.38	15.932		
7,000.0	6,890.4	6,925.2	6,648.7	31.6	35.0	82.30	1,438.9	-757.3	1,000.0	937.7	62.30	16.051		

PERMIAN**RESOURCES****Anticollision Report**

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 131H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-33.0	0.0	33.0				
100.0	100.0	100.0	100.0	0.1	0.3	-118.42	-33.0	0.0	33.8	33.4	0.38	88.154	
200.0	199.8	199.8	199.8	0.5	0.6	-125.59	-33.0	0.0	36.6	35.5	1.11	33.046	
300.0	299.5	299.5	299.5	0.9	1.0	-135.15	-33.0	0.0	42.3	40.4	1.84	22.919	
400.0	398.7	398.7	398.7	1.3	1.3	-144.60	-33.0	0.0	51.6	49.1	2.58	19.985	
500.0	497.5	497.5	497.5	1.7	1.7	-152.46	-33.0	0.0	65.1	61.7	3.32	19.579	
520.8	518.0	518.0	518.0	1.8	1.7	-153.86	-33.0	0.0	68.4	64.9	3.48	19.631	
600.0	595.8	595.8	595.8	2.1	2.0	-158.28	-33.0	0.0	81.5	77.4	4.05	20.101	
700.0	694.2	694.2	694.2	2.6	2.4	-162.17	-33.0	0.0	98.5	93.8	4.77	20.644	
800.0	792.5	792.5	792.5	3.1	2.7	-164.91	-33.0	0.0	115.9	110.4	5.49	21.099	
900.0	890.9	890.9	890.9	3.5	3.1	-166.93	-33.0	0.0	133.5	127.3	6.21	21.476	
1,000.0	989.2	989.2	989.2	4.0	3.4	-168.48	-33.0	0.0	151.1	144.2	6.94	21.789	
1,100.0	1,087.6	1,090.8	1,090.8	4.4	3.8	-169.34	-33.4	-1.4	168.1	160.4	7.67	21.924	
1,200.0	1,185.9	1,193.4	1,193.3	4.9	4.1	-169.13	-34.9	-6.2	182.9	174.5	8.40	21.783	
1,300.0	1,284.3	1,296.5	1,296.0	5.3	4.5	-168.08	-37.5	-14.7	195.7	186.6	9.14	21.408	
1,400.0	1,382.6	1,399.9	1,398.6	5.8	4.9	-166.30	-41.2	-26.6	206.6	196.7	9.90	20.856	
1,500.0	1,481.0	1,503.2	1,500.6	6.3	5.3	-163.86	-46.0	-42.1	215.7	205.0	10.69	20.177	
1,600.0	1,579.4	1,604.6	1,600.2	6.7	5.7	-160.93	-51.6	-60.5	223.5	212.0	11.50	19.440	
1,700.0	1,677.7	1,703.6	1,697.3	7.2	6.1	-158.14	-57.4	-79.0	231.7	219.3	12.32	18.798	
1,800.0	1,776.1	1,802.7	1,794.4	7.6	6.5	-155.53	-63.1	-97.4	240.3	227.2	13.17	18.252	
1,900.0	1,874.4	1,901.7	1,891.6	8.1	6.9	-153.11	-68.8	-115.9	249.4	235.4	14.02	17.786	
2,000.0	1,972.8	2,000.8	1,988.7	8.6	7.3	-150.86	-74.5	-134.4	259.0	244.1	14.89	17.387	
2,100.0	2,071.1	2,099.8	2,085.8	9.0	7.7	-148.77	-80.2	-152.9	268.8	253.1	15.77	17.044	
2,200.0	2,169.5	2,198.9	2,183.0	9.5	8.2	-146.83	-85.9	-171.4	279.1	262.4	16.66	16.750	
2,300.0	2,267.8	2,297.9	2,280.1	9.9	8.6	-145.03	-91.6	-189.9	289.6	272.0	17.56	16.495	
2,400.0	2,366.2	2,396.9	2,377.2	10.4	9.1	-143.36	-97.3	-208.4	300.4	281.9	18.46	16.275	
2,500.0	2,464.5	2,496.0	2,474.4	10.9	9.5	-141.80	-103.0	-226.9	311.4	292.1	19.36	16.083	
2,600.0	2,562.9	2,595.0	2,571.5	11.3	10.0	-140.35	-108.7	-245.4	322.7	302.4	20.27	15.917	
2,700.0	2,661.2	2,694.1	2,668.7	11.8	10.4	-139.00	-114.4	-263.9	334.1	312.9	21.18	15.772	
2,800.0	2,759.6	2,793.1	2,765.8	12.2	10.9	-137.73	-120.1	-282.4	345.7	323.6	22.10	15.645	
2,900.0	2,857.9	2,892.2	2,862.9	12.7	11.3	-136.55	-125.8	-300.9	357.4	334.4	23.01	15.534	
3,000.0	2,956.3	2,991.2	2,960.1	13.2	11.8	-135.45	-131.5	-319.4	369.3	345.4	23.93	15.436	
3,100.0	3,054.6	3,090.2	3,057.2	13.6	12.2	-134.41	-137.2	-337.9	381.4	356.5	24.84	15.351	
3,200.0	3,153.0	3,189.3	3,154.3	14.1	12.7	-133.44	-142.9	-356.4	393.5	367.8	25.76	15.275	
3,300.0	3,251.3	3,288.3	3,251.5	14.5	13.2	-132.52	-148.6	-374.9	405.8	379.1	26.68	15.208	
3,400.0	3,349.7	3,387.4	3,348.6	15.0	13.6	-131.66	-154.3	-393.4	418.1	390.5	27.60	15.149	
3,500.0	3,448.0	3,486.4	3,445.7	15.5	14.1	-130.85	-160.0	-411.8	430.5	402.0	28.52	15.097	
3,600.0	3,546.4	3,585.5	3,542.9	15.9	14.5	-130.08	-165.7	-430.3	443.1	413.6	29.44	15.051	
3,700.0	3,644.7	3,684.5	3,640.0	16.4	15.0	-129.36	-171.4	-448.8	455.7	425.3	30.36	15.010	
3,800.0	3,743.1	3,783.6	3,737.1	16.8	15.5	-128.67	-177.1	-467.3	468.3	437.0	31.28	14.974	
3,900.0	3,841.4	3,882.6	3,834.3	17.3	15.9	-128.02	-182.8	-485.8	481.0	448.8	32.19	14.941	
4,000.0	3,939.8	3,981.6	3,931.4	17.8	16.4	-127.41	-188.5	-504.3	493.8	460.7	33.11	14.913	
4,100.0	4,038.1	4,080.7	4,028.5	18.2	16.9	-126.82	-194.2	-522.8	506.6	472.6	34.03	14.887	
4,200.0	4,136.5	4,179.7	4,125.7	18.7	17.3	-126.27	-199.9	-541.3	519.5	484.6	34.95	14.864	
4,300.0	4,234.9	4,278.8	4,222.8	19.1	17.8	-125.74	-205.6	-559.8	532.4	496.6	35.87	14.844	
4,400.0	4,333.2	4,377.8	4,319.9	19.6	18.3	-125.23	-211.4	-578.3	545.4	508.6	36.79	14.826	
4,500.0	4,431.6	4,476.9	4,417.1	20.1	18.7	-124.75	-217.1	-596.8	558.4	520.7	37.70	14.811	
4,600.0	4,529.9	4,575.9	4,514.2	20.5	19.2	-124.29	-222.8	-615.3	571.5	532.8	38.62	14.797	
4,700.0	4,628.3	4,674.9	4,611.3	21.0	19.7	-123.86	-228.5	-633.8	584.5	545.0	39.54	14.784	
4,800.0	4,726.6	4,774.0	4,708.5	21.4	20.1	-123.44	-234.2	-652.3	597.7	557.2	40.46	14.773	
4,900.0	4,825.0	4,873.0	4,805.6	21.9	20.6	-123.04	-239.9	-670.8	610.8	569.4	41.37	14.763	
5,000.0	4,923.3	4,972.1	4,902.7	22.4	21.1	-122.65	-245.6	-689.3	624.0	581.7	42.29	14.755	

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

PERMIAN**RESOURCES**

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 131H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,021.7	5,071.1	4,999.9	22.8	21.6	-122.28	-251.3	-707.8	637.2	594.0	43.21	14.747	
5,200.0	5,120.0	5,170.2	5,097.0	23.3	22.0	-121.93	-257.0	-726.2	650.4	606.3	44.12	14.741	
5,300.0	5,218.4	5,269.2	5,194.1	23.7	22.5	-121.59	-262.7	-744.7	663.6	618.6	45.04	14.735	
5,400.0	5,316.7	5,368.3	5,291.3	24.2	23.0	-121.26	-268.4	-763.2	676.9	630.9	45.95	14.730	
5,500.0	5,415.1	5,467.3	5,388.4	24.7	23.4	-120.95	-274.1	-781.7	690.2	643.3	46.87	14.726	
5,600.0	5,513.4	5,566.3	5,485.5	25.1	23.9	-120.65	-279.8	-800.2	703.5	655.7	47.78	14.722	
5,700.0	5,611.8	5,665.4	5,582.7	25.6	24.4	-120.36	-285.5	-818.7	716.8	668.1	48.70	14.719	
5,800.0	5,710.1	5,764.4	5,679.8	26.0	24.9	-120.08	-291.2	-837.2	730.2	680.6	49.61	14.717	
5,900.0	5,808.5	5,863.5	5,777.0	26.5	25.3	-119.81	-296.9	-855.7	743.5	693.0	50.53	14.715	
6,000.0	5,906.8	5,962.5	5,874.1	27.0	25.8	-119.55	-302.6	-874.2	756.9	705.5	51.44	14.713	
6,100.0	6,005.2	6,061.6	5,971.2	27.4	26.3	-119.30	-308.3	-892.7	770.3	717.9	52.36	14.712	
6,200.0	6,103.5	6,160.6	6,068.4	27.9	26.7	-119.05	-314.0	-911.2	783.7	730.4	53.27	14.711	
6,300.0	6,201.9	6,259.6	6,165.5	28.3	27.2	-118.82	-319.7	-929.7	797.1	742.9	54.19	14.711	
6,400.0	6,300.2	6,358.7	6,262.6	28.8	27.7	-118.59	-325.4	-948.2	810.5	755.4	55.10	14.710 SF	
6,500.0	6,398.6	6,457.7	6,359.8	29.3	28.2	-118.37	-331.1	-966.7	824.0	768.0	56.01	14.710	
6,600.0	6,496.9	6,556.8	6,456.9	29.7	28.6	-118.16	-336.8	-985.2	837.4	780.5	56.93	14.711	
6,700.0	6,595.3	6,655.8	6,554.0	30.2	29.1	-117.95	-342.5	-1,003.7	850.9	793.1	57.84	14.711	
6,800.0	6,693.7	6,754.9	6,651.2	30.6	29.6	-117.75	-348.2	-1,022.2	864.4	805.6	58.75	14.712	
6,900.0	6,792.0	6,853.9	6,748.3	31.1	30.0	-117.56	-353.9	-1,040.7	877.9	818.2	59.67	14.713	
7,000.0	6,890.4	6,953.0	6,845.4	31.6	30.5	-117.37	-359.7	-1,059.1	891.4	830.8	60.58	14.714	
7,100.0	6,988.7	7,052.0	6,942.6	32.0	31.0	-117.19	-365.4	-1,077.6	904.9	843.4	61.49	14.715	
7,200.0	7,087.1	7,151.0	7,039.7	32.5	31.5	-117.02	-371.1	-1,096.1	918.4	856.0	62.41	14.716	
7,300.0	7,185.4	7,250.1	7,136.8	32.9	31.9	-116.84	-376.8	-1,114.6	931.9	868.6	63.32	14.717	
7,400.0	7,283.8	7,349.1	7,234.0	33.4	32.4	-116.68	-382.5	-1,133.1	945.4	881.2	64.23	14.719	
7,500.0	7,382.1	7,448.2	7,331.1	33.9	32.9	-116.52	-388.2	-1,151.6	959.0	893.8	65.15	14.720	
7,600.0	7,480.5	7,547.2	7,428.2	34.3	33.3	-116.36	-393.9	-1,170.1	972.5	906.5	66.06	14.722	
7,700.0	7,578.8	7,646.3	7,525.4	34.8	33.8	-116.21	-399.6	-1,188.6	986.1	919.1	66.97	14.724	
7,800.0	7,677.2	7,745.3	7,622.5	35.2	34.3	-116.06	-405.3	-1,207.1	999.6	931.7	67.88	14.726	

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

PERMIAN**RESOURCES****Anticollision Report**

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 132H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance	Rule Assigned:							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-99.0	0.0	99.0				
100.0	100.0	100.0	100.0	0.1	0.3	-116.65	-99.0	0.0	99.8	99.4	0.38	260.652	
200.0	199.8	199.8	199.8	0.5	0.6	-119.23	-99.0	0.0	102.2	101.1	1.11	92.423	
300.0	299.5	299.5	299.5	0.9	1.0	-123.23	-99.0	0.0	106.8	104.9	1.84	57.907	
400.0	398.7	398.7	398.7	1.3	1.3	-128.23	-99.0	0.0	113.9	111.3	2.59	43.959	
500.0	497.5	497.5	497.5	1.7	1.7	-133.71	-99.0	0.0	124.3	120.9	3.35	37.125	
520.8	518.0	518.0	518.0	1.8	1.7	-134.87	-99.0	0.0	126.9	123.4	3.51	36.158	
600.0	595.8	595.8	595.8	2.1	2.0	-139.08	-99.0	0.0	137.4	133.3	4.10	33.516	
700.0	694.2	694.2	694.2	2.6	2.4	-143.53	-99.0	0.0	151.6	146.8	4.84	31.331	
800.0	792.5	792.5	792.5	3.1	2.7	-147.21	-99.0	0.0	166.6	161.0	5.57	29.891	
900.0	890.9	890.9	890.9	3.5	3.1	-150.28	-99.0	0.0	182.1	175.8	6.30	28.893	
1,000.0	989.2	989.2	989.2	4.0	3.4	-152.87	-99.0	0.0	198.1	191.1	7.03	28.174	
1,100.0	1,087.6	1,085.1	1,085.1	4.4	3.8	-154.70	-100.1	-0.6	214.9	207.2	7.73	27.788	
1,200.0	1,185.9	1,180.6	1,180.4	4.9	4.1	-155.52	-104.0	-2.7	233.1	224.7	8.43	27.663 SF	
1,300.0	1,284.3	1,275.6	1,275.2	5.3	4.4	-155.55	-110.7	-6.2	252.5	243.4	9.12	27.674	
1,400.0	1,382.6	1,370.2	1,369.1	5.8	4.7	-154.95	-120.1	-11.1	273.2	263.4	9.83	27.779	
1,500.0	1,481.0	1,463.9	1,461.9	6.3	5.1	-153.87	-132.1	-17.5	295.2	284.6	10.56	27.964	
1,600.0	1,579.4	1,556.7	1,553.2	6.7	5.4	-152.44	-146.7	-25.2	318.6	307.3	11.29	28.224	
1,700.0	1,677.7	1,648.4	1,642.9	7.2	5.8	-150.75	-163.6	-34.1	343.5	331.5	12.03	28.563	
1,800.0	1,776.1	1,738.8	1,730.6	7.6	6.2	-148.90	-182.8	-44.2	370.2	357.5	12.78	28.980	
1,900.0	1,874.4	1,827.7	1,816.2	8.1	6.5	-146.94	-204.0	-55.4	398.8	385.3	13.53	29.479	
2,000.0	1,972.8	1,915.1	1,899.6	8.6	7.0	-144.95	-227.2	-67.6	429.4	415.1	14.28	30.064	
2,100.0	2,071.1	2,000.0	1,979.8	9.0	7.4	-142.96	-251.8	-80.6	462.0	447.0	15.02	30.756	
2,200.0	2,169.5	2,084.6	2,058.9	9.5	7.8	-140.98	-278.4	-94.7	496.9	481.1	15.78	31.494	
2,300.0	2,267.8	2,166.7	2,134.7	9.9	8.3	-139.07	-306.2	-109.3	533.9	517.4	16.51	32.337	
2,400.0	2,366.2	2,251.8	2,212.4	10.4	8.8	-137.14	-336.8	-125.5	573.1	555.8	17.30	33.135	
2,500.0	2,464.5	2,341.8	2,294.6	10.9	9.4	-135.33	-369.4	-142.6	613.0	594.8	18.15	33.770	
2,600.0	2,562.9	2,431.8	2,376.7	11.3	10.0	-133.73	-402.0	-159.8	653.4	634.4	19.01	34.365	
2,700.0	2,661.2	2,521.8	2,458.8	11.8	10.6	-132.31	-434.5	-177.0	694.1	674.3	19.88	34.923	
2,800.0	2,759.6	2,611.8	2,540.9	12.2	11.2	-131.05	-467.1	-194.2	735.2	714.5	20.74	35.446	
2,900.0	2,857.9	2,701.8	2,623.0	12.7	11.8	-129.92	-499.7	-211.4	776.6	755.0	21.61	35.936	
3,000.0	2,956.3	2,791.7	2,705.1	13.2	12.4	-128.90	-532.3	-228.6	818.2	795.7	22.48	36.396	
3,100.0	3,054.6	2,881.7	2,787.2	13.6	13.0	-127.98	-564.9	-245.8	860.0	836.7	23.35	36.828	
3,200.0	3,153.0	2,971.7	2,869.3	14.1	13.7	-127.14	-597.5	-263.0	902.0	877.7	24.22	37.235	
3,300.0	3,251.3	3,061.7	2,951.4	14.5	14.3	-126.37	-630.1	-280.2	944.1	919.0	25.10	37.618	
3,400.0	3,349.7	3,151.7	3,033.5	15.0	14.9	-125.67	-662.7	-297.4	986.3	960.4	25.97	37.979	

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

PERMIAN**RESOURCES**

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: FRED PROJECT - FRED STATE COM 222H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-66.0	0.0	66.0				
100.0	100.0	100.0	100.0	0.1	0.3	-117.10	-66.0	0.0	66.8	66.4	0.38	174.389	
200.0	199.8	199.8	199.8	0.5	0.6	-120.91	-66.0	0.0	69.3	68.2	1.11	62.659	
300.0	299.5	299.5	299.5	0.9	1.0	-126.60	-66.0	0.0	74.2	72.3	1.84	40.234	
400.0	398.7	398.7	398.7	1.3	1.3	-133.30	-66.0	0.0	82.1	79.5	2.59	31.691	
500.0	497.5	497.5	497.5	1.7	1.7	-140.11	-66.0	0.0	93.5	90.2	3.34	28.014	
520.8	518.0	518.0	518.0	1.8	1.7	-141.47	-66.0	0.0	96.4	92.9	3.50	27.552	
600.0	595.8	595.8	595.8	2.1	2.0	-146.18	-66.0	0.0	108.0	104.0	4.08	26.469	
700.0	694.2	694.2	694.2	2.6	2.4	-150.84	-66.0	0.0	123.5	118.7	4.81	25.679	
800.0	792.5	792.5	792.5	3.1	2.7	-154.44	-66.0	0.0	139.7	134.1	5.54	25.225	
900.0	890.9	890.9	890.9	3.5	3.1	-157.30	-66.0	0.0	156.2	149.9	6.26	24.952	
1,000.0	989.2	989.2	989.2	4.0	3.4	-159.60	-66.0	0.0	173.1	166.1	6.98	24.782	
1,100.0	1,087.6	1,087.4	1,087.4	4.4	3.8	-161.09	-67.0	-0.9	190.2	182.5	7.70	24.715	
1,200.0	1,185.9	1,185.7	1,185.6	4.9	4.1	-161.39	-70.4	-4.1	207.5	199.1	8.40	24.689	
1,300.0	1,284.3	1,283.9	1,283.4	5.3	4.4	-160.78	-76.4	-9.5	224.9	215.8	9.12	24.645	
1,400.0	1,382.6	1,381.8	1,380.7	5.8	4.8	-159.45	-84.7	-17.2	242.5	232.6	9.86	24.586	
1,500.0	1,481.0	1,479.2	1,476.9	6.3	5.1	-157.57	-95.5	-27.0	260.5	249.9	10.62	24.529	
1,600.0	1,579.4	1,575.8	1,571.9	6.7	5.5	-155.26	-108.5	-39.0	279.2	267.8	11.40	24.491 SF	
1,700.0	1,677.7	1,671.4	1,665.3	7.2	5.9	-152.65	-123.7	-52.9	298.8	286.6	12.20	24.493	
1,800.0	1,776.1	1,765.9	1,756.8	7.6	6.3	-149.82	-141.0	-68.8	319.7	306.7	13.02	24.553	
1,900.0	1,874.4	1,860.6	1,847.8	8.1	6.7	-146.88	-160.3	-86.4	342.0	328.2	13.87	24.662	
2,000.0	1,972.8	1,956.5	1,939.9	8.6	7.2	-144.20	-180.1	-104.6	365.3	350.6	14.75	24.775	
2,100.0	2,071.1	2,052.4	2,031.9	9.0	7.6	-141.84	-199.9	-122.7	389.3	373.6	15.63	24.907	
2,200.0	2,169.5	2,148.2	2,124.0	9.5	8.1	-139.75	-219.7	-140.8	413.8	397.3	16.52	25.049	
2,300.0	2,267.8	2,244.1	2,216.0	9.9	8.6	-137.89	-239.4	-159.0	438.8	421.4	17.41	25.199	
2,400.0	2,366.2	2,340.0	2,308.0	10.4	9.1	-136.23	-259.2	-177.1	464.2	445.9	18.31	25.352	
2,500.0	2,464.5	2,435.9	2,400.1	10.9	9.6	-134.74	-279.0	-195.2	489.9	470.7	19.21	25.506	
2,600.0	2,562.9	2,531.7	2,492.1	11.3	10.1	-133.40	-298.8	-213.4	515.9	495.8	20.11	25.659	
2,700.0	2,661.2	2,627.6	2,584.2	11.8	10.6	-132.18	-318.6	-231.5	542.2	521.1	21.01	25.809	
2,800.0	2,759.6	2,723.5	2,676.2	12.2	11.1	-131.08	-338.4	-249.6	568.6	546.7	21.91	25.956	
2,900.0	2,857.9	2,819.4	2,768.3	12.7	11.7	-130.07	-358.2	-267.8	595.2	572.4	22.81	26.100	
3,000.0	2,956.3	2,915.3	2,860.3	13.2	12.2	-129.15	-377.9	-285.9	622.0	598.3	23.71	26.239	
3,100.0	3,054.6	3,011.1	2,952.4	13.6	12.7	-128.30	-397.7	-304.0	649.0	624.4	24.61	26.373	
3,200.0	3,153.0	3,107.0	3,044.4	14.1	13.2	-127.53	-417.5	-322.2	676.0	650.5	25.51	26.503	
3,300.0	3,251.3	3,202.9	3,136.4	14.5	13.8	-126.81	-437.3	-340.3	703.2	676.8	26.41	26.628	
3,400.0	3,349.7	3,298.8	3,228.5	15.0	14.3	-126.14	-457.1	-358.4	730.4	703.1	27.31	26.749	
3,500.0	3,448.0	3,394.6	3,320.5	15.5	14.8	-125.52	-476.9	-376.6	757.8	729.6	28.21	26.865	
3,600.0	3,546.4	3,490.5	3,412.6	15.9	15.4	-124.95	-496.7	-394.7	785.2	756.1	29.11	26.977	
3,700.0	3,644.7	3,586.4	3,504.6	16.4	15.9	-124.41	-516.5	-412.8	812.7	782.7	30.01	27.084	
3,800.0	3,743.1	3,682.3	3,596.7	16.8	16.5	-123.91	-536.2	-431.0	840.2	809.3	30.91	27.187	
3,900.0	3,841.4	3,778.1	3,688.7	17.3	17.0	-123.44	-556.0	-449.1	867.8	836.0	31.80	27.287	
4,000.0	3,939.8	3,874.0	3,780.8	17.8	17.5	-123.00	-575.8	-467.2	895.5	862.8	32.70	27.382	
4,100.0	4,038.1	3,969.9	3,872.8	18.2	18.1	-122.59	-595.6	-485.4	923.2	889.6	33.60	27.474	
4,200.0	4,136.5	4,065.8	3,964.8	18.7	18.6	-122.20	-615.4	-503.5	950.9	916.4	34.50	27.562	
4,300.0	4,234.9	4,161.7	4,056.9	19.1	19.2	-121.83	-635.2	-521.7	978.7	943.3	35.40	27.648	

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

PERMIAN

RESOURCES

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3153.0usft

Offset Depths are relative to Offset Datum

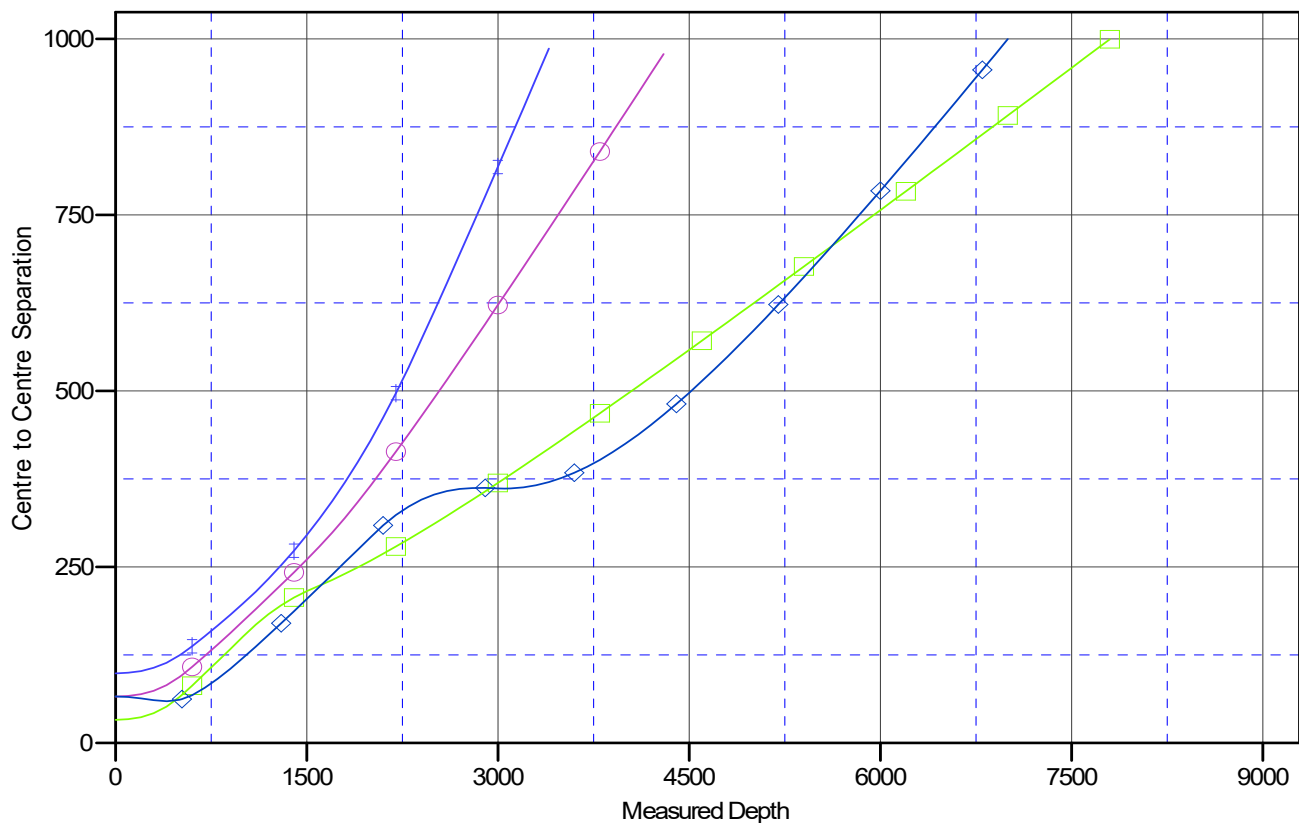
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: FRED STATE COM 221H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.07°

Ladder Plot



LEGEND

◆ FRED STATECOM1132H.OWB/PWP0V0 ● FRED STATECOM222H.OWB/PWP0V0
■ FRED STATECOM131H.OWB/PWP0V0 ◆ FRED STATECOM121H.OWB/PWP0V0

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

PERMIAN

RESOURCES

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well FRED STATE COM 221H
Project:	(SP) EDDY	TVD Reference:	KB @ 3153.0usft
Reference Site:	FRED PROJECT	MD Reference:	KB @ 3153.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	FRED STATE COM 221H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass_17
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3153.0usft

Offset Depths are relative to Offset Datum

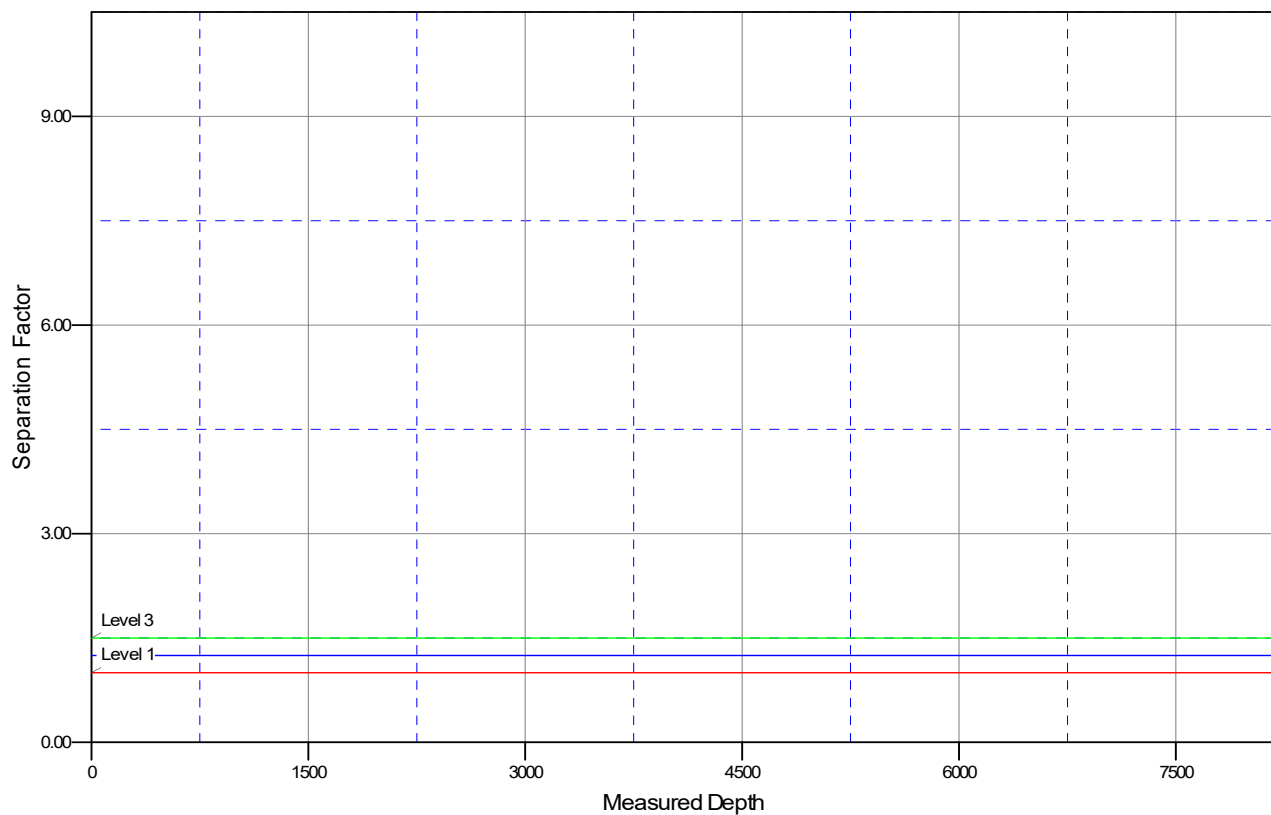
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: FRED STATE COM 221H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

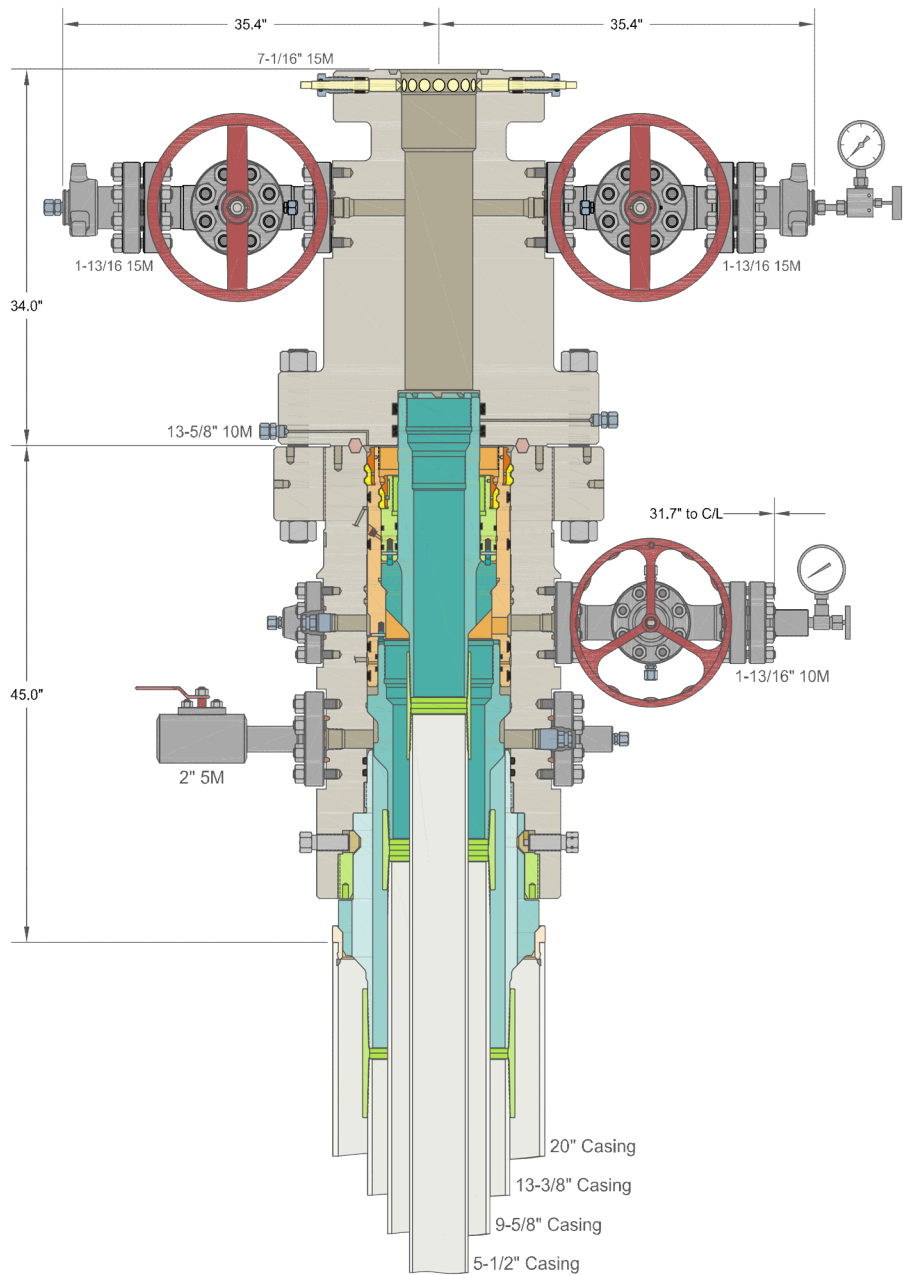
Grid Convergence at Surface is: 0.07°

Separation Factor Plot



LEGEND

FRED STATECOM132H.OWB/PWP0/0
 FRED STATECOM131H.OWB/PWP0/0
 FRED STATECOM222H.OWB/PWP0/0
 FRED STATECOM121H.OWB/PWP0/0



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ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC		CENTENNIAL RESOURCE DEVELOPMENT LEE CO, NM	
20" x 13-3/8" x 9-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO System With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head, 20" Landing Ring & Pin Down Mandrel Casing Hangers	DRAWN	DLE	10JUN20
	APPRV		
DRAWING NO.		HBE0000338	

Permian Resources

Multi-Well Pad Batch Drilling Procedure

Surface Casing - PR intends to Batch set all surface casing to a depth approved in the APD. Surface Holes will be batch drilled by a rig. Appropriate notifications will be made prior to spudding the well, running and cementing casing and prior to skidding to the rig to the next well on pad.

1. Drill Surface hole to Approved Depth with Rig and perform wellbore cleanup cycles. Trip out and rack back drilling BHA.
2. Run and land planned surface casing see Illustration 1-1 Below to depth approved in APD.
3. Set packoff and test to 5k psi
4. Offline Cement
5. Install wellhead with pressure gauge and nightcap. Nightcap is shown on final wellhead Stack up Illustration #2-2.
6. Skid Rig to adjacent well to drill Surface hole.
7. Surface casing test will be performed by the rig in order to allow ample time for Cement to develop 500psi compressive strength. Casing test to 0.22 psi/ft or 1500 psi whichever is greater - not to exceed 70% casing burst.

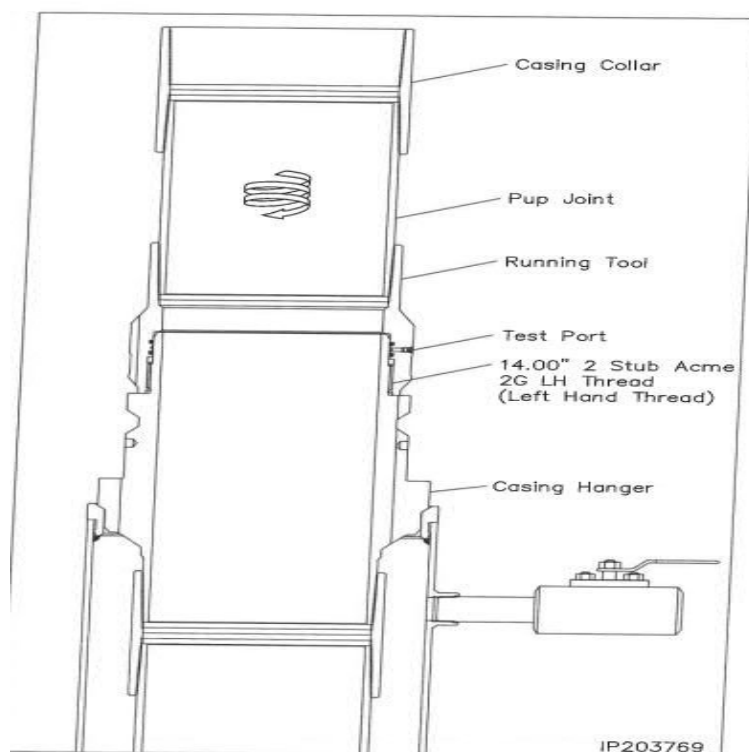


Illustration 1-1



Connection Data Sheet

Issued on: May. 09, 2025

5.500" 17.00# P-110 RY (SeAH) Bushmaster® SP SC6.050

Pipe Body Data	
Nominal OD	5.500 in.
Wall Thickness	0.304 in.
Weight	17.00 lb/ft
PE Weight	16.89 lb/ft
Nominal ID	4.892 in.
Drift	4.767 in.
Minimum Yield Strength	110,000 psi
Minimum Tensile Strength	125,000 psi
Remaining Body Wall (RBW)	95.0% Rating

Connection Data	
Connection OD	6.050 in.
Connection ID	4.892 in.
Make-Up Loss	4.209 in.
Tension Efficiency	100.0% Rating
Compression Efficiency	100.0% Rating
Yield Strength in Tension	546,000 lbs
Yield Strength in Compression	546,000 lbs
MIYP (Burst)	11,550 psi
Collapse	7,480 psi
Uniaxial Bending	91.7 °/100ft.

Make-up Torque		
Max. Operating Torque	-	37,300 ft. lbs
Maximum Make-up	-	17,900 ft. lbs
Optimum Make-Up	-	16,300 ft. lbs
Minimum Make-Up	-	14,700 ft. lbs

Buck-on Torque		
Maximum Make-Up	-	19,900 ft. lbs
Optimum Make-Up	-	18,100 ft. lbs
Minimum Make-Up	-	16,300 ft. lbs



For technical support please email support@fermata-tech.com or call (281) 941-5257.

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Connection performance values pertain to structural capacity.

Intermediate Casing – PR intends to Batch set all intermediate casing strings to a depth approved in the APD. Intermediate Holes will be batch drilled by the rig. Appropriate notifications will be made prior to testing BOPE, and prior to running/cementing all casing strings.

1. Rig will remove the nightcap and install and test BOPE.
2. Test Surface casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
3. Install wear bushing then drill out surface casing shoe-track plus 20' and conduct FIT to minimum of the MW equivalent anticipated to control the formation pressure to the next casing point.
4. Drill Intermediate hole to approved casing point. Trip out of hole with BHA to run Casing.
5. Remove wear bushing then run and land Intermediate Casing with mandrel hanger in wellhead.
6. Cement casing to surface with floats holding.
7. Washout stack then run wash tool in wellhead and wash hanger and pack-off setting area.
8. Install pack-off and test void to 5,000 psi for 15 minutes. Nightcap shown on final wellhead stack up illustration 2-2 on page 3.
9. Test casing per COA WOC timing (.22 psi/ft or 1500 psi whichever is greater) - not to exceed 70% casing burst. Cement must have achieved 500psi compressive strength prior to test.
10. Install nightcap – skid rig to adjacent well to drill Intermediate hole.

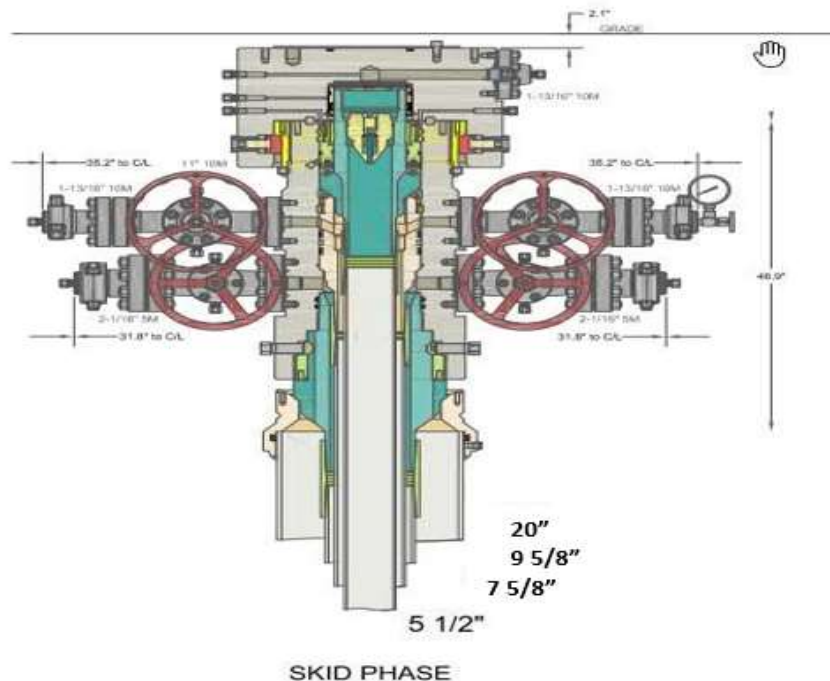


Illustration 2-2

Production Casing – PR intends to Batch set all Production casings with Rig. Appropriate notifications will be made prior Testing BOPE, and prior to running/cementing all casing strings.

1. Drilling Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing in production interval – Trip for Lateral BHA.
5. Drill Lateral / Production hole to Permitted BHL, perform cleanup cycles and trip out to run Production Casing.
6. Remove wear bushing then run Production casing to TD landing casing mandrel in wellhead.
7. Cement Production string with floats holding.
8. Run in with wash tool and wash wellhead area – install pack-off and test void to 5,000psi for 15 minutes.
9. Install BPV in Production mandrel hanger – Nipple down BOPE and install nightcap.
10. Test nightcap void to 5,000 psi for 30 minutes per illustration 2-2
11. Skid rig to adjacent well on pad to drill production hole.



ContiTech Fluid Technology

ContiTech Oil & Marine Corp. # 11535 Brittmoore Park Dr., Houston, TX 77041-6916 USA		Packing list / Delivery note		
CONSIGNEE / Ship-to address: HELMERICH & PAYNE INT'L DRILLING CO ATTN: FLEX RIG WHSE - B-BAY 210 MAGNOLIA DRIVE GALENA PARK TX 77547		Document No. 71461553 Document Date 28.01.2022		
Buyer: HELMERICH & PAYNE INT'L DRILLING CO 1437 SOUTH BOULDER 74119 TULSA		Customer Number 11697 Customer VAT No. Supplier Number Purchase Order No. 740362040 Purchase Order Date 18.01.2022 Sales Order Number 1388153 Sales Order Date 18.01.2022		
Conditions Incoterms EXW Houston Ex Works		Unloading Point RAN-No.		
		Page 1 of 2		
		Weights (Gross / Net) Total Gross Weight 2,507.000 LB Total Net Weight 2,507.000 LB		
Item	Material/Description	Quantity	Net Weight	Gross Weight
20	Buyer: Jack Peebles E-mail: Jackie.Peebles@hpinc.com Tel: 832-782-6000 Rig/Whse: HOW 00RECERTIFY Recert of HP Hoses Serial# 67094 Commodity Code: 3" X 35 FT 10K Choke & Kill Hoses API 16C End 1: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange End 2: 4 - 1/16" 10Kpsi API Spec 6A Type 6BX Flange c/w BX155 ring groove each end Standard: API Spec 16C - Monogrammed Working Pressure: 10.000psi Test Pressure: 15.000psi Inspection & Certification includes: External inspection of the hose & couplings Internal boroscopic inspection of hose liner Hydrostatic pressure test of hose assembly Repair of any external damage to hose body and end connections (limited to minor repairs). Clean & protect end connections Inspection Report Disposal of hose assembly if hose fails inspection and recertification process. Please Flush Hoses before sending them to our Facility.	1 PC	2,507.000 LB	2,507.000 LB

ContiTech Rubber Industrial Kft.
 H-6728 Szeged Budapesti út 10.
 P. O. Box 152 Szeged H-6701
 Phone: (62)566-700, Fax: (62)566-713
 Tax Number: 11087209-2-06
 EU Community VAT: HU11087209
 Registration No.: Cg. 0609-002502
 Registry Court: Csongrád Megyei Cégbíróság

COMMERZBANK ZRT. (HUF)
 H-1054 Budapest, Széchenyi rakpart 8.
 H-1245 Budapest P.O. Box 1070
 Account No.: 14220108-26830003
 IBAN: HU83 1422 0108 2683 0003 0000 0000
 SWIFT: COBA HU HXXX

COMMERZBANK AG Hannover (EUR)
 30159 Hannover, Theaterstr. 11-12.
 Account No.: 3 066 156 00
 Sort Code: 250 400 66
 BIC: COBADEFF250
 IBAN: DE41250400660306615600

Record Rotary Hose sleeve number on the CBC Made Hose List!!!!!!!!!!!!!!!!!!!!!!!!!!!!



Hydrostatic Test Certificate

ContiTech

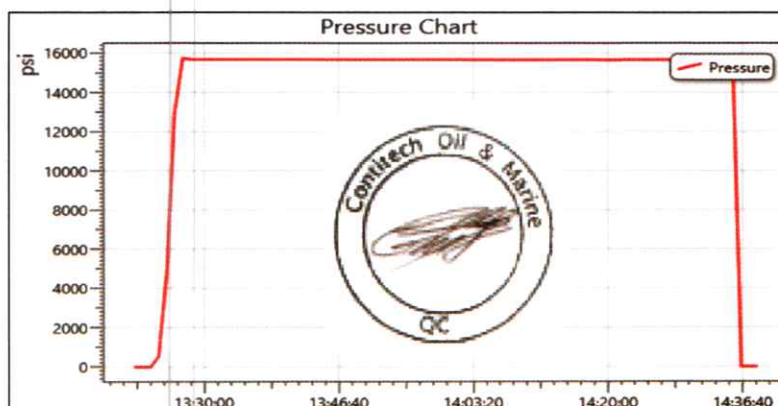
Certificate Number H100122	COM Order Reference 1388153	Customer Name & Address HELMERICH & PAYNE DRILLING CO 1434 SOUTH BOULDER AVE TULSA, OK 74119 USA
Customer Purchase Order No: 740362040		
Project:		
Test Center Address ContiTech Oil & Marine Corp. 11535 Brittmoore Park Drive Houston, TX 77041 USA	Accepted by COM Inspection Signed: Gerson Mejia-Lazo Date: 02/09/22	Accepted by Client Inspection

We certify that the goods detailed hereon have been inspected as described below by our Quality Management System, and to the best of our knowledge are found to conform the requirements of the above referenced purchase order as issued to ContiTech Oil & Marine Corporation.

Item	Part No.	Description	Qty	Serial Number	Work. Press. (psi)	Test Press. (psi)	Test Time (minutes)
20	RECERTIFICATION	3" ID 10K Choke and Kill Hose x 35ft OAL	1	67094	10,000	15,000	60

Record Information	
Start Time	1/27/2022 13:21:21
End Time	1/27/2022 14:38:28
Interval	00:01:00
Number	78
MaxValue	15849
MinValue	-3
AvgValue	14240
RecordName	67094-sh
RecordNumber	199

Gauge Information	
Model	ADT680
SN	21817380014
Range	(0-40000)psi
Unit	psi



Permian Resources BOP Break Testing Variance Procedure

Subject: Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE). Permian Resources requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

Background

Title 43 CFR 3172, Drilling Operations, Sections 6.b.9.iv states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. 43 CFR 3172.13, Variances from minimum standards states, "An operator may request the authorized officer to approve a variance from any of the minimum standards prescribed in §§ 3172.6 through 3172.12. All such requests shall be submitted in writing to the appropriate authorized officer and provide information as to the circumstances which warrant approval of the variance(s) requested and the proposed alternative methods by which the related minimum standard(s) are to be satisfied. The authorized officer, after considering all relevant factors, if appropriate, may approve the requested variance(s) if it is determined that the proposed alternative(s) meet or exceed the objectives of the applicable minimum standard(s)." Permian Resources feels the break testing the BOPE is such a situation. Therefore, as per 43 CFR 3172.13, Permian Resources submits this request for the variance.

Supporting Documentation

The language used in 43 CFR 3172 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time, there have been significant changes in drilling technology. The BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since 43 CFR 3172 was originally released. The Permian Resources drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System



American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. 43 CFR 3172 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, Well Control Equipment Systems for Drilling Wells (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states "A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component." See Table C.4 below for reference.

62		API STANDARD 53	
Table C.4—Initial Pressure Testing, Surface BOP Stacks			
Component to be Pressure Tested	Pressure Test—Low Pressure ^{a,c} psig (MPa)	Pressure Test—High Pressure ^{a,c}	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer ^b	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers ^{a,c}	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes ^a	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	
^a Pressure test evaluation periods shall be a minimum of five minutes. No visible leaks. The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure. ^b Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program. ^c For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. ^d For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually. ^e Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.			

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

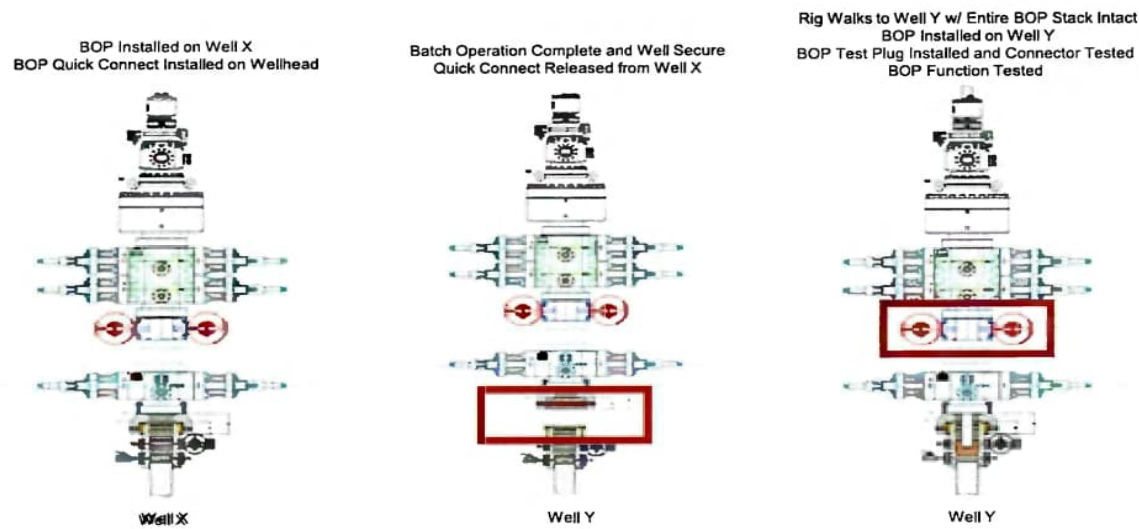
Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

Permian Resources feels break testing and our current procedures meet the intent of 43 CFR 3172 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. Permian Resources internal standards require complete BOPE tests more often than that of 43 CFR 3172 (every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, Permian Resources performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of 43 CFR 3172.

Procedures

- 1) Permian Resources will use this document for our break testing plan for New Mexico Delaware Basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
- 2) Permian Resources will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
 - a) A full BOP test will be conducted on the first well on the pad.
 - b) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same formation depth or shallower.
 - c) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
 - d) A full BOP test will be required prior to drilling any production hole.
- 3) After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
 - a) Between the HCV valve and choke line connection
 - b) Between the BOP quick connect and the wellhead
- 4) The BOP is then lifted and removed from the wellhead by a hydraulic system.
- 5) After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
- 6) The connections mentioned in 3a and 3b will then be reconnected.
- 7) Install test plug into the wellhead using test joint or drill pipe.
- 8) A shell test is performed against the upper pipe rams testing the two breaks.
- 9) The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
- 10) Function tests will be performed on the following components: lower pipe rams, blind rams, and annular.
- 11) For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
- 12) A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

Note: Picture below highlights BOP components that will be tested during batch operations



Summary

A variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operations, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

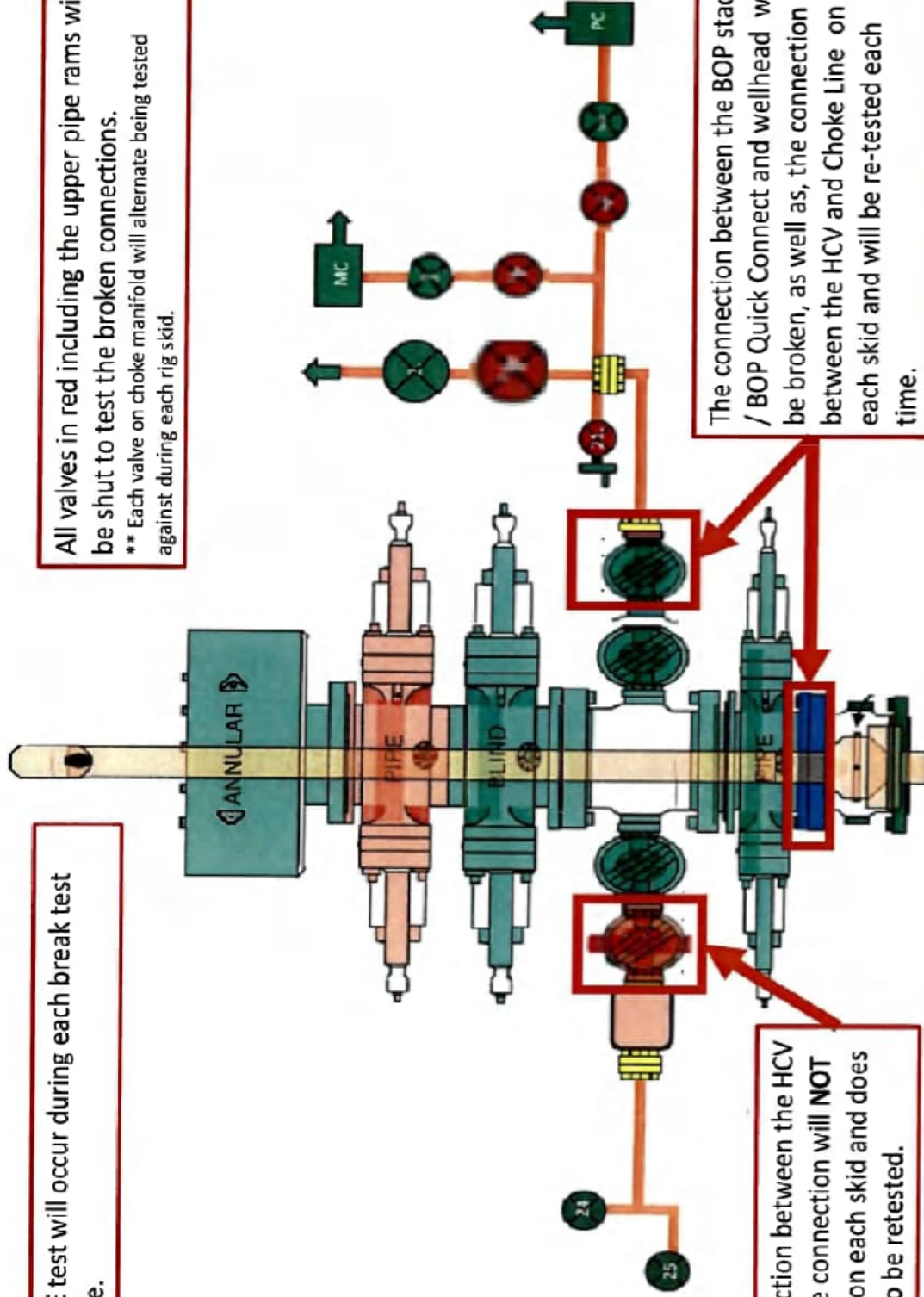
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

Based on public data and the supporting documentation submitted herein to the BLM, we will request permission to ONLY retest broken pressure seals if the following conditions are met:

- 1) After a full BOP test is conducted on the first well on the pad.
- 2) The first intermediate hole section drilled on the pad will be the deepest. All the remaining hole sections will be the same depth or shallower.
- 3) A full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
- 4) A full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.
 ** Each valve on choke manifold will alternate being tested against during each rig skid.

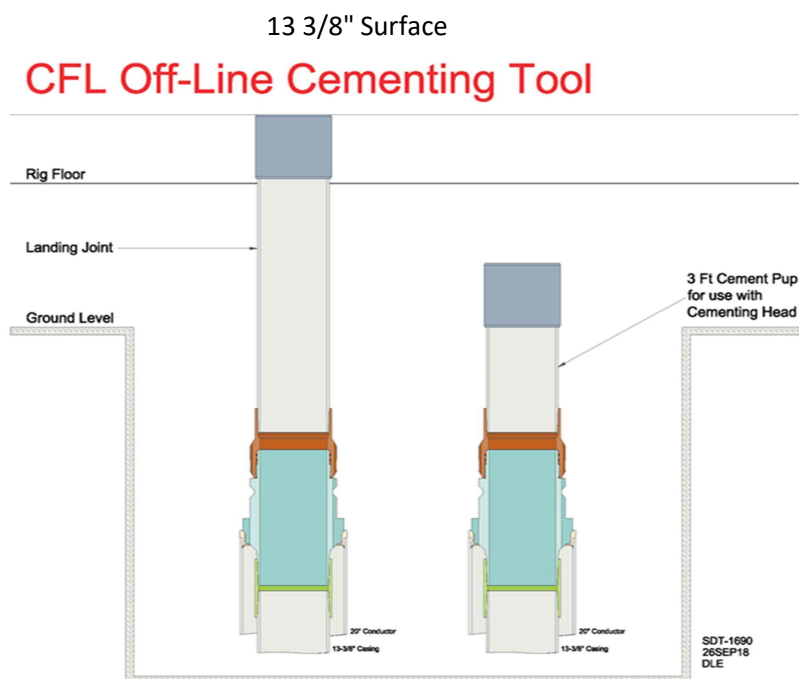


The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

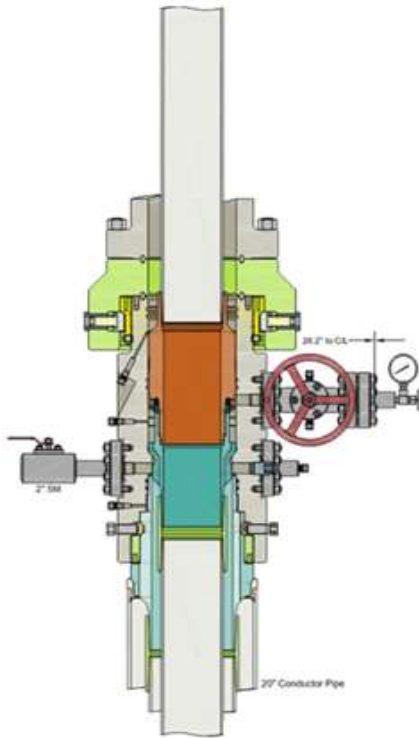
The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.

Permian Resources Offline Cementing Procedure Surface & Intermediate Casing

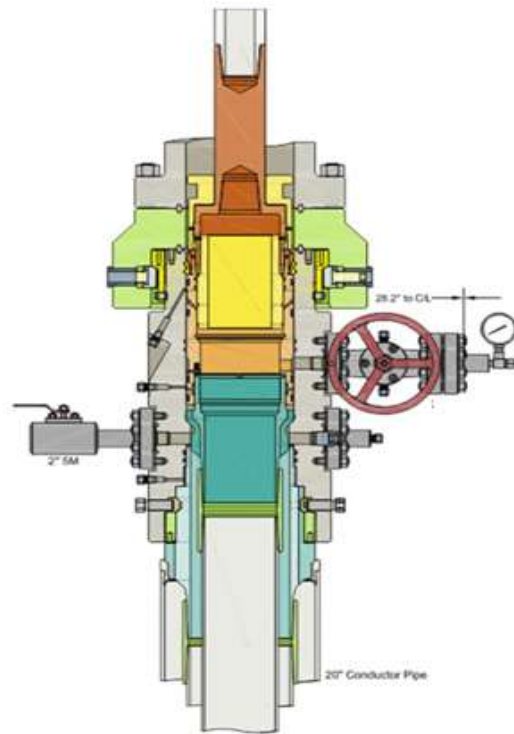
1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and install cap flange.
8. Skid rig to next well on pad
9. Remove cap flange (confirm well is static before removal)
 - a) If well is not static use the casing outlet valves to kill well
 - b) Drillers method will be used in well control event
 - c) High pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
 - d) Kill mud will be circulated once influx is circulated out of hole
 - e) Confirm well is static and remove cap flange to start offline cement operations
10. Install offline cement tool.
11. Rig up cementers.
12. Circulate bottoms up with cement truck
13. Commence planned cement job, take returns through the annulus wellhead valve
14. After plug is bumped confirm floats hold and well is static
15. Rig down cementers and equipment
16. Install night cap with pressure gauge to monitor.



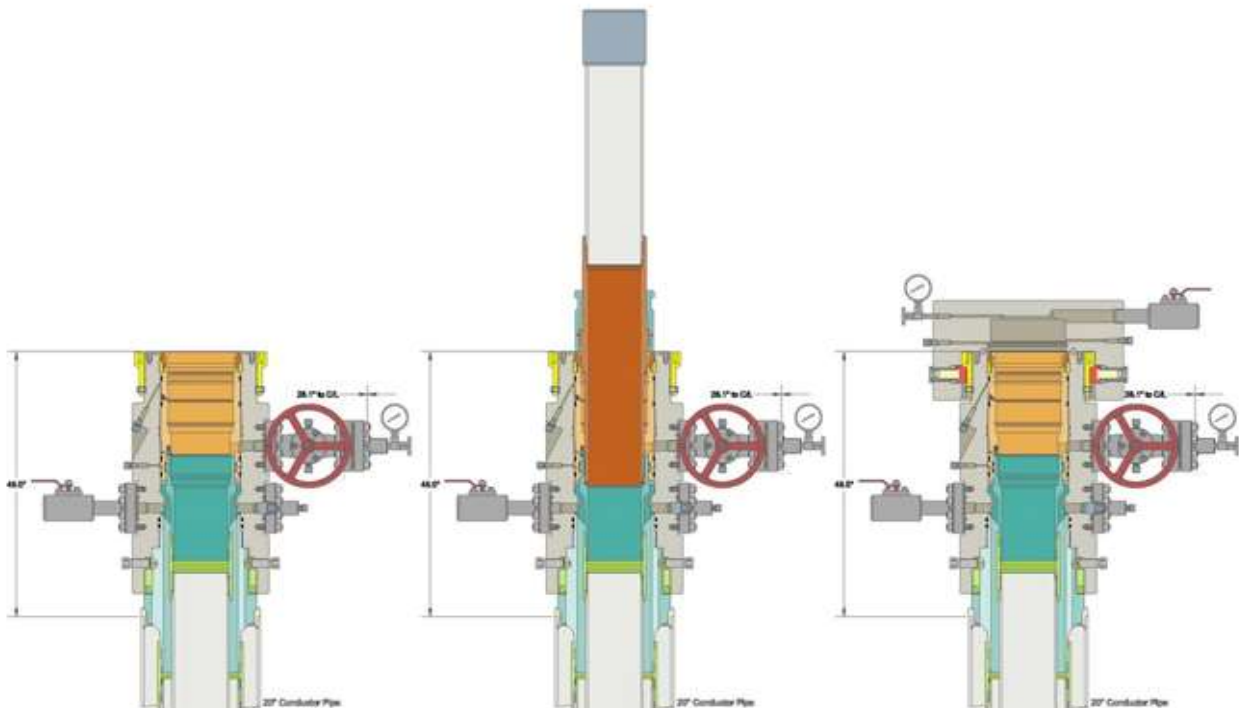
Intermediate



Run 7 5/8" Casing
Land Casing on 7 5/8" Mandrel Hanger
Cement 7 5/8" Casing
Retrieve Running Tool



Run 9 5/8" Packoff
Test Upper and Lower Seals
Engage Lockring
Retrieve Running Tool





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

CONDITIONS

Action 529791

CONDITIONS

Operator: Permian Resources Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 372165
	Action Number: 529791
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	12/3/2025