

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

5. Lease Serial No. NMNM0629320Z

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator EARTHSTONE OPERATING LLC

3a. Address 300 N MARIENFIELD STREET SUITE 1000, MID3b. Phone No. (include area code) (432) 695-4222

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 30/T26S/R35E/NMP

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No. LOS VAQUEROS FED COM/204H

9. API Well No. 3002549575

10. Field and Pool or Exploratory Area Jabalina/Wolfcamp; Southwest

11. Country or Parish, State LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

API: 30-025-49575

WELL NAME CHANGE

FROM: LOS VAQUEROS FED 204H

TO: ~~LOS VAQUEROS FED 444H~~ LOS VAQUEROS FED COM 444H

POOL NAME

FROM: (96672) WC-025 G-08 S263412K; BONE SPRING

TO: (96776) JABALINA; WOLFCAMP, SOUTHWEST

SURFACE HOLE LOCATION

FROM: B-30-26S-35E; 353' FNL, 1544' FEL

TO: B-30-26S-35E; 353' FNL, 1633' FEL

FIRST TAKE POINT

FROM: A-30-26S-35E; 100' FNL, 330' FEL

Continued on page 3 additional information

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) JENNIFER ELROD / Ph: (940) 452-6214

Senior Regulatory Analyst

Title

(Electronic Submission)

Signature

Date 01/12/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by CHRISTOPHER WALLS / Ph: (575) 234-2234 / Approved

Petroleum Engineer

Title

01/29/2024

Date

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

Office CARLSBAD

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Additional Remarks

TO: A-30-26S-35E; 100' FNL, 990' FEL;
STATE LINE CROSSING - LOT 5-31-26S-35E; 0' FSL, 990' FEL;
LTP & BHL CHANGES HAVE BEEN MADE
FROM: LOT 5-31-26S-32E; LEA COUNTY, NM
TO: SECT. 25, BLOCK C24, PUBLIC LANDS SURVEY A-701; LOVING COUNTY, TX;
DRILLING PLAN & CASING DESIGN CHANGES ATTACHED

Location of Well

0. SHL: NWNE / 353 FNL / 1544 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.0205785 / LONG: -103.4029197 (TVD: 0 feet, MD: 0 feet)
PPP: NENE / 299 FNL / 1330 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.020729 / LONG: -103.402238 (TVD: 3085 feet, MD: 3100 feet)
PPP: NESE / 2642 FNL / 332 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.014282 / LONG: -103.398995 (TVD: 11020 feet, MD: 13500 feet)
PPP: SENE / 1320 FNL / 331 FEL / TWSP: 26S / RANGE: 35E / SECTION: 30 / LAT: 32.017867 / LONG: -103.399001 (TVD: 11974 feet, MD: 12073 feet)
BHL: LOT 5 / 10 FSL / 330 FEL / TWSP: 26S / RANGE: 35E / SECTION: 31 / LAT: 32.0003189 / LONG: -103.3989714 (TVD: 11012 feet, MD: 18579 feet)

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT
WELL NUMBER, POOL/TARGET
DEPTH, SHL, FTP, LTP, BHL,
STATE LINE CROSSING

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-025-49575	2 Pool Code 96776	3 Pool Name JABALINA; WOLFCAMP, SOUTHWEST
4 Property Code 335610	5 Property Name LOS VAQUEROS FED COM	6 Well Number 444H
7 OGRID No. 331165	8 Operator Name EARTHSTONE OPERATING LLC	9 Elevation 3181.03'

10 Surface Location

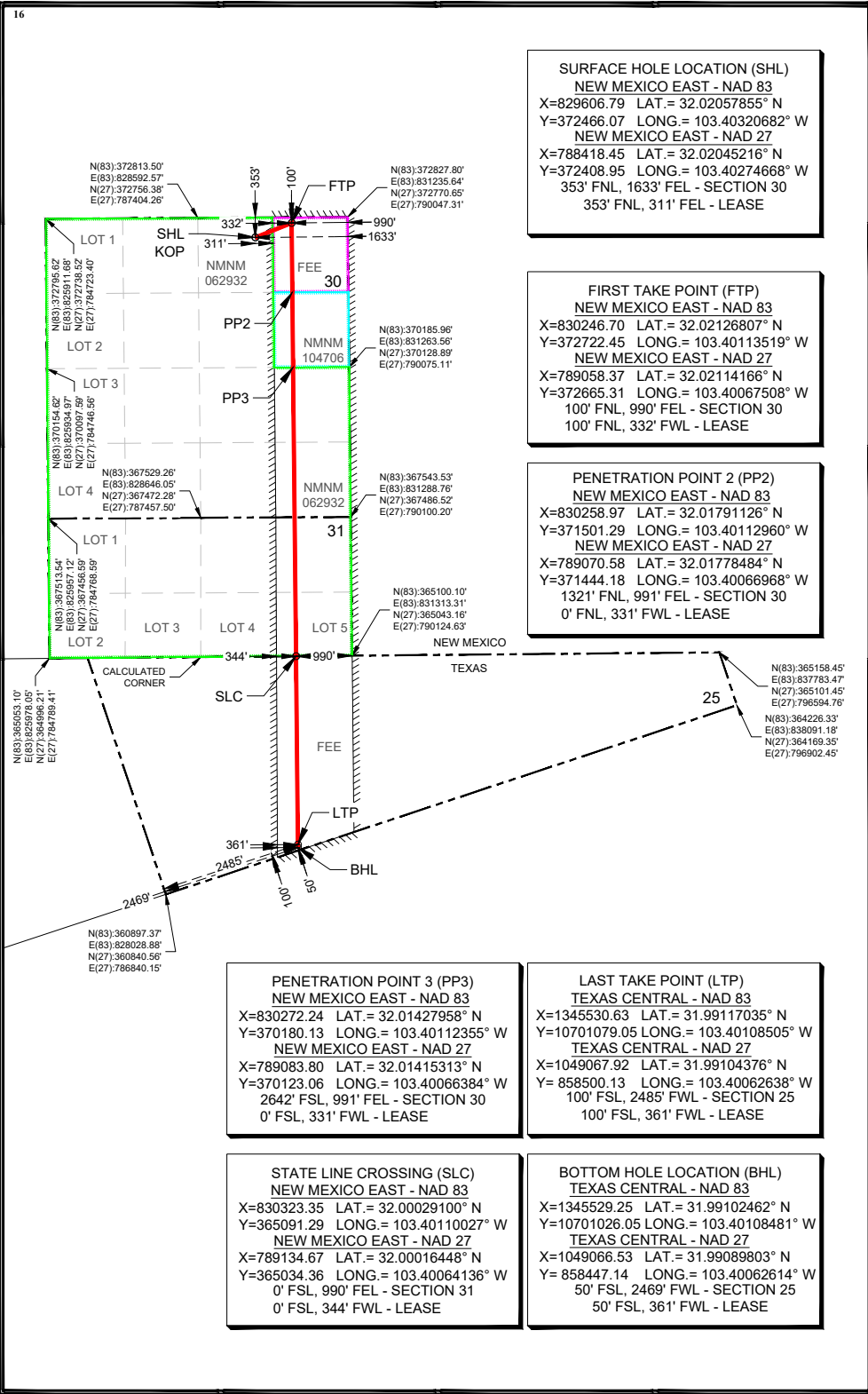
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	30	26-S	35-E		353'	NORTH	1633'	EAST	LEA

11 State Line Crossing If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
5	31	26-S	35-E		0'	SOUTH	990'	EAST	LEA

12 Dedicated Acres 240	13 Joint or Infill Y	14 Consolidation Code	15 Order No.
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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.
*BHL & LTP WILL BE IN TEXAS



17 OPERATOR CERTIFICATION

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

Signature: *Jennifer Elrod* Date: 12/15/2023

Printed Name: JENNIFER ELROD

E-mail Address: jennifer.elrod@permianres.com

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date of Survey: 12/13/2023

Signature and Seal of Professional Surveyor: *Charles L. Jurica*

Certificate Number: 25490

EARTHSTONE OPERATING, LLC

SHEET NO. 1 OF 1

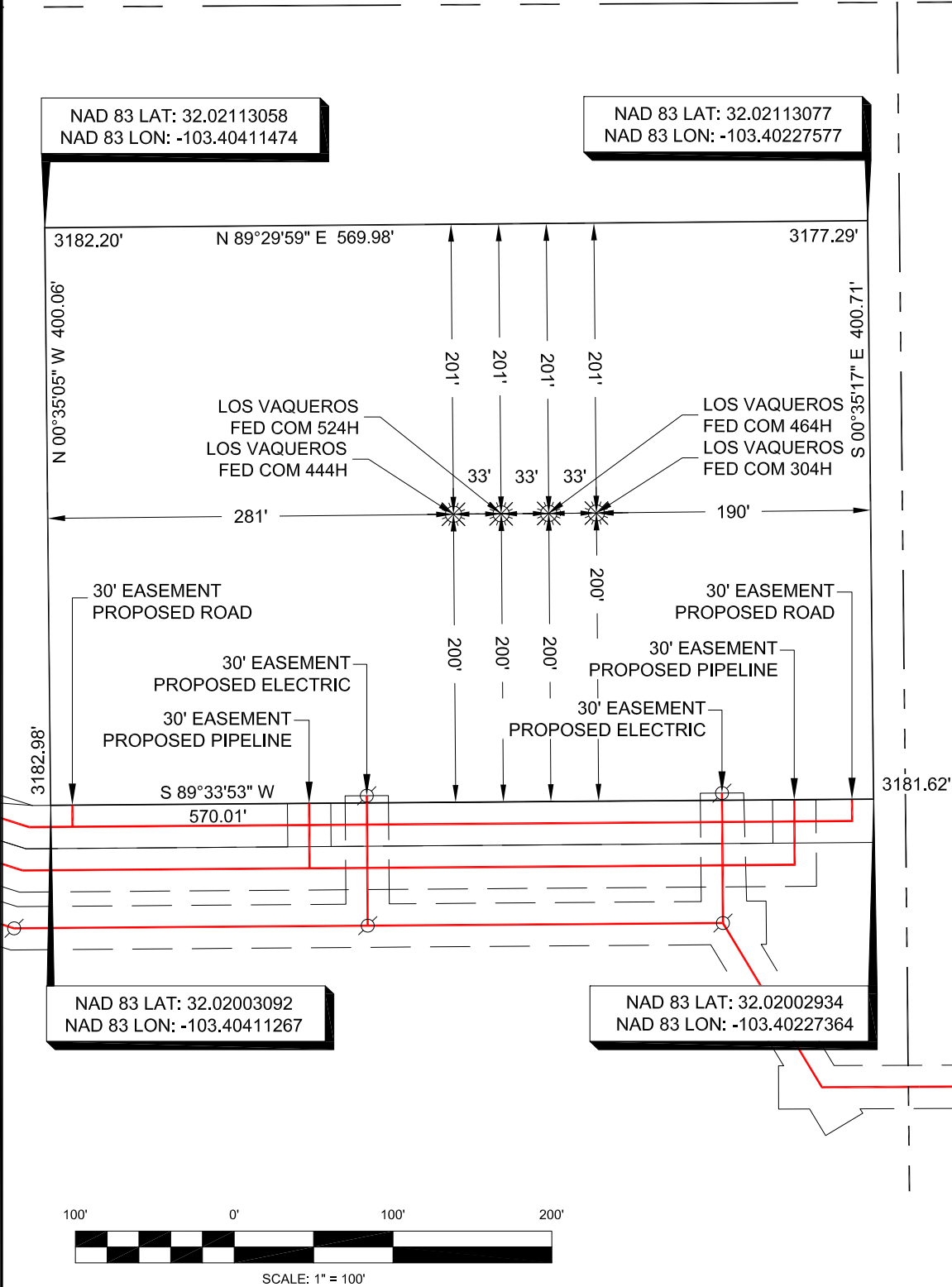
NATURE OF WORK PAD SITE EXHIBIT DATE 11-30-23 SRID NO. _____

PROJECT- LOS VAQUEROS WELL PAD 4 PLAT JOB OR AFE _____

SEC. 30 BLK OR RANGE 35E TWP 26S MERIDIAN NEW MEXICO PRINCIPAL MERIDIAN CO. LEA STATE NEW MEXICO

REMARKS TOTAL AREA= 5.239 ACRES (228,216 SQUARE FEET) RE: ☐ AS-BUILT ☒ STAKING _____

PROP. ROW. WIDTH _____ TEMP. WORK ROW WIDTH _____



LOS VAQUEROS FED COM 444H SURFACE HOLE LOCATION	
ELEVATION 3181.03'	
NEW MEXICO EAST - NAD 83	
NORTHING	372466.07
EASTING	829606.79
LATITUDE	32.02057855°
LONGITUDE	-103.40320682°
NEW MEXICO EAST - NAD 27	
NORTHING	372408.95
EASTING	788418.46
LATITUDE	32.02045216°
LONGITUDE	-103.40274668°

LOS VAQUEROS FED COM 524H SURFACE HOLE LOCATION	
ELEVATION 3180.76'	
NEW MEXICO EAST - NAD 83	
NORTHING	372466.36
EASTING	829639.79
LATITUDE	32.02057856°
LONGITUDE	-103.40310035°
NEW MEXICO EAST - NAD 27	
NORTHING	372409.24
EASTING	788451.45
LATITUDE	32.02045217°
LONGITUDE	-103.40264022°

LOS VAQUEROS FED COM 464H SURFACE HOLE LOCATION	
ELEVATION 3180.71'	
NEW MEXICO EAST - NAD 83	
NORTHING	372466.65
EASTING	829672.79
LATITUDE	32.02057857°
LONGITUDE	-103.40299388°
NEW MEXICO EAST - NAD 27	
NORTHING	372409.52
EASTING	788484.45
LATITUDE	32.02045218°
LONGITUDE	-103.40253375°

LOS VAQUEROS FED COM 304H SURFACE HOLE LOCATION	
ELEVATION 3180.98'	
NEW MEXICO EAST - NAD 83	
NORTHING	372466.94
EASTING	829705.79
LATITUDE	32.02057859°
LONGITUDE	-103.40288741°
NEW MEXICO EAST - NAD 27	
NORTHING	372409.81
EASTING	788517.45
LATITUDE	32.02045219°
LONGITUDE	-103.40242728°

NOTES:

1. BEARINGS, DISTANCES, AREA AND COORDINATES SHOWN HEREON ARE CORRELATED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM OF 1983, EAST ZONE, AS DETERMINED BY GPS OPUS OBSERVATIONS. ALL BEARINGS AND DISTANCES SHOWN ARE GRID.

2. LATITUDE & LONGITUDE ARE NAD 83 DECIMAL GEOGRAPHIC.

3. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THE REVIEW OF THE ABSTRACT OF TITLE. THERE MAY BE EASEMENTS AND/OR COVENANTS AFFECTING THIS PROPERTY NOT SHOWN HEREON. LOCATION OF ALL IMPROVEMENTS WAS BEYOND COMMISSIONED SCOPE OF THIS PROJECT AND HAS BEEN SPECIFICALLY OMITTED. VESTING DOCUMENTS NOT FURNISHED FOR THIS SURVEY.

DATE: 11-30-23 DATE SURVEYED 10-05-23 DRAFT AVP

JOB NO. 20061 FIELD BOOK V. JR01, P. 14 REV. 1

FILE 20061 LOS VAQUEROS WELL PAD 4 PLAT





TRANSGLOBAL
SERVICES LLC

TBPELS FIRM# 10194245
201 West Wall Street, Suite 325
Midland, TX 79701
(817) 529-1180 ~ Fax (817) 529-1181

I, CHARLES JURICA, A NEW MEXICO PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.


CHARLES JURICA NEW MEXICO PS #25490

12/13/2023
DATE

Permian Resources - Los Vaqueros Fed Com 444H

1. Geologic Formations

Formation	Lithology	Elevation	TVD	Target
Rustler	Sandstone	2171	1040	No
Top of Salt	Salt	1711	1500	No
Lamar	Anhydrite/Shale	-2123	5334	No
Capitan	Limestone	NP	NP	No
Cherry Canyon	Sandstone	-2167	5378	No
Brushy Canyon	Sandstone	NP	NP	No
Bone Spring Lime	Limestone	-6063	9274	No
1st Bone Spring Sand	Sandstone/Limestone/Shale	-7389	10600	No
2nd Bone Spring Sand	Sandstone/Limestone/Shale	-7851	11062	No
3rd Bone Spring Sand	Sandstone/Limestone/Shale	-8931	12142	No
Wolfcamp A/XY	Sandstone/Limestone/Shale	-9343	12554	Yes
Wolfcamp B	Sandstone/Limestone/Shale	-9765	12976	No

2. Blowout Prevention

BOP installed and tested before drilling	Size?	Min. Required WP	Type	x	Tested to:
8.75	13-5/8"	5M	Annular	x	5000 psi
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		
6.75	13-5/8"	10M	Annular	x	50% testing pressure
			Blind Ram	x	5000 psi
			Pipe Ram	x	
			Double Ram		
			Other*		

Equipment: 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 the components installed will be functional and tested. All BOPE connections shall be flanged, welded or clamped. All choke lines shall be straight unless targeted with running tees or tee blocks are used, and choke lines shall be anchored to prevent whip and reduce vibrations. All valves in the choke line & the choke manifold shall be full opening as to not cause restrictions and to allow for straight fluid paths to minimize potential erosion. All gauges utilized in the well control system shall be of a type designed for drilling fluid service. A top drive inside BOP valve will be utilized at all times. Subs equipped with full opening valves sized to fit the drill pipe and collars will be available on the rig floor in the open position. The key to operate said valve equipped subs will be on the rig floor at all times. The accumulator system will have sufficient capacity to open the HCR and close all three sets of rams plus the annular preventer while retaining at least 300 psi above precharge on the closing manifold (accumulator system shall be capable of doing so without using the closing unit pumps). The fluid reservoir capacity will be double the usable fluid volume of the accumulator system capacity, and the fluid level will be maintained at the manufacturer's recommended level. Prior to connecting the closing unit to the BOP stack, an accumulator precharge pressure test shall be performed to ensure the precharge pressure is within 100 psi of the desired precharge pressure (only nitrogen gas will be used to precharge). Two independent power sources will be made available at all times to power the closing unit pumps so that the pumps can automatically start when the closing valve manifold pressure has decreased to the preset level. Closing unit pumps will be sized to allow opening of HCR and closing of annular preventer on 5" drill pipe achieving at least 200 psi above precharge pressure with the accumulator system isolated from service in less than two minutes. A valve shall be installed in the closing line as close to the annular preventer as possible to act as a locking device; the valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative. Remote controls capable of opening and closing all preventers & the HCR shall be readily accessible to the driller; master controls with the same capability will be operable at the accumulator. The wellhead will be a multibowl speed head allowing for hangoff of intermediate casing & isolation of the 133/8 x 95/8 annulus without breaking the connection between the BOP & wellhead to install an additional casing head. A wear bushing will be installed & inspected frequently to guard against internal wear to wellhead. VBRs (variablebore rams) will be run in upper rambody of BOP stack to provide redundancy to annular preventer while RIH w/ production casing;

Requesting Variance? YES

Variance request: Flex hose and offline cement variances, see attachments in section 8.

Testing Procedure: 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 30 day intervals e. checked daily as to mechanical operating conditions. The ram type preventer(s) will be tested using a test plug to 250 psi (low) and 5,000 psi (high) (casinghead WP) with a test plug upon its installation onto the 13 surface casing. If a test plug is not used, the ram type preventer(s) shall be tested to 70% of the minimum internal yield pressure of the casing. The annular type preventer(s) shall be tested to 3500 psi. Pressure will be maintained for at least 10 minutes or until provisions of the test are met, whichever is longer. A Sundry Notice (Form 3160 5), along with a copy of the BOP test report, shall be submitted to the local BLM office within 5 working days following the test. If the bleed line is connected into the buffer tank (header), all BOP equipment including the buffer tank and associated valves will be rated at the required BOP pressure. The BLM office will be provided with a minimum of four (4) hours notice of BOP testing to allow witnessing. The BOP Configuration, choke manifold layout, and accumulator system, will be in compliance with Onshore Order 2 for a 5,000 psi system. A remote accumulator and a multi-bowl system will be used, please see attachment in section 8 for multi-bowl procedure. Pressures, capacities, and specific placement and use of the manual and/or hydraulic controls, accumulator controls, bleed lines, etc., will be identified at the time of the BLM 'witnessed BOP test. Any remote controls will be capable of both opening and closing all preventers and shall be readily accessible.

Choke Diagram Attachemnt: 5 M Choe Manifold
BOP Diagram Attachment: BOP Schematic

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	12.25	9.625	0	1130	0	1130	1130	J55	40	BTC	4.60	4.72	Dry	4.92	Dry	4.34
Intermediate	8.75	7.625	0	12000	0	12000	12000	P110HS	29.7	MOFXL	2.84	2.04	Dry	1.84	Dry	3.08
Production	6.75	5.5	0	11500	0	12671	11500	P110RY	20	GEOCONN	1.25	1.59	Dry	2.11	Dry	2.11
Production	6.75	5.5	11500	23588	12671	12671	12088	P110RY	20	Bushmaster SL	1.25	1.59	Dry	2.11	Dry	2.11
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	Lead	0	900	310	1.88	12.9	570	100%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Surface	Tail	900	1130	90	1.34	14.8	110	50%	Class C	Accelerator
Intermediate	Lead	0	9600	780	1.88	12.9	1450	50%	Class C	EconoCem-HLC + 5% Salt + 5% Kol-Seal
Intermediate	Tail	9600	12000	280	1.34	14.8	370	50%	Class C	Retarder
Production	Lead	11500	12253	70	2.41	11.5	160	40%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder
Production	Tail	12253	23588	690	1.73	12.5	1190	25%	Class H	POZ, Extender, Fluid Loss, Dispersant, Retarder

Permian Resources requests to pump a two stage cement job on the 7-5/8" 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: 8350 Cu Ft

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight	Max Weight
0	1130	Spud Mud	8.6	9.5
1130	12000	Water Based Mud	10	10
12000	11500	OBM	9	13.5
11500	23588	OBM	9	13.5

6. Test, Logging, Coring

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

Will utilize MWD/LWD (Gamma Ray logging) from intermediate hole to TD of the well.

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

DIRECTIONAL SURVEY, GAMMA RAY LOG,

Coring operation description for the well:

N/A

7. Pressure

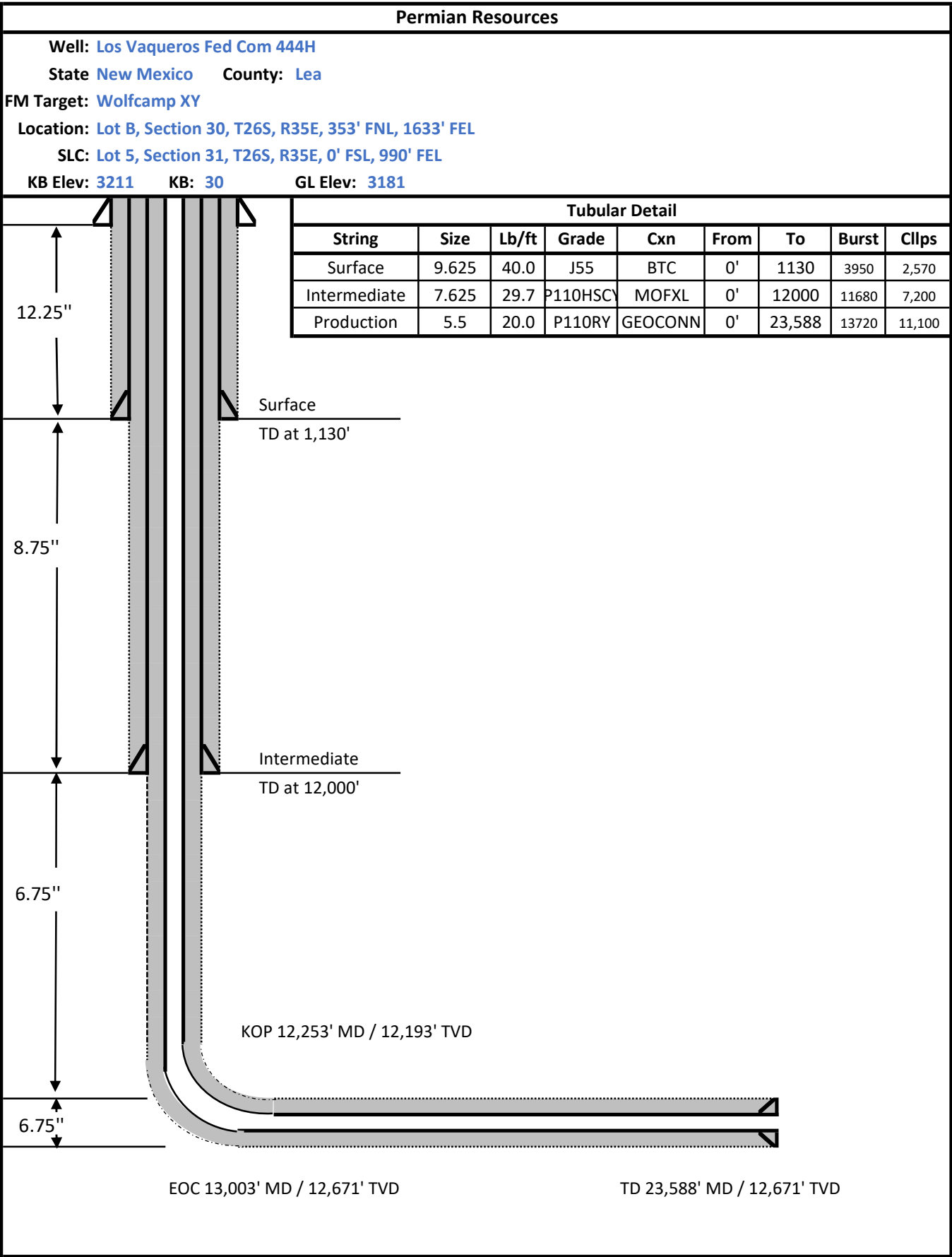
Anticipated Bottom Hole Pressure	8900	psi
Anticipated Surface Pressure	6107	psi
Anticipated Bottom Hole Temperature	180	°F
Anticipated Abnormal pressure, temp, or geo hazards	No	

8. Waste Management

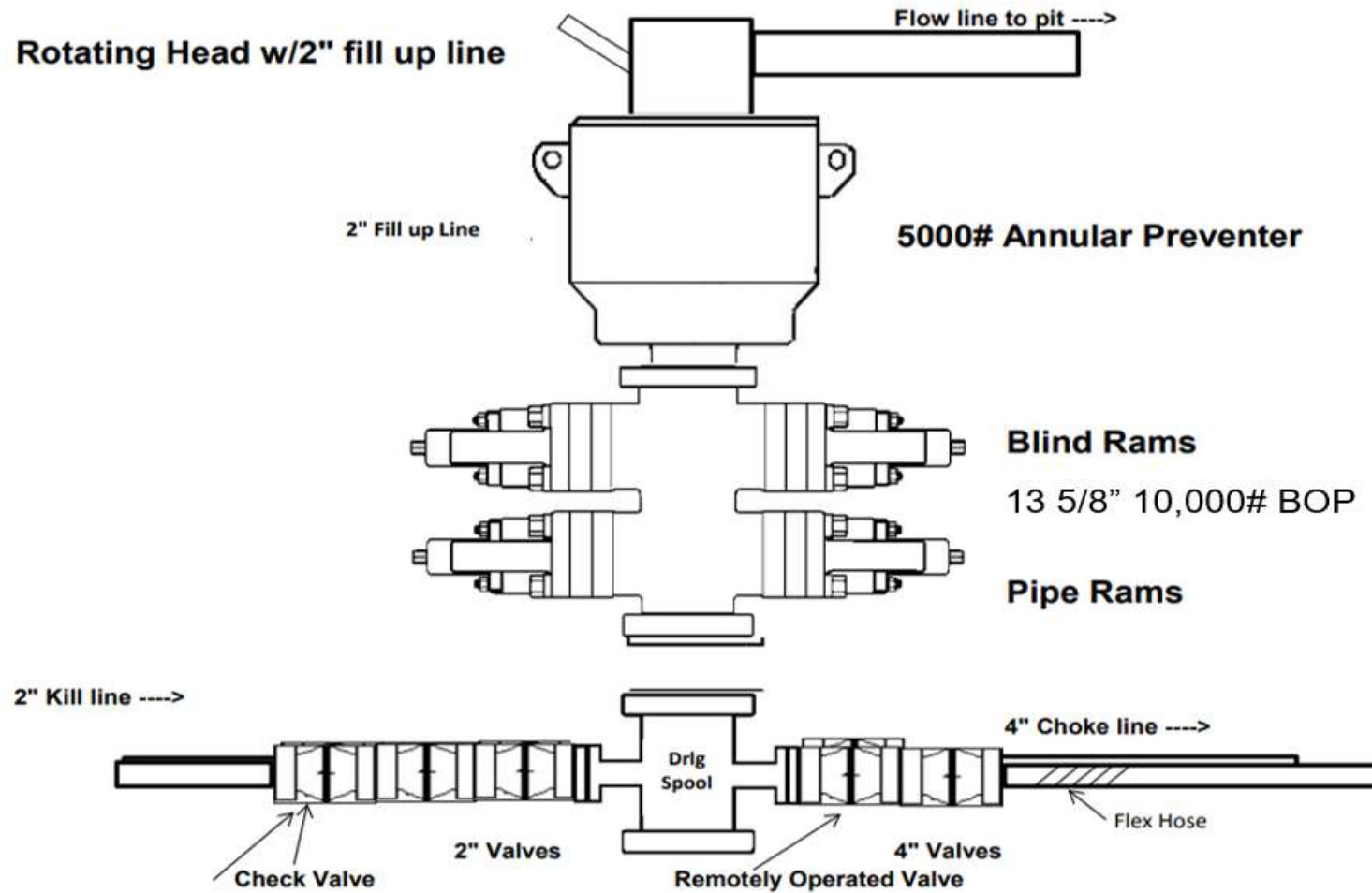
Waste Type:	Drilling
Waste content description:	Fresh water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Weekly (after drilling all surfaces)
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Grey Water & Human Waste
Waste content description:	Grey Water/Human Waste
Amount of waste:	5000 gallons
Waste disposal frequency:	Weekly
Safe containment description:	Approved waste storage tanks with containment
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Garbage
Waste content description:	General trash/garbage
Amount of waste:	5000 lbs
Waste disposal frequency:	Weekly
Safe containment description:	Enclosed trash trailer
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Drilling
Waste content description:	Drill Cuttings
Amount of waste:	8350 Cu Ft
Waste disposal frequency:	Per well
Safe containment description:	Steel tanks
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial
Waste Type:	Drilling
Waste content description:	Brine water based drilling fluid
Amount of waste:	1500 bbls
Waste disposal frequency:	Monthly
Safe containment description:	Steel tanks with plastic-lined containment berms
Waste disposal type:	Haul to commercial facility
Disposal location ownership:	Commercial

9. Other Information

Well Plan and AC Report: attached
Batching Drilling Procedure: attached
WBD: attached
Flex Hose Specs: attached
Offline Cementing Procedure Attached:



10,000 BOP Schematic



150' to Flare Pit

OUTLET FROM BOP

Choke Line Valve

Sequence Optional

Remotely Operated HCR

4" NOMINAL CHOKER LINE

5M PRESSURE GAUGE

2" Isolation Valve

2" Nominal

MANUAL CHOKER

CHOKER ISOLATION VALVE

BUFFER TANK

MUD GAS SEPARATOR (MGS)

MGS AND/OR PIT

CLOSED LOOP MUD SYSTEM

MGS Gas Vent Line

FOR BLEED OFF OR "PANIC" LINE TO PIT NOT CONNECTED TO BUFFER TANK OR MGS



ContiTech

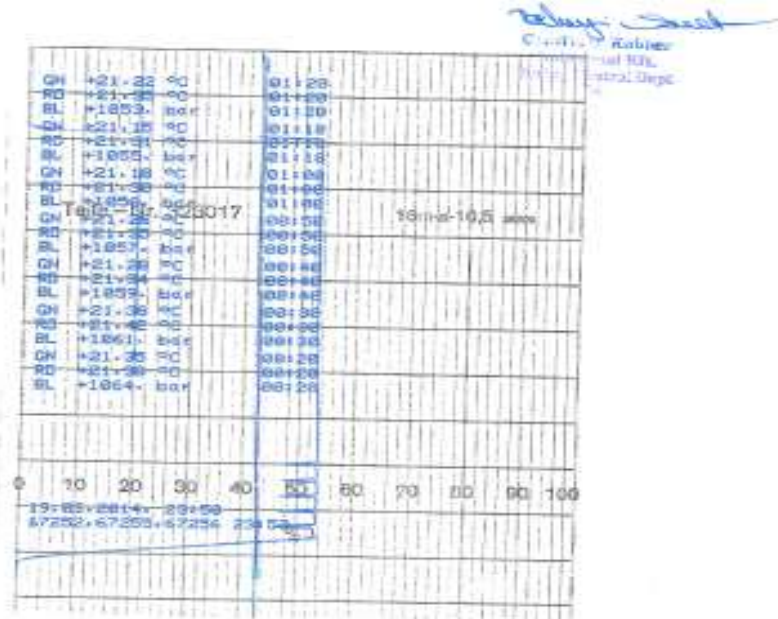
CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014 Page: 9 / 113
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QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 504	
PURCHASER: ContiTech Oil & Marine Corp.				P.O. N°: 4500408659	
CONTITECH RUBBER order N°: 538236		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 67255		NOMINAL / ACTUAL LENGTH:		10,67 m / 10,77 m	
W.P.: 68,9 MPa 10000 psi		T.P.: 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature					
See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 20 MPa					
COUPLINGS Type		Serial N°		Quality	
3" coupling with		9251 9254		AISI 4130	
4 1/16" 10K API b.w. Flange end				AISI 4130	
				A0579N	
				035608	
Not Designed For Well Testing				API Spec 16 C	
				Temperature rate: "B"	
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated, inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.					
COUNTRY OF ORIGIN HUNGARY/EU					
Date:		Inspector		Quality Control	
20. March 2014.				ContiTech Rubber Industrial S.R.L. Quality Control Dept.  	

Centech Rubber Industrial Co., Ltd. (Subsidiary of 10, H-8728 Sangdo) H-6701 P.O. Box 102 Sangdo, Gangneung
Phone: +82 33 948 737 / Fax: +82 33 948 738 / e-mail: info@centechrubber.co.kr / Internet: www.centech-rubber.co.kr / www.centech.co.kr
The Court of Gangneung County is Registry Court / Registry Court No: Cg-99-09-000503 / Tel: 347 No: H-111537208
Hans Data Communication Co., Ltd. (Subsidiary of 142-20106-2083000)

ATTACHMENT OF QUALITY CONTROL INSPECTION AND TEST CERTIFICATE No: 501, 504, 505

Page: 1 / 1



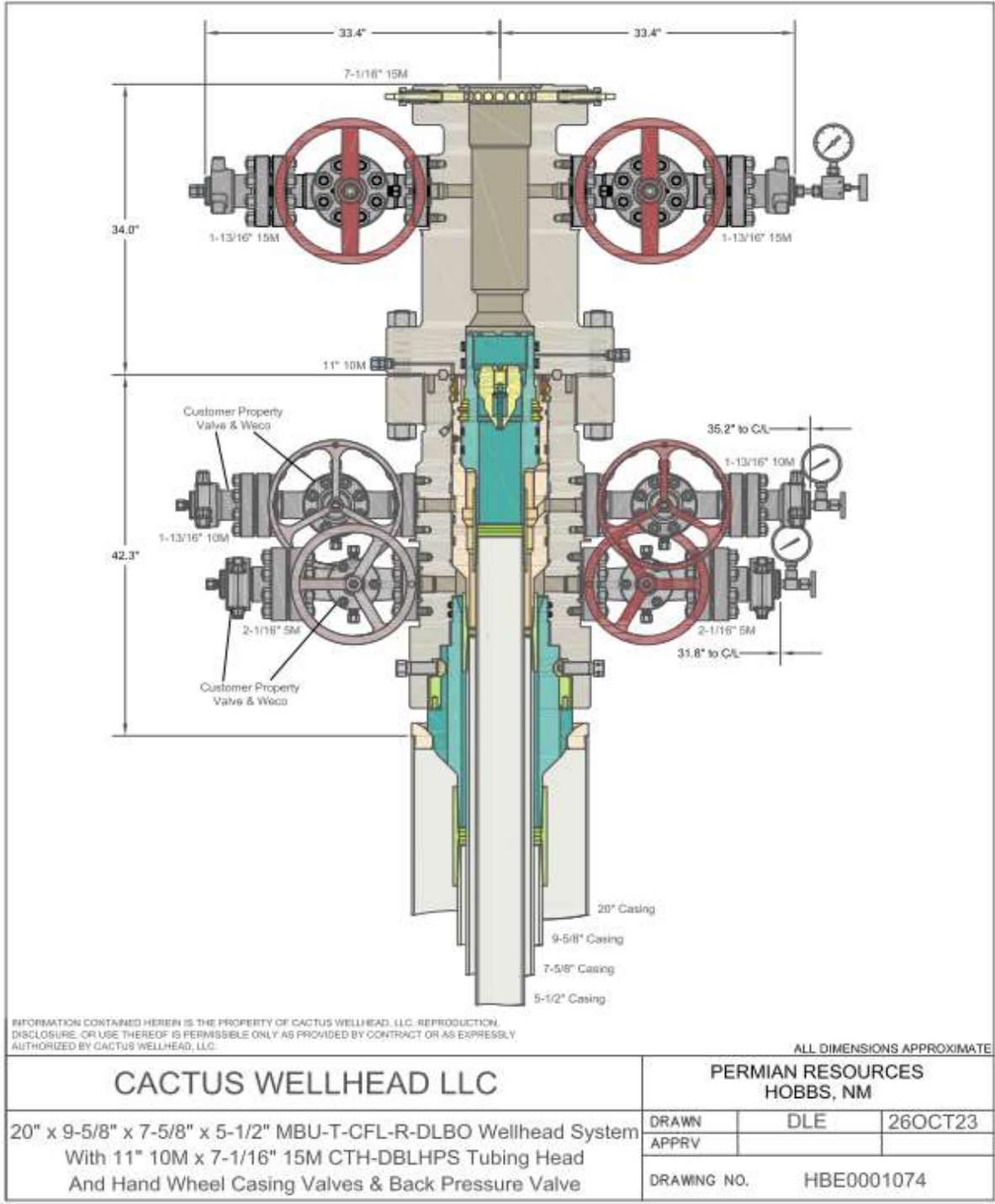


CONTITECH RUBBER Industrial Kft.	No:QC-DB- 210/ 2014
	Page: 15 / 113
	ContiTech

Hose Data Sheet

CRI Order No.	538236
Customer	ContiTech Oil & Marine Corp.
Customer Order No	4500409659
Item No.	1
Hose Type	Flexible Hose
Standard	API SPEC 16 C
Inside dia in inches	3
Length	35 ft
Type of coupling one end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
Type of coupling other end	FLANGE 4.1/16" 10K API SPEC 6A TYPE 6BX FLANGE C/W BX155 R.GR.SOUR
H2S service NACE MR0175	Yes
Working Pressure	10 000 psi
Design Pressure	10 000 psi
Test Pressure	15 000 psi
Safety Factor	2,25
Marking	USUAL PHOENIX
Cover	NOT FIRE RESISTANT
Outside protection	St. steel outer wrap
Internal stripwound tube	No
Lining	OIL + GAS RESISTANT SOUR
Safety clamp	No
Lifting collar	No
Element C	No
Safety chain	No
Safety wire rope	No
Max.design temperature [°C]	100
Min.design temperature [°C]	-20
Min. Bend Radius operating [m]	0,90
Min. Bend Radius storage [m]	0,90
Electrical continuity	The Hose is electrically continuous
Type of packing	WOODEN CRATE ISPM-15

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Permian Resources Casing Design Criteria

A sundry will be requested if any lesser grade or different size casing is substituted. All casing will be centralized as specified in Onshore Order II. Casing will be tested as specified in Onshore Order II.

Casing Design Assumptions:

Surface

- 1) Burst Design Loads
 - a. Displacement to Gas
 - i. Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
 - ii. External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b. Casing Pressure Test
 - i. Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order II and NM NMAC 19.15.16 of NMOCD regulations.
 - ii. External: Mud weight to TOC and cement mix water (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a. Cementing
 - i. Internal: Displacement fluid density.
 - ii. External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b. Lost Returns with Mud Drop
 - i. Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - ii. External: Mud weight to TOC and cement slurry(s) density below TOC
- 3) Tension Loads
 - a. Overpull Force
 - i. Axial: Dry weight of the string plus 100,000 lbs applied in a stuck pipe situation.
 - b. Green Cement Casing Test
 - i. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate I

- 1) Burst Design Loads
 - a. Displacement to Gas
 - i. Internal: Assumes a full column of gas in the casing with a gas gradient of 0.7 psi/ft in the absence of better information. It is limited to the controlling pressure based on the maximum expected pore pressure within the next drilling interval.
 - ii. External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b. Casing Pressure Test
 - i. Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order II and NM NMAC 19.15.16 of NMOCD regulations.
 - ii. External: Mud weight to TOC and cement mix water (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a. Cementing

- i. Internal: Displacement fluid density.
 - ii. External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b. Lost Returns with Mud Drop
 - i. Internal: Lost circulation at the TD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - ii. External: Mud weight to TOC and cement slurry(s) density below TOC
- 3) Tension Loads
 - a. Overpull Force
 - i. Axial: Dry weight of the string plus 50,000 lbs applied in a stuck pipe situation.
 - b. Green Cement Casing Test
 - i. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Intermediate or Intermediate II

- 1) Burst Design Loads
 - a. Gas Kick Profile
 - i. Internal: Load profile based on influx encountered in lateral portion of wellbore with a maximum influx volume of 150 bbls and a kick intensity of 1.5 ppg using maximum anticipated MW of 9.9 ppg.
 - ii. External: Mud weight to TOC and cement mix water gradient (8.4 ppg) below TOC.
 - b. Casing Pressure Test
 - i. Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order II and NM NMAC 19.15.16 of NMOCD regulations.
 - ii. External: Mud weight to TOC and cement mix water (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a. Cementing
 - i. Internal: Displacement fluid density.
 - ii. External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b. Lost Returns with Mud Drop
 - i. Internal: Lost circulation at the deepest TVD of the next hole section and the fluid level falls to a depth where the hydrostatic pressure of the mud column equals pore pressure at the depth of the lost circulation zone.
 - ii. External: Mud weight to TOC and cement slurry(s) density below TOC
- 3) Tension Loads
 - a. Overpull Force
 - i. Axial: Dry weight of the string plus 50,000 lbs applied in a stuck pipe situation.
 - b. Green Cement Casing Test
 - i. Axial: Buoyant weight of the string plus cement plug bump pressure load.

Production

- 1) Burst Design Loads
 - a. Injection Down Casing
 - i. Internal: Surface pressure plus injection fluid gradient
 - ii. External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
 - b. Casing Pressure Test (Drilling)

- i. Internal: Displacement fluid plus surface pressure required to comply with regulatory casing test pressure requirements of Onshore Oil and Gas Order II and NM NMAC 19.15.16 of NMOCD regulations.
 - ii. External: Mud weight to TOC and cement mix water (8.4 ppg) below TOC.
 - c. Casing Pressure Test (Production)
 - i. Internal: The design pressure test should be the greater of the planned test pressure prior to stimulation down the casing, the regulatory test pressure, and the expected gas lift system pressure. The design test fluid should be the fluid associated with the pressure test having the greatest pressure.
 - ii. External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
 - d. Tubing Leak
 - i. Internal: SITP plus a packer fluid gradient to the top of packer.
 - ii. External: Mud base-fluid density to top of cement and cement mix water gradient (8.4 ppg) below TOC.
- 2) Collapse Loads
 - a. Cementing
 - i. Internal: Displacement fluid density.
 - ii. External: Mud weight from TOC to surface and cement slurry weight from TOC to shoe.
 - b. Full Evacuation
 - i. Internal: Fully void pipe.
 - ii. External: Mud weight to TOC and cement slurry(s) density below TOC
- 3) Tension Loads
 - a. Overpull Force
 - i. Axial: Dry weight of the string plus 50,000 lbs applied in a stuck pipe situation.
 - b. Green Cement Casing Test
 - i. Axial: Buoyant weight of the string plus cement plug bump pressure load.

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.

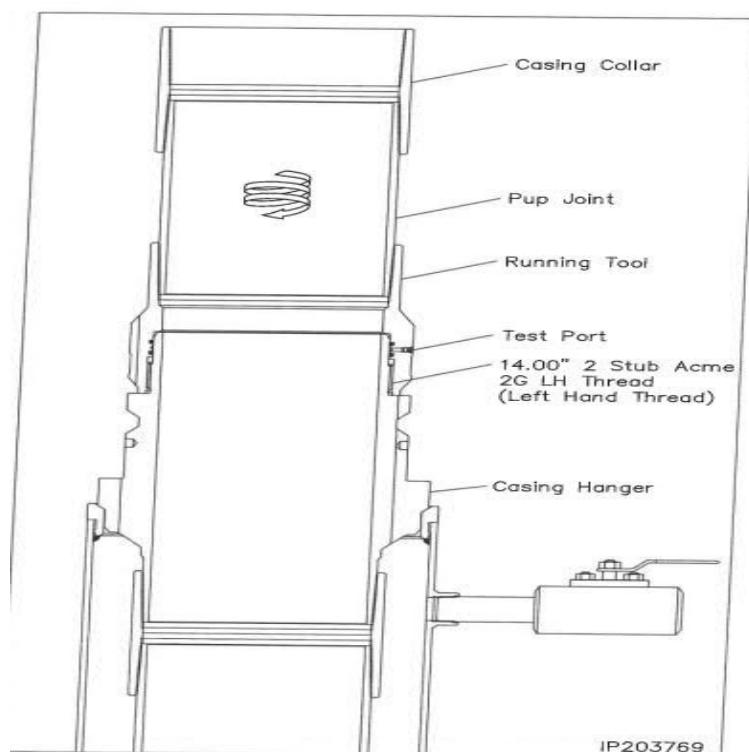


Illustration 1-1

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.

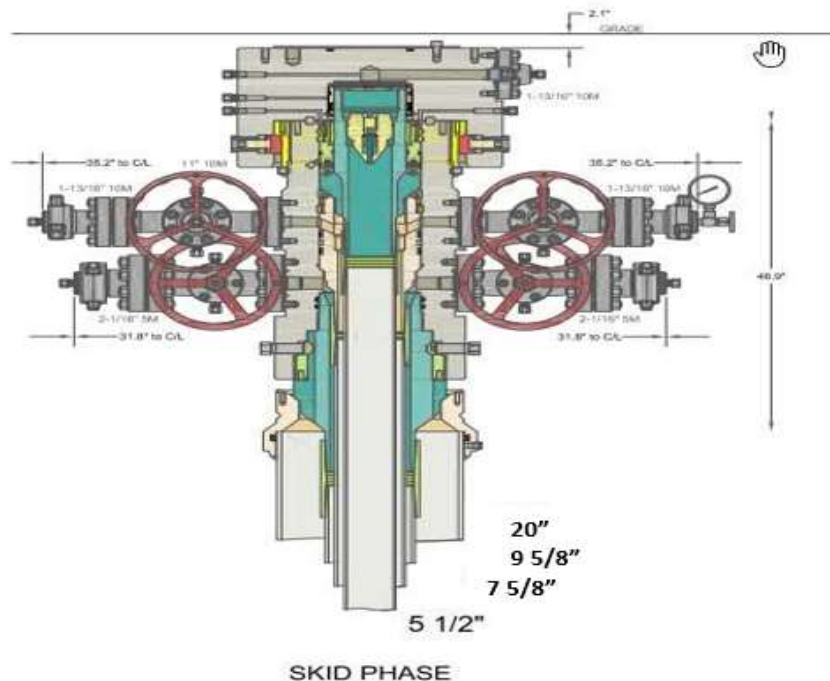


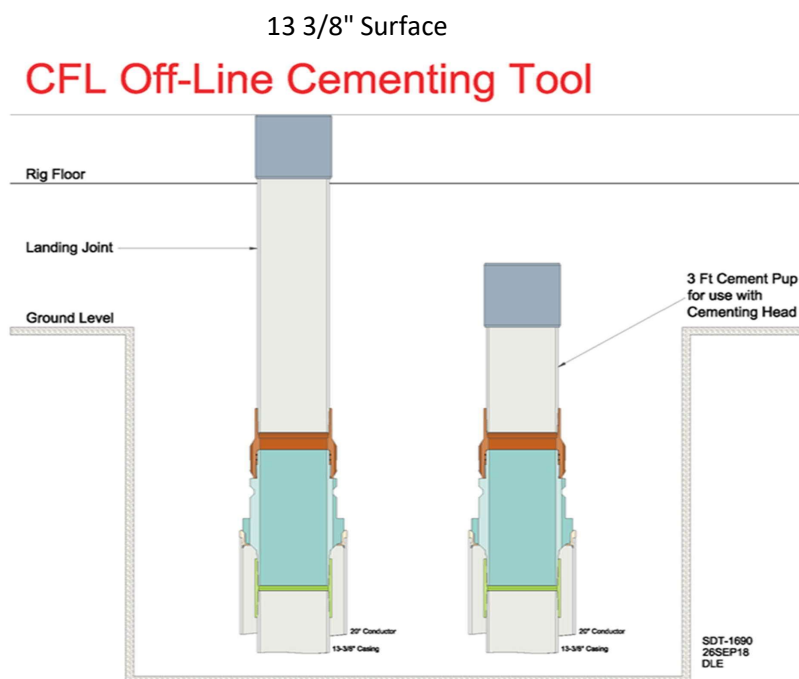
Illustration 2-2

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.

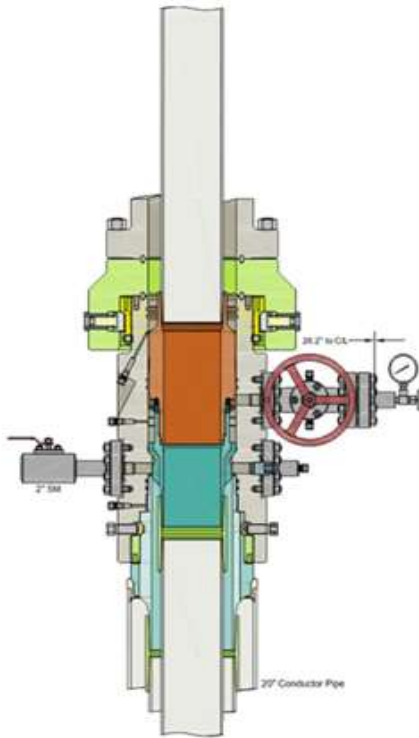
1. Drilling Rig will remove the nightcap and install and test BOPE.
2. Install wear bushing then drill Intermediate shoe-track plus 20' and conduct FIT to minimum MW equivalent to control the formation pressure to TD of well.
3. Drill Vertical hole to KOP – Trip out for Curve BHA.
4. Drill Curve, landing 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.

Permian Resources Offline Cementing Procedure Surface & Intermediate Casing

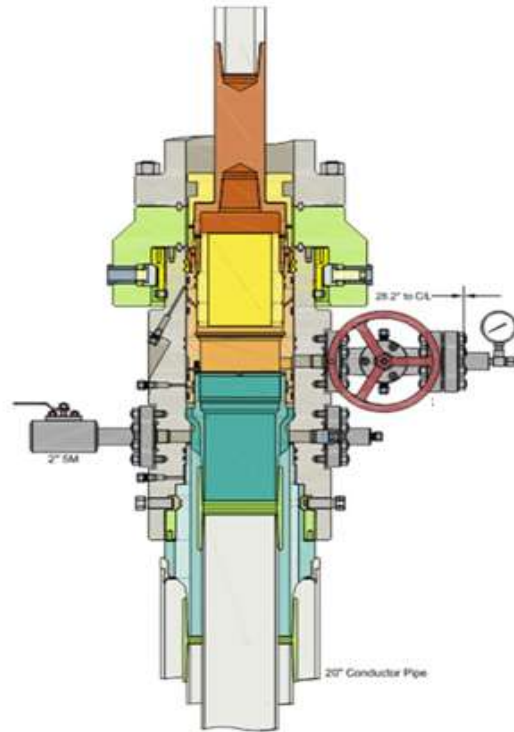
1. Drill hole to Total Depth with Rig and perform wellbore cleanup cycles.
2. Run and casing to Depth.
3. Land casing with mandrel.
4. Circulate 1.5 csg capacity.
5. Flow test – Confirm well is static and floats are holding.
6. Set Annular packoff and pressure test. Test to 5k.
7. Nipple down BOP and 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.



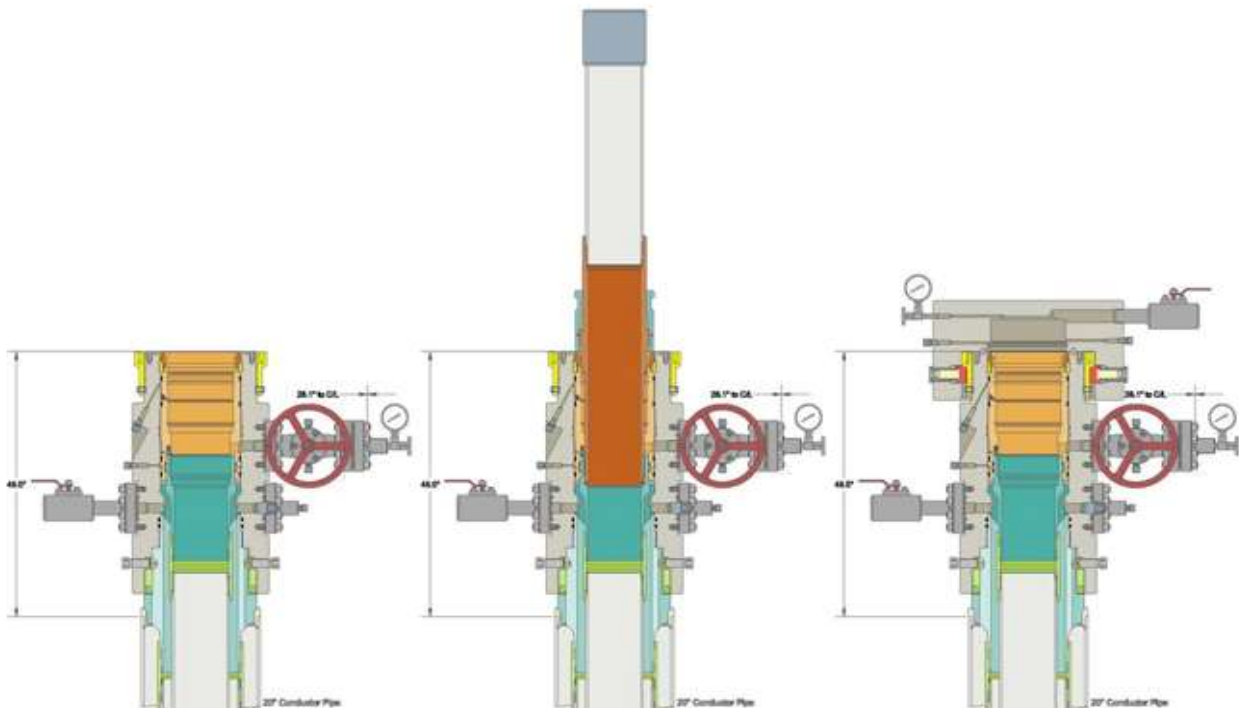
Intermediate



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





Metal One Corp. Metal One	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Min95%WT	CDS#	MO-FXL 7-5/8 29.7
			P110HSCY
			MinYS125ksi
			Min95%WT
Connection Data Sheet		Date	20-Sep-23

MO-FXL

Geometry

Imperial

S.I.

Pipe Body

Grade *	P110HSCY		P110HSCY	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.70	lb/ft	44.25	kg/m
Actual weight	29.04	in	43.26	kg/m
Wall Thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.541	in ²	5,510	mm ²
Drift Dia.	6.750	in	171.45	mm

Connection

Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Make up Loss	4.219	in	107.16	mm
Box Critical Area	5.714	in ²	3686	mm ²
Joint load efficiency	70	%	70	%
Thread Taper	1 / 10 (1.2" per ft)			
Number of Threads	5 TPI			

Performance

Performance Properties for Pipe Body

S.M.Y.S. *1	1,068	kips	4,749	kN
M.I.Y.P. *1	11,680	psi	80.55	MPa
Collapse Strength *1	7,200	psi	49.66	MPa

Note S.M.Y.S. = Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

* BMP P110HSCY: MinYS125ksi, Min95%WT, Collapse Strength 7,200psi
Performance Data Sheet: 7.625" 29.7lb/ft P110HSCY Rev3, dated 9/19/2023

Performance Properties for Connection

Tensile Yield load	747	kips (70% of S.M.Y.S.)
Min.Compression Yield	747	kips (70% of S.M.Y.S.)
Internal Pressure	9,340	psi (80% of M.I.Y.P.)
External Pressure	100% of Collapse Strength	
Max. DLS (deg. /100ft)	30	

Recommended Torque

Min.	15,500	ft-lb	21,000	N-m
Opti.	17,200	ft-lb	23,300	N-m
Max.	18,900	ft-lb	25,600	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

Note : Operational Max. torque can be applied for high torque application

Legal Notice

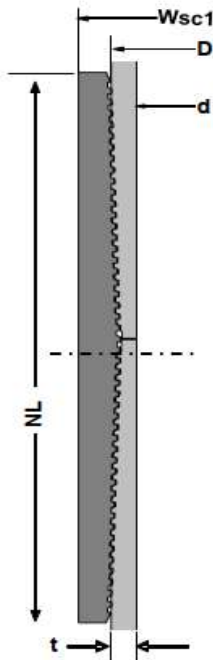
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Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mfco.com/images/stories/WebsiteTerms_Active_20230207_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

Metal One Corp. 	GEOCONN-SC Pipe Body: SeAH P110RY(SMYS110ksi) & 95%RBW *1 Coupling: P110CY (SMYS110ksi) Connection Data Sheet	Page Date Rev.	MAI GC 5.5 20 SeAH PRY 95%RW SC-CpigOD 6.050 P110CY 29-Sep-21 0
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GEOCONN-SC



Geometry		Imperial		S.I.	
Pipe Body					
Grade *1	SeAH P110RY	-	SeAH P110RY		
SMYS	110	ksi	110		ksi
Pipe OD (D)	5.500	in	139.70		mm
Weight	20.00	lb/ft	29.80		kg/m
Wall Thickness (t)	0.361	in	9.17		mm
Pipe ID (d)	4.778	in	121.36		mm
Drift Dia.	4.653	in	118.19		mm
Connection					
Coupling SMYS	110	ksi	110		ksi
Coupling OD (Wsc1)	6.050	in	153.67		mm
Coupling Length (NL)	8.350	in	212.09		mm
Make up Loss	4.125	in	104.78		mm
Pipe Critical Area	5.83	in ²	3,760		mm ²
Box Critical Area	6.00	in ²	3,874		mm ²
Thread Taper	1 / 16 (3/4" per ft)				
Number of Threads	5 TPI				

Performance		Imperial		S.I.	
Performance Properties for Pipe Body					
S.M.Y.S.	641	kips	2,852		kN
M.I.Y.P. *1	13,720	psi	94.62		MPa
Collapse Strength	11,100	psi	76.55		MPa
Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body *1 Pipe: SeAH P110RY (SMYS110ksi), Min Wall Thickness of Pipe Body: 95% of Nom wall					
Performance Properties for Connection					
Min. Connection Joint Strength	100% of S.M.Y.S.				
Min. Compression Yield	100% of S.M.Y.S.				
Internal Pressure	100% of M.I.Y.P.				
External Pressure	100% of Collapse Strength				
Max. DLS (deg. /100ft)	>90				
Recommended Torque					
Min.	14,600	ft-lb	19,700		N-m
Opti.	16,200	ft-lb	21,900		N-m
Max.	17,800	ft-lb	24,100		N-m
Operational Max.	19,500	ft-lb	26,400		N-m

Note : Operational Max. torque can be applied for high torque application

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 The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mto.co.jp/mo-cen/_images/topWebsiteTerms_Active_20332287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.



5.5" 20# .361" P-110 Restricted Yield (RY)

Dimensions (Nominal)

Outside Diameter	5.500	in.
Wall	0.361	in.
Inside Diameter	4.778	in.
Drift	4.653	in.
Weight, T&C	20.000	lbs/ft
Weight, PE	19.830	lbs/ft

Performance Properties (Minimum)

Minimum Yield Strength	110000	psi
Maximum Yield Strength	125000	psi
Collapse, PE	11100	psi
Internal Yield Pressure		
PE	12630	psi
LTC	12360	psi
BTC	12360	psi
Yield Strength, Pipe Body	641	1000 lbs
Joint Strength		
LTC	548	1000 lbs
BTC	667	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.



5.500 x 20.00# P-110 RY Bushmaster® SL (95% RBW)

Pipe Body Data

Nominal OD	5.500	Inches
Wall Thickness	0.361	Inches
Weight	20.00	lb/ft
PE Weight	19.83	lb/ft
Nominal ID	4.778	Inches
Drift	4.653	Inches
Minimum Yield Strength	110,000	PSI
Minimum Tensile Strength	125,000	PSI
RBW	95.0%	Rating

Connection Data

Connection OD	5.900	Inches
Connection ID	4.778	Inches
Make-Up Loss	4.892	Inches
Tension Efficiency	100%	Rating
Compression Efficiency	100%	Rating
Yield Strength in Tension	641,000	LBS.
Yield Strength in Compression	641,000	LBS.
MIYP (Burst)	13,720	PSI
Collapse*	11,110	PSI
Uniaxial Bending	92	°/100 FT

Make-Up Torque

Yield Torque	41,000	FT-LBS.
Max Operating Torque	32,800	FT-LBS.
Max Make-Up	22,000	FT-LBS.
Optimum Make-Up	20,000	FT-LBS.
Minimum Make-Up	18,000	FT-LBS.



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

9/21/2023

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*Collapse value based on API collapse +10-15% depending on D/t ratio and is used for example only. The actual collapse rating is 100% of pipe body and will vary depending on the mill. Verify the collapse rating of the pipe body with the manufacturer.

NEW MEXICO

(SP) LEA

LOS VAQUEROS FED PROJECT

LOS VAQUEROS FED 444H

OWB

PWP0

Anticollision Report

13 December, 2023

Permian Resources
Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 304H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program:		0-MWD						Rule Assigned:				Offset Well Error:	0.0 usft	
Reference	Offset	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Distance		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	89.50	0.9	99.0	99.0	87.7	11.26	8.796		
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	89.50	0.9	99.0	99.0	87.0	11.97	8.269		
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	89.50	0.9	99.0	99.0	86.3	12.69	7.802		
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	89.50	0.9	99.0	99.0	85.6	13.41	7.385		
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	89.50	0.9	99.0	99.0	84.9	14.12	7.010	CC	
2,100.0	2,100.0	2,096.7	2,096.7	7.4	7.4	26.12	1.2	100.6	99.1	84.3	14.81	6.691		
2,200.0	2,199.8	2,193.4	2,193.3	7.8	7.7	26.91	2.0	105.4	99.4	83.9	15.47	6.425		
2,300.0	2,299.5	2,290.1	2,289.6	8.1	8.1	28.21	3.5	113.4	99.9	83.8	16.12	6.200	ES	
2,400.0	2,398.7	2,386.7	2,385.6	8.5	8.4	30.00	5.5	124.6	100.8	84.0	16.75	6.015		
2,500.0	2,497.5	2,483.3	2,481.0	8.8	8.8	32.25	8.2	139.0	102.0	84.6	17.38	5.868		
2,600.0	2,595.9	2,579.9	2,575.9	9.2	9.1	34.41	11.4	156.5	105.1	87.1	18.00	5.840	SF	
2,700.0	2,694.4	2,676.2	2,669.9	9.6	9.5	35.84	15.1	177.1	111.5	92.9	18.61	5.993		
2,800.0	2,792.9	2,773.0	2,763.6	10.0	9.9	36.58	19.5	200.9	121.1	101.8	19.24	6.292		
2,900.0	2,891.4	2,872.4	2,859.7	10.4	10.3	37.08	24.1	226.2	131.5	111.6	19.97	6.586		
3,000.0	2,989.9	2,971.9	2,955.8	10.8	10.7	37.50	28.7	251.5	142.0	121.3	20.71	6.857		
3,100.0	3,088.3	3,071.3	3,051.8	11.2	11.2	37.86	33.3	276.8	152.5	131.0	21.46	7.107		
3,200.0	3,186.8	3,170.7	3,147.9	11.6	11.6	38.17	37.9	302.2	163.0	140.8	22.21	7.339		
3,300.0	3,285.3	3,270.2	3,243.9	12.0	12.1	38.45	42.6	327.5	173.5	150.5	22.96	7.553		
3,400.0	3,383.8	3,369.6	3,340.0	12.4	12.5	38.70	47.2	352.8	184.0	160.2	23.73	7.753		
3,500.0	3,482.3	3,469.1	3,436.0	12.8	13.0	38.92	51.8	378.1	194.5	170.0	24.50	7.938		
3,600.0	3,580.8	3,568.5	3,532.1	13.2	13.5	39.11	56.4	403.4	205.0	179.7	25.27	8.111		
3,700.0	3,679.2	3,668.0	3,628.2	13.6	14.0	39.29	61.0	428.8	215.5	189.4	26.05	8.272		
3,800.0	3,777.7	3,767.4	3,724.2	14.1	14.5	39.45	65.7	454.1	226.0	199.1	26.83	8.423		
3,900.0	3,876.2	3,866.9	3,820.3	14.5	15.0	39.60	70.3	479.4	236.5	208.9	27.61	8.564		
4,000.0	3,974.7	3,966.3	3,916.3	14.9	15.5	39.73	74.9	504.7	247.0	218.6	28.40	8.696		
4,100.0	4,073.2	4,065.8	4,012.4	15.3	16.0	39.86	79.5	530.0	257.5	228.3	29.19	8.821		
4,200.0	4,171.6	4,165.2	4,108.4	15.7	16.5	39.97	84.1	555.4	268.0	238.0	29.98	8.938		
4,300.0	4,270.1	4,264.6	4,204.5	16.2	17.0	40.08	88.8	580.7	278.5	247.7	30.78	9.048		
4,400.0	4,368.6	4,364.1	4,300.5	16.6	17.5	40.17	93.4	606.0	289.0	257.4	31.58	9.152		
4,500.0	4,467.1	4,463.5	4,396.6	17.0	18.0	40.26	98.0	631.3	299.5	267.1	32.38	9.251		
4,600.0	4,565.6	4,563.0	4,492.7	17.5	18.5	40.35	102.6	656.6	310.0	276.9	33.18	9.344		
4,700.0	4,664.0	4,662.4	4,588.7	17.9	19.0	40.43	107.2	682.0	320.5	286.6	33.99	9.432		
4,800.0	4,762.5	4,761.9	4,684.8	18.3	19.5	40.50	111.8	707.3	331.1	296.3	34.79	9.515		
4,900.0	4,861.0	4,861.3	4,780.8	18.8	20.1	40.57	116.5	732.6	341.6	306.0	35.60	9.595		
5,000.0	4,959.5	4,960.8	4,876.9	19.2	20.6	40.64	121.1	757.9	352.1	315.7	36.41	9.670		
5,100.0	5,058.0	5,060.2	4,972.9	19.6	21.1	40.70	125.7	783.2	362.6	325.4	37.22	9.742		
5,200.0	5,156.4	5,159.6	5,069.0	20.1	21.6	40.76	130.3	808.6	373.1	335.1	38.03	9.810		
5,300.0	5,254.9	5,259.1	5,165.1	20.5	22.1	40.81	134.9	833.9	383.6	344.8	38.85	9.875		
5,400.0	5,353.4	5,358.5	5,261.1	20.9	22.7	40.86	139.6	859.2	394.1	354.5	39.66	9.938		
5,500.0	5,451.9	5,458.0	5,357.2	21.4	23.2	40.91	144.2	884.5	404.7	364.2	40.48	9.997		
5,600.0	5,550.4	5,557.4	5,453.2	21.8	23.7	40.96	148.8	909.8	415.2	373.9	41.30	10.054		
5,700.0	5,648.9	5,656.9	5,549.3	22.3	24.3	41.00	153.4	935.2	425.7	383.6	42.11	10.108		
5,800.0	5,747.3	5,756.3	5,645.3	22.7	24.8	41.05	158.0	960.5	436.2	393.3	42.93	10.160		
5,900.0	5,845.8	5,855.8	5,741.4	23.1	25.3	41.09	162.7	985.8	446.7	403.0	43.75	10.210		
6,000.0	5,944.3	5,955.2	5,837.5	23.6	25.9	41.12	167.3	1,011.1	457.3	412.7	44.57	10.258		
6,102.4	6,045.1	6,057.0	5,935.8	24.0	26.4	41.16	172.0	1,037.1	468.0	422.6	45.42	10.305		
6,200.0	6,141.5	6,153.9	6,029.4	24.4	26.9	41.22	176.5	1,061.7	479.5	433.3	46.20	10.380		
6,300.0	6,240.8	6,252.9	6,125.0	24.8	27.5	41.05	181.1	1,086.9	493.9	446.9	46.96	10.518		
6,400.0	6,340.4	6,351.3	6,220.0	25.2	28.0	40.68	185.7	1,112.0	510.9	463.2	47.68	10.716		
6,500.0	6,440.2	6,449.0	6,314.5	25.6	28.5	40.13	190.2	1,136.9	530.6	482.2	48.36	10.972		
6,602.4	6,542.6	6,548.4	6,410.4	25.9	29.1	103.07	194.8	1,162.2	553.6	504.6	49.02	11.294		
6,700.0	6,640.2	6,642.7	6,501.5	26.2	29.6	102.08	199.2	1,186.2	577.0	527.4	49.63	11.626		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 304H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned: Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,800.0	6,740.2	6,745.8	6,601.2	26.5	30.1	101.09	204.0	1,212.2	601.0	550.6	50.34	11.937	
6,900.0	6,840.2	6,867.6	6,719.8	26.9	30.7	100.14	208.9	1,239.4	622.2	571.0	51.24	12.144	
7,000.0	6,940.2	6,991.6	6,841.6	27.2	31.3	99.41	213.0	1,262.0	639.6	587.5	52.08	12.281	
7,100.0	7,040.2	7,117.3	6,966.1	27.5	31.8	98.88	216.2	1,279.5	653.0	600.1	52.86	12.353	
7,200.0	7,140.2	7,244.5	7,092.6	27.8	32.3	98.52	218.5	1,291.8	662.3	608.7	53.58	12.362	
7,300.0	7,240.2	7,372.5	7,220.4	28.2	32.7	98.33	219.7	1,298.5	667.4	613.2	54.21	12.311	
7,400.0	7,340.2	7,492.3	7,340.2	28.5	33.1	98.29	220.0	1,299.9	668.4	613.6	54.80	12.196	
7,500.0	7,440.2	7,592.3	7,440.2	28.8	33.4	98.29	220.0	1,299.9	668.4	612.9	55.47	12.051	
7,600.0	7,540.2	7,692.3	7,540.2	29.1	33.6	98.29	220.0	1,299.9	668.4	612.3	56.13	11.908	
7,700.0	7,640.2	7,792.3	7,640.2	29.5	33.9	98.29	220.0	1,299.9	668.4	611.6	56.79	11.769	
7,800.0	7,740.2	7,892.3	7,740.2	29.8	34.2	98.29	220.0	1,299.9	668.4	610.9	57.46	11.633	
7,900.0	7,840.2	7,992.3	7,840.2	30.1	34.5	98.29	220.0	1,299.9	668.4	610.3	58.13	11.499	
8,000.0	7,940.2	8,092.3	7,940.2	30.5	34.8	98.29	220.0	1,299.9	668.4	609.6	58.79	11.369	
8,100.0	8,040.2	8,192.3	8,040.2	30.8	35.1	98.29	220.0	1,299.9	668.4	608.9	59.46	11.241	
8,200.0	8,140.2	8,292.3	8,140.2	31.1	35.4	98.29	220.0	1,299.9	668.4	608.3	60.13	11.116	
8,300.0	8,240.2	8,392.3	8,240.2	31.4	35.6	98.29	220.0	1,299.9	668.4	607.6	60.80	10.993	
8,400.0	8,340.2	8,492.3	8,340.2	31.8	35.9	98.29	220.0	1,299.9	668.4	606.9	61.48	10.873	
8,500.0	8,440.2	8,592.3	8,440.2	32.1	36.2	98.29	220.0	1,299.9	668.4	606.3	62.15	10.755	
8,600.0	8,540.2	8,692.3	8,540.2	32.4	36.5	98.29	220.0	1,299.9	668.4	605.6	62.82	10.640	
8,700.0	8,640.2	8,792.3	8,640.2	32.8	36.8	98.29	220.0	1,299.9	668.4	604.9	63.50	10.526	
8,800.0	8,740.2	8,892.3	8,740.2	33.1	37.1	98.29	220.0	1,299.9	668.4	604.2	64.17	10.416	
8,900.0	8,840.2	8,992.3	8,840.2	33.4	37.4	98.29	220.0	1,299.9	668.4	603.6	64.85	10.307	
9,000.0	8,940.2	9,092.3	8,940.2	33.8	37.7	98.29	220.0	1,299.9	668.4	602.9	65.53	10.200	
9,100.0	9,040.2	9,192.3	9,040.2	34.1	38.0	98.29	220.0	1,299.9	668.4	602.2	66.21	10.096	
9,200.0	9,140.2	9,292.3	9,140.2	34.5	38.3	98.29	220.0	1,299.9	668.4	601.5	66.89	9.993	
9,300.0	9,240.2	9,392.3	9,240.2	34.8	38.6	98.29	220.0	1,299.9	668.4	600.8	67.57	9.893	
9,400.0	9,340.2	9,492.3	9,340.2	35.1	38.9	98.29	220.0	1,299.9	668.4	600.2	68.25	9.794	
9,500.0	9,440.2	9,592.3	9,440.2	35.5	39.2	98.29	220.0	1,299.9	668.4	599.5	68.93	9.697	
9,600.0	9,540.2	9,692.3	9,540.2	35.8	39.5	98.29	220.0	1,299.9	668.4	598.8	69.61	9.602	
9,700.0	9,640.2	9,792.3	9,640.2	36.1	39.8	98.29	220.0	1,299.9	668.4	598.1	70.29	9.509	
9,800.0	9,740.2	9,892.3	9,740.2	36.5	40.1	98.29	220.0	1,299.9	668.4	597.4	70.98	9.417	
9,900.0	9,840.2	9,992.3	9,840.2	36.8	40.4	98.29	220.0	1,299.9	668.4	596.7	71.66	9.327	
10,000.0	9,940.2	10,092.3	9,940.2	37.2	40.8	98.29	220.0	1,299.9	668.4	596.1	72.35	9.239	
10,100.0	10,040.2	10,192.3	10,040.2	37.5	41.1	98.29	220.0	1,299.9	668.4	595.4	73.03	9.152	
10,200.0	10,140.2	10,292.3	10,140.2	37.8	41.4	98.29	220.0	1,299.9	668.4	594.7	73.72	9.067	
10,300.0	10,240.2	10,392.3	10,240.2	38.2	41.7	98.29	220.0	1,299.9	668.4	594.0	74.40	8.983	
10,400.0	10,340.2	10,492.3	10,340.2	38.5	42.0	98.29	220.0	1,299.9	668.4	593.3	75.09	8.901	
10,500.0	10,440.2	10,592.3	10,440.2	38.9	42.3	98.29	220.0	1,299.9	668.4	592.6	75.78	8.820	
10,600.0	10,540.2	10,692.3	10,540.2	39.2	42.6	98.29	220.0	1,299.9	668.4	591.9	76.47	8.741	
10,700.0	10,640.2	10,792.3	10,640.2	39.5	42.9	98.29	220.0	1,299.9	668.4	591.2	77.16	8.663	
10,800.0	10,740.2	10,892.3	10,740.2	39.9	43.2	98.29	220.0	1,299.9	668.4	590.6	77.85	8.586	
10,900.0	10,840.2	10,992.3	10,840.2	40.2	43.6	98.29	220.0	1,299.9	668.4	589.9	78.54	8.511	
11,000.0	10,940.2	11,092.3	10,940.2	40.6	43.9	98.29	220.0	1,299.9	668.4	589.2	79.23	8.437	
11,100.0	11,040.2	11,192.3	11,040.2	40.9	44.2	98.29	220.0	1,299.9	668.4	588.5	79.92	8.364	
11,200.0	11,140.2	11,292.3	11,140.2	41.3	44.5	98.29	220.0	1,299.9	668.4	587.8	80.61	8.292	
11,300.0	11,240.2	11,392.3	11,240.2	41.6	44.8	98.29	220.0	1,299.9	668.4	587.1	81.30	8.221	
11,400.0	11,340.2	11,492.3	11,340.2	41.9	45.1	98.29	220.0	1,299.9	668.4	586.4	81.99	8.152	
11,500.0	11,440.2	11,592.3	11,440.2	42.3	45.5	98.29	220.0	1,299.9	668.4	585.7	82.68	8.084	
11,600.0	11,540.2	11,692.3	11,540.2	42.6	45.8	98.29	220.0	1,299.9	668.4	585.0	83.38	8.017	
11,700.0	11,640.2	11,775.0	11,622.5	43.0	46.0	98.85	213.4	1,300.0	669.7	585.6	84.12	7.961	
11,800.0	11,740.2	11,850.0	11,695.2	43.3	46.2	100.38	195.2	1,300.2	674.2	589.3	84.85	7.946	
11,900.0	11,840.2	11,921.2	11,760.8	43.7	46.4	102.66	167.7	1,300.4	683.1	597.6	85.48	7.991	

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design:LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 304H - 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		Rule Assigned:			Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)					
12,000.0	11,940.2	11,981.8	11,812.9	44.0	46.5	105.18	136.7	1,300.8	697.9	612.1	85.84	8.131		
12,100.0	12,040.2	12,033.5	11,853.9	44.4	46.6	107.67	105.3	1,301.1	719.9	634.1	85.78	8.392		
12,200.0	12,140.2	12,075.0	11,884.2	44.7	46.6	109.86	77.0	1,301.4	749.8	664.6	85.21	8.799		
12,253.3	12,193.5	12,100.0	11,901.3	44.9	46.7	111.24	58.7	1,301.5	769.0	684.2	84.83	9.066		
12,275.0	12,215.2	12,100.0	11,901.3	45.0	46.7	-67.18	58.7	1,301.5	777.4	692.9	84.44	9.207		
12,300.0	12,240.1	12,114.8	11,910.9	45.0	46.7	-65.27	47.5	1,301.7	786.9	702.7	84.26	9.339		
12,325.0	12,264.9	12,125.0	11,917.3	45.1	46.7	-63.65	39.5	1,301.7	796.5	712.5	83.96	9.486		

Permian Resources

Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - OWB - PWP0														Offset Site Error:	0.0 usft
Survey Program:		0-MWD								Rule Assigned:				Offset Well Error:	0.0 usft
Reference	Offset	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum		Separation	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	89.50	0.6	66.0	66.0						
100.0	100.0	100.0	100.0	0.3	0.3	89.50	0.6	66.0	66.0	65.5	0.50	131.516			
200.0	200.0	200.0	200.0	0.6	0.6	89.50	0.6	66.0	66.0	64.8	1.22	54.154			
300.0	300.0	300.0	300.0	1.0	1.0	89.50	0.6	66.0	66.0	64.1	1.94	34.097			
400.0	400.0	400.0	400.0	1.3	1.3	89.50	0.6	66.0	66.0	63.3	2.65	24.881			
500.0	500.0	500.0	500.0	1.7	1.7	89.50	0.6	66.0	66.0	62.6	3.37	19.587			
524.6	524.6	524.6	524.6	1.8	1.8	89.50	0.6	66.0	66.0	62.5	3.55	18.613			
600.0	600.0	600.0	600.0	2.0	2.0	89.50	0.6	66.0	66.0	61.9	4.09	16.151			
633.3	633.3	633.3	633.3	2.2	2.2	89.50	0.6	66.0	66.0	61.7	4.33	15.259			
700.0	700.0	700.0	700.0	2.4	2.4	89.50	0.6	66.0	66.0	61.2	4.80	13.740			
800.0	800.0	800.0	800.0	2.8	2.8	89.50	0.6	66.0	66.0	60.5	5.52	11.956			
900.0	900.0	900.0	900.0	3.1	3.1	89.50	0.6	66.0	66.0	59.8	6.24	10.582			
1,000.0	1,000.0	1,000.0	1,000.0	3.5	3.5	89.50	0.6	66.0	66.0	59.0	6.95	9.491			
1,100.0	1,100.0	1,100.0	1,100.0	3.8	3.8	89.50	0.6	66.0	66.0	58.3	7.67	8.604			
1,200.0	1,200.0	1,200.0	1,200.0	4.2	4.2	89.50	0.6	66.0	66.0	57.6	8.39	7.868			
1,300.0	1,300.0	1,300.0	1,300.0	4.6	4.6	89.50	0.6	66.0	66.0	56.9	9.11	7.249			
1,400.0	1,400.0	1,400.0	1,400.0	4.9	4.9	89.50	0.6	66.0	66.0	56.2	9.82	6.720			
1,500.0	1,500.0	1,500.0	1,500.0	5.3	5.3	89.50	0.6	66.0	66.0	55.5	10.54	6.263			
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	89.50	0.6	66.0	66.0	54.7	11.26	5.864			
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	89.50	0.6	66.0	66.0	54.0	11.97	5.513			
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	89.50	0.6	66.0	66.0	53.3	12.69	5.201			
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	89.50	0.6	66.0	66.0	52.6	13.41	4.923			
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	89.50	0.6	66.0	66.0	51.9	14.12	4.673 CC			
2,100.0	2,100.0	2,097.8	2,097.8	7.4	7.4	26.15	1.0	67.6	66.1	51.3	14.81	4.461			
2,200.0	2,199.8	2,195.6	2,195.5	7.8	7.7	27.03	2.3	72.5	66.4	50.9	15.48	4.287			
2,300.0	2,299.5	2,293.4	2,292.9	8.1	8.1	28.47	4.3	80.5	66.8	50.7	16.13	4.144 ES			
2,400.0	2,398.7	2,391.2	2,390.0	8.5	8.4	30.45	7.3	91.8	67.6	50.8	16.77	4.030			
2,500.0	2,497.5	2,489.0	2,486.6	8.8	8.8	32.93	11.0	106.3	68.7	51.3	17.41	3.945			
2,600.0	2,595.9	2,588.7	2,584.8	9.2	9.2	35.53	15.3	123.0	70.4	52.2	18.12	3.884			
2,700.0	2,694.4	2,688.6	2,683.2	9.6	9.5	38.00	19.7	139.8	72.2	53.4	18.84	3.832			
2,800.0	2,792.9	2,788.5	2,781.6	10.0	9.9	40.34	24.0	156.6	74.2	54.6	19.58	3.789			
2,900.0	2,891.4	2,888.5	2,880.0	10.4	10.3	42.56	28.4	173.4	76.3	55.9	20.33	3.752			
3,000.0	2,989.9	2,988.4	2,978.4	10.8	10.7	44.66	32.7	190.2	78.5	57.4	21.08	3.722			
3,100.0	3,088.3	3,088.3	3,076.9	11.2	11.1	46.64	37.1	207.0	80.8	58.9	21.85	3.696			
3,200.0	3,186.8	3,188.3	3,175.3	11.6	11.5	48.50	41.4	223.8	83.1	60.5	22.63	3.675			
3,300.0	3,285.3	3,288.2	3,273.7	12.0	11.9	50.27	45.8	240.6	85.6	62.2	23.41	3.657			
3,400.0	3,383.8	3,388.1	3,372.1	12.4	12.3	51.93	50.1	257.4	88.2	64.0	24.20	3.642			
3,500.0	3,482.3	3,488.1	3,470.5	12.8	12.7	53.50	54.5	274.2	90.8	65.8	25.01	3.630			
3,600.0	3,580.8	3,588.0	3,568.9	13.2	13.2	54.98	58.8	291.0	93.5	67.6	25.81	3.620			
3,700.0	3,679.2	3,687.9	3,667.4	13.6	13.6	56.37	63.2	307.8	96.2	69.6	26.63	3.612			
3,800.0	3,777.7	3,787.9	3,765.8	14.1	14.0	57.69	67.5	324.6	99.0	71.5	27.45	3.606			
3,900.0	3,876.2	3,887.8	3,864.2	14.5	14.4	58.94	71.9	341.4	101.8	73.6	28.28	3.601			
4,000.0	3,974.7	3,987.8	3,962.6	14.9	14.8	60.11	76.2	358.2	104.7	75.6	29.11	3.597			
4,100.0	4,073.2	4,087.7	4,061.0	15.3	15.3	61.23	80.6	375.0	107.7	77.7	29.95	3.595			
4,200.0	4,171.6	4,187.6	4,159.5	15.7	15.7	62.28	84.9	391.8	110.6	79.8	30.79	3.593			
4,300.0	4,270.1	4,287.6	4,257.9	16.2	16.1	63.28	89.3	408.6	113.6	82.0	31.64	3.592			
4,400.0	4,368.6	4,387.5	4,356.3	16.6	16.5	64.23	93.6	425.4	116.7	84.2	32.49	3.591			
4,500.0	4,467.1	4,487.4	4,454.7	17.0	17.0	65.13	98.0	442.2	119.7	86.4	33.34	3.591			
4,600.0	4,565.6	4,587.4	4,553.1	17.5	17.4	65.98	102.3	459.0	122.8	88.6	34.20	3.592			
4,700.0	4,664.0	4,687.3	4,651.5	17.9	17.8	66.79	106.7	475.8	126.0	90.9	35.06	3.593			
4,800.0	4,762.5	4,787.2	4,750.0	18.3	18.3	67.56	111.0	492.6	129.1	93.2	35.92	3.594			
4,900.0	4,861.0	4,887.2	4,848.4	18.8	18.7	68.30	115.4	509.4	132.3	95.5	36.79	3.596			

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - 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)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Minimum Separation (usft)	Separation Factor	Warning	
							+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
5,000.0	4,959.5	4,987.1	4,946.8	19.2	19.1	69.00	119.7	526.2	135.5	97.8	37.65	3.597		
5,100.0	5,058.0	5,087.0	5,045.2	19.6	19.6	69.67	124.1	543.0	138.7	100.1	38.52	3.600		
5,200.0	5,156.4	5,187.0	5,143.6	20.1	20.0	70.31	128.4	559.8	141.9	102.5	39.39	3.602		
5,300.0	5,254.9	5,286.9	5,242.0	20.5	20.5	70.92	132.8	576.6	145.1	104.9	40.26	3.604		
5,400.0	5,353.4	5,386.9	5,340.5	20.9	20.9	71.50	137.1	593.4	148.4	107.2	41.14	3.607		
5,500.0	5,451.9	5,486.8	5,438.9	21.4	21.3	72.06	141.5	610.2	151.7	109.6	42.02	3.610		
5,600.0	5,550.4	5,586.7	5,537.3	21.8	21.8	72.59	145.8	627.0	154.9	112.1	42.89	3.612		
5,700.0	5,648.9	5,686.7	5,635.7	22.3	22.2	73.10	150.2	643.8	158.2	114.5	43.77	3.615		
5,800.0	5,747.3	5,786.6	5,734.1	22.7	22.6	73.59	154.5	660.6	161.6	116.9	44.65	3.618		
5,900.0	5,845.8	5,886.5	5,832.6	23.1	23.1	74.06	158.9	677.4	164.9	119.3	45.53	3.621		
6,000.0	5,944.3	5,986.5	5,931.0	23.6	23.5	74.52	163.2	694.2	168.2	121.8	46.41	3.624		
6,102.4	6,045.1	6,088.8	6,031.7	24.0	24.0	74.96	167.7	711.4	171.6	124.3	47.32	3.627		
6,200.0	6,141.5	6,186.3	6,127.8	24.4	24.4	74.92	171.9	727.8	175.3	127.2	48.14	3.642		
6,300.0	6,240.8	6,286.1	6,226.1	24.8	24.9	73.83	176.2	744.6	180.1	131.2	48.90	3.682		
6,400.0	6,340.4	6,385.7	6,324.2	25.2	25.3	71.81	180.6	761.4	185.9	136.3	49.58	3.750		
6,500.0	6,440.2	6,485.0	6,421.9	25.6	25.7	68.98	184.9	778.0	193.3	143.1	50.17	3.852		
6,602.4	6,542.6	6,586.1	6,521.5	25.9	26.2	129.08	189.3	795.0	202.7	152.1	50.67	4.001		
6,700.0	6,640.2	6,682.2	6,616.2	26.2	26.6	125.44	193.5	811.2	213.3	162.2	51.12	4.174		
6,800.0	6,740.2	6,780.7	6,713.1	26.5	27.0	122.08	197.8	827.8	225.0	173.4	51.58	4.362		
6,900.0	6,840.2	6,879.2	6,810.1	26.9	27.5	119.06	202.0	844.3	237.4	185.3	52.07	4.559		
7,000.0	6,940.2	6,977.7	6,907.1	27.2	27.9	116.33	206.3	860.9	250.3	197.7	52.57	4.761		
7,100.0	7,040.2	7,076.1	7,004.1	27.5	28.4	113.88	210.6	877.4	263.8	210.7	53.09	4.968		
7,200.0	7,140.2	7,174.6	7,101.1	27.8	28.8	111.67	214.9	894.0	277.7	224.0	53.63	5.177		
7,300.0	7,240.2	7,273.1	7,198.1	28.2	29.2	109.66	219.2	910.5	291.9	237.7	54.19	5.387		
7,400.0	7,340.2	7,371.6	7,295.0	28.5	29.7	107.85	223.5	927.1	306.5	251.8	54.77	5.597		
7,500.0	7,440.2	7,470.1	7,392.0	28.8	30.1	106.20	227.8	943.6	321.4	266.0	55.36	5.805		
7,600.0	7,540.2	7,568.6	7,489.0	29.1	30.6	104.69	232.0	960.2	336.5	280.5	55.96	6.013		
7,700.0	7,640.2	7,667.0	7,586.0	29.5	31.0	103.32	236.3	976.8	351.8	295.2	56.58	6.218		
7,800.0	7,740.2	7,765.5	7,683.0	29.8	31.4	102.06	240.6	993.3	367.3	310.1	57.20	6.421		
7,900.0	7,840.2	7,864.0	7,780.0	30.1	31.9	100.90	244.9	1,009.9	382.9	325.1	57.83	6.622		
8,000.0	7,940.2	7,962.5	7,877.0	30.5	32.3	99.83	249.2	1,026.4	398.7	340.3	58.48	6.819		
8,100.0	8,040.2	8,061.0	7,973.9	30.8	32.7	98.84	253.5	1,043.0	414.7	355.5	59.12	7.014		
8,200.0	8,140.2	8,159.4	8,070.9	31.1	33.2	97.93	257.8	1,059.5	430.7	370.9	59.78	7.205		
8,300.0	8,240.2	8,257.9	8,167.9	31.4	33.6	97.08	262.0	1,076.1	446.8	386.4	60.44	7.393		
8,400.0	8,340.2	8,356.4	8,264.9	31.8	34.1	96.29	266.3	1,092.6	463.1	401.9	61.11	7.578		
8,500.0	8,440.2	8,454.9	8,361.9	32.1	34.5	95.56	270.6	1,109.2	479.4	417.6	61.78	7.759		
8,600.0	8,540.2	8,553.4	8,458.9	32.4	34.9	94.87	274.9	1,125.7	495.7	433.3	62.45	7.938		
8,700.0	8,640.2	8,651.8	8,555.8	32.8	35.4	94.22	279.2	1,142.3	512.2	449.0	63.13	8.113		
8,800.0	8,740.2	8,750.3	8,652.8	33.1	35.8	93.62	283.5	1,158.9	528.7	464.9	63.81	8.285		
8,900.0	8,840.2	8,848.8	8,749.8	33.4	36.3	93.05	287.8	1,175.4	545.2	480.7	64.50	8.453		
9,000.0	8,940.2	8,947.3	8,846.8	33.8	36.7	92.52	292.0	1,192.0	561.8	496.6	65.18	8.619		
9,100.0	9,040.2	9,045.8	8,943.8	34.1	37.2	92.02	296.3	1,208.5	578.5	512.6	65.87	8.781		
9,200.0	9,140.2	9,144.2	9,040.8	34.5	37.6	91.54	300.6	1,225.1	595.2	528.6	66.57	8.941		
9,300.0	9,240.2	9,242.7	9,137.8	34.8	38.0	91.09	304.9	1,241.6	611.9	544.6	67.26	9.097		
9,400.0	9,340.2	9,341.9	9,235.4	35.1	38.5	90.66	309.2	1,258.3	628.6	560.7	67.96	9.250		
9,500.0	9,440.2	9,467.8	9,359.8	35.5	39.0	90.22	314.0	1,276.7	643.2	574.4	68.87	9.341		
9,600.0	9,540.2	9,595.1	9,486.4	35.8	39.5	89.91	317.4	1,289.9	653.6	583.9	69.68	9.381		
9,700.0	9,640.2	9,723.4	9,614.5	36.1	40.0	89.74	319.4	1,297.7	659.7	589.3	70.39	9.372		
9,800.0	9,740.2	9,849.2	9,740.2	36.5	40.4	89.69	320.0	1,299.9	661.4	590.4	71.01	9.314		
9,900.0	9,840.2	9,949.2	9,840.2	36.8	40.7	89.69	320.0	1,299.9	661.4	589.7	71.69	9.226		
10,000.0	9,940.2	10,049.2	9,940.2	37.2	41.0	89.69	320.0	1,299.9	661.4	589.0	72.37	9.139		
10,100.0	10,040.2	10,149.2	10,040.2	37.5	41.3	89.69	320.0	1,299.9	661.4	588.4	73.06	9.053		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program:		0-MWD										Offset Well Error:	0.0 usft	
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Distance		Rule Assigned:				Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
10,200.0	10,140.2	10,249.2	10,140.2	37.8	41.6	89.69	320.0	1,299.9	661.4	587.7	73.74	8.969		
10,300.0	10,240.2	10,349.2	10,240.2	38.2	41.9	89.69	320.0	1,299.9	661.4	587.0	74.43	8.887		
10,400.0	10,340.2	10,449.2	10,340.2	38.5	42.2	89.69	320.0	1,299.9	661.4	586.3	75.11	8.806		
10,500.0	10,440.2	10,549.2	10,440.2	38.9	42.5	89.69	320.0	1,299.9	661.4	585.6	75.80	8.726		
10,600.0	10,540.2	10,649.2	10,540.2	39.2	42.8	89.69	320.0	1,299.9	661.4	584.9	76.48	8.648		
10,700.0	10,640.2	10,749.2	10,640.2	39.5	43.1	89.69	320.0	1,299.9	661.4	584.2	77.17	8.571		
10,800.0	10,740.2	10,849.2	10,740.2	39.9	43.4	89.69	320.0	1,299.9	661.4	583.6	77.86	8.495		
10,900.0	10,840.2	10,949.2	10,840.2	40.2	43.8	89.69	320.0	1,299.9	661.4	582.9	78.55	8.421		
11,000.0	10,940.2	11,049.2	10,940.2	40.6	44.1	89.69	320.0	1,299.9	661.4	582.2	79.23	8.348		
11,100.0	11,040.2	11,149.2	11,040.2	40.9	44.4	89.69	320.0	1,299.9	661.4	581.5	79.92	8.276		
11,200.0	11,140.2	11,249.2	11,140.2	41.3	44.7	89.69	320.0	1,299.9	661.4	580.8	80.61	8.205		
11,300.0	11,240.2	11,349.2	11,240.2	41.6	45.0	89.69	320.0	1,299.9	661.4	580.1	81.30	8.135		
11,400.0	11,340.2	11,449.2	11,340.2	41.9	45.3	89.69	320.0	1,299.9	661.4	579.4	81.99	8.067		
11,500.0	11,440.2	11,549.2	11,440.2	42.3	45.6	89.69	320.0	1,299.9	661.4	578.7	82.68	7.999		
11,600.0	11,540.2	11,649.2	11,540.2	42.6	46.0	89.69	320.0	1,299.9	661.4	578.0	83.37	7.933		
11,700.0	11,640.2	11,749.2	11,640.2	43.0	46.3	89.69	320.0	1,299.9	661.4	577.4	84.07	7.868		
11,800.0	11,740.2	11,849.2	11,740.2	43.3	46.6	89.69	320.0	1,299.9	661.4	576.7	84.76	7.804		
11,900.0	11,840.2	11,949.2	11,840.2	43.7	46.9	89.69	320.0	1,299.9	661.4	576.0	85.45	7.740		
12,000.0	11,940.2	12,049.2	11,940.2	44.0	47.2	89.69	320.0	1,299.9	661.4	575.3	86.14	7.678		
12,100.0	12,040.2	12,149.2	12,040.2	44.4	47.5	89.69	320.0	1,299.9	661.4	574.6	86.84	7.617		
12,200.0	12,140.2	12,249.2	12,140.2	44.7	47.9	89.69	320.0	1,299.9	661.4	573.9	87.53	7.556		
12,253.3	12,193.5	12,302.5	12,193.5	44.9	48.0	89.69	320.0	1,299.9	661.4	573.5	87.90	7.525		
12,275.0	12,215.2	12,324.2	12,215.2	45.0	48.1	-89.77	320.0	1,299.9	661.4	573.4	88.05	7.512		
12,300.0	12,240.1	12,349.1	12,240.1	45.0	48.2	-89.93	320.0	1,299.9	661.4	573.2	88.20	7.499		
12,308.0	12,248.1	12,357.1	12,248.1	45.1	48.2	-90.00	320.0	1,299.9	661.4	573.2	88.25	7.495		
12,325.0	12,264.9	12,373.9	12,264.9	45.1	48.3	-90.19	320.0	1,299.9	661.4	573.1	88.35	7.486		
12,350.0	12,289.5	12,398.8	12,289.8	45.2	48.3	-90.52	319.4	1,299.9	661.4	573.0	88.49	7.475		
12,375.0	12,313.9	12,424.0	12,314.9	45.2	48.4	-90.85	317.5	1,299.9	661.5	572.9	88.62	7.465		
12,400.0	12,337.9	12,449.3	12,340.0	45.3	48.5	-91.17	314.3	1,300.0	661.6	572.8	88.74	7.455		
12,425.0	12,361.5	12,474.8	12,365.2	45.4	48.5	-91.50	309.7	1,300.0	661.6	572.8	88.85	7.446		
12,450.0	12,384.7	12,500.6	12,390.2	45.4	48.6	-91.82	303.7	1,300.1	661.8	572.8	88.96	7.438		
12,475.0	12,407.3	12,526.6	12,415.1	45.5	48.7	-92.14	296.3	1,300.1	661.9	572.8	89.07	7.431		
12,500.0	12,429.4	12,552.8	12,439.8	45.5	48.7	-92.45	287.4	1,300.2	662.0	572.9	89.16	7.425		
12,525.0	12,450.8	12,579.2	12,464.1	45.6	48.8	-92.76	277.2	1,300.3	662.2	572.9	89.25	7.419		
12,550.0	12,471.5	12,605.9	12,488.1	45.6	48.9	-93.06	265.4	1,300.5	662.4	573.0	89.33	7.415		
12,575.0	12,491.4	12,632.8	12,511.5	45.7	48.9	-93.35	252.3	1,300.6	662.6	573.1	89.41	7.411		
12,600.0	12,510.5	12,659.9	12,534.4	45.7	49.0	-93.64	237.8	1,300.7	662.8	573.3	89.48	7.407		
12,625.0	12,528.8	12,687.2	12,556.6	45.7	49.0	-93.92	221.8	1,300.9	663.0	573.4	89.54	7.404		
12,650.0	12,546.1	12,714.7	12,577.9	45.8	49.0	-94.18	204.4	1,301.1	663.2	573.6	89.59	7.402		
12,675.0	12,562.5	12,742.5	12,598.4	45.8	49.1	-94.43	185.7	1,301.2	663.4	573.8	89.64	7.400		
12,700.0	12,577.8	12,770.4	12,617.9	45.8	49.1	-94.68	165.7	1,301.4	663.6	573.9	89.69	7.399		
12,725.0	12,592.1	12,798.6	12,636.4	45.8	49.1	-94.90	144.5	1,301.7	663.8	574.1	89.73	7.398		
12,750.0	12,605.3	12,826.9	12,653.6	45.8	49.1	-95.12	122.0	1,301.9	664.0	574.3	89.77	7.398		
12,775.0	12,617.4	12,855.5	12,669.6	45.8	49.2	-95.32	98.4	1,302.1	664.3	574.5	89.80	7.397		
12,800.0	12,628.3	12,884.1	12,684.3	45.9	49.2	-95.50	73.7	1,302.4	664.4	574.6	89.83	7.397		
12,825.0	12,638.1	12,913.0	12,697.5	45.9	49.2	-95.66	48.1	1,302.6	664.6	574.8	89.86	7.396		
12,850.0	12,646.6	12,942.0	12,709.1	45.9	49.2	-95.81	21.5	1,302.9	664.8	574.9	89.89	7.395		
12,875.0	12,653.8	12,971.1	12,719.2	45.9	49.2	-95.94	-5.8	1,303.2	664.9	575.0	89.92	7.394		
12,900.0	12,659.8	13,000.3	12,727.7	45.9	49.2	-96.05	-33.8	1,303.4	665.1	575.1	89.96	7.393		
12,925.0	12,664.6	13,029.7	12,734.4	45.9	49.2	-96.14	-62.3	1,303.7	665.2	575.2	89.99	7.391		
12,950.0	12,668.0	13,059.1	12,739.4	45.9	49.2	-96.21	-91.3	1,304.0	665.2	575.2	90.03	7.389		
12,975.0	12,670.1	13,088.5	12,742.5	45.9	49.3	-96.27	-120.6	1,304.3	665.3	575.2	90.08	7.386		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program:		0-MWD											Offset Well Error:	0.0 usft
Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Rule Assigned: Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,000.0	12,671.0	13,118.0	12,743.9	45.9	49.3	-96.30	-150.0	1,304.6	665.3	575.2	90.12	7.382		
13,003.3	12,671.0	13,121.9	12,744.0	45.9	49.3	-96.30	-153.9	1,304.6	665.3	575.2	90.13	7.382		
13,100.0	12,671.0	13,219.2	12,744.0	46.0	49.4	-96.30	-251.1	1,305.6	665.3	574.9	90.41	7.359		
13,200.0	12,671.0	13,319.2	12,744.0	46.2	49.5	-96.30	-351.1	1,306.6	665.3	574.5	90.80	7.327		
13,300.0	12,671.0	13,419.2	12,744.0	46.4	49.7	-96.30	-451.1	1,307.6	665.3	574.0	91.32	7.285		
13,400.0	12,671.0	13,519.2	12,744.0	46.7	49.9	-96.30	-551.1	1,308.6	665.3	573.3	91.95	7.235		
13,500.0	12,671.0	13,619.2	12,744.0	47.1	50.2	-96.30	-651.1	1,309.6	665.3	572.6	92.69	7.178		
13,600.0	12,671.0	13,719.2	12,744.0	47.5	50.6	-96.30	-751.1	1,310.6	665.2	571.7	93.53	7.112		
13,700.0	12,671.0	13,819.2	12,744.0	48.0	51.0	-96.30	-851.1	1,311.6	665.2	570.7	94.49	7.040		
13,800.0	12,671.0	13,919.2	12,744.0	48.5	51.5	-96.30	-951.1	1,312.6	665.2	569.6	95.55	6.962		
13,900.0	12,671.0	14,019.2	12,744.0	49.1	52.0	-96.30	-1,051.1	1,313.6	665.2	568.5	96.71	6.878		
14,000.0	12,671.0	14,119.2	12,744.0	49.8	52.6	-96.30	-1,151.1	1,314.6	665.2	567.2	97.96	6.790		
14,100.0	12,671.0	14,219.2	12,744.0	50.5	53.2	-96.30	-1,251.1	1,315.6	665.1	565.8	99.31	6.698		
14,200.0	12,671.0	14,319.2	12,744.0	51.2	53.9	-96.30	-1,351.1	1,316.6	665.1	564.4	100.74	6.602		
14,300.0	12,671.0	14,419.2	12,744.0	52.0	54.6	-96.30	-1,451.1	1,317.6	665.1	562.8	102.26	6.504		
14,400.0	12,671.0	14,519.2	12,744.0	52.8	55.4	-96.30	-1,551.1	1,318.6	665.1	561.2	103.87	6.403		
14,500.0	12,671.0	14,619.2	12,744.0	53.6	56.2	-96.30	-1,651.1	1,319.6	665.1	559.5	105.55	6.301		
14,600.0	12,671.0	14,719.2	12,744.0	54.5	57.0	-96.30	-1,751.1	1,320.5	665.1	557.8	107.30	6.198		
14,700.0	12,671.0	14,819.2	12,744.0	55.4	57.9	-96.30	-1,851.1	1,321.5	665.0	555.9	109.12	6.094		
14,800.0	12,671.0	14,919.2	12,744.0	56.4	58.8	-96.30	-1,951.1	1,322.5	665.0	554.0	111.02	5.990		
14,900.0	12,671.0	15,019.2	12,744.0	57.3	59.7	-96.30	-2,051.1	1,323.5	665.0	552.0	112.97	5.886		
15,000.0	12,671.0	15,119.2	12,744.0	58.4	60.7	-96.30	-2,151.1	1,324.5	665.0	550.0	114.99	5.783		
15,100.0	12,671.0	15,219.2	12,744.0	59.4	61.7	-96.30	-2,251.0	1,325.5	665.0	547.9	117.06	5.681		
15,200.0	12,671.0	15,319.2	12,744.0	60.5	62.7	-96.30	-2,351.0	1,326.5	664.9	545.8	119.19	5.579		
15,300.0	12,671.0	15,419.2	12,744.0	61.6	63.8	-96.30	-2,451.0	1,327.5	664.9	543.6	121.36	5.479		
15,400.0	12,671.0	15,519.2	12,744.0	62.7	64.9	-96.30	-2,551.0	1,328.5	664.9	541.3	123.59	5.380		
15,500.0	12,671.0	15,619.2	12,744.0	63.8	66.0	-96.30	-2,651.0	1,329.5	664.9	539.0	125.86	5.283		
15,600.0	12,671.0	15,719.2	12,744.0	65.0	67.1	-96.30	-2,751.0	1,330.5	664.9	536.7	128.18	5.187		
15,700.0	12,671.0	15,819.2	12,744.0	66.2	68.2	-96.30	-2,851.0	1,331.5	664.9	534.3	130.54	5.093		
15,800.0	12,671.0	15,919.2	12,744.0	67.4	69.4	-96.30	-2,951.0	1,332.5	664.8	531.9	132.94	5.001		
15,900.0	12,671.0	16,019.2	12,744.0	68.6	70.6	-96.30	-3,051.0	1,333.5	664.8	529.4	135.37	4.911		
16,000.0	12,671.0	16,119.2	12,744.0	69.8	71.8	-96.30	-3,151.0	1,334.5	664.8	527.0	137.84	4.823		
16,100.0	12,671.0	16,219.2	12,744.0	71.1	73.0	-96.30	-3,251.0	1,335.5	664.8	524.4	140.34	4.737		
16,200.0	12,671.0	16,319.2	12,744.0	72.4	74.3	-96.30	-3,351.0	1,336.5	664.8	521.9	142.88	4.653		
16,300.0	12,671.0	16,419.2	12,744.0	73.6	75.5	-96.30	-3,451.0	1,337.5	664.7	519.3	145.44	4.571		
16,400.0	12,671.0	16,519.2	12,744.0	74.9	76.8	-96.30	-3,551.0	1,338.5	664.7	516.7	148.03	4.490		
16,500.0	12,671.0	16,619.2	12,744.0	76.3	78.1	-96.31	-3,651.0	1,339.5	664.7	514.1	150.65	4.412		
16,600.0	12,671.0	16,719.2	12,744.0	77.6	79.4	-96.31	-3,751.0	1,340.5	664.7	511.4	153.29	4.336		
16,700.0	12,671.0	16,819.2	12,744.0	78.9	80.7	-96.31	-3,851.0	1,341.5	664.7	508.7	155.96	4.262		
16,800.0	12,671.0	16,919.2	12,744.0	80.3	82.0	-96.31	-3,951.0	1,342.5	664.7	506.0	158.65	4.189		
16,900.0	12,671.0	17,019.2	12,744.0	81.6	83.3	-96.31	-4,051.0	1,343.5	664.6	503.3	161.37	4.119		
17,000.0	12,671.0	17,119.2	12,744.0	83.0	84.7	-96.31	-4,151.0	1,344.5	664.6	500.5	164.10	4.050		
17,100.0	12,671.0	17,219.2	12,744.0	84.4	86.0	-96.31	-4,250.9	1,345.5	664.6	497.7	166.86	3.983		
17,200.0	12,671.0	17,319.2	12,744.0	85.8	87.4	-96.31	-4,350.9	1,346.5	664.6	495.0	169.63	3.918		
17,300.0	12,671.0	17,419.2	12,744.0	87.2	88.8	-96.31	-4,450.9	1,347.5	664.6	492.1	172.42	3.854		
17,400.0	12,671.0	17,519.2	12,744.0	88.6	90.2	-96.31	-4,550.9	1,348.4	664.5	489.3	175.23	3.793		
17,500.0	12,671.0	17,619.2	12,744.0	90.0	91.6	-96.31	-4,650.9	1,349.4	664.5	486.5	178.05	3.732		
17,600.0	12,671.0	17,719.2	12,744.0	91.4	93.0	-96.31	-4,750.9	1,350.4	664.5	483.6	180.89	3.674		
17,700.0	12,671.0	17,819.2	12,744.0	92.8	94.4	-96.31	-4,850.9	1,351.4	664.5	480.7	183.74	3.616		
17,800.0	12,671.0	17,919.2	12,744.0	94.3	95.8	-96.31	-4,950.9	1,352.4	664.5	477.9	186.61	3.561		
17,900.0	12,671.0	18,019.2	12,744.0	95.7	97.2	-96.31	-5,050.9	1,353.4	664.5	475.0	189.49	3.507		
18,000.0	12,671.0	18,119.2	12,744.0	97.2	98.6	-96.31	-5,150.9	1,354.4	664.4	472.1	192.38	3.454		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - OWB - PWP0														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Rule Assigned: Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
+N/-S (usft)	+E/-W (usft)														
18,100.0	12,671.0	18,219.2	12,744.0	98.6	100.1	-96.31	-5,250.9	1,355.4	664.4	469.1	195.29	3.402			
18,200.0	12,671.0	18,319.2	12,744.0	100.1	101.5	-96.31	-5,350.9	1,356.4	664.4	466.2	198.21	3.352			
18,300.0	12,671.0	18,419.2	12,744.0	101.6	103.0	-96.31	-5,450.9	1,357.4	664.4	463.2	201.14	3.303			
18,400.0	12,671.0	18,519.2	12,744.0	103.0	104.4	-96.31	-5,550.9	1,358.4	664.4	460.3	204.07	3.255			
18,500.0	12,671.0	18,619.2	12,744.0	104.5	105.9	-96.31	-5,650.9	1,359.4	664.3	457.3	207.02	3.209			
18,600.0	12,671.0	18,719.2	12,744.0	106.0	107.4	-96.31	-5,750.9	1,360.4	664.3	454.3	209.98	3.164			
18,700.0	12,671.0	18,819.2	12,744.0	107.5	108.8	-96.31	-5,850.9	1,361.4	664.3	451.4	212.95	3.119			
18,800.0	12,671.0	18,919.2	12,744.0	109.0	110.3	-96.31	-5,950.9	1,362.4	664.3	448.4	215.93	3.076			
18,900.0	12,671.0	19,019.2	12,744.0	110.5	111.8	-96.31	-6,050.9	1,363.4	664.3	445.4	218.92	3.034			
19,000.0	12,671.0	19,119.2	12,744.0	112.0	113.3	-96.31	-6,150.9	1,364.4	664.3	442.3	221.91	2.993			
19,100.0	12,671.0	19,219.2	12,744.0	113.5	114.8	-96.31	-6,250.8	1,365.4	664.2	439.3	224.92	2.953			
19,200.0	12,671.0	19,319.2	12,744.0	115.0	116.3	-96.31	-6,350.8	1,366.4	664.2	436.3	227.93	2.914			
19,300.0	12,671.0	19,419.2	12,744.0	116.5	117.8	-96.31	-6,450.8	1,367.4	664.2	433.3	230.94	2.876			
19,400.0	12,671.0	19,519.2	12,744.0	118.0	119.3	-96.31	-6,550.8	1,368.4	664.2	430.2	233.97	2.839			
19,500.0	12,671.0	19,619.2	12,744.0	119.6	120.8	-96.31	-6,650.8	1,369.4	664.2	427.2	237.00	2.802			
19,600.0	12,671.0	19,719.2	12,744.0	121.1	122.3	-96.31	-6,750.8	1,370.4	664.1	424.1	240.04	2.767			
19,700.0	12,671.0	19,819.2	12,744.0	122.6	123.8	-96.31	-6,850.8	1,371.4	664.1	421.0	243.08	2.732			
19,800.0	12,671.0	19,919.2	12,744.0	124.2	125.3	-96.31	-6,950.8	1,372.4	664.1	418.0	246.13	2.698			
19,900.0	12,671.0	20,019.2	12,744.0	125.7	126.8	-96.31	-7,050.8	1,373.4	664.1	414.9	249.19	2.665			
20,000.0	12,671.0	20,119.2	12,744.0	127.2	128.4	-96.31	-7,150.8	1,374.4	664.1	411.8	252.25	2.633			
20,100.0	12,671.0	20,219.2	12,744.0	128.8	129.9	-96.31	-7,250.8	1,375.4	664.1	408.7	255.32	2.601			
20,200.0	12,671.0	20,319.2	12,744.0	130.3	131.4	-96.31	-7,350.8	1,376.3	664.0	405.6	258.39	2.570			
20,217.4	12,671.0	20,336.6	12,744.0	130.6	131.7	-96.31	-7,368.2	1,376.5	664.0	405.1	258.93	2.565			
20,217.7	12,671.0	20,336.9	12,744.0	130.6	131.7	-96.31	-7,368.5	1,376.5	664.0	405.1	258.94	2.564			
20,221.4	12,671.0	20,340.5	12,744.0	130.6	131.7	-96.31	-7,372.1	1,376.6	664.0	405.0	259.05	2.563			
20,300.0	12,671.0	20,419.1	12,744.0	131.8	133.0	-96.31	-7,450.7	1,377.4	664.0	402.6	261.47	2.540			
20,400.0	12,671.0	20,519.1	12,744.0	133.4	134.5	-96.31	-7,550.7	1,378.4	664.0	399.5	264.55	2.510			
20,500.0	12,671.0	20,619.1	12,744.0	134.9	136.0	-96.31	-7,650.7	1,379.4	664.0	396.4	267.64	2.481			
20,600.0	12,671.0	20,719.1	12,744.0	136.5	137.6	-96.31	-7,750.7	1,380.4	664.0	393.3	270.73	2.453			
20,700.0	12,671.0	20,819.1	12,744.0	138.0	139.1	-96.31	-7,850.7	1,381.4	664.0	390.2	273.83	2.425			
20,800.0	12,671.0	20,919.1	12,744.0	139.6	140.7	-96.31	-7,950.7	1,382.4	664.0	387.1	276.93	2.398			
20,900.0	12,671.0	21,019.1	12,744.0	141.2	142.2	-96.31	-8,050.7	1,383.4	664.1	384.0	280.03	2.371			
21,000.0	12,671.0	21,119.1	12,744.0	142.7	143.8	-96.31	-8,150.7	1,384.4	664.1	380.9	283.14	2.345			
21,100.0	12,671.0	21,219.1	12,744.0	144.3	145.3	-96.31	-8,250.7	1,385.4	664.1	377.8	286.26	2.320			
21,200.0	12,671.0	21,319.1	12,744.0	145.9	146.9	-96.31	-8,350.7	1,386.4	664.1	374.7	289.37	2.295			
21,300.0	12,671.0	21,419.1	12,744.0	147.4	148.4	-96.31	-8,450.7	1,387.4	664.1	371.6	292.49	2.270			
21,400.0	12,671.0	21,519.1	12,744.0	149.0	150.0	-96.31	-8,550.7	1,388.4	664.1	368.5	295.61	2.246			
21,500.0	12,671.0	21,619.1	12,744.0	150.6	151.5	-96.31	-8,650.7	1,389.4	664.1	365.3	298.74	2.223			
21,600.0	12,671.0	21,719.1	12,744.0	152.1	153.1	-96.31	-8,750.7	1,390.5	664.1	362.2	301.87	2.200			
21,700.0	12,671.0	21,819.1	12,744.0	153.7	154.7	-96.31	-8,850.6	1,391.5	664.1	359.1	305.00	2.177			
21,800.0	12,671.0	21,919.1	12,744.0	155.3	156.2	-96.31	-8,950.6	1,392.5	664.1	355.9	308.14	2.155			
21,900.0	12,671.0	22,019.1	12,744.0	156.8	157.8	-96.31	-9,050.6	1,393.5	664.1	352.8	311.28	2.133			
22,000.0	12,671.0	22,119.1	12,744.0	158.4	159.4	-96.31	-9,150.6	1,394.5	664.1	349.7	314.42	2.112			
22,100.0	12,671.0	22,219.1	12,744.0	160.0	160.9	-96.31	-9,250.6	1,395.5	664.1	346.5	317.57	2.091			
22,200.0	12,671.0	22,319.1	12,744.0	161.6	162.5	-96.31	-9,350.6	1,396.5	664.1	343.4	320.71	2.071			
22,300.0	12,671.0	22,419.1	12,744.0	163.2	164.1	-96.31	-9,450.6	1,397.5	664.1	340.2	323.86	2.051			
22,400.0	12,671.0	22,519.1	12,744.0	164.7	165.7	-96.31	-9,550.6	1,398.5	664.1	337.1	327.02	2.031			
22,500.0	12,671.0	22,619.1	12,744.0	166.3	167.2	-96.31	-9,650.6	1,399.5	664.1	333.9	330.17	2.011			
22,600.0	12,671.0	22,719.1	12,744.0	167.9	168.8	-96.31	-9,750.6	1,400.5	664.1	330.8	333.33	1.992			
22,700.0	12,671.0	22,819.1	12,744.0	169.5	170.4	-96.31	-9,850.6	1,401.5	664.1	327.6	336.49	1.974			
22,800.0	12,671.0	22,919.1	12,744.0	171.1	172.0	-96.31	-9,950.6	1,402.5	664.1	324.5	339.65	1.955			
22,900.0	12,671.0	23,019.1	12,744.0	172.7	173.5	-96.31	-10,050.6	1,403.5	664.1	321.3	342.82	1.937			

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 464H - OWB - PWP0

Survey Program: 0-MWD													Offset Site Error: 0.0 usft
Rule Assigned:													Offset Well Error: 0.0 usft
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)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
23,000.0	12,671.0	23,119.1	12,744.0	174.3	175.1	-96.31	-10,150.6	1,404.6	664.1	318.1	345.98	1.920	
23,100.0	12,671.0	23,219.1	12,744.0	175.9	176.7	-96.31	-10,250.6	1,405.6	664.1	315.0	349.15	1.902	
23,200.0	12,671.0	23,319.1	12,744.0	177.5	178.3	-96.31	-10,350.6	1,406.6	664.1	311.8	352.32	1.885	
23,300.0	12,671.0	23,419.1	12,744.0	179.0	179.9	-96.31	-10,450.6	1,407.6	664.1	308.6	355.49	1.868	
23,301.4	12,671.0	23,420.5	12,744.0	179.1	179.9	-96.31	-10,451.9	1,407.6	664.1	308.6	355.54	1.868	
23,400.0	12,671.0	23,496.6	12,744.0	180.6	181.1	-96.31	-10,528.1	1,408.4	664.5	305.6	358.88	1.852 SF	
23,500.0	12,671.0	23,496.6	12,744.0	182.2	181.1	-96.31	-10,528.1	1,408.4	675.3	316.8	358.50	1.884	
23,588.5	12,671.0	23,496.6	12,744.0	183.6	181.1	-96.31	-10,528.1	1,408.4	696.9	344.3	352.55	1.977	

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

Permian Resources
Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program:		0-MWD						Rule Assigned:					Offset Well Error:	0.0 usft
Reference	Measured	Offset	Semi Major Axis	Highside	Offset Wellbore Centre		Distance		Minimum		Separation	Warning		
Depth (usft)	Depth (usft)	Depth (usft)	Offset (usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	Factor				
0.0	0.0	0.0	0.0	0.0	0.0	89.50	0.3	33.0	33.0					
100.0	100.0	100.0	100.0	0.3	0.3	89.50	0.3	33.0	33.0	32.5	0.50	65.758		
200.0	200.0	200.0	200.0	0.6	0.6	89.50	0.3	33.0	33.0	31.8	1.22	27.077		
300.0	300.0	300.0	300.0	1.0	1.0	89.50	0.3	33.0	33.0	31.1	1.94	17.048		
400.0	400.0	400.0	400.0	1.3	1.3	89.50	0.3	33.0	33.0	30.3	2.65	12.441		
500.0	500.0	500.0	500.0	1.7	1.7	89.50	0.3	33.0	33.0	29.6	3.37	9.794		
524.4	524.4	524.4	524.4	1.8	1.8	89.50	0.3	33.0	33.0	29.5	3.54	9.310		
600.0	600.0	600.0	600.0	2.0	2.0	89.50	0.3	33.0	33.0	28.9	4.09	8.076		
633.3	633.3	633.3	633.3	2.2	2.2	89.50	0.3	33.0	33.0	28.7	4.33	7.629		
700.0	700.0	700.0	700.0	2.4	2.4	89.50	0.3	33.0	33.0	28.2	4.80	6.870		
800.0	800.0	800.0	800.0	2.8	2.8	89.50	0.3	33.0	33.0	27.5	5.52	5.978		
900.0	900.0	900.0	900.0	3.1	3.1	89.50	0.3	33.0	33.0	26.8	6.24	5.291		
1,000.0	1,000.0	1,000.0	1,000.0	3.5	3.5	89.50	0.3	33.0	33.0	26.0	6.95	4.745		
1,100.0	1,100.0	1,100.0	1,100.0	3.8	3.8	89.50	0.3	33.0	33.0	25.3	7.67	4.302		
1,200.0	1,200.0	1,200.0	1,200.0	4.2	4.2	89.50	0.3	33.0	33.0	24.6	8.39	3.934		
1,300.0	1,300.0	1,300.0	1,300.0	4.6	4.6	89.50	0.3	33.0	33.0	23.9	9.11	3.624		
1,400.0	1,400.0	1,400.0	1,400.0	4.9	4.9	89.50	0.3	33.0	33.0	23.2	9.82	3.360		
1,500.0	1,500.0	1,500.0	1,500.0	5.3	5.3	89.50	0.3	33.0	33.0	22.5	10.54	3.131		
1,600.0	1,600.0	1,600.0	1,600.0	5.6	5.6	89.50	0.3	33.0	33.0	21.7	11.26	2.932		
1,700.0	1,700.0	1,700.0	1,700.0	6.0	6.0	89.50	0.3	33.0	33.0	21.0	11.97	2.756		
1,800.0	1,800.0	1,800.0	1,800.0	6.3	6.3	89.50	0.3	33.0	33.0	20.3	12.69	2.601		
1,900.0	1,900.0	1,900.0	1,900.0	6.7	6.7	89.50	0.3	33.0	33.0	19.6	13.41	2.462		
2,000.0	2,000.0	2,000.0	2,000.0	7.1	7.1	89.50	0.3	33.0	33.0	18.9	14.12	2.337 CC		
2,100.0	2,100.0	2,099.0	2,098.9	7.4	7.4	25.99	1.0	34.6	33.0	18.2	14.82	2.228		
2,200.0	2,199.8	2,197.9	2,197.8	7.8	7.8	26.39	3.1	39.3	33.1	17.6	15.49	2.134		
2,300.0	2,299.5	2,296.9	2,296.3	8.1	8.1	27.04	6.5	47.1	33.1	17.0	16.16	2.052		
2,400.0	2,398.7	2,395.8	2,394.6	8.5	8.5	27.96	11.3	58.0	33.3	16.5	16.81	1.980		
2,500.0	2,497.5	2,494.8	2,492.3	8.8	8.8	29.12	17.5	72.0	33.4	16.0	17.45	1.916 ES		
2,600.0	2,595.9	2,593.7	2,589.5	9.2	9.2	29.09	25.1	89.1	35.2	17.1	18.08	1.946		
2,700.0	2,694.4	2,693.6	2,687.2	9.6	9.6	27.79	33.4	108.1	38.7	19.9	18.78	2.058		
2,800.0	2,792.9	2,793.5	2,784.9	10.0	10.0	26.69	41.8	127.1	42.2	22.7	19.49	2.163		
2,900.0	2,891.4	2,893.5	2,882.7	10.4	10.4	25.76	50.2	146.1	45.7	25.5	20.21	2.260		
3,000.0	2,989.9	2,993.4	2,980.4	10.8	10.8	24.97	58.6	165.1	49.2	28.3	20.94	2.350		
3,100.0	3,088.3	3,093.3	3,078.2	11.2	11.2	24.28	67.0	184.1	52.7	31.1	21.66	2.435		
3,200.0	3,186.8	3,193.3	3,175.9	11.6	11.6	23.68	75.4	203.1	56.3	33.9	22.40	2.513		
3,300.0	3,285.3	3,293.2	3,273.7	12.0	12.0	23.15	83.8	222.1	59.8	36.7	23.13	2.587		
3,400.0	3,383.8	3,393.1	3,371.4	12.4	12.5	22.67	92.2	241.1	63.4	39.5	23.87	2.656		
3,500.0	3,482.3	3,493.1	3,469.2	12.8	12.9	22.25	100.6	260.1	66.9	42.3	24.60	2.721		
3,600.0	3,580.8	3,593.0	3,566.9	13.2	13.4	21.87	109.0	279.1	70.5	45.2	25.35	2.782		
3,700.0	3,679.2	3,692.9	3,664.7	13.6	13.8	21.53	117.4	298.1	74.1	48.0	26.09	2.839		
3,800.0	3,777.7	3,792.9	3,762.4	14.1	14.2	21.22	125.8	317.1	77.6	50.8	26.83	2.893		
3,900.0	3,876.2	3,892.8	3,860.2	14.5	14.7	20.94	134.2	336.1	81.2	53.6	27.58	2.944		
4,000.0	3,974.7	3,992.7	3,957.9	14.9	15.1	20.68	142.6	355.1	84.8	56.4	28.33	2.992		
4,100.0	4,073.2	4,092.7	4,055.7	15.3	15.6	20.44	151.0	374.1	88.3	59.3	29.08	3.038		
4,200.0	4,171.6	4,192.6	4,153.4	15.7	16.0	20.22	159.4	393.1	91.9	62.1	29.83	3.081		
4,300.0	4,270.1	4,292.6	4,251.2	16.2	16.5	20.02	167.8	412.2	95.5	64.9	30.58	3.122		
4,400.0	4,368.6	4,392.5	4,348.9	16.6	17.0	19.83	176.2	431.2	99.1	67.7	31.34	3.161		
4,500.0	4,467.1	4,492.4	4,446.7	17.0	17.4	19.65	184.6	450.2	102.6	70.5	32.09	3.199		
4,600.0	4,565.6	4,592.4	4,544.4	17.5	17.9	19.49	193.0	469.2	106.2	73.4	32.84	3.234		
4,700.0	4,664.0	4,692.3	4,642.2	17.9	18.3	19.33	201.4	488.2	109.8	76.2	33.60	3.268		
4,800.0	4,762.5	4,792.2	4,739.9	18.3	18.8	19.19	209.8	507.2	113.4	79.0	34.36	3.300		
4,900.0	4,861.0	4,892.2	4,837.7	18.8	19.3	19.06	218.2	526.2	117.0	81.8	35.12	3.330		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program:		0-MWD						Rule Assigned:				Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Major Axis Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.0	4,959.5	4,992.1	4,935.5	19.2	19.7	18.93	226.6	545.2	120.5	84.7	35.87	3.360		
5,100.0	5,058.0	5,092.0	5,033.2	19.6	20.2	18.81	235.0	564.2	124.1	87.5	36.63	3.388		
5,200.0	5,156.4	5,192.0	5,131.0	20.1	20.7	18.70	243.3	583.2	127.7	90.3	37.39	3.415		
5,300.0	5,254.9	5,291.9	5,228.7	20.5	21.1	18.59	251.7	602.2	131.3	93.1	38.15	3.441		
5,400.0	5,353.4	5,391.8	5,326.5	20.9	21.6	18.49	260.1	621.2	134.9	95.9	38.91	3.465		
5,500.0	5,451.9	5,491.8	5,424.2	21.4	22.1	18.39	268.5	640.2	138.4	98.8	39.68	3.489		
5,600.0	5,550.4	5,591.7	5,522.0	21.8	22.5	18.30	276.9	659.2	142.0	101.6	40.44	3.512		
5,700.0	5,648.9	5,691.6	5,619.7	22.3	23.0	18.22	285.3	678.2	145.6	104.4	41.20	3.534		
5,800.0	5,747.3	5,792.9	5,718.7	22.7	23.5	18.14	293.8	697.4	149.1	107.1	41.99	3.550		
5,900.0	5,845.8	5,898.2	5,822.3	23.1	24.0	18.36	301.5	714.8	150.0	107.2	42.86	3.501		
6,000.0	5,944.3	6,003.4	5,926.4	23.6	24.4	18.98	307.7	728.8	147.5	103.8	43.69	3.375		
6,102.4	6,045.1	6,110.7	6,033.1	24.0	24.8	20.12	312.3	739.4	141.2	96.7	44.51	3.173		
6,200.0	6,141.5	6,212.6	6,134.7	24.4	25.2	21.49	315.3	746.1	133.5	88.3	45.25	2.951		
6,300.0	6,240.8	6,316.6	6,238.7	24.8	25.6	23.02	316.8	749.5	125.5	79.6	45.97	2.731		
6,400.0	6,340.4	6,418.3	6,340.4	25.2	25.9	24.58	317.0	749.9	117.9	71.2	46.70	2.524		
6,500.0	6,440.2	6,518.2	6,440.2	25.6	26.2	25.66	317.0	749.9	113.1	65.6	47.46	2.382		
6,602.4	6,542.6	6,620.6	6,542.6	25.9	26.5	89.70	317.0	749.9	111.4	63.2	48.19	2.312		
6,700.0	6,640.2	6,718.2	6,640.2	26.2	26.8	89.70	317.0	749.9	111.4	62.6	48.84	2.281		
6,800.0	6,740.2	6,818.2	6,740.2	26.5	27.1	89.70	317.0	749.9	111.4	61.9	49.52	2.250		
6,900.0	6,840.2	6,918.2	6,840.2	26.9	27.4	89.70	317.0	749.9	111.4	61.2	50.20	2.220		
7,000.0	6,940.2	7,018.2	6,940.2	27.2	27.7	89.70	317.0	749.9	111.4	60.5	50.87	2.190		
7,100.0	7,040.2	7,118.2	7,040.2	27.5	28.1	89.70	317.0	749.9	111.4	59.9	51.55	2.161		
7,200.0	7,140.2	7,218.2	7,140.2	27.8	28.4	89.70	317.0	749.9	111.4	59.2	52.23	2.133		
7,300.0	7,240.2	7,318.2	7,240.2	28.2	28.7	89.70	317.0	749.9	111.4	58.5	52.91	2.106		
7,400.0	7,340.2	7,418.2	7,340.2	28.5	29.0	89.70	317.0	749.9	111.4	57.8	53.60	2.079		
7,500.0	7,440.2	7,518.2	7,440.2	28.8	29.3	89.70	317.0	749.9	111.4	57.1	54.28	2.053		
7,600.0	7,540.2	7,618.2	7,540.2	29.1	29.7	89.70	317.0	749.9	111.4	56.5	54.96	2.027		
7,700.0	7,640.2	7,718.2	7,640.2	29.5	30.0	89.70	317.0	749.9	111.4	55.8	55.65	2.002		
7,800.0	7,740.2	7,818.2	7,740.2	29.8	30.3	89.70	317.0	749.9	111.4	55.1	56.33	1.978		
7,900.0	7,840.2	7,918.2	7,840.2	30.1	30.6	89.70	317.0	749.9	111.4	54.4	57.02	1.954		
8,000.0	7,940.2	8,018.2	7,940.2	30.5	31.0	89.70	317.0	749.9	111.4	53.7	57.70	1.931		
8,100.0	8,040.2	8,118.2	8,040.2	30.8	31.3	89.70	317.0	749.9	111.4	53.0	58.39	1.908		
8,200.0	8,140.2	8,218.2	8,140.2	31.1	31.6	89.70	317.0	749.9	111.4	52.3	59.08	1.886		
8,300.0	8,240.2	8,318.2	8,240.2	31.4	31.9	89.70	317.0	749.9	111.4	51.6	59.77	1.864		
8,400.0	8,340.2	8,418.2	8,340.2	31.8	32.3	89.70	317.0	749.9	111.4	51.0	60.46	1.843		
8,500.0	8,440.2	8,518.2	8,440.2	32.1	32.6	89.70	317.0	749.9	111.4	50.3	61.15	1.822		
8,600.0	8,540.2	8,618.2	8,540.2	32.4	32.9	89.70	317.0	749.9	111.4	49.6	61.84	1.802		
8,700.0	8,640.2	8,718.2	8,640.2	32.8	33.2	89.70	317.0	749.9	111.4	48.9	62.53	1.782		
8,800.0	8,740.2	8,818.2	8,740.2	33.1	33.6	89.70	317.0	749.9	111.4	48.2	63.22	1.762		
8,900.0	8,840.2	8,918.2	8,840.2	33.4	33.9	89.70	317.0	749.9	111.4	47.5	63.91	1.743		
9,000.0	8,940.2	9,018.2	8,940.2	33.8	34.2	89.70	317.0	749.9	111.4	46.8	64.61	1.724		
9,100.0	9,040.2	9,118.2	9,040.2	34.1	34.6	89.70	317.0	749.9	111.4	46.1	65.30	1.706		
9,200.0	9,140.2	9,218.2	9,140.2	34.5	34.9	89.70	317.0	749.9	111.4	45.4	65.99	1.688		
9,300.0	9,240.2	9,318.2	9,240.2	34.8	35.2	89.70	317.0	749.9	111.4	44.7	66.69	1.671		
9,400.0	9,340.2	9,418.2	9,340.2	35.1	35.6	89.70	317.0	749.9	111.4	44.0	67.38	1.653		
9,500.0	9,440.2	9,518.2	9,440.2	35.5	35.9	89.70	317.0	749.9	111.4	43.3	68.08	1.637		
9,600.0	9,540.2	9,618.2	9,540.2	35.8	36.2	89.70	317.0	749.9	111.4	42.6	68.77	1.620		
9,700.0	9,640.2	9,718.2	9,640.2	36.1	36.6	89.70	317.0	749.9	111.4	41.9	69.47	1.604		
9,800.0	9,740.2	9,818.2	9,740.2	36.5	36.9	89.70	317.0	749.9	111.4	41.2	70.17	1.588		
9,900.0	9,840.2	9,918.2	9,840.2	36.8	37.2	89.70	317.0	749.9	111.4	40.5	70.86	1.572		
10,000.0	9,940.2	10,018.2	9,940.2	37.2	37.6	89.70	317.0	749.9	111.4	39.8	71.56	1.557		
10,100.0	10,040.2	10,118.2	10,040.2	37.5	37.9	89.70	317.0	749.9	111.4	39.2	72.26	1.542		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - OWB - PWP0														Offset Site Error:	0.0 usft
Survey Program: 0-MWD														Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Rule Assigned: Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,200.0	10,140.2	10,218.2	10,140.2	37.8	38.2	89.70	317.0	749.9	111.4	38.5	72.96	1.527			
10,300.0	10,240.2	10,318.2	10,240.2	38.2	38.6	89.70	317.0	749.9	111.4	37.8	73.66	1.513			
10,400.0	10,340.2	10,418.2	10,340.2	38.5	38.9	89.70	317.0	749.9	111.4	37.1	74.36	1.498	Level 3		
10,500.0	10,440.2	10,518.2	10,440.2	38.9	39.3	89.70	317.0	749.9	111.4	36.4	75.05	1.484	Level 3		
10,600.0	10,540.2	10,618.2	10,540.2	39.2	39.6	89.70	317.0	749.9	111.4	35.7	75.75	1.471	Level 3		
10,700.0	10,640.2	10,718.2	10,640.2	39.5	39.9	89.70	317.0	749.9	111.4	35.0	76.45	1.457	Level 3		
10,800.0	10,740.2	10,818.2	10,740.2	39.9	40.3	89.70	317.0	749.9	111.4	34.3	77.15	1.444	Level 3		
10,900.0	10,840.2	10,918.2	10,840.2	40.2	40.6	89.70	317.0	749.9	111.4	33.6	77.86	1.431	Level 3		
11,000.0	10,940.2	11,018.2	10,940.2	40.6	40.9	89.70	317.0	749.9	111.4	32.9	78.56	1.418	Level 3		
11,100.0	11,040.2	11,118.2	11,040.2	40.9	41.3	89.70	317.0	749.9	111.4	32.2	79.26	1.406	Level 3		
11,200.0	11,140.2	11,218.2	11,140.2	41.3	41.6	89.70	317.0	749.9	111.4	31.5	79.96	1.393	Level 3		
11,300.0	11,240.2	11,318.2	11,240.2	41.6	42.0	89.70	317.0	749.9	111.4	30.8	80.66	1.381	Level 3		
11,400.0	11,340.2	11,418.2	11,340.2	41.9	42.3	89.70	317.0	749.9	111.4	30.0	81.36	1.369	Level 3		
11,500.0	11,440.2	11,518.2	11,440.2	42.3	42.7	89.70	317.0	749.9	111.4	29.3	82.06	1.358	Level 3		
11,600.0	11,540.2	11,618.2	11,540.2	42.6	43.0	89.70	317.0	749.9	111.4	28.6	82.77	1.346	Level 3		
11,700.0	11,640.2	11,718.2	11,640.2	43.0	43.3	89.70	317.0	749.9	111.4	27.9	83.47	1.335	Level 3		
11,800.0	11,740.2	11,818.2	11,740.2	43.3	43.7	89.70	317.0	749.9	111.4	27.2	84.17	1.324	Level 3		
11,900.0	11,840.2	11,918.2	11,840.2	43.7	44.0	89.70	317.0	749.9	111.4	26.5	84.88	1.313	Level 3		
12,000.0	11,940.2	12,018.2	11,940.2	44.0	44.4	89.70	317.0	749.9	111.4	25.8	85.58	1.302	Level 3		
12,100.0	12,040.2	12,118.2	12,040.2	44.4	44.7	89.70	317.0	749.9	111.4	25.1	86.28	1.291	Level 3		
12,200.0	12,140.2	12,218.2	12,140.2	44.7	45.0	89.70	317.0	749.9	111.4	24.4	86.99	1.281	Level 3		
12,253.3	12,193.5	12,271.5	12,193.5	44.9	45.2	89.70	317.0	749.9	111.4	24.1	87.36	1.275	Level 3		
12,275.0	12,215.2	12,293.2	12,215.2	45.0	45.3	-89.98	317.0	749.9	111.4	23.9	87.50	1.273	Level 3		
12,276.1	12,216.3	12,294.3	12,216.3	45.0	45.3	-90.00	317.0	749.9	111.4	23.9	87.51	1.273	Level 3		
12,300.0	12,240.1	12,318.1	12,240.1	45.0	45.4	-90.89	317.0	749.9	111.4	23.8	87.63	1.271	Level 3		
12,325.0	12,264.9	12,342.9	12,264.9	45.1	45.5	-92.46	317.0	749.9	111.5	23.8	87.74	1.271	Level 3, SF		
12,350.0	12,289.5	12,367.5	12,289.5	45.2	45.6	-94.63	317.0	749.9	111.8	24.0	87.83	1.273	Level 3		
12,375.0	12,313.9	12,391.9	12,313.9	45.2	45.6	-97.37	317.0	749.9	112.4	24.5	87.91	1.279	Level 3		
12,400.0	12,337.9	12,415.9	12,337.9	45.3	45.7	-100.57	317.0	749.9	113.5	25.5	87.99	1.290	Level 3		
12,425.0	12,361.5	12,439.5	12,361.5	45.4	45.8	-104.15	317.0	749.9	115.4	27.3	88.09	1.310	Level 3		
12,450.0	12,384.7	12,462.7	12,384.7	45.4	45.9	-107.96	317.0	749.9	118.2	30.0	88.22	1.340	Level 3		
12,475.0	12,407.3	12,485.3	12,407.3	45.5	46.0	-111.87	317.0	749.9	122.1	33.7	88.38	1.382	Level 3		
12,500.0	12,429.4	12,507.3	12,429.4	45.5	46.0	-115.74	317.0	749.9	127.4	38.8	88.59	1.438	Level 3		
12,525.0	12,450.8	12,528.7	12,450.8	45.6	46.1	-119.46	317.0	749.9	134.1	45.3	88.84	1.510			
12,550.0	12,471.5	12,549.4	12,471.5	45.6	46.2	-122.92	317.0	749.9	142.4	53.3	89.12	1.598			
12,575.0	12,491.4	12,569.4	12,491.4	45.7	46.3	-126.06	317.0	749.9	152.3	62.8	89.42	1.703			
12,600.0	12,510.5	12,588.5	12,510.5	45.7	46.3	-128.82	317.0	749.9	163.7	73.9	89.73	1.824			
12,625.0	12,528.8	12,606.7	12,528.8	45.7	46.4	-131.20	317.0	749.9	176.6	86.5	90.03	1.961			
12,650.0	12,546.1	12,624.1	12,546.1	45.8	46.4	-133.17	317.0	749.9	190.9	100.6	90.32	2.113			
12,675.0	12,562.5	12,640.4	12,562.5	45.8	46.5	-134.73	317.0	749.9	206.5	115.9	90.58	2.280			
12,700.0	12,577.8	12,655.8	12,577.8	45.8	46.5	-135.88	317.0	749.9	223.4	132.6	90.83	2.459			
12,725.0	12,592.1	12,677.9	12,599.9	45.8	46.6	-138.11	316.7	749.9	241.2	150.3	90.94	2.652			
12,750.0	12,605.3	12,705.4	12,627.3	45.8	46.7	-140.88	314.9	749.9	259.4	168.6	90.84	2.856			
12,775.0	12,617.4	12,735.5	12,657.3	45.8	46.8	-143.59	311.1	750.0	277.8	187.3	90.51	3.069			
12,800.0	12,628.3	12,769.2	12,690.3	45.9	46.9	-146.27	304.7	750.0	296.2	206.4	89.86	3.296			
12,825.0	12,638.1	12,795.2	12,715.4	45.9	47.0	-147.60	298.0	750.1	314.5	225.1	89.46	3.516			
12,850.0	12,646.6	12,851.8	12,768.8	45.9	47.1	-151.71	279.2	750.3	332.5	245.3	87.16	3.814			
12,875.0	12,653.8	12,904.4	12,815.9	45.9	47.2	-154.45	256.0	750.5	349.8	265.0	84.71	4.129			
12,900.0	12,659.8	12,967.9	12,869.2	45.9	47.3	-157.15	221.4	750.9	366.0	284.9	81.14	4.511			
12,925.0	12,664.6	13,046.2	12,927.6	45.9	47.4	-159.67	169.5	751.4	380.6	304.5	76.12	5.000			
12,950.0	12,668.0	13,142.7	12,986.8	45.9	47.5	-161.82	93.5	752.1	392.6	322.9	69.69	5.634			
12,975.0	12,670.1	13,241.6	13,030.3	45.9	47.5	-163.15	4.8	753.0	400.9	336.8	64.17	6.248			

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - 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		Rule Assigned:		Distance		Minimum	Separation	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)			
13,000.0	12,671.0	13,389.9	13,059.5	45.9	47.6	-164.02	-139.9	754.5	404.5	344.5	60.04	6.738		
13,003.3	12,671.0	13,407.7	13,060.0	45.9	47.6	-164.03	-157.6	754.6	404.6	344.5	60.08	6.735		
13,100.0	12,671.0	13,506.6	13,060.0	46.0	47.6	-164.03	-256.6	755.6	404.6	344.3	60.26	6.714		
13,200.0	12,671.0	13,606.6	13,060.0	46.2	47.8	-164.04	-356.6	756.6	404.6	344.1	60.48	6.690		
13,300.0	12,671.0	13,706.6	13,060.0	46.4	48.0	-164.04	-456.6	757.6	404.6	343.8	60.76	6.659		
13,400.0	12,671.0	13,806.6	13,060.0	46.7	48.3	-164.04	-556.6	758.6	404.6	343.5	61.08	6.624		
13,500.0	12,671.0	13,906.6	13,060.0	47.1	48.6	-164.04	-656.6	759.6	404.6	343.1	61.45	6.584		
13,600.0	12,671.0	14,006.6	13,060.0	47.5	49.0	-164.05	-756.6	760.6	404.6	342.7	61.87	6.539		
13,700.0	12,671.0	14,106.6	13,060.0	48.0	49.5	-164.05	-856.6	761.6	404.6	342.2	62.34	6.490		
13,800.0	12,671.0	14,206.6	13,060.0	48.5	50.0	-164.05	-956.6	762.6	404.6	341.7	62.85	6.437		
13,900.0	12,671.0	14,306.6	13,060.0	49.1	50.6	-164.05	-1,056.6	763.6	404.6	341.2	63.40	6.381		
14,000.0	12,671.0	14,406.6	13,060.0	49.8	51.2	-164.06	-1,156.6	764.6	404.6	340.6	64.00	6.321		
14,100.0	12,671.0	14,506.6	13,060.0	50.5	51.8	-164.06	-1,256.6	765.6	404.6	339.9	64.65	6.258		
14,200.0	12,671.0	14,606.6	13,060.0	51.2	52.5	-164.06	-1,356.6	766.6	404.6	339.2	65.33	6.192		
14,300.0	12,671.0	14,706.6	13,060.0	52.0	53.3	-164.06	-1,456.6	767.6	404.5	338.5	66.05	6.125		
14,400.0	12,671.0	14,806.6	13,060.0	52.8	54.1	-164.07	-1,556.6	768.6	404.5	337.7	66.82	6.055		
14,500.0	12,671.0	14,906.6	13,060.0	53.6	54.9	-164.07	-1,656.6	769.6	404.5	336.9	67.61	5.983		
14,600.0	12,671.0	15,006.6	13,060.0	54.5	55.8	-164.07	-1,756.6	770.6	404.5	336.1	68.45	5.910		
14,700.0	12,671.0	15,106.6	13,060.0	55.4	56.7	-164.07	-1,856.5	771.6	404.5	335.2	69.32	5.836		
14,800.0	12,671.0	15,206.6	13,060.0	56.4	57.6	-164.08	-1,956.5	772.6	404.5	334.3	70.22	5.761		
14,900.0	12,671.0	15,306.6	13,060.0	57.3	58.5	-164.08	-2,056.5	773.6	404.5	333.4	71.15	5.685		
15,000.0	12,671.0	15,406.6	13,060.0	58.4	59.5	-164.08	-2,156.5	774.5	404.5	332.4	72.12	5.609		
15,100.0	12,671.0	15,506.6	13,060.0	59.4	60.6	-164.08	-2,256.5	775.5	404.5	331.4	73.11	5.533		
15,200.0	12,671.0	15,606.6	13,060.0	60.5	61.6	-164.09	-2,356.5	776.5	404.5	330.4	74.14	5.456		
15,300.0	12,671.0	15,706.6	13,060.0	61.6	62.7	-164.09	-2,456.5	777.5	404.5	329.3	75.18	5.380		
15,400.0	12,671.0	15,806.6	13,060.0	62.7	63.8	-164.09	-2,556.5	778.5	404.5	328.2	76.26	5.304		
15,500.0	12,671.0	15,906.6	13,060.0	63.8	64.9	-164.09	-2,656.5	779.5	404.5	327.1	77.36	5.229		
15,600.0	12,671.0	16,006.6	13,060.0	65.0	66.0	-164.10	-2,756.5	780.5	404.5	326.0	78.49	5.154		
15,700.0	12,671.0	16,106.6	13,060.0	66.2	67.2	-164.10	-2,856.5	781.5	404.5	324.8	79.63	5.079		
15,800.0	12,671.0	16,206.6	13,060.0	67.4	68.4	-164.10	-2,956.5	782.5	404.5	323.7	80.80	5.006		
15,900.0	12,671.0	16,306.6	13,060.0	68.6	69.6	-164.10	-3,056.5	783.5	404.5	322.5	81.99	4.933		
16,000.0	12,671.0	16,406.6	13,060.0	69.8	70.8	-164.11	-3,156.5	784.5	404.5	321.3	83.20	4.861		
16,100.0	12,671.0	16,506.6	13,060.0	71.1	72.0	-164.11	-3,256.5	785.5	404.5	320.0	84.43	4.790		
16,200.0	12,671.0	16,606.6	13,060.0	72.4	73.3	-164.11	-3,356.5	786.5	404.5	318.8	85.68	4.721		
16,300.0	12,671.0	16,706.6	13,060.0	73.6	74.6	-164.11	-3,456.5	787.5	404.4	317.5	86.94	4.652		
16,400.0	12,671.0	16,806.6	13,060.0	74.9	75.8	-164.12	-3,556.5	788.5	404.4	316.2	88.22	4.584		
16,500.0	12,671.0	16,906.6	13,060.0	76.3	77.1	-164.12	-3,656.5	789.5	404.4	314.9	89.52	4.518		
16,600.0	12,671.0	17,006.6	13,060.0	77.6	78.4	-164.12	-3,756.5	790.5	404.4	313.6	90.84	4.452		
16,700.0	12,671.0	17,106.6	13,060.0	78.9	79.8	-164.12	-3,856.4	791.5	404.4	312.3	92.16	4.388		
16,800.0	12,671.0	17,206.6	13,060.0	80.3	81.1	-164.13	-3,956.4	792.5	404.4	310.9	93.50	4.325		
16,900.0	12,671.0	17,306.6	13,060.0	81.6	82.4	-164.13	-4,056.4	793.5	404.4	309.6	94.86	4.263		
17,000.0	12,671.0	17,406.6	13,060.0	83.0	83.8	-164.13	-4,156.4	794.5	404.4	308.2	96.23	4.203		
17,100.0	12,671.0	17,506.6	13,060.0	84.4	85.2	-164.13	-4,256.4	795.5	404.4	306.8	97.61	4.143		
17,200.0	12,671.0	17,606.6	13,060.0	85.8	86.5	-164.14	-4,356.4	796.5	404.4	305.4	99.00	4.085		
17,300.0	12,671.0	17,706.6	13,060.0	87.2	87.9	-164.14	-4,456.4	797.5	404.4	304.0	100.40	4.028		
17,400.0	12,671.0	17,806.6	13,060.0	88.6	89.3	-164.14	-4,556.4	798.5	404.4	302.6	101.82	3.972		
17,500.0	12,671.0	17,906.6	13,060.0	90.0	90.7	-164.14	-4,656.4	799.5	404.4	301.1	103.24	3.917		
17,600.0	12,671.0	18,006.6	13,060.0	91.4	92.1	-164.15	-4,756.4	800.4	404.4	299.7	104.68	3.863		
17,700.0	12,671.0	18,106.6	13,060.0	92.8	93.6	-164.15	-4,856.4	801.4	404.4	298.3	106.12	3.811		
17,800.0	12,671.0	18,206.6	13,060.0	94.3	95.0	-164.15	-4,956.4	802.4	404.4	296.8	107.57	3.759		
17,900.0	12,671.0	18,306.6	13,060.0	95.7	96.4	-164.15	-5,056.4	803.4	404.4	295.3	109.04	3.709		
18,000.0	12,671.0	18,406.6	13,060.0	97.2	97.9	-164.16	-5,156.4	804.4	404.4	293.9	110.51	3.659		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design: LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - OWB - PWP0													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre		Distance Between Centres (usft)		Rule Assigned: Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
+N/-S (usft)	+E/-W (usft)													
18,100.0	12,671.0	18,506.6	13,060.0	98.6	99.3	-164.16	-5,256.4	805.4	404.4	292.4	111.98	3.611		
18,200.0	12,671.0	18,606.6	13,060.0	100.1	100.8	-164.16	-5,356.4	806.4	404.3	290.9	113.47	3.563		
18,300.0	12,671.0	18,706.6	13,060.0	101.6	102.2	-164.17	-5,456.4	807.4	404.3	289.4	114.96	3.517		
18,400.0	12,671.0	18,806.6	13,060.0	103.0	103.7	-164.17	-5,556.4	808.4	404.3	287.9	116.47	3.472		
18,500.0	12,671.0	18,906.6	13,060.0	104.5	105.1	-164.17	-5,656.4	809.4	404.3	286.4	117.97	3.427		
18,600.0	12,671.0	19,006.6	13,060.0	106.0	106.6	-164.17	-5,756.4	810.4	404.3	284.8	119.49	3.384		
18,700.0	12,671.0	19,106.6	13,060.0	107.5	108.1	-164.18	-5,856.3	811.4	404.3	283.3	121.01	3.341		
18,800.0	12,671.0	19,206.6	13,060.0	109.0	109.6	-164.18	-5,956.3	812.4	404.3	281.8	122.53	3.300		
18,900.0	12,671.0	19,306.6	13,060.0	110.5	111.1	-164.18	-6,056.3	813.4	404.3	280.2	124.07	3.259		
19,000.0	12,671.0	19,406.6	13,060.0	112.0	112.6	-164.18	-6,156.3	814.4	404.3	278.7	125.61	3.219		
19,100.0	12,671.0	19,506.6	13,060.0	113.5	114.1	-164.19	-6,256.3	815.4	404.3	277.2	127.15	3.180		
19,200.0	12,671.0	19,606.6	13,060.0	115.0	115.6	-164.19	-6,356.3	816.4	404.3	275.6	128.70	3.141		
19,300.0	12,671.0	19,706.6	13,060.0	116.5	117.1	-164.19	-6,456.3	817.4	404.3	274.0	130.25	3.104		
19,400.0	12,671.0	19,806.6	13,060.0	118.0	118.6	-164.19	-6,556.3	818.4	404.3	272.5	131.81	3.067		
19,500.0	12,671.0	19,906.6	13,060.0	119.6	120.1	-164.20	-6,656.3	819.4	404.3	270.9	133.38	3.031		
19,600.0	12,671.0	20,006.6	13,060.0	121.1	121.6	-164.20	-6,756.3	820.4	404.3	269.3	134.94	2.996		
19,700.0	12,671.0	20,106.6	13,060.0	122.6	123.1	-164.20	-6,856.3	821.4	404.3	267.8	136.52	2.961		
19,800.0	12,671.0	20,206.6	13,060.0	124.2	124.7	-164.20	-6,956.3	822.4	404.3	266.2	138.09	2.927		
19,900.0	12,671.0	20,306.6	13,060.0	125.7	126.2	-164.21	-7,056.3	823.4	404.3	264.6	139.68	2.894		
20,000.0	12,671.0	20,406.6	13,060.0	127.2	127.7	-164.21	-7,156.3	824.4	404.3	263.0	141.26	2.862		
20,100.0	12,671.0	20,506.6	13,060.0	128.8	129.3	-164.21	-7,256.3	825.3	404.3	261.4	142.85	2.830		
20,200.0	12,671.0	20,606.6	13,060.0	130.3	130.8	-164.21	-7,356.3	826.3	404.2	259.8	144.44	2.799		
20,217.4	12,671.0	20,624.1	13,060.0	130.6	131.1	-164.21	-7,373.7	826.5	404.2	259.5	144.72	2.793		
20,217.7	12,671.0	20,624.3	13,060.0	130.6	131.1	-164.21	-7,374.0	826.5	404.2	259.5	144.72	2.793		
20,221.4	12,671.0	20,628.0	13,060.0	130.6	131.1	-164.21	-7,377.7	826.6	404.2	259.5	144.78	2.792		
20,300.0	12,671.0	20,706.6	13,060.0	131.8	132.3	-164.21	-7,456.3	827.3	404.2	258.2	146.04	2.768		
20,400.0	12,671.0	20,806.6	13,060.0	133.4	133.9	-164.21	-7,556.3	828.4	404.2	256.6	147.64	2.738		
20,500.0	12,671.0	20,906.6	13,060.0	134.9	135.4	-164.21	-7,656.3	829.4	404.2	255.0	149.25	2.709		
20,600.0	12,671.0	21,006.6	13,060.0	136.5	137.0	-164.21	-7,756.2	830.4	404.2	253.4	150.86	2.680		
20,700.0	12,671.0	21,106.6	13,060.0	138.0	138.5	-164.21	-7,856.2	831.4	404.2	251.8	152.47	2.651		
20,800.0	12,671.0	21,206.6	13,060.0	139.6	140.1	-164.21	-7,956.2	832.4	404.2	250.2	154.09	2.623		
20,900.0	12,671.0	21,306.6	13,060.0	141.2	141.6	-164.21	-8,056.2	833.4	404.2	248.5	155.71	2.596		
21,000.0	12,671.0	21,406.6	13,060.0	142.7	143.2	-164.21	-8,156.2	834.4	404.2	246.9	157.33	2.569		
21,100.0	12,671.0	21,506.6	13,060.0	144.3	144.7	-164.21	-8,256.2	835.4	404.2	245.3	158.96	2.543		
21,200.0	12,671.0	21,606.6	13,060.0	145.9	146.3	-164.21	-8,356.2	836.4	404.2	243.7	160.59	2.517		
21,300.0	12,671.0	21,706.6	13,060.0	147.4	147.8	-164.21	-8,456.2	837.4	404.2	242.0	162.22	2.492		
21,400.0	12,671.0	21,806.6	13,060.0	149.0	149.4	-164.21	-8,556.2	838.4	404.2	240.4	163.85	2.467		
21,500.0	12,671.0	21,906.6	13,060.0	150.6	151.0	-164.21	-8,656.2	839.4	404.3	238.8	165.49	2.443		
21,600.0	12,671.0	22,006.6	13,060.0	152.1	152.5	-164.21	-8,756.2	840.4	404.3	237.1	167.12	2.419		
21,700.0	12,671.0	22,106.6	13,060.0	153.7	154.1	-164.21	-8,856.2	841.4	404.3	235.5	168.77	2.395		
21,800.0	12,671.0	22,206.6	13,060.0	155.3	155.7	-164.21	-8,956.2	842.4	404.3	233.8	170.41	2.372		
21,900.0	12,671.0	22,306.6	13,060.0	156.8	157.2	-164.21	-9,056.2	843.4	404.3	232.2	172.05	2.350		
22,000.0	12,671.0	22,406.6	13,060.0	158.4	158.8	-164.21	-9,156.2	844.4	404.3	230.6	173.70	2.327		
22,100.0	12,671.0	22,506.6	13,060.0	160.0	160.4	-164.21	-9,256.2	845.4	404.3	228.9	175.35	2.305		
22,200.0	12,671.0	22,606.6	13,060.0	161.6	162.0	-164.21	-9,356.2	846.5	404.3	227.3	177.00	2.284		
22,300.0	12,671.0	22,706.6	13,060.0	163.2	163.5	-164.21	-9,456.2	847.5	404.3	225.6	178.66	2.263		
22,400.0	12,671.0	22,806.6	13,060.0	164.7	165.1	-164.21	-9,556.2	848.5	404.3	223.9	180.31	2.242		
22,500.0	12,671.0	22,906.6	13,060.0	166.3	166.7	-164.21	-9,656.1	849.5	404.3	222.3	181.97	2.222		
22,600.0	12,671.0	23,006.6	13,060.0	167.9	168.3	-164.21	-9,756.1	850.5	404.3	220.6	183.63	2.201		
22,700.0	12,671.0	23,106.6	13,060.0	169.5	169.9	-164.21	-9,856.1	851.5	404.3	219.0	185.29	2.182		
22,800.0	12,671.0	23,206.6	13,060.0	171.1	171.4	-164.21	-9,956.1	852.5	404.3	217.3	186.95	2.162		
22,900.0	12,671.0	23,306.6	13,060.0	172.7	173.0	-164.21	-10,056.1	853.5	404.3	215.6	188.62	2.143		

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 LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Offset Design:LOS VAQUEROS FED PROJECT - LOS VAQUEROS FED 524H - OWB - PWP0												Offset Site Error:	0.0 usft
Survey Program:		0-MWD										Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis		Offset Wellbore Centre		Rule Assigned:						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
23,000.0	12,671.0	23,406.6	13,060.0	174.3	174.6	-164.21	-10,156.1	854.5	404.3	214.0	190.28	2.125	
23,100.0	12,671.0	23,506.6	13,060.0	175.9	176.2	-164.21	-10,256.1	855.5	404.3	212.3	191.95	2.106	
23,200.0	12,671.0	23,606.6	13,060.0	177.5	177.8	-164.21	-10,356.1	856.5	404.3	210.6	193.62	2.088	
23,300.0	12,671.0	23,706.6	13,060.0	179.0	179.4	-164.21	-10,456.1	857.5	404.3	209.0	195.29	2.070	
23,400.0	12,671.0	23,806.6	13,060.0	180.6	181.0	-164.21	-10,556.1	858.5	404.3	207.3	196.96	2.052	
23,500.0	12,671.0	23,906.6	13,060.0	182.2	182.6	-164.21	-10,656.1	859.5	404.3	205.6	198.64	2.035	
23,504.0	12,671.0	23,910.6	13,060.0	182.3	182.6	-164.21	-10,660.1	859.6	404.3	205.6	198.70	2.034	
23,588.5	12,671.0	23,960.0	13,060.0	183.6	183.4	-164.21	-10,709.5	860.1	405.8	207.1	198.70	2.042	

Permian Resources

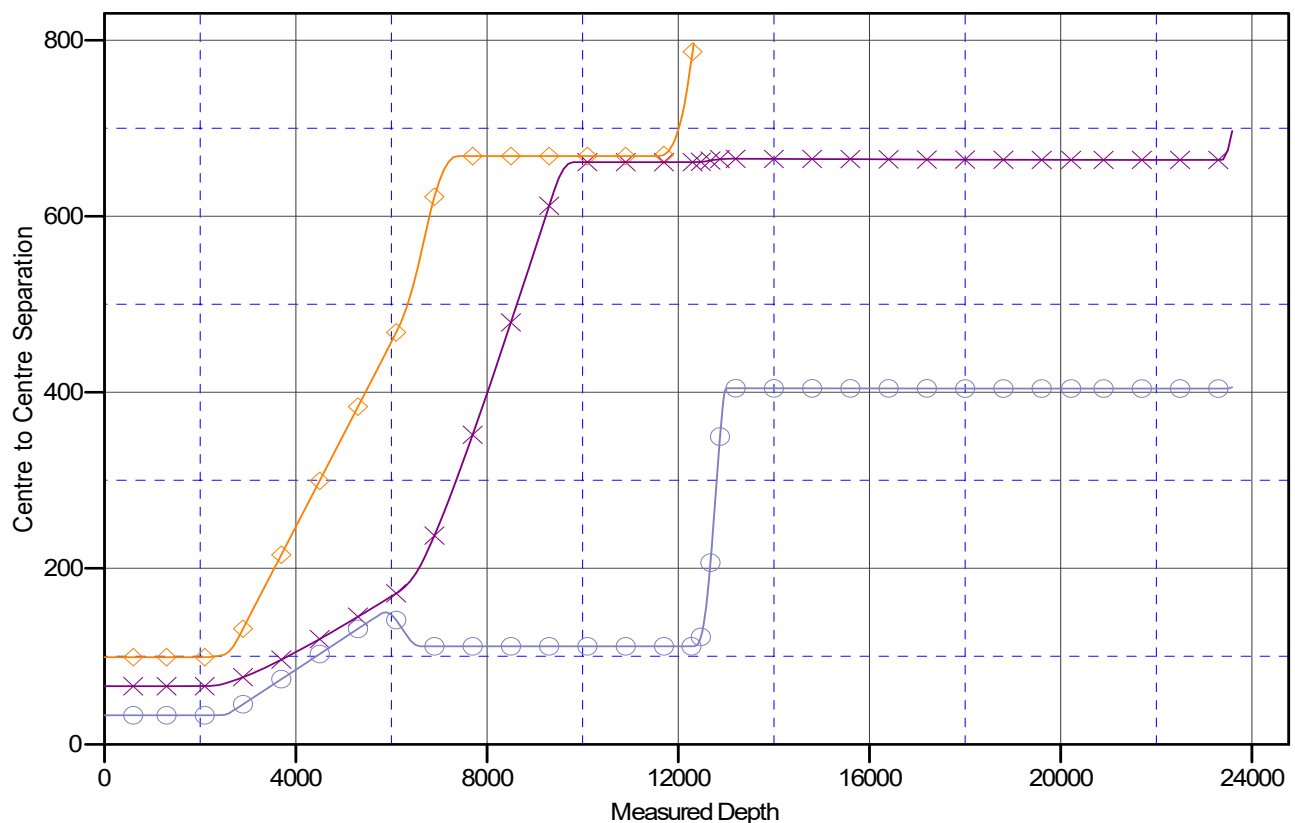
Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3211.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: LOS VAQUEROS FED 444H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.49°

Ladder Plot



LEGEND

✕ LOS VAQUEROS FED 464H, OWB, PWP0 V0
 ● LOS VAQUEROS FED 524H, OWB, PWP0 V0
 ◆ LOS VAQUEROS FED 304H, OWB, PWP0 V0

Permian Resources

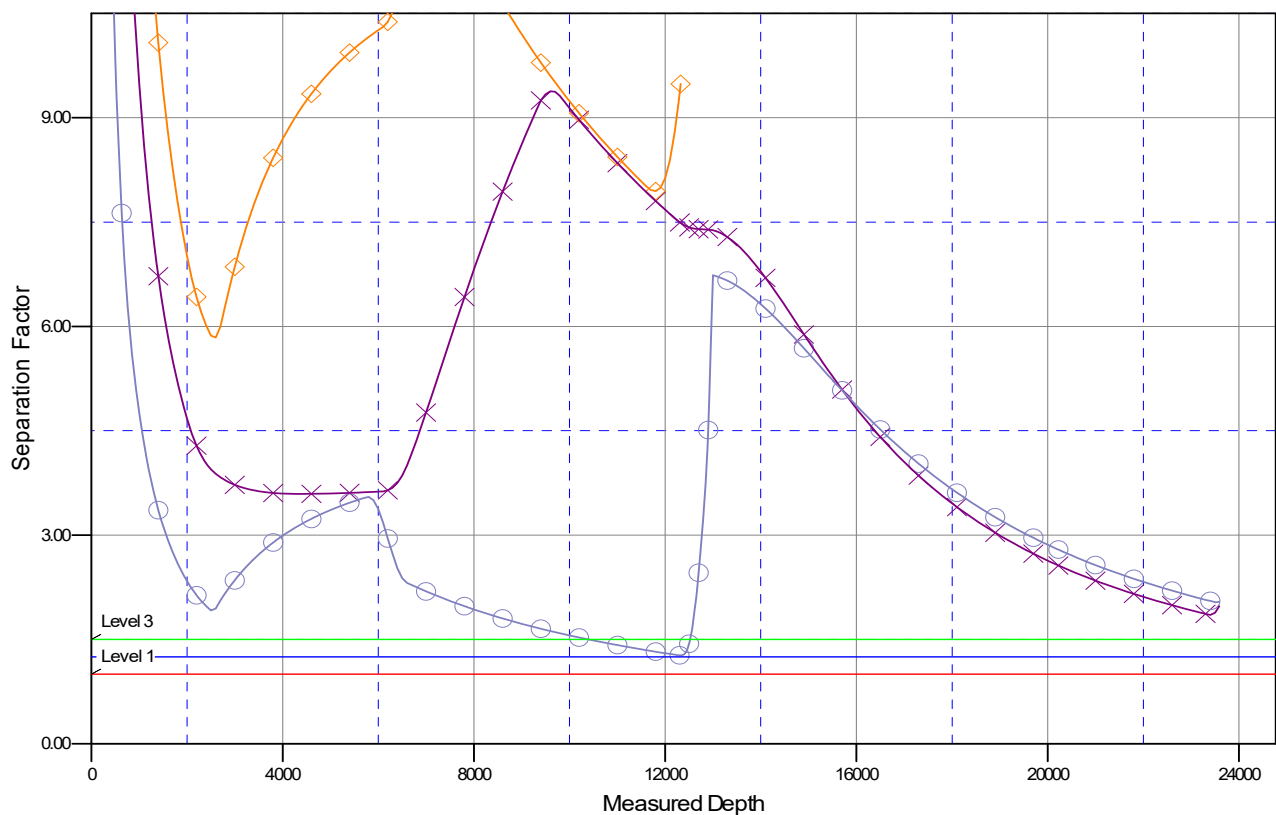
Anticollision Report

Company:	NEW MEXICO	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Project:	(SP) LEA	TVD Reference:	KB @ 3211.0usft
Reference Site:	LOS VAQUEROS FED PROJECT	MD Reference:	KB @ 3211.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	Compass
Reference Design:	PWP0	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 3211.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: LOS VAQUEROS FED 444H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.49°

Separation Factor Plot



LEGEND

LOS VAQUEROS FED 464H, OWB, PWP0 V0 LOS VAQUEROS FED 524H, OWB, PWP0 V0 LOS VAQUEROS FED 304H, OWB, PWP0 V0

NEW MEXICO

(SP) LEA

LOS VAQUEROS FED PROJECT

LOS VAQUEROS FED 444H

OWB

Plan: PWP0

Standard Planning Report - Geographic

13 December, 2023

Permian Resources
Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

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

Site	LOS VAQUEROS FED PROJECT				
Site Position:		Northing:	372,466.94 usft	Latitude:	32° 1' 14.083 N
From:	Map	Easting:	829,705.79 usft	Longitude:	103° 24' 10.395 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	LOS VAQUEROS FED 444H					
Well Position	+N/-S	0.0 usft	Northing:	372,466.07 usft	Latitude:	32° 1' 14.083 N
	+E/-W	0.0 usft	Easting:	829,606.79 usft	Longitude:	103° 24' 11.545 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,181.0 usft
Grid Convergence:		0.49 °				

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	7.66	60.08	48,690.73656999

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	176.01

Plan Survey Tool Program	Date	12/13/2023		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	23,588.5 PWP0 (OWB)	MWD	
			OWSG_Rev2_ MWD - Star	

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,500.0	10.00	63.64	2,497.5	19.3	39.0	2.00	2.00	0.00	63.64	
6,102.4	10.00	63.64	6,045.1	297.1	599.5	0.00	0.00	0.00	0.00	
6,602.4	0.00	0.00	6,542.6	316.4	638.5	2.00	-2.00	0.00	180.00	
12,253.3	0.00	0.00	12,193.5	316.4	638.5	0.00	0.00	0.00	0.00	
13,003.3	90.00	179.42	12,671.0	-161.0	643.3	12.00	12.00	23.92	179.42	
20,217.4	90.00	179.42	12,671.0	-7,374.8	716.5	0.00	0.00	0.00	0.00	SLC-LOS VAQUER
20,217.7	90.00	179.42	12,671.0	-7,375.1	716.6	2.00	0.09	2.00	87.30	
23,588.5	90.00	179.42	12,671.0	-10,745.7	750.4	0.00	0.00	0.00	0.00	BHL-LOS VAQUER

Permian Resources

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
100.0	0.00	0.00	100.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
200.0	0.00	0.00	200.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
300.0	0.00	0.00	300.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
400.0	0.00	0.00	400.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
500.0	0.00	0.00	500.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
600.0	0.00	0.00	600.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
700.0	0.00	0.00	700.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
800.0	0.00	0.00	800.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
900.0	0.00	0.00	900.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	372,466.07	829,606.79	32° 1' 14.083 N	103° 24' 11.545 W
Start Build 2.00									
2,100.0	2.00	63.64	2,100.0	0.8	1.6	372,466.84	829,608.35	32° 1' 14.090 N	103° 24' 11.526 W
2,200.0	4.00	63.64	2,199.8	3.1	6.3	372,469.17	829,613.04	32° 1' 14.113 N	103° 24' 11.472 W
2,300.0	6.00	63.64	2,299.5	7.0	14.1	372,473.04	829,620.85	32° 1' 14.150 N	103° 24' 11.381 W
2,400.0	8.00	63.64	2,398.7	12.4	25.0	372,478.45	829,631.77	32° 1' 14.203 N	103° 24' 11.253 W
2,500.0	10.00	63.64	2,497.5	19.3	39.0	372,485.39	829,645.79	32° 1' 14.271 N	103° 24' 11.090 W
Start 3602.4 hold at 2500.0 MD									
2,600.0	10.00	63.64	2,595.9	27.0	54.6	372,493.10	829,661.34	32° 1' 14.346 N	103° 24' 10.908 W
2,700.0	10.00	63.64	2,694.4	34.7	70.1	372,500.81	829,676.90	32° 1' 14.421 N	103° 24' 10.727 W
2,800.0	10.00	63.64	2,792.9	42.5	85.7	372,508.52	829,692.46	32° 1' 14.496 N	103° 24' 10.545 W
2,900.0	10.00	63.64	2,891.4	50.2	101.2	372,516.23	829,708.02	32° 1' 14.571 N	103° 24' 10.364 W
3,000.0	10.00	63.64	2,989.9	57.9	116.8	372,523.94	829,723.58	32° 1' 14.645 N	103° 24' 10.182 W
3,100.0	10.00	63.64	3,088.3	65.6	132.4	372,531.65	829,739.14	32° 1' 14.720 N	103° 24' 10.001 W
3,200.0	10.00	63.64	3,186.8	73.3	147.9	372,539.36	829,754.70	32° 1' 14.795 N	103° 24' 9.819 W
3,300.0	10.00	63.64	3,285.3	81.0	163.5	372,547.07	829,770.26	32° 1' 14.870 N	103° 24' 9.638 W
3,400.0	10.00	63.64	3,383.8	88.7	179.0	372,554.78	829,785.82	32° 1' 14.945 N	103° 24' 9.456 W
3,500.0	10.00	63.64	3,482.3	96.4	194.6	372,562.49	829,801.38	32° 1' 15.020 N	103° 24' 9.275 W
3,600.0	10.00	63.64	3,580.8	104.1	210.1	372,570.20	829,816.94	32° 1' 15.095 N	103° 24' 9.093 W
3,700.0	10.00	63.64	3,679.2	111.8	225.7	372,577.91	829,832.50	32° 1' 15.170 N	103° 24' 8.912 W
3,800.0	10.00	63.64	3,777.7	119.6	241.3	372,585.63	829,848.06	32° 1' 15.245 N	103° 24' 8.730 W
3,900.0	10.00	63.64	3,876.2	127.3	256.8	372,593.34	829,863.62	32° 1' 15.320 N	103° 24' 8.549 W
4,000.0	10.00	63.64	3,974.7	135.0	272.4	372,601.05	829,879.17	32° 1' 15.395 N	103° 24' 8.367 W
4,100.0	10.00	63.64	4,073.2	142.7	287.9	372,608.76	829,894.73	32° 1' 15.470 N	103° 24' 8.186 W
4,200.0	10.00	63.64	4,171.6	150.4	303.5	372,616.47	829,910.29	32° 1' 15.545 N	103° 24' 8.004 W
4,300.0	10.00	63.64	4,270.1	158.1	319.1	372,624.18	829,925.85	32° 1' 15.620 N	103° 24' 7.823 W
4,400.0	10.00	63.64	4,368.6	165.8	334.6	372,631.89	829,941.41	32° 1' 15.695 N	103° 24' 7.641 W
4,500.0	10.00	63.64	4,467.1	173.5	350.2	372,639.60	829,956.97	32° 1' 15.770 N	103° 24' 7.460 W
4,600.0	10.00	63.64	4,565.6	181.2	365.7	372,647.31	829,972.53	32° 1' 15.845 N	103° 24' 7.279 W
4,700.0	10.00	63.64	4,664.0	188.9	381.3	372,655.02	829,988.09	32° 1' 15.920 N	103° 24' 7.097 W
4,800.0	10.00	63.64	4,762.5	196.7	396.9	372,662.73	830,003.65	32° 1' 15.995 N	103° 24' 6.916 W
4,900.0	10.00	63.64	4,861.0	204.4	412.4	372,670.44	830,019.21	32° 1' 16.070 N	103° 24' 6.734 W
5,000.0	10.00	63.64	4,959.5	212.1	428.0	372,678.15	830,034.77	32° 1' 16.145 N	103° 24' 6.553 W
5,100.0	10.00	63.64	5,058.0	219.8	443.5	372,685.86	830,050.33	32° 1' 16.220 N	103° 24' 6.371 W

Permian Resources

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	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	
5,200.0	10.00	63.64	5,156.4	227.5	459.1	372,693.57	830,065.89	32° 1' 16.295 N	103° 24' 6.190 W	
5,300.0	10.00	63.64	5,254.9	235.2	474.7	372,701.28	830,081.44	32° 1' 16.370 N	103° 24' 6.008 W	
5,400.0	10.00	63.64	5,353.4	242.9	490.2	372,708.99	830,097.00	32° 1' 16.445 N	103° 24' 5.827 W	
5,500.0	10.00	63.64	5,451.9	250.6	505.8	372,716.70	830,112.56	32° 1' 16.520 N	103° 24' 5.645 W	
5,600.0	10.00	63.64	5,550.4	258.3	521.3	372,724.41	830,128.12	32° 1' 16.595 N	103° 24' 5.464 W	
5,700.0	10.00	63.64	5,648.9	266.1	536.9	372,732.12	830,143.68	32° 1' 16.670 N	103° 24' 5.282 W	
5,800.0	10.00	63.64	5,747.3	273.8	552.5	372,739.83	830,159.24	32° 1' 16.745 N	103° 24' 5.101 W	
5,900.0	10.00	63.64	5,845.8	281.5	568.0	372,747.54	830,174.80	32° 1' 16.819 N	103° 24' 4.919 W	
6,000.0	10.00	63.64	5,944.3	289.2	583.6	372,755.25	830,190.36	32° 1' 16.894 N	103° 24' 4.738 W	
6,102.4	10.00	63.64	6,045.1	297.1	599.5	372,763.14	830,206.29	32° 1' 16.971 N	103° 24' 4.552 W	
Start Drop -2.00										
6,200.0	8.05	63.64	6,141.5	303.9	613.2	372,769.94	830,220.01	32° 1' 17.037 N	103° 24' 4.392 W	
6,300.0	6.05	63.64	6,240.8	309.3	624.2	372,775.39	830,231.00	32° 1' 17.090 N	103° 24' 4.264 W	
6,400.0	4.05	63.64	6,340.4	313.2	632.1	372,779.30	830,238.89	32° 1' 17.128 N	103° 24' 4.172 W	
6,500.0	2.05	63.64	6,440.2	315.6	636.9	372,781.66	830,243.65	32° 1' 17.151 N	103° 24' 4.116 W	
6,602.4	0.00	0.00	6,542.6	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
Start 5650.9 hold at 6602.4 MD										
6,700.0	0.00	0.00	6,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
6,800.0	0.00	0.00	6,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
6,900.0	0.00	0.00	6,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,000.0	0.00	0.00	6,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,100.0	0.00	0.00	7,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,200.0	0.00	0.00	7,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,300.0	0.00	0.00	7,240.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,400.0	0.00	0.00	7,340.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,500.0	0.00	0.00	7,440.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,600.0	0.00	0.00	7,540.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,700.0	0.00	0.00	7,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,800.0	0.00	0.00	7,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
7,900.0	0.00	0.00	7,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,000.0	0.00	0.00	7,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,100.0	0.00	0.00	8,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,200.0	0.00	0.00	8,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,300.0	0.00	0.00	8,240.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,400.0	0.00	0.00	8,340.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,500.0	0.00	0.00	8,440.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,600.0	0.00	0.00	8,540.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,700.0	0.00	0.00	8,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,800.0	0.00	0.00	8,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
8,900.0	0.00	0.00	8,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,000.0	0.00	0.00	8,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,100.0	0.00	0.00	9,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,200.0	0.00	0.00	9,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,300.0	0.00	0.00	9,240.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,400.0	0.00	0.00	9,340.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,500.0	0.00	0.00	9,440.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,600.0	0.00	0.00	9,540.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,700.0	0.00	0.00	9,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,800.0	0.00	0.00	9,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
9,900.0	0.00	0.00	9,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,000.0	0.00	0.00	9,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,100.0	0.00	0.00	10,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,200.0	0.00	0.00	10,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,300.0	0.00	0.00	10,240.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	

Permian Resources

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
10,400.0	0.00	0.00	10,340.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,500.0	0.00	0.00	10,440.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,600.0	0.00	0.00	10,540.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,700.0	0.00	0.00	10,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,800.0	0.00	0.00	10,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
10,900.0	0.00	0.00	10,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,000.0	0.00	0.00	10,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,100.0	0.00	0.00	11,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,200.0	0.00	0.00	11,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,300.0	0.00	0.00	11,240.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,400.0	0.00	0.00	11,340.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,500.0	0.00	0.00	11,440.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,600.0	0.00	0.00	11,540.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,700.0	0.00	0.00	11,640.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,800.0	0.00	0.00	11,740.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
11,900.0	0.00	0.00	11,840.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
12,000.0	0.00	0.00	11,940.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
12,100.0	0.00	0.00	12,040.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
12,200.0	0.00	0.00	12,140.2	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
12,253.3	0.00	0.00	12,193.5	316.4	638.5	372,782.47	830,245.29	32° 1' 17.159 N	103° 24' 4.097 W	
Start DLS 12.00 TFO 179.42										
12,275.0	2.60	179.42	12,215.2	315.9	638.5	372,781.98	830,245.29	32° 1' 17.154 N	103° 24' 4.097 W	
12,300.0	5.60	179.42	12,240.1	314.1	638.5	372,780.19	830,245.31	32° 1' 17.137 N	103° 24' 4.097 W	
12,325.0	8.60	179.42	12,264.9	311.0	638.6	372,777.09	830,245.34	32° 1' 17.106 N	103° 24' 4.097 W	
12,350.0	11.60	179.42	12,289.5	306.6	638.6	372,772.71	830,245.39	32° 1' 17.063 N	103° 24' 4.097 W	
12,375.0	14.60	179.42	12,313.9	301.0	638.7	372,767.04	830,245.45	32° 1' 17.006 N	103° 24' 4.097 W	
12,400.0	17.60	179.42	12,337.9	294.0	638.7	372,760.11	830,245.52	32° 1' 16.938 N	103° 24' 4.097 W	
12,425.0	20.60	179.42	12,361.5	285.9	638.8	372,751.93	830,245.60	32° 1' 16.857 N	103° 24' 4.097 W	
12,450.0	23.60	179.42	12,384.7	276.5	638.9	372,742.52	830,245.69	32° 1' 16.764 N	103° 24' 4.096 W	
12,475.0	26.60	179.42	12,407.3	265.8	639.0	372,731.92	830,245.80	32° 1' 16.659 N	103° 24' 4.096 W	
12,500.0	29.60	179.42	12,429.4	254.1	639.1	372,720.14	830,245.92	32° 1' 16.542 N	103° 24' 4.096 W	
12,525.0	32.60	179.42	12,450.8	241.2	639.3	372,707.23	830,246.05	32° 1' 16.415 N	103° 24' 4.096 W	
12,550.0	35.60	179.42	12,471.5	227.1	639.4	372,693.21	830,246.19	32° 1' 16.276 N	103° 24' 4.095 W	
12,575.0	38.60	179.42	12,491.4	212.1	639.6	372,678.14	830,246.35	32° 1' 16.127 N	103° 24' 4.095 W	
12,600.0	41.60	179.42	12,510.5	196.0	639.7	372,662.03	830,246.51	32° 1' 15.967 N	103° 24' 4.095 W	
12,625.0	44.60	179.42	12,528.8	178.9	639.9	372,644.95	830,246.68	32° 1' 15.798 N	103° 24' 4.095 W	
12,650.0	47.60	179.42	12,546.1	160.9	640.1	372,626.94	830,246.87	32° 1' 15.620 N	103° 24' 4.094 W	
12,675.0	50.60	179.42	12,562.5	142.0	640.3	372,608.05	830,247.06	32° 1' 15.433 N	103° 24' 4.094 W	
12,700.0	53.60	179.42	12,577.8	122.3	640.5	372,588.32	830,247.26	32° 1' 15.238 N	103° 24' 4.094 W	
12,725.0	56.60	179.42	12,592.1	101.8	640.7	372,567.82	830,247.47	32° 1' 15.035 N	103° 24' 4.093 W	
12,750.0	59.60	179.42	12,605.3	80.5	640.9	372,546.60	830,247.68	32° 1' 14.825 N	103° 24' 4.093 W	
12,775.0	62.60	179.42	12,617.4	58.6	641.1	372,524.71	830,247.90	32° 1' 14.608 N	103° 24' 4.092 W	
12,800.0	65.60	179.42	12,628.3	36.2	641.3	372,502.23	830,248.13	32° 1' 14.386 N	103° 24' 4.092 W	
12,825.0	68.60	179.42	12,638.1	13.1	641.6	372,479.20	830,248.37	32° 1' 14.158 N	103° 24' 4.092 W	
12,850.0	71.60	179.42	12,646.6	-10.4	641.8	372,455.70	830,248.60	32° 1' 13.925 N	103° 24' 4.091 W	
12,875.0	74.60	179.42	12,653.8	-34.3	642.1	372,431.78	830,248.85	32° 1' 13.689 N	103° 24' 4.091 W	
12,900.0	77.60	179.42	12,659.8	-58.6	642.3	372,407.52	830,249.09	32° 1' 13.449 N	103° 24' 4.090 W	
12,925.0	80.60	179.42	12,664.6	-83.1	642.6	372,382.97	830,249.34	32° 1' 13.206 N	103° 24' 4.090 W	
12,950.0	83.60	179.42	12,668.0	-107.9	642.8	372,358.21	830,249.59	32° 1' 12.961 N	103° 24' 4.090 W	
12,975.0	86.60	179.42	12,670.1	-132.8	643.1	372,333.31	830,249.85	32° 1' 12.714 N	103° 24' 4.089 W	
13,000.0	89.60	179.42	12,671.0	-157.7	643.3	372,308.33	830,250.10	32° 1' 12.467 N	103° 24' 4.089 W	
13,003.3	90.00	179.42	12,671.0	-161.0	643.3	372,305.03	830,250.13	32° 1' 12.434 N	103° 24' 4.089 W	
Start 7214.1 hold at 13003.3 MD										
13,100.0	90.00	179.42	12,671.0	-257.7	644.3	372,208.33	830,251.11	32° 1' 11.477 N	103° 24' 4.087 W	

Permian Resources

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	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	
13,200.0	90.00	179.42	12,671.0	-357.7	645.3	372,108.34	830,252.13	32° 1' 10.488 N	103° 24' 4.085 W	
13,300.0	90.00	179.42	12,671.0	-457.7	646.4	372,008.34	830,253.14	32° 1' 9.498 N	103° 24' 4.083 W	
13,400.0	90.00	179.42	12,671.0	-557.7	647.4	371,908.35	830,254.16	32° 1' 8.509 N	103° 24' 4.082 W	
13,500.0	90.00	179.42	12,671.0	-657.7	648.4	371,808.35	830,255.17	32° 1' 7.519 N	103° 24' 4.080 W	
13,600.0	90.00	179.42	12,671.0	-757.7	649.4	371,708.36	830,256.19	32° 1' 6.530 N	103° 24' 4.078 W	
13,700.0	90.00	179.42	12,671.0	-857.7	650.4	371,608.36	830,257.20	32° 1' 5.540 N	103° 24' 4.076 W	
13,800.0	90.00	179.42	12,671.0	-957.7	651.4	371,508.37	830,258.22	32° 1' 4.551 N	103° 24' 4.075 W	
13,900.0	90.00	179.42	12,671.0	-1,057.7	652.4	371,408.37	830,259.23	32° 1' 3.561 N	103° 24' 4.073 W	
14,000.0	90.00	179.42	12,671.0	-1,157.7	653.5	371,308.38	830,260.25	32° 1' 2.572 N	103° 24' 4.071 W	
14,100.0	90.00	179.42	12,671.0	-1,257.7	654.5	371,208.38	830,261.26	32° 1' 1.582 N	103° 24' 4.069 W	
14,200.0	90.00	179.42	12,671.0	-1,357.7	655.5	371,108.39	830,262.28	32° 1' 0.592 N	103° 24' 4.067 W	
14,300.0	90.00	179.42	12,671.0	-1,457.7	656.5	371,008.39	830,263.29	32° 0' 59.603 N	103° 24' 4.066 W	
14,400.0	90.00	179.42	12,671.0	-1,557.7	657.5	370,908.40	830,264.31	32° 0' 58.613 N	103° 24' 4.064 W	
14,500.0	90.00	179.42	12,671.0	-1,657.7	658.5	370,808.40	830,265.32	32° 0' 57.624 N	103° 24' 4.062 W	
14,600.0	90.00	179.42	12,671.0	-1,757.7	659.5	370,708.41	830,266.34	32° 0' 56.634 N	103° 24' 4.060 W	
14,700.0	90.00	179.42	12,671.0	-1,857.7	660.6	370,608.41	830,267.35	32° 0' 55.645 N	103° 24' 4.059 W	
14,800.0	90.00	179.42	12,671.0	-1,957.6	661.6	370,508.42	830,268.37	32° 0' 54.655 N	103° 24' 4.057 W	
14,900.0	90.00	179.42	12,671.0	-2,057.6	662.6	370,408.42	830,269.38	32° 0' 53.666 N	103° 24' 4.055 W	
15,000.0	90.00	179.42	12,671.0	-2,157.6	663.6	370,308.43	830,270.40	32° 0' 52.676 N	103° 24' 4.053 W	
15,100.0	90.00	179.42	12,671.0	-2,257.6	664.6	370,208.43	830,271.41	32° 0' 51.687 N	103° 24' 4.052 W	
15,200.0	90.00	179.42	12,671.0	-2,357.6	665.6	370,108.44	830,272.42	32° 0' 50.697 N	103° 24' 4.050 W	
15,300.0	90.00	179.42	12,671.0	-2,457.6	666.7	370,008.44	830,273.44	32° 0' 49.708 N	103° 24' 4.048 W	
15,400.0	90.00	179.42	12,671.0	-2,557.6	667.7	369,908.45	830,274.45	32° 0' 48.718 N	103° 24' 4.046 W	
15,500.0	90.00	179.42	12,671.0	-2,657.6	668.7	369,808.45	830,275.47	32° 0' 47.728 N	103° 24' 4.044 W	
15,600.0	90.00	179.42	12,671.0	-2,757.6	669.7	369,708.46	830,276.48	32° 0' 46.739 N	103° 24' 4.043 W	
15,700.0	90.00	179.42	12,671.0	-2,857.6	670.7	369,608.46	830,277.50	32° 0' 45.749 N	103° 24' 4.041 W	
15,800.0	90.00	179.42	12,671.0	-2,957.6	671.7	369,508.47	830,278.51	32° 0' 44.760 N	103° 24' 4.039 W	
15,900.0	90.00	179.42	12,671.0	-3,057.6	672.7	369,408.47	830,279.53	32° 0' 43.770 N	103° 24' 4.037 W	
16,000.0	90.00	179.42	12,671.0	-3,157.6	673.8	369,308.48	830,280.54	32° 0' 42.781 N	103° 24' 4.036 W	
16,100.0	90.00	179.42	12,671.0	-3,257.6	674.8	369,208.49	830,281.56	32° 0' 41.791 N	103° 24' 4.034 W	
16,200.0	90.00	179.42	12,671.0	-3,357.6	675.8	369,108.49	830,282.57	32° 0' 40.802 N	103° 24' 4.032 W	
16,300.0	90.00	179.42	12,671.0	-3,457.6	676.8	369,008.50	830,283.59	32° 0' 39.812 N	103° 24' 4.030 W	
16,400.0	90.00	179.42	12,671.0	-3,557.6	677.8	368,908.50	830,284.60	32° 0' 38.823 N	103° 24' 4.029 W	
16,500.0	90.00	179.42	12,671.0	-3,657.6	678.8	368,808.51	830,285.62	32° 0' 37.833 N	103° 24' 4.027 W	
16,600.0	90.00	179.42	12,671.0	-3,757.6	679.8	368,708.51	830,286.63	32° 0' 36.843 N	103° 24' 4.025 W	
16,700.0	90.00	179.42	12,671.0	-3,857.6	680.9	368,608.52	830,287.65	32° 0' 35.854 N	103° 24' 4.023 W	
16,800.0	90.00	179.42	12,671.0	-3,957.5	681.9	368,508.52	830,288.66	32° 0' 34.864 N	103° 24' 4.022 W	
16,900.0	90.00	179.42	12,671.0	-4,057.5	682.9	368,408.53	830,289.68	32° 0' 33.875 N	103° 24' 4.020 W	
17,000.0	90.00	179.42	12,671.0	-4,157.5	683.9	368,308.53	830,290.69	32° 0' 32.885 N	103° 24' 4.018 W	
17,100.0	90.00	179.42	12,671.0	-4,257.5	684.9	368,208.54	830,291.70	32° 0' 31.896 N	103° 24' 4.016 W	
17,200.0	90.00	179.42	12,671.0	-4,357.5	685.9	368,108.54	830,292.72	32° 0' 30.906 N	103° 24' 4.014 W	
17,300.0	90.00	179.42	12,671.0	-4,457.5	686.9	368,008.55	830,293.73	32° 0' 29.917 N	103° 24' 4.013 W	
17,400.0	90.00	179.42	12,671.0	-4,557.5	688.0	367,908.55	830,294.75	32° 0' 28.927 N	103° 24' 4.011 W	
17,500.0	90.00	179.42	12,671.0	-4,657.5	689.0	367,808.56	830,295.76	32° 0' 27.938 N	103° 24' 4.009 W	
17,600.0	90.00	179.42	12,671.0	-4,757.5	690.0	367,708.56	830,296.78	32° 0' 26.948 N	103° 24' 4.007 W	
17,700.0	90.00	179.42	12,671.0	-4,857.5	691.0	367,608.57	830,297.79	32° 0' 25.958 N	103° 24' 4.006 W	
17,800.0	90.00	179.42	12,671.0	-4,957.5	692.0	367,508.57	830,298.81	32° 0' 24.969 N	103° 24' 4.004 W	
17,900.0	90.00	179.42	12,671.0	-5,057.5	693.0	367,408.58	830,299.82	32° 0' 23.979 N	103° 24' 4.002 W	
18,000.0	90.00	179.42	12,671.0	-5,157.5	694.0	367,308.58	830,300.84	32° 0' 22.990 N	103° 24' 4.000 W	
18,100.0	90.00	179.42	12,671.0	-5,257.5	695.1	367,208.59	830,301.85	32° 0' 22.000 N	103° 24' 3.999 W	
18,200.0	90.00	179.42	12,671.0	-5,357.5	696.1	367,108.59	830,302.87	32° 0' 21.011 N	103° 24' 3.997 W	
18,300.0	90.00	179.42	12,671.0	-5,457.5	697.1	367,008.60	830,303.88	32° 0' 20.021 N	103° 24' 3.995 W	
18,400.0	90.00	179.42	12,671.0	-5,557.5	698.1	366,908.60	830,304.90	32° 0' 19.032 N	103° 24' 3.993 W	
18,500.0	90.00	179.42	12,671.0	-5,657.5	699.1	366,808.61	830,305.91	32° 0' 18.042 N	103° 24' 3.991 W	
18,600.0	90.00	179.42	12,671.0	-5,757.5	700.1	366,708.61	830,306.93	32° 0' 17.053 N	103° 24' 3.990 W	

Permian Resources

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWPO		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
18,700.0	90.00	179.42	12,671.0	-5,857.4	701.2	366,608.62	830,307.94	32° 0' 16.063 N	103° 24' 3.988 W	
18,800.0	90.00	179.42	12,671.0	-5,957.4	702.2	366,508.62	830,308.96	32° 0' 15.073 N	103° 24' 3.986 W	
18,900.0	90.00	179.42	12,671.0	-6,057.4	703.2	366,408.63	830,309.97	32° 0' 14.084 N	103° 24' 3.984 W	
19,000.0	90.00	179.42	12,671.0	-6,157.4	704.2	366,308.63	830,310.98	32° 0' 13.094 N	103° 24' 3.983 W	
19,100.0	90.00	179.42	12,671.0	-6,257.4	705.2	366,208.64	830,312.00	32° 0' 12.105 N	103° 24' 3.981 W	
19,200.0	90.00	179.42	12,671.0	-6,357.4	706.2	366,108.64	830,313.01	32° 0' 11.115 N	103° 24' 3.979 W	
19,300.0	90.00	179.42	12,671.0	-6,457.4	707.2	366,008.65	830,314.03	32° 0' 10.126 N	103° 24' 3.977 W	
19,400.0	90.00	179.42	12,671.0	-6,557.4	708.3	365,908.65	830,315.04	32° 0' 9.136 N	103° 24' 3.976 W	
19,500.0	90.00	179.42	12,671.0	-6,657.4	709.3	365,808.66	830,316.06	32° 0' 8.147 N	103° 24' 3.974 W	
19,600.0	90.00	179.42	12,671.0	-6,757.4	710.3	365,708.67	830,317.07	32° 0' 7.157 N	103° 24' 3.972 W	
19,700.0	90.00	179.42	12,671.0	-6,857.4	711.3	365,608.67	830,318.09	32° 0' 6.168 N	103° 24' 3.970 W	
19,800.0	90.00	179.42	12,671.0	-6,957.4	712.3	365,508.68	830,319.10	32° 0' 5.178 N	103° 24' 3.968 W	
19,900.0	90.00	179.42	12,671.0	-7,057.4	713.3	365,408.68	830,320.12	32° 0' 4.188 N	103° 24' 3.967 W	
20,000.0	90.00	179.42	12,671.0	-7,157.4	714.3	365,308.69	830,321.13	32° 0' 3.199 N	103° 24' 3.965 W	
20,100.0	90.00	179.42	12,671.0	-7,257.4	715.4	365,208.69	830,322.15	32° 0' 2.209 N	103° 24' 3.963 W	
20,200.0	90.00	179.42	12,671.0	-7,357.4	716.4	365,108.70	830,323.16	32° 0' 1.220 N	103° 24' 3.961 W	
20,217.4	90.00	179.42	12,671.0	-7,374.8	716.5	365,091.29	830,323.34	32° 0' 1.048 N	103° 24' 3.961 W	
20,217.7	90.00	179.42	12,671.0	-7,375.1	716.6	365,090.99	830,323.34	32° 0' 1.045 N	103° 24' 3.961 W	
Start 3370.8 hold at 20217.7 MD										
20,300.0	90.00	179.42	12,671.0	-7,457.4	717.4	365,008.70	830,324.17	32° 0' 0.230 N	103° 24' 3.960 W	
20,400.0	90.00	179.42	12,671.0	-7,557.4	718.4	364,908.71	830,325.17	31° 59' 59.241 N	103° 24' 3.958 W	
20,500.0	90.00	179.42	12,671.0	-7,657.4	719.4	364,808.71	830,326.18	31° 59' 58.251 N	103° 24' 3.956 W	
20,600.0	90.00	179.42	12,671.0	-7,757.4	720.4	364,708.72	830,327.18	31° 59' 57.262 N	103° 24' 3.955 W	
20,700.0	90.00	179.42	12,671.0	-7,857.3	721.4	364,608.72	830,328.19	31° 59' 56.272 N	103° 24' 3.953 W	
20,800.0	90.00	179.42	12,671.0	-7,957.3	722.4	364,508.73	830,329.19	31° 59' 55.283 N	103° 24' 3.951 W	
20,900.0	90.00	179.42	12,671.0	-8,057.3	723.4	364,408.73	830,330.19	31° 59' 54.293 N	103° 24' 3.950 W	
21,000.0	90.00	179.42	12,671.0	-8,157.3	724.4	364,308.74	830,331.20	31° 59' 53.303 N	103° 24' 3.948 W	
21,100.0	90.00	179.42	12,671.0	-8,257.3	725.4	364,208.74	830,332.20	31° 59' 52.314 N	103° 24' 3.946 W	
21,200.0	90.00	179.42	12,671.0	-8,357.3	726.4	364,108.75	830,333.21	31° 59' 51.324 N	103° 24' 3.945 W	
21,300.0	90.00	179.42	12,671.0	-8,457.3	727.4	364,008.75	830,334.21	31° 59' 50.335 N	103° 24' 3.943 W	
21,400.0	90.00	179.42	12,671.0	-8,557.3	728.4	363,908.76	830,335.22	31° 59' 49.345 N	103° 24' 3.942 W	
21,500.0	90.00	179.42	12,671.0	-8,657.3	729.4	363,808.76	830,336.22	31° 59' 48.356 N	103° 24' 3.940 W	
21,600.0	90.00	179.42	12,671.0	-8,757.3	730.4	363,708.77	830,337.23	31° 59' 47.366 N	103° 24' 3.938 W	
21,700.0	90.00	179.42	12,671.0	-8,857.3	731.4	363,608.77	830,338.23	31° 59' 46.377 N	103° 24' 3.937 W	
21,800.0	90.00	179.42	12,671.0	-8,957.3	732.4	363,508.78	830,339.23	31° 59' 45.387 N	103° 24' 3.935 W	
21,900.0	90.00	179.42	12,671.0	-9,057.3	733.5	363,408.78	830,340.24	31° 59' 44.398 N	103° 24' 3.933 W	
22,000.0	90.00	179.42	12,671.0	-9,157.3	734.5	363,308.79	830,341.24	31° 59' 43.408 N	103° 24' 3.932 W	
22,100.0	90.00	179.42	12,671.0	-9,257.3	735.5	363,208.79	830,342.25	31° 59' 42.418 N	103° 24' 3.930 W	
22,200.0	90.00	179.42	12,671.0	-9,357.3	736.5	363,108.80	830,343.25	31° 59' 41.429 N	103° 24' 3.928 W	
22,300.0	90.00	179.42	12,671.0	-9,457.3	737.5	363,008.80	830,344.26	31° 59' 40.439 N	103° 24' 3.927 W	
22,400.0	90.00	179.42	12,671.0	-9,557.3	738.5	362,908.81	830,345.26	31° 59' 39.450 N	103° 24' 3.925 W	
22,500.0	90.00	179.42	12,671.0	-9,657.3	739.5	362,808.81	830,346.27	31° 59' 38.460 N	103° 24' 3.923 W	
22,600.0	90.00	179.42	12,671.0	-9,757.3	740.5	362,708.82	830,347.27	31° 59' 37.471 N	103° 24' 3.922 W	
22,700.0	90.00	179.42	12,671.0	-9,857.2	741.5	362,608.82	830,348.27	31° 59' 36.481 N	103° 24' 3.920 W	
22,800.0	90.00	179.42	12,671.0	-9,957.2	742.5	362,508.83	830,349.28	31° 59' 35.492 N	103° 24' 3.918 W	
22,900.0	90.00	179.42	12,671.0	-10,057.2	743.5	362,408.83	830,350.28	31° 59' 34.502 N	103° 24' 3.917 W	
23,000.0	90.00	179.42	12,671.0	-10,157.2	744.5	362,308.84	830,351.29	31° 59' 33.513 N	103° 24' 3.915 W	
23,100.0	90.00	179.42	12,671.0	-10,257.2	745.5	362,208.84	830,352.29	31° 59' 32.523 N	103° 24' 3.913 W	
23,200.0	90.00	179.42	12,671.0	-10,357.2	746.5	362,108.85	830,353.30	31° 59' 31.533 N	103° 24' 3.912 W	
23,300.0	90.00	179.42	12,671.0	-10,457.2	747.5	362,008.85	830,354.30	31° 59' 30.544 N	103° 24' 3.910 W	
23,400.0	90.00	179.42	12,671.0	-10,557.2	748.5	361,908.86	830,355.30	31° 59' 29.554 N	103° 24' 3.908 W	
23,500.0	90.00	179.42	12,671.0	-10,657.2	749.5	361,808.86	830,356.31	31° 59' 28.565 N	103° 24' 3.907 W	
23,588.5	90.00	179.42	12,671.0	-10,745.7	750.4	361,720.33	830,357.20	31° 59' 27.689 N	103° 24' 3.905 W	
TD at 23588.5										

Planning Report - Geographic

Database:	Compass	Local Co-ordinate Reference:	Well LOS VAQUEROS FED 444H
Company:	NEW MEXICO	TVD Reference:	KB @ 3211.0usft
Project:	(SP) LEA	MD Reference:	KB @ 3211.0usft
Site:	LOS VAQUEROS FED PROJECT	North Reference:	Grid
Well:	LOS VAQUEROS FED 444H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PWP0		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
FTP-LOS VAQUEROŠ - plan misses target center by 156.8usft at 12659.6usft MD (12552.5 TVD, 153.7 N, 640.2 E) - Point	0.00	0.00	12,671.0	256.4	639.9	372,722.45	830,246.70	32° 1' 16.565 N	103° 24' 4.087 W
SLC-LOS VAQUEROŠ - plan hits target center - Point	0.00	0.00	12,671.0	-7,374.8	716.5	365,091.29	830,323.34	32° 0' 1.048 N	103° 24' 3.961 W
LTP-LOS VAQUEROŠ - plan misses target center by 35.5usft at 23500.0usft MD (12671.0 TVD, -10657.2 N, 749.5 E) - Point	0.00	0.00	12,671.0	-10,692.7	749.9	361,773.34	830,356.67	31° 59' 28.213 N	103° 24' 3.906 W
BHL-LOS VAQUEROŠ - plan hits target center - Point	0.00	0.00	12,671.0	-10,745.7	750.4	361,720.33	830,357.20	31° 59' 27.689 N	103° 24' 3.905 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.0	2,000.0	0.0	0.0	Start Build 2.00
2,500.0	2,497.5	19.3	39.0	Start 3602.4 hold at 2500.0 MD
6,102.4	6,045.1	297.1	599.5	Start Drop -2.00
6,602.4	6,542.6	316.4	638.5	Start 5650.9 hold at 6602.4 MD
12,253.3	12,193.5	316.4	638.5	Start DLS 12.00 TFO 179.42
13,003.3	12,671.0	-161.0	643.3	Start 7214.1 hold at 13003.3 MD
20,217.7	12,671.0	-7,375.1	716.6	Start 3370.8 hold at 20217.7 MD
23,588.5	12,671.0	-10,745.7	750.4	TD at 23588.5

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Earthstone
LEASE NO.:	NMNM62932
LOCATION:	Section 30, T.26 S, R.35 E., NMPM
COUNTY:	Lea County, New Mexico
WELL NAME & NO.:	Los Vaqueros Fed 444H
SURFACE HOLE FOOTAGE:	353'N & 1633'E
BOTTOM HOLE FOOTAGE:	0'S & 990'E

Previously known as **Los Vaqueros Fed 204H**. Changes approved through engineering via **Sundry 2769701** on 1-24-2024. Any previous COAs not addressed within the updated COAs still apply.

COA

H₂S	☐ Yes	☒ No		
Potash / WIPP	☒ None	☐ Secretary	☐ R-111-P	☐ WIPP
Cave / Karst	☒ Low	☐ Medium	☐ High	☐ Critical
Wellhead	☐ Conventional	☒ Multibowl	☐ Both	☐ Diverter
Cementing	☐ Primary Squeeze	☐ Cont. Squeeze	☐ EchoMeter	☐ DV Tool
Special Req	☐ Break Testing	☐ Water Disposal	☒ COM	☐ Unit
Variance	☒ Flex Hose	☐ Casing Clearance	☐ Pilot Hole	☐ Capitan Reef
Variance	☐ Four-String	☒ Offline Cementing	☐ Fluid-Filled	☐ Open Annulus
☐ Batch APD / Sundry				

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area must meet all requirements from **43 CFR 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The 9-5/8 inch surface casing shall be set at approximately **1130** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type of temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.
3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the casing shoe shall be **10,000 (10M) psi**. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one-inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172 must be followed.

D. SPECIAL REQUIREMENT (S)

Offline Cementing

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

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

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

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

☒ Eddy County

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

- rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
- b. When the operator proposes to set surface casing with Spudder Rig
- Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

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

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

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

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

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

ZS 1/26/2024

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 310138

CONDITIONS

Operator: Earthstone Operating, LLC 300 N. Marienfeld St Ste 1000 Midland, TX 79701	OGRID: 331165
	Action Number: 310138
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	3/13/2024