

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

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NMLC056302B
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator LONGFELLOW ENERGY LP		8. Lease Name and Well No. VAN HALEN 33CD FED COM 005H
3a. Address 8115 PRESTON ROAD SUITE 800, DALLAS, TX 75225	3b. Phone No. (include area code) (972) 590-9900	9. API Well No. 30-015-58055
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface SWSE / 1117 FSL / 1780 FEL / LAT 32.8738822 / LONG -103.8891302 At proposed prod. zone SESE / 1249 FSL / 20 FEL / LAT 32.8742935 / LONG -103.8662004		10. Field and Pool, or Exploratory CEDAR LAKE/GLORIETA-YESO
11. Sec., T. R. M. or Blk. and Survey or Area SEC 32/T16S/R31E/NMP		
14. Distance in miles and direction from nearest town or post office* 6 miles		12. County or Parish EDDY
13. State NM		
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 460 feet	16. No of acres in lease	17. Spacing Unit dedicated to this well 320.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet	19. Proposed Depth 5195 feet / 10877 feet	20. BLM/BIA Bond No. in file FED: NMB001490
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3902 feet	22. Approximate date work will start* 03/01/2026	23. Estimated duration 60 days
24. Attachments		

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) CORY WALK / Ph: (972) 590-9900	Date 08/04/2025
Title Permitting Agent		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) CHRISTOPHER WALLS / Ph: (575) 234-2234	Date 03/13/2026
Title Petroleum Engineer		

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

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

(Continued on page 2)

*(Instructions on page 2)



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

WELL LOCATION INFORMATION

API Number 30-015-58055	Pool Code 96831	Pool Name CEDAR LAKE; GLORIETA-YESO
Property Code 339060	Property Name VAN HALEN 33CD FED COM	Well Number 005H
OGRID No. 372210	Operator Name LONGFELLOW ENERGY, LP	Ground Level Elevation 3902.3
Surface Owner: ☒ State ☐ Fee ☐ Tribal ☐ Federal		Mineral Owner: ☒ State ☐ Fee ☐ Tribal ☒ Federal

Surface Location

UL O	Section 32	Township 16 S	Range 31 E	Lot	Ft. from N/S 1117 SOUTH	Ft. from E/W 1780 EAST	Latitude 32.8738822°N	Longitude 103.8891302°W	County EDDY
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Bottom Hole Location

UL P	Section 33	Township 16 S	Range 31 E	Lot	Ft. from N/S 1249 SOUTH	Ft. from E/W 20 EAST	Latitude 32.8742935°N	Longitude 103.8662004°W	County EDDY
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Dedicated Acres 320.00	Infill or Defining Well DEFINING	Defining Well API	Overlapping Spacing Unit (Y/N) N	Consolidation Code C
Order Numbers.			Well setbacks are under Common Ownership: ☐ Yes ☐ No	

Kick Off Point (KOP)

UL O	Section 32	Township 16 S	Range 31 E	Lot	Ft. from N/S 1117 SOUTH	Ft. from E/W 1780 EAST	Latitude 32.8738822°N	Longitude 103.8891302°W	County EDDY
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First Take Point (FTP)

UL M	Section 33	Township 16 S	Range 31 E	Lot	Ft. from N/S 1249 SOUTH	Ft. from E/W 100 WEST	Latitude 32.8742577°N	Longitude 103.8830087°W	County EDDY
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Last Take Point (LTP)

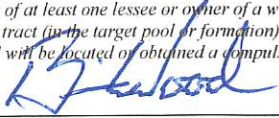
UL P	Section 33	Township 16 S	Range 31 E	Lot	Ft. from N/S 1249 SOUTH	Ft. from E/W 100 EAST	Latitude 32.8742930°N	Longitude 103.8664609°W	County EDDY
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Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
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OPERATOR CERTIFICATIONS

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

If this well is a horizontal well, I further certify that this organization has received the consent of at least one lessee or owner of a working interest or unleased mineral interest in each tract (in the target pool or formation) in which any part of the well's completed interval will be located or obtained a compulsory pooling order from the division.


7-25-25

Signature

Date

BRIAN WOOD

(505) 466-8120

Printed Name

brian@permitswest.com

Email Address

SURVEYOR CERTIFICATIONS

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

Signature and Seal of Professional Surveyor
FILIMON F. JARAMILLO

Certificate Number

PLS 12797

Date of Survey

APRIL 28, 2025

SURVEY NO. 10427

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

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

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

VAN HALEN 33CD FED COM 005H
EL. = 3902.3

GEODETIC COORDINATES

NAD 83 NMSP EAST
SURFACE LOCATION
1117' FSL, 1780' FEL
N.=681938.95
E.=677713.76
LAT.=32.8738822°N
LONG.=103.8891302°W

LAST TAKE POINT
1249' FSL, 100' FEL
N.=682118.46
E.=684672.93
LAT.=32.8742930°N
LONG.=103.8664609°W

PPP3
1249' FSL, 2641' FWL
N.=682101.00
E.=682133.10
LAT.=32.8742757°N
LONG.=103.8747336°W

KICK OFF POINT
1117' FSL, 1780' FEL
N.=681938.95
E.=677713.76
LAT.=32.8738822°N
LONG.=103.8891302°W

BOTTOM OF HOLE
1249' FSL, 20' FEL
N.=682119.00
E.=684752.91
LAT.=32.8742935°N
LONG.=103.8662004°W

PPP4
1249' FSL, 1320' FEL
N.=682110.07
E.=683452.92
LAT.=32.8742847°N
LONG.=103.8704347°W

FIRST TAKE POINT
1249' FSL, 100' FWL
N.=682083.55
E.=679592.58
LAT.=32.8742577°N
LONG.=103.8830087°W

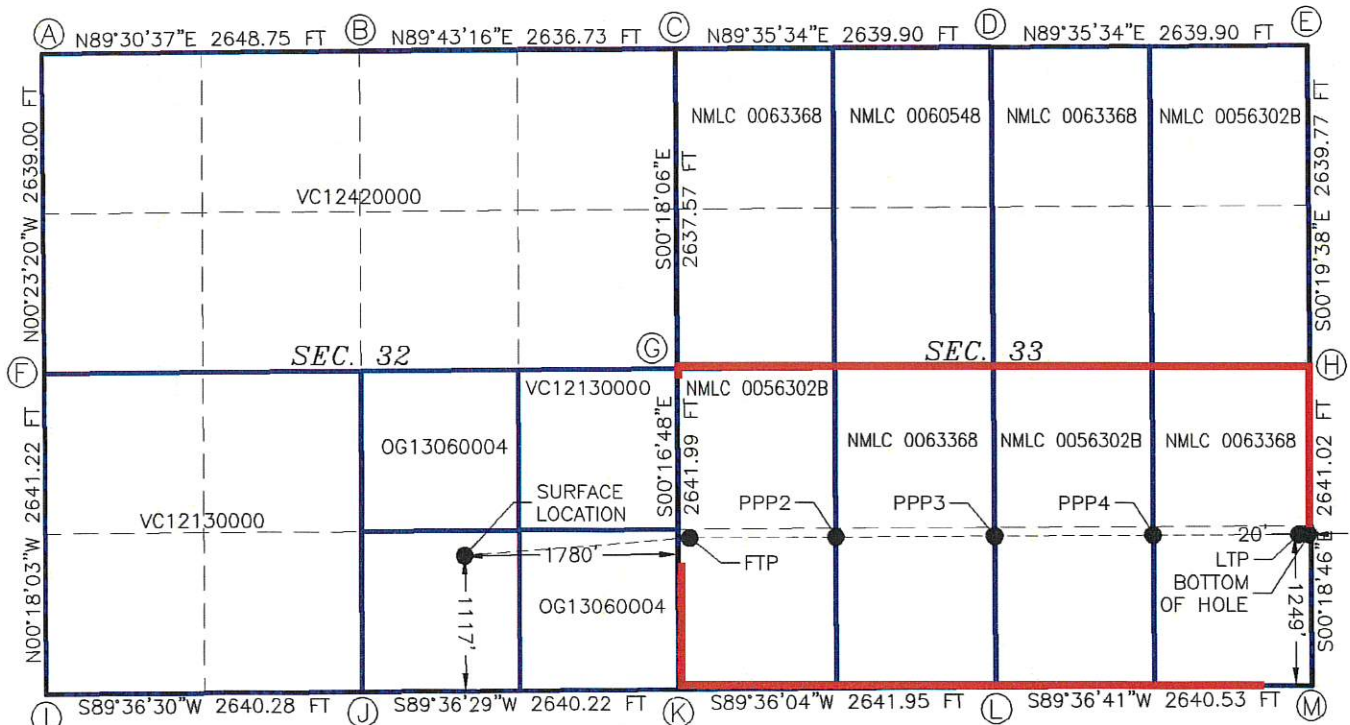
PPP2
1249' FSL, 1320' FWL
N.=682091.92
E.=680812.74
LAT.=32.8742664°N
LONG.=103.8790343°W

CORNER COORDINATES TABLE

NAD 83 NMSP EAST
A - N.=686076.85 E.=674187.91
B - N.=686099.49 E.=676835.89
C - N.=686112.32 E.=679471.91
D - N.=686131.08 E.=682111.08
E - N.=686149.83 E.=684750.24
F - N.=683438.58 E.=674205.82
G - N.=683475.46 E.=679485.80
H - N.=683510.78 E.=684765.30
I - N.=680798.07 E.=674219.68
J - N.=680816.12 E.=676859.22
K - N.=680834.18 E.=679498.71
L - N.=680852.56 E.=682139.92
M - N.=680870.47 E.=684779.72

LEGEND

--- SECTION LINE
--- QUARTER LINE
--- LEASE LINE
--- WELL PATH



State of New Mexico
Energy, Minerals and Natural Resources Department

Submit Electronically
Via E-permitting

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

NATURAL GAS MANAGEMENT PLAN

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

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Longfellow Energy, LP **OGRID:** 372210 **Date:** 1-4-26

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

If Other, please describe: _____

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Van Halen 33CD Fed Com 005H	30-015-	O-32-16S-31E	1117 FSL & 1780 FEL	50	150	150
Van Halen 33CD Fed Com 006H	30-015-	O-32-16S-31E	1101 FSL & 1791 FEL	50	150	150
Van Halen 33CD Fed Com 007H	30-015-	O-32-16S-31E	1084 FSL & 1803 FEL	50	150	150
Van Halen 33CD Fed Com 008H	30-015-	O-32-16S-31E	1068 FSL & 1814 FEL	50	150	150

IV. Central Delivery Point Name: Kinetik Gas Gathering, LLC (333008) in J-5-17s-31e [See 19.15.27.9(D)(1) NMAC]

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

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Van Halen 33CD Fed Com 005H	30-015-	3-1-26	3-10-26	6-1-26	7-15-26	7-31-26
Van Halen 33CD Fed Com 006H	30-015-	3-11-26	3-22-26	7-16-26	9-1-26	9-15-26
Van Halen 33CD Fed Com 007H	30-015-	3-23-26	4-3-26	9-2-26	10-15-26	11-1-26
Van Halen 33CD Fed Com 008H	30-015-	4-4-26	4-14-26	10-16-26	12-1-26	12-15-26

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

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

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

Section 2 – Enhanced Plan
EFFECTIVE APRIL 1, 2022

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

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

IX. Anticipated Natural Gas Production:

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

X. Natural Gas Gathering System (NGGS):

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

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

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

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

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

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

Section 3 - Certifications

Effective May 25, 2021

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

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

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

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

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

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

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

Section 4 - Notices

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

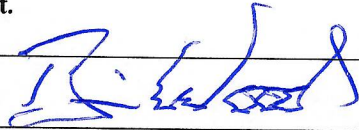
(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit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

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

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

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

Signature:



Printed Name: Brian Wood

Title: Consultant

E-mail Address: brian@permitswest.com

Date: 1-4-26

Phone: 505 466-8120

OIL CONSERVATION DIVISION
(Only applicable when submitted as a standalone form)

Approved By:

Title:

Approval Date:

Conditions of Approval:

**Attachment VI. Separation Equipment:**

Longfellow Energy (LFE) production facilities include separation equipment designed to efficiently separate gas from liquid phases to optimize gas capture based on projected and estimated volumes from the completion project. LFE will utilize flowback separation equipment and production separation equipment designed and built to industry specifications after the completion to optimize gas capture and send gas to sales or flare based on analytical composition. LFE operates facilities that are typically multi-well facilities. Production separation equipment is upgraded or installed before new wells are completed. This equipment is on-site and tied into sales gas lines prior to flowback.

Attachment VII. Operational Practices:***19.15.27.8 Subsection A: Venting and Flaring of Natural Gas***

Longfellow Energy (LFE) understands the requirements of NMAC 19.15.27.8 which states that the venting and flaring of natural gas during drilling, completion, or production operations that constitutes waste as defined in 19.15.2 are prohibited.

19.15.27.8 Subsection B: Venting and flaring during drilling operations

1. LFE shall capture or combust natural gas if technically feasible using best industry practices
2. A properly-sized flare stack shall be located at a minimum of 100 feet from the nearest surface hole location unless otherwise approved by the division.
3. In an emergency or malfunction, LFE may vent natural gas to avoid a risk of an immediate and substantial adverse impact on safety, public health, or the environment. LFE will report natural gas vented or flared during an emergency or malfunction to the NMOCD.

19.15.27.8 Subsection C: Venting and flaring during completion or recompletion operations

1. During initial flowback, LFE shall route flowback fluids into a completion or storage tank and, if technically feasible under the applicable well conditions, flare rather than vent and commence operation of a separator as soon as it is technically feasible for a separator to function
2. During separation flowback, LFE shall capture and route natural gas from the separation equipment:
 - a. to a gas flowline or collection system, reinject into the well, or use on-site as a fuel source or other purpose that a purchased fuel or raw material would serve; or
 - b. to a flare if routing the natural gas to a gas flowline or collection system, reinjecting it into the well, or using it on-site as a fuel source or other purpose that a purchased fuel or raw material would serve would pose a risk to safe operation or personnel safety.
3. If natural gas does not meet gathering pipeline quality specifications, LFE may flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner, provided that:

19.15.27.8 Subsection D: Venting and flaring during production operations

LFE shall not vent or flare natural gas except:

1. during an emergency or malfunction;
2. to unload or clean-up liquid holdup in a well to atmospheric pressure, provided
 - a. LFE does not vent after the well achieves a stabilized rate and pressure;
 - b. for liquids unloading by manual purging, LFE remains present on-site until the end of unloading or posts at the well site the contact information of the personnel conducting the liquids unloading operation and ensures that personnel remains within 30 minutes' drive time of the well being unloaded until the end of unloading, takes all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time and takes reasonable actions to minimize venting to the maximum extent practicable;
 - c. during downhole well maintenance, only when LFE uses a workover rig, swabbing rig, coiled tubing unit or similar specialty equipment and minimizes the venting of natural gas to the extent that it does not pose a risk to safe operations and personnel safety
3. during the following activities unless prohibited by applicable state or federal law, rule, or regulation for the emission of hydrocarbons and volatile organic compounds:
 - a. gauging or sampling a storage tank or other low-pressure production vessel;
 - b. loading out liquids from a storage tank or other low-pressure production vessel to a transport vehicle;
 - c. repair and maintenance, including blowing down and depressurizing production equipment to perform repair and maintenance;
 - d. normal operation of a gas-activated pneumatic controller or pump;
 - e. normal operation of a storage tank or other low-pressure production vessel, but not including venting from a thief hatch that is not properly closed or maintained
 - f. normal operations of valves, flanges and connectors that is not the result of inadequate equipment design or maintenance;
 - g. a packer leakage test;
 - h. a production test lasting less than 24 hours unless the division requires or approves a longer test period;
 - i. when natural gas does not meet the gathering pipeline specifications, provided LFE analyzes natural gas samples twice per week to determine whether the specifications have been achieved, routes the natural gas into a gathering pipeline as soon as the pipeline specifications are met and provides the pipeline specifications and natural gas analyses to the division upon request; or
 - j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities from the pipeline or equipment.

19.15.27.8 Subsection E: Performance Standards

1. LFE designed completion and production separation equipment and storage tanks for maximum anticipated throughput and pressure to minimize waste.
2. LFE permanent storage tanks associated with production operations that is routed to a flare or control device are equipped with automatic gauging system that reduces the venting of natural gas.
3. LFE shall combust natural gas in a flare stack that is properly sized and designed to ensure proper combustion efficiency.
 - a. The flare stack shall be equipped with an automatic ignitor or continuous pilot.

4. The flare stack shall be securely anchored and located at least 100 feet from the well and storage tanks unless otherwise approved by the division.
5. LFE shall conduct an AVO inspection weekly to confirm that all production equipment is operating properly and there are no leaks or releases except as allowed in Subsection D of 19.15.27.8 NMAC.
 - a. During an AVO inspection the LFE shall inspect all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated piping to identify defects, leaks, and releases by:
 - i. a comprehensive external visual inspection;
 - ii. listening for pressure and liquid leaks; and
 - iii. smelling for unusual and strong odors.
 - b. LFE shall make and keep a record of an AVO inspection for not less than five years and make such record available for inspection by the division upon request.
6. facilities shall be designed to minimize waste;
7. LFE has an obligation to minimize waste and shall resolve emergencies as quickly and safely as is feasible.

19.15.27.8 Subsection F: Measurement or estimation of vented and flared natural gas

1. LFE shall measure or estimate the volume of natural gas that it vents, flares, or beneficially uses during drilling, completion, and production operations regardless of the reason or authorization for such venting or flaring.
2. LFE shall install equipment to measure the volume of natural gas flared from existing process piping or a flowline piped from equipment such as high pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by the APD

Attachment VIII. Best Management Practices:

Longfellow Energy (LFE) utilizes the following best management practices to minimize venting during active and planned maintenance

1. LFE has a closed vent capture system to route emissions from the heater treater, tanks and vapor to the VRU with a flare for backup. The system is designed such that if the VRU is taken out of service for any reason, the vapors will be routed to the flare for combustion.
2. LFE will isolate and attempt to route all vapors to the VRU or flare prior to opening any lines for maintenance to minimize venting from the equipment when technically feasible
3. LFE will shut in wells in the event of a takeaway disruption, emergency situations, or other operations where venting or flaring may occur due to equipment failures.
4. Lease operators will be visiting the location daily to check and maintain all equipment ensuring all scrubbers, flame arrestors, and the flare ignitor is functioning properly.



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

03/13/2026

APD ID: 10400106237

Submission Date: 08/04/2025

Highlighted data
reflects the most
recent changes

Operator Name: LONGFELLOW ENERGY LP

Well Name: VAN HALEN 33CD FED COM

Well Number: 005H

Well Type: OIL WELL

Well Work Type: Drill

[Show Final Text](#)

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
17647971	QUATERNARY	3902	0	0	OTHER : Caliche	USEABLE WATER	N
17647972	RUSTLER ANHYDRITE	3449	453	453	ANHYDRITE	NONE	N
17647984	TOP SALT	3265	637	637	SALT	NONE	N
17647974	BASE OF SALT	2248	1654	1679	SALT	NONE	N
17647975	YATES	2108	1794	1825	SANDSTONE	NATURAL GAS, OIL	N
17647976	SEVEN RIVERS	1833	2069	2111	GYPSUM	NATURAL GAS, OIL	N
17647977	QUEEN	1224	2678	2745	SANDSTONE	NATURAL GAS, OIL	N
17647978	GRAYBURG	822	3080	3164	DOLOMITE	NATURAL GAS, OIL	N
17647979	SAN ANDRES	495	3407	3504	DOLOMITE	NATURAL GAS, OIL	N
17647980	GLORIETA	-918	4820	5052	DOLOMITE	NATURAL GAS, OIL	N
17647981	PADDOCK	-965	4867	5128	DOLOMITE, OTHER : Yeso dolomite	NATURAL GAS, OIL	N
17647982	BLINEBRY	-1195	5097	5715	DOLOMITE, OTHER : Yeso dolomite	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 6000

Equipment: A 5000-psi BOP stack (rated to 6000') consisting of annular preventer and double (blind and pipe) ram will be used below surface casing to TD. Other accessories to the BOPE will include a speed head, Kelly cock and floor safety valve (inside BOP), and choke lines and choke manifold.

Requesting Variance? YES

Variance request: Variance is requested to use a flex-hose. Test certificate for a typical hose is attached. Certificate for the hose in use will be available on the rig before spud.

Operator Name: LONGFELLOW ENERGY LP

Well Name: VAN HALEN 33CD FED COMWell Number: 005H

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250-psi low and 3000-psi high per 43 CFR 3172. If the system is upgraded to a higher pressure, it will still be tested as described above. If the system is upgraded, then all installed components will be functional and tested. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. Checks will be noted on daily tour sheets.

Choke Diagram Attachment:

VH_5H_Choke_Rev2_20260106081500.pdf

BOP Diagram Attachment:

VH_5H_BOP_Rev2_20260106081507.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	550	0	550	3902	3352	550	J-55	54.5	LT&C	1.125	1.125	DRY	1.8	DRY	1.8
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4115	0	3994	3902	-92	4115	J-55	40	LT&C	1.125	1.125	DRY	1.8	DRY	1.8
3	PRODUCTION	8.75	7.0	NEW	API	N	0	5576	0	5077	0	-1175	5576	L-80	32	BUTT	1.125	1.125	DRY	1.8	DRY	1.8
4	PRODUCTION	8.75	5.5	NEW	API	N	5576	10877	5077	5195	-1175	-1293	5301	L-80	20	BUTT	1.125	1.125	DRY	1.8	DRY	1.8

Casing Attachments

Casing ID: 1StringSURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

VH_5H_Casing_Design_Rev3_20260228075314.pdf

Operator Name: LONGFELLOW ENERGY LP

Well Name: VAN HALEN 33CD FED COM

Well Number: 005H

Casing Attachments

Casing ID: 2StringINTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

VH_5H_Casing_Design_Rev3_20260228075240.pdf

Casing ID: 3StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

VH_5H_Casing_Design_Rev3_20260228075421.pdf

Casing ID: 4StringPRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

VH_5H_Casing_Design_Rev3_20260228075453.pdf

Section 4 - Cement

Operator Name: LONGFELLOW ENERGY LP**Well Name:** VAN HALEN 33CD FED COM**Well Number:** 005H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	550	440	1.72	13.5	756	100	Class C	None
SURFACE	Tail		0	550	180	1.33	14.8	239	100	Class C	None
INTERMEDIATE	Lead	3029	0	3029	1600	1.83	12.4	2928	100	35/65 Poz C	None
INTERMEDIATE	Tail		3029	4115	600	1.19	15.6	714	100	Class C	None
PRODUCTION	Lead		0	5576	490	2.08	12.2	1019	10	25/75 Poz C	None
PRODUCTION	Tail		5576	1087 7	1060	1.4	14.8	1484	10	Class C	None

Section 5 - Circulating Medium

Mud System Type: Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with 43 CFR 3172:****Diagram of the equipment for the circulating system in accordance with 43 CFR 3172:**

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (LCM) will be on site to handle any abnormal hole condition that may be encountered while drilling this well.

Describe the mud monitoring system utilized: An electronic/mechanical mud monitor with a minimum pit volume totalizer, stroke counter, and flow sensor will be used.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	550	OTHER : Fresh Water/Gel	8.4	9							
550	4120	SALT SATURATED	8.8	9.2							
4120	1087 7	OTHER : Cut Brine	8.8	9.2							

Operator Name: LONGFELLOW ENERGY LP**Well Name:** VAN HALEN 33CD FED COM**Well Number:** 005H

Section 6 - Test, Logging, Coring

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

A mud logger will be used from GL to TD. Samples will be collected every 10' in the lateral pay zone. A wireline MWD GR log will be run from the base of the surface casing to TD.

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

MUD LOG/GEOLOGICAL LITHOLOGY LOG, GAMMA RAY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2285

Anticipated Surface Pressure: 1142

Anticipated Bottom Hole Temperature(F): 95

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations

VH_PadD_H2S_Plan_20250826161651.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

VH_5H_Directional_Plan_Rev3_20260228075825.pdf

Other proposed operations facets description:

A DV tool and an external casing packer will be set 3029', just above the Grayburg.

Other proposed operations facets attachment:

CoFlex_Certs_20250826161858.pdf

VH_5H_Anticollision_Rev2_20260106082302.pdf

VH_WMP_Rev2_20260106082318.pdf

VH_5H_Drill_Plan_Rev4_20260310112621.pdf

Other Variance request(s)?: N

Other Variance attachment:

Operator Name: LONGFELLOW ENERGY LP

Well Name: VAN HALEN 33CD FED COM

Well Number: 005H



Company: Longfellow Energy
Project: Eddy Co., NM (Nad-83)
Site: VAN HALEN 33CD FED COM
Well: 005H
Wellbore: OH
Rig:
Design: PLAN 3 / 10:28, December 04 2025

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
413.00	413.00	Rustler
1661.00	1686.55	Base of Salt
1794.00	1825.00	Yates
2069.00	2111.25	Seven Rivers
2678.00	2745.18	Queen
3080.00	3163.63	Grayburg
3407.00	3504.02	San Andres
4820.00	5051.83	Glorieta
4867.00	5127.91	Top Paddock
5030.00	5445.97	Lower Paddock
5097.00	5715.17	Paddock Target

WELL DETAILS: 005H

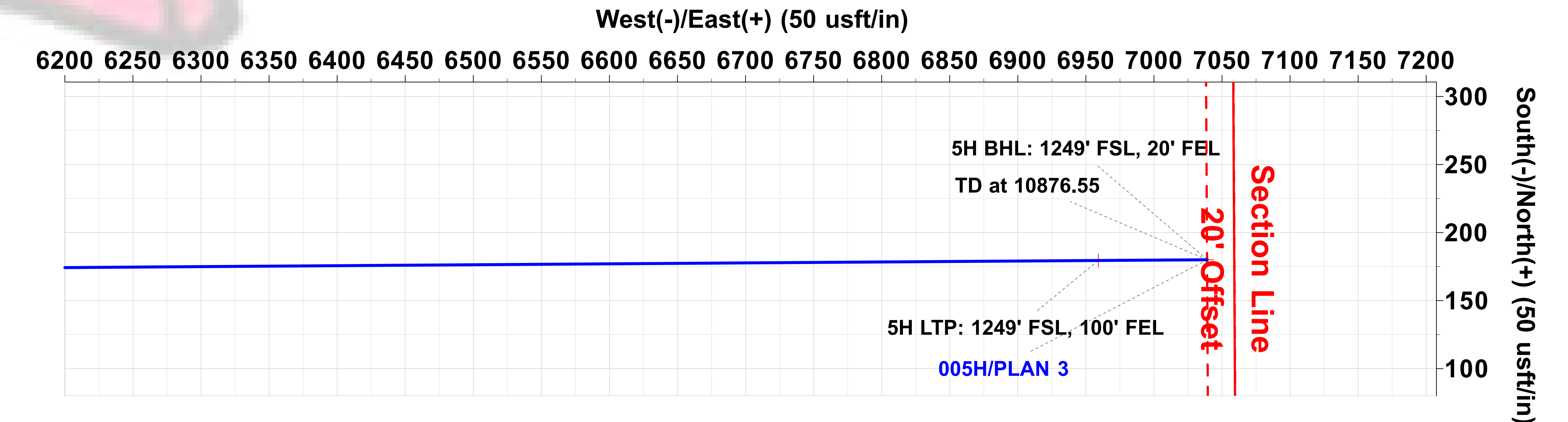
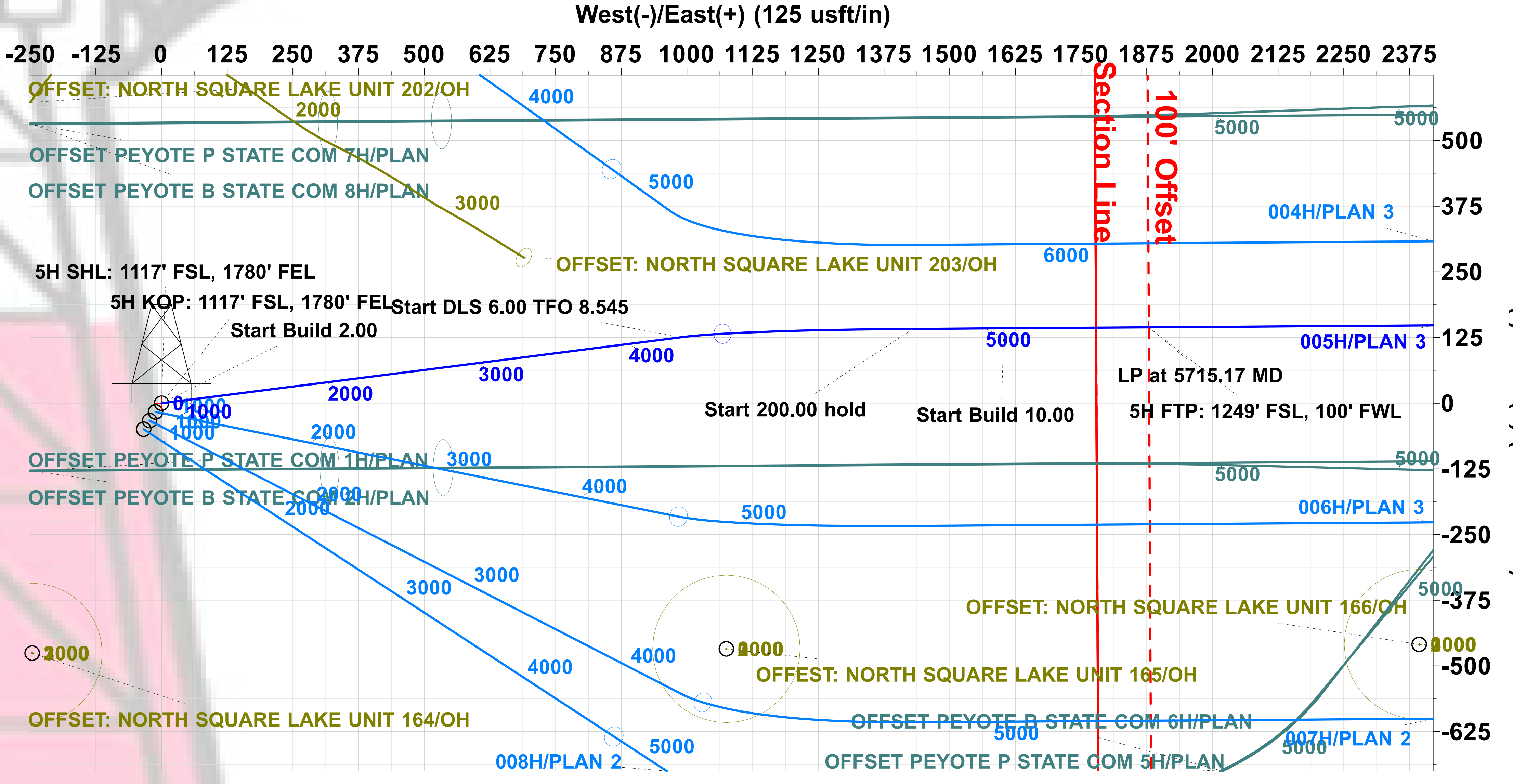
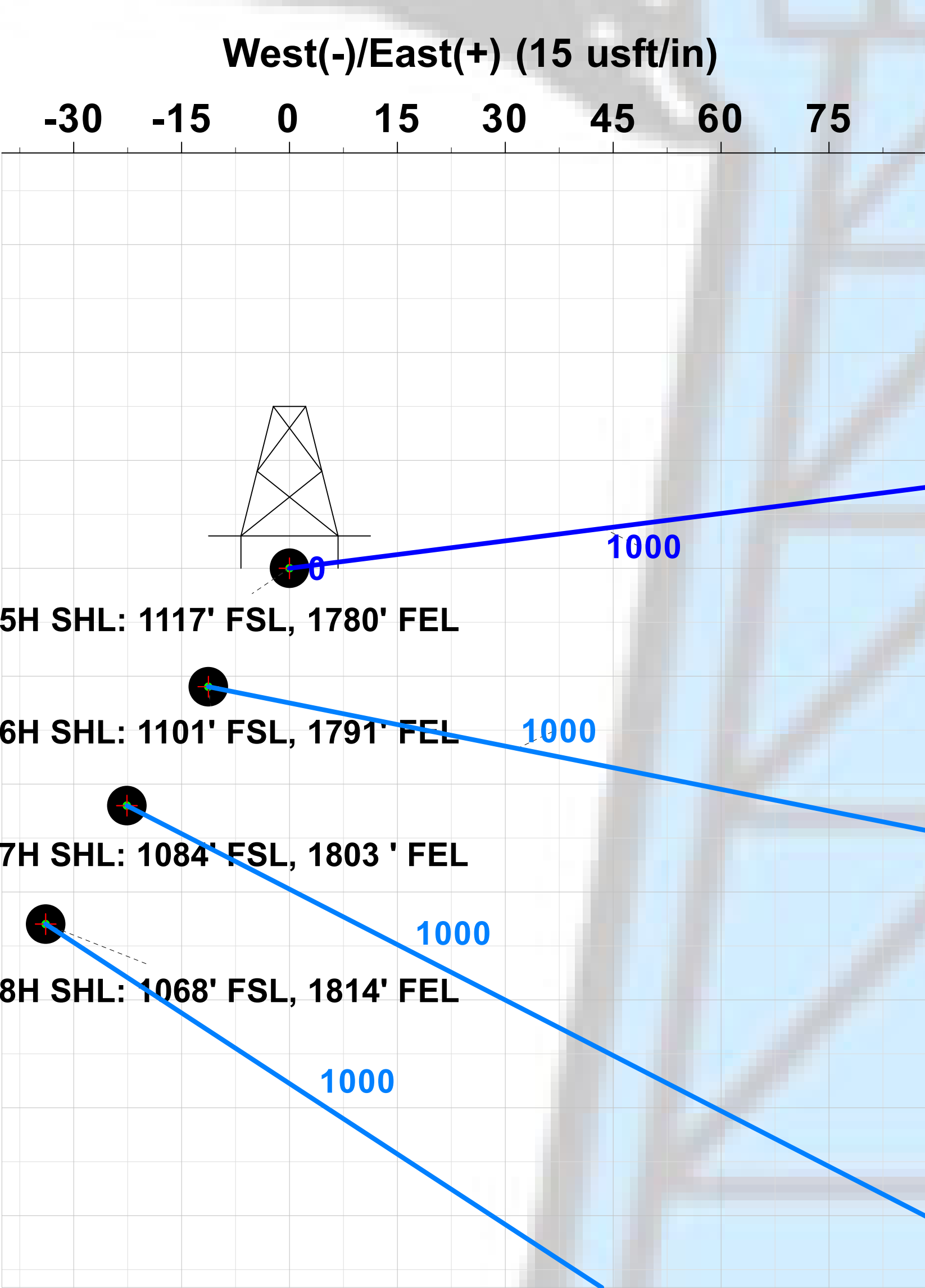
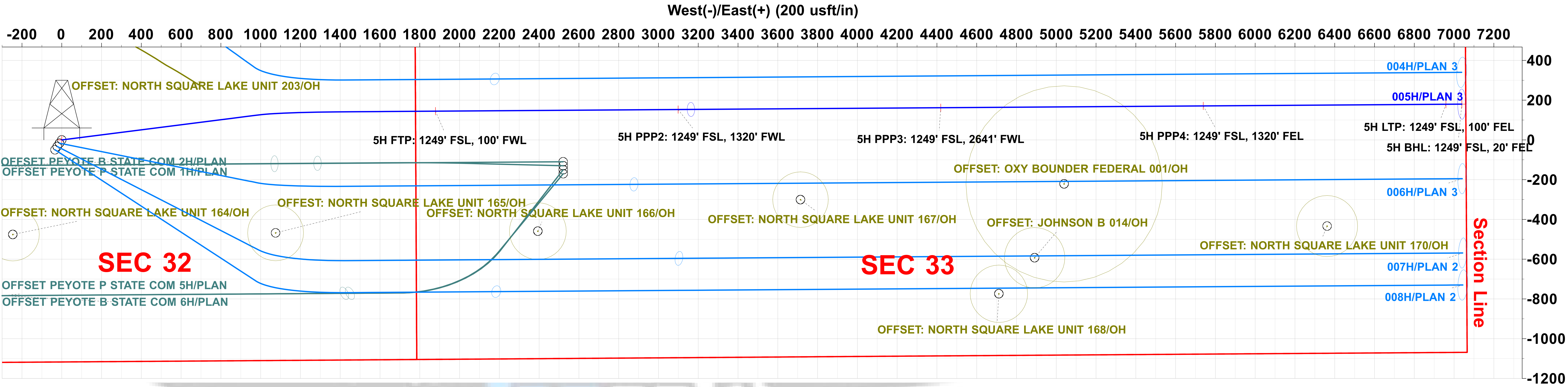
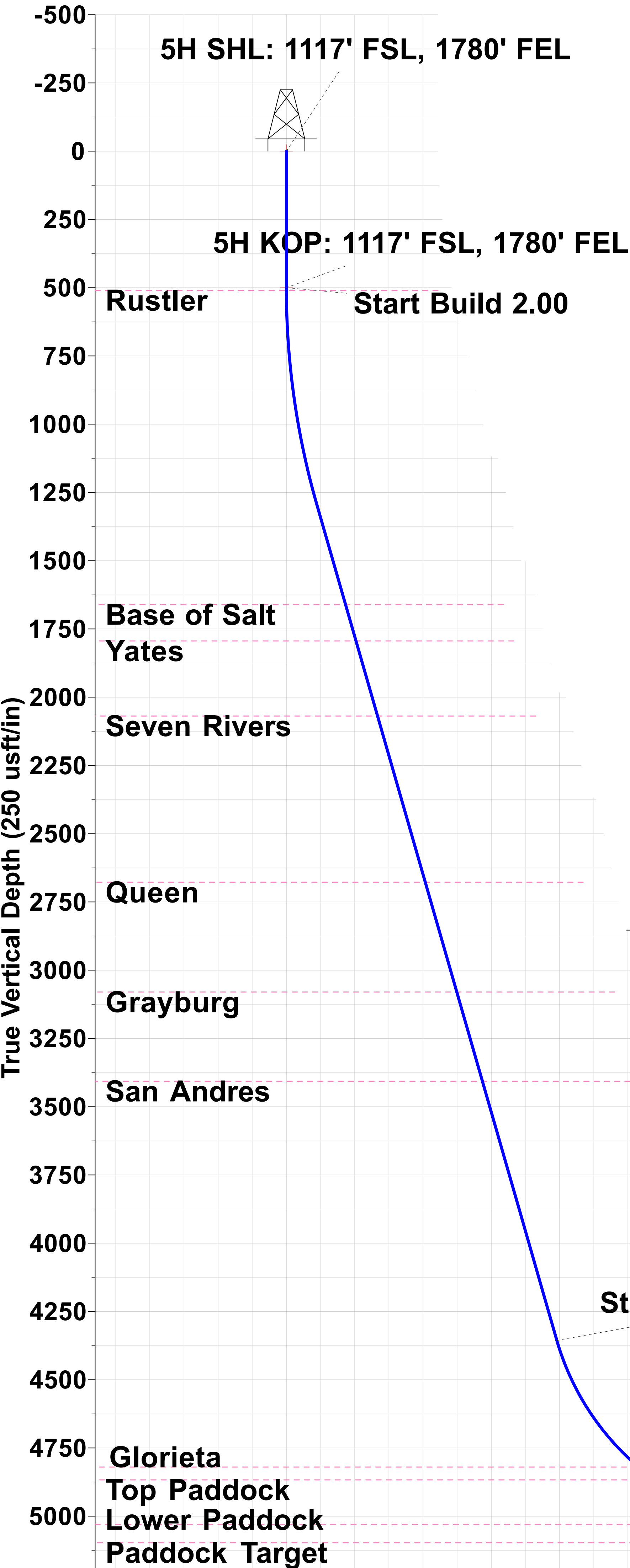
RKB = 20' @ 3922.30usft					
Ground Elevation: 3902.30					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	681938.95	677713.76	32.873882	-103.889130

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	359.76	500.00	0.00	0.00	0.00	0.00	
3	1306.02	16.12	82.76	1295.43	14.20	111.74	2.00	111.84	
4	4492.37	16.12	82.76	4356.49	125.71	989.40	0.00	990.24	
5	5226.05	60.00	89.61	4920.34	141.52	1430.03	6.00	1430.96	
6	5426.05	60.00	89.61	5020.34	142.71	1603.23	0.00	1604.16	
7	5715.17	88.91	89.61	5097.00	144.60	1878.82	10.00	1879.76	5H FTP: 1249' FSL, 100' FWL
8	6935.58	88.91	89.61	5120.17	152.98	3098.98	0.00	3099.95	5H PPP2: 1249' FSL, 1320' FWL
9	8256.21	88.91	89.61	5145.25	162.05	4419.34	0.00	4420.34	5H PPP3: 1249' FSL, 2641' FWL
10	9576.30	88.91	89.61	5170.31	171.12	5739.16	0.00	5740.19	5H PPP4: 1249' FSL, 1320' FEL
11	10796.56	88.91	89.61	5193.48	179.50	6959.17	0.00	6960.23	5H LTP: 1249' FSL, 100' FEL
12	10876.55	88.91	89.61	5195.00	180.05	7039.15	0.00	7040.22	5H BHL: 1249' FSL, 20' FEL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
5H SHL: 1117' FSL, 1780' FEL	0.00	0.00	0.00	681938.95	677713.76	32.873882	-103.889130
5H KOP: 1117' FSL, 1780' FEL	500.00	0.00	0.00	681938.95	677713.76	32.873882	-103.889130
5H FTP: 1249' FSL, 100' FWL	5097.00	144.60	1878.82	682083.55	679592.58	32.874258	-103.883009
5H PPP2: 1249' FSL, 1320' FWL	5120.17	152.97	3098.98	682091.92	680812.74	32.874266	-103.879034
5H PPP3: 1249' FSL, 2641' FWL	5145.25	162.05	4419.34	682101.00	682133.10	32.874276	-103.874734
5H PPP4: 1249' FSL, 1320' FEL	5170.31	171.12	5739.16	682110.07	683452.92	32.874285	-103.870435
5H LTP: 1249' FSL, 100' FEL	5193.48	179.51	6959.17	682118.46	684672.93	32.874293	-103.866461
5H BHL: 1249' FSL, 20' FEL	5195.00	180.05	7039.15	682119.00	684752.91	32.874294	-103.866200



PROJECT DETAILS: Eddy Co., NM (Nad-83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Plan: PLAN 3 (005H/OH)

Created By: Matthew May Date: 10:28, December 04 2025



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 005H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3922.30usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3922.30usft
Site:	VAN HALEN 33CD FED COM	North Reference:	Grid
Well:	005H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 3		

Project	Eddy Co., NM (Nad-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Well	005H				
Well Position	+N/-S	0.00 usft	Northing:	681,938.95 usft	Latitude: 32.873882
	+E/-W	0.00 usft	Easting:	677,713.76 usft	Longitude: -103.889130
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 3,902.30 usft
Grid Convergence:	0.241 °				

Design	PLAN 3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	89.61

Plan Survey Tool Program	Date	12/4/2025		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	10,876.36	PLAN 3 (OH)	MWD+IFR1+SAG+FDIR OWSG MWD + IFR1 + Sag

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	
500.00	0.00	359.76	500.00	0.00	0.00	0.00	0.00	0.00	359.759	
1,306.02	16.12	82.76	1,295.43	14.20	111.74	2.00	2.00	0.00	82.759	
4,492.37	16.12	82.76	4,356.49	125.71	989.40	0.00	0.00	0.00	0.000	
5,226.05	60.00	89.61	4,920.34	141.52	1,430.03	6.00	5.98	0.93	8.545	
5,426.05	60.00	89.61	5,020.34	142.71	1,603.23	0.00	0.00	0.00	0.000	
5,715.17	88.91	89.61	5,097.00	144.60	1,878.82	10.00	10.00	0.00	0.000	5H FTP: 1249' FSL
6,935.58	88.91	89.61	5,120.17	152.98	3,098.98	0.00	0.00	0.00	0.000	5H PPP2: 1249' FS
8,256.21	88.91	89.61	5,145.25	162.05	4,419.34	0.00	0.00	0.00	0.000	5H PPP3: 1249' FS
9,576.30	88.91	89.61	5,170.31	171.12	5,739.16	0.00	0.00	0.00	0.000	5H PPP4: 1249' FS
10,796.56	88.91	89.61	5,193.48	179.50	6,959.17	0.00	0.00	0.00	0.000	5H LTP: 1249' FSL,
10,876.55	88.91	89.61	5,195.00	180.05	7,039.15	0.00	0.00	0.00	0.000	5H BHL: 1249' FSL



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 005H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3922.30usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3922.30usft
Site:	VAN HALEN 33CD FED COM	North Reference:	Grid
Well:	005H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	359.76	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	2.00	82.76	599.98	0.22	1.73	1.73	2.00	2.00	0.00
700.00	4.00	82.76	699.84	0.88	6.92	6.93	2.00	2.00	0.00
800.00	6.00	82.76	799.45	1.98	15.57	15.58	2.00	2.00	0.00
900.00	8.00	82.76	898.70	3.51	27.66	27.68	2.00	2.00	0.00
1,000.00	10.00	82.76	997.47	5.49	43.18	43.21	2.00	2.00	0.00
1,100.00	12.00	82.76	1,095.62	7.89	62.10	62.16	2.00	2.00	0.00
1,200.00	14.00	82.76	1,193.06	10.73	84.42	84.49	2.00	2.00	0.00
1,306.02	16.12	82.76	1,295.43	14.20	111.74	111.84	2.00	2.00	0.00
1,400.00	16.12	82.76	1,385.71	17.49	137.63	137.75	0.00	0.00	0.00
1,500.00	16.12	82.76	1,481.78	20.99	165.17	165.31	0.00	0.00	0.00
1,600.00	16.12	82.76	1,577.85	24.49	192.72	192.88	0.00	0.00	0.00
1,700.00	16.12	82.76	1,673.92	27.99	220.26	220.45	0.00	0.00	0.00
1,800.00	16.12	82.76	1,769.98	31.49	247.81	248.02	0.00	0.00	0.00
1,900.00	16.12	82.76	1,866.05	34.99	275.35	275.58	0.00	0.00	0.00
2,000.00	16.12	82.76	1,962.12	38.49	302.90	303.15	0.00	0.00	0.00
2,100.00	16.12	82.76	2,058.19	41.98	330.44	330.72	0.00	0.00	0.00
2,200.00	16.12	82.76	2,154.26	45.48	357.99	358.29	0.00	0.00	0.00
2,300.00	16.12	82.76	2,250.32	48.98	385.53	385.86	0.00	0.00	0.00
2,400.00	16.12	82.76	2,346.39	52.48	413.07	413.42	0.00	0.00	0.00
2,500.00	16.12	82.76	2,442.46	55.98	440.62	440.99	0.00	0.00	0.00
2,600.00	16.12	82.76	2,538.53	59.48	468.16	468.56	0.00	0.00	0.00
2,700.00	16.12	82.76	2,634.60	62.98	495.71	496.13	0.00	0.00	0.00
2,800.00	16.12	82.76	2,730.66	66.48	523.25	523.69	0.00	0.00	0.00
2,900.00	16.12	82.76	2,826.73	69.98	550.80	551.26	0.00	0.00	0.00
3,000.00	16.12	82.76	2,922.80	73.48	578.34	578.83	0.00	0.00	0.00
3,100.00	16.12	82.76	3,018.87	76.98	605.88	606.40	0.00	0.00	0.00
3,200.00	16.12	82.76	3,114.94	80.48	633.43	633.96	0.00	0.00	0.00
3,300.00	16.12	82.76	3,211.00	83.98	660.97	661.53	0.00	0.00	0.00
3,400.00	16.12	82.76	3,307.07	87.48	688.52	689.10	0.00	0.00	0.00
3,500.00	16.12	82.76	3,403.14	90.98	716.06	716.67	0.00	0.00	0.00
3,600.00	16.12	82.76	3,499.21	94.48	743.61	744.23	0.00	0.00	0.00
3,700.00	16.12	82.76	3,595.28	97.98	771.15	771.80	0.00	0.00	0.00
3,800.00	16.12	82.76	3,691.34	101.48	798.69	799.37	0.00	0.00	0.00
3,900.00	16.12	82.76	3,787.41	104.98	826.24	826.94	0.00	0.00	0.00
4,000.00	16.12	82.76	3,883.48	108.48	853.78	854.50	0.00	0.00	0.00
4,100.00	16.12	82.76	3,979.55	111.98	881.33	882.07	0.00	0.00	0.00
4,200.00	16.12	82.76	4,075.62	115.48	908.87	909.64	0.00	0.00	0.00
4,300.00	16.12	82.76	4,171.68	118.98	936.42	937.21	0.00	0.00	0.00
4,400.00	16.12	82.76	4,267.75	122.48	963.96	964.77	0.00	0.00	0.00
4,492.37	16.12	82.76	4,356.49	125.71	989.40	990.24	0.00	0.00	0.00
4,500.00	16.57	83.00	4,363.81	125.98	991.53	992.37	6.00	5.94	3.13
4,550.00	19.55	84.29	4,411.34	127.68	1,006.94	1,007.79	6.00	5.95	2.59
4,600.00	22.53	85.26	4,458.01	129.30	1,024.81	1,025.67	6.00	5.96	1.93
4,650.00	25.51	86.01	4,503.67	130.84	1,045.10	1,045.97	6.00	5.97	1.50
4,700.00	28.50	86.61	4,548.22	132.30	1,067.76	1,068.63	6.00	5.98	1.20
4,750.00	31.49	87.11	4,591.51	133.66	1,092.71	1,093.60	6.00	5.98	0.99
4,800.00	34.48	87.53	4,633.45	134.93	1,119.90	1,120.79	6.00	5.98	0.84
4,850.00	37.47	87.88	4,673.91	136.11	1,149.24	1,150.15	6.00	5.99	0.72



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 005H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3922.30usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3922.30usft
Site:	VAN HALEN 33CD FED COM	North Reference:	Grid
Well:	005H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,900.00	40.47	88.20	4,712.78	137.18	1,180.67	1,181.58	6.00	5.99	0.63
4,950.00	43.46	88.48	4,749.95	138.15	1,214.08	1,215.00	6.00	5.99	0.55
5,000.00	46.46	88.72	4,785.33	139.01	1,249.40	1,250.32	6.00	5.99	0.50
5,050.00	49.45	88.95	4,818.81	139.76	1,286.51	1,287.44	6.00	5.99	0.45
5,100.00	52.45	89.15	4,850.31	140.40	1,325.33	1,326.26	6.00	5.99	0.41
5,150.00	55.44	89.34	4,879.74	140.93	1,365.75	1,366.68	6.00	5.99	0.38
5,200.00	58.44	89.52	4,907.01	141.35	1,407.65	1,408.58	6.00	5.99	0.35
5,226.05	60.00	89.61	4,920.34	141.52	1,430.03	1,430.96	6.00	5.99	0.34
5,300.00	60.00	89.61	4,957.32	141.96	1,494.07	1,495.00	0.00	0.00	0.00
5,400.00	60.00	89.61	5,007.32	142.55	1,580.67	1,581.60	0.00	0.00	0.00
5,426.05	60.00	89.61	5,020.34	142.71	1,603.23	1,604.16	0.00	0.00	0.00
5,450.00	62.39	89.61	5,031.88	142.85	1,624.21	1,625.15	10.00	10.00	0.00
5,500.00	67.39	89.61	5,053.09	143.16	1,669.47	1,670.41	10.00	10.00	0.00
5,550.00	72.39	89.61	5,070.27	143.48	1,716.41	1,717.35	10.00	10.00	0.00
5,600.00	77.39	89.61	5,083.29	143.82	1,764.66	1,765.60	10.00	10.00	0.00
5,650.00	82.39	89.61	5,092.06	144.15	1,813.87	1,814.81	10.00	10.00	0.00
5,700.00	87.39	89.61	5,096.51	144.50	1,863.66	1,864.60	10.00	10.00	0.00
5,715.17	88.91	89.61	5,097.00	144.60	1,878.82	1,879.76	10.00	10.00	0.00
5,800.00	88.91	89.61	5,098.61	145.18	1,963.63	1,964.58	0.00	0.00	0.00
5,900.00	88.91	89.61	5,100.51	145.87	2,063.61	2,064.56	0.00	0.00	0.00
6,000.00	88.91	89.61	5,102.41	146.56	2,163.59	2,164.54	0.00	0.00	0.00
6,100.00	88.91	89.61	5,104.31	147.24	2,263.57	2,264.52	0.00	0.00	0.00
6,200.00	88.91	89.61	5,106.21	147.93	2,363.55	2,364.50	0.00	0.00	0.00
6,300.00	88.91	89.61	5,108.10	148.62	2,463.53	2,464.49	0.00	0.00	0.00
6,400.00	88.91	89.61	5,110.00	149.30	2,563.51	2,564.47	0.00	0.00	0.00
6,500.00	88.91	89.61	5,111.90	149.99	2,663.49	2,664.45	0.00	0.00	0.00
6,600.00	88.91	89.61	5,113.80	150.68	2,763.47	2,764.43	0.00	0.00	0.00
6,700.00	88.91	89.61	5,115.70	151.36	2,863.45	2,864.41	0.00	0.00	0.00
6,800.00	88.91	89.61	5,117.60	152.05	2,963.43	2,964.40	0.00	0.00	0.00
6,900.00	88.91	89.61	5,119.50	152.74	3,063.41	3,064.38	0.00	0.00	0.00
6,935.58	88.91	89.61	5,120.17	152.98	3,098.98	3,099.95	0.00	0.00	0.00
7,000.00	88.91	89.61	5,121.40	153.42	3,163.39	3,164.36	0.00	0.00	0.00
7,100.00	88.91	89.61	5,123.29	154.11	3,263.37	3,264.34	0.00	0.00	0.00
7,200.00	88.91	89.61	5,125.19	154.80	3,363.35	3,364.32	0.00	0.00	0.00
7,300.00	88.91	89.61	5,127.09	155.49	3,463.32	3,464.31	0.00	0.00	0.00
7,400.00	88.91	89.61	5,128.99	156.17	3,563.30	3,564.29	0.00	0.00	0.00
7,500.00	88.91	89.61	5,130.89	156.86	3,663.28	3,664.27	0.00	0.00	0.00
7,600.00	88.91	89.61	5,132.79	157.55	3,763.26	3,764.25	0.00	0.00	0.00
7,700.00	88.91	89.61	5,134.69	158.23	3,863.24	3,864.23	0.00	0.00	0.00
7,800.00	88.91	89.61	5,136.59	158.92	3,963.22	3,964.22	0.00	0.00	0.00
7,900.00	88.91	89.61	5,138.48	159.61	4,063.20	4,064.20	0.00	0.00	0.00
8,000.00	88.91	89.61	5,140.38	160.29	4,163.18	4,164.18	0.00	0.00	0.00
8,100.00	88.91	89.61	5,142.28	160.98	4,263.16	4,264.16	0.00	0.00	0.00
8,200.00	88.91	89.61	5,144.18	161.67	4,363.14	4,364.14	0.00	0.00	0.00
8,256.21	88.91	89.61	5,145.25	162.05	4,419.34	4,420.34	0.00	0.00	0.00
8,300.00	88.91	89.61	5,146.08	162.35	4,463.12	4,464.13	0.00	0.00	0.00
8,400.00	88.91	89.61	5,147.98	163.04	4,563.10	4,564.11	0.00	0.00	0.00
8,500.00	88.91	89.61	5,149.88	163.73	4,663.08	4,664.09	0.00	0.00	0.00
8,600.00	88.91	89.61	5,151.77	164.41	4,763.06	4,764.07	0.00	0.00	0.00
8,700.00	88.91	89.61	5,153.67	165.10	4,863.04	4,864.05	0.00	0.00	0.00
8,800.00	88.91	89.61	5,155.57	165.79	4,963.02	4,964.04	0.00	0.00	0.00
8,900.00	88.91	89.61	5,157.47	166.47	5,063.00	5,064.02	0.00	0.00	0.00
9,000.00	88.91	89.61	5,159.37	167.16	5,162.98	5,164.00	0.00	0.00	0.00
9,100.00	88.91	89.61	5,161.27	167.85	5,262.96	5,263.98	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_3	Local Co-ordinate Reference:	Well 005H
Company:	Longfellow Energy	TVD Reference:	RKB = 20' @ 3922.30usft
Project:	Eddy Co., NM (Nad-83)	MD Reference:	RKB = 20' @ 3922.30usft
Site:	VAN HALEN 33CD FED COM	North Reference:	Grid
Well:	005H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN 3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,200.00	88.91	89.61	5,163.17	168.53	5,362.94	5,363.96	0.00	0.00	0.00	
9,300.00	88.91	89.61	5,165.07	169.22	5,462.92	5,463.95	0.00	0.00	0.00	
9,400.00	88.91	89.61	5,166.96	169.91	5,562.90	5,563.93	0.00	0.00	0.00	
9,500.00	88.91	89.61	5,168.86	170.60	5,662.88	5,663.91	0.00	0.00	0.00	
9,576.30	88.91	89.61	5,170.31	171.12	5,739.16	5,740.19	0.00	0.00	0.00	
9,600.00	88.91	89.61	5,170.76	171.28	5,762.86	5,763.89	0.00	0.00	0.00	
9,700.00	88.91	89.61	5,172.66	171.97	5,862.84	5,863.87	0.00	0.00	0.00	
9,800.00	88.91	89.61	5,174.56	172.66	5,962.82	5,963.85	0.00	0.00	0.00	
9,900.00	88.91	89.61	5,176.46	173.34	6,062.79	6,063.84	0.00	0.00	0.00	
10,000.00	88.91	89.61	5,178.36	174.03	6,162.77	6,163.82	0.00	0.00	0.00	
10,100.00	88.91	89.61	5,180.26	174.72	6,262.75	6,263.80	0.00	0.00	0.00	
10,200.00	88.91	89.61	5,182.15	175.40	6,362.73	6,363.78	0.00	0.00	0.00	
10,300.00	88.91	89.61	5,184.05	176.09	6,462.71	6,463.76	0.00	0.00	0.00	
10,400.00	88.91	89.61	5,185.95	176.78	6,562.69	6,563.75	0.00	0.00	0.00	
10,500.00	88.91	89.61	5,187.85	177.46	6,662.67	6,663.73	0.00	0.00	0.00	
10,600.00	88.91	89.61	5,189.75	178.15	6,762.65	6,763.71	0.00	0.00	0.00	
10,700.00	88.91	89.61	5,191.65	178.84	6,862.63	6,863.69	0.00	0.00	0.00	
10,796.56	88.91	89.61	5,193.48	179.50	6,959.17	6,960.23	0.00	0.00	0.00	
10,800.00	88.91	89.61	5,193.55	179.52	6,962.61	6,963.67	0.00	0.00	0.00	
10,876.55	88.91	89.61	5,195.00	180.05	7,039.15	7,040.22	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
5H SHL: 1117' FSL, 1' - plan hits target center - Point	0.00	359.76	0.00	0.00	0.00	681,938.95	677,713.76	32.873882	-103.889130	
5H KOP: 1117' FSL, 1 - plan hits target center - Point	0.00	359.76	500.00	0.00	0.00	681,938.95	677,713.76	32.873882	-103.889130	
5H FTP: 1249' FSL, 1 - plan hits target center - Point	0.00	359.76	5,097.00	144.60	1,878.82	682,083.55	679,592.58	32.874258	-103.883009	
5H PPP2: 1249' FSL, - plan misses target center by 0.01usft at 6935.58usft MD (5120.17 TVD, 152.98 N, 3098.98 E) - Point	0.00	359.75	5,120.17	152.97	3,098.98	682,091.92	680,812.74	32.874266	-103.879035	
5H PPP3: 1249' FSL, - plan hits target center - Point	0.00	359.75	5,145.25	162.05	4,419.34	682,101.00	682,133.10	32.874276	-103.874734	
5H PPP4: 1249' FSL, - plan hits target center - Point	0.00	359.75	5,170.31	171.12	5,739.16	682,110.07	683,452.92	32.874285	-103.870435	
5H LTP: 1249' FSL, 11 - plan misses target center by 0.01usft at 10796.56usft MD (5193.48 TVD, 179.50 N, 6959.17 E) - Point	0.00	359.75	5,193.48	179.51	6,959.17	682,118.46	684,672.93	32.874293	-103.866461	
5H BHL: 1249' FSL, 2 - plan hits target center - Point	0.00	359.75	5,195.00	180.05	7,039.15	682,119.00	684,752.91	32.874294	-103.866201	

**PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	Avant Operating II LLC
LOCATION:	Section 32, T.16 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	Van Halen 33CD Fed Com 1H
ATS/API ID:	ATS-25-2154
APD ID:	10400106202
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 2H
ATS/API ID:	ATS-25-2153
APD ID:	10400106228
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 3H
ATS/API ID:	ATS-25-2152
APD ID:	10400106229
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 4H
ATS/API ID:	ATS-25-2151
APD ID:	10400106230
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 5H
ATS/API ID:	ATS-25-2150
APD ID:	10400106237
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 6H
ATS/API ID:	ATS-25-2149
APD ID:	10400106319
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 7H
ATS/API ID:	ATS-25-2148
APD ID:	10400106323
Sundry ID:	N/a

WELL NAME & NO.:	Van Halen 33CD Fed Com 8H
ATS/API ID:	ATS-25-2147
APD ID:	10400106324
Sundry ID:	N/a

COA

H2S	Yes		
Potash	None	None	
Cave/Karst Potential	Low		
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	Conventional		
Other	☐ 4 String ☐ 5 String	Capitan Reef None	☐ WIPP
Other	Pilot Hole None	☐ Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter None	Primary Cement Squeeze None
Special Requirements	☐ Water Disposal/Injection	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry	Waste Prevention Waste MP	
Special Requirements Variance	☐ BOPE Break Testing ☐ Offline BOPE Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **550 feet** (a minimum of 70 feet into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **17 1/2** inch in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

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

Option 2:

Operator has proposed a DV tool(s), the depth may be adjusted as long as the cement is changed proportionally. The DV tool(s) may be cancelled if cement circulates to surface on the first stage.

DV tool(s) shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall contact the BLM if DV tool(s) depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe

to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

- a. First stage to DV tool(s): Cement to circulate. If cement does not circulate off the DV tool(s), contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool(s):
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
3. The minimum required fill of cement behind the 7 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** inch intermediate casing shoe shall be **3000 (3M)** psi.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- 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

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.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or

if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends of both lead and tail cement, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Acceptable Method of Cement Verifications:
 - a. Observing cement circulated to surface.
 - b. Cement bond log (CBL).
 - c. Temperature log within 8-10 hours after completing the cement job.
 - d. Echometer (if a second-stage bradenhead squeeze is being used).
5. 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.
6. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
7. 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.
8. 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.
9. 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 3172.6(b)(9) must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin

after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- 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.

Long Vo (LVO) 3/3/2026



H₂S Drilling Operations Plan

- a. All personnel will be trained in H₂S working conditions as required by 43 CFR 3176 before drilling out of the surface casing.
- b. Two briefing areas will be established. Each will be $\geq 150'$ from the wellhead, perpendicular from one another, and easily entered and exited. See H₂S page 5 for more details.
- c. H₂S Safety Equipment/Systems:
 - i. Well Control Equipment
 - Flare line will be $\geq 150'$ from the wellhead and ignited by a pilot light.
 - Beware of SO₂ created by flaring.
 - Choke manifold will include a remotely operated choke.
 - Mud gas separator
 - ii. Protective Equipment for Essential Personnel
 - Every person on site will be required to wear a personal H₂S and SO₂ monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest – not on the belt.
 - One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
 - Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
 - Four emergency escape packs will be in the doghouse for emergency evacuation.
 - Hand signals will be used when wearing protective breathing apparatus.
 - Stokes litter or stretcher
 - Two full OSHA compliant body harnesses
 - A 100' long x 5/8" OSHA compliant rope
 - One 20-pound ABC fire extinguisher
 - iii. H₂S Detection & Monitoring Equipment
 - Every person on site will be required to wear a personal H₂S and SO₂ monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.



- A stationary detector with 3 sensors will be in the doghouse.
- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
- Visual alarm will be triggered at 10 ppm.
- Audible alarm will be triggered at 10 ppm.
- Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.

iv. Visual Warning System

- Color-coded H₂S condition sign will be set at the entrance to the pad.
- Color-coded condition flag will be installed to indicate current H₂S conditions.
- Two windsocks will be installed that will be visible from all sides.

v. Mud Program

- A water-based mud with a pH of ≥ 10 will be maintained to control corrosion, H₂S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
- Drilling mud containing H₂S gas will be degassed at an optimum location for the rig configuration.
- This gas will be piped into the flare system.
- Enough mud additives will be on location to scavenge and/or neutralize H₂S where formation pressures are unknown.

vi. Metallurgy

- All equipment that has the potential to be exposed to H₂S will be suitable for H₂S service.
- Equipment that will meet the metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head & spool, rotating head, kill lines, choke, choke manifold & lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).

vii. Communication from well site

- Cell phones and/or two-way radios will be used to communicate from the well site.

d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain H₂S.



Company Personnel to be Notified

James Follis

Office: (972) 590-9905

Mobile: (405) 306-6169

Local & County Agencies

Maljamar Fire Department

911 or (575) 370-4362

Loco Hills Fire Department

911 or (575) 628-5450

Eddy County Sheriff (Carlsbad)

911 or (575) 887-7551

Eddy County Sheriff sub-office (Artesia)

911 or (575) 746-9888

Eddy County Emergency Management (Carlsbad)

(575) 887-9511

Artesia General Hospital

(575) 748-3333

Lovington (Nor-Lea) Hospital

(575) 396-6611

Eddy County North Road Department (Artesia)

(575) 746-9540

State Agencies

NM State Police (Artesia)

(575) 748-9718

NM Oil Conservation (Artesia)

(575) 748-1283

NM Oil Conservation (Santa Fe)

(505) 476-3440

NM Dept. of Transportation (Roswell)

(575) 637-7201

Federal Agencies

BLM Carlsbad Field Office

(575) 234-5972

National Response Center

(800) 424-8802

US EPA Region 6 (Dallas)

(800) 887-6063

(214) 665-6444



Residents within 2 miles (none)

Air Evacuation

Med Flight Air Ambulance (Albuquerque) (800) 842-4431

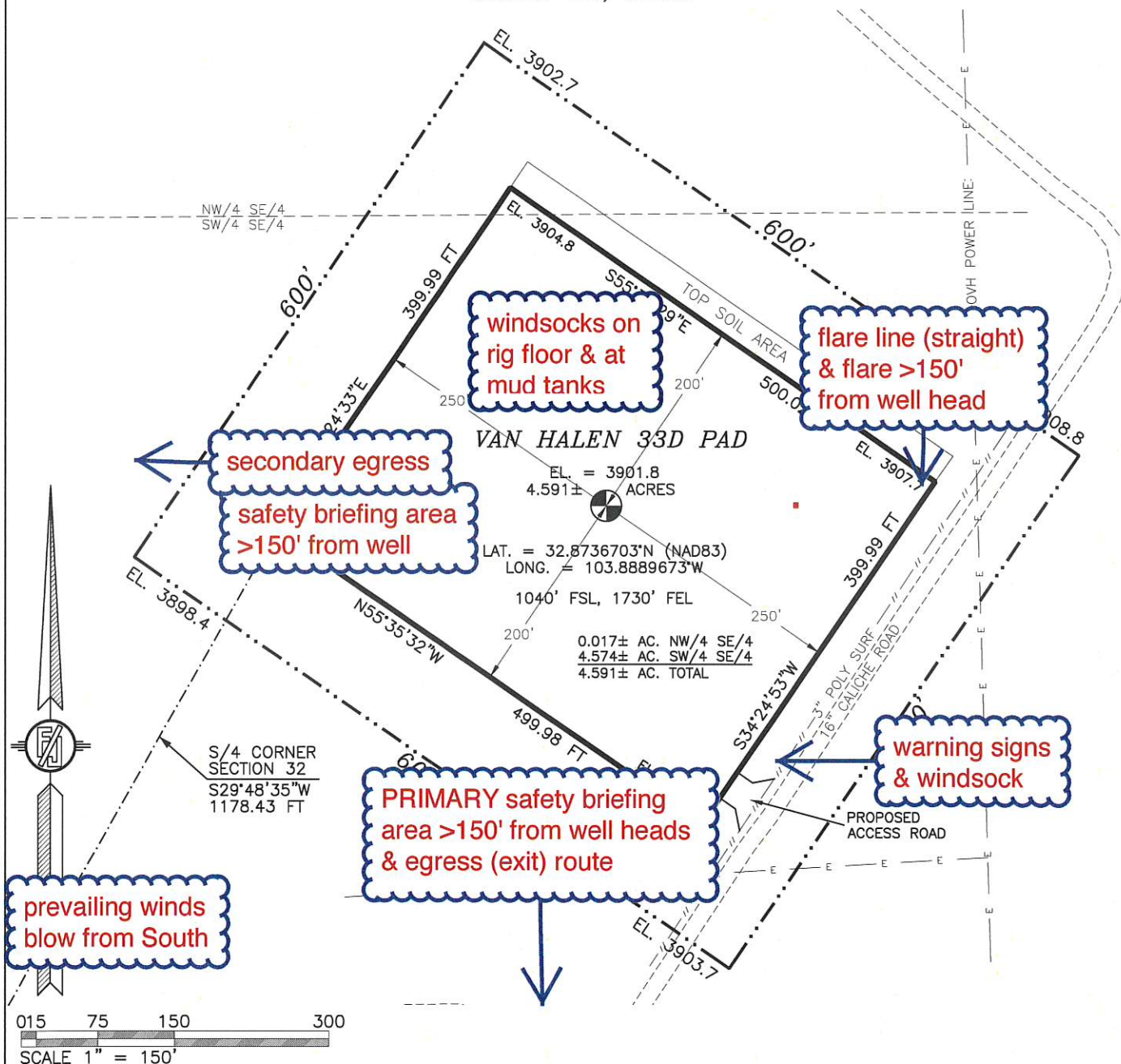
Lifeguard (Albuquerque) (888) 866-7256

Veterinarian

Artesia Animal Clinic (575) 748-2042

VAN HALEN 33D PAD
LONGFELLOW ENERGY, LP
IN THE W/2 SE/4 OF
SECTION 32, TOWNSHIP 16 SOUTH, RANGE 31 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
APRIL 28, 2025

highest ground
to the Northeast



prevailing winds
blow from South

015 75 150 300
SCALE 1" = 150'

GENERAL NOTES

1.) THE INTENT OF THIS SURVEY IS TO ACQUIRE A BUSINESS LEASE FOR THE PURPOSE OF BUILDING A WELL PAD

2.) BASIS OF BEARING IS NEW MEXICO STATE PLANE EAST ZONE MODIFIED TO THE SURFACE (NAD83), COORDINATES ARE NAD 83, ELEVATIONS ARE NAVD 88

DRIVING DIRECTIONS: FROM THE INTERSECTION OF CO. RD. 220 (SQUARE LAKE) & CO. RD. 252 (EAST SQUARE LAKE) APPROX. 2.35 MILES TO A ROAD SURVEY ON RIGHT (SOUTH), FOLLOW ROAD SURVEY SOUTH APPROX. 585' TO THE NORTHWEST PAD CORNER VAN HALEN 33B PAD, FROM THE SOUTHEAST PAD CORNER FOLLOW ROAD SURVEY SOUTH APPROX. 0.34 MILES TO A CALICHE ROAD, FOLLOW CALICHE ROAD SOUTHEAST AND SOUTHWEST APPROX. 0.2 MILES TO A ROAD SURVEY ON RIGHT (NORTHWEST), FOLLOW ROAD SURVEY APPROX. 50' TO THE SOUTH PAD CORNER FOR THIS LOCATION.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE 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 LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 28th DAY OF APRIL 2025

FILIMON F. JARAMILLO
NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3327

SURVEY NO. 10207B

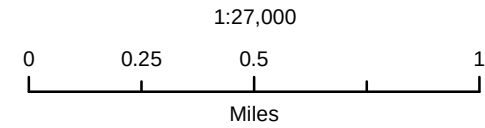
MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

Longfellow Energy, L.P.

Van Halen 33CD Fed Com Pad D
H₂S Contingency Plan:
Radius Map

Section 32, Township 16S, Range 31E
Eddy County, New Mexico

 Well Pad Location

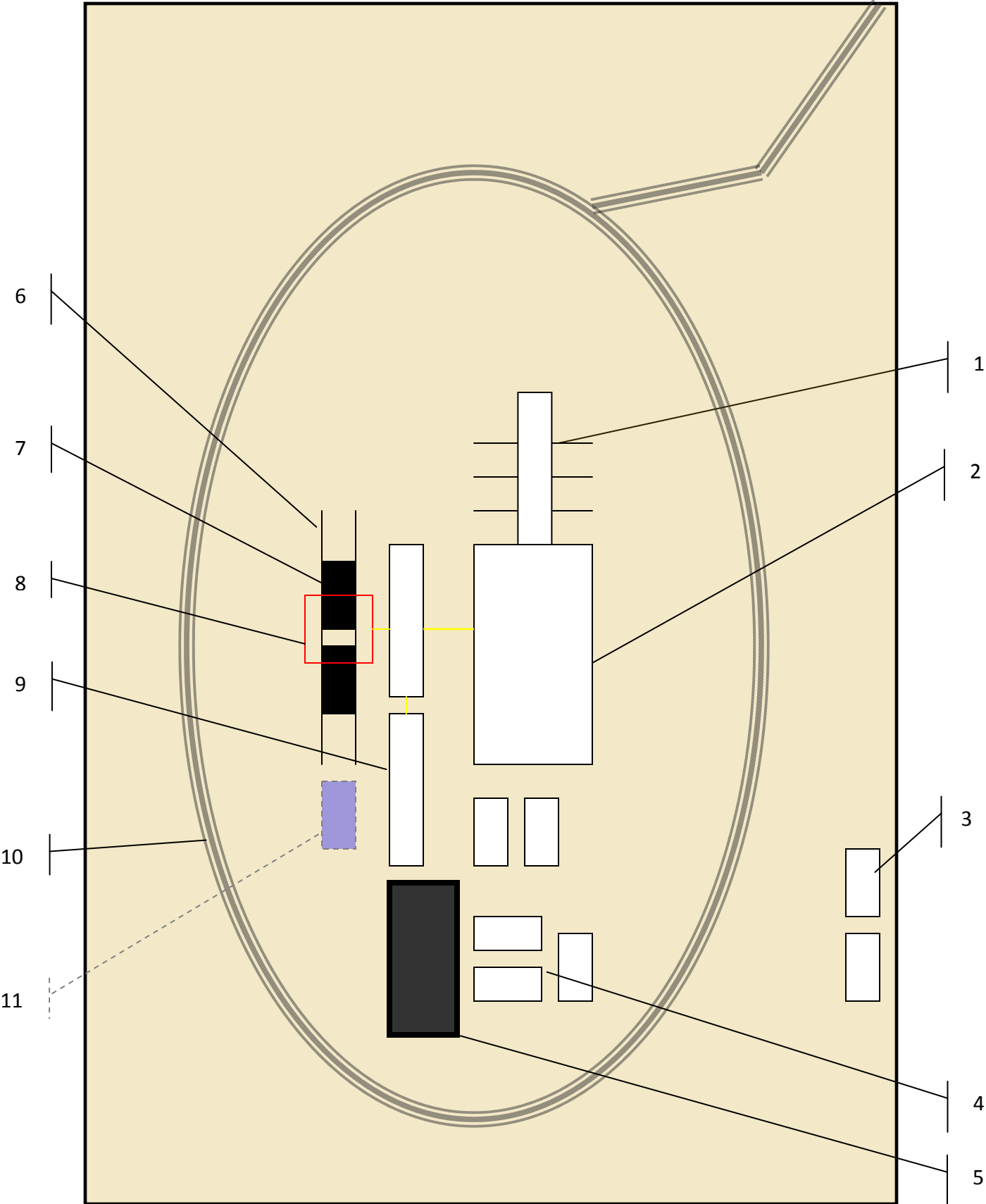


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., June 30, 2025
for Longfellow Energy, L.P.





Schematic Closed Loop Drilling Rig*

- 1. Pipe Rack
- 2. Drill Rig
- 3. House Trailers/ Offices
- 4. Generator/Fuel/Storage
- 5. Overflow-Frac Tank
- 6. Skids
- 7. Roll Offs
- 8. Hopper or Centrifuge
- 9. Mud Tanks
- 10. Loop Drive
- 11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available



Above: Centrifugal Closed Loop System

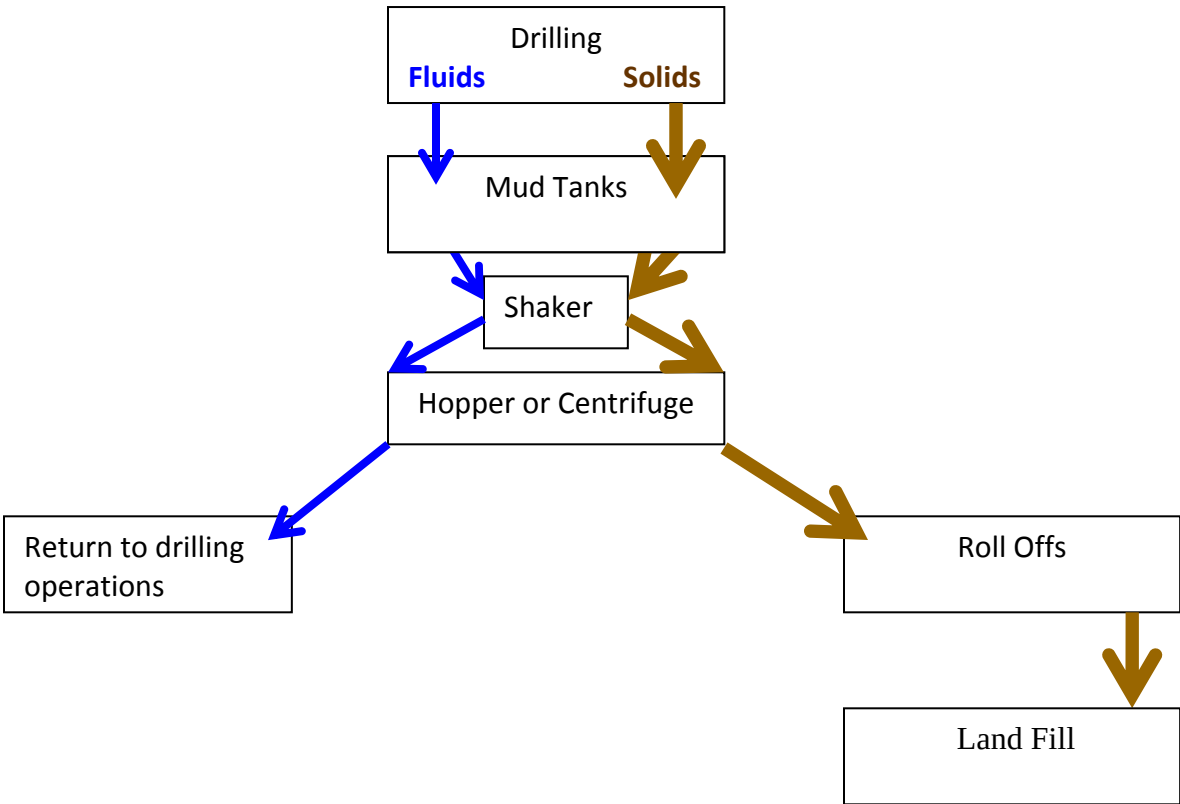


PERMITS WEST, INC.
PROVIDING PERMITS for LAND USERS
37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120



Closed Loop Drilling System: Mud tanks to right (1)
Hopper in air to settle out solids (2)
Water return pipe (3)
Shaker between hopper and mud tanks (4)
Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil
Field Service

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

General Information
Phone: (505) 629-6116

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

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

ACKNOWLEDGMENTS

Action 562896

ACKNOWLEDGMENTS

Operator: LONGFELLOW ENERGY, LP 8115 Preston Road Dallas, TX 75225	OGRID: 372210
	Action Number: 562896
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

ACKNOWLEDGMENTS

☒	I hereby certify that no additives containing PFAS chemicals will be added to the completion or recompletion of this well.
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Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
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State of New Mexico
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CONDITIONS

Action 562896

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CONDITIONS

Created By	Condition	Condition Date
permitsw	Cement is required to circulate on both surface and intermediate1 strings of casing.	3/13/2026
permitsw	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	3/13/2026
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	4/13/2026
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	4/13/2026
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.	4/13/2026
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.	4/13/2026
ward.rikala	If the method of isolation was not by circulation, a CBL must be performed; if strata isolation is not achieved, then remediation will be required before further operations.	4/13/2026