Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☐ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☐ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.

2. Name of Operator

9. API Well No.
30-045-38413

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface

At proposed prod. zone

11. Sec., T. R. M. or Blk. and Survey or Area

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date

Title

Approved by *(Signature)*	Name *(Printed/Typed)*	Date

Title	Office

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

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

APPROVED

Approval Date: 11/15/2024

(Continued on page 2)

*(Instructions on page 2)

Additional Operator Remarks

Location of Well

0. SHL: SWSW / 263 FSL / 311 FWL / TWSP: 24N / RANGE: 8W / SECTION: 25 / LAT: 36.278756 / LONG: -107.641306 (TVD: 0 feet, MD: 0 feet)

PPP: NWSW / 2043 FSL / 100 FWL / TWSP: 24N / RANGE: 8W / SECTION: 25 / LAT: 36.283644 / LONG: -107.641885 (TVD: 5526 feet, MD: 6056 feet)

PPP: NWSE / 2018 FSL / 2606 FWL / TWSP: 24N / RANGE: 8W / SECTION: 25 / LAT: 36.283586 / LONG: -107.633384 (TVD: 5597 feet, MD: 12636 feet)

BHL: NWSW / 1998 FSL / 1225 FWL / TWSP: 24N / RANGE: 7W / SECTION: 30 / LAT: 36.283494 / LONG: -107.620247 (TVD: 5597 feet, MD: 12636 feet)

BLM Point of Contact

Name: CHRISTOPHER P WENMAN
Title: Natural Resource Specialist
Phone: (505) 564-7727
Email: cwenman@blm.gov

Santa Fe Main Office
Phone: (505) 476-3441 Fax: (55) 476-3462
General Information
Phone: (505) 629-6116

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

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION

C-102
Revised July 9, 2024
Submit Electronically via OCD Permitting

Submittal Type:	☒ Initial Submittal
	☐ Amended Report
	☐ As Drilled

WELL LOCATION INFORMATION

API Number	Pool Code	Pool Name
30-045-38413	98101	LYBROOK UNIT NW HZ OIL

Property Code	Property Name	Well Number
321252	NW LYBROOK UNIT	139H

OGRID No.	Operator Name	Ground Level Elevation
372286	ENDURING RESOURCES LLC	6847

Surface Owner: ☐ State ☐ Fee ☒ Tribal ☒ Federal
Mineral Owner: ☐ State ☐ Fee ☒ Tribal ☒ Federal

Surface Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
M	25	24N	8W		263 SOUTH	311 WEST	36.278756	-107.641306	SAN JUAN

Bottom Hole Location

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	30	24N	7W	3	1998 SOUTH	1225 WEST	36.283494	-107.620247	RIO ARRIBA

Dedicated Acres	Infill or Defining Well	Defining Well API	Overlapping Spacing Unit (Y/N)	Consolidation Code
N/2 S/2 – Sec. 25 NW/4 SW/4 (Lot 3) – Sec. 30 200.76 Acres			N	UNIT

Order Numbers. R-13921
Well setbacks are under Common Ownership: ☒Yes ☐No

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	25	24N	8W		2043 SOUTH	100 WEST	36.283644	-107.641885	SAN JUAN

First Take Point (FTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	25	24N	8W		2043 SOUTH	100 WEST	36.283644	-107.641885	SAN JUAN

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Ft. from N/S	Ft. from E/W	Latitude	Longitude	County
L	30	24N	7W	3	1998 SOUTH	1225 WEST	36.283494	-107.620247	RIO ARRIBA

Unitized Area or Area of Uniform Interest	Spacing Unit Type ☒ Horizontal ☐ Vertical	Ground Floor Elevation:
NW LYBROOK UNIT		

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

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

Shaw-Marie Ford — Signature
12/16/2024 — Date

Shaw-Marie Ford
Printed Name

sford@enduringresources.com
Email Address

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.

JASON C. EDWARDS
Signature and Seal of Professional Surveyor

Certificate Number
15269

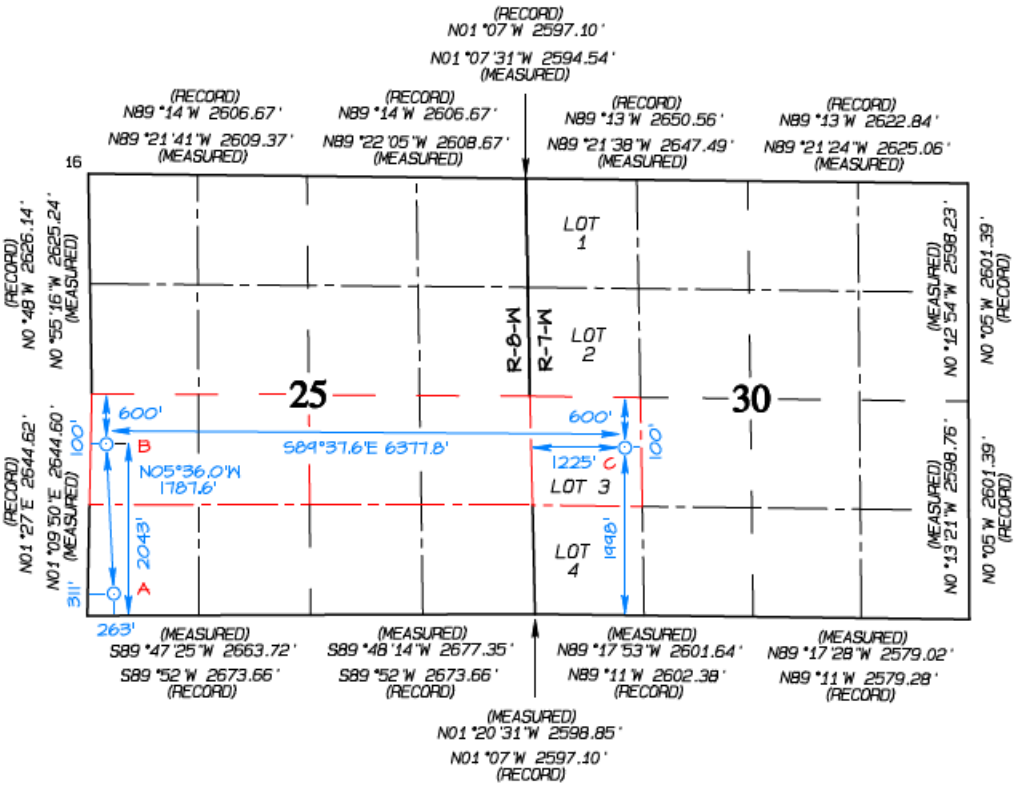
Date of Survey
FEBRUARY 4, 2023
Revised October 3, 2023

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

ACREAGE DEDICATION PLATS

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

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



SURFACE LOCATION (A)
263' FSL 311' FWL
SECTION 25, T24N, R8W

LAT 36.278756°N
LONG -107.641306°W
DATUM: NAD1983

FIRST TAKE POINT (B)
2043' FSL 100' FWL
SECTION 25, T24N, R8W

LAT 36.283644°N
LONG -107.641885°W
DATUM: NAD1983

LAST TAKE POINT (C)
1998' FSL 1225' FWL
SECTION 30, T24N, R7W

LAT 36.283494°N
LONG -107.620247°W
DATUM: NAD1983

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: __Enduring Resources, LLC_____ **OGRID:** __372286_____ **Date:** _12_/_16_/_2024_

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
Lybrook 2408-26 FED COM	TBD	M-25-24N-8W	266 FSL x 294 FWL	255	760	102
NW Lybrook Unit 139H	TBD	M-25-24N-8W	263 FSL x 311 FWL	276	824	111
NW Lybrook Unit 140H	TBD	M-25-24N-8W	252 FSL x 394 FWL	412	1229	165
NW Lybrook Unit 141H	TBD	M-25-24N-8W	250 FSL x 414 FWL	417	1242	167
				3-year Decline	3-year Decline	3-year Decline
Lybrook 2408-26 FED COM	TBD	M-25-24N-8W	266 FSL x 294 FWL	58	172	23
NW Lybrook Unit 139H	TBD	M-25-24N-8W	263 FSL x 311 FWL	62	186	25
NW Lybrook Unit 140H	TBD	M-25-24N-8W	252 FSL x 394 FWL	93	278	37
NW Lybrook Unit 141H	TBD	M-25-24N-8W	250 FSL x 414 FWL	94	280	38

IV. Central Delivery Point Name: _____NW Lybrook 131H CDP_____ [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
Lybrook 2408-26 FED COM 138H	TBD	Q3 2025	Q3 2025	Q3 2025	Q3 2025	Q3 2025
NW Lybrook Unit 139H	TBD	Q3 2025	Q3 2025	Q3 2025	Q3 2025	Q3 2025
NW Lybrook Unit 140H	TBD	Q3 2025	Q3 2025	Q3 2025	Q3 2025	Q3 2025
NW Lybrook Unit 141H	TBD	Q3 2025	Q3 2025	Q3 2025	Q3 2025	Q3 2025

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: Shaw-Marie Ford
Title: Regulatory Specialist
E-mail Address: sford@enduringresources.com
Date: 12/16/2024
Phone: 505-716-3297

OIL CONSERVATION DIVISION **(Only applicable when submitted as a standalone form)**
Approved By:
Title:
Approval Date:
Conditions of Approval:

Enduring Resources, LLC.
NATURAL GAS MANAGEMENT and WASTE MINIMIZATION PLAN
Lybrook 2408-26 FED COM 138H, NW Lybrook Unit 139H, 140H, 141H

SEPARATION EQUIPMENT

Enduring Resources, LLC (Enduring) has pulled representative pressurized samples from wells in the same producing formation. Enduring has utilized these samples in process simulations to determine the amount of gas anticipated in each stage of the process and utilized this information with a safety factor to size the equipment listed below:

Separation equipment will be set as follows:

- Individual 3-phase separator will be set for the individual well.
- The separator will be sized based on the anticipated volume of the well and the pressure of the lines utilized for oil, gas, and water takeaway.
- The 3-phase production separator will be equipped with a 0.75 MMBtu/hr indirect fired heater.

Heater treaters will be set as follows:

- Individual heater treaters will be set for the individual well.
- The heater treaters are sized based on the anticipated combined volume of oil and produced water predicted to come from the initial 3 phase separator.
- Oil will be separated from the produced water and the oil/produced water will be sent to its respective tanks.
- The combined oil and natural gas stream is routed to the Vapor Recovery Tower.

Vapor Recovery Equipment will be set as follows:

- The Vapor Recovery Tower has been sized, based on the anticipated volume of gas from the heater treater and oil and water tanks.
- The Vapor Recovery Unit has been sized, based on the anticipated volume of gas from the heater treater and oil and water tanks. The Vapor Recovery Unit is utilized to push the recovered gas into the sales pipeline.

Production storage tanks will be set as follows:

- The oil and produced water tanks utilize a closed vent capture system to ensure all breathing, working, and flashing losses are routed to the Vapor Recovery Tower and Vapor Recovery Unit.
- Each of the production storage tanks will be equipped with a 0.5 MMBtu/hr indirect heater.

Enduring Resources, LLC.
NATURAL GAS MANAGEMENT and WASTE MINIMIZATION PLAN
Lybrook 2408-26 FED COM 138H, NW Lybrook Unit 139H, 140H, 141H

VENTING and FLARING

Enduring has a natural gas system available prior to startup of completion operations. Enduring utilizes a Vapor Recovery Unit System and sells all natural gas except during periods of startup, shutdown, maintenance, or malfunction for the gas capturing equipment, including the vapor recovery tower, vapor recovery unit, storage tanks, and pipelines.

Currently, Enduring utilizes the following from list A-I of Section 3 for its operations to minimize flaring:

a) Enduring utilizes natural gas-powered generators to power its leases where grid power isn't available.
b) When electrical grid power is unavailable, natural gas generators will be used for major equipment onsite.
c) Enduring's in service compression will be natural gas powered.
d) Should liquids removal, such as dehydration be required, units will be powered by natural gas.

Enduring will only flare gas during the following times:

- Scheduled maintenance for gas capturing equipment including:
  - Vapor Recovery Tower
  - Vapor Recovery Unit
  - Storage tanks
  - Pipelines
  - Emergency flaring

Enduring Resources, LLC.
NATURAL GAS MANAGEMENT and WASTE MINIMIZATION PLAN
Lybrook 2408-26 FED COM 138H, NW Lybrook Unit 139H, 140H, 141H

OPERATIONAL PRACTICES

19.15.27.8 A. Venting and Flaring of Natural Gas

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

19.15.27.8 B. Venting and flaring during drilling operations

- Enduring shall capture or combust natural gas if technically feasible during drilling operations using best industry practices.
- A flare stack with a 100% capacity for expected volumes will be set on location of the facility at least 100 feet from the nearest surface hole location, well heads, and storage tanks.
- In the event of an emergency, Enduring will vent natural gas in order to avoid substantial impact. Enduring shall report the vented or flared gas to the NMOCD.

19.15.27.8 E. Venting and flaring during completion or recompletion operations

During Completion Operations, Enduring utilizes the following:

- Enduring facilities are built and ready from day 1 of Flowback.
- Individual well test separators will be set to properly separate gas and liquids. Temporary test separator will be utilized initially to process volumes. In addition, separators will be tied into flowback tanks which will be tied into the gas processing equipment for sales down a pipeline. See Separation Equipment for details.
- Should the facility not yet be capable of processing gas, or the gas does not meet quality standards, then storage tanks will be set that are tied into gas busters or temporary flare to manage natural gas. This flare would meet the following requirements:
    1) An appropriately sized flare stack with an automatic igniter.
    2) Enduring analyzes the natural gas samples twice per week.
    3) Enduring routes the natural gas into a gathering pipeline as soon as the pipeline specifications are met.
    4) Enduring provides the NMOCD with pipeline specifications and natural gas data.

19.15.27.8 D. Venting and flaring during production operations

During Production Operations Enduring will not vent or flare natural gas except under the following circumstances:

1. During an emergency or malfunction
2. To unload or clean-up liquid holdup in a well to atmospheric pressure, provided:
    a. Enduring does not vent after the well achieves a stabilized rate and pressure.
    b. Enduring will remain present on-site during liquids unloading by manual purging and tall all reasonable actions to achieve a stabilized rate and pressure at the earliest practical time.
    c. Enduring will optimize the system to minimize natural gas venting on any well equipped with a plunger lift or auto control system.
    d. Best Management Practices will be used during downhole well maintenance.
3. During the first year of production from an exploratory well provided:
    a. Enduring receives approval from the NMOCD.
    b. Enduring remains in compliance with the NM gas capture requirements.
    c. Enduring submits an updated C-129 form to the NMOCD.
4. During the following activities unless prohibited:
    a. Gauging or sampling a storage tank or low-pressure production vessel.
    b. Loading out liquids from a storage tank.
    c. Repair and maintenance.
    d. Normal operation of gas activated pneumatic controller or pump.
    e. Normal operation of a storage tank but not including venting from a thief hatch.
    f. Normal operation of dehydration units.
    g. Normal operations of compressors, compressor engines, turbines, valves, flanges, and connectors.
    h. During a bradenhead, packer leakage test, or production test lasting less than 24-hours.
    i. When natural gas does not meet the gathering pipeline specifications.
    j. Commissioning of pipelines, equipment, or facilities only for as long as necessary to purge introduced impurities.

19.15.27.8 E. Performance standards

1. Enduring has utilized process simulations with a safety factor to design all separation and storage equipment. The equipment is routed to a Vapor Recovery System and utilizes a flare as back up for periods of startup, shutdown, maintenance, or malfunction of the VRU System.
2. Enduring will install a flare that designed to handle the full volume of vapors from the facility in case of the VRU failure and it its designed with an auto ignition system.
3. Flare stacks will appropriately sized and designed to ensure proper combustion efficiency.
    a. Flare stacks installed or replaced will be equipped with an automatic ignitor or continuous pilot.

   b. Previously installed flare stacks will be retrofitted with an automatic ignitor, continuous pilot, or technology that alerts ENDURING of flare malfunction within 18 months after May 25, 2021.
   c. Flare stacks replaced after May 25, 2021, will be equipped with an automatic ignitor or continuous pilot if located at a well or facility with average daily production of 60,000 cubic feet of natural gas or less.
   d. Flare stacks will be located at least 100 feet from the well and storage tanks and securely anchored.
4. Enduring will conduct an AVO inspection on all components for leaks and defects on a weekly basis.
5. Enduring will make and keep records of AVO inspections which will be available to the NMOCD for at least 5 years.
6. Enduring may use a remote or automated monitoring technology to detect leaks and releases in lieu of AVO inspections with prior NMOCD approval.
7. Facilities will be designed to minimize waste.
8. Enduring will resolve emergencies as promptly as possible.

19.15.27.8 F. Measurement or estimation of vented and flared natural gas

1. Enduring will have meters on both the low- and high-pressure sides of the flares and the volumes will be recorded in ENDURING's SCADA system.
2. Enduring will install equipment to measure the volume of flared natural gas that has an average daily production of 60,000 cubic feet or greater of natural gas.
3. Enduring's measuring equipment will conform to the industry standards.
4. The measurement system is designed such that it cannot be bypassed except for inspections and servicing meters.
5. Enduring will estimate the volume of vented or flared natural gas using a methodology that can be independently verified if metering is not practicable due to low flow rate or pressure.
6. Enduring will estimate the volume of flared and vented natural gas based on the results of an annual GOR test for wells that do not require measuring equipment reported on Form C-116.
7. Enduring will install measuring equipment whenever the NMOCD determines that metering is necessary.

Enduring Resources, LLC.
NATURAL GAS MANAGEMENT and WASTE MINIMIZATION PLAN
Lybrook 2408-26 FED COM 138H, NW Lybrook Unit 139H, 140H, 141H

BEST MANAGEMENT PRACTICES

Enduring utilizes the following Best Management Practices to minimize venting during active and planned maintenance.

Enduring has a closed vent capture system to route emissions from the heater treater, tanks, and vapor recovery to the vapor recovery unit with an enclosed combustion device (ECD) for backup. The system is designed such that if the vapor recovery unit is taken out of service for any reason, the vapors will be routed to the ECD for combustion.

Enduring will isolate and attempt to route all vapors to the vapor recovery unit or ECD prior to opening any lines for maintenance to minimize venting from the equipment.

Enduring shall notify the NMOCD of venting or flaring that exceeds 50 MCF but less than 500 MCF in volume that either resulted from an emergency or malfunction, or an event lasting over eight hours or more cumulatively within any 24-hour period from a single event by filing a form C-129 no later than 15 days following the discovery or commencement of venting or flaring.

Enduring shall notify the NMOCD verbally or by e-mail within 24-hours following discovery or commencement of venting or flaring that exceeds 500 MCF in volume or otherwise qualifies as a major release as defined in 19.15.29.7 NMAC from a single event and provide the information required in form C-129 to the NMOCD no later than 15 days that verifies, updates, or corrects the verbal or e-mail notification.

Enduring will install measuring equipment to conform to industry standards such as American Petroleum Institute (API) Manual of Petroleum Measurement Standards (MPMS) Chapter 14.10 Measurement of Flow to Flares.

Enduring's measuring equipment shall not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

Enduring shall report the volume of vented and flared natural gas for each well or facility at which venting or flaring occurred on a monthly basis.

ENDURING RESOURCES IV, LLC
6300 S SYRACUSE WAY, SUITE 525
CENTENNIAL, CO 80111

DRILLING PLAN: ***Drill, complete, equip single lateral Mancos formation Gallup member.***

WELL INFORMATION:

Name: **NW LYBROOK UNIT 139H**
State: New Mexico
County: San Juan
Surface Elevation: 6,847 ft ASL (GL) 6,872 ft ASL (KB)
Surface Location: 25-24-8 Sec-Twn-Rng 263 ft FSL 311 ft FWL
36.278756 ° N latitude 107.641306 ° W longitude (NAD 83)
BH Location: 30-24-7 Sec-Twn-Rng 1,998 ft FSL 1,225 ft FWL
36.283494 ° N latitude 107.620247 ° W longitude (NAD 83)
Driving Directions: From the intersection of US HWY 550 & US HWY 64 in Bloomfield, NM: South on US HWY 550 for 43.5 mles to MM 108.3; Left (North) on County Road #7998 for 0.5 miles to fork; Left (North) continuing on Rd #7998 for 0.5 miles to T; Left (NorthWest) for 0.6 miles to acces road; Left (West) for 0.3 miles into NW Lybrook Unit 131H Pad. The 138H will be one of 4 wells to be added to an existing, 3 well pad. The 138H will be the furthest west well and furthest from the location entrance. From east to west will be NW Lybrook 141H, NW Lybrook 140H, NW Lybrook 289H (existing well). NW Lybrook 131H (existing well), Lybrook 2408 237H (existing well), NW Lybrook 139H, NW Lybrook 138H

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:

Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O / G / W	Pressure
Nacimiento	0	0	0	0	0
Ojo Alamo	5,650	1,222	1,229	W	normal
Kirtland	5,520	1,352	1,365	W	normal
Fruitland	5,300	1,572	1,602	G, W	sub
Pictured Cliffs	4,990	1,882	1,938	G, W	sub
Lewis	4,890	1,982	2,046	G, W	normal
Chacra A	4,580	2,292	2,382	G, W	normal
Cliff House Basal	3,485	3,387	3,568	G, W	sub
Menefee	3,480	3,392	3,573	G, W	normal
Point Lookout	2,610	4,262	4,515	G, W	normal
Mancos	2,375	4,497	4,770	O,G	normal
MNCS_A	2,005	4,867	5,170	O,G	sub (~.38)
MNCS_B	1,920	4,952	5,262	O,G	sub (~.38)
MNCS_C	1,800	5,072	5,390	O,G	sub (~.38)
MNCS_Cms	1,720	5,152	5,478	O,G	sub (~.38)
MNCS_D	1,640	5,232	5,569	O,G	sub (~.38)
MNCS_E	1,560	5,312	5,668	O,G	sub (~.38)
MNCS_F	1,505	5,367	5,744	O,G	sub (~.38)
MNCS_G	1,415	5,457	5,896	O,G	sub (~.38)
MNCS_H	1,375	5,497	5,977	O,G	sub (~.38)
MNCS I TARGET (POE)	**1,325**	**5,547**	**6,121**	**O,G**	sub (~.38)
FTP TARGET	**1,346**	**5,526**	**6,056**	**O,G**	sub (~.38)
PROJECTED WELL TD (BHL)	**1,275**	**5,597**	**12,636**	**O,G**	sub (~.38)

Surface:	Nacimiento					
Oil & Gas Zones:	Several gas bearing zones will be encountered; target formation is the Gallup					
Pressure:	Normal (0.43 psi/ft) or sub-normal pressure gradients anticipated in all formations					
	Max. pressure gradient:	0.43	psi/ft	Evacuated hole gradient:	0.22	psi/ft
	Maximum anticipated BH pressure, assuming maximum pressure gradient:				**2,410**	**psi**
	Maximum anticipated surface pressure, assuming partially evacuated hole:				**1,180**	**psi**
Temperature:	**Maximum anticipated BHT is 125° F or less**					

H_2S INFORMATION:

H_2S Zones: Encountering hydrogen-sulfide bearing zones is **NOT** anticipated.

Safety: Sensors and alarms will be placed in the substructure, on the rig floor, above the pits, and at the shakers.

LOGGING, CORING, AND TESTING:

Mud Logs: None planned; remote geo-steering from drill out of 9-5/8" casing to TD; gas detection from drillout of 13-3/8" casing to TD.

MWD / LWD: MWD surveys with inclination and azimuth in 100' stations (minimum) from drill out of 13-3/8" casing to TD; Gamma Ray from drill out of 9-5/8" casing to TD; Gamma Ray optional in 12-1/4" intermediate hole

Open Hole Logs: None planned

Testing: None planned

Coring: None planned

Cased Hole Logs: CBL on 5-1/2" casing from deepest free-fall depth to surface

DRILLING RIG INFORMATION:

Contractor: Aztec

Rig No.: 1000

Draw Works: E80 AC 1500HP

Mast: Hyduke 600K Cantilever Triple (136 ft, 600,000 lbs)

Top Drive: NOV IDS-350PE 1000 HP

Prime Movers: 4 GE Jenbachers 1000KW 480/240 volt Nat Gas

Pumps: 2 - RS F-1600 (7,500 psi)

BOPE 1: Cameron double gate ram (13-5/8", 5,000 psi)

Int Hole BOPE 2: Cameron annular (13-5/8", 5,000 psi)

Choke 3", 5,000 psi

KB-GL (ft): 25

Note: Actual drilling rig may vary depending on availability at time the well is scheduled to be drilled.

BOPE REQUIREMENTS:

See attached diagram for details regarding BOPE specifications and configuration.

1) Rig will be equipped with upper and lower kelly cocks with handles available.

2) Inside BOP and TIW valves will be available to use on all sizes and threads of drill pipe used while drilling the well.

3) BOP accumulator will have enough capacity to open the HCR valve, close all rams and annular preventer, and retain minimum of 200 psi above precharge on the closing manifold without the use of closing pumps. The fluid reservoir capacity shall be at least double the usable fluid volume of the accumulator system capacity, and the fluid level shall be maintained at manufacturer's recommendation. There will be two additional sources of power for the closing pumps (electric and air). Sufficient nitrogen bottles will be available and will be recharged when pressure falls below manufacturer's recommended minimum.

4) BOP testing shall be conducted (a) when initially installed, (b) whenever any seal is broken or repaired, (c) if the time since the previous test exceeds 30 days. Tests will be conducted using a test plug. BOP ram preventers will be tested to 3,000 psig for 10 minutes, and the annular preventer will be tested to 1,500 psi for 10 minutes. Ram and annular preventers will be tested to 250 psi for 5 minutes. Additionally, BOP and casing strings will be tested to .22 psi/ft or 1,500 psi, whichever is greater but not exceeding 70% of yield strength of the casing, for 30 minutes, prior to drilling out 13-3/8" and 9-5/8" casing. Rams and hydraulically operated remote choke line valve will be function tested daily at a minimum.
5) Remote valve for BOP rams, HCR, and choke shall be placed in a location that is readily available to the driller. The remote BOP valve shall be capable of closing and opening the rams.
6) Manual locking devices (hand wheels) shall be intalled on rams. A valve will be installed on the annular preventer's closing line as close as possible to the preventer to act as a locking device.The valve will be maintained in the open position and shall only be closed when the there is no power to the accumulator.

FLUIDS AND SOLIDS CONTROL PROGRAM:

Fluid Measurement:

Pumps shall be equipped with stroke counters with displays in the dog-house. Slow pump speed shall be recorded daily and after mudding up, at a minimum, on the drilling report. A Pit Volume Totalizer will be installed and the readout will be displayed in the dog-house. Gas-detecting equipment will be installed at the shakers, and readouts will be available in the dog-house and the in the geologist's work-station (if geologist or mud-logger is on-site).

Closed-Loop System: A fully, closed-loop system will be utilized. The system will consist of above-ground piping and above-ground storage tanks and bins. The system will not entail any earthen pits, below-grade storage, or drying pads. All equipment will be disassembled and removed from the site when drilling operations cease. The system will be capable of storing all fluids and generated cuttings and of preventing uncontrolled releases of the same. The system will be operated in an efficient manner to allow the recycling and reuse of as much fluid as possible and to minimize the amount of fluids and solids that require disposal.

Fluid Disposal : Fluids that cannot be reused, recycled, or returned to the supplier will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Solids Disposal : Drilling solids will be stored (until haul-off) on-site in separate containers with no other waste, debris, or garbage products. Waste solids will be hauled to and disposed of at an approved disposal site (Industrial Ecosystem, Inc. or Envirotech, Inc.).

Fluid Program: See "Detailed Drilling Plan" section for specifics and fluid program from Newpark. Sufficient weighting agent will be on location to weight up mud system to balance the maximum expected pressure gradient.

DETAILED DRILLING PLAN:

SURFACE: ***Drill vertically to casing setting depth, run casing, cement casing to surface.***

0 ft (MD)	to	350 ft (MD)	Hole Section Length:	350 ft
0 ft (TVD)	to	350 ft (TVD)	Casing Required:	350 ft

Note: Surface hole may be drilled, cased, and cemented with a smaller rig in advance of the drilling rig.

Fluid:

Type	MW (ppg)	FL (mL/30 min)	PV (cp)	YP (lb/100 sqft)	pH	Comments
Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud mud

Hole Size: 17-1/2"

Bit / Motor: Mill Tooth or PDC, no motor

MWD / Survey: No MWD, run deviation survey after drilling

Logging: None

Casing Specs:

	Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)

Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading					153	1,520	116,634	116,634
Min. S.F.					**7.39**	**1.80**	**7.31**	**7.79**

Assumptions: ***Collapse*** *: partially evacuated casing with 8.4 ppg fluid outside casing*

Burst *: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling intermediate hole and 8.4 ppg equivalent external pressure gradient*

Tension *: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull*

MU Torque (ft lbs): *Minumum: N/A Optimum: N/A Maximum: N/A*

Make-up as per API Buttress Connection running procedure.

Casing Details: Float shoe, 1 jt casing, float collar, casing to surface

Centralizers: 2 centralizers per jt stop-banded 10' from each collar on bottom 3 jts, 1 centralizer per 2 jts to surface

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**Ann Cap. (cuft/ft)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**
	TYPE III	14.6	1.39	6.686	0.6946	100%	0	364

Annular Capacity 0.6946 cuft/ft *13-3/8" casing x 17-1/2" hole annulus* Csg capacity 0.8680 ft3/ft

Drake Energy Services: Calculated cement volumes assume gauge hole and the excess noted in table

		Calcium Chloride	D-CD2 .3% BWOC	
	ASTM Type III	2% BWOC	Dispersant/Friction	.25 lbs/sx Cello
Tail	*Blend*	Accelerator	reducer	Flake - seepage

Notify COGCC & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

INTERMEDIATE: ***Drill as per directional plan to casing setting depth, run casing, cement casing to surface.***

350 ft (MD)	**to**	**3,739 ft (MD)**	**Hole Section Length:**	**3,389 ft**
350 ft (TVD)	**to**	**3,542 ft (TVD)**	**Casing Required:**	**3,739 ft**

Fluid:	**Type**	**MW (ppg)**	**FL (mL/30 min)**	**PV (cp)**	**YP (lb/100 sqft)**	**pH**	**Comments**
	LSND (KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	

Hole Size: 12-1/4"

Bit / Motor: PDC w/mud motor

MWD / Survey: MWD with GR, inclination, and azimuth survey (every 100' at a minimum)

Logging: None

Pressure Test: NU BOPE and test (as noted above); pressure test 13-3/8" casing to **1,500** psi for 30 minutes.

Maximum anticipated surface pressure while drilling intermediate hole section is 1,350 psi

Casing Specs:		**Wt (lb/ft)**	**Grade**	**Conn.**	**Collapse (psi)**	**Burst (psi)**	**Tens. Body (lbs)**	**Tens. Conn (lbs)**
Specs	9.625	36.0	J55	LTC	2,020	3,520	564,000	453,000
Loading					755	1,395	211,197	211,197
Min. S.F.					**2.68**	**2.52**	**2.67**	**2.14**

Assumptions: Collapse: evacuated casing with 8.33 ppg equiv external pressure gradient, .22 psi/ft backup

Burst: maximum anticipated surface pressure with 9.5 ppg fluid inside casing while drilling production hole and 8.4 ppg equivalent external pressure gradient

Tension: buoyed weight in 8.4 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,400 Optimum: 4,530 Maximum: 5,660* DV depth *N/A*

Casing Summary: Float shoe, 1 jt casing, float collar, casing to surface (Float Equipment from Weatherford)

Centralizers: 1 per joint in non-vertical hole; 1 per 3-joints in vertical hole

Cement:	**Type**	**Weight (ppg)**	**Yield (cuft/sk)**	**Water (gal/sk)**	**% Excess**	**Planned TOC (ft MD)**	**Total Cmt (sx)**

Stage 1	*Spacer*	D-Mud Breaker	8.5				0	10 bbls
	Lead	90:10 Type III:POZ	12.5	2.140	12.05	70%	0	865
	Tail	Type III	14.6	1.380	6.61	20%	3,239	150
	Displacement	*286*	*est bbls*					

Annular Capacity
0.3627 cuft/ft *9-5/8" casing x 13-3/8" casing annulus*
0.3132 cuft/ft *9-5/8" casing x 12-1/4" hole annulus*
0.4341 cuft/ft *9-5/8" casing vol* *est shoe jt ft* 44

Calculated cement volumes assume gauge hole and the excess (open hole only) noted in table

Spacer	*D-Mud Breaker*	SAPP						
Lead	*ASTM Type III 90/10 Poz*	D-CSE 1 5.0% BWOC Strength Enhancer	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP 1 .5% BWOC Defoamer	D-R1 .5% Retarder
Tail	*ASTM Type III Blend*		D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control	Cello Flace LCM .25 lb/sx				

Drake Intermediate Cementing Program

Cement must achieve 500 psi compressive strength before drilling out.
Notify NMOCD & BLM if cement is not circulated to surface. Cement must achieve 500 psi compressive strength before drilling out.

PRODUCTION: ***Drill to TD following directional plan, run casing, cement casing to surface.***

3,739	**ft (MD)**	**to**	**12,636**	**ft (MD)**	**Hole Section Length: 8,897 ft**
3,542	**ft (TVD)**	**to**	**5,597**	**ft (TVD)**	**Casing Required: 12,636 ft**

Estimated KOP:	**5,250**	**ft (MD)**	**4,936**	**ft (TVD)**
Estimated Landing Point (P.O.E.):	**5,896**	**ft (MD)**	**5,547**	**ft (TVD)**
Estimated Lateral Length:	**6,740**	**ft (MD)**		

Fluid:	**Type**	**MW (ppg)**	**WPS ppm**	**HTHP**	**YP (lb/100 sqft)**	**ES**	**OWR**	**Comment**
	OBM	8.0 - 9.0	120,000 CaCl	NC	±6	+300	80:20	WBM as contingency

Hole Size: 8-1/2"
Bit / Motor: PDC w/mud motor
MWD / Survey: MWD with GR, inclination, and azimuth (survey every joint from KOP to Landing Point and survey every 100' minimum before KOP and after Landing Point)
Logging: GR MWD for entire section, no mud-log or cuttings sampling, no OH WL logs
Pressure Test: NU BOPE and test (as noted above); pressure test 9-5/8" casing to **1,500** psi for 30 minutes.

Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	5.500	17.0	P-110	LTC	7,460	10,640	546,000	445,000
Loading					2,765	8,117	182,105	182,105
Min. S.F.					**2.70**	**1.31**	**3.00**	**2.44**

Assumptions: *Collapse: fully evacuated casing with 9.5 ppg fluid in the annulus (floating casing during running)*
Burst: 8,500 psi maximum surface treating pressure with 10.2 ppg equivalent mud weight sand laden fluid with 8.4 ppg equivalent external pressure gradient
Tension: buoyed weight in 9.0 ppg fluid with 100,000 lbs over-pull

MU Torque (ft lbs): *Minumum: 3,470 Optimum: 4,620 Maximum: 5,780*

Centralizers: *Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys* ***(ARSENAL***

Cement:	Type	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess Open Hole	Planned TOC (ft MD)	Total Cmt (sx)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	637
Tail	G:POZ blend	13.3	1.570	7.70	10%	4,770	1,271

Displacement *278* *est bbls*

Annular Capacity 0.2691 cuft/ft *5-1/2" casing x 9-5/8" casing annulus*

0.2291 cuft/ft *5-1/2" casing x 8-1/2" hole annulus*

0.1245 cuft/ft *5-1/2" casing vol* *est shoe jt ft* 100

Calculated cement volumes assume gauge hole and the excess noted in table

American Cementing Liner & Production Blend

Spacer	*S-8 Silica Flour 163.7 lbs/bbl*	Avis 616 viscosifier 11.6 lb/bbl	FP24 Defoamer .5 lb/bbl	IntegraGuard Star Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Lead	*ASTM Type I/II*	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R7C Retarder .2% BWOB	FP24 Defoamer 0.3% BWOB, Anti-Static .01 lb/sx	
Tail	*Type G 50%*	Pozzolan Fly Ash Extender 50%	BA90 Bonding Agent 3.0 lb/sx	Bentonite Viscosifier 4% BWOB	FL24 Fluid Loss .4% BWOB	IntegraGuard GW86 Viscosifier .1% BWOB	R3 Retarder .5% BWOB	FP24 Defoamer .3% BWOB, IntegraSeal 0.25 lb/sx

Note: This well will not be considered an unorthodox well location as definted by NMAC19.15.16.15.C.5. As defined in NMAC 19.15.16.15.C.1.a and 19.15.16.15.C.1.b, no point in the completed interval shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth well. The boundaries of the completed interval, as defined by NMAC 19.15.16.7.B, are the last take point and first take point, as defined by NMAC 19.15.16.7.E and NMAC 19.15.16.7.J, respectively. In the case of this well, the last take point will be the bottom toe-initiation sleeve, and the first take point will be the top perforation. **Neither the toe-initiation sleeve nor the top perforation shall be closer to the unit boundary than 100' measured along the azimuth of the well or 330' measured perpendicular to the azimuth of the well.**

FINISH WELL: ***ND BOP, cap well, RDMO.***

COMPLETION AND PRODUCTION PLAN:

Est Lateral Length: 6,480

Est Frac Inform: *27 Frac Stages 104,000 bbls slick water 8,430,000 lbs proppant*

Flowback: Flow back through production tubing as pressures allow

Production: Produce through production tubing into permanent production and storage facilities

ESTIMATED START DATES:

Drilling: 2/1/2024

Completion: 5/2/2024

Production: 7/1/2024

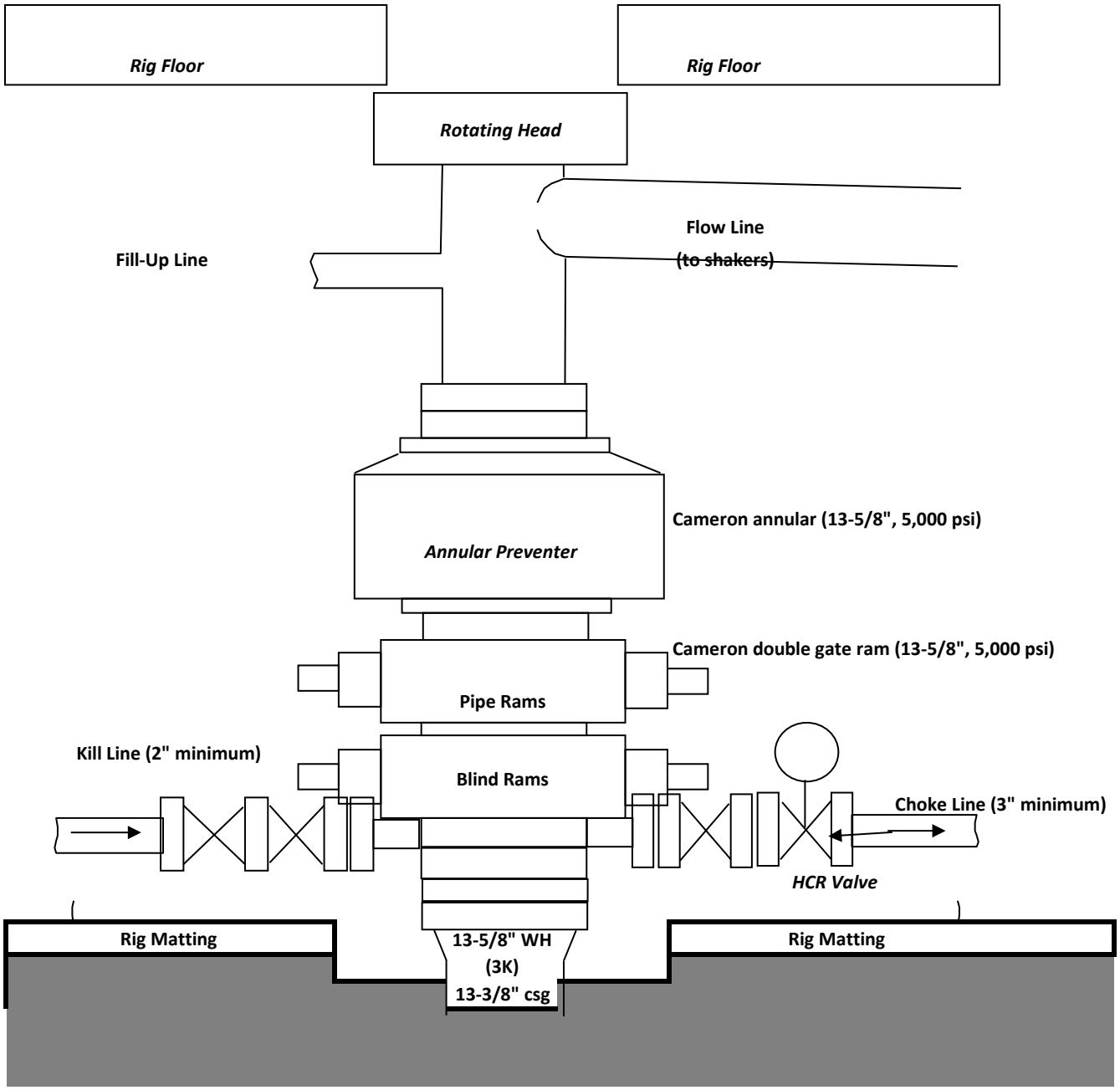
Prepared by: **Greg Olson** **8/9/2023**

Updated by:

NW Lybrook Unit 139H

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

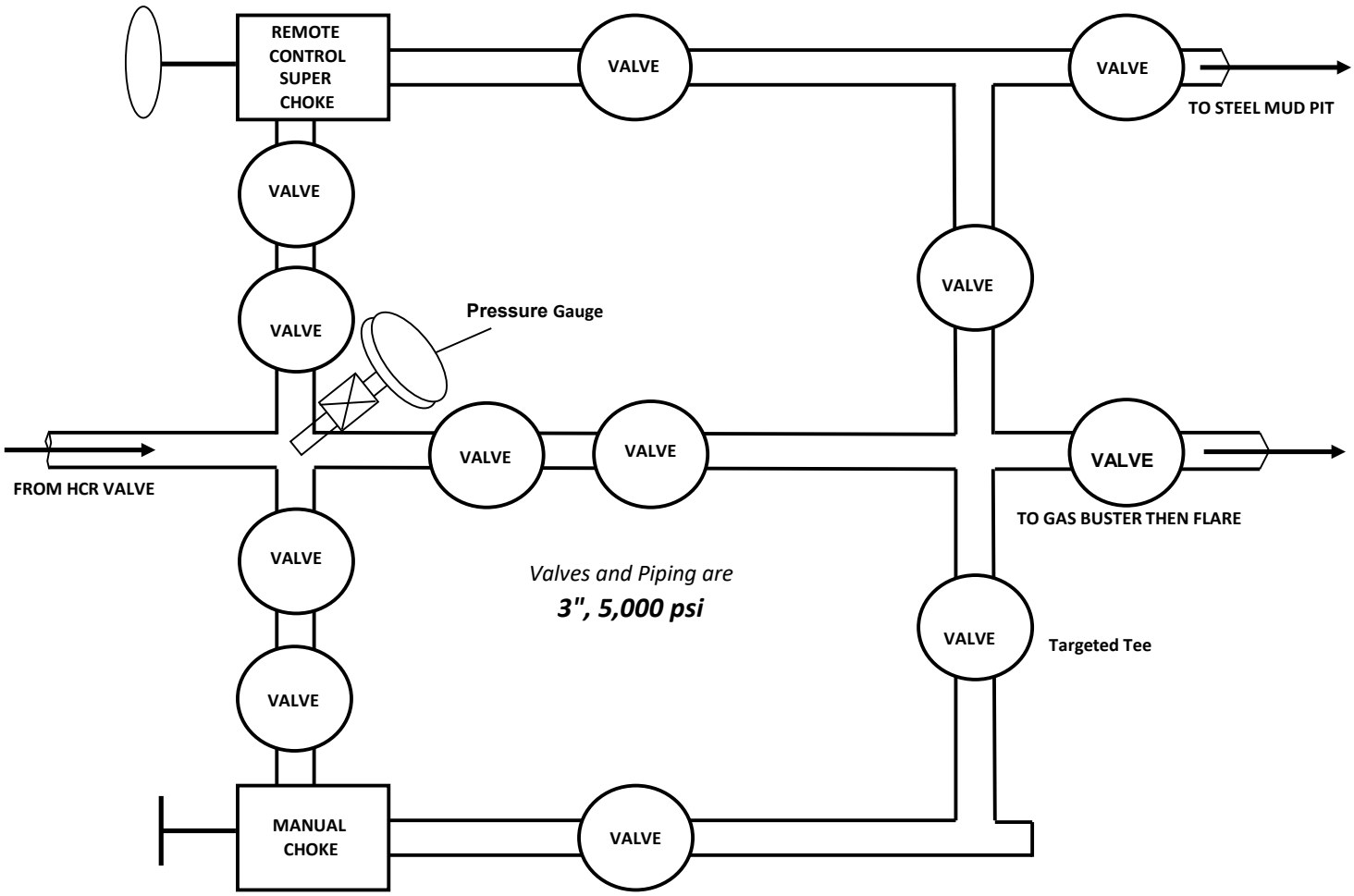
BOPE



NW Lybrook Unit 139H

NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

CHOKE MANIFOLD



WELL NAME: **NW LYBROOK UNIT 139H**

OBJECTIVE: **Drill, complete, equip single lateral Mancos formation Gallup member.**

API Number: Not assigned yet

State: New Mexico

County: San Juan

Surface Elev.:	6,847	ft ASL (GL)	6,872	ft ASL (KB)		
Surface Location:	25-24-8	Sec-Twn- Rng	263	ft FSL	311	ft FWL
BH Location:	30-24-7	Sec-Twn- Rng	1998	ft FSL	1225	ft FWL

Driving Directions: From the intersection of US HWY 550 & US HWY 64 in Bloomfield, NM: South on US HWY 550 for 43.5 mles to MM 108.3; Left (North) on County Road #7998 for 0.5 miles to fork; Left (North) continuing on Rd #7998 for 0.5 miles to T; Left (NorthWest) for 0.6 miles to acces road; Left (West) for 0.3 miles into NW Lybrook Unit 131H Pad. The 138H will be one of 4 wells to be added to an existing, 3 well pad. The 138H will be the furthest west well and furthest from the location entrance. From east to west will be NW Lybrook 141H, NW Lybrook 140H, NW Lybrook 289H (existing well). NW Lybrook 131H (existing well), Lybrook 2408 237H (existing well), NW Lybrook 139H, NW Lybrook 138H

QUICK REFERENCE		
Sur TD (MD)	350	ft
Int TD (MD)	3,739	ft
KOP (MD)	5,250	ft
KOP (TVD)	4,936	ft
Target (TVD)	5,547	ft
Curve BUR	10	°/100 ft
POE (MD)	5,896	ft
TD (MD)	12,636	ft
Lat Len (ft)	6,740	ft

WELL CONSTRUCTION SUMMARY:

	Hole (in)	TD MD (ft)	Csg (in)	Csg (lb/ft)	Csg (grade)	Csg (conn)	Csg Top (ft)	Csg Bot (ft)
Surface	17.500	350	13.375	54.5	J-55	BTC	0	350
Intermediate	12.250	3,739	9.625	36	J55	LTC	0	3,739
Production	8.500	12,636	5.500	17.0	P-110	LTC	0	12,636

CEMENT PROPERTIES SUMMARY:

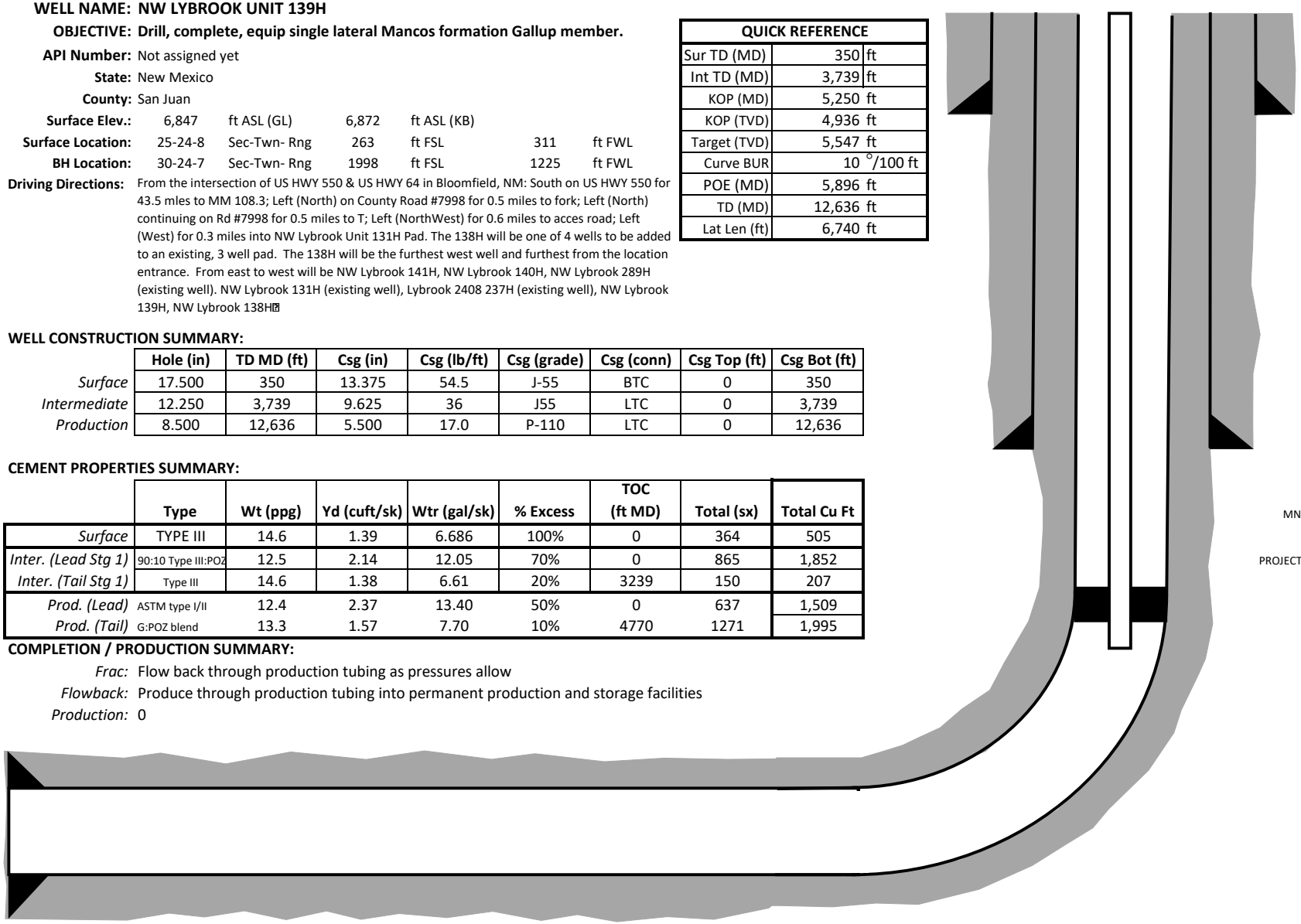
	Type	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	% Excess	TOC (ft MD)	Total (sx)	Total Cu Ft
Surface	TYPE III	14.6	1.39	6.686	100%	0	364	505
Inter. (Lead Stg 1)	90:10 Type III:POZ	12.5	2.14	12.05	70%	0	865	1,852
Inter. (Tail Stg 1)	Type III	14.6	1.38	6.61	20%	3239	150	207
Prod. (Lead)	ASTM type I/II	12.4	2.37	13.40	50%	0	637	1,509
Prod. (Tail)	G:POZ blend	13.3	1.57	7.70	10%	4770	1271	1,995

COMPLETION / PRODUCTION SUMMARY:

Frac: Flow back through production tubing as pressures allow

Flowback: Produce through production tubing into permanent production and storage facilities

Production: 0



Formation Tops	TVD (ft KB)	MD (ft KB)
Nacimiento	0	0
Ojo Alamo	1,222	1,229
Kirtland	1,352	1,365
Fruitland	1,572	1,602
Pictured Cliffs	1,882	1,938
Lewis	1,982	2,046
Chacra A	2,292	2,382
Cliff House Basal	3,387	3,568
Menefee	3,392	3,573
Point Lookout	4,262	4,515
Mancos	4,497	4,770
MNCS_A	4,867	5,170
MNCS_B	4,952	5,262
MNCS_C	5,072	5,390
MNCS_Cms	5,152	5,478
MNCS_D	5,232	5,569
MNCS_E	5,312	5,668
MNCS_F	5,367	5,744
MNCS_G	5,457	5,896
MNCS_H	5,497	5,977
MNCS I TARGET (POE)	5,547	6,121
FTP TARGET	5,526	6,056
PROJECTED WELL TD (BHL)	5,597	12,636

Well: NW Lybrook Unit 139H
Site: NW Lybrook (138, 139, 140 & 141)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig:

MARKSMAN DIRECTIONAL

Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
1	0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
2	700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	KOP Begin 3°/100' build
3	1457.02	22.71	331.825	1437.35	130.53	-69.92	3.00	331.83	-70.76	Begin 22.71° tangent
4	5216.52	22.71	331.825	4905.37	1410.00	-755.24	0.00	0.00	-764.35	Begin 10°/100' build/turn
5	5895.65	60.00	76.590	5454.20	1618.80	-500.54	10.00	115.34	-511.02	Begin 60.00° tangent
6	5955.65	60.00	76.590	5484.20	1630.85	-450.00	0.00	0.00	-460.55	Begin 10°/100' build
7	6252.45	89.68	76.590	5560.95	1696.55	-174.44	10.00	0.00	-185.43	Begin 2°/100' turn
8	6941.47	89.68	90.371	5564.84	1774.59	508.47	2.00	90.05	496.97	Begin 89.68° lateral
9	12636.44	89.68	90.371	5597.00	1737.74	6203.22	0.00	0.00	6191.84	PBHL/TD 12636.44 MD 5597.00 TVD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
NW Lybrook 139H FTP 2043 FSL 100 FWL	5560.95	1779.02	-174.18	1922601.520	2779516.222	36.283644000	-107.641885000
NW Lybrook 139H 0VS	5562.00	1777.82	11.50	1922600.320	2779701.900	36.283639694	-107.641255005
NW Lybrook 139H LTP 1998 FSL 1225 FWL	5597.00	1737.74	6203.22	1922560.239	2785893.604	36.283494000	-107.620247000

CASING DETAILS

TVD	MD	Name
350.00	350.00	13 3/8" Csg
3542.00	3738.56	9 5/8" Csg

T G M

Azimuths to Grid North
True North: -0.11°
Magnetic North: 8.47°

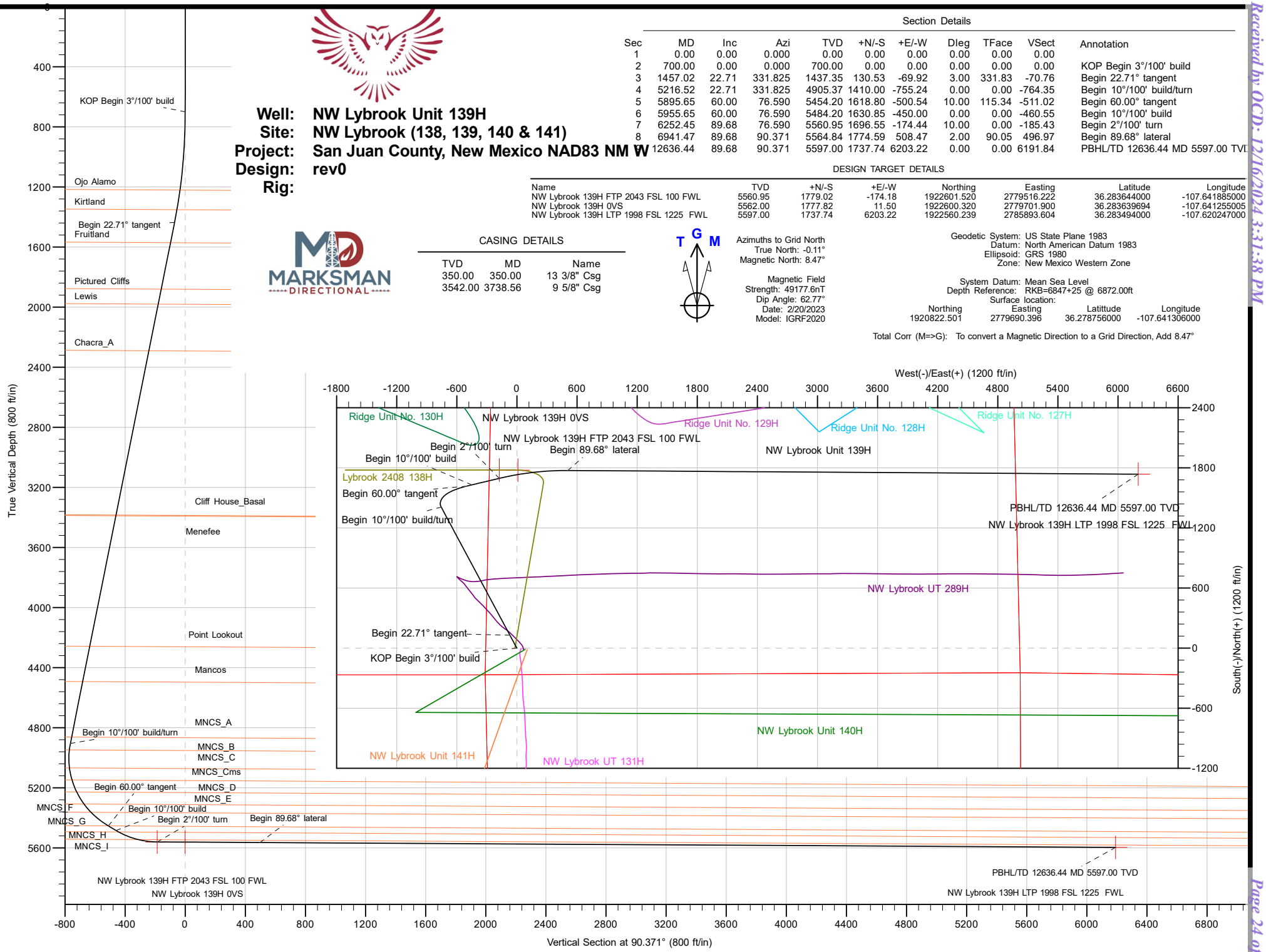
Magnetic Field
Strength: 49177.6nT
Dip Angle: 62.77°
Date: 2/20/2023
Model: IGRF2020

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

System Datum: Mean Sea Level
Depth Reference: RKB=6847+25 @ 6872.00ft
Surface location:

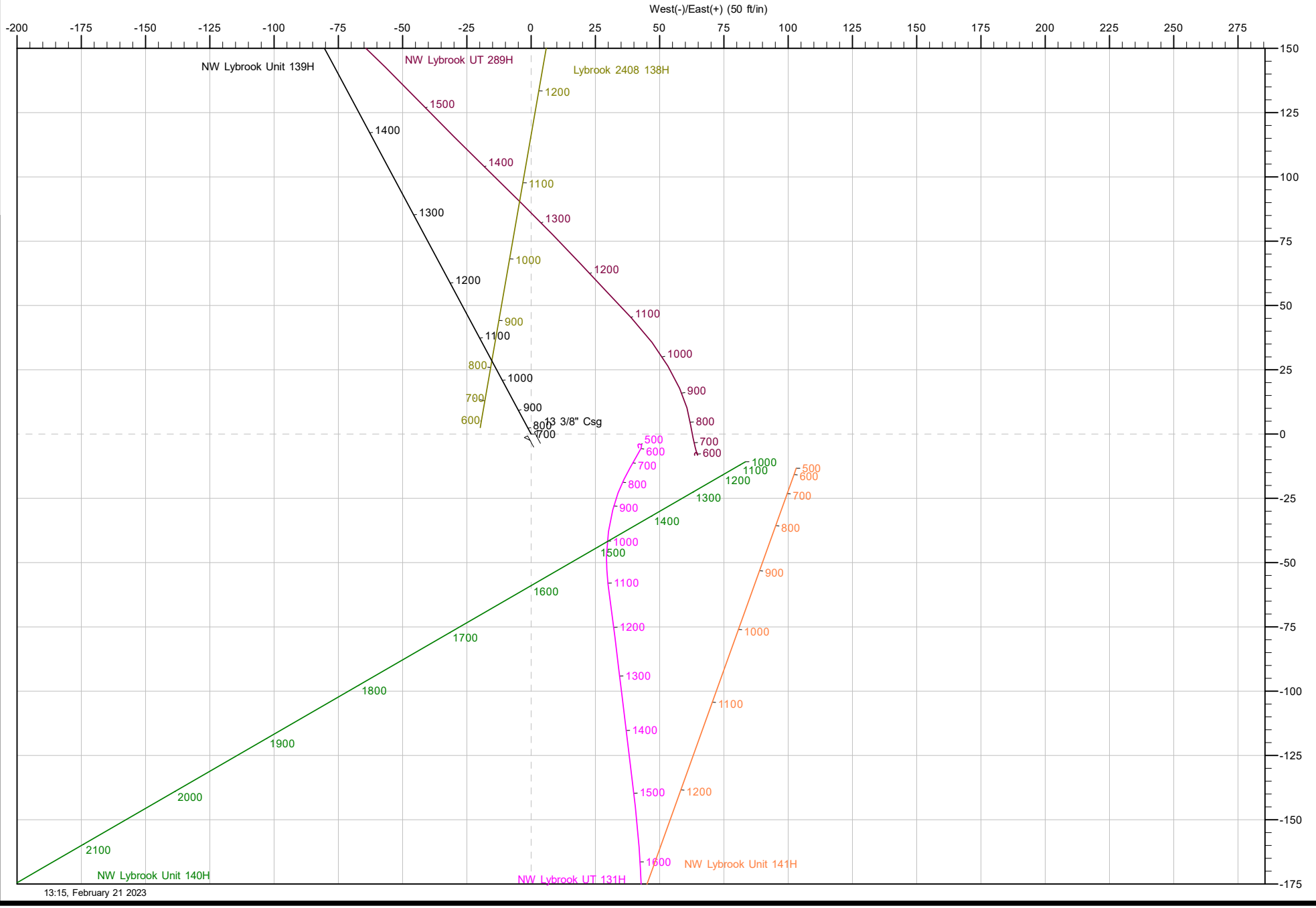
Northing	Easting	Latitude	Longitude
1920822.501	2779690.396	36.278756000	-107.641306000

Total Corr (M=>G): To convert a Magnetic Direction to a Grid Direction, Add 8.47°



Well: NW Lybrook Unit 139H
Site: NW Lybrook (138, 139, 140 & 141)
Project: San Juan County, New Mexico NAD83 NM W
Design: rev0
Rig:

MARKSMAN DIRECTIONAL



Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project San Juan County, New Mexico NAD83 NM W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site NW Lybrook (138, 139, 140 & 141)

Site Position:		**Northing:**	1,920,822.501 usft	**Latitude:**	36.278756000
From:	Lat/Long	**Easting:**	2,779,690.396 usft	**Longitude:**	-107.641306000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well NW Lybrook Unit 139H, Surf loc: 263 FSL 311 FWL Section 25-T24N-R08W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,920,822.501 usft	**Latitude:**	36.278756000
	+E/-W	0.00 ft	**Easting:**	2,779,690.396 usft	**Longitude:**	-107.641306000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,847.00 ft
Grid Convergence:		0.11 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/20/2023	8.59	62.77	49,177.60822071

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	90.371

Plan Survey Tool Program **Date** 2/21/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,636.44	rev0 (Original Hole)	MWD OWSG MWD - Standard	

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,457.02	22.71	331.825	1,437.35	130.53	-69.92	3.00	3.00	0.00	331.83	
5,216.52	22.71	331.825	4,905.37	1,410.00	-755.24	0.00	0.00	0.00	0.00	
5,895.65	60.00	76.590	5,454.20	1,618.80	-500.54	10.00	5.49	15.43	115.34	
5,955.65	60.00	76.590	5,484.20	1,630.85	-450.00	0.00	0.00	0.00	0.00	
6,252.45	89.68	76.590	5,560.95	1,696.55	-174.44	10.00	10.00	0.00	0.00	
6,941.47	89.68	90.371	5,564.84	1,774.59	508.47	2.00	0.00	2.00	90.05	
12,636.44	89.68	90.371	5,597.00	1,737.74	6,203.22	0.00	0.00	0.00	0.00	NW Lybrook 139H LT

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.000	350.00	0.00	0.00	0.00	0.00	0.00	0.00
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP Begin 3°/100' build									
800.00	3.00	331.825	799.95	2.31	-1.24	-1.25	3.00	3.00	0.00
900.00	6.00	331.825	899.63	9.22	-4.94	-5.00	3.00	3.00	0.00
1,000.00	9.00	331.825	998.77	20.73	-11.10	-11.24	3.00	3.00	0.00
1,100.00	12.00	331.825	1,097.08	36.79	-19.71	-19.94	3.00	3.00	0.00
1,200.00	15.00	331.825	1,194.31	57.37	-30.73	-31.10	3.00	3.00	0.00
1,228.53	15.86	331.825	1,221.81	64.06	-34.31	-34.72	3.00	3.00	0.00
Ojo Alamo									
1,300.00	18.00	331.825	1,290.18	82.40	-44.14	-44.67	3.00	3.00	0.00
1,365.05	19.95	331.825	1,351.69	101.05	-54.12	-54.78	3.00	3.00	0.00
Kirtland									
1,400.00	21.00	331.825	1,384.43	111.82	-59.90	-60.62	3.00	3.00	0.00
1,457.02	22.71	331.825	1,437.35	130.53	-69.92	-70.76	3.00	3.00	0.00
Begin 22.71° tangent									
1,500.00	22.71	331.825	1,477.00	145.16	-77.75	-78.69	0.00	0.00	0.00
1,600.00	22.71	331.825	1,569.25	179.19	-95.98	-97.14	0.00	0.00	0.00
1,602.39	22.71	331.825	1,571.46	180.01	-96.42	-97.58	0.00	0.00	0.00
Fruitland									
1,700.00	22.71	331.825	1,661.49	213.23	-114.21	-115.59	0.00	0.00	0.00
1,800.00	22.71	331.825	1,753.74	247.26	-132.44	-134.04	0.00	0.00	0.00
1,900.00	22.71	331.825	1,845.99	281.29	-150.67	-152.49	0.00	0.00	0.00
1,938.07	22.71	331.825	1,881.11	294.25	-157.61	-159.51	0.00	0.00	0.00
Pictured Cliffs									
2,000.00	22.71	331.825	1,938.23	315.32	-168.90	-170.94	0.00	0.00	0.00
2,046.36	22.71	331.825	1,981.00	331.10	-177.35	-179.49	0.00	0.00	0.00
Lewis									
2,100.00	22.71	331.825	2,030.48	349.36	-187.13	-189.38	0.00	0.00	0.00
2,200.00	22.71	331.825	2,122.73	383.39	-205.36	-207.83	0.00	0.00	0.00
2,300.00	22.71	331.825	2,214.97	417.42	-223.58	-226.28	0.00	0.00	0.00
2,382.04	22.71	331.825	2,290.65	445.34	-238.54	-241.42	0.00	0.00	0.00
Chacra_A									
2,400.00	22.71	331.825	2,307.22	451.46	-241.81	-244.73	0.00	0.00	0.00
2,500.00	22.71	331.825	2,399.47	485.49	-260.04	-263.18	0.00	0.00	0.00
2,600.00	22.71	331.825	2,491.71	519.52	-278.27	-281.63	0.00	0.00	0.00
2,700.00	22.71	331.825	2,583.96	553.55	-296.50	-300.08	0.00	0.00	0.00
2,800.00	22.71	331.825	2,676.21	587.59	-314.73	-318.53	0.00	0.00	0.00
2,900.00	22.71	331.825	2,768.45	621.62	-332.96	-336.98	0.00	0.00	0.00
3,000.00	22.71	331.825	2,860.70	655.65	-351.19	-355.43	0.00	0.00	0.00
3,100.00	22.71	331.825	2,952.95	689.69	-369.42	-373.87	0.00	0.00	0.00
3,200.00	22.71	331.825	3,045.19	723.72	-387.65	-392.32	0.00	0.00	0.00
3,300.00	22.71	331.825	3,137.44	757.75	-405.87	-410.77	0.00	0.00	0.00
3,400.00	22.71	331.825	3,229.69	791.78	-424.10	-429.22	0.00	0.00	0.00
3,500.00	22.71	331.825	3,321.94	825.82	-442.33	-447.67	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,567.75	22.71	331.825	3,384.43	848.87	-454.68	-460.17	0.00	0.00	0.00
Cliff House_Basal									
3,573.16	22.71	331.825	3,389.42	850.72	-455.67	-461.17	0.00	0.00	0.00
Menefee									
3,600.00	22.71	331.825	3,414.18	859.85	-460.56	-466.12	0.00	0.00	0.00
3,700.00	22.71	331.825	3,506.43	893.88	-478.79	-484.57	0.00	0.00	0.00
3,738.56	22.71	331.825	3,542.00	907.01	-485.82	-491.68	0.00	0.00	0.00
9 5/8" Csg									
3,800.00	22.71	331.825	3,598.68	927.92	-497.02	-503.02	0.00	0.00	0.00
3,900.00	22.71	331.825	3,690.92	961.95	-515.25	-521.47	0.00	0.00	0.00
4,000.00	22.71	331.825	3,783.17	995.98	-533.48	-539.92	0.00	0.00	0.00
4,100.00	22.71	331.825	3,875.42	1,030.01	-551.71	-558.37	0.00	0.00	0.00
4,200.00	22.71	331.825	3,967.66	1,064.05	-569.94	-576.81	0.00	0.00	0.00
4,300.00	22.71	331.825	4,059.91	1,098.08	-588.17	-595.26	0.00	0.00	0.00
4,400.00	22.71	331.825	4,152.16	1,132.11	-606.39	-613.71	0.00	0.00	0.00
4,500.00	22.71	331.825	4,244.40	1,166.15	-624.62	-632.16	0.00	0.00	0.00
4,515.23	22.71	331.825	4,258.45	1,171.33	-627.40	-634.97	0.00	0.00	0.00
Point Lookout									
4,600.00	22.71	331.825	4,336.65	1,200.18	-642.85	-650.61	0.00	0.00	0.00
4,700.00	22.71	331.825	4,428.90	1,234.21	-661.08	-669.06	0.00	0.00	0.00
4,769.70	22.71	331.825	4,493.19	1,257.93	-673.79	-681.92	0.00	0.00	0.00
Mancos									
4,800.00	22.71	331.825	4,521.14	1,268.24	-679.31	-687.51	0.00	0.00	0.00
4,900.00	22.71	331.825	4,613.39	1,302.28	-697.54	-705.96	0.00	0.00	0.00
5,000.00	22.71	331.825	4,705.64	1,336.31	-715.77	-724.41	0.00	0.00	0.00
5,100.00	22.71	331.825	4,797.88	1,370.34	-734.00	-742.86	0.00	0.00	0.00
5,170.35	22.71	331.825	4,862.78	1,394.28	-746.82	-755.83	0.00	0.00	0.00
MNCS_A									
5,200.00	22.71	331.825	4,890.13	1,404.38	-752.23	-761.30	0.00	0.00	0.00
5,216.52	22.71	331.825	4,905.37	1,410.00	-755.24	-764.35	0.00	0.00	0.00
Begin 10°/100' build/turn									
5,250.00	21.48	340.112	4,936.40	1,421.46	-760.38	-769.56	10.00	-3.67	24.75
5,262.13	21.14	343.316	4,947.69	1,425.64	-761.76	-770.97	10.00	-2.79	26.43
MNCS_B									
5,300.00	20.50	353.831	4,983.11	1,438.79	-764.43	-773.73	10.00	-1.70	27.76
5,350.00	20.66	8.081	5,029.95	1,456.23	-764.14	-773.55	10.00	0.32	28.50
5,390.46	21.61	19.001	5,067.70	1,470.35	-760.70	-770.21	10.00	2.36	26.99
MNCS_C									
5,400.00	21.94	21.421	5,076.56	1,473.67	-759.48	-769.01	10.00	3.39	25.36
5,450.00	24.16	32.894	5,122.59	1,490.97	-750.51	-760.15	10.00	4.44	22.95
5,477.79	25.71	38.361	5,147.79	1,500.47	-743.68	-753.38	10.00	5.60	19.67
MNCS_Cms									
5,500.00	27.09	42.286	5,167.69	1,507.99	-737.28	-747.03	10.00	6.19	17.67
5,550.00	30.52	49.842	5,211.51	1,524.61	-719.91	-729.77	10.00	6.87	15.11
5,569.25	31.95	52.342	5,227.97	1,530.87	-712.14	-722.04	10.00	7.39	12.99
MNCS_D									
5,600.00	34.31	55.940	5,253.72	1,540.70	-698.52	-708.48	10.00	7.69	11.70
5,650.00	38.35	60.928	5,294.00	1,556.14	-673.27	-683.33	10.00	8.07	9.98
5,668.35	39.88	62.538	5,308.24	1,561.62	-663.07	-673.17	10.00	8.33	8.77
MNCS_E									
5,700.00	42.56	65.084	5,332.05	1,570.81	-644.36	-654.52	10.00	8.48	8.04
5,744.08	46.38	68.224	5,363.50	1,583.02	-616.01	-626.24	10.00	8.67	7.12

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
MNCS_F									
5,750.00	46.90	68.614	5,367.56	1,584.60	-612.01	-622.25	10.00	8.77	6.60
5,800.00	51.34	71.672	5,400.29	1,597.40	-576.46	-586.79	10.00	8.87	6.11
5,850.00	55.84	74.369	5,429.96	1,609.12	-537.98	-548.39	10.00	9.01	5.40
5,895.54	59.99	76.585	5,454.15	1,618.78	-500.64	-511.11	10.00	9.11	4.87
MNCS_G									
5,895.65	60.00	76.590	5,454.20	1,618.80	-500.54	-511.02	10.00	9.15	4.65
Begin 60.00° tangent									
5,900.00	60.00	76.590	5,456.38	1,619.67	-496.88	-507.36	0.00	0.00	0.00
5,955.65	60.00	76.590	5,484.20	1,630.85	-450.00	-460.55	0.00	0.00	0.00
Begin 10°/100' build									
5,977.00	62.14	76.590	5,494.53	1,635.18	-431.82	-442.40	10.00	10.00	0.00
MNCS_H									
6,000.00	64.44	76.590	5,504.87	1,639.95	-411.84	-422.45	10.00	10.00	0.00
6,050.00	69.44	76.590	5,524.45	1,650.61	-367.10	-377.78	10.00	10.00	0.00
6,100.00	74.44	76.590	5,539.95	1,661.63	-320.88	-331.63	10.00	10.00	0.00
6,121.20	76.56	76.590	5,545.26	1,666.39	-300.92	-311.70	10.00	10.00	0.00
MNCS_I									
6,150.00	79.44	76.590	5,551.25	1,672.93	-273.52	-284.34	10.00	10.00	0.00
6,200.00	84.44	76.590	5,558.26	1,684.40	-225.38	-236.28	10.00	10.00	0.00
6,252.45	89.68	76.590	5,560.95	1,696.55	-174.44	-185.43	10.00	10.00	0.00
Begin 2°/100' turn									
6,300.00	89.68	77.541	5,561.22	1,707.19	-128.10	-139.15	2.00	0.00	2.00
6,400.00	89.68	79.541	5,561.78	1,727.06	-30.10	-41.28	2.00	0.00	2.00
6,500.00	89.68	81.541	5,562.34	1,743.49	68.53	57.24	2.00	0.00	2.00
6,600.00	89.68	83.541	5,562.91	1,756.47	167.68	156.30	2.00	0.00	2.00
6,700.00	89.68	85.541	5,563.48	1,765.98	267.22	255.78	2.00	0.00	2.00
6,800.00	89.68	87.541	5,564.04	1,772.01	367.03	355.55	2.00	0.00	2.00
6,900.00	89.68	89.541	5,564.61	1,774.56	466.99	455.49	2.00	0.00	2.00
6,941.47	89.68	90.371	5,564.84	1,774.59	508.47	496.97	2.00	0.00	2.00
Begin 89.68° lateral									
7,000.00	89.68	90.371	5,565.17	1,774.21	566.99	555.49	0.00	0.00	0.00
7,100.00	89.68	90.371	5,565.74	1,773.57	666.99	655.49	0.00	0.00	0.00
7,200.00	89.68	90.371	5,566.30	1,772.92	766.98	755.49	0.00	0.00	0.00
7,300.00	89.68	90.371	5,566.87	1,772.27	866.98	855.49	0.00	0.00	0.00
7,400.00	89.68	90.371	5,567.43	1,771.63	966.98	955.48	0.00	0.00	0.00
7,500.00	89.68	90.371	5,568.00	1,770.98	1,066.97	1,055.48	0.00	0.00	0.00
7,600.00	89.68	90.371	5,568.56	1,770.33	1,166.97	1,155.48	0.00	0.00	0.00
7,700.00	89.68	90.371	5,569.12	1,769.68	1,266.96	1,255.48	0.00	0.00	0.00
7,800.00	89.68	90.371	5,569.69	1,769.04	1,366.96	1,355.48	0.00	0.00	0.00
7,900.00	89.68	90.371	5,570.25	1,768.39	1,466.96	1,455.48	0.00	0.00	0.00
8,000.00	89.68	90.371	5,570.82	1,767.74	1,566.95	1,555.47	0.00	0.00	0.00
8,100.00	89.68	90.371	5,571.38	1,767.10	1,666.95	1,655.47	0.00	0.00	0.00
8,200.00	89.68	90.371	5,571.95	1,766.45	1,766.95	1,755.47	0.00	0.00	0.00
8,300.00	89.68	90.371	5,572.51	1,765.80	1,866.94	1,855.47	0.00	0.00	0.00
8,400.00	89.68	90.371	5,573.08	1,765.15	1,966.94	1,955.47	0.00	0.00	0.00
8,500.00	89.68	90.371	5,573.64	1,764.51	2,066.94	2,055.47	0.00	0.00	0.00
8,600.00	89.68	90.371	5,574.21	1,763.86	2,166.93	2,155.46	0.00	0.00	0.00
8,700.00	89.68	90.371	5,574.77	1,763.21	2,266.93	2,255.46	0.00	0.00	0.00
8,800.00	89.68	90.371	5,575.34	1,762.57	2,366.92	2,355.46	0.00	0.00	0.00
8,900.00	89.68	90.371	5,575.90	1,761.92	2,466.92	2,455.46	0.00	0.00	0.00
9,000.00	89.68	90.371	5,576.47	1,761.27	2,566.92	2,555.46	0.00	0.00	0.00
9,100.00	89.68	90.371	5,577.03	1,760.62	2,666.91	2,655.46	0.00	0.00	0.00

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,200.00	89.68	90.371	5,577.59	1,759.98	2,766.91	2,755.46	0.00	0.00	0.00
9,300.00	89.68	90.371	5,578.16	1,759.33	2,866.91	2,855.45	0.00	0.00	0.00
9,400.00	89.68	90.371	5,578.72	1,758.68	2,966.90	2,955.45	0.00	0.00	0.00
9,500.00	89.68	90.371	5,579.29	1,758.04	3,066.90	3,055.45	0.00	0.00	0.00
9,600.00	89.68	90.371	5,579.85	1,757.39	3,166.89	3,155.45	0.00	0.00	0.00
9,700.00	89.68	90.371	5,580.42	1,756.74	3,266.89	3,255.45	0.00	0.00	0.00
9,800.00	89.68	90.371	5,580.98	1,756.10	3,366.89	3,355.45	0.00	0.00	0.00
9,900.00	89.68	90.371	5,581.55	1,755.45	3,466.88	3,455.44	0.00	0.00	0.00
10,000.00	89.68	90.371	5,582.11	1,754.80	3,566.88	3,555.44	0.00	0.00	0.00
10,100.00	89.68	90.371	5,582.68	1,754.15	3,666.88	3,655.44	0.00	0.00	0.00
10,200.00	89.68	90.371	5,583.24	1,753.51	3,766.87	3,755.44	0.00	0.00	0.00
10,300.00	89.68	90.371	5,583.81	1,752.86	3,866.87	3,855.44	0.00	0.00	0.00
10,400.00	89.68	90.371	5,584.37	1,752.21	3,966.87	3,955.44	0.00	0.00	0.00
10,500.00	89.68	90.371	5,584.94	1,751.57	4,066.86	4,055.43	0.00	0.00	0.00
10,600.00	89.68	90.371	5,585.50	1,750.92	4,166.86	4,155.43	0.00	0.00	0.00
10,700.00	89.68	90.371	5,586.07	1,750.27	4,266.85	4,255.43	0.00	0.00	0.00
10,800.00	89.68	90.371	5,586.63	1,749.62	4,366.85	4,355.43	0.00	0.00	0.00
10,900.00	89.68	90.371	5,587.19	1,748.98	4,466.85	4,455.43	0.00	0.00	0.00
11,000.00	89.68	90.371	5,587.76	1,748.33	4,566.84	4,555.43	0.00	0.00	0.00
11,100.00	89.68	90.371	5,588.32	1,747.68	4,666.84	4,655.43	0.00	0.00	0.00
11,200.00	89.68	90.371	5,588.89	1,747.04	4,766.84	4,755.42	0.00	0.00	0.00
11,300.00	89.68	90.371	5,589.45	1,746.39	4,866.83	4,855.42	0.00	0.00	0.00
11,400.00	89.68	90.371	5,590.02	1,745.74	4,966.83	4,955.42	0.00	0.00	0.00
11,500.00	89.68	90.371	5,590.58	1,745.09	5,066.82	5,055.42	0.00	0.00	0.00
11,600.00	89.68	90.371	5,591.15	1,744.45	5,166.82	5,155.42	0.00	0.00	0.00
11,700.00	89.68	90.371	5,591.71	1,743.80	5,266.82	5,255.42	0.00	0.00	0.00
11,800.00	89.68	90.371	5,592.28	1,743.15	5,366.81	5,355.41	0.00	0.00	0.00
11,900.00	89.68	90.371	5,592.84	1,742.51	5,466.81	5,455.41	0.00	0.00	0.00
12,000.00	89.68	90.371	5,593.41	1,741.86	5,566.81	5,555.41	0.00	0.00	0.00
12,100.00	89.68	90.371	5,593.97	1,741.21	5,666.80	5,655.41	0.00	0.00	0.00
12,200.00	89.68	90.371	5,594.54	1,740.56	5,766.80	5,755.41	0.00	0.00	0.00
12,300.00	89.68	90.371	5,595.10	1,739.92	5,866.80	5,855.41	0.00	0.00	0.00
12,400.00	89.68	90.371	5,595.66	1,739.27	5,966.79	5,955.40	0.00	0.00	0.00
12,500.00	89.68	90.371	5,596.23	1,738.62	6,066.79	6,055.40	0.00	0.00	0.00
12,600.00	89.68	90.371	5,596.79	1,737.98	6,166.78	6,155.40	0.00	0.00	0.00
12,636.44	89.68	90.371	5,597.00	1,737.74	6,203.22	6,191.84	0.00	0.00	0.00

PBHL/TD 12636.44 MD 5597.00 TVD

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NW Lybrook 139H 0VS - plan misses target center by 42.80ft at 6449.38ft MD (5562.06 TVD, 1735.60 N, 18.54 E) - Point	0.00	0.000	5,562.00	1,777.82	11.50	1,922,600.320	2,779,701.900	36.283639694	-107.641255006
NW Lybrook 139H FTP 1 - plan misses target center by 80.23ft at 6271.17ft MD (5561.06 TVD, 1700.83 N, -156.22 E) - Point	0.00	0.000	5,560.95	1,779.02	-174.18	1,922,601.519	2,779,516.222	36.283644000	-107.641885000
NW Lybrook 139H LTP 1 - plan hits target center - Point	0.00	0.000	5,597.00	1,737.74	6,203.22	1,922,560.238	2,785,893.603	36.283494000	-107.620247000

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
3,738.56	3,542.00	9 5/8" Csg	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,228.53	1,221.81	Ojo Alamo		0.32	90.371
1,365.05	1,351.69	Kirtland		0.32	90.371
1,602.39	1,571.46	Fruitland		0.32	90.371
1,938.07	1,881.11	Pictured Cliffs		0.32	90.371
2,046.36	1,981.00	Lewis		0.32	90.371
2,382.04	2,290.65	Chacra_A		0.32	90.371
3,567.75	3,384.43	Cliff House_Basal		0.32	90.371
3,573.16	3,389.42	Menefee		0.32	90.371
4,515.23	4,258.45	Point Lookout		0.32	90.371
4,769.70	4,493.19	Mancos		0.32	90.371
5,170.35	4,862.78	MNCS_A		0.32	90.371
5,262.13	4,947.69	MNCS_B		0.32	90.371
5,390.46	5,067.70	MNCS_C		0.32	90.371
5,477.79	5,147.79	MNCS_Cms		0.32	90.371
5,569.25	5,227.97	MNCS_D		0.32	90.371
5,668.35	5,308.24	MNCS_E		0.32	90.371
5,744.08	5,363.50	MNCS_F		0.32	90.371
5,895.54	5,454.15	MNCS_G		0.32	90.371
5,977.00	5,494.53	MNCS_H		0.32	90.371
6,121.20	5,545.26	MNCS_I		0.32	90.371

Planning Report

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
700.00	700.00	0.00	0.00	KOP Begin 3°/100' build
1,457.02	1,437.35	130.53	-69.92	Begin 22.71° tangent
5,216.52	4,905.37	1,410.00	-755.24	Begin 10°/100' build/turn
5,895.65	5,454.20	1,618.80	-500.54	Begin 60.00° tangent
5,955.65	5,484.20	1,630.85	-450.00	Begin 10°/100' build
6,252.45	5,560.95	1,696.55	-174.44	Begin 2°/100' turn
6,941.47	5,564.84	1,774.59	508.47	Begin 89.68° lateral
12,636.44	5,597.00	1,737.74	6,203.22	PBHL/TD 12636.44 MD 5597.00 TVD

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Project San Juan County, New Mexico NAD83 NM W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site NW Lybrook (138, 139, 140 & 141)

Site Position:		**Northing:**	1,920,822.501 usft	**Latitude:**	36.278756000
From:	Lat/Long	**Easting:**	2,779,690.396 usft	**Longitude:**	-107.641306000
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "		

Well NW Lybrook Unit 139H, Surf loc: 263 FSL 311 FWL Section 25-T24N-R08W

Well Position	**+N/-S**	0.00 ft	**Northing:**	1,920,822.501 usft	**Latitude:**	36.278756000
	+E/-W	0.00 ft	**Easting:**	2,779,690.396 usft	**Longitude:**	-107.641306000
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	6,847.00 ft
Grid Convergence:		0.11 °				

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	2/20/2023	8.59	62.77	49,177.60822071

Design rev0

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	90.371

Plan Survey Tool Program **Date** 2/21/2023

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,636.44	rev0 (Original Hole)	MWD OWSG MWD - Standard	

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,457.02	22.71	331.825	1,437.35	130.53	-69.92	3.00	3.00	0.00	331.83	
5,216.52	22.71	331.825	4,905.37	1,410.00	-755.24	0.00	0.00	0.00	0.00	
5,895.65	60.00	76.590	5,454.20	1,618.80	-500.54	10.00	5.49	15.43	115.34	
5,955.65	60.00	76.590	5,484.20	1,630.85	-450.00	0.00	0.00	0.00	0.00	
6,252.45	89.68	76.590	5,560.95	1,696.55	-174.44	10.00	10.00	0.00	0.00	
6,941.47	89.68	90.371	5,564.84	1,774.59	508.47	2.00	0.00	2.00	90.05	
12,636.44	89.68	90.371	5,597.00	1,737.74	6,203.22	0.00	0.00	0.00	0.00	NW Lybrook 139H LT

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.000	0.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
100.00	0.00	0.000	100.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
200.00	0.00	0.000	200.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
300.00	0.00	0.000	300.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
350.00	0.00	0.000	350.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
13 3/8" Csg									
400.00	0.00	0.000	400.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
500.00	0.00	0.000	500.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
600.00	0.00	0.000	600.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
700.00	0.00	0.000	700.00	0.00	0.00	1,920,822.501	2,779,690.396	36.278756000	-107.641306000
KOP Begin 3°/100' build									
800.00	3.00	331.825	799.95	2.31	-1.24	1,920,824.808	2,779,689.161	36.278762345	-107.641310178
900.00	6.00	331.825	899.63	9.22	-4.94	1,920,831.724	2,779,685.456	36.278781362	-107.641322698
1,000.00	9.00	331.825	998.77	20.73	-11.10	1,920,843.229	2,779,679.294	36.278813000	-107.641343528
1,100.00	12.00	331.825	1,097.08	36.79	-19.71	1,920,859.291	2,779,670.691	36.278857171	-107.641372610
1,200.00	15.00	331.825	1,194.31	57.37	-30.73	1,920,879.867	2,779,659.669	36.278913754	-107.641409864
1,228.53	15.86	331.825	1,221.81	64.06	-34.31	1,920,886.556	2,779,656.086	36.278932150	-107.641421975
Ojo Alamo									
1,300.00	18.00	331.825	1,290.18	82.40	-44.14	1,920,904.900	2,779,646.261	36.278982595	-107.641455188
1,365.05	19.95	331.825	1,351.69	101.05	-54.12	1,920,923.546	2,779,636.273	36.279033871	-107.641488947
Kirtland									
1,400.00	21.00	331.825	1,384.43	111.82	-59.90	1,920,934.322	2,779,630.501	36.279063505	-107.641508458
1,457.02	22.71	331.825	1,437.35	130.53	-69.92	1,920,953.031	2,779,620.480	36.279114954	-107.641542332
Begin 22.71° tangent									
1,500.00	22.71	331.825	1,477.00	145.16	-77.75	1,920,967.660	2,779,612.645	36.279155183	-107.641568818
1,600.00	22.71	331.825	1,569.25	179.19	-95.98	1,921,001.693	2,779,594.416	36.279248772	-107.641630437
1,602.39	22.71	331.825	1,571.46	180.01	-96.42	1,921,002.508	2,779,593.979	36.279251012	-107.641631912
Fruitland									
1,700.00	22.71	331.825	1,661.49	213.23	-114.21	1,921,035.726	2,779,576.187	36.279342361	-107.641692056
1,800.00	22.71	331.825	1,753.74	247.26	-132.44	1,921,069.759	2,779,557.958	36.279435950	-107.641753675
1,900.00	22.71	331.825	1,845.99	281.29	-150.67	1,921,103.791	2,779,539.729	36.279529539	-107.641815293
1,938.07	22.71	331.825	1,881.11	294.25	-157.61	1,921,116.749	2,779,532.788	36.279565172	-107.641838754
Pictured Cliffs									
2,000.00	22.71	331.825	1,938.23	315.32	-168.90	1,921,137.824	2,779,521.500	36.279623128	-107.641876913
2,046.36	22.71	331.825	1,981.00	331.10	-177.35	1,921,153.601	2,779,513.049	36.279666514	-107.641905478
Lewis									
2,100.00	22.71	331.825	2,030.48	349.36	-187.13	1,921,171.857	2,779,503.271	36.279716716	-107.641938532
2,200.00	22.71	331.825	2,122.73	383.39	-205.36	1,921,205.890	2,779,485.042	36.279810305	-107.642000151
2,300.00	22.71	331.825	2,214.97	417.42	-223.58	1,921,239.923	2,779,466.813	36.279903894	-107.642061771
2,382.04	22.71	331.825	2,290.65	445.34	-238.54	1,921,267.843	2,779,451.858	36.279980673	-107.642112323
Chacra_A									
2,400.00	22.71	331.825	2,307.22	451.46	-241.81	1,921,273.955	2,779,448.584	36.279997483	-107.642123391
2,500.00	22.71	331.825	2,399.47	485.49	-260.04	1,921,307.988	2,779,430.354	36.280091071	-107.642185010
2,600.00	22.71	331.825	2,491.71	519.52	-278.27	1,921,342.021	2,779,412.125	36.280184660	-107.642246630
2,700.00	22.71	331.825	2,583.96	553.55	-296.50	1,921,376.054	2,779,393.896	36.280278249	-107.642308251
2,800.00	22.71	331.825	2,676.21	587.59	-314.73	1,921,410.087	2,779,375.667	36.280371837	-107.642369871
2,900.00	22.71	331.825	2,768.45	621.62	-332.96	1,921,444.119	2,779,357.438	36.280465426	-107.642431491
3,000.00	22.71	331.825	2,860.70	655.65	-351.19	1,921,478.152	2,779,339.209	36.280559014	-107.642493112
3,100.00	22.71	331.825	2,952.95	689.69	-369.42	1,921,512.185	2,779,320.980	36.280652603	-107.642554733
3,200.00	22.71	331.825	3,045.19	723.72	-387.65	1,921,546.218	2,779,302.751	36.280746191	-107.642616354
3,300.00	22.71	331.825	3,137.44	757.75	-405.87	1,921,580.251	2,779,284.522	36.280839780	-107.642677975
3,400.00	22.71	331.825	3,229.69	791.78	-424.10	1,921,614.283	2,779,266.293	36.280933368	-107.642739596
3,500.00	22.71	331.825	3,321.94	825.82	-442.33	1,921,648.316	2,779,248.064	36.281026957	-107.642801217

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,567.75	22.71	331.825	3,384.43	848.87	-454.68	1,921,671.373	2,779,235.715	36.281090360	-107.642842964
Cliff House_Basal									
3,573.16	22.71	331.825	3,389.42	850.72	-455.67	1,921,673.215	2,779,234.728	36.281095427	-107.642846300
Menefee									
3,600.00	22.71	331.825	3,414.18	859.85	-460.56	1,921,682.349	2,779,229.835	36.281120545	-107.642862839
3,700.00	22.71	331.825	3,506.43	893.88	-478.79	1,921,716.382	2,779,211.606	36.281214133	-107.642924460
3,738.56	22.71	331.825	3,542.00	907.01	-485.82	1,921,729.505	2,779,204.577	36.281250222	-107.642948222
9 5/8" Csg									
3,800.00	22.71	331.825	3,598.68	927.92	-497.02	1,921,750.415	2,779,193.377	36.281307721	-107.642986082
3,900.00	22.71	331.825	3,690.92	961.95	-515.25	1,921,784.447	2,779,175.148	36.281401310	-107.643047704
4,000.00	22.71	331.825	3,783.17	995.98	-533.48	1,921,818.480	2,779,156.919	36.281494898	-107.643109326
4,100.00	22.71	331.825	3,875.42	1,030.01	-551.71	1,921,852.513	2,779,138.690	36.281588486	-107.643170948
4,200.00	22.71	331.825	3,967.66	1,064.05	-569.94	1,921,886.546	2,779,120.461	36.281682074	-107.643232570
4,300.00	22.71	331.825	4,059.91	1,098.08	-588.17	1,921,920.579	2,779,102.232	36.281775662	-107.643294193
4,400.00	22.71	331.825	4,152.16	1,132.11	-606.39	1,921,954.611	2,779,084.003	36.281869250	-107.643355816
4,500.00	22.71	331.825	4,244.40	1,166.15	-624.62	1,921,988.644	2,779,065.774	36.281962838	-107.643417438
4,515.23	22.71	331.825	4,258.45	1,171.33	-627.40	1,921,993.828	2,779,062.998	36.281977094	-107.643426825
Point Lookout									
4,600.00	22.71	331.825	4,336.65	1,200.18	-642.85	1,922,022.677	2,779,047.545	36.282056426	-107.643479061
4,700.00	22.71	331.825	4,428.90	1,234.21	-661.08	1,922,056.710	2,779,029.316	36.282150014	-107.643540684
4,769.70	22.71	331.825	4,493.19	1,257.93	-673.79	1,922,080.430	2,779,016.611	36.282215244	-107.643583635
Mancos									
4,800.00	22.71	331.825	4,521.14	1,268.24	-679.31	1,922,090.743	2,779,011.087	36.282243602	-107.643602308
4,900.00	22.71	331.825	4,613.39	1,302.28	-697.54	1,922,124.775	2,778,992.858	36.282337190	-107.643663931
5,000.00	22.71	331.825	4,705.64	1,336.31	-715.77	1,922,158.808	2,778,974.629	36.282430778	-107.643725555
5,100.00	22.71	331.825	4,797.88	1,370.34	-734.00	1,922,192.841	2,778,956.400	36.282524366	-107.643787178
5,170.35	22.71	331.825	4,862.78	1,394.28	-746.82	1,922,216.783	2,778,943.576	36.282590205	-107.643830530
MNCS_A									
5,200.00	22.71	331.825	4,890.13	1,404.38	-752.23	1,922,226.874	2,778,938.171	36.282617954	-107.643848802
5,216.52	22.71	331.825	4,905.37	1,410.00	-755.24	1,922,232.497	2,778,935.159	36.282633417	-107.643858984
Begin 10°/100' build/turn									
5,250.00	21.48	340.112	4,936.40	1,421.46	-760.38	1,922,243.961	2,778,930.021	36.282664936	-107.643876340
5,262.13	21.14	343.316	4,947.69	1,425.64	-761.76	1,922,248.143	2,778,928.638	36.282676433	-107.643881005
MNCS_B									
5,300.00	20.50	353.831	4,983.11	1,438.79	-764.43	1,922,261.284	2,778,925.964	36.282712545	-107.643889993
5,350.00	20.66	8.081	5,029.95	1,456.23	-764.14	1,922,278.730	2,778,926.263	36.282760471	-107.643888862
5,390.46	21.61	19.001	5,067.70	1,470.35	-760.70	1,922,292.847	2,778,929.694	36.282799232	-107.643877128
MNCS_C									
5,400.00	21.94	21.421	5,076.56	1,473.67	-759.48	1,922,296.168	2,778,930.917	36.282808349	-107.643872956
5,450.00	24.16	32.894	5,122.59	1,490.97	-750.51	1,922,313.465	2,778,939.890	36.282855814	-107.643842396
5,477.79	25.71	38.361	5,147.79	1,500.47	-743.68	1,922,322.968	2,778,946.721	36.282881885	-107.643819155
MNCS_Cms									
5,500.00	27.09	42.286	5,167.69	1,507.99	-737.28	1,922,330.488	2,778,953.114	36.282902506	-107.643797415
5,550.00	30.52	49.842	5,211.51	1,524.61	-719.91	1,922,347.108	2,778,970.488	36.282948069	-107.643738354
5,569.25	31.95	52.342	5,227.97	1,530.87	-712.14	1,922,353.372	2,778,978.256	36.282965236	-107.643711955
MNCS_D									
5,600.00	34.31	55.940	5,253.72	1,540.70	-698.52	1,922,363.199	2,778,991.880	36.282992157	-107.643665665
5,650.00	38.35	60.928	5,294.00	1,556.14	-673.27	1,922,378.638	2,779,017.128	36.283034433	-107.643579899
5,668.35	39.88	62.538	5,308.24	1,561.62	-663.07	1,922,384.117	2,779,027.324	36.283049430	-107.643545267
MNCS_E									
5,700.00	42.56	65.084	5,332.05	1,570.81	-644.36	1,922,393.308	2,779,046.038	36.283074576	-107.643481709
5,744.08	46.38	68.224	5,363.50	1,583.02	-616.01	1,922,405.515	2,779,074.392	36.283107956	-107.643385425
MNCS_F									

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,750.00	46.90	68.614	5,367.56	1,584.60	-612.01	1,922,407.097	2,779,078.391	36.283112280	-107.643371844
5,800.00	51.34	71.672	5,400.29	1,597.40	-576.46	1,922,419.900	2,779,113.942	36.283147259	-107.643251138
5,850.00	55.84	74.369	5,429.96	1,609.12	-537.98	1,922,431.619	2,779,152.418	36.283179246	-107.643120510
5,895.54	59.99	76.585	5,454.15	1,618.78	-500.64	1,922,441.275	2,779,189.761	36.283205570	-107.642993745
MNCS_G									
5,895.65	60.00	76.590	5,454.20	1,618.80	-500.54	1,922,441.297	2,779,189.853	36.283205629	-107.642993433
Begin 60.00° tangent									
5,900.00	60.00	76.590	5,456.38	1,619.67	-496.88	1,922,442.171	2,779,193.520	36.283208011	-107.642980985
5,955.65	60.00	76.590	5,484.20	1,630.85	-450.00	1,922,453.348	2,779,240.397	36.283238460	-107.642821856
Begin 10°/100' build									
5,977.00	62.14	76.590	5,494.53	1,635.18	-431.82	1,922,457.682	2,779,258.574	36.283250267	-107.642760154
MNCS_H									
6,000.00	64.44	76.590	5,504.87	1,639.95	-411.84	1,922,462.446	2,779,278.558	36.283263247	-107.642692318
6,050.00	69.44	76.590	5,524.45	1,650.61	-367.10	1,922,473.112	2,779,323.293	36.283292304	-107.642540464
6,100.00	74.44	76.590	5,539.95	1,661.63	-320.88	1,922,484.132	2,779,369.517	36.283322328	-107.642383552
6,121.20	76.56	76.590	5,545.26	1,666.39	-300.92	1,922,488.891	2,779,389.478	36.283335293	-107.642315793
MNCS_I									
6,150.00	79.44	76.590	5,551.25	1,672.93	-273.52	1,922,495.424	2,779,416.880	36.283353092	-107.642222776
6,200.00	84.44	76.590	5,558.26	1,684.40	-225.38	1,922,506.902	2,779,465.020	36.283384360	-107.642059360
6,252.45	89.68	76.590	5,560.95	1,696.55	-174.44	1,922,519.045	2,779,515.952	36.283417441	-107.641886468
Begin 2°/100' turn									
6,300.00	89.68	77.541	5,561.22	1,707.19	-128.10	1,922,529.689	2,779,562.297	36.283446428	-107.641729149
6,400.00	89.68	79.541	5,561.78	1,727.06	-30.10	1,922,549.554	2,779,660.297	36.283500465	-107.641396505
6,500.00	89.68	81.541	5,562.34	1,743.49	68.53	1,922,565.987	2,779,758.931	36.283545070	-107.641061733
6,600.00	89.68	83.541	5,562.91	1,756.47	167.68	1,922,578.967	2,779,858.078	36.283580186	-107.640725242
6,700.00	89.68	85.541	5,563.48	1,765.98	267.22	1,922,588.480	2,779,957.617	36.283605773	-107.640387442
6,800.00	89.68	87.541	5,564.04	1,772.01	367.03	1,922,594.512	2,780,057.428	36.283621798	-107.640048744
6,900.00	89.68	89.541	5,564.61	1,774.56	466.99	1,922,597.058	2,780,157.389	36.283628242	-107.639709562
6,941.47	89.68	90.371	5,564.84	1,774.59	508.47	1,922,597.090	2,780,198.862	36.283628102	-107.639568845
Begin 89.68° lateral									
7,000.00	89.68	90.371	5,565.17	1,774.21	566.99	1,922,596.711	2,780,257.386	36.283626739	-107.639370278
7,100.00	89.68	90.371	5,565.74	1,773.57	666.99	1,922,596.064	2,780,357.382	36.283624411	-107.639030998
7,200.00	89.68	90.371	5,566.30	1,772.92	766.98	1,922,595.417	2,780,457.378	36.283622082	-107.638691718
7,300.00	89.68	90.371	5,566.87	1,772.27	866.98	1,922,594.770	2,780,557.374	36.283619751	-107.638352438
7,400.00	89.68	90.371	5,567.43	1,771.63	966.98	1,922,594.123	2,780,657.370	36.283617420	-107.638013158
7,500.00	89.68	90.371	5,568.00	1,770.98	1,066.97	1,922,593.476	2,780,757.366	36.283615088	-107.637673877
7,600.00	89.68	90.371	5,568.56	1,770.33	1,166.97	1,922,592.829	2,780,857.362	36.283612755	-107.637334597
7,700.00	89.68	90.371	5,569.12	1,769.68	1,266.96	1,922,592.181	2,780,957.358	36.283610420	-107.636995317
7,800.00	89.68	90.371	5,569.69	1,769.04	1,366.96	1,922,591.534	2,781,057.355	36.283608085	-107.636656037
7,900.00	89.68	90.371	5,570.25	1,768.39	1,466.96	1,922,590.887	2,781,157.351	36.283605749	-107.636316757
8,000.00	89.68	90.371	5,570.82	1,767.74	1,566.95	1,922,590.240	2,781,257.347	36.283603412	-107.635977477
8,100.00	89.68	90.371	5,571.38	1,767.10	1,666.95	1,922,589.593	2,781,357.343	36.283601074	-107.635638197
8,200.00	89.68	90.371	5,571.95	1,766.45	1,766.95	1,922,588.946	2,781,457.339	36.283598735	-107.635298917
8,300.00	89.68	90.371	5,572.51	1,765.80	1,866.94	1,922,588.299	2,781,557.335	36.283596395	-107.634959637
8,400.00	89.68	90.371	5,573.08	1,765.15	1,966.94	1,922,587.652	2,781,657.331	36.283594054	-107.634620357
8,500.00	89.68	90.371	5,573.64	1,764.51	2,066.94	1,922,587.005	2,781,757.327	36.283591713	-107.634281077
8,600.00	89.68	90.371	5,574.21	1,763.86	2,166.93	1,922,586.358	2,781,857.323	36.283589370	-107.633941797
8,700.00	89.68	90.371	5,574.77	1,763.21	2,266.93	1,922,585.711	2,781,957.320	36.283587026	-107.633602518
8,800.00	89.68	90.371	5,575.34	1,762.57	2,366.92	1,922,585.064	2,782,057.316	36.283584681	-107.633263238
8,900.00	89.68	90.371	5,575.90	1,761.92	2,466.92	1,922,584.416	2,782,157.312	36.283582336	-107.632923958
9,000.00	89.68	90.371	5,576.47	1,761.27	2,566.92	1,922,583.769	2,782,257.308	36.283579989	-107.632584678
9,100.00	89.68	90.371	5,577.03	1,760.62	2,666.91	1,922,583.122	2,782,357.304	36.283577641	-107.632245398
9,200.00	89.68	90.371	5,577.59	1,759.98	2,766.91	1,922,582.475	2,782,457.300	36.283575293	-107.631906119
9,300.00	89.68	90.371	5,578.16	1,759.33	2,866.91	1,922,581.828	2,782,557.296	36.283572943	-107.631566839

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,400.00	89.68	90.371	5,578.72	1,758.68	2,966.90	1,922,581.181	2,782,657.292	36.283570593	-107.631227559
9,500.00	89.68	90.371	5,579.29	1,758.04	3,066.90	1,922,580.534	2,782,757.288	36.283568241	-107.630888280
9,600.00	89.68	90.371	5,579.85	1,757.39	3,166.89	1,922,579.887	2,782,857.284	36.283565889	-107.630549000
9,700.00	89.68	90.371	5,580.42	1,756.74	3,266.89	1,922,579.240	2,782,957.281	36.283563535	-107.630209720
9,800.00	89.68	90.371	5,580.98	1,756.10	3,366.89	1,922,578.593	2,783,057.277	36.283561181	-107.629870441
9,900.00	89.68	90.371	5,581.55	1,755.45	3,466.88	1,922,577.946	2,783,157.273	36.283558826	-107.629531161
10,000.00	89.68	90.371	5,582.11	1,754.80	3,566.88	1,922,577.298	2,783,257.269	36.283556469	-107.629191882
10,100.00	89.68	90.371	5,582.68	1,754.15	3,666.88	1,922,576.651	2,783,357.265	36.283554112	-107.628852602
10,200.00	89.68	90.371	5,583.24	1,753.51	3,766.87	1,922,576.004	2,783,457.261	36.283551754	-107.628513323
10,300.00	89.68	90.371	5,583.81	1,752.86	3,866.87	1,922,575.357	2,783,557.257	36.283549395	-107.628174043
10,400.00	89.68	90.371	5,584.37	1,752.21	3,966.87	1,922,574.710	2,783,657.253	36.283547035	-107.627834764
10,500.00	89.68	90.371	5,584.94	1,751.57	4,066.86	1,922,574.063	2,783,757.249	36.283544674	-107.627495484
10,600.00	89.68	90.371	5,585.50	1,750.92	4,166.86	1,922,573.416	2,783,857.246	36.283542311	-107.627156205
10,700.00	89.68	90.371	5,586.07	1,750.27	4,266.85	1,922,572.769	2,783,957.242	36.283539948	-107.626816926
10,800.00	89.68	90.371	5,586.63	1,749.62	4,366.85	1,922,572.122	2,784,057.238	36.283537584	-107.626477646
10,900.00	89.68	90.371	5,587.19	1,748.98	4,466.85	1,922,571.475	2,784,157.234	36.283535219	-107.626138367
11,000.00	89.68	90.371	5,587.76	1,748.33	4,566.84	1,922,570.828	2,784,257.230	36.283532854	-107.625799088
11,100.00	89.68	90.371	5,588.32	1,747.68	4,666.84	1,922,570.181	2,784,357.226	36.283530487	-107.625459809
11,200.00	89.68	90.371	5,588.89	1,747.04	4,766.84	1,922,569.533	2,784,457.222	36.283528119	-107.625120529
11,300.00	89.68	90.371	5,589.45	1,746.39	4,866.83	1,922,568.886	2,784,557.218	36.283525750	-107.624781250
11,400.00	89.68	90.371	5,590.02	1,745.74	4,966.83	1,922,568.239	2,784,657.214	36.283523380	-107.624441971
11,500.00	89.68	90.371	5,590.58	1,745.09	5,066.82	1,922,567.592	2,784,757.211	36.283521010	-107.624102692
11,600.00	89.68	90.371	5,591.15	1,744.45	5,166.82	1,922,566.945	2,784,857.207	36.283518638	-107.623763413
11,700.00	89.68	90.371	5,591.71	1,743.80	5,266.82	1,922,566.298	2,784,957.203	36.283516265	-107.623424134
11,800.00	89.68	90.371	5,592.28	1,743.15	5,366.81	1,922,565.651	2,785,057.199	36.283513892	-107.623084854
11,900.00	89.68	90.371	5,592.84	1,742.51	5,466.81	1,922,565.004	2,785,157.195	36.283511517	-107.622745575
12,000.00	89.68	90.371	5,593.41	1,741.86	5,566.81	1,922,564.357	2,785,257.191	36.283509142	-107.622406296
12,100.00	89.68	90.371	5,593.97	1,741.21	5,666.80	1,922,563.710	2,785,357.187	36.283506765	-107.622067017
12,200.00	89.68	90.371	5,594.54	1,740.56	5,766.80	1,922,563.063	2,785,457.183	36.283504388	-107.621727738
12,300.00	89.68	90.371	5,595.10	1,739.92	5,866.80	1,922,562.415	2,785,557.179	36.283502009	-107.621388459
12,400.00	89.68	90.371	5,595.66	1,739.27	5,966.79	1,922,561.768	2,785,657.175	36.283499630	-107.621049181
12,500.00	89.68	90.371	5,596.23	1,738.62	6,066.79	1,922,561.121	2,785,757.172	36.283497249	-107.620709902
12,600.00	89.68	90.371	5,596.79	1,737.98	6,166.78	1,922,560.474	2,785,857.168	36.283494868	-107.620370623
12,636.44	89.68	90.371	5,597.00	1,737.74	6,203.22	1,922,560.238	2,785,893.603	36.283494000	-107.620247000
PBHL/TD 12636.44 MD 5597.00 TVD									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NW Lybrook 139H 0VS	0.00	0.000	5,562.00	1,777.82	11.50	1,922,600.320	2,779,701.900	36.283639694	-107.641255006
- plan misses target center by 42.80ft at 6449.38ft MD (5562.06 TVD, 1735.60 N, 18.54 E)									
- Point									
NW Lybrook 139H FTP 1	0.00	0.000	5,560.95	1,779.02	-174.18	1,922,601.519	2,779,516.222	36.283644000	-107.641885000
- plan misses target center by 80.23ft at 6271.17ft MD (5561.06 TVD, 1700.83 N, -156.22 E)									
- Point									
NW Lybrook 139H LTP 1	0.00	0.000	5,597.00	1,737.74	6,203.22	1,922,560.238	2,785,893.603	36.283494000	-107.620247000
- plan hits target center									
- Point									

Planning Report - Geographic

Database:	DB_Decv0422v16	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Company:	Enduring Resources LLC	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Project:	San Juan County, New Mexico NAD83 NM W	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site:	NW Lybrook (138, 139, 140 & 141)	**North Reference:**	Grid
Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
350.00	350.00	13 3/8" Csg	13-3/8	17-1/2
3,738.56	3,542.00	9 5/8" Csg	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,228.53	1,221.81	Ojo Alamo		0.32	90.371
1,365.05	1,351.69	Kirtland		0.32	90.371
1,602.39	1,571.46	Fruitland		0.32	90.371
1,938.07	1,881.11	Pictured Cliffs		0.32	90.371
2,046.36	1,981.00	Lewis		0.32	90.371
2,382.04	2,290.65	Chacra_A		0.32	90.371
3,567.75	3,384.43	Cliff House_Basal		0.32	90.371
3,573.16	3,389.42	Menefee		0.32	90.371
4,515.23	4,258.45	Point Lookout		0.32	90.371
4,769.70	4,493.19	Mancos		0.32	90.371
5,170.35	4,862.78	MNCS_A		0.32	90.371
5,262.13	4,947.69	MNCS_B		0.32	90.371
5,390.46	5,067.70	MNCS_C		0.32	90.371
5,477.79	5,147.79	MNCS_Cms		0.32	90.371
5,569.25	5,227.97	MNCS_D		0.32	90.371
5,668.35	5,308.24	MNCS_E		0.32	90.371
5,744.08	5,363.50	MNCS_F		0.32	90.371
5,895.54	5,454.15	MNCS_G		0.32	90.371
5,977.00	5,494.53	MNCS_H		0.32	90.371
6,121.20	5,545.26	MNCS_I		0.32	90.371

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
700.00	700.00	0.00	0.00	KOP Begin 3°/100' build
1,457.02	1,437.35	130.53	-69.92	Begin 22.71° tangent
5,216.52	4,905.37	1,410.00	-755.24	Begin 10°/100' build/turn
5,895.65	5,454.20	1,618.80	-500.54	Begin 60.00° tangent
5,955.65	5,484.20	1,630.85	-450.00	Begin 10°/100' build
6,252.45	5,560.95	1,696.55	-174.44	Begin 2°/100' turn
6,941.47	5,564.84	1,774.59	508.47	Begin 89.68° lateral
12,636.44	5,597.00	1,737.74	6,203.22	PBHL/TD 12636.44 MD 5597.00 TVD

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Reference rev0

Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.00ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum centre distance of 1,463.64ft	**Error Surface:**	Ellipsoid Separation
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 2/21/2023

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	12,636.44	rev0 (Original Hole)	MWD	OWSG MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
NW Lybrook (138, 139, 140 & 141)						
Lybrook 2408 138H - Original Hole - rev0	558.88	558.88	19.89	16.33	5.590	CC
Lybrook 2408 138H - Original Hole - rev0	600.00	600.00	19.96	16.11	5.182	ES
Lybrook 2408 138H - Original Hole - rev0	6,283.91	6,044.95	90.40	38.67	1.748	Level 3<2.00, SF
NW Lybrook Unit 140H - Original Hole - rev0	700.00	700.00	84.12	79.55	18.406	CC, ES
NW Lybrook Unit 140H - Original Hole - rev0	1,000.00	998.77	99.64	92.92	14.819	SF
NW Lybrook Unit 141H - Original Hole - rev0	727.93	729.50	102.11	97.37	21.547	CC, ES
NW Lybrook Unit 141H - Original Hole - rev0	900.00	897.05	112.49	106.50	18.775	SF
NW Lybrook UT 131H - Original Hole - MWD	732.88	721.75	40.80	36.01	8.512	CC, ES
NW Lybrook UT 131H - Original Hole - MWD	800.00	788.25	42.45	37.18	8.056	SF
NW Lybrook UT 289H - Original Hole - Gyro & MWD	1,441.44	1,440.52	44.51	35.39	4.881	CC, ES
NW Lybrook UT 289H - Original Hole - Gyro & MWD	12,492.05	12,029.00	990.81	661.03	3.005	SF
Ridge Unit (124, 127, 128 & 129)						
Ridge Unit No. 127H - Original Hole - rev0	11,010.23	5,583.27	546.12	407.34	3.935	CC, ES, SF
Ridge Unit No. 128H - Original Hole - rev0	9,366.43	5,500.00	544.62	442.41	5.328	CC
Ridge Unit No. 128H - Original Hole - rev0	9,400.00	5,500.00	545.66	441.76	5.252	ES, SF
Ridge Unit No. 129H - Original Hole - rev0	7,719.92	6,012.17	552.69	458.64	5.876	CC, ES
Ridge Unit No. 129H - Original Hole - rev0	7,800.00	6,000.00	556.94	460.11	5.752	SF
Ridge Unit (130, 135, 136 & 137)						
Ridge Unit No. 130H - Original Hole - rev0	5,800.00	6,200.00	597.60	509.47	6.781	SF
Ridge Unit No. 130H - Original Hole - rev0	5,900.00	6,231.23	580.71	497.08	6.944	ES
Ridge Unit No. 130H - Original Hole - rev0	6,019.41	6,263.22	575.06	497.98	7.461	CC

Offset Design: NW Lybrook (138, 139, 140 & 141) - Lybrook 2408 138H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD **Rule Assigned:** **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-82.76	2.51	-19.75	19.91				
100.00	100.00	100.00	100.00	0.13	0.13	-82.76	2.51	-19.75	19.91	19.64	0.27	74.061	
200.00	200.00	200.00	200.00	0.49	0.49	-82.76	2.51	-19.75	19.91	18.93	0.99	20.198	
300.00	300.00	300.00	300.00	0.85	0.85	-82.76	2.51	-19.75	19.91	18.21	1.70	11.694	
400.00	400.00	400.00	400.00	1.21	1.21	-82.76	2.51	-19.75	19.91	17.49	2.42	8.229	
500.00	500.00	500.00	500.00	1.57	1.57	-82.76	2.51	-19.75	19.91	16.77	3.14	6.348	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - Lybrook 2408 138H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
558.88	558.88	558.88	558.88	1.78	1.78	-80.15	3.40	-19.60	19.89	16.33	3.56	5.590	CC
600.00	600.00	600.00	599.95	1.93	1.93	-75.24	5.09	-19.30	19.96	16.11	3.85	5.182	ES
700.00	700.00	699.37	699.01	2.29	2.29	-54.64	12.75	-17.97	22.06	17.49	4.57	4.828	
800.00	799.95	797.98	796.77	2.64	2.66	-4.05	25.37	-15.78	27.45	22.18	5.27	5.206	
900.00	899.63	895.79	892.97	3.01	3.04	14.84	42.77	-12.76	35.09	29.15	5.94	5.906	
1,000.00	998.77	992.67	987.22	3.37	3.46	30.12	64.77	-8.93	45.58	38.99	6.59	6.918	
1,100.00	1,097.08	1,088.47	1,079.21	3.76	3.91	42.03	91.13	-4.35	59.23	51.97	7.25	8.164	
1,200.00	1,194.31	1,183.10	1,168.63	4.19	4.41	51.16	121.59	0.94	76.07	68.10	7.97	9.539	
1,300.00	1,290.18	1,277.91	1,256.69	4.65	4.96	58.33	156.19	6.95	95.80	86.98	8.82	10.864	
1,400.00	1,384.43	1,375.08	1,346.56	5.17	5.55	65.03	192.60	13.28	115.38	105.52	9.86	11.704	
1,500.00	1,477.00	1,472.03	1,436.22	5.75	6.17	71.70	228.91	19.59	134.73	123.70	11.03	12.210	
1,600.00	1,569.25	1,568.91	1,525.83	6.37	6.79	77.20	265.21	25.90	155.36	143.08	12.28	12.650	
1,700.00	1,661.49	1,665.79	1,615.43	7.01	7.42	81.41	301.50	32.20	177.06	163.50	13.56	13.058	
1,800.00	1,753.74	1,762.67	1,705.03	7.67	8.07	84.69	337.80	38.51	199.48	184.63	14.85	13.429	
1,900.00	1,845.99	1,859.55	1,794.64	8.34	8.71	87.31	374.09	44.82	222.40	206.24	16.16	13.761	
2,000.00	1,938.23	1,956.43	1,884.24	9.03	9.37	89.44	410.39	51.12	245.69	228.21	17.48	14.059	
2,100.00	2,030.48	2,053.31	1,973.84	9.72	10.02	91.21	446.68	57.43	269.24	250.44	18.80	14.324	
2,200.00	2,122.73	2,150.19	2,063.45	10.41	10.68	92.69	482.98	63.74	292.99	272.87	20.12	14.561	
2,300.00	2,214.97	2,247.07	2,153.05	11.12	11.34	93.94	519.27	70.04	316.90	295.45	21.45	14.774	
2,400.00	2,307.22	2,343.95	2,242.65	11.82	12.01	95.03	555.57	76.35	340.93	318.15	22.78	14.966	
2,500.00	2,399.47	2,440.83	2,332.26	12.53	12.67	95.97	591.86	82.66	365.07	340.96	24.11	15.139	
2,600.00	2,491.71	2,537.71	2,421.86	13.24	13.34	96.79	628.16	88.96	389.29	363.84	25.45	15.296	
2,700.00	2,583.96	2,634.60	2,511.46	13.96	14.01	97.52	664.45	95.27	413.57	386.78	26.79	15.439	
2,800.00	2,676.21	2,731.48	2,601.07	14.68	14.68	98.16	700.75	101.58	437.91	409.78	28.13	15.569	
2,900.00	2,768.45	2,828.36	2,690.67	15.40	15.35	98.74	737.04	107.88	462.29	432.83	29.47	15.689	
3,000.00	2,860.70	2,925.24	2,780.27	16.12	16.02	99.26	773.34	114.19	486.72	455.91	30.81	15.799	
3,100.00	2,952.95	3,022.12	2,869.88	16.84	16.69	99.73	809.63	120.50	511.18	479.03	32.15	15.900	
3,200.00	3,045.19	3,119.00	2,959.48	17.57	17.36	100.16	845.93	126.80	535.67	502.18	33.49	15.994	
3,300.00	3,137.44	3,215.88	3,049.09	18.29	18.04	100.55	882.22	133.11	560.18	525.35	34.84	16.080	
3,400.00	3,229.69	3,312.76	3,138.69	19.02	18.71	100.91	918.52	139.42	584.72	548.54	36.18	16.161	
3,500.00	3,321.94	3,409.64	3,228.29	19.74	19.39	101.24	954.81	145.73	609.28	571.75	37.53	16.236	
3,600.00	3,414.18	3,506.52	3,317.90	20.47	20.06	101.54	991.11	152.03	633.85	594.98	38.87	16.306	
3,700.00	3,506.43	3,603.40	3,407.50	21.20	20.74	101.82	1,027.40	158.34	658.44	618.23	40.22	16.372	
3,800.00	3,598.68	3,700.28	3,497.10	21.93	21.41	102.08	1,063.70	164.65	683.05	641.48	41.56	16.434	
3,900.00	3,690.92	3,797.16	3,586.71	22.66	22.09	102.32	1,099.99	170.95	707.67	664.75	42.91	16.491	
4,000.00	3,783.17	3,894.05	3,676.31	23.39	22.76	102.55	1,136.29	177.26	732.29	688.03	44.26	16.546	
4,100.00	3,875.42	3,990.93	3,765.91	24.12	23.44	102.76	1,172.58	183.57	756.93	711.32	45.61	16.597	
4,200.00	3,967.66	4,087.81	3,855.52	24.85	24.12	102.96	1,208.88	189.87	781.58	734.62	46.95	16.645	
4,300.00	4,059.91	4,184.69	3,945.12	25.58	24.79	103.15	1,245.17	196.18	806.23	757.93	48.30	16.691	
4,400.00	4,152.16	4,281.57	4,034.72	26.31	25.47	103.32	1,281.47	202.49	830.89	781.24	49.65	16.734	
4,500.00	4,244.40	4,378.45	4,124.33	27.04	26.15	103.49	1,317.76	208.79	855.56	804.56	51.00	16.775	
4,600.00	4,336.65	4,475.33	4,213.93	27.78	26.83	103.64	1,354.06	215.10	880.24	827.89	52.35	16.814	
4,700.00	4,428.90	4,572.21	4,303.53	28.51	27.50	103.79	1,390.35	221.41	904.92	851.22	53.70	16.851	
4,800.00	4,521.14	4,669.09	4,393.14	29.24	28.18	103.93	1,426.65	227.71	929.61	874.56	55.05	16.886	
4,900.00	4,613.39	4,765.97	4,482.74	29.98	28.86	104.06	1,462.94	234.02	954.30	897.90	56.40	16.920	
5,000.00	4,705.64	6,608.08	5,557.04	30.71	37.07	80.79	1,779.56	-719.57	959.88	937.04	22.84	42.019	
5,100.00	4,797.88	6,625.91	5,556.96	31.44	37.24	77.79	1,779.55	-737.39	862.36	838.87	23.49	36.713	
5,200.00	4,890.13	6,643.73	5,556.89	32.18	37.41	74.33	1,779.54	-755.21	765.06	740.84	24.22	31.583	
5,300.00	4,983.11	6,655.53	5,556.84	32.86	37.53	16.27	1,779.54	-767.01	667.30	642.29	25.01	26.684	
5,400.00	5,076.56	6,650.17	5,556.86	33.41	37.48	-53.56	1,779.54	-761.65	569.43	543.71	25.72	22.141	
5,500.00	5,167.69	6,627.57	5,556.95	33.81	37.25	-89.83	1,779.55	-739.05	474.64	448.19	26.44	17.949	
5,600.00	5,253.72	6,588.42	5,557.12	34.09	36.89	-107.19	1,779.57	-699.91	386.15	358.80	27.35	14.117	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - Lybrook 2408 138H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Rule Assigned:

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,700.00	5,332.05	6,533.92	5,557.35	34.26	36.44	-114.95	1,779.59	-645.41	307.17	278.43	28.74	10.688	
5,800.00	5,400.29	6,465.72	5,557.64	34.34	35.97	-116.80	1,779.62	-577.20	240.76	209.79	30.97	7.774	
5,900.00	5,456.38	6,385.89	5,557.98	34.34	35.53	-114.10	1,779.66	-497.38	189.52	155.15	34.37	5.514	
6,000.00	5,504.87	6,300.64	5,558.34	34.31	35.18	-104.18	1,779.70	-412.13	149.63	109.98	39.65	3.773	
6,100.00	5,539.95	6,207.89	5,556.10	34.27	34.91	-93.91	1,779.74	-319.45	119.21	73.53	45.68	2.610	
6,200.00	5,558.26	6,116.95	5,540.64	34.23	34.74	-78.40	1,779.78	-229.93	97.10	45.28	51.81	1.874	Level 3<2.00
6,283.91	5,563.19	6,044.95	5,518.47	34.20	34.65	-60.37	1,779.81	-161.47	90.40	38.67	51.73	1.748	Level 3<2.00, SF
6,300.00	5,561.22	6,030.91	5,513.16	34.20	34.64	-57.47	1,779.82	-148.48	89.44	38.48	50.97	1.755	Level 3<2.00
6,400.00	5,561.78	5,952.54	5,477.82	34.19	34.58	-35.94	1,779.85	-78.60	110.40	66.00	44.40	2.486	
6,500.00	5,562.34	5,873.09	5,437.58	34.21	34.53	-20.82	1,779.61	-10.10	151.83	109.94	41.89	3.625	
6,600.00	5,562.91	5,809.70	5,400.93	34.30	34.47	-12.09	1,776.97	41.52	206.34	161.37	44.97	4.588	
6,700.00	5,563.48	5,750.00	5,361.91	34.57	34.39	-5.68	1,771.88	86.37	270.87	222.85	48.02	5.641	
6,800.00	5,564.04	5,709.73	5,333.34	35.29	34.32	-1.47	1,767.05	114.32	342.22	289.71	52.51	6.517	
6,900.00	5,564.61	5,670.40	5,303.83	36.57	34.23	2.36	1,761.28	139.68	418.71	363.34	55.36	7.563	
7,000.00	5,565.17	5,636.56	5,277.30	38.20	34.14	4.28	1,755.50	159.85	498.98	441.37	57.61	8.662	
7,100.00	5,565.74	5,600.00	5,247.54	40.02	34.03	5.13	1,748.42	179.87	582.37	523.50	58.88	9.891	
7,200.00	5,566.30	5,582.36	5,232.82	41.95	33.97	5.53	1,744.71	188.84	668.02	607.34	60.68	11.010	
7,300.00	5,566.87	5,550.00	5,205.24	43.96	33.86	6.24	1,737.41	204.11	755.90	694.61	61.29	12.333	
7,400.00	5,567.43	5,550.00	5,205.24	46.02	33.86	6.24	1,737.41	204.11	845.17	782.30	62.88	13.441	
7,500.00	5,568.00	5,524.58	5,183.11	48.13	33.76	6.79	1,731.25	214.99	935.73	872.48	63.25	14.794	
7,600.00	5,568.56	5,500.00	5,161.36	50.28	33.66	7.30	1,724.94	224.55	1,027.63	964.09	63.54	16.173	
7,700.00	5,569.12	5,500.00	5,161.36	52.47	33.66	7.30	1,724.94	224.55	1,120.22	1,055.88	64.34	17.410	
7,800.00	5,569.69	5,500.00	5,161.36	54.68	33.66	7.30	1,724.94	224.55	1,213.99	1,149.03	64.96	18.687	
7,900.00	5,570.25	5,473.80	5,137.86	56.93	33.54	7.83	1,717.85	233.69	1,307.85	1,242.90	64.94	20.138	
8,000.00	5,570.82	5,450.00	5,116.25	59.19	33.43	8.30	1,711.09	241.04	1,402.81	1,337.87	64.95	21.600	

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook Unit 140H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Rule Assigned: Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	97.35	-10.76	83.43	84.12				
100.00	100.00	100.00	100.00	0.13	0.13	97.35	-10.76	83.43	84.12	83.86	0.27	312.901	
200.00	200.00	200.00	200.00	0.49	0.49	97.35	-10.76	83.43	84.12	83.14	0.99	85.337	
300.00	300.00	300.00	300.00	0.85	0.85	97.35	-10.76	83.43	84.12	82.42	1.70	49.405	
400.00	400.00	400.00	400.00	1.21	1.21	97.35	-10.76	83.43	84.12	81.70	2.42	34.767	
500.00	500.00	500.00	500.00	1.57	1.57	97.35	-10.76	83.43	84.12	80.99	3.14	26.820	
600.00	600.00	600.00	600.00	1.93	1.93	97.35	-10.76	83.43	84.12	80.27	3.85	21.830	
700.00	700.00	700.00	700.00	2.29	2.29	97.35	-10.76	83.43	84.12	79.55	4.57	18.406	CC, ES
800.00	799.95	799.95	799.95	2.64	2.64	126.91	-10.76	83.43	85.67	80.39	5.29	16.207	
900.00	899.63	899.63	899.63	3.01	3.00	130.76	-10.76	83.43	90.60	84.60	6.00	15.094	
1,000.00	998.77	998.77	998.77	3.37	3.36	136.24	-10.76	83.43	99.64	92.92	6.72	14.819	SF
1,100.00	1,097.08	1,100.44	1,100.39	3.76	3.71	143.63	-12.08	81.15	112.12	104.67	7.44	15.064	
1,200.00	1,194.31	1,200.39	1,200.02	4.19	4.05	152.61	-16.01	74.34	128.28	120.13	8.15	15.737	
1,300.00	1,290.18	1,297.78	1,296.58	4.65	4.39	161.83	-22.34	63.37	150.23	141.37	8.87	16.943	
1,400.00	1,384.43	1,391.91	1,389.17	5.17	4.74	170.34	-30.80	48.74	179.34	169.75	9.59	18.696	
1,500.00	1,477.00	1,482.37	1,477.26	5.75	5.11	177.72	-41.06	30.96	215.63	205.30	10.33	20.870	
1,600.00	1,569.25	1,570.25	1,561.82	6.37	5.49	-176.06	-53.02	10.26	255.47	244.39	11.07	23.067	
1,700.00	1,661.49	1,655.60	1,642.80	7.01	5.91	-170.78	-66.48	-13.05	298.02	286.18	11.84	25.169	
1,800.00	1,753.74	1,738.20	1,719.96	7.67	6.34	-166.22	-81.22	-38.58	343.29	330.67	12.62	27.200	
1,900.00	1,845.99	1,822.59	1,797.98	8.34	6.83	-162.23	-97.31	-66.42	390.82	377.35	13.47	29.015	
2,000.00	1,938.23	1,907.40	1,876.38	9.03	7.34	-159.04	-113.48	-94.42	439.59	425.24	14.35	30.630	
2,100.00	2,030.48	1,992.21	1,954.78	9.72	7.88	-156.47	-129.65	-122.42	489.25	473.99	15.26	32.058	
2,200.00	2,122.73	2,077.01	2,033.18	10.41	8.42	-154.36	-145.82	-150.42	539.54	523.34	16.19	33.321	
2,300.00	2,214.97	2,161.82	2,111.58	11.12	8.99	-152.60	-161.99	-178.43	590.30	573.16	17.14	34.441	
2,400.00	2,307.22	2,246.63	2,189.99	11.82	9.56	-151.11	-178.17	-206.43	641.42	623.32	18.10	35.436	
2,500.00	2,399.47	2,331.44	2,268.39	12.53	10.14	-149.83	-194.34	-234.43	692.82	673.75	19.07	36.324	
2,600.00	2,491.71	2,416.24	2,346.79	13.24	10.72	-148.73	-210.51	-262.43	744.45	724.39	20.06	37.119	
2,700.00	2,583.96	2,501.05	2,425.19	13.96	11.32	-147.77	-226.68	-290.43	796.25	775.20	21.05	37.833	
2,800.00	2,676.21	2,585.86	2,503.59	14.68	11.91	-146.92	-242.85	-318.43	848.20	826.15	22.05	38.475	
2,900.00	2,768.45	2,670.67	2,581.99	15.40	12.52	-146.17	-259.03	-346.43	900.27	877.22	23.05	39.057	
3,000.00	2,860.70	2,755.47	2,660.39	16.12	13.12	-145.51	-275.20	-374.43	952.44	928.38	24.06	39.586	
3,100.00	2,952.95	2,840.28	2,738.79	16.84	13.73	-144.91	-291.37	-402.43	1,004.70	979.63	25.07	40.069	
3,200.00	3,045.19	2,925.09	2,817.19	17.57	14.35	-144.37	-307.54	-430.43	1,057.03	1,030.94	26.09	40.511	
3,300.00	3,137.44	3,009.89	2,895.59	18.29	14.96	-143.88	-323.71	-458.43	1,109.42	1,082.31	27.11	40.916	
3,400.00	3,229.69	3,094.70	2,974.00	19.02	15.58	-143.43	-339.89	-486.43	1,161.87	1,133.73	28.14	41.289	
3,500.00	3,321.94	3,179.51	3,052.40	19.74	16.20	-143.02	-356.06	-514.43	1,214.36	1,185.19	29.17	41.633	
3,600.00	3,414.18	3,264.32	3,130.80	20.47	16.82	-142.65	-372.23	-542.43	1,266.90	1,236.70	30.20	41.951	
3,700.00	3,506.43	3,349.12	3,209.20	21.20	17.44	-142.30	-388.40	-570.43	1,319.47	1,288.24	31.23	42.246	
3,800.00	3,598.68	3,433.93	3,287.60	21.93	18.06	-141.99	-404.57	-598.43	1,372.07	1,339.80	32.27	42.521	
3,900.00	3,690.92	3,518.74	3,366.00	22.66	18.69	-141.69	-420.75	-626.44	1,424.70	1,391.40	33.31	42.777	

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook Unit 141H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	97.32	-13.26	103.19	104.04				
100.00	100.00	100.00	100.00	0.13	0.13	97.32	-13.26	103.19	104.04	103.77	0.27	386.962	
200.00	200.00	200.00	200.00	0.49	0.49	97.32	-13.26	103.19	104.04	103.05	0.99	105.535	
300.00	300.00	300.00	300.00	0.85	0.85	97.32	-13.26	103.19	104.04	102.33	1.70	61.099	
400.00	400.00	400.00	400.00	1.21	1.21	97.32	-13.26	103.19	104.04	101.62	2.42	42.996	
500.00	500.00	500.00	500.00	1.57	1.57	97.32	-13.26	103.19	104.04	100.90	3.14	33.168	
600.00	600.00	601.09	601.04	1.93	1.92	98.77	-15.78	102.28	103.50	99.66	3.84	26.950	
700.00	700.00	701.62	701.24	2.29	2.26	103.15	-23.27	99.60	102.29	97.75	4.54	22.537	
727.93	727.93	729.50	728.95	2.39	2.36	133.17	-26.23	98.54	102.11	97.37	4.74	21.547	CC, ES
800.00	799.95	800.72	799.48	2.64	2.61	139.53	-35.50	95.21	103.59	98.34	5.25	19.718	
900.00	899.63	897.05	894.20	3.01	2.99	150.90	-51.97	89.30	112.49	106.50	5.99	18.775	SF
1,000.00	998.77	989.49	984.15	3.37	3.39	162.52	-71.98	82.12	132.28	125.55	6.73	19.654	
1,100.00	1,097.08	1,077.10	1,068.36	3.76	3.81	172.26	-94.71	73.96	163.98	156.55	7.43	22.056	
1,200.00	1,194.31	1,159.18	1,146.17	4.19	4.25	179.65	-119.28	65.14	206.67	198.57	8.09	25.531	
1,300.00	1,290.18	1,235.24	1,217.22	4.65	4.69	-174.89	-144.83	55.97	258.81	250.11	8.70	29.755	
1,400.00	1,384.43	1,300.00	1,276.81	5.17	5.09	-171.02	-168.68	47.42	319.03	309.81	9.21	34.630	
1,500.00	1,477.00	1,368.66	1,339.02	5.75	5.56	-167.79	-196.02	37.61	385.68	375.87	9.81	39.312	
1,600.00	1,569.25	1,428.33	1,392.20	6.37	5.99	-165.69	-221.47	28.47	455.37	445.07	10.30	44.204	
1,700.00	1,661.49	1,484.66	1,441.61	7.01	6.42	-164.01	-246.93	19.33	527.18	516.41	10.78	48.922	
1,800.00	1,753.74	1,537.83	1,487.50	7.67	6.85	-162.62	-272.21	10.26	600.91	589.67	11.24	53.481	
1,900.00	1,845.99	1,588.13	1,530.21	8.34	7.27	-161.44	-297.22	1.29	676.37	664.69	11.68	57.924	
2,000.00	1,938.23	1,651.86	1,583.88	9.03	7.82	-160.17	-329.56	-10.32	752.72	740.42	12.31	61.166	
2,100.00	2,030.48	1,715.59	1,637.55	9.72	8.38	-159.12	-361.91	-21.93	829.21	816.26	12.95	64.039	
2,200.00	2,122.73	1,779.33	1,691.23	10.41	8.95	-158.25	-394.26	-33.53	905.79	892.18	13.60	66.591	
2,300.00	2,214.97	1,843.06	1,744.90	11.12	9.53	-157.51	-426.60	-45.14	982.44	968.18	14.27	68.867	
2,400.00	2,307.22	1,906.80	1,798.58	11.82	10.11	-156.87	-458.95	-56.75	1,059.15	1,044.22	14.94	70.910	
2,500.00	2,399.47	1,970.53	1,852.25	12.53	10.69	-156.32	-491.30	-68.36	1,135.91	1,120.30	15.62	72.744	
2,600.00	2,491.71	2,034.26	1,905.92	13.24	11.28	-155.84	-523.65	-79.97	1,212.71	1,196.41	16.30	74.400	
2,700.00	2,583.96	2,098.00	1,959.60	13.96	11.87	-155.42	-555.99	-91.57	1,289.54	1,272.55	16.99	75.901	
2,800.00	2,676.21	2,161.73	2,013.27	14.68	12.46	-155.05	-588.34	-103.18	1,366.40	1,348.71	17.69	77.262	
2,900.00	2,768.45	2,225.46	2,066.95	15.40	13.06	-154.71	-620.69	-114.79	1,443.27	1,424.89	18.38	78.504	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook UT 131H - Original Hole - MWD

Offset Site Error: 0.00 ft

Survey Program: 64-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	97.32	-5.38	41.86	43.88				
100.00	100.00	88.13	88.13	0.13	0.18	96.74	-4.93	41.69	41.98	41.67	0.31	135.098	
200.00	200.00	188.03	188.02	0.49	0.53	95.84	-4.26	41.61	41.83	40.81	1.03	40.744	
226.29	226.29	214.30	214.29	0.59	0.63	95.66	-4.13	41.62	41.82	40.61	1.21	34.423	
300.00	300.00	287.88	287.87	0.85	0.89	95.36	-3.92	41.80	41.98	40.24	1.74	24.156	
400.00	400.00	387.81	387.80	1.21	1.24	95.09	-3.76	42.15	42.32	39.87	2.45	17.300	
500.00	500.00	487.68	487.67	1.57	1.59	95.27	-3.94	42.75	42.94	39.78	3.15	13.616	
600.00	600.00	588.55	588.52	1.93	1.93	97.54	-5.65	42.73	43.11	39.25	3.86	11.172	
700.00	700.00	689.03	688.79	2.29	2.28	105.82	-11.21	39.57	41.13	36.57	4.56	9.017	
732.88	732.88	721.75	721.40	2.40	2.40	137.98	-13.57	38.25	40.80	36.01	4.79	8.512	CC, ES
800.00	799.95	788.25	787.66	2.64	2.63	147.72	-18.66	35.68	42.45	37.18	5.27	8.056	SF
900.00	899.63	885.71	884.64	3.01	2.98	162.68	-27.60	32.28	52.45	46.46	5.99	8.762	
1,000.00	998.77	980.24	978.29	3.37	3.34	174.11	-40.16	29.79	73.83	67.14	6.69	11.041	
1,100.00	1,097.08	1,072.29	1,069.16	3.76	3.71	179.86	-54.79	29.63	105.24	97.87	7.37	14.280	
1,200.00	1,194.31	1,163.12	1,158.69	4.19	4.08	-177.68	-70.00	31.49	143.71	135.65	8.05	17.850	
1,300.00	1,290.18	1,250.23	1,244.36	4.65	4.45	-176.22	-85.61	33.47	188.14	179.42	8.71	21.596	
1,400.00	1,384.43	1,333.38	1,325.90	5.17	4.81	-175.20	-101.83	35.36	238.51	229.16	9.35	25.497	
1,500.00	1,477.00	1,409.93	1,400.64	5.75	5.16	-174.54	-118.21	37.34	294.53	284.58	9.96	29.585	
1,600.00	1,569.25	1,484.81	1,473.36	6.37	5.51	-174.08	-135.94	39.53	353.14	342.62	10.53	33.551	
1,700.00	1,661.49	1,561.11	1,547.18	7.01	5.89	-173.63	-155.15	41.60	412.85	401.73	11.12	37.123	
1,800.00	1,753.74	1,630.25	1,613.73	7.67	6.24	-173.15	-173.84	42.77	473.72	462.06	11.66	40.627	
1,900.00	1,845.99	1,699.42	1,679.80	8.34	6.61	-172.65	-194.27	43.77	536.41	524.20	12.21	43.935	
2,000.00	1,938.23	1,778.92	1,755.67	9.03	7.05	-172.26	-217.96	45.59	599.57	586.70	12.87	46.584	
2,100.00	2,030.48	1,854.84	1,828.22	9.72	7.47	-172.06	-240.20	48.19	662.68	649.18	13.50	49.086	
2,200.00	2,122.73	1,927.56	1,897.62	10.41	7.88	-171.91	-261.75	50.85	726.13	712.03	14.10	51.485	
2,300.00	2,214.97	2,015.57	1,981.52	11.12	8.38	-171.65	-288.20	53.01	789.59	774.72	14.86	53.120	
2,400.00	2,307.22	2,099.31	2,061.69	11.82	8.85	-171.44	-312.35	54.63	851.95	836.37	15.58	54.668	
2,500.00	2,399.47	2,182.25	2,141.24	12.53	9.31	-171.31	-335.71	56.64	913.94	897.64	16.30	56.080	
2,600.00	2,491.71	2,253.04	2,209.06	13.24	9.72	-171.14	-356.01	57.41	975.96	959.06	16.90	57.741	
2,700.00	2,583.96	2,327.89	2,280.53	13.96	10.15	-170.90	-378.25	57.39	1,038.47	1,020.92	17.55	59.162	
2,800.00	2,676.21	2,400.11	2,349.40	14.68	10.57	-170.69	-399.98	57.28	1,101.26	1,083.08	18.18	60.567	
2,900.00	2,768.45	2,477.55	2,423.22	15.40	11.03	-170.53	-423.38	58.05	1,164.46	1,145.60	18.86	61.733	
3,000.00	2,860.70	2,556.62	2,498.69	16.12	11.49	-170.41	-446.92	59.20	1,227.43	1,207.87	19.56	62.756	
3,100.00	2,952.95	2,627.25	2,566.10	16.84	11.91	-170.34	-467.96	60.61	1,290.57	1,270.39	20.18	63.964	
3,200.00	3,045.19	2,697.31	2,632.81	17.57	12.33	-170.28	-489.29	62.40	1,354.34	1,333.54	20.79	65.141	
3,300.00	3,137.44	2,778.42	2,710.09	18.29	12.82	-170.21	-513.86	64.13	1,417.90	1,396.39	21.51	65.914	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook UT 289H - Original Hole - Gyro & MWD — **Offset Site Error:** 0.00 ft

Survey Program: 64-GYRO-NS, 464-MWD — **Rule Assigned:** — **Offset Well Error:** 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	97.38	-8.25	63.68	65.32				
100.00	100.00	88.08	88.08	0.13	0.17	97.19	-8.02	63.62	64.12	63.82	0.31	209.372	
144.92	144.92	132.92	132.92	0.30	0.33	97.03	-7.84	63.60	64.08	63.46	0.62	102.708	
200.00	200.00	187.85	187.85	0.49	0.52	96.73	-7.52	63.71	64.15	63.14	1.01	63.309	
300.00	300.00	287.71	287.70	0.85	0.87	96.40	-7.19	64.14	64.55	62.82	1.72	37.515	
400.00	400.00	387.79	387.79	1.21	1.20	96.47	-7.32	64.54	64.96	62.55	2.41	26.961	
500.00	500.00	487.87	487.86	1.57	1.36	96.94	-7.88	64.75	65.23	62.30	2.93	22.292	
600.00	600.00	588.58	588.56	1.93	1.46	96.86	-7.78	64.61	65.08	61.69	3.39	19.221	
700.00	700.00	689.28	689.15	2.29	1.64	92.98	-3.30	63.40	63.50	59.58	3.92	16.199	
760.98	760.97	750.21	749.91	2.50	1.77	117.92	1.15	62.48	62.95	58.68	4.27	14.734	
800.00	799.95	789.33	788.86	2.64	1.87	116.00	4.72	61.87	63.15	58.65	4.51	14.007	
900.00	899.63	891.49	890.31	3.01	2.16	112.00	16.23	58.54	63.92	58.76	5.16	12.396	
1,000.00	998.77	993.94	991.44	3.37	2.50	109.56	30.55	50.69	62.74	56.89	5.86	10.714	
1,100.00	1,097.08	1,096.67	1,092.19	3.76	2.89	110.01	46.10	38.13	59.01	52.41	6.60	8.943	
1,200.00	1,194.31	1,197.62	1,190.45	4.19	3.32	113.56	62.95	22.28	53.92	46.54	7.38	7.303	
1,300.00	1,290.18	1,298.91	1,288.16	4.65	3.80	120.43	82.20	3.83	48.99	40.83	8.16	6.000	
1,400.00	1,384.43	1,399.31	1,384.03	5.17	4.32	131.91	103.20	-17.35	44.94	36.07	8.86	5.069	
1,441.44	1,423.03	1,440.52	1,423.28	5.41	4.55	138.09	112.03	-26.28	44.51	35.39	9.12	4.881	CC, ES
1,500.00	1,477.00	1,498.82	1,478.73	5.75	4.88	147.66	124.77	-39.00	45.89	36.46	9.43	4.865	
1,600.00	1,569.25	1,598.44	1,573.20	6.37	5.46	161.82	147.23	-61.25	49.83	39.79	10.04	4.962	
1,700.00	1,661.49	1,696.65	1,666.32	7.01	6.04	174.90	168.16	-84.39	56.59	45.75	10.84	5.221	
1,800.00	1,753.74	1,793.98	1,759.05	7.67	6.61	-173.68	185.91	-108.02	68.26	56.41	11.86	5.758	
1,900.00	1,845.99	1,891.06	1,852.12	8.34	7.16	-166.52	202.36	-130.18	83.54	70.60	12.94	6.455	
2,000.00	1,938.23	1,989.11	1,946.53	9.03	7.70	-162.30	218.49	-151.18	100.51	86.51	14.01	7.177	
2,100.00	2,030.48	2,089.82	2,043.75	9.72	8.26	-160.37	236.19	-170.60	117.12	102.11	15.01	7.804	
2,200.00	2,122.73	2,188.46	2,138.79	10.41	8.81	-159.25	254.96	-189.14	132.45	116.47	15.99	8.286	
2,300.00	2,214.97	2,290.84	2,237.40	11.12	9.38	-158.73	275.47	-207.50	146.95	130.00	16.94	8.673	
2,400.00	2,307.22	2,389.48	2,332.30	11.82	9.94	-158.79	296.68	-224.03	160.15	142.29	17.85	8.970	
2,500.00	2,399.47	2,489.53	2,428.55	12.53	10.50	-158.63	317.77	-241.40	173.68	154.89	18.79	9.243	
2,600.00	2,491.71	2,588.06	2,523.15	13.24	11.07	-158.33	338.89	-259.05	186.77	167.02	19.75	9.458	
2,700.00	2,583.96	2,686.39	2,617.59	13.96	11.64	-157.92	359.41	-277.16	200.37	179.64	20.72	9.669	
2,800.00	2,676.21	2,786.68	2,713.79	14.68	12.22	-157.36	380.32	-296.32	213.91	192.17	21.74	9.841	
2,900.00	2,768.45	2,885.36	2,808.30	15.40	12.80	-156.75	401.08	-315.68	227.21	204.45	22.76	9.981	
3,000.00	2,860.70	2,985.46	2,904.05	16.12	13.40	-156.09	422.29	-335.74	240.33	216.51	23.82	10.091	
3,100.00	2,952.95	3,081.56	2,996.10	16.84	13.97	-155.51	441.99	-355.07	254.16	229.31	24.85	10.227	
3,200.00	3,045.19	3,177.88	3,088.52	17.57	14.53	-154.99	461.07	-374.38	268.74	242.86	25.89	10.382	
3,300.00	3,137.44	3,275.90	3,182.78	18.29	15.10	-154.57	479.73	-393.72	284.13	257.21	26.92	10.555	
3,400.00	3,229.69	3,373.72	3,277.10	19.02	15.65	-154.31	497.73	-412.38	300.23	272.30	27.93	10.751	
3,500.00	3,321.94	3,487.42	3,386.33	19.74	16.30	-154.47	522.48	-431.91	312.98	284.02	28.96	10.808	
3,600.00	3,414.18	3,584.81	3,479.61	20.47	16.88	-154.59	544.81	-448.76	324.63	294.73	29.90	10.856	
3,700.00	3,506.43	3,684.38	3,574.88	21.20	17.47	-154.61	567.72	-466.47	336.16	305.29	30.88	10.888	
3,800.00	3,598.68	3,783.93	3,669.99	21.93	18.07	-154.50	590.59	-484.99	347.67	315.79	31.88	10.905	
3,900.00	3,690.92	3,876.03	3,758.26	22.66	18.61	-154.51	611.04	-501.43	360.03	327.22	32.81	10.973	
4,000.00	3,783.17	3,968.03	3,847.15	23.39	19.11	-154.79	629.68	-516.05	374.50	340.85	33.66	11.127	
4,100.00	3,875.42	4,059.46	3,936.06	24.12	19.59	-155.23	646.41	-529.32	391.06	356.63	34.44	11.356	
4,200.00	3,967.66	4,144.44	4,018.91	24.85	20.02	-155.49	660.08	-542.32	409.82	374.66	35.16	11.655	
4,300.00	4,059.91	4,236.01	4,108.42	25.58	20.47	-155.64	672.65	-556.99	430.84	394.86	35.98	11.974	
4,400.00	4,152.16	4,322.30	4,193.29	26.31	20.86	-156.01	682.74	-568.80	454.06	417.41	36.65	12.390	
4,500.00	4,244.40	4,406.31	4,276.44	27.04	21.20	-156.65	690.73	-577.68	479.75	442.57	37.18	12.904	
4,600.00	4,336.65	4,488.20	4,357.89	27.78	21.49	-157.48	696.50	-583.83	508.21	470.62	37.59	13.521	
4,700.00	4,428.90	4,571.33	4,440.85	28.51	21.75	-158.53	700.60	-587.33	539.22	501.27	37.94	14.211	
4,800.00	4,521.14	4,664.88	4,534.28	29.24	22.03	-159.70	704.27	-590.06	571.54	533.09	38.45	14.866	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook UT 289H - Original Hole - Gyro & MWD

Offset Site Error: 0.00 ft

Survey Program: 64-GYRO-NS, 464-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Rule Assigned: Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.00	4,613.39	4,756.06	4,625.35	29.98	22.29	-160.72	707.81	-592.70	604.11	565.17	38.94	15.513	
5,000.00	4,705.64	4,845.23	4,714.44	30.71	22.55	-161.63	710.64	-595.09	637.54	598.11	39.43	16.168	
5,100.00	4,797.88	4,934.81	4,803.97	31.44	22.80	-162.46	712.89	-597.34	671.75	631.80	39.95	16.817	
5,200.00	4,890.13	5,019.00	4,888.14	32.18	23.03	-163.25	714.24	-598.33	707.16	666.79	40.37	17.518	
5,300.00	4,983.11	5,062.54	4,931.62	32.86	23.11	172.53	713.54	-596.50	745.48	705.35	40.13	18.575	
5,400.00	5,076.56	5,113.00	4,981.66	33.41	23.19	142.65	710.61	-590.86	785.85	745.80	40.05	19.621	
5,500.00	5,167.69	5,158.51	5,026.15	33.81	23.22	119.90	706.46	-582.29	826.59	786.61	39.98	20.674	
5,600.00	5,253.72	5,207.00	5,072.32	34.09	23.24	104.92	699.80	-569.13	867.50	827.39	40.11	21.626	
5,700.00	5,332.05	5,248.56	5,110.50	34.26	23.24	94.83	692.91	-554.27	907.04	866.69	40.35	22.479	
5,800.00	5,400.29	5,301.00	5,156.01	34.34	23.22	88.10	683.49	-530.07	944.11	903.16	40.95	23.056	
5,900.00	5,456.38	5,634.49	5,393.34	34.34	23.25	88.14	683.23	-300.58	958.15	915.35	42.81	22.384	
6,000.00	5,504.87	5,678.00	5,420.10	34.31	23.28	88.13	688.03	-266.63	965.68	921.99	43.69	22.103	
6,100.00	5,539.95	5,741.00	5,454.19	34.27	23.35	87.71	692.61	-213.88	977.70	932.69	45.01	21.724	
6,200.00	5,558.26	5,815.32	5,488.02	34.23	23.49	87.48	696.34	-147.87	992.81	946.08	46.73	21.245	
6,300.00	5,561.22	5,897.00	5,517.31	34.20	23.75	88.22	700.18	-71.74	1,009.09	960.32	48.77	20.691	
6,400.00	5,561.78	5,989.36	5,538.82	34.19	24.25	89.42	704.35	17.87	1,023.89	972.86	51.03	20.064	
6,500.00	5,562.34	6,082.73	5,548.50	34.21	25.02	89.93	707.90	110.64	1,036.44	982.97	53.47	19.384	
6,600.00	5,562.91	6,194.46	5,550.91	34.30	26.29	90.02	713.17	222.20	1,044.73	988.37	56.36	18.538	
6,700.00	5,563.48	6,281.93	5,551.05	34.57	27.52	89.99	717.21	309.58	1,049.63	990.42	59.21	17.728	
6,800.00	5,564.04	6,392.21	5,551.09	35.29	29.27	89.95	722.19	419.74	1,051.15	988.47	62.68	16.770	
6,900.00	5,564.61	6,491.30	5,550.14	36.57	31.01	89.85	727.15	518.70	1,048.69	982.50	66.19	15.844	
7,000.00	5,565.17	6,584.17	5,548.78	38.20	32.73	89.74	731.40	611.46	1,043.77	974.03	69.74	14.967	
7,100.00	5,565.74	6,685.22	5,548.01	40.02	34.70	89.67	735.84	712.42	1,038.74	965.11	73.63	14.108	
7,200.00	5,566.30	6,776.22	5,546.95	41.95	36.55	89.58	739.38	803.33	1,034.20	956.80	77.40	13.361	
7,300.00	5,566.87	6,870.65	5,546.03	43.96	38.51	89.50	742.51	897.71	1,030.25	948.89	81.36	12.663	
7,400.00	5,567.43	6,965.97	5,545.21	46.02	40.55	89.42	745.23	992.99	1,026.77	941.33	85.44	12.017	
7,500.00	5,568.00	7,057.00	5,544.54	48.13	42.53	89.35	747.13	1,084.00	1,024.06	934.59	89.46	11.447	
7,600.00	5,568.56	7,151.22	5,544.00	50.28	44.61	89.29	748.41	1,178.21	1,022.06	928.40	93.65	10.913	
7,700.00	5,569.12	7,267.66	5,544.67	52.47	47.23	89.29	750.40	1,294.63	1,019.74	921.11	98.63	10.340	
7,800.00	5,569.69	7,343.76	5,545.85	54.68	48.96	89.33	752.10	1,370.69	1,017.01	914.66	102.35	9.936	
7,826.48	5,569.84	7,360.00	5,545.88	55.28	49.33	89.33	752.08	1,386.93	1,016.88	913.68	103.20	9.854	
7,900.00	5,570.25	7,421.00	5,546.11	56.93	50.73	89.32	751.30	1,447.93	1,017.34	911.25	106.09	9.589	
8,000.00	5,570.82	7,524.65	5,545.94	59.19	53.13	89.28	749.82	1,551.56	1,018.12	907.31	110.80	9.189	
8,100.00	5,571.38	7,619.53	5,543.55	61.48	55.34	89.11	748.21	1,646.40	1,019.22	904.01	115.20	8.847	
8,200.00	5,571.95	7,718.38	5,542.22	63.78	57.66	89.01	745.86	1,745.21	1,020.98	901.18	119.80	8.522	
8,300.00	5,572.51	7,819.57	5,542.26	66.10	60.06	88.98	743.44	1,846.37	1,022.73	898.19	124.54	8.212	
8,400.00	5,573.08	7,955.63	5,543.25	68.44	63.30	88.99	743.13	1,982.41	1,022.30	891.66	130.64	7.826	
8,500.00	5,573.64	8,039.76	5,544.65	70.79	65.31	89.04	743.90	2,066.52	1,020.75	885.94	134.82	7.571	
8,586.63	5,574.13	8,120.30	5,544.14	72.84	67.25	88.99	743.84	2,147.06	1,020.29	881.58	138.71	7.356	
8,600.00	5,574.21	8,130.72	5,544.01	73.15	67.50	88.98	743.76	2,157.47	1,020.31	881.08	139.23	7.328	
8,700.00	5,574.77	8,220.00	5,542.01	75.52	69.65	88.84	742.23	2,246.72	1,021.39	877.84	143.55	7.115	
8,800.00	5,575.34	8,319.71	5,540.23	77.91	72.06	88.71	739.94	2,346.39	1,023.10	874.77	148.33	6.898	
8,900.00	5,575.90	8,437.93	5,539.24	80.30	74.94	88.62	738.83	2,464.59	1,023.39	869.50	153.89	6.650	
9,000.00	5,576.47	8,542.26	5,536.24	82.70	77.48	88.42	738.81	2,568.88	1,022.86	863.99	158.86	6.439	
9,100.00	5,577.03	8,646.04	5,533.29	85.11	80.01	88.22	739.56	2,672.61	1,021.57	857.75	163.82	6.236	
9,200.00	5,577.59	8,762.12	5,532.98	87.53	82.85	88.16	741.84	2,788.66	1,018.90	849.59	169.30	6.018	
9,300.00	5,578.16	8,849.00	5,532.92	89.95	84.98	88.12	743.21	2,875.53	1,016.70	843.03	173.68	5.854	
9,378.87	5,578.60	8,912.00	5,532.68	91.86	86.53	88.09	743.46	2,938.52	1,015.95	839.08	176.87	5.744	
9,400.00	5,578.72	8,932.97	5,532.56	92.38	87.05	88.07	743.31	2,959.49	1,015.97	838.08	177.90	5.711	
9,500.00	5,579.29	9,038.85	5,532.13	94.81	89.65	88.01	742.71	3,065.37	1,015.94	832.90	183.04	5.550	
9,600.00	5,579.85	9,163.00	5,535.44	97.25	92.72	88.16	744.84	3,189.45	1,013.32	824.36	188.96	5.363	
9,700.00	5,580.42	9,243.44	5,536.51	99.70	94.71	88.19	745.70	3,269.88	1,011.55	818.43	193.12	5.238	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: NW Lybrook (138, 139, 140 & 141) - NW Lybrook UT 289H - Original Hole - Gyro & MWD

Offset Site Error: 0.00 ft

Survey Program: 64-GYRO-NS, 464-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Rule Assigned: Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,800.00	5,580.98	9,362.64	5,536.96	102.15	97.66	88.17	746.26	3,389.07	1,010.59	811.77	198.82	5.083	
9,868.70	5,581.37	9,404.65	5,536.72	103.83	98.70	88.15	746.41	3,431.08	1,009.78	808.67	201.11	5.021	
9,900.00	5,581.55	9,427.25	5,536.39	104.60	99.26	88.12	746.22	3,453.68	1,009.86	807.61	202.25	4.993	
10,000.00	5,582.11	9,511.53	5,535.08	107.06	101.35	88.02	744.17	3,537.91	1,011.66	805.24	206.41	4.901	
10,100.00	5,582.68	9,631.12	5,534.59	109.52	104.32	87.96	742.05	3,657.48	1,012.79	800.50	212.29	4.771	
10,200.00	5,583.24	9,737.69	5,535.90	111.98	106.97	88.00	741.19	3,764.04	1,012.94	795.39	217.55	4.656	
10,297.51	5,583.79	9,831.72	5,535.16	114.39	109.32	87.93	740.94	3,858.05	1,012.62	790.40	222.21	4.557	
10,300.00	5,583.81	9,833.94	5,535.13	114.45	109.37	87.92	740.93	3,860.27	1,012.62	790.29	222.32	4.555	
10,400.00	5,584.37	9,936.73	5,533.36	116.92	111.93	87.79	740.37	3,963.05	1,012.60	785.23	227.37	4.453	
10,500.00	5,584.94	10,042.18	5,531.71	119.40	114.56	87.66	740.24	4,068.49	1,012.17	779.63	232.54	4.353	
10,600.00	5,585.50	10,151.60	5,530.26	121.87	117.29	87.54	741.06	4,177.89	1,010.85	772.97	237.88	4.249	
10,700.00	5,586.07	10,257.81	5,528.41	124.35	119.94	87.40	742.62	4,284.08	1,008.83	765.78	243.05	4.151	
10,800.00	5,586.63	10,343.78	5,526.53	126.84	122.09	87.26	743.92	4,370.01	1,006.86	759.47	247.38	4.070	
10,843.25	5,586.87	10,377.64	5,525.63	127.91	122.93	87.20	743.90	4,403.86	1,006.66	757.58	249.08	4.041	
10,900.00	5,587.19	10,424.75	5,524.70	129.32	124.11	87.13	743.39	4,450.96	1,006.98	755.56	251.41	4.005	
11,000.00	5,587.76	10,547.13	5,524.46	131.81	127.18	87.08	742.80	4,573.33	1,006.86	749.43	257.43	3.911	
11,100.00	5,588.32	10,637.31	5,525.07	134.29	129.44	87.08	743.33	4,663.51	1,005.66	743.69	261.97	3.839	
11,109.37	5,588.38	10,643.81	5,525.04	134.53	129.60	87.07	743.30	4,670.00	1,005.65	743.35	262.30	3.834	
11,200.00	5,588.89	10,712.40	5,523.80	136.78	131.32	86.98	742.07	4,738.57	1,006.76	741.11	265.65	3.790	
11,300.00	5,589.45	10,813.18	5,520.38	139.28	133.84	86.76	739.14	4,839.25	1,009.24	738.66	270.59	3.730	
11,400.00	5,590.02	10,939.35	5,516.58	141.77	137.01	86.51	737.72	4,965.34	1,009.89	733.11	276.78	3.649	
11,431.30	5,590.19	10,966.01	5,515.30	142.55	137.67	86.43	737.70	4,991.97	1,009.82	731.73	278.08	3.631	
11,500.00	5,590.58	11,027.49	5,512.51	144.27	139.21	86.25	737.25	5,053.39	1,010.10	729.04	281.06	3.594	
11,600.00	5,591.15	11,111.00	5,509.29	146.76	141.31	86.05	735.54	5,136.81	1,011.77	726.73	285.04	3.550	
11,700.00	5,591.71	11,189.74	5,503.15	149.26	143.28	85.69	732.39	5,215.24	1,015.61	727.11	288.50	3.520	
11,800.00	5,592.28	11,322.88	5,490.89	151.76	146.60	84.97	728.95	5,347.76	1,018.31	723.38	294.93	3.453	
11,900.00	5,592.84	11,449.59	5,485.76	154.26	149.78	84.65	726.65	5,474.29	1,020.32	719.36	300.97	3.390	
12,000.00	5,593.41	11,575.25	5,486.82	156.77	152.93	84.64	730.55	5,599.89	1,016.26	709.35	306.91	3.311	
12,100.00	5,593.97	11,664.04	5,487.59	159.27	155.16	84.64	733.08	5,688.63	1,012.77	701.28	311.49	3.251	
12,200.00	5,594.54	11,812.25	5,489.85	161.77	158.88	84.69	738.98	5,836.69	1,008.29	690.46	317.82	3.172	
12,300.00	5,595.10	11,900.98	5,490.72	164.28	161.10	84.68	744.26	5,925.25	1,001.64	679.08	322.56	3.105	
12,400.00	5,595.66	12,006.22	5,492.02	166.79	163.73	84.68	750.72	6,030.28	994.82	667.19	327.63	3.036	
12,492.05	5,596.18	12,029.00	5,492.32	169.10	164.30	84.68	752.15	6,053.02	990.81	661.03	329.77	3.005 SF	
12,500.00	5,596.23	12,029.00	5,492.32	169.30	164.30	84.68	752.15	6,053.02	990.84	661.10	329.74	3.005	
12,600.00	5,596.79	12,029.00	5,492.32	171.81	164.30	84.68	752.15	6,053.02	996.66	669.88	326.78	3.050	
12,636.44	5,597.00	12,029.00	5,492.32	172.72	164.30	84.68	752.15	6,053.02	1,001.26	676.68	324.58	3.085	

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: Ridge Unit (124, 127, 128 & 128) - Ridge Unit No. 127H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Rule Assigned: Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,500.00	5,579.29	6,400.44	5,659.26	94.81	28.99	-90.62	2,752.37	4,061.32	1,406.36	1,315.88	90.48	15.543	
9,600.00	5,579.85	6,329.28	5,658.87	97.25	28.36	-90.62	2,702.06	4,111.64	1,336.11	1,244.92	91.18	14.653	
9,700.00	5,580.42	6,258.12	5,658.47	99.70	27.80	-90.61	2,651.74	4,161.96	1,265.85	1,173.91	91.94	13.768	
9,800.00	5,580.98	6,186.95	5,658.08	102.15	27.31	-90.60	2,601.42	4,212.28	1,195.60	1,102.86	92.74	12.892	
9,900.00	5,581.55	6,114.71	5,654.78	104.60	26.92	-90.38	2,550.42	4,263.29	1,125.31	1,031.75	93.56	12.027	
10,000.00	5,582.11	6,044.15	5,643.01	107.06	26.60	-89.48	2,501.26	4,312.45	1,055.02	960.38	94.64	11.147	
10,100.00	5,582.68	5,977.54	5,624.14	109.52	26.36	-87.90	2,456.12	4,357.59	985.05	888.77	96.28	10.231	
10,200.00	5,583.24	5,916.18	5,600.30	111.98	26.19	-85.71	2,416.15	4,397.56	915.98	817.27	98.71	9.280	
10,300.00	5,583.81	5,858.45	5,572.70	114.45	26.08	-82.97	2,380.32	4,433.39	848.66	746.73	101.92	8.326	
10,400.00	5,584.37	5,800.00	5,543.30	116.92	26.00	-79.78	2,344.60	4,469.11	783.65	678.24	105.41	7.434	
10,500.00	5,584.94	5,750.00	5,515.31	119.40	25.97	-76.54	2,315.32	4,498.40	722.33	612.13	110.20	6.554	
10,600.00	5,585.50	5,711.32	5,491.24	121.87	25.96	-73.67	2,293.91	4,519.80	666.56	549.83	116.73	5.710	
10,700.00	5,586.07	5,674.08	5,466.19	124.35	25.95	-70.63	2,274.43	4,539.28	618.54	494.88	123.66	5.002	
10,800.00	5,586.63	5,641.06	5,442.52	126.84	25.95	-67.74	2,258.16	4,555.56	580.79	450.25	130.54	4.449	
10,900.00	5,587.19	5,611.78	5,420.46	129.32	25.96	-65.06	2,244.55	4,569.16	555.94	419.89	136.06	4.086	
11,000.00	5,587.76	5,585.76	5,400.04	131.81	25.96	-62.61	2,233.15	4,580.57	546.21	407.50	138.71	3.938	
11,010.23	5,587.82	5,583.27	5,398.05	132.06	25.97	-62.37	2,232.09	4,581.63	546.12	407.34	138.78	3.935	CC, ES, SF
11,100.00	5,588.32	5,562.58	5,381.26	134.29	25.97	-60.39	2,223.54	4,590.17	552.74	415.04	137.71	4.014	
11,200.00	5,588.89	5,550.00	5,370.84	136.78	25.97	-59.19	2,218.56	4,595.16	575.39	440.95	134.44	4.280	
11,300.00	5,589.45	5,523.27	5,348.20	139.28	25.98	-56.63	2,208.51	4,605.20	612.28	484.72	127.55	4.800	
11,400.00	5,590.02	5,500.00	5,327.97	141.77	25.98	-54.43	2,200.38	4,613.33	661.54	541.07	120.47	5.491	
11,500.00	5,590.58	5,500.00	5,327.97	144.27	25.98	-54.43	2,200.38	4,613.33	720.62	605.30	115.32	6.249	
11,600.00	5,591.15	5,477.72	5,308.18	146.76	25.98	-52.36	2,193.15	4,620.57	787.25	678.22	109.04	7.220	
11,700.00	5,591.71	5,465.25	5,296.93	149.26	25.98	-51.22	2,189.34	4,624.37	860.00	755.95	104.05	8.265	
11,800.00	5,592.28	5,450.00	5,283.03	151.76	25.98	-49.85	2,184.92	4,628.80	937.43	837.84	99.59	9.413	
11,900.00	5,592.84	5,450.00	5,283.03	154.26	25.98	-49.85	2,184.92	4,628.80	1,018.51	922.22	96.29	10.578	
12,000.00	5,593.41	5,450.00	5,283.03	156.77	25.98	-49.85	2,184.92	4,628.80	1,102.70	1,009.33	93.37	11.810	
12,100.00	5,593.97	5,425.04	5,259.92	159.27	25.97	-47.69	2,178.25	4,635.46	1,188.58	1,098.43	90.15	13.185	
12,200.00	5,594.54	5,416.89	5,252.29	161.77	25.97	-47.01	2,176.23	4,637.49	1,276.63	1,188.84	87.79	14.543	
12,300.00	5,595.10	5,400.00	5,236.34	164.28	25.97	-45.62	2,172.29	4,641.43	1,366.29	1,280.74	85.55	15.971	
12,400.00	5,595.66	5,400.00	5,236.34	166.79	25.97	-45.62	2,172.29	4,641.43	1,457.00	1,373.10	83.90	17.365	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: Ridge Unit (124, 127, 128 & 129) - Ridge Unit No. 128H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,800.00	5,569.69	6,359.01	5,649.50	54.68	31.17	-90.59	2,790.14	2,388.15	1,444.21	1,375.20	69.02	20.925	
7,900.00	5,570.25	6,287.84	5,649.10	56.93	30.13	-90.58	2,739.82	2,438.47	1,373.96	1,305.04	68.92	19.937	
8,000.00	5,570.82	6,216.68	5,648.71	59.19	29.17	-90.57	2,689.50	2,488.79	1,303.70	1,234.79	68.91	18.919	
8,100.00	5,571.38	6,145.52	5,648.31	61.48	28.27	-90.56	2,639.19	2,539.11	1,233.45	1,164.46	68.98	17.880	
8,200.00	5,571.95	6,074.02	5,647.70	63.78	27.44	-90.53	2,588.63	2,589.67	1,163.19	1,094.04	69.15	16.821	
8,300.00	5,572.51	6,002.11	5,640.84	66.10	26.68	-90.04	2,538.05	2,640.25	1,092.89	1,023.49	69.39	15.749	
8,400.00	5,573.08	5,933.09	5,625.89	68.44	26.04	-88.84	2,490.44	2,687.87	1,022.69	952.74	69.95	14.621	
8,500.00	5,573.64	5,868.63	5,604.71	70.79	25.51	-86.99	2,447.41	2,730.89	953.02	882.11	70.91	13.440	
8,600.00	5,574.21	5,809.74	5,579.49	73.15	25.10	-84.59	2,409.80	2,768.51	884.60	812.13	72.47	12.207	
8,700.00	5,574.77	5,750.34	5,550.01	75.52	24.73	-81.54	2,373.34	2,804.97	818.25	743.92	74.33	11.008	
8,800.00	5,575.34	5,700.00	5,524.04	77.91	24.45	-78.62	2,342.86	2,835.45	754.61	677.57	77.04	9.795	
8,900.00	5,575.90	5,650.00	5,494.81	80.30	24.20	-75.18	2,314.19	2,864.12	695.47	615.23	80.24	8.668	
9,000.00	5,576.47	5,612.76	5,470.81	82.70	24.02	-72.28	2,294.06	2,884.25	642.79	557.95	84.84	7.577	
9,100.00	5,577.03	5,577.35	5,446.32	85.11	23.87	-69.28	2,275.99	2,902.33	598.94	509.03	89.91	6.661	
9,200.00	5,577.59	5,550.00	5,426.34	87.53	23.76	-66.83	2,262.77	2,915.54	566.58	470.99	95.59	5.927	
9,300.00	5,578.16	5,518.10	5,401.95	89.95	23.63	-63.87	2,248.24	2,930.07	548.16	448.22	99.95	5.485	
9,366.43	5,578.53	5,500.00	5,387.62	91.56	23.56	-62.15	2,240.43	2,937.89	544.62	442.41	102.21	5.328	CC
9,400.00	5,578.72	5,500.00	5,387.62	92.38	23.56	-62.15	2,240.43	2,937.89	545.66	441.76	103.90	5.252	ES, SF
9,500.00	5,579.29	5,471.19	5,364.11	94.81	23.45	-59.39	2,228.66	2,949.65	559.38	454.84	104.54	5.351	
9,600.00	5,579.85	5,450.00	5,346.29	97.25	23.37	-57.35	2,220.55	2,957.76	588.65	484.92	103.73	5.675	
9,700.00	5,580.42	5,433.61	5,332.22	99.70	23.31	-55.79	2,214.60	2,963.71	631.43	529.72	101.71	6.208	
9,800.00	5,580.98	5,417.57	5,318.24	102.15	23.25	-54.27	2,209.05	2,969.26	685.36	586.55	98.81	6.936	
9,900.00	5,581.55	5,400.00	5,302.66	104.60	23.19	-52.63	2,203.30	2,975.02	748.15	652.64	95.51	7.833	
10,000.00	5,582.11	5,400.00	5,302.66	107.06	23.19	-52.63	2,203.30	2,975.02	817.96	724.95	93.02	8.794	
10,100.00	5,582.68	5,377.88	5,282.72	109.52	23.11	-50.61	2,196.54	2,981.78	892.84	803.07	89.77	9.945	
10,200.00	5,583.24	5,366.91	5,272.69	111.98	23.07	-49.63	2,193.39	2,984.93	972.03	884.79	87.24	11.142	
10,300.00	5,583.81	5,350.00	5,257.08	114.45	23.01	-48.16	2,188.80	2,989.52	1,054.55	969.72	84.82	12.432	
10,400.00	5,584.37	5,350.00	5,257.08	116.92	23.01	-48.16	2,188.80	2,989.52	1,139.53	1,056.45	83.08	13.716	
10,500.00	5,584.94	5,350.00	5,257.08	119.40	23.01	-48.16	2,188.80	2,989.52	1,226.79	1,145.28	81.51	15.052	
10,600.00	5,585.50	5,331.15	5,239.45	121.87	22.95	-46.57	2,184.07	2,994.25	1,315.44	1,235.66	79.77	16.489	
10,700.00	5,586.07	5,323.82	5,232.55	124.35	22.93	-45.96	2,182.34	2,995.97	1,405.61	1,327.18	78.43	17.921	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: Ridge Unit (124, 127, 128 & 129) - Ridge Unit No. 129H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,300.00	5,561.22	6,686.98	5,638.69	34.20	57.88	-90.57	2,688.90	853.74	1,388.51	1,309.96	78.55	17.677	
6,400.00	5,561.78	6,631.73	5,638.36	34.19	57.09	-90.54	2,649.83	892.81	1,305.16	1,227.76	77.40	16.863	
6,500.00	5,562.34	6,573.61	5,638.01	34.21	56.27	-90.52	2,608.74	933.90	1,223.79	1,147.48	76.31	16.037	
6,600.00	5,562.91	6,511.72	5,634.41	34.30	55.41	-90.24	2,565.07	977.57	1,144.47	1,069.30	75.17	15.225	
6,700.00	5,563.48	6,448.74	5,623.94	34.57	54.56	-89.37	2,521.17	1,021.46	1,067.33	993.17	74.17	14.391	
6,800.00	5,564.04	6,386.42	5,606.94	35.29	53.76	-87.91	2,478.80	1,063.83	992.73	919.33	73.39	13.527	
6,900.00	5,564.61	6,326.38	5,584.50	36.57	53.02	-85.91	2,439.44	1,103.19	921.26	848.28	72.98	12.624	
7,000.00	5,565.17	6,269.37	5,557.95	38.20	52.36	-83.34	2,403.79	1,138.84	853.45	780.41	73.05	11.684	
7,100.00	5,565.74	6,211.79	5,529.15	40.02	51.73	-80.24	2,368.53	1,174.11	788.15	714.80	73.35	10.745	
7,200.00	5,566.30	6,179.31	5,512.08	41.95	51.37	-78.29	2,349.44	1,194.07	727.08	651.55	75.53	9.626	
7,300.00	5,566.87	6,150.00	5,495.56	43.96	51.05	-76.36	2,333.34	1,212.15	672.39	593.79	78.60	8.554	
7,400.00	5,567.43	6,114.01	5,473.92	46.02	50.64	-73.79	2,315.10	1,234.36	625.71	543.84	81.86	7.643	
7,500.00	5,568.00	6,081.61	5,453.21	48.13	50.28	-71.32	2,300.17	1,254.30	589.00	503.15	85.85	6.861	
7,600.00	5,568.56	6,050.00	5,431.94	50.28	49.92	-68.80	2,287.01	1,273.64	564.25	474.31	89.95	6.273	
7,700.00	5,569.12	6,018.32	5,409.66	52.47	49.56	-66.20	2,275.27	1,292.84	553.17	459.70	93.46	5.918	
7,719.92	5,569.24	6,012.17	5,405.22	52.91	49.49	-65.69	2,273.15	1,296.55	552.69	458.64	94.05	5.876	CC, ES
7,800.00	5,569.69	6,000.00	5,396.35	54.68	49.36	-64.68	2,269.14	1,303.85	556.94	460.11	96.83	5.752	SF
7,900.00	5,570.25	5,950.00	5,358.59	56.93	48.80	-60.54	2,255.01	1,333.39	574.76	478.48	96.28	5.969	
8,000.00	5,570.82	5,929.56	5,342.60	59.19	48.57	-58.88	2,250.33	1,345.22	605.93	509.38	96.55	6.276	
8,100.00	5,571.38	5,900.00	5,318.95	61.48	48.25	-56.55	2,244.70	1,362.04	648.76	553.54	95.22	6.813	
8,200.00	5,571.95	5,875.78	5,299.16	63.78	47.98	-54.72	2,241.11	1,375.54	701.14	607.53	93.60	7.491	
8,300.00	5,572.51	5,850.00	5,277.74	66.10	47.71	-52.86	2,238.31	1,389.59	761.24	669.54	91.70	8.301	
8,400.00	5,573.08	5,826.77	5,258.14	68.44	47.46	-51.27	2,236.68	1,401.95	827.51	737.64	89.87	9.208	
8,500.00	5,573.64	5,800.00	5,235.26	70.79	47.18	-49.56	2,235.87	1,415.81	898.70	810.61	88.08	10.203	
8,600.00	5,574.21	5,782.56	5,220.20	73.15	47.01	-48.51	2,235.96	1,424.62	973.77	887.18	86.58	11.246	
8,700.00	5,574.77	5,750.00	5,191.84	75.52	46.68	-46.70	2,237.42	1,440.53	1,052.19	967.07	85.12	12.361	
8,800.00	5,575.34	5,736.59	5,180.08	77.91	46.55	-46.01	2,238.42	1,446.91	1,132.83	1,048.89	83.95	13.495	
8,900.00	5,575.90	5,689.55	5,138.86	80.30	46.10	-43.74	2,241.95	1,469.30	1,215.00	1,132.23	82.77	14.679	
9,000.00	5,576.47	5,642.51	5,097.64	82.70	45.64	-41.67	2,245.49	1,491.68	1,297.97	1,216.23	81.74	15.879	
9,100.00	5,577.03	5,595.47	5,056.42	85.11	45.18	-39.78	2,249.03	1,514.06	1,381.59	1,300.75	80.84	17.091	

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

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Offset Design: Ridge Unit (130, 135, 136 & 137) - Ridge Unit No. 130H - Original Hole - rev0

Offset Site Error: 0.00 ft

Survey Program: 0-MWD

Offset Well Error: 0.00 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
3,800.00	3,598.68	5,140.57	4,251.67	21.93	55.19	17.42	2,176.18	-844.09	1,463.45	1,410.24	53.21	27.501	
3,900.00	3,690.92	5,191.59	4,290.61	22.66	55.89	19.38	2,163.40	-813.70	1,387.78	1,332.65	55.13	25.175	
4,000.00	3,783.17	5,242.61	4,329.55	23.39	56.60	21.47	2,150.63	-783.30	1,313.37	1,256.17	57.20	22.959	
4,100.00	3,875.42	5,293.63	4,368.48	24.12	57.30	23.70	2,137.85	-752.91	1,240.47	1,181.00	59.47	20.858	
4,200.00	3,967.66	5,344.65	4,407.42	24.85	58.00	26.08	2,125.07	-722.52	1,169.35	1,107.40	61.95	18.876	
4,300.00	4,059.91	5,395.67	4,446.36	25.58	58.70	28.60	2,112.29	-692.13	1,100.36	1,035.69	64.67	17.016	
4,400.00	4,152.16	5,446.68	4,485.30	26.31	59.41	31.28	2,099.52	-661.74	1,033.92	966.28	67.64	15.286	
4,500.00	4,244.40	5,497.70	4,524.23	27.04	60.11	34.12	2,086.74	-631.35	970.56	899.68	70.88	13.693	
4,600.00	4,336.65	5,548.72	4,563.17	27.78	60.81	37.11	2,073.96	-600.96	910.92	836.55	74.38	12.248	
4,700.00	4,428.90	5,599.74	4,602.11	28.51	61.52	40.25	2,061.19	-570.56	855.79	777.70	78.09	10.959	
4,800.00	4,521.14	5,642.96	4,635.12	29.24	62.11	43.02	2,050.40	-544.85	806.14	724.34	81.80	9.855	
4,900.00	4,613.39	5,671.31	4,657.36	29.98	62.47	44.85	2,044.07	-528.45	764.17	679.08	85.09	8.981	
5,000.00	4,705.64	5,700.00	4,680.61	30.71	62.83	46.68	2,038.67	-512.54	731.17	643.32	87.85	8.323	
5,100.00	4,797.88	5,750.00	4,722.75	31.44	63.38	49.79	2,031.73	-486.57	707.75	617.43	90.32	7.836	
5,200.00	4,890.13	5,788.67	4,756.57	32.18	63.75	52.08	2,028.54	-468.12	693.93	602.35	91.58	7.577	
5,300.00	4,983.11	5,850.00	4,812.02	32.86	64.24	34.14	2,027.41	-441.99	686.35	593.94	92.41	7.427	
5,400.00	5,076.56	5,914.24	4,871.85	33.41	64.62	9.69	2,031.42	-419.04	677.04	584.76	92.29	7.336	
5,500.00	5,167.69	5,992.34	4,945.94	33.81	64.92	-9.59	2,043.36	-397.64	663.11	571.03	92.08	7.201	
5,600.00	5,253.72	6,070.15	5,019.94	34.09	65.07	-24.08	2,062.76	-383.75	643.56	552.00	91.56	7.029	
5,700.00	5,332.05	6,138.88	5,084.37	34.26	65.10	-36.09	2,085.83	-377.88	620.27	529.95	90.32	6.868	
5,800.00	5,400.29	6,200.00	5,140.15	34.34	65.08	-46.70	2,110.75	-377.78	597.60	509.47	88.13	6.781 SF	
5,900.00	5,456.38	6,231.23	5,167.88	34.34	65.04	-53.65	2,124.99	-379.58	580.71	497.08	83.63	6.944 ES	
6,000.00	5,504.87	6,250.00	5,184.25	34.31	65.02	-55.40	2,134.02	-381.27	575.29	497.63	77.66	7.408	
6,019.41	5,512.95	6,263.22	5,195.64	34.30	65.01	-56.63	2,140.59	-382.73	575.06	497.98	77.07	7.461 CC	
6,100.00	5,539.95	6,276.39	5,206.85	34.27	64.99	-57.69	2,147.29	-384.41	577.31	505.15	72.16	8.000	
6,200.00	5,558.26	6,284.00	5,213.26	34.23	64.98	-57.63	2,151.23	-385.48	586.82	520.59	66.23	8.860	
6,300.00	5,561.22	6,284.12	5,213.36	34.20	64.98	-56.85	2,151.29	-385.49	605.07	544.07	60.99	9.921	
6,400.00	5,561.78	6,282.48	5,211.99	34.19	64.98	-56.29	2,150.44	-385.26	639.74	582.97	56.77	11.269	
6,500.00	5,562.34	6,280.16	5,210.03	34.21	64.98	-55.42	2,149.23	-384.93	689.75	635.86	53.89	12.799	
6,600.00	5,562.91	6,277.25	5,207.57	34.30	64.99	-54.22	2,147.73	-384.52	751.99	699.54	52.45	14.337	
6,700.00	5,563.48	6,273.86	5,204.71	34.57	64.99	-52.65	2,145.99	-384.07	823.60	771.39	52.21	15.775	
6,800.00	5,564.04	6,270.09	5,201.49	35.29	65.00	-50.67	2,144.06	-383.58	902.27	849.51	52.76	17.103	
6,900.00	5,564.61	6,265.98	5,198.00	36.57	65.00	-48.22	2,141.98	-383.07	986.20	932.50	53.70	18.365	
7,000.00	5,565.17	6,250.00	5,184.25	38.20	65.02	-45.46	2,134.02	-381.27	1,074.04	1,019.55	54.49	19.711	
7,100.00	5,565.74	6,250.00	5,184.25	40.02	65.02	-45.46	2,134.02	-381.27	1,163.65	1,107.94	55.71	20.888	
7,200.00	5,566.30	6,250.00	5,184.25	41.95	65.02	-45.46	2,134.02	-381.27	1,254.83	1,197.98	56.85	22.073	
7,300.00	5,566.87	6,250.00	5,184.25	43.96	65.02	-45.46	2,134.02	-381.27	1,347.26	1,289.36	57.89	23.272	
7,400.00	5,567.43	6,250.00	5,184.25	46.02	65.02	-45.46	2,134.02	-381.27	1,440.70	1,381.86	58.84	24.485	

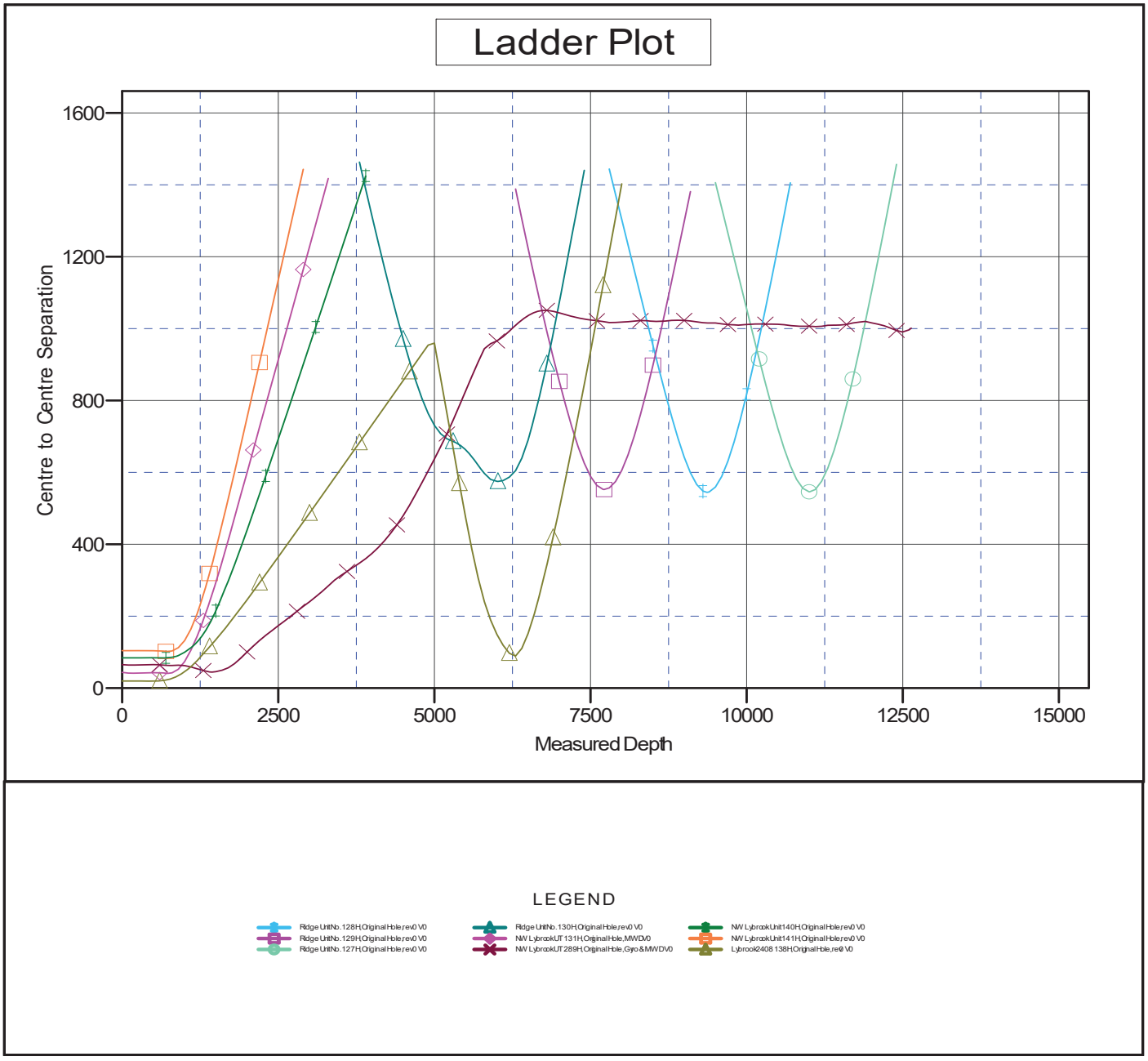
CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to RKB=6847+25 @ 6872.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -107.833333333

Coordinates are relative to: NW Lybrook Unit 139H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.11°



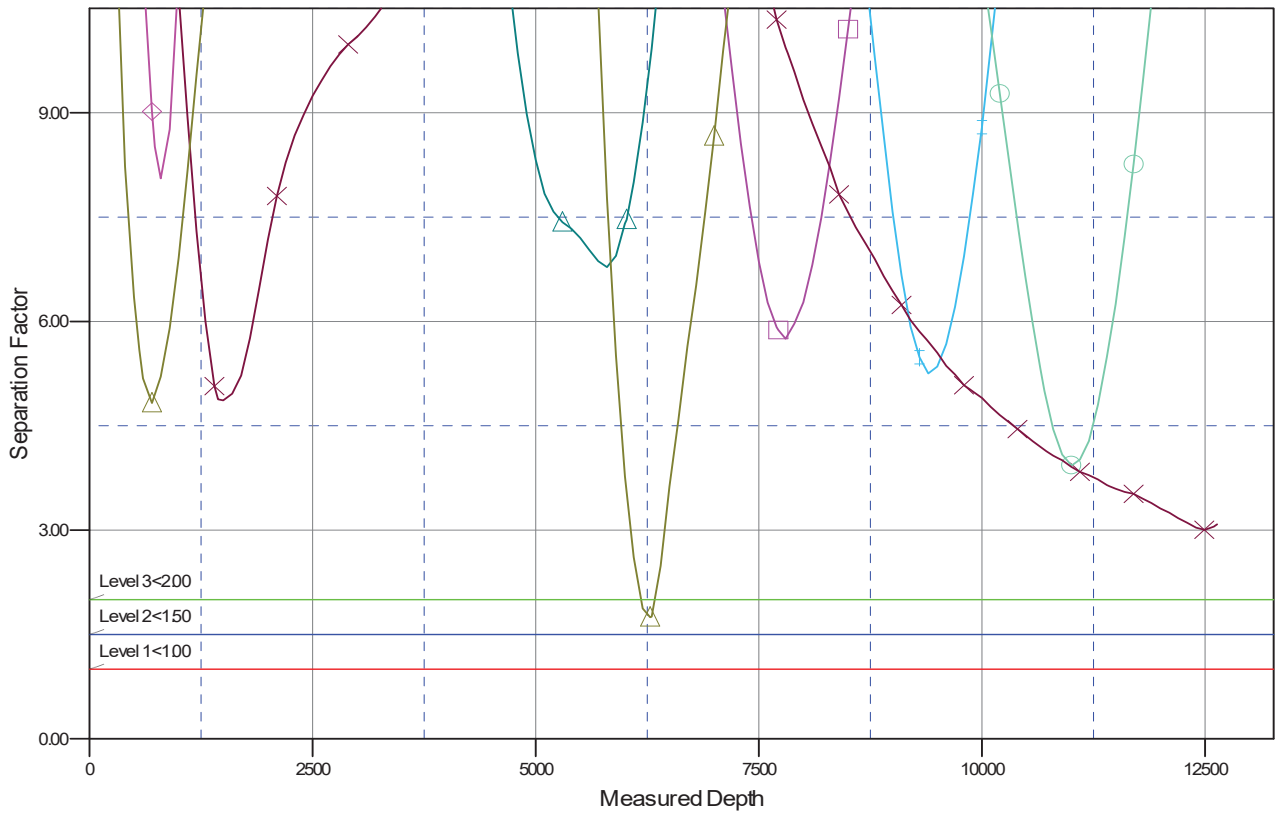
Anticollision Report

Company:	Enduring Resources LLC	**Local Co-ordinate Reference:**	Well NW Lybrook Unit 139H
Project:	San Juan County, New Mexico NAD83 NM W	**TVD Reference:**	RKB=6847+25 @ 6872.00ft
Reference Site:	NW Lybrook (138, 139, 140 & 141)	**MD Reference:**	RKB=6847+25 @ 6872.00ft
Site Error:	0.00 ft	**North Reference:**	Grid
Reference Well:	NW Lybrook Unit 139H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.00 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Original Hole	**Database:**	DB_Decv0422v16
Reference Design:	rev0	**Offset TVD Reference:**	Offset Datum

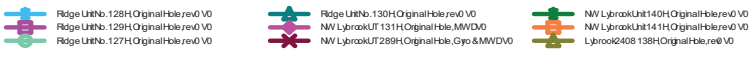
Reference Depths are relative to RKB=6847+25 @ 6872.00ft
Offset Depths are relative to Offset Datum
Central Meridian is -107.833333333

Coordinates are relative to: NW Lybrook Unit 139H
Coordinate System is US State Plane 1983, New Mexico Western Zone
Grid Convergence at Surface is: 0.11°

Separation Factor Plot



LEGEND



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Farmington District Office
6251 College Blvd, Suite A
Farmington, New Mexico 87402

In Reply Refer To:
3162.3-1(NMF0110)

* Enduring Resources LLC

#139H NW LYBROOK UNIT

Lease: NMNM12233 Agreement: NMNM133482A
SH: SW¼SW¼ Section 25, T. 24N., R. 8W.
San Juan County, New Mexico
BH: NW¼SW¼ Section 30, T. 24N., R. 7W.
San Juan County, New Mexico
***Above Data Required on Well Sign**

GENERAL REQUIREMENTS FOR OIL AND GAS OPERATIONS ON FEDERAL AND INDIAN LEASES

The following special requirements apply and are effective when **checked**:

A. ☒ Note all surface/drilling conditions of approval attached.

B. ☒ The required wait on cement (WOC) time will be a minimum of 500 psi compressive strength at 60 degrees. Blowout preventor (BOP) nipple-up operations may then be initiated

C. ☒ Test all casing strings below the conductor casing to .22 psi/ft. of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield (burst) for a minimum of 30 minutes. If pressure declines more than 10 percent in 30 minutes, corrective action shall be taken.

D. ☐ Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the Bureau of Land Management, New Mexico State Office, Reservoir Management Group, 301 Dinosaur Trail, Santa Fe, New Mexico 87508.
The effective date of the agreement must be **prior** to any sales.

E. ☐ The use of co-flex hose is authorized contingent upon the following:
1. From the BOP to the choke manifold: the co-flex hose must be hobbled on both ends and saddle to prevent whip.
2. From the choke manifold to the discharge tank: the co-flex hoses must be as straight as practical, hobbled on both ends and anchored to prevent whip.
3. The co-flex hose pressure rating must be at least commensurate with approved BOPE.

I. GENERAL

A. Full compliance with all applicable laws and regulations, with the approved Permit to drill, and with the approved Surface Use and Operations Plan is required. Lessees and/or operators are fully accountable for the actions of their contractors and subcontractors. Failure to comply with these requirements and the filing of required reports will result in strict enforcement pursuant to 43 CFR 3163.1 or 3163.2.

B. Each well shall have a well sign in legible condition from spud date to final abandonment. The sign should show the operator's name, lease serial number, or unit name, well number, location of the well, and whether lease is Tribal or Allotted, (See 43 CFR 3162.6(b)).

C. A complete copy of the approved Application for Permit to Drill, along with any conditions of approval, shall be available to authorized personnel at the drill site whenever active drilling operations are under way.

D. For Wildcat wells only, a drilling operations progress report is to be submitted, to the BLM-Field Office, weekly from the spud date until the well is completed and the Well Completion Report is filed. The report should be on 8-1/2 x 11 inch paper, and each page should identify the well by; operator's name, well number, location and lease number.

E. As soon as practical, notice is required of all blowouts, fires and accidents involving life-threatening injuries or loss of life. (See NTL-3A).

F. BOP equipment (except the annular preventer) shall be tested utilizing a test plug to full working pressure for 10 minutes. No bleed-off of pressure is acceptable. (See 43 CFR 3172.6(b)(9)(ii)).

G. The operator shall have sufficient weighting materials and lost circulation materials on location in the event of a pressure kick or in the event of lost circulation. (See 43 CFR 3172.8(a)).

H. The flare line(s) discharge shall be located not less than 100 feet from the well head, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of the prevailing wind direction and shall be anchored. The flare system shall have an effective method for ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and to maintain a continuous flare. (See 43 CFR 3172.8(b)(7)).

I. Prior approval by the BLM-Authorized Office (Drilling and Production Section) is required for variance from the approved drilling program and before commencing plugging operations, plug back work, casing repair work, corrective cementing operations, or suspending drilling operations indefinitely. Emergency approval may be obtained orally, but such approval is contingent upon filing of a Notice of Intent sundry within three business days. **Any changes to the approved plan or any questions regarding drilling operations should be directed to BLM during regular business hours at 505-564-7600. Emergency program changes after hours should be directed to Virgil Lucero at 505-793-1836.**

J. The Inspection and Enforcement Section (I&E), phone number (505-564-7750) is to be notified at least 24 hours in advance of BOP test, spudding, cementing, or plugging operations so that a BLM representative may witness the operations.

K. Unless drilling operations are commenced within three years according to 43 CFR 3171.14, approval of the Application for Permit to Drill will expire. No extensions will be granted.

L. From the time drilling operations are initiated and until drilling operations are completed, a member of the drilling crew or the tool pusher shall maintain rig surveillance at all times, unless the well is secured with blowout preventers or cement plugs.

M. If for any reason, drilling operations are suspended for more than 90 days, a written notice must be provided to this office outlining your plans for this well.

N. **Commingling**: No production (oil, gas, and water) from the subject well should start until Sundry Notices (if necessary) granting variances from applicable regulations as related to commingling and off-lease measurement are approved by this office. (See 43 CFR 3173.14)

II. REPORTING REQUIREMENTS

A. For reporting purposes, all well Sundry notices, well completion and other well actions shall be referenced by the appropriate lease, communitization agreement and/or unit agreement numbers.

B. The following reports shall be filed with the BLM-Authorized Officer online through AFMSS 2 within 30 days after the work is completed.

1. Provide complete information concerning.

   a. Setting of each string of casing. Show size and depth of hole, grade and weight of casing, depth set, depth of all cementing tools that are used, amount (in cubic feet) and types of cement used, whether cement circulated to surface and all cement tops in the casing annulus, casing test method and results, and the date work was done. Show spud date on first report submitted.

   b. Intervals tested, perforated (include size, number and location of perforations), acidized, or fractured; and results obtained. Provide date work was done on well completion report and completion sundry notice.

   c. Subsequent Report of Abandonment, show the way the well was plugged, including depths where casing was cut and pulled, intervals (by depths) where cement plugs were replaced, and dates of the operations.

2. Well Completion Report will be submitted with 30 days after well has been completed.

   a. Initial Bottom Hole Pressure (BHP) for the producing formations. Show the BHP on the completion report. The pressure may be: 1) measured with a bottom hole bomb, or; 2) calculated based on shut in surface pressures (minimum seven day buildup) and fluid level shot.

3. Submit a cement evaluation log if cement is not circulated to surface.

C. Production Startup Notification is required no later than the 5th business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site or resumes production in the case of a well which has been off production for more than 90 days. The operator shall notify the Authorized Officer by letter or Sundry Notice, Form 3160-5, or orally to be followed by a letter or Sundry Notice, of the date on which such production has begun or resumed. CFR 43 3162.4-1(c).

III. DRILLER'S LOG

The following shall be entered in the daily driller's log: 1) Blowout preventer pressures tests, including test pressures and results, 2) Blowout preventer tests for proper functioning, 3) Blowout prevention drills conducted, 4) Casing run, including size, grade, weight, and depth set, 5) How pipe was cemented, including amount of cement, type, whether cement circulated to surface, location of cementing tools, etc., 6) Waiting on cement time for each casing string, 7) Casing pressure tests after cementing, including test pressure and results, and 8) Estimated amounts of oil and gas recovered and/or produced during drill stem test.

IV. GAS FLARING

Gas produced from this well may not be vented or flared beyond an initial, authorized test period of * Days, 20 MMCF following its (completion)(recompletion), or flowback has been routed to the production separator, whichever first occurs, without the prior, written approval of the authorized officer in accordance with 43 CFR 3179.81. Should gas be vented or flared without approval beyond the test period authorized above, you may be directed to shut-in the well until the gas can be captured or approval to continue venting or flaring as uneconomic is granted. You shall be required to compensate the lessor for the portion of the gas vented or flared without approval which is determined to have been avoidably lost.

*30 days, unless a longer test period is specifically approved by the authorized officer. The 30-day period will commence upon the beginning of flowback following completion or recompletion.

V. SAFETY

A. All rig heating stoves are to be of the explosion-proof type.

B. Rig safety lines are to be installed.

C. Hard hats and other Personal Protective Equipment (PPE) must be utilized.

VI. CHANGE OF PLANS OR ABANDONMENT

A. Any changes of plans required to mitigate unanticipated conditions encountered during drilling operations, will require approval as set forth in Section 1.I.

B. If the well is dry, it is to be plugged in accordance with 43 CFR 3162.3-4, approval of the proposed plugging program is required as set forth in Section 1.I. The report should show the total depth reached, the reason for plugging, and the proposed intervals, by depths, where cement plugs are to be placed, type of plugging mud, etc. A Subsequent Report of Abandonment is required as set forth in Section II.B.1c.

C. Unless a well has been properly cased and cemented, or properly plugged, the drilling rig must not be moved from the drill site without prior approval from the BLM-Authorized Officer.

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

General Information
Phone: (505) 629-6116

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

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

CONDITIONS

Operator: ENDURING RESOURCES, LLC 6300 S Syracuse Way Centennial, CO 80111	OGRID: 372286
	Action Number: 412584
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
sford	Cement is required to circulate on both surface and intermediate1 strings of casing.	12/16/2024
sford	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	12/16/2024
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	1/12/2025
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	1/12/2025
ward.rikala	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string.	1/12/2025
ward.rikala	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.	1/12/2025