Form 3160-3 (June 2015) UNITED STATES		FORM APPROVED OMB No. 1004-0137 Expires: January 31, 2018					
DEPARTMENT OF THE INT	5. Lease Serial No.						
BUREAU OF LAND MANAG APPLICATION FOR PERMIT TO DRII	6. If Indian, Allotee or Tribe Name						
1a. Type of work: DRILL	7. If Unit or CA Agreement, Name and No.						
1b. Type of Well: Oil Well Gas Well Other	-	8. Lease Name and Well No.					
1c. Type of Completion: Hydraulic Fracturing Single	Zone Multiple Zone	6. Lease Ivalle and Well IV.					
2. Name of Operator		9. API Well No.					
3a. Address 3b.	Phone No. (include area code)	10. Field and Po					
4. Location of Well (<i>Report location clearly and in accordance with</i>	any State requirements.*)	11. Sec., T. R. M. or Blk. and Survey or Area					
At surface							
At proposed prod. zone							
14. Distance in miles and direction from nearest town or post office*		12. County or Parish 13. State					
15. Distance from proposed* 16 location to nearest 16 property or lease line, ft. (Also to nearest drig. unit line, if any)	No of acres in lease 17. Spacing	2 Unit dedicated to this well					
	. Proposed Depth 20. BLM/E	BIA Bond No. in file					
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 22	Approximate date work will start*	23. Estimated duration					
2	4. Attachments						
The following, completed in accordance with the requirements of On (as applicable) 1. Well plat certified by a registered surveyor.		vdraulic Fracturing rule per 43 CFR 3162.3-3 unless covered by an existing bond on file (see					
2. A Drilling Plan.	Item 20 above).						
3. A Surface Use Plan (if the location is on National Forest System L SUPO must be filed with the appropriate Forest Service Office).	ands, the 5. Operator certification. 6. Such other site specific inform BLM.	nation and/or plans as may be requested by the					
25. Signature	Name (Printed/Typed)	Date					
Title							
Approved by (Signature)	Name (Printed/Typed)	Date					
Title	Office	1					
Application approval does not warrant or certify that the applicant ho applicant to conduct operations thereon. Conditions of approval, if any, are attached.	Ids legal or equitable title to those rights in	n the subject lease which would entitle the					
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make of the United States any false, fictitious or fraudulent statements or re							



(Continued on page 2)

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INSTRUCTIONS

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

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

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

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

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

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Operator Remarks

Location of Well

0. SHL: SWNW / 1733 FNL / 303 FWL / TWSP: 23N / RANGE: 6W / SECTION: 3 / LAT: 36.25612 / LONG: -107.464632 (TVD: 0 feet, MD: 0 feet) PPP: SWNE / 2268 FNL / 2601 FEL / TWSP: 23N / RANGE: 6W / SECTION: 3 / LAT: 36.254834 / LONG: -107.456245 (TVD: 5557 feet, MD: 6328 feet) PPP: SWNW / 2275 FNL / 0 FWL / TWSP: 23N / RANGE: 6W / SECTION: 2 / LAT: 36.255009 / LONG: -107.447425 (TVD: 5569 feet, MD: 8930 feet) BHL: SENW / 2280 FNL / 2585 FWL / TWSP: 23N / RANGE: 6W / SECTION: 2 / LAT: 36.255182 / LONG: -107.438659 (TVD: 5582 feet, MD: 11515 feet)

BLM Point of Contact

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

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

Conditions of Approval

Operator:	Enduring Resources IV, LLC
Well Names:	Haynes Canyon Unit 428H Pad: HCU 428H, 430H, 440H, 442H
	Haynes Canyon Unit 432H Pad: HCU 432H, 434H, 436H, 438H,
	Northeast Lybrook COM 176H Pad: NELCA 262H and 263H
Legal Location:	Sec 3 & Sec 6 Township 23N, Range 6W, Rio Arriba County
NEPA Log Number:	DOI-BLM-NM-F010-2023-0067-EA
Inspection Date:	June 27, 2023
Lease Number:	NMNM-028733, NMNM-142111X, NMSF-078362, NMNM-132829

The following conditions of approval will apply to Haynes Canyon Unit 428H, 432H, and NE Lybrook Com 176H Reoccupation (NELCA 262H) Oil and Gas Wells Project, and other associated facilities, unless a particular Surface Managing Agency or private surface owner has supplied to Bureau of Land Management and the operator a contradictory environmental stipulation. The failure of the operator to comply with these requirements may result in an assessment or civil penalties pursuant to 43 CFR 3163.1 or 3163.2.

Disclaimers: BLM's approval of the APD does not relieve the lessee and operator from obtaining any other authorizations that may be required by the BIA, Navajo Tribe, State, or other jurisdictional entities.

Copy of Plans: A complete copy of the APD package, including Surface Use Plan of Operations, Bare Soil Reclamation Plan, Plan of Development (if required), Conditions of Approval, Cultural Resource Record of Review, Cultural Resources Compliance Form (if required), and Project Stipulations (if required) shall be at the project area at all times and available to all persons.

Review of NEPA documents: It is the responsibility of the operator to follow all the design features, best management practices, and mitigation measures as contained in the Environmental Assessment DOI-BLM-NM-F010-2023-0067-EA, which contains additional design features and best management practices that must be followed. Copies of the EA, Decision Record, and Finding of No Significant Impact may be obtained from the BLM FFO public room, or online at: EplanningUi (blm.gov).

Best Management Practices (BMPs): Farmington Field Office established environmental Best Management Practices (BMP's) will be followed during construction and reclamation of well site pads, access roads, pipeline ties, facility placement or any other surface disturbing activity associated with this project. Bureau wide standard BMP's are found in the Gold Book, Fourth Edition-Revised 2007 and at

<u>http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html</u>. Farmi ngton Field Office BMPs are integrated into the Environmental Assessment, Surface Use Plan of Operations, Bare Soil Reclamation Plan, and COAs.

Construction, Production, Facilities, Reclamation & Maintenance

Construction & Reclamation Notification: The operator or their contractor will contact the Bureau of Land Management, Farmington Field Office Environmental Protection Staff (505) 564-7600 or by email, at least 48 hours prior to any construction or reclamation on this project.

Production Facilities: design and layout of facilities will be deferred until an onsite with BLM-FFO surface protection staff is conducted to determine the best location. Enduring Resources or their contractor will contact the Bureau of Land Management, Farmington Field Office, Surface, and Environmental Protection Staff (505) 564-7600 to schedule a facility layout onsite.

Staking: The holder shall place slope stakes, culvert location and grade stakes, and other construction control stakes as deemed necessary by the authorized officer to ensure construction in accordance with the plan of development. If stakes are disturbed, they shall be replaced before proceeding with construction.

Weather: No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts more than 6 inches deep, the soil shall be deemed too wet.

Stockpile of Soil: The top 6 inches of soil material will be stripped and stockpiled in the construction zones around the pad [construction zones may be restricted or deleted to provide resource avoidance]. The stockpiled soil will be free of brush and tree limbs, trunks, and roots. The stockpiled soil material will be spread on the reclaimed portions of the pad [including the reserve pit, cut and fill slopes] prior to re-seeding. Spreading shall not be done when the ground or topsoil is frozen or wet.

Painting of Equipment: Within 90 days of installation, all above ground structures not subject to safety requirements shall be painted by the Holder to blend with the natural color of the landscape. A reflective material may be used to reduce hazards that may occur when such structures are near roads. Otherwise, the paint use shall be a non-glare, non-reflective, non-chalking color of: Federal 595a-34127 (Juniper Green).

Storage Tanks: All open top permanent production or storage tanks regardless of diameter made of fiberglass, steel, or other material used for the containment of oil, condensate, produced water and or other production waste shall be screened, netted, or otherwise covered to protect migratory birds and other wildlife from access.

Compressors: Compressor units on this well location not equipped with a drip pan for containment of fluids shall be lined with an impervious material at least 8 mils thick and a 12-inch berm. The compressor will be painted to match the well facilities. Any variance to this will be approved by the Authorized Officer (AO). Noise mitigation may be required at the time of compressor installation.

Culverts: Silt Traps/Bell Holes will be built upstream of all culvert locations.

Driving Surface Area: All activities associated within the construction, operation, maintenance, and abandonment of the well location is limited to areas approved in the APD or ROW permit. During the production of the well, vehicular traffic is limited to the daily driving surface area established during interim reclamation construction operations. This area typically forms a keyhole or teardrop driving surface from which all production facilities may be serviced or inspected. A v-type ditch will be constructed on the outside of the driving surface to further define the driving surface and to deter vehicular traffic from entering onto the interim reclamation areas.

Contouring of Cut and Fill Slopes: The interim cut and fill slope grade shall be as close to the original contour as possible. To obtain this ratio, pits and slopes shall be back sloped into the pad during interim reclamation. Only subsurface soil and material shall be utilized in the contouring of the cut and fill slopes. Under no circumstances shall topsoil be utilized as substrate material for contouring of cut and fill slopes.

Maintenance: In order to perform subsequent well operations, right-of-way (ROW) operations, or install new/additional equipment, it may be necessary to drive, park, and operate on restored, interim vegetation within the previously disturbed area. This is generally acceptable provided damage is promptly repaired and reclaimed following use. Where vehicular travel has occurred as a "convenience" and interim reclamation/vegetation has been compromised, immediate remediation of the affected areas is required. Additionally, where erosion has occurred and compromised the reclamation of the well location, the affected area must be promptly remediated so that future erosion is prevented, and the landform is stabilized.

Layflat Lines: Layflat lines used for development of the wells may be on the ground for a maximum of 6 months and shall be retrieved immediately following completion operations. If the layflat lines are needed for longer than 6 months a Sundry NOI shall be submitted to the BLM FFO for review and decision that includes a rationale for the time extension.

The holder or its contractors will notify the BLM of any fires and comply with all rules and regulations administered by the BLM concerning the use, prevention and suppression of fires on federal lands, including any fire prevention orders that may be in effect at the time of the permitted activity. The holder or its contractors may be held liable for the cost of fire suppression, stabilization and rehabilitation. In the event of a fire, personal safety will be the first priority of the holder or its contractors.

"Hotwork" and Construction Affecting Fire Safety: The holder or its contractors shall:

- 1. Operate all internal and external combustion engines (including off-highway vehicles, chainsaws, generators, heavy equipment, etc.) with a qualified spark arrester. Qualified spark arresters are maintained and not modified, and meet the Society of Automotive Engineers (SAE) Recommended Practices J335 or J350. Refer to 43 CFR §8343.1.
 - a. Refueling of any combustible engine equipment must be minimum of 3 meters away from any ignition source (open flame, smoking, etc.).
- 2. Maintain and clean all equipment regularly to remove flammable debris buildup and prevent fluid leaks that can lead to ignitions.

- Carry at least one shovel or wildland fire hand tool (combi, Pulaski, McLeod) per person working, minimum 5 gallons of water, and a fire extinguisher rated at a minimum as ABC - 10 pound on each piece of equipment and each vehicle.
- 4. When conducting "hotwork" such as, but not limited to welding, grinding, cutting, sparkproducing work with metal, work that creates hot material or slag; choose an area large enough to contain all hot material that is naturally free of all flammable vegetation or remove the flammable vegetation in a manner compliant with the permitted activity. If adequate clearance cannot be made, wet an area large enough to contain all hot material prior to the activity and periodically throughout the activity to reduce the risk of wildfire ignition. Regardless of clearance, maintain readiness to respond to an ignition at all times. In addition, keep one hand tool per person and at least one fire extinguisher ready, minimum, as specified earlier (#3) during this activity.
- 5. Keep apprised of current and forecasted weather at <u>https://www.weather.gov/abq/forecasts-fireweather-links</u> and fire conditions at <u>www.wfas.net</u> and take additional fire precautions when fire danger is rated High or greater. Red Flag Warnings are issued by the National Weather Service when fire conditions are most dangerous, and ignitions escape control quickly. Extra precautions are required during these warnings such as additional water, designate a fire watch/patrol and tools. If work is being conducted in an area that is not clear of vegetation within 50 feet of work area; then, when fire danger is rated High or greater and 1. There is a predicted Red Flag warning for your area or 2. If winds are predicted to be greater than 10 mph, stop all hotwork activities for the day at 10 am.
- 6. In the event of an ignition, initiate fire suppression actions in the work area to prevent fire spread to or on federally administered lands. If a fire spreads beyond the capability of workers with the stipulated tools, all will cease fire suppression action and leave the area immediately via pre-identified escape routes.
- 7. Call **911** or the **Taos Interagency Fire Dispatch Center (575-758-6208)** immediately of the location and status of any fire.

AND

Notify the respective BLM field office for which the permit or contract was issued immediately of the incident.

Farmington Field Office at 505-564-7600

Taos Field Office at 575-758-8851

Noxious Weeds

Inventory the proposed site for the presence of noxious and invasive weeds. Noxious weeds are those listed on the New Mexico Noxious Weed List and USDA's Federal Noxious Weed List. The New Mexico Noxious Weed List or USDA's Noxious Weed List can be updated at any time and should be regularly check for any changes. Invasive species may or may not be listed as a noxious weed but have been identified to likely cause economic or environmental harm or harm to human health. The following noxious weeds have been identified as occurring

on lands within the boundaries of the Farmington Field Office (FFO). There are numerous invasive species on the FFO such as Russian thistle (*Salsola spp.*) and field bindweed (*Convolvulus arvensis*).

Russian Knapweed (Centaurea repens)	Musk Thistle (Carduss nutans)
Bull Thistle (Cirsium vulgare)	Canada Thistle (Cirsium arvense)
Scotch Thistle (Onopordum acanthium)	Hoary Cress (Cardaria draba)
Perennial Pepperweed (Lepdium latiofolfium)	Halogeton (Halogeton glomeratus)
Spotted Knapweed (Centaurea maculosa)	Dalmation Toadflax (Linaria genistifolia)
Yellow Toadflax (Linaria vulgaris)	Camelthorn (Alhagi pseudalhagi)
African Rue (Penganum harmala)	Salt Cedar (Tamarix spp.)
Diffuse Knapweed (Centaurea diffusa)	Leafy Spurge (Euphorbia esula)

- a. Identified weeds will be treated prior to new surface disturbance if determined by the FFO Noxious Weed Coordinator. A Pesticide Use Proposal (PUP) must be submitted to and approved by the FFO Noxious Weed Coordinator prior to application of pesticide. The FFO Noxious Weeds Coordinator (505-564-7600) can provide assistance in the development of the PUP.
- b. Construction equipment should be inspected and cleaned prior to coming onto the work site. This is especially important on vehicles from out of state or if coming from a weed-infested site.
- c. Fill dirt or gravel may be needed for excavation, road construction/repair, or for spill remediation. If fill dirt or gravel will be required, the source shall be noxious weed free and approved by the FFO Noxious Weed Coordinator.
- d. The site shall be monitored for the life of the project for the presence of noxious weeds (includes maintenance and construction activities). If weeds are found the FFO Coordinator shall be notified at (505) 564-7600 and provided with a Weed Management Plan and if necessary, a Pesticide Use Proposal (PUP). The FFO Coordinator can provide assistance developing the Weed Management Plan and/or the Pesticide Use Proposal.
- e. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. (Company Name)'s weed-control contractor would contact the BLM-FFO prior to using these chemicals.
- f. Noxious/invasive weed treatments must be reported to the FFO Noxious Weed Coordinator. A Pesticide Application Record (PAR) is required to report any mechanical, chemical, biological or cultural treatments used to eradicate, and/or control noxious or invasive species. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Bare ground vegetation trim-out: If bare ground vegetation treatment (trim-out) is desired around facility structures, the operator will submit a bare ground/trim-out design included in their Surface Use Plan of Operations (SUPO). The design will address vegetation safety concerns of the operator and BLM while minimizing impacts to interim reclamation efforts. The design must include what structures to be treated and buffer distances of trim-out. Pesticide use

for vegetation control around anchor structures is not approved. If pesticides are used for bare ground trim-out, the trim-out will not exceed three feet from the edge of any eligible permanent structure (i.e., well heads, fences, tanks). Additional distance/areas may be requested and must be approved by the FFO authorized officer. The additional information below must also be provided to the FFO:

- a. Pesticide use for trim out will require a Pesticide Use Proposal (PUP). A PUP is required *prior* to any treatment and must be approved by the FFO Noxious Weed Coordinator. Only pesticides authorized for use on BLM lands would be used and applied by a licensed pesticide applicator. The use of pesticides would comply with federal and state laws and used only in accordance with their registered use and limitations. Enduring Resources' weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.
- A Pesticide Use Report (PUR) or a Biological Use Report (BUR) is required to report any chemical, or biological treatments used to eradicate, or control vegetation on site. Reporting will be required quarterly and annually or per request from the FFO Noxious Weed Coordinator.

Paleontology

Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the Holder.

Visual Resources

Dark Sky COAs need to be applied to existing lighting, which is not dark sky friendly and to any additional lights added as part of pad expansion. All permanent lighting will use full cutoff luminaires, which are fully shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the lowest part of the light source). All permanent lighting will be pointed straight down at the ground in order to prevent light spill to the sides. All permanent lighting will be 4000° Kelvin or less with 3000° Kelvin preferred. Warmer light colors are less noticeable by humans and cause less impact to wildlife. All permanent lighting will be controlled by a switch and/or timer which allows the lights to be turned on when workers are on location during dark periods but will keep the lights off the majority of the time.

Wildlife Resources

Wildlife: The proposed project intersects a known mule deer migration route. Big game habitat areas and hunting activities are valuable land uses which support BLM's multiple-use land management objectives. To maintain reasonable concurrence with surface use closure

requirements in other recognized mule deer migration areas in the BLM FFO, no surface use will take place December 1 – March 1.

Hazards: Wildlife hazards associated with the proposed project would be fenced, covered, and/or contained in storage tanks, as necessary.

Migratory Bird: Migratory nest survey stipulations. Once drilling and completion activities are complete, any open water that could be harmful to birds and wildlife. must be covered, screened, or netted to prevent entry.

Threatened, Endangered or Sensitive Species: If, in operations the operator/holder discovers any Threatened, Endangered, or Sensitive species, work in the vicinity of the discovery will be suspended and the discovery promptly reported to the BLM-FFO T&E specialist at (505) 564-7600. The BLM-FFO will then specify what action is to be taken. Failure to notify the BLM-FFO about a discovery may result in civil or criminal penalties in accordance with The Endangered Species Act (as amended).

Noise: This well is located within a designated Noise Sensitive Area (NSA). Once proposed project activities are complete, noise from pumpjack, compressor or other facilities cannot exceed 48.6 db at edge of Bald eagle ACEC core area. Any compressor that emits noise > 48.6db may require a 'noise wall' to deflect sound away from ACEC...

Nesting: If a bird nest containing eggs or young is encountered in the path of construction the operator will cease construction and consult with BLM to determine appropriate actions.

Livestock Grazing: Cattle are in allotment between 5/1 and 10/31. Industry may need to coordinate with permittee if concerns of livestock in area during construction.

Soil, Air, Water

Land Farming: No excavation, remediation or closure activities will be authorized without prior approval, on any federal or Indian mineral estate, federal surface, or federal ROW. A Sundry Notice (DOI, BLM Form 3160-5) must be submitted with an explanation of the remediation or closure plan for on-lease actions.

Emission Control Standard: Compressor engines 300 horsepower or less used during well production must be rated by the manufacturer as emitting NOx at 2 grams per horsepower hour or less to comply with the New Mexico Environmental Department, Air Quality Bureau's guidance.

Waste Disposal: All fluids (i.e., scrubber cleaners) used during washing of production equipment, including compressors, will be properly disposed of to avoid ground contamination, or hazard to livestock or wildlife.

Cultural Resources

Non-Permitted Disturbance: Construction, construction maintenance or any other activity outside the areas permitted by the APD will require additional approval and may require a new cultural survey and clearance.

Employee Education: All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles, and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

Discovery of Cultural Resources in the Absence of Monitoring: Discovery of Cultural Resources in the Absence of Monitoring: If, in its operations, operator/holder discovers any previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the discovery promptly reported to BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed. Failure to notify the BLM about a discovery may result in civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.

Discovery of Cultural Resources during Monitoring: If monitoring confirms the presence of previously unidentified historic or prehistoric cultural resources, then work in the vicinity of the discovery will be suspended and the monitor will promptly report the discovery to the BLM Field Manager. BLM will then specify what action is to be taken. If there is an approved "discovery plan" in place for the project, then the plan will be executed. In the absence of an approved plan, the BLM will evaluate the significance of the discovery in accordance with 36 CFR Section 800.13, in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property, or in accordance with an approved program alternative. Minor recordation, stabilization, or data recovery may be performed by BLM or a third party acting on its behalf, such as a permitted cultural resources consultant. If warranted, more extensive archaeological or alternative mitigation, likely implemented by a permitted cultural resources consultant, may be required of the operator/holder prior to

allowing the project to proceed. Further damage to significant cultural resources will not be allowed until any mitigations determined appropriate through the agency's Section 106 consultation are completed.

Damage to Sites: If, in its operations, operator/holder damages, or is found to have damaged any previously documented or undocumented historic or prehistoric cultural resources, excluding "discoveries" as noted above, the operator/holder agrees at his/her expense to have a permitted cultural resources consultant prepare a BLM approved damage assessment and/or data recovery plan. The operator/holder agrees at his/her expense to implement a **mitigation** that the agency finds appropriate given the significance of the site, which the agency determines in consultation with the appropriate State or Tribal Historic Preservation Officer(s) and Indian tribe(s) that might attach religious and cultural significance to the affected property. **This mitigation may entail execution of the data recovery plan by a permitted cultural resources consultant and/or alternative mitigations.** Damage to cultural resources may result in **civil or criminal penalties in accordance with the Archeological Resources Protection Act (ARPA) of 1979, as amended, the Native American Graves Protection and Repatriation Act (NAGRPA) of 1990, as amended, and other applicable laws.**

See below additional cultural stipulations.

IN-HOUSE ARCHEOLOGICAL SURVEY DETERMINATION FARMINGTON FIELD OFFICE

NM-210-2024-003

Date Submitted: 10/17/2023.

Case No./Name: Haynes Canyon 428H Well Pad Company: Enduring Type of Case: Well Pad

IS A CULTURAL RESOURCE INVENTORY REQUIRED?

Proposal involves non-Federal lands.

Proposal is within an existing right-of-way.

 \square Proposal is along an existing road.

Proposal is within an existing disturbed area.

The well pad is to be expanded feet to the

Other: This new well pad will be re-permitted and drilled on an existing location.

Please see the attached base map.

Submitted by: Kim A. on behalf of Chris W.

CULTURAL RESOURCE SPECIALIST RECOMMENDATIONS

Inventory for cultural resources is required.

 \boxtimes Inventory for cultural resources **is not** required for the reason(s) indicated below.

Previous natural ground disturbance has modified the surface so extensively that the likelihood of finding cultural properties is negligible (e.g., within a floodplain), or

Human activity has created a new land surface to such an extent as to eradicate traces of cultural properties, or

Existing Class II or equivalent inventory or environmental data are sufficient to indicate that there is no likelihood of finding a National Register or eligible property, or

Inventory at the Class III level of intensity has previously been performed and records adequately documenting the location, methods, and results of the inventory are available in report no. NMCRIS No 130650

or

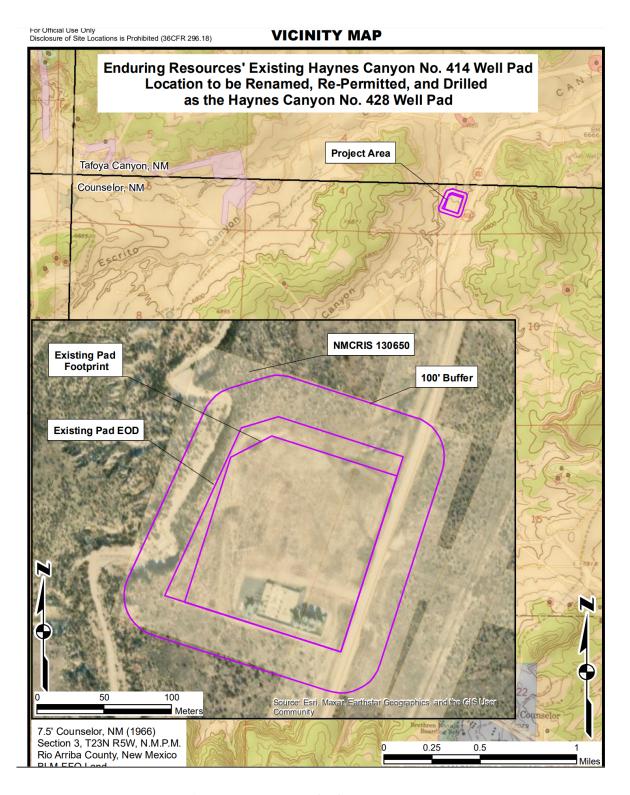
Natural environmental characteristics are unfavorable to the presence of cultural properties (such as recent landslide or rock falls), or

The nature of the proposed action is such that no impact can be expected on significant cultural resources (e.g. land use will not require any surface disturbing action, e.g., aerial spraying, hand application of chemicals, travel on existing roads, etc.), or

Other: Recommended by: Kin Adams

Date: 10/17/2023

Archaeologist Cultural Notes (if any, e.g., conditions, stipulations, etc.):



Released to Imaging: 12/29/2023 4:02:26 PM Approval Date: 12/05/2023



<u>BLM Report Number:</u> 2024(I)002F <u>USGS Map:</u> Counselor & Tafoya Canyon, NM <u>Activity Code</u>: 1310 <u>NMCRIS No:</u> 153816

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT FARMINGTON FIELD OFFICE

1. Description of Report/Project:

<u>Project Name:</u> Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Areas.

Project Sponsor: Enduring Resources.

Arch. Firm & Report No.: Division of Conservation Archaeology; DCA Report No. 23-DCA-027. Location: T23N R6W Section 3.

Well Footages: 1,773' FNL, 303' FWL.

<u>Split Estate:</u> No.

Project Dimensions:400 ft x 400 ft – well pad (500 ft x 500 ft w/ a 50 ft construction zone).1,571 ft x 30 ft - access road upgrade.3,384 ft x 40 ft – pipeline/layflat.248 ft x 25 ft – TUA.323 ft x 25 ft – TUA.Sites Located:LA39919/NM-01-31536 (NRHP- Eligible; Avoided).

Determination: No Effect to Historic Properties.

2. Field Check: No

3. Cultural ACEC: No.

4. Sensitive Cultural Area: No.

5. Recommendation: *PROCEED WITH ACTION:* <u>X</u> *STIPULATIONS ATTACHED:* <u>X</u>

6. Reviewer / Archaeologist: Kim Adams **Date**: 10/23/2023

Note. I alt of this project was previously inventoried.										
Report Summary	BLM	Other	Total							
Acres Inventoried	14.93	0.00	14.93							
Sites Recorded	0	0	0							
Prev. Recorded Sites	1	0	1							
Sites Avoided	1	0	1							
Sites Treated	0	0	0							

Note: Part of this project was previously inventoried.

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov. Or Geoffrey Haymes (BLM) at 505.564.7684 or ghaymes@blm.gov

1

CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)002F

Project Name: Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Area. Project Sponsor: Enduring Resources.

1. SITE PROTECTION AND EMPLOYEE EDUCATION:

All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:

A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

The monitor will:

- Ensure that the site protection barrier is located as indicated on the attached map in the vicinity of LA39919.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction activities within 100'of LA39919.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

3. SITE PROTECTION BARRIER:

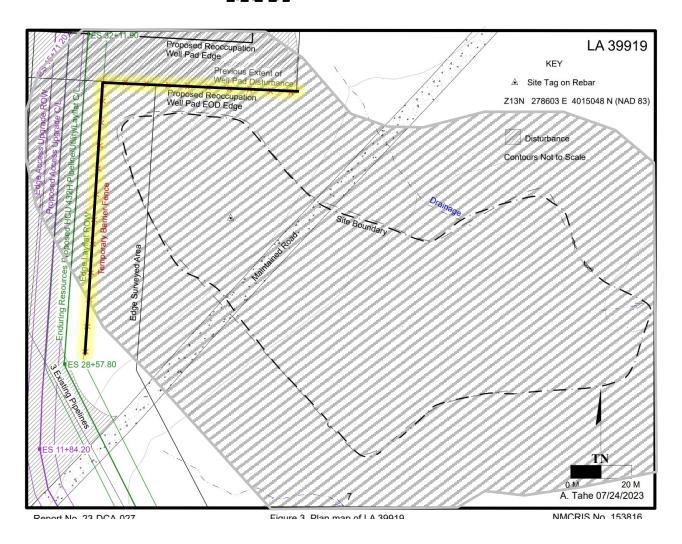
- The temporary site protection barrier will be erected prior to the start of construction. The barrier will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barrier will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barrier will be placed as indicated on the attached map. •
- There will be no surface-disturbing activities or vehicle traffic past the barrier.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18) CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)002F

<u>Project Name:</u> Haynes Canyon Unit 432H Reoccupation Well Pad, Access Road Upgrade, Pipeline, Layflat, and Temporary Use Area. <u>Project Sponsor:</u> Enduring Resources.

MONITOR CONSTRUCTION = TEMPORARY FENCING =





BLM Report Number: 2024(I)005F USGS Map: Crow Mesa West, NM Activity Code: 1310 NMCRIS No: 154100

CULTURAL RESOURCE RECORD OF REVIEW

BUREAU OF LAND MANAGEMENT FARMINGTON FIELD OFFICE

1. Description of Report/Project:

<u>Project Name:</u> Northeast Lybrook Com No 262H **Reoccupation Well**. <u>Project Sponsor:</u> Enduring Resources. <u>Arch. Firm & Report No.:</u> Division of Conservation Archaeology; DCA Report No. 22-DCA-060. <u>Location:</u> T23N R6W Section 6.

Well Footages: See plats

Split Estate: No.

Project Dimensions: 300 ft x 500 ft – well pad (400 ft x 600 ft w/ a 50 ft construction zone).

Sites Located: LA64876/NM-01-34748 (NRHP- Eligible; Update; Avoided; No Further Work). LA175265/NM-210-47840 (NRHP- Eligible; Update; Avoided). LA178266/NM-210-48243 (NRHP- Eligible; Update; Avoided).

Determination: No Effect to Historic Properties.

2. Field Check: No

3. Cultural ACEC: No.

- 4. Sensitive Cultural Area: No.
- **5. Recommendation:** *PROCEED WITH ACTION:* <u>X</u> *STIPULATIONS ATTACHED:* <u>X</u>
- 6. Reviewer / Archaeologist: Kim Adams Date: 11/6/2023

Note: The majority of this project was previously inventoried (see NMCRIS No 129798).

Report Summary	BLM	Other	Total
Acres Inventoried	0.74	0.00	0.74
Sites Recorded	0	0	0
Prev. Recorded Sites	3	0	3
Sites Avoided	3	0	3
Sites Treated	0	0	0

Discovery of Cultural Resources in the Presence or Absence of Monitoring: If any previously unidentified historic or prehistoric cultural resources are discovered during construction or project operations, work in the vicinity of the discovery will be suspended and the discovery will promptly be reported to the BLM Field Manager.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)005F

<u>Project Name:</u> Northeast Lybrook Com No 262H **Reoccupation Well**. <u>Project Sponsor:</u> Enduring Resources.

1. SITE PROTECTION AND EMPLOYEE EDUCATION:

All employees of the project, including the Project Sponsor and its contractors and sub-contractors will be informed that cultural sites are to be avoided by all personnel, personal vehicles and company equipment. They will also be notified that it is illegal to collect, damage, or disturb cultural resources, and that such activities are punishable by criminal and or administrative penalties under the provisions of the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) when on federal land and the New Mexico Cultural Properties Act NMSA 1978 when on state land.

2. ARCHAEOLOGICAL MONITORING IS REQUIRED:

A copy of these stipulations will be supplied to the archeological monitor at least two working days prior to the start of construction activities. No construction activities, including vegetation removal, may begin before the arrival of the archaeological monitor.

The monitor will:

- Ensure that the site protection barriers are located as indicated on the attached maps in the vicinity of LA175265, & LA178266.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction activities within 100'of LA175265, & LA178266.
- Submit a report of the monitoring activities within 30 days of completion of monitoring unless other arrangements are made with the BLM. These stipulations must be attached to the report.

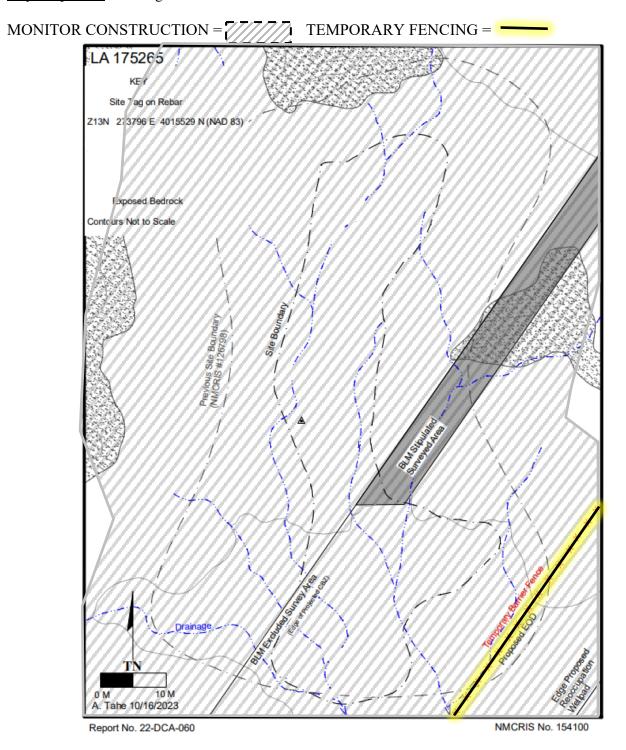
3. SITE PROTECTION BARRIER:

- The temporary site protection barriers will be erected prior to the start of construction. The barriers will consist of upright wooden survey lath spaced no more than 10 feet apart and marked with blue flagging or blue paint. The barriers will remain in place through reclamation and reseeding and shall be promptly removed after reclamation.
- The barriers will be placed as indicated on the attached map.
- There will be no surface-disturbing activities or vehicle traffic past the barriers.

Note: If there are questions about these stipulations, contact Kim Adams (BLM) at 505.564.7683 or kadams@blm.gov.

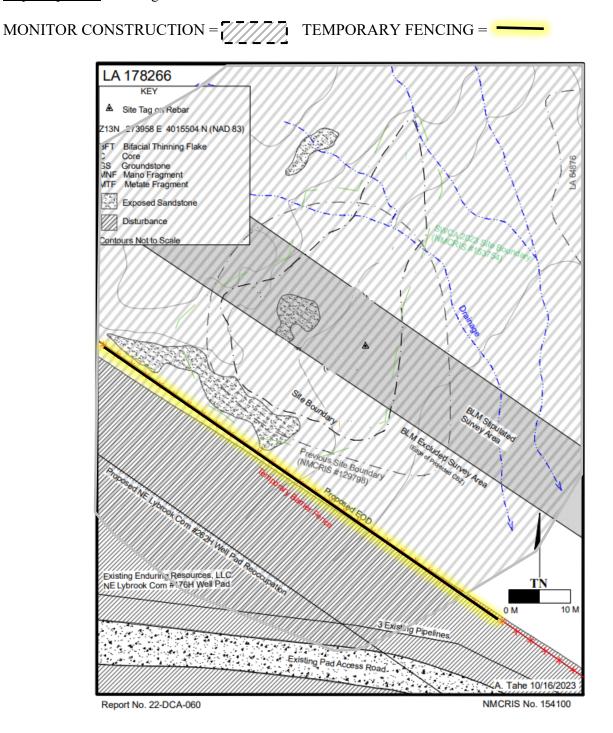
For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18) CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)005F

<u>Project Name:</u> Northeast Lybrook Com No 262H **Reoccupation Well**. <u>Project Sponsor:</u> Enduring Resources.



For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18) CULTURAL RESOURCE STIPULATIONS Farmington Field Office BLM Report Number: 2024(I)005F

<u>Project Name:</u> Northeast Lybrook Com No 262H **Reoccupation Well**. <u>Project Sponsor:</u> Enduring Resources.





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
> #436H HAYNES CANYON UNIT
> Lease: FEE Agreement: NMNM105770949
> SH: SW¼NW¼ Section 3, T. 23N., R. 6W. Rio Arriba County, New Mexico
> BH: SE¼NW¼ Section 2, T. 23N., R. 6W. Rio Arriba 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.

INTERIOR REGION 7 • UPPER COLORADO BASIN

COLORADO, NEW MEXICO, UTAH, WYOMING

NOTE: WELL WILL NOT PENETRATE FEDERAL MINERALS IN THE PROPOSED LATERAL. THE WELL WILL BE A FEE/STATE WELL WITHIN A FEDERAL UNIT AGREEMENT.

I. <u>GENERAL</u>

- 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 $8-1/2 \times 11$ 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 two years, approval of the Application for Permit to Drill will expire. A written request for a two-year extension may be granted if submitted prior to expiration.
- 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.

II. <u>REPORTING REQUIREMENTS</u>

- 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 or 50 MMCF following its (completion)(recompletion), whichever first occurs, without the prior, written approval of the authorized officer. 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 first gas to surface.

V. <u>SAFETY</u>

- 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.F.

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.F. 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.

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

Operator Certification Data Report

Operator

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: KAYLA WHITE		Signed on: 09/22/2023
Title: Staff Engineer		
Street Address: PO BOX 4190		
City: PARKER	State: CO	Zip: 80134
Phone: (720)768-3575		
Email address: KWHITE@CDHCC	DNSULT.COM	
Field		
Representative Name:		
Street Address:		
City: S	tate:	Zip:
Phone:		
Email address:		

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WAFMSS

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

APD ID: 10400093994

Operator Name: ENDURING RESOURCES LLC Well Name: HAYNES CANYON UNIT Well Type: OIL WELL

Submission Date: 09/29/2023

Zip: 87401

Well Number: 436H Well Work Type: Drill Highlighted data reflects the most recent changes <u>Show Final Text</u>

Application Data

Section 1 -	General
-------------	---------

APD ID: 10400093994	Tie to previous NOS? Y	Submission Date: 09/29/2023							
BLM Office: Farmington	User: KAYLA WHITE	Title: Staff Engineer							
Federal/Indian APD: FED	Is the first lease penetrated for	Is the first lease penetrated for production Federal or Indian? FED							
Lease number: NMNM28733	Lease Acres:								
Surface access agreement in place	ce? Allotted? Rese	ervation:							
Agreement in place? YES	Federal or Indian agreement: FI	Federal or Indian agreement: FEDERAL							
Agreement number: NMNM105770)949								
Agreement name: Haynes Canyon	Unit								
Keep application confidential? Y									
Permitting Agent? YES	APD Operator: ENDURING RES	OURCES LLC							
Operator letter of	Operator Certification 09062023 2023090)8134230.pdf							

Operator Info

Operator Organization Name: ENDURING RESOURCES LLC Operator Address: 200 ENERGY COURT Operator PO Box: Operator City: FARMINGTON State: NM Operator Phone: (505)497-8574 Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO	Master Development Plan name:							
Well in Master SUPO? NO	Master SUPO name:							
Well in Master Drilling Plan? NO	Master Drilling Plan name:							
Well Name: HAYNES CANYON UNIT	Well Number: 436H	Well API Number:						
Field/Pool or Exploratory? Field and Pool	Field Name: COUNSELOR GALLUP-DAKOTA	Pool Name: COUNSELORS GALLUP-DAKOTA						

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12/05/2023

and the Alt

Operator Name: ENDURING RESOURCES LLC Well Name: HAYNES CANYON UNIT

Well Number: 436H

Is the proposed well in an area containing other mineral resources? USEABLE WATER, NATURAL GAS

Is the proposed well in a Helium produ	ction area? N	Use Existing Well Pad?	Y I	New surface disturbance? N				
Type of Well Pad: MULTIPLE WELL		Multiple Well Pad Name Haynes Canyon Unit): 	Number: 432H				
Well Class: HORIZONTAL		Number of Legs: 1						
Well Work Type: Drill								
Well Type: OIL WELL								
Describe Well Type:								
Well sub-Type: EXPLORATORY (WILDO	CAT)							
Describe sub-type:								
Distance to town: 3.3 Miles	Distance to ne	arest well: 20 FT	Distance	to lease line: 303 FT				
Reservoir well spacing assigned acres	Measurement:	160 Acres						
Well plat: HCU_436H_C102_Signed_	_092823_20230	928143253.pdf						
Well work start Date: 01/01/2024		Duration: 30 DAYS						

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Survey number: 15269

Vertical Datum: NAVD88

Reference Datum: GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
SHL		FNL	303	FW	23N	6W	3	Aliquot	36.25612		RIO				NMNM		0	0	Ν
Leg	3			L				SWN W		107.4646 32	ARRI BA	MEXI CO	MEXI CO		28733	9			
#1								vv											
KOP	173	FNL	303	FW	23N	6W	3	Aliquot	36.25612		RIO			F	NMNM	147	563	521	N
Leg	3			L				SWN		107.4646			MEXI		28733	6	8	3	
#1								W		32	BA	со	со						
PPP	226	FNL	260	FEL	23N	6W	3	Aliquot	36.25483	-	RIO	NEW	NEW	F	FEE	113	632	555	Y
Leg	8		1					SWNE	4		ARRI		MEXI			2	8	7	
#1-1										45	BA	со	CO						

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this
PPP	227	FNL	0	FW	23N	6W	2	Aliquot	36.25500	-	RIO	1		F	FEE	112	893	556	Y
Leg	5			L				SWN	9	107.4474		1	MEXI			0	0	9	
#1-2								W		25	BA	со	со						
EXIT	228	FNL	258	FW	23N	6W	2	Aliquot	36.25518	-	RIO	NEW	NEW	S	STATE	110	115	558	Y
Leg	0		5	L				SENW		107.4386			MEXI			7	15	2	
#1										59	BA	со	со						
BHL	228	FNL	258	FW	23N	6W	2	Aliquot	36.25518	-	RIO	NEW	NEW	S	STATE	110	115	558	Y
Leg	0		5	L				SENW	2	107.4386			MEXI			7	15	2	
#1										59	BA	co	со						

Operator Certification:

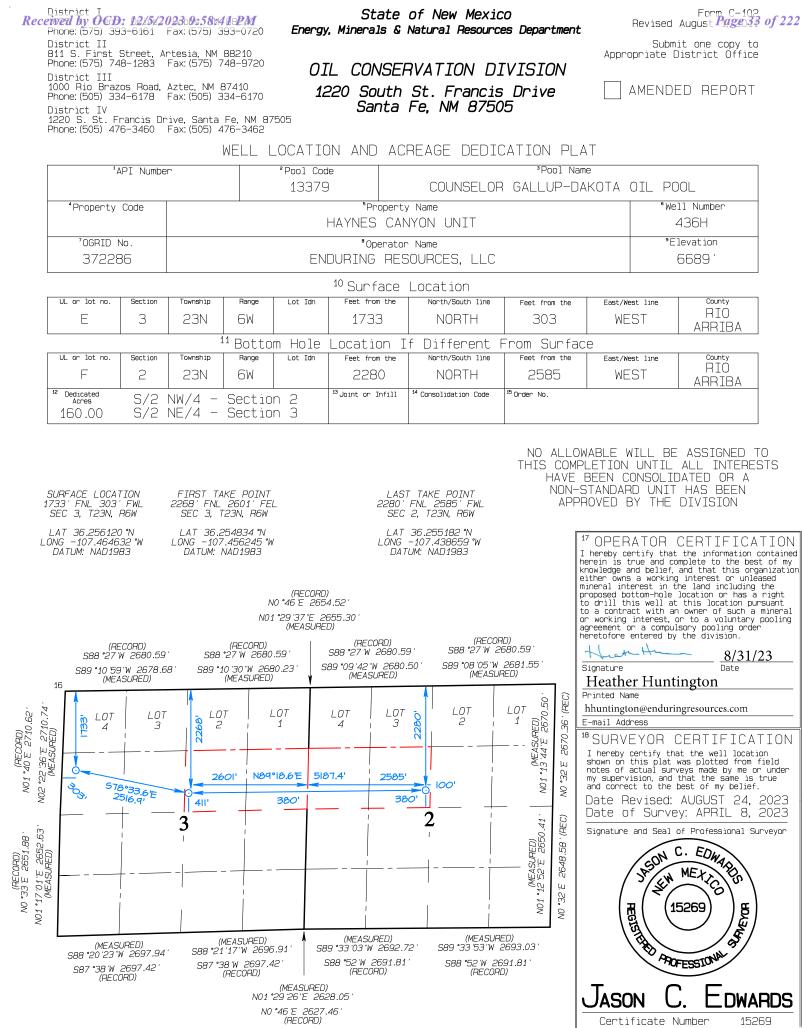
I hereby certify that I, or someone under my direct supervision, has inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package, to the best of my knowledge, are true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 6th day of September	,2023.
Name: Heather Huntington	
Position Title Permitting Technician	
Address: 200 Energy Court, Farmington, NM 87401	
Telephone: 505-636-9751	_
Field representative (if not above signatory)	
Email: <u>hhuntington@enduringresources.com</u>	

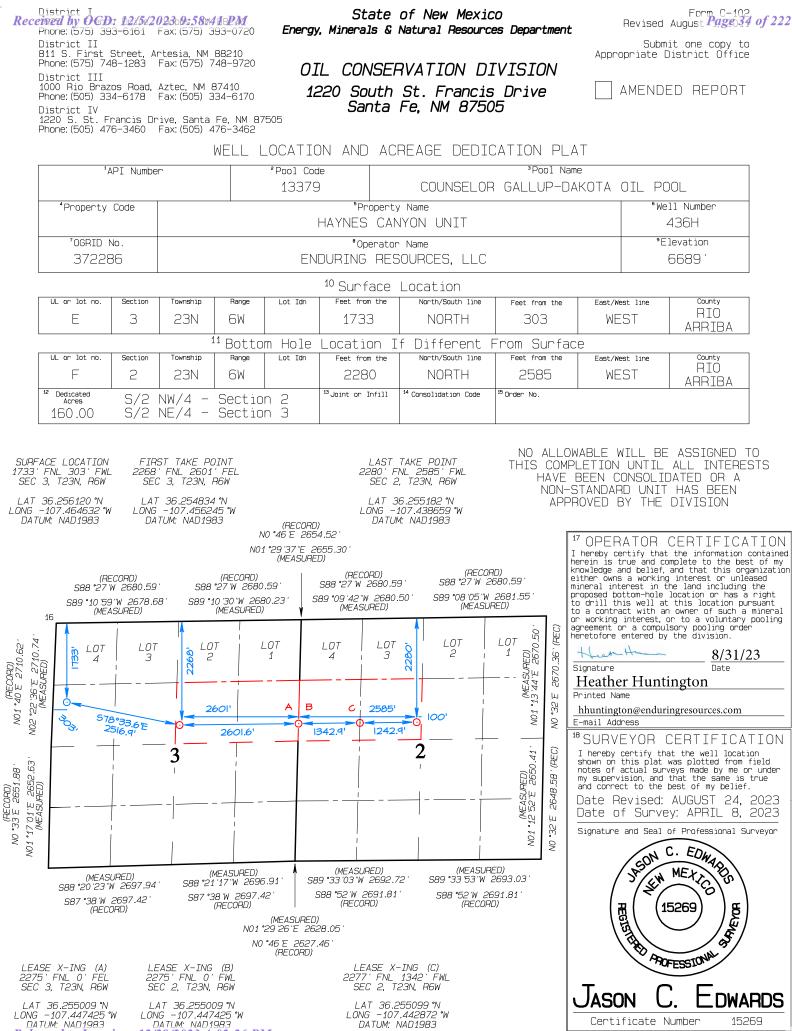
Date: 9/6/2023

at

Heather Huntington Permitting Technician Enduring Resources, LLC

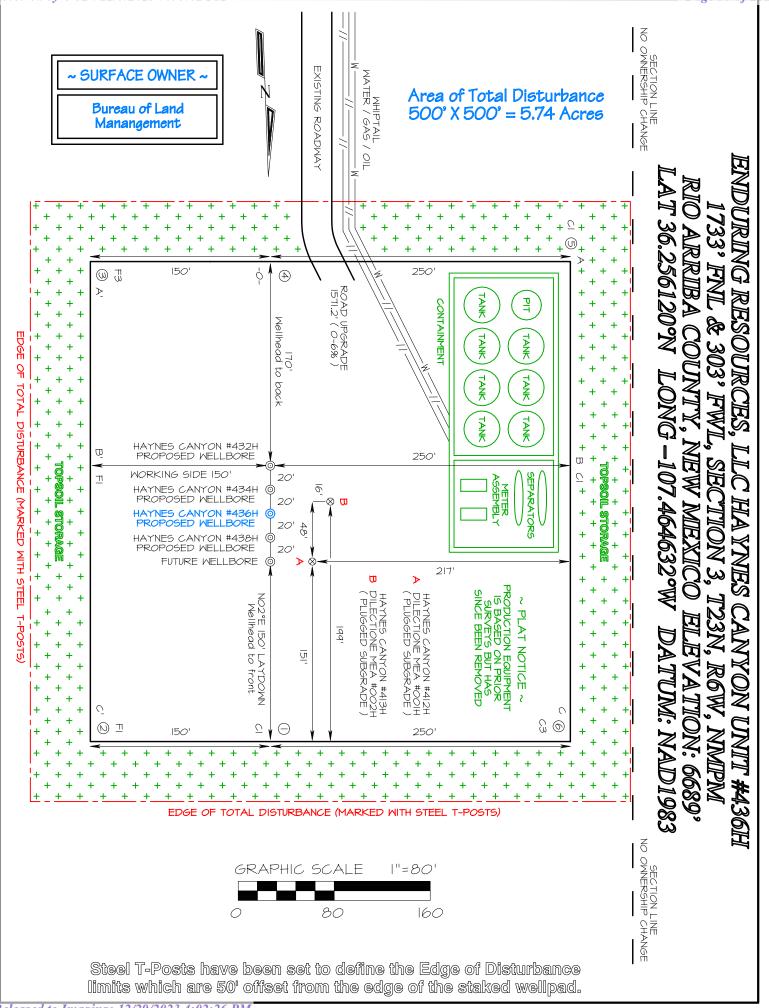


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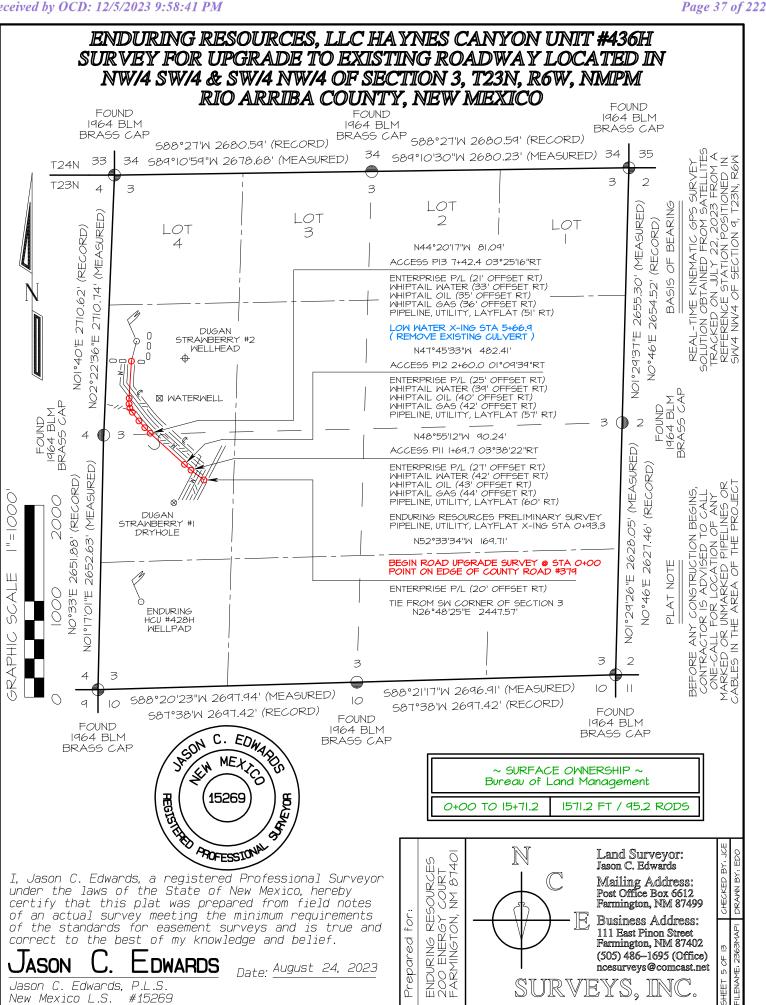


	6679	-b899	6699-	C-C-		6679'	-b899	66dd.	₿-₿_		6679	16699	66dd.	A - A'						
EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.					C/L	C/L	C/L	C/L	C/L					C/L					HORIZONTAL SCALE I"=55'	ENDURING RESOURCES, LLC HAYNES CANYON UNIT #436H 1733' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
ND UTILITIES OR PIPELINES. R UNMARKED UNDERGROUND NG DAYS PRIOR TO CONSTRUCTION.															VERTICAL SCALE I"=30'	ANYON UNIT #436H 8N, R6W, NMIPM LEVATION: 6689°				

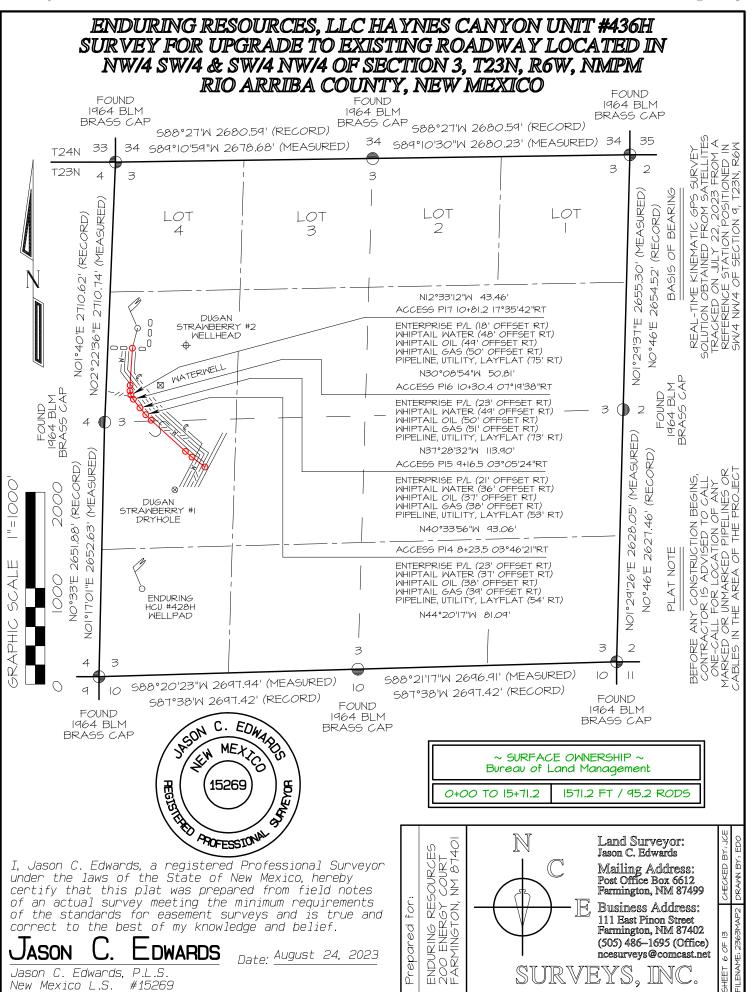
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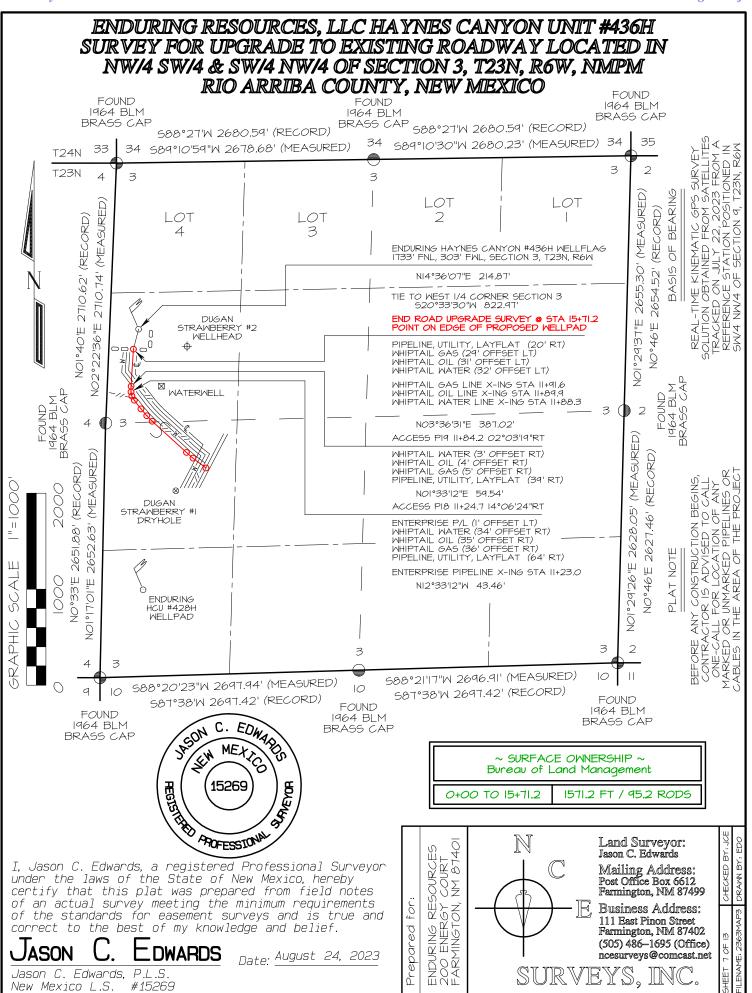


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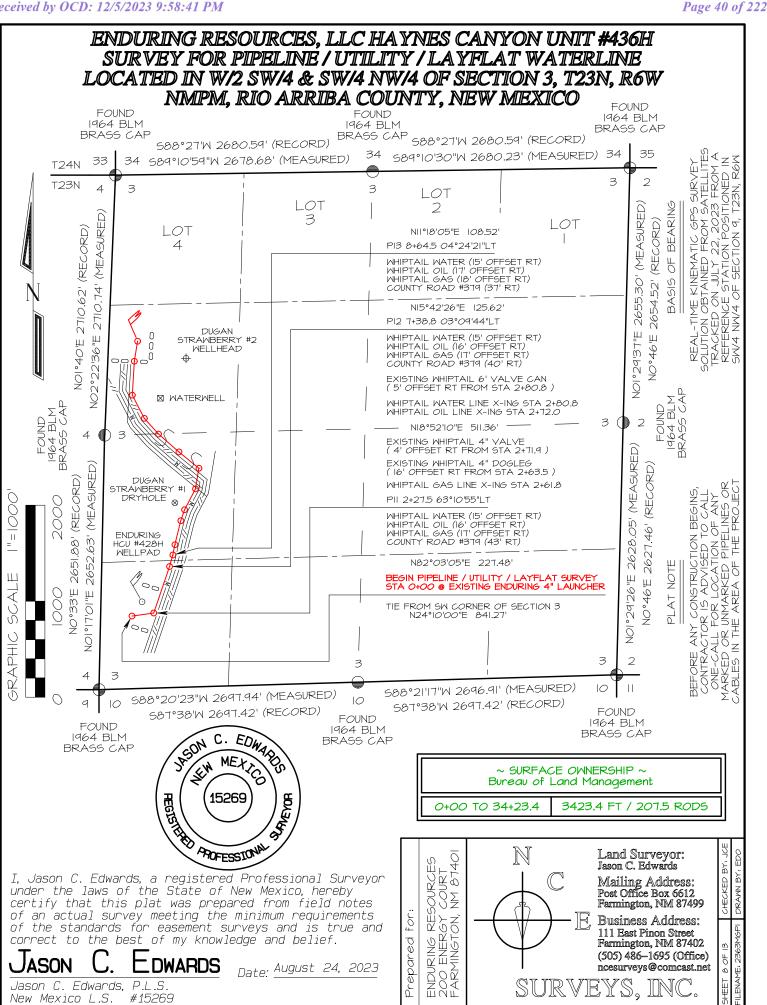
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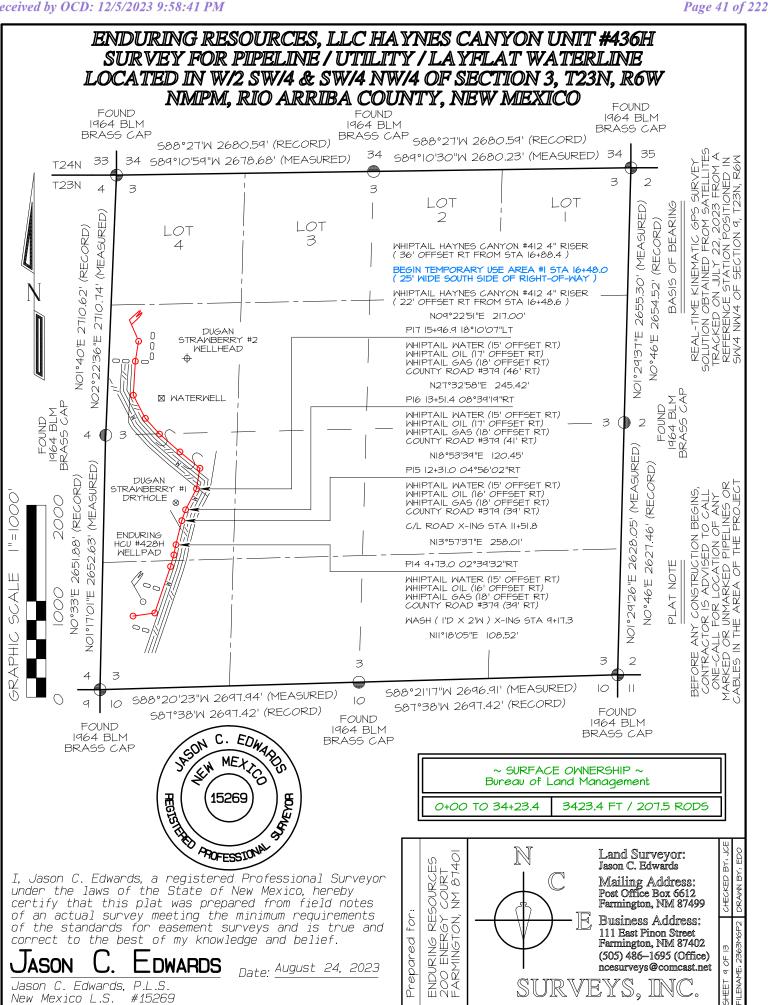


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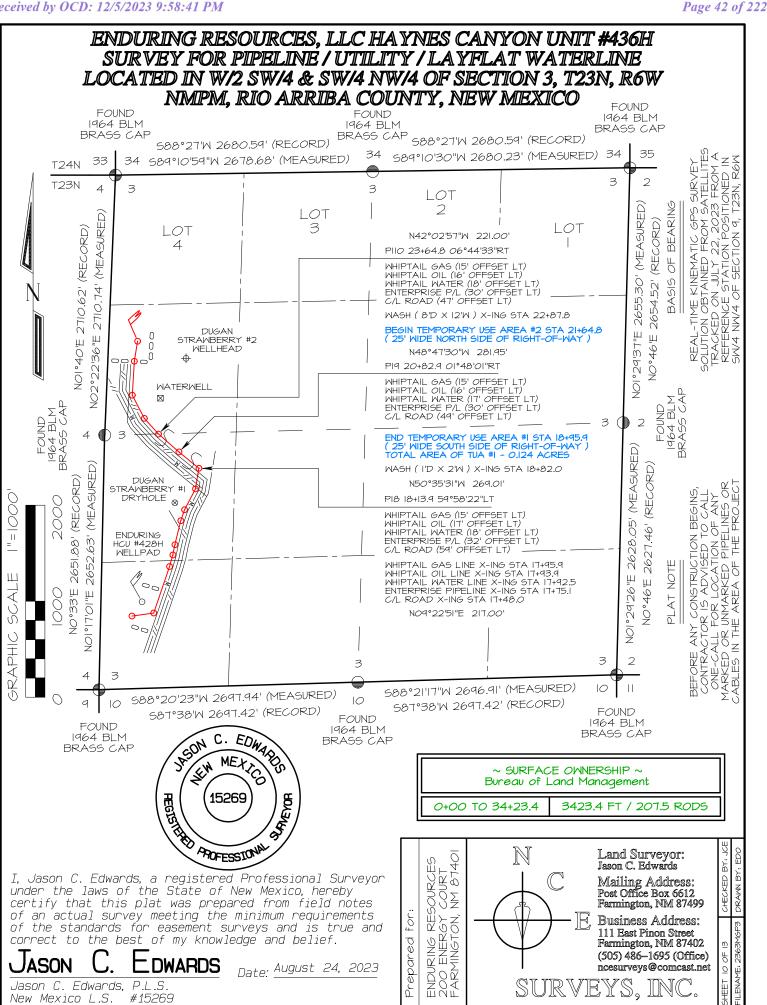
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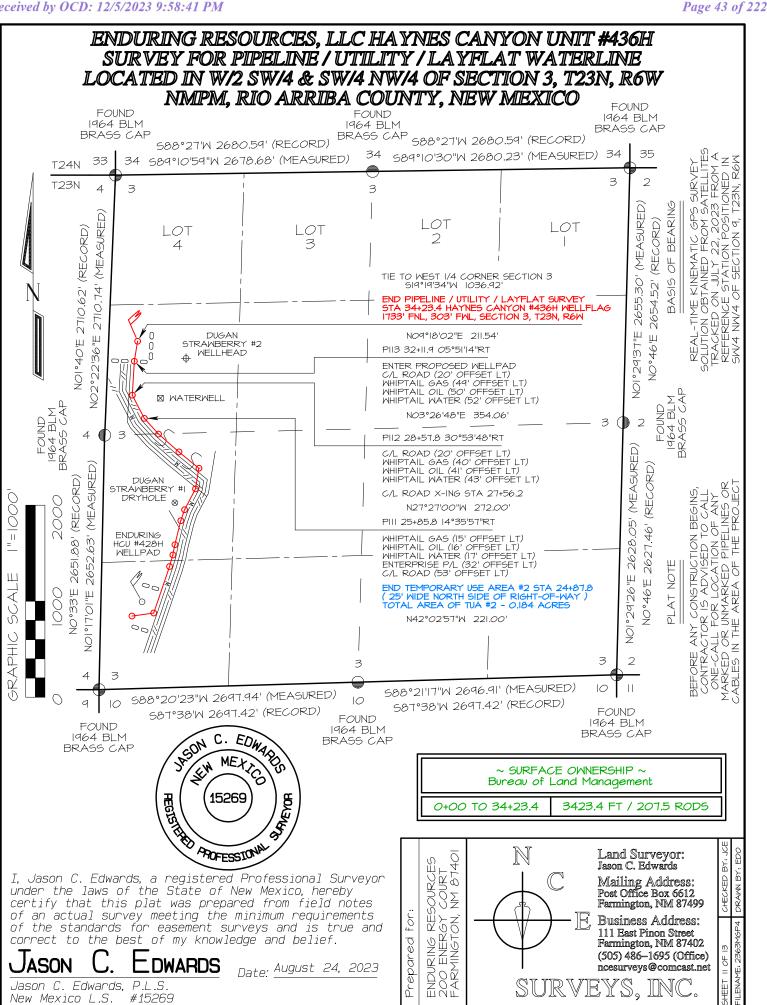
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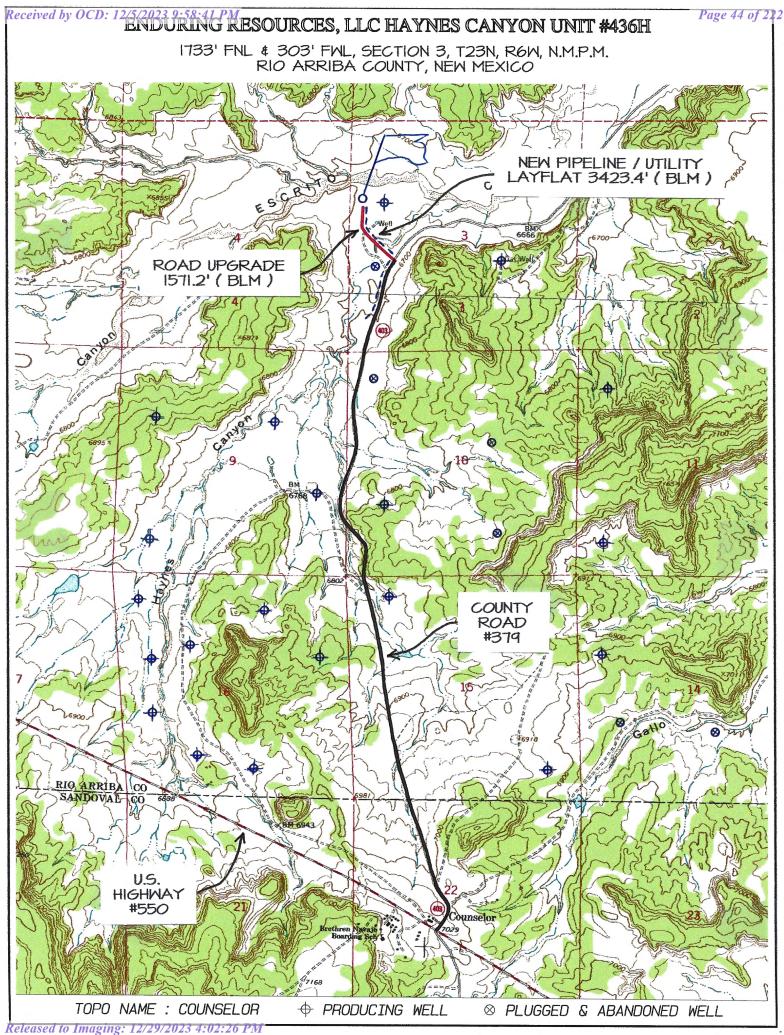
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Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #436H

1733' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256120°N Longitude -107.464632°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #436H existing location.



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

APD ID: 10400093994

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Type: OIL WELL

Well Number: 436H Well Work Type: Drill

Submission Date: 09/29/2023

Highlighted data reflects the most recent changes

12/05/2023

Drilling Plan Data Report

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12560903	NACIMIENTO	6714	0	0	SANDSTONE, SILTSTONE	USEABLE WATER	N
12560898	OJO ALAMO	5299	1415	1482	SANDSTONE, SILTSTONE	USEABLE WATER	N
12560899	KIRTLAND	5189	1525	1564	SANDSTONE, SHALE, SILTSTONE	USEABLE WATER	N
12560900	FRUITLAND	4968	1746	1807	COAL, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS	N
12560901	PICTURED CLIFFS	4743	1971	2056	SANDSTONE, SILTSTONE	NATURAL GAS	N
12560902	LEWIS	4598	2116	2217	OTHER, SHALE, SILTSTONE : Huarfonito Bentonite is in middle of the interval (1 thick marker bed)	NATURAL GAS	N
12560904	CHACRA	4297	2417	2549	SHALE, SILTSTONE	NATURAL GAS	N
12560905	CLIFFHOUSE	3184	3530	3778	SANDSTONE	NATURAL GAS	N
12560906	MENEFEE	3184	3530	3778	COAL, SANDSTONE, SHALE, SILTSTONE	NATURAL GAS	N
12560907	POINT LOOKOUT	2473	4241	4564	SANDSTONE, SHALE	NATURAL GAS	N
12560908	MANCOS	2157	4557	4913	SHALE, SILTSTONE	NATURAL GAS, OIL	Y
12560909	GALLUP	1821	4893	5284	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560910	MANCOS	1726	4988	5389	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560911	MANCOS	1571	5143	5561	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560912	MANCOS	1501	5213	5638	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560913	MANCOS	1451	5263	5697	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Formation ID	Formation Name	Elevation	True Vertical	Measured Depth	Lithologies	Mineral Resources	Producing Formatio
12560914	MANCOS	1380	5334	5785	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560915	MANCOS	1325	5389	5865	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560916	MANCOS	1239	5475	6020	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560917	MANCOS	1209	5505	6085	OTHER, SHALE : Silts	NATURAL GAS, OIL	Y
12560918	MANCOS	1132	5582	11515	SANDSTONE, SHALE, SILTSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 5582

Equipment: Rig will be equipped with upper and lower kelly cocks with handles available.

Requesting Variance? NO

Variance request:

Testing Procedure: 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.

Choke Diagram Attachment:

Haynes_Canyon_Unit_436H_BOP_and_Choke_20230907184721.pdf

BOP Diagram Attachment:

Haynes_Canyon_Unit_436H_BOP_and_Choke_20230907184726.pdf

Section 3 - Casing

Casing ID		String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
	1	SURFACE	17.5	13.375	NEW	API	N	0	350	0	350	6689	6339	350	J-55	54.5	BUTT	7.39	3.44	BUOY	7.31	BUOY	7.79

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
		12.2 5	9.625	NEW	API	N	0	3944	0	3680	6689	3009	3944	J-55	36	LT&C	1.26	2.51	BUOY	2.62	BUOY	2.1
3	PRODUCTI ON	8.5	5.5	NEW	API	N	0	11515	0	5582	6689	1107	11515	P- 110	17	LT&C	2.71	1.18	BUOY	2.03	BUOY	1.65

Casing Attachments

Casing ID: 1 String SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_436H_Casing_Assumptions_20230907194147.pdf

Casing ID: 2 String INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_436H_Casing_Assumptions_20230907194159.pdf

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

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Casing Attachments

Casing ID: 3 String PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Haynes_Canyon_Unit_436H_Casing_Assumptions_20230907194210.pdf

Section	4 -	Cement
		Contone

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	350	364	1.39	14.6	505.3	100		ASTM Type III Blend, Calcium Chloride 2% BWOC Accelerator, D- CD2 .3% BWOC Dispersant/Friction reducer, .25 lbs/sx Cello Flake - seepage

INTERMEDIATE	Lead	0	3444	829	2.14	12.5	1774	70	90:10 Type III:POZ	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-FP1 0.5% BWOC Defoamer, D-R1 .5% Retarder
INTERMEDIATE	Tail	3444	3944	150	1.38	14.6	207	20	ASTM Type III Blend	ASTM Type III Blend, D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control, D-CD 2 .5% BWOC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

									-		
String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											Dispersant, Cello Flace LCM .25 lb/sx, D-R1 .2% Retarder
PRODUCTION	Lead		0	4913	588	2.37	12.4	1394	50	ASTM type I/II	ASTM Type I/II, BA90 Bonding Agent 5.0 Ib/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 Ib/sx
PRODUCTION	Tail		0	1151 5	1068	1.57	13.3	1676	10	G:POZ blend	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

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: 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).

Describe the mud monitoring system utilized: A fully, closed-loop system will be utilized. The system will consist of aboveground 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

Well Name: HAYNES CANYON UNIT

Well Number: 436H

require disposal.

Circulating Medium Table

C Top Depth	Bottom Depth	Mud Type	Min Weight (Ibs/gal)	Max Weight (Ibs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	Hd o	N Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	350	SPUD MUD	8.4	8.4			9	2			
0	3944	LOW SOLIDS NON- DISPERSED (LSND)	8.8	9.5	8		9	8		20	
0	1151 5	OIL-BASED MUD	8	9					120000		OWR 80:20 WBM as contingency

Section 6 - Test, Logging, Coring

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

Reference ops plan.

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

MEASUREMENT WHILE DRILLING, GAMMA RAY LOG, DIRECTIONAL SURVEY,

Coring operation description for the well:

Reference ops plan.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 2410

Anticipated Surface Pressure: 1181

Anticipated Bottom Hole Temperature(F): 125

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards

Hydrogen Sulfide drilling operations plan required? NO

Well Name: HAYNES CANYON UNIT

Well Number: 436H

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Hydrogen sulfide drilling operations

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Enduring_Hayes_Canyon_Unit_436H_rev0_20231128111011.pdf

Other proposed operations facets description:

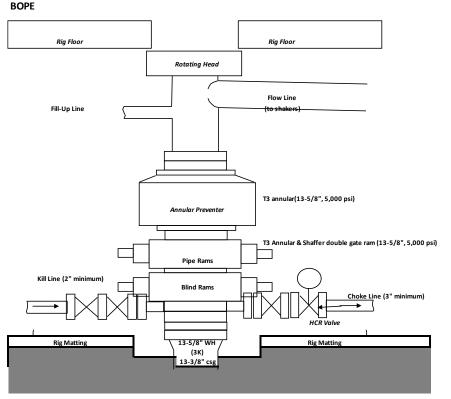
Other proposed operations facets attachment:

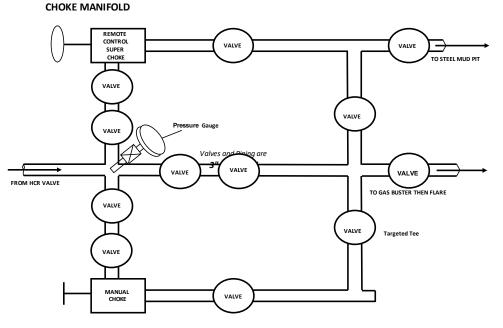
Haynes_Canyon_Unit_436H_WBD._pdf_20230907194327.pdf

Other Variance attachment:

BOPE & CHOKE MANIFOLD DIAGRAMS

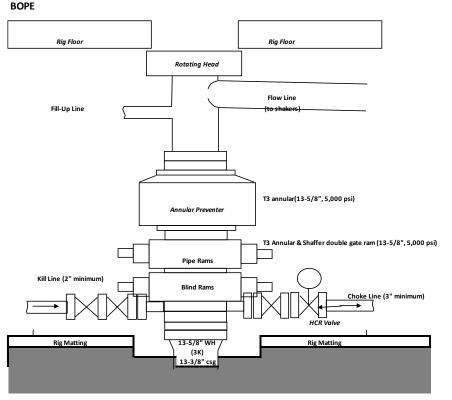
NOTE: EXACT BOPE AND CHOKE CONFIRGURATION AND COMPONENTS MAY DIFFER FROM WHAT IS DEPICTED IN THE DIGRAMS BELOW DEPENDING ON THE RIG AND ITS ASSOCIATED EQUIPMENT. RAM PREVENTERS, ANNULAR PREVENTERS, AND CHOKE MANIFOLD AND COMPONENTS WILL BE RATED TO 3,000 PSI MINIMUM.

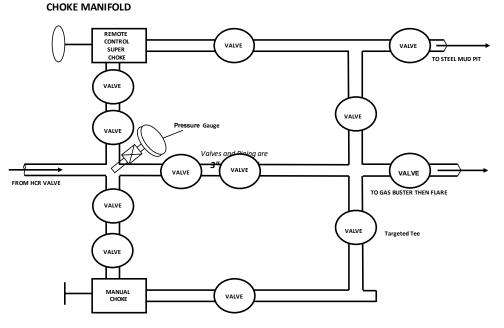




BOPE & CHOKE MANIFOLD DIAGRAMS

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.







ENDURING RESOURCES IV, LLC 6300 S SYRACUSE WAY, SUITE 525 CENTENNIAL, COLORADO 80211

DRILLING PLAN:

Drill, complete, and equip single lateral in the Mancos-H formation

WFLL	INFORMATION:
AAFFF	

WELL IN ONWATION.					
Name:	Haynes Canyon Unit 436H				
API Number:	Not yet assigned				
AFE Number:	Not yet assigned				
ER Well Number:	Not yet assigned				
State:	New Mexico				
County:	Rio Arriba				
Surface Elevation:	6,689 ft ASL (GL)	6,714 ft ASL (KB)			
Surface Location:	3-23-6 Sec-Twn-Rng	1,733 ft FNL	303	ft FWL	
	36.25612 ° N latitude	107.464632 °W longitude		(NAD 83)	
BH Location:	2-23-6 Sec-Twn-Rng	2,280 ft FNL	2,585	ft FWL	
	36.255182 °N latitude	107.438659 °W longitude		(NAD 83)	
Driving Directions:	FROM THE INTERSECTION OF US	HWY 550 & US HWY 64 IN BLC	DOMFIELD, NM:		
	South on US Hwy 550 for 53.8 r	niles to MM 97.6: Left (North) o	on CR #379 (Stat	e Hwy 403) for	1.3 n

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

osis: Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	0/G/W	Pressure
Ojo Alamo	5,299	1,415	1,482	W	normal
Kirtland	5,189	1,525	1,564	W	normal
Fruitland	4,968	1,746	1,807	G, W	sub
Pictured Cliffs	4,743	1,971	2,056	G, W	sub
Lewis	4,598	2,116	2,217	G, W	normal
Chacra	4,297	2,417	2,549	G, W	normal
Cliff House	3,184	3,530	3,778	G, W	sub
Menefee	3,184	3,530	3,778	G, W	normal
Point Lookout	2,473	4,241	4,564	G <i>,</i> W	normal
Mancos	2,157	4,557	4,913	0,G	sub (~0.38
Gallup (MNCS_A)	1,821	4,893	5,284	0,G	sub (~0.38
MNCS_B	1,726	4,988	5,389	0,G	sub (~0.38
MNCS_C	1,571	5,143	5,561	0,G	sub (~0.38
MNCS_Cms	1,501	5,213	5,638	0,G	sub (~0.38
MNCS_D	1,451	5,263	5,697	0,G	sub (~0.38
MNCS_E	1,380	5,334	5,785	0,G	sub (~0.38
MNCS_F	1,325	5,389	5,865	0,G	sub (~0.38
MNCS_G	1,239	5,475	6,020	0,G	sub (~0.38
MNCS_H	1,209	5,505	6,085	0,G	sub (~0.38
MNCS_I	0	0	0	0,G	sub (~0.38
FTP TARGET	1,239	5,475	6,020	0,G	sub (~0.38
PROJECTED LTP	1,132	5,582	11,515	0,G	sub (~0.38

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 formation

Pressure:	Normal (0.43 psi/π) or sub-norm	iai pressure	gradients ant	icipated in all formations			
	Max. pressure gradient:	0.43	psi/ft	Evacuated hole gradient:	0.22	psi/ft	
	Maximum anticipated BH press	ure, assumi	ng maximum	pressure gradient:	2,410	psi	
	Maximum anticipated surface p	ressure, ass	suming partia	ly evacuated hole:	1,190	psi	
Temperature:	Maximum anticipated BHT is 12	5° F or less					

H₂S INFORMATION:

H₂ S 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:	
5	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:	Gamma Ray from drillout of 13-3/8" casing to TD
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 1,500 hp

- Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
- Top Drive: NOV IDS-350PE (350 ton)
- Prime Movers: 4 GE Jenbacher Natural Gas Generator
 - Pumps: 2 RS F-1600 (7,500 psi)
 - BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)
 - **BOPE 2:** Cameron annular (13-5/8", 5,000 psi) **Choke** Cameron (4", 10,000 psi)
 - **KB-GL (ft):** 25

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

STATE AND FEDERAL	NOTIFICATIONS	BLM	State
Construction and	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation.		
Reclamation :	Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and		
	cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or		
	number that notifications were made to.		

Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov

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.
- 2) 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.
- 3)
 - 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.
- 4) 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.
- 5) 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:

Fiula Weasurement:	
	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). 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 additional details. Sufficient barite will be on location to weight up mud system to

balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE:	Drill vertically to casing setting	depth (plus ne	cessary rathole), run casing, ce	ement 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 drille	ed, cased, and o	cemented with a smaller rig in (advance of the drilling rig.	

			FL (mL/30		YP (lb/100		
Fluid:	Туре	MW (ppg)	min)	PV (cp)	sqft)	pН	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, deviation survey

Logging: None Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

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	793	116,634	116,634
Min. S.F.					7.39	3.44	7.31	7.79
	Assumptions:	Collapse: fully	evacuated casir	na with 8.4 ppa	eauivalent exte	rnal pressure ai	radient	

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

N/A Minumum: Optimum: N/A Maximum: N/A

MU Torque (ft lbs): Make-up as per API Buttress Connection running procedure.

Casing Summary: 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

					Hole Cap.		Planned TOC	
Cement:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	(cuft/ft)	% Excess	(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 a	innulus	Csg capacity	0.8680	ft3/ft
Drake Ei	nergy Services:	Calculated cen	nent volumes as	sume gauge hol	e and the exces	s noted in table		Cu Ft Slurry
			D-CD2 .3% BWOC					505.3
		Calcium Chloride 2%	Dispersant/Friction	.25 lbs/sx Cello				
Tail	ASTM Type III Blend	BWOC Accelerator	reducer	Flake - seepage				
	Notify COGCC 8	& BLM if cemen	t is not circulate	ed to surface. Ce	ment must ach	ieve 500 psi co	mpressive strer	ngth before

drilling out.

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	350	ft (MD)	to	3,944	ft (MD)	Hole S	Section Length:	3,594 f
	350	ft (TVD)	to	3,680	ft (TVD)	Ca	asing Required:	3,944 f
			FL (mL/30		YP (lb/100			
Fluid:	Туре	MW (ppg)	min)	PV (cp)	sqft)	рН	Comn	nents
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8-14	9.0-9.5	No (DBM
Hole Size:								-
	, 12-1/4" PDC bi	it w/mud motor						
				v/gal. 1.83 DEG	, 900 GPM, 950	DIFF PSIG		
2.17,					n (range 0.65 - 0.		th 6 - 12s	
MWD / Survey:								
Logging:		and the second second		vcy (cvci y 100	at a minimum j, v	Sitoptional		
55 5	NU BOPE and te	ost (as noted ab	aval: prossura to	ct 12 2 /0" cacin	ato	1,500	psi for 30 minu	tor
			10.1		setting depth).			
Fioteduie.								
			· · ·		urveys every stan			
					flow-rate is 650			
	casing running	. TOOH. Run cas	ing using a CRT a	nd washing / ci	rculating as requ	ired. Land casi	ng. ND BOPE. Wa	alk rig to next
	well Perform	off-line coment i	ob. Pump ceme	nt as detailed h	Nonitor re	turns during ce	montichand	ata comont
	Well. Fellolilli	Ju-inte cement j					entent job and m	otecement
	volume to surfa			ar us actured b		curris during et	entent job and no	otecement
							ement job and h	otecement
							-	
		ace.					Tens. Body	Tens. Conn
Casing Specs:	volume to surfa	wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	volume to surfa	ace.			Collapse (psi) 2,020	Burst (psi) 3,520	Tens. Body (lbs) 564,000	Tens. Conn (lbs) 453,000
51	volume to surfa	wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	volume to surfa	wt (lb/ft)	Grade	Conn.	Collapse (psi) 2,020	Burst (psi) 3,520	Tens. Body (lbs) 564,000	Tens. Conn (lbs) 453,000
Specs Loading	yolume to surfa	ace. Wt (Ib/ft) 36.0	Grade J-55	Conn. LTC	Collapse (psi) 2,020 1,607 1.26	Burst (psi) 3,520 1,400 2.51	Tens. Body (lbs) 564,000 215,529 2.62	Tens. Conn (lbs) 453,000 215,529
Specs Loading	yolume to surfa	wt (lb/ft) 36.0 Collapse: fully	Grade J-55 evacuated casir	Conn. LTC ag with 8.4 ppg	Collapse (psi) 2,020 1,607	Burst (psi) 3,520 1,400 2.51 rnal pressure g	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading	yolume to surfa	wt (Ib/ft) 36.0 Collapse: fully Burst: maximu	Grade J-55 evacuated casir m anticipated s	Conn. LTC ag with 8.4 ppg urface pressure	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu	Burst (psi) 3,520 1,400 2.51 rnal pressure g	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading	yolume to surfa	Wt (Ib/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj	Grade J-55 evacuated casir m anticipated s og equivalent ex	Conn. LTC ag with 8.4 ppg urface pressure cternal pressure	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu gradient	Burst (psi) 3,520 1,400 2.51 mal pressure g uid inside casing	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F.	9.625	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 p Tension: buoye	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 8.4	Conn. LTC ag with 8.4 ppg urface pressure cternal pressure ppg fluid with .	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu gradient 100,000 lbs over	Burst (psi) 3,520 1,400 2.51 mal pressure g uid inside casing	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs):	9.625 Assumptions: Minumum:	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 p Tension: buoye 3,400	Grade J-55 m anticipated s og equivalent ex d weight in 8.4 Optimum:	Conn. LTC urface pressure cternal pressure ppg fluid with : 4,530	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppgl gradient 100,000 lbs over Maximum:	Burst (psi) 3,520 1,400 2.51 rnal pressure g iid inside casing -pull 5,660	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling (Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary:	9.625 Assumptions: Minumum: Float shoe, 1 jt	Collapse: fully 36.0 Collapse: fully Burst: maximu hole and 8.4 pf Tension: buoye 3,400 casing, float col	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 8.4 Optimum: llar, casing to su	Conn. LTC urface pressure aternal pressure ppg fluid with . 4,530 rface (FLOAT EQ	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppgl gradient 100,000 lbs over Maximum:	Burst (psi) 3,520 1,400 2.51 rnal pressure g iid inside casing -pull 5,660	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling (Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n	Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 8.4 Optimum: ilar, casing to su ; 1 per 3-joints i	Conn. LTC ag with 8.4 ppg urface pressure cternal pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM	Burst (psi) 3,520 1,400 2.51 rnal pressure g uid inside casing -pull 5,660 WEATHERFORD	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling (Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n	Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 8.4 Optimum: ilar, casing to su ; 1 per 3-joints i	Conn. LTC ag with 8.4 ppg urface pressure cternal pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppgl gradient 100,000 lbs over Maximum:	Burst (psi) 3,520 1,400 2.51 rnal pressure g uid inside casing -pull 5,660 WEATHERFORD	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling (Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in p 1 centralizers jt	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole t stop-banded 1	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 84 Optimum: ilar, casing to su ; 1 per 3-joints i 0' from float sho	Conn. LTC bg with 8.4 ppg urface pressure ternal pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole be on bottom 1	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM	Burst (psi) 3,520 1,400 2.51 rnal pressure gradients id inside casing -pull 5,660 WEATHERFORD floating on boo	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling j 0) ttom joint, 1 cer	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole t stop-banded 1	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 84 Optimum: llar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg urface pressure ternal pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole be on bottom 1	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM it & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gradients id inside casing -pull 5,660 WEATHERFORD floating on boo	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling j 0) ttom joint, 1 cer	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole t stop-banded 1 DP ; 1 centralizer	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 84 Optimum: llar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg urface pressure ternal pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole be on bottom 1	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM it & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gradients id inside casing -pull 5,660 WEATHERFORD floating on boo	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling j 0) ttom joint, 1 cer	Tens. Conn (lbs) 453,000 215,529 2.10 production htralizer per jt 9-5/8" x
Specs Loading Min. S.F. MU Torque (ft lbs): Casing Summary: Centralizers: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC 11.75" SOLID E	Wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole t stop-banded 1 DP ; 1 centralizer BODY POLYMER	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 84 Optimum: llar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg urface pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 ng) to surface (C	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM it & 1 centralizer entralizers from	Burst (psi) 3,520 1,400 2.51 rnal pressure grain id inside casing -pull 5,660 WEATHERFORD floating on boy Scepter Supply Planned TOC	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling j o) ttom joint, 1 cer y - SLIP'N'SLIDE S	Tens. Conn (lbs) 453,000 215,529 2.10 production htralizer per jt 9-5/8" x
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC 11.75" SOLID E	Wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pj Tension: buoye 3,400 casing, float col on-vertical hole t stop-banded 1 DP ; 1 centralizer BODY POLYMER	Grade J-55 evacuated casir m anticipated s og equivalent ex ed weight in 84 Optimum: llar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg urface pressure ppg fluid with 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 ng) to surface (C	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu e gradient 100,000 lbs over Maximum: UIPMENT FROM it & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on bor Scepter Supply	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling j 0) ttom joint, 1 cer	Tens. Conn (lbs) 453,000 215,529 2.10 production htralizer per jt 9-5/8" x

	90:10 Type							
Lead	III:POZ	12.5	2.140	12.05	70%	0	829	1,774
Tail	Type III	14.6	1.380	6.64	20%	3,444	150	207
Displacement Annular Capacity	302 0.3627	<i>est bbls</i> cuft/ft	9-5/8" casing x	12-2/8" casing	annulus			l
Amulai Capacity	0.3132	cuft/ft	9-5/8" casing x 9-5/8" casing x			9-5/8"36#ID	8 921	
	0.4341	cuft/ft	9-5/8" casing v	-	est shoe jt ft	44	0.521	
			sume gauge hol				le	
Snacer	D-Mud Breaker	SAPP				,,		
Sputti								
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 Ib/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarder
Tail	ASTM Type III Blend	diate Cementino	D-MPA-1 .4% BWOC Fluid Loss & Gas Migration Control		D-CD 2 .5% BWOC Dispersant	Cello Flace LCM .25 lb/sx		D-R1 .2% Retarder
	Notify NMOCD drilling out.	& BLM if ceme	compressive str nt is not circulat	ed to surface.	Cement must ad	chieve 500 psi c	ompressive stre	ength before
PRODUCTION:		-		-		Usla		7 5 7 4
		ft (MD) ft (TVD)	to to		ft (MD) ft (TVD)		Section Length: asing Required:	7,571
	3,080	IL (IVD)	10	5,582	II (IVD)	C	asing Required:	11,515
		F	stimated KOP:	5 638	ft (MD)	5 213	ft (TVD)	T
	E	stimated Landi			ft (MD)		ft (TVD)	
			ateral Length:	-	ft (MD)	0,0		1
	J		,					
					YP (lb/100			Ī
Fluid:	Туре	MW (ppg)	WPS ppm	нтнр	sqft)	ES	OWR	Comment
		410						WBM as
uids / Solids Notes:	burn retorts on program specs.	cuttings sampl Reference New	120,000 CaCl . Ensure that dry es one per tour t park's mud prog ud systems are t	to check % ROC ram for additio	Add diesel and nal details. No	products as req asphalt product	uired to mainta s are to be adde	contingency ds control will in mud in
	Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin	rill OBM system cuttings sampl Reference New, anges to the m w/mud motor 77857 - 6.5" 7/ ag device(s) as ref	. Ensure that dr es one per tour t park's mud prog ud systems are t	ying shakers are to check % ROC ram for additio to be discussed 3 rev/gal, 1.83 tool spaced ~3	rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind the	the rig (2nd set) products as req asphalt product ng prior to appl ,580 DIFF PSIG e bit.	of shakers. Solid uired to mainta s are to be adde ication.	contingency ds control will in mud in d to the OBM
Hole Size: Bit / Motor: Bit / Motor:	Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI MWD with GR,	rill OBM system cuttings sampl Reference New anges to the m w/mud motor 77857 - 6.5" 7/3 g device(s) as re OC w/16 mm - 1 inclination, and	. Ensure that drives one per tour to park's mud prog ud systems are to stage, 0.2:3 squired, bottom 9 mm cutters, m d azimuth (surve	ying shakers are to check % ROC ram for additio to be discussed 3 rev/gal, 1.83 tool spaced ~3 natrix body, tar	rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1.	the rig (2nd set) products as req asphalt product ng prior to appl ,580 DIFF PSIG e bit. .5 sq-in	of shakers. Soli uired to mainta s are to be adde ication. (or similar); on o	contingency ds control will in mud in d to the OBM d to the OBM
Hole Size: Bit / Motor: Bit / Motor: MWD / Survey:	Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and	rill OBM system cuttings sampl Reference New anges to the m w/mud motor 77857 - 6.5" 7/7 19 device(s) as re DC w/16 mm - 1 inclination, and after Landing P	Ensure that drives one per tour to park's mud progud systems are to system and the systems are to systems	ying shakers are to check % ROC ram for additio o be discussed 3 rev/gal, 1.83 tool spaced ~3 natrix body, tar y every joint fro	rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind th get TFA = 1.0 - 1 om KOP to Land	the rig (2nd set) products as req asphalt product ng prior to appl ,580 DIFF PSIG e bit. .5 sq-in	of shakers. Soli uired to mainta s are to be adde ication. (or similar); on o	contingency ds control will in mud in d to the OBM d to the OBM
Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging:	Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en	rill OBM system cuttings sampl Reference New anges to the m 77857 - 6.5" 7/i ng device(s) as re OC w/16 mm - 1 inclination, and after Landing P titre section, no	Ensure that drives one per tour to park's mud progud systems are to systems	ying shakers are to check % ROC ram for additio o be discussed 3 rev/gal, 1.83 tool spaced ~3 hatrix body, tar by every joint fro tings sampling,	rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind th get TFA = 1.0 - 1 om KOP to Land no OH WL logs	the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in ing Point and su	of shakers. Solid uired to mainta s are to be adde ication. (or similar); on o	contingency ds control will in mud in d to the OBM demand minimum
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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

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary:	Float shoe, float collar w/debris catcher, 1 jt casing, float collar (Weatherford (WFT) float equipment), 20' marker joint, toe-
	intitiation sleeve (WFT RD 8,500 psi), casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation
	sub (NCS Air-Lock 2,500 psi from WFT), casing to surface. The toe-initiation sleeve shall be placed no closer to the unit
	boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore.
	Wellbore path must be no closer than 600' from the parallel lease lines. <i>Note: the LTP is the maximum depth of the toe</i>
	sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place
	the toe sleeve as close to (but not past) the planned LTP as possible.

		unt and placem						
		ralizer per 3 joir			cepter Supply)			
		9-5/8" shoe: 1						
	9-5/8" shoe to	surface: 1 cent	ralizer per 5 join	ts	1	1		-
						Planned TOC		Total Cmt (cu
Cement:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	(ft MD)	Total Cmt (sx)	ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	588	1,394
Tail	G:POZ blend	13.3	1.570	7.70	10%	4,913	1,068	1,676
Displacement	253	est bbls						
Annular Capacity	0.2691	cuft/ft	5-1/2" casing x	9-5/8" casing a	nnulus			
	0.2291	cuft/ft	5-1/2" casing x	8-1/2" hole an	nulus			
	0.1245	cuft/ft	5-1/2" casing v	ol	est shoe it ft	100		
	Calculated cer	nent volumes as	ssume gauge ho	le and the exces	s noted in table	2		
	American Cem	enting Liner & F	Production Blen	d				
				IntegraGuard Star				
Spacer	S-8 Silica Flour 163.7 lbs/bbl	Avis 616 viscosifier 11.6 lb/bbl	FP24 Detoamer .5 Ib/bbl	Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Spuce	105.7 103/001	11.0 10/001	15/ 551	10/001	84/001			
					IntegraGuard GW86		FP24 Defoamer	
Lond	ASTM Type I/II	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	Viscosifier .1% BWOB	R7C Retarder .2% BWOB	0.3% BWOB, Anti- Static .01 lb/sx	
Leuu	ASTINI Type I/II	5.010/58	876 BWOB	BWOB	BWOB	BWOB	318110.01 10/54	
						IntegraGuard GW86		FP24 Defoamer .3%
T -11	T	Pozzolan Fly Ash		Bentonite Viscosifier		Viscosifier .1%	R3 Retarder .5%	BWOB, IntegraSeal
Iaii	Type G 50%	Extender 50%	3.0 lb/sx	4% BWOB	BWOB	BWOB	BWOB	0.25 lb/sx
		ment volumes as			s notea în table	2		
N		& BLM if ceme			and a Cross and Inc. M			
Note:		ot be considere						
		.1.a and 19.15.						
		g the azimuth o						
		erval, as defined						
		ind NMAC 19.15						
		ve, and the first t						
		all be closer to t		ry than 100' me	easured along t	he azimuth of th	e well or 330' r	measured
	nernendicular	to the azimuth	of the well.					

FINISH WELL:	ND BOP, cap well, RDMO.		
Procedure:	After off-line cement job, cap ar	nd cover well. Continue drilling ope	rations on subsequent wells on pad.
COMPLETION AND PR	RODUCTION PLAN:		
Est Lateral Length:	5,395		
Est Frac Inform:	22 Frac Stages	87,000 bbls slick water	7,020,000 lbs proppant
Flowback:	Flow back through production	tubing as pressures allow	
Production:	Produce through production to	ubing via gas-lift into permanent pro	duction and storage facilities
ESTIMATED START D	ATES:		
Drilling:	11/1/23		

11/1/23	
12/31/23	
2/14/24	
Alec Bridge	12/20/21
Greg Olson	2/20/23
Greg Olson	3/27/23
G Olson	8/21/23
	12/31/23 2/14/24 Alec Bridge Greg Olson Greg Olson



ENDURING RESOURCES IV, LLC 6300 S SYRACUSE WAY, SUITE 525 **CENTENNIAL, COLORADO 80211**

DRILLING PLAN:

Drill, complete, and equip single lateral in the Mancos-H formation

WELL	INFORMATION:	

ELL INFORMATION:					
Name:	Haynes Canyon Unit 436H				
API Number:	Not yet assigned				
AFE Number:	Not yet assigned				
ER Well Number:	Not yet assigned				
State:	New Mexico				
County:	Rio Arriba				
Surface Elevation:	6,689 ft ASL (GL)	6,714 ft ASL (KB)			
Surface Location:	3-23-6 Sec-Twn-Rng	1,733 ft FNL	303	ft FWL	
	36.25612 ° N latitude	107.464632 °W longitude		(NAD 83)	
BH Location:	2-23-6 Sec-Twn-Rng	2,280 ft FNL	2,585	ft FWL	
	36.255182 ° N latitude	107.438659 °W longitude		(NAD 83)	
Driving Directions:	FROM THE INTERSECTION OF US	HWY 550 & US HWY 64 IN BLOOM	IFIELD, NM:		
	South on US Hww 550 for 53.8 r	niles to MM 97 6. Left (North) on C	P #270 (Stat	Huny (103) for	1 2

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

nosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	0/G/W	Pressure
(Ojo Alamo	5,299	1,415	1,482	W	normal
I	Kirtland	5,189	1,525	1,564	W	normal
F	Fruitland	4,968	1,746	1,807	G, W	sub
F	Pictured Cliffs	4,743	1,971	2,056	G, W	sub
l	Lewis	4,598	2,116	2,217	G, W	normal
(Chacra	4,297	2,417	2,549	G, W	normal
(Cliff House	3,184	3,530	3,778	G <i>,</i> W	sub
1	Menefee	3,184	3,530	3,778	G, W	normal
F	Point Lookout	2,473	4,241	4,564	G, W	normal
1	Mancos	2,157	4,557	4,913	0,G	sub (~0.38)
C	Gallup (MNCS_A)	1,821	4,893	5,284	0,G	sub (~0.38)
1	MNCS_B	1,726	4,988	5,389	0,G	sub (~0.38)
1	MNCS_C	1,571	5,143	5,561	0,G	sub (~0.38)
1	MNCS_Cms	1,501	5,213	5,638	0,G	sub (~0.38)
1	MNCS_D	1,451	5,263	5,697	0,G	sub (~0.38)
1	MNCS_E	1,380	5,334	5,785	0,G	sub (~0.38)
1	MNCS_F	1,325	5,389	5,865	0,G	sub (~0.38)
1	MNCS_G	1,239	5,475	6,020	0,G	sub (~0.38)
1	MNCS_H	1,209	5,505	6,085	0,G	sub (~0.38)
1	MNCS_I	0	0	0	0,G	sub (~0.38)
1	FTP TARGET	1,239	5,475	6,020	0,G	sub (~0.38)
1	PROJECTED LTP	1,132	5,582	11,515	0,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup -+: al (0.43 nsi/ft) (aL di ents anticipated in all fo

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 pres	sure, assumi	ng maximum	pressure gradient:	2,410	psi		
	Maximum anticipated surface	1,190	psi					
Temperature:	Maximum anticipated BHT is 1	25° F or less						

H₂S INFORMATION:

H₂ S 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:	Gamma Ray from drillout of 13-3/8" casing to TD
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 1,500 hp

- Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
- Top Drive: NOV IDS-350PE (350 ton)
- Prime Movers: 4 GE Jenbacher Natural Gas Generator
 - Pumps: 2 RS F-1600 (7,500 psi)
 - BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)
 - **BOPE 2:** Cameron annular (13-5/8", 5,000 psi) **Choke** Cameron (4", 10,000 psi)
 - KB-GL (ft): 25

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

STATE AND FEDERAL	NOTIFICATIONS	BLM	State
Construction and	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation.		
Reclamation:	Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and		
	cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or		
	number that notifications were made to.		

Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov

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.

- 2) 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.
- 3)

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.

- 4) 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.
- 5) 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:

Fluid Measurement:	
Closed-Loop System:	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). 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 additional details. Sufficient barite will be on location to weight up mud system to

balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE:	Drill vertically to casing setting depth (plus necessary rathole), 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.								

			FL (mL/30		YP (lb/100		
Fluid:	Туре	MW (ppg)	min)	PV (cp)	sqft)	pН	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, deviation survey

Logging: None

Sta

Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

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	793	116,634	116,634		
Min. S.F.					7.39	3.44	7.31	7.79		
	Assumptions:	Assumptions: Collapse fully evacuated casing with 8.4 ppg equivalent external pressure gradient								

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 Maximum: N/A

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

Make-up as per API Buttress Connection running procedure.

Casing Summary: 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

Planned TOC Hole Cap. Cement Weight (ppg) Yield (cuft/sk) Water (gal/sk (cuft/ft) % Excess (ft MD) Total Cmt (sx) Туре TYPE III 0.6946 100% 364 14.6 1.39 6.686 0 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 Cu Ft Slurry 505.3 D-CD2 .3% BWOC

Calcium Chloride 2% Dispersant/Friction .25 lbs/sx Cello Tail ASTM Type III Blend BWOC 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.

<u>INTERMEDIATE:</u>								
	350	ft (MD)	to	3,944	ft (MD)	Hole S	ection Length:	3,594 ft
	350	ft (TVD)	to	3,680	ft (TVD)	Ca	asing Required:	3,944 ft
			51 (VD (11./4.0.0			
Fluid:	Turne		FL (mL/30	DV(an)	YP (lb/100		Comm	
Fluid:	Type LSND (5% KCl)	MW (ppg) 8.8 - 9.5	min) 20	PV (cp) 8 - 14	sqft) 8 - 14	рН 9.0-9.5	Comn No C	
Hole Size:		0.0-9.5	20	0-14	0-14	9.0-9.5	NUC	Лым
	12-1/4 12-1/4" PDC bi	tw/mud motor						
	MOTOR: NOV 0			v/gal. 1.83 DEG	900 GPM, 950	DIFF PSIG		
2.17, 1.101011					(range 0.65 - 0.		th 6 - 12s	
MWD / Survey:		1	· · · · · · · · · · · · · · · · · · ·					
Logging:				-/ (/				
	NU BOPE and to	est (as noted abo	ove); pressure te	st 13-3/8" casin	gto	1,500	psi for 30 minu	tes.
	Drill to TD follo		11.1		•	Steer as needed	to keep well on	plan. Keep DLS
	< 3 deg/100' an	d keep slide len	gth < 10', when	possible. Take su	rveys every stan	d, at a minimu	m. Target flow-ra	ates of 750
					flow-rate is 650		-	
					rculating as requ			
							-	
		off-line cement jo	ob. Pump ceme	nt as detailed be	low. Monitor re	turns during ce	ement job and no	ote cement
	well. Perform c volume to surfa		ob. Pump ceme	nt as detailed be	elow. Monitor re	turns during ce	ement Job and no	ote cement
			ob. Pump ceme	nt as detailed be	low. Monitor re	turns during ce	ment job and no	ote cement
			ob. Pump ceme	nt as detailed be	low. Monitor re	turns during ce	Tens. Body	Tens. Conn
Casing Specs:	volume to surfa		ob. Pump cemer	nt as detailed be Conn.	Collapse (psi)	turns during ce Burst (psi)	-	
Casing Specs: Specs	volume to surfa	ace.					Tens. Body	Tens. Conn
5 1	volume to surfa	wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	Tens. Body (lbs)	Tens. Conn (lbs)
Specs	yolume to surfa	wt (lb/ft)	Grade	Conn.	Collapse (psi) 2,020	Burst (psi) 3,520	Tens. Body (lbs) 564,000	Tens. Conn (lbs) 453,000
Specs Loading	9.625	wt (lb/ft) 36.0	Grade J-55	Conn. LTC	Collapse (psi) 2,020 1,607	Burst (psi) 3,520 1,400 2.51	Tens. Body (lbs) 564,000 215,529 2.62	Tens. Conn (lbs) 453,000 215,529
Specs Loading	9.625	wt (lb/ft) 36.0 Collapse: fully 0	Grade J-55 evacuated casir	Conn. LTC ang with 8.4 ppg	Collapse (psi) 2,020 1,607 1.26	Burst (psi) 3,520 1,400 2.51 rnal pressure gi	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading	9.625	wt (lb/ft) 36.0 Collapse: fully Burst: maximu	Grade J-55 evacuated casir m anticipated s	Conn. LTC ang with 8.4 ppg	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu	Burst (psi) 3,520 1,400 2.51 rnal pressure gi	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading	9.625	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pp	Grade J-55 evacuated casir m anticipated s og equivalent ev	Conn. LTC ng with 8.4 ppg surface pressure kternal pressure	Collapse (psi) 2,020 1,607 1.26 equivalent exte with 9.5 ppg flu	Burst (psi) 3,520 1,400 2.51 mal pressure guid inside casing	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading	9.625	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pp	Grade J-55 evacuated casir m anticipated s og equivalent ev	Conn. LTC ng with 8.4 ppg surface pressure kternal pressure	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu	Burst (psi) 3,520 1,400 2.51 mal pressure guid inside casing	Tens. Body (lbs) 564,000 215,529 2.62 radient	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs):	9.625 Assumptions: Minumum:	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pp Tension: buoye 3,400	Grade J-55 manticipated s og equivalent ex d weight in 8.4 Optimum:	Conn. LTC urface pressure surface pressure kternal pressure ppg fluid with 1 4,530	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 00,000 lbs over Maximum:	Burst (psi) 3,520 1,400 2.51 rnal pressure gi id inside casing -pull 5,660	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary:	9.625 Assumptions: Minumum: Float shoe, 1 jt	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pµ Tension: buoye 3,400 casing, float col	Grade J-55 evacuated casir manticipated s og equivalent ex d weight in 8.4 Optimum: lar, casing to su	Conn. LTC by with 8.4 ppg surface pressure kternal pressure ppg fluid with 1 4,530 rface (FLOAT EQ	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 00,000 lbs over Maximum:	Burst (psi) 3,520 1,400 2.51 rnal pressure gi id inside casing -pull 5,660	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n	wt (lb/ft) 36.0 Collapse: fully Burst: maximu hole and 8.4 pp Tension: buoye 3,400 casing, float col on-vertical hole	Grade J-55 evacuated casir m anticipated s og equivalent ev d weight in 8.4 Optimum: lar, casing to su ; 1 per 3-joints i	Conn. LTC by with 8.4 ppg surface pressure kternal pressure ppg fluid with 1 4,530 rface (FLOAT EQ n vertical hole	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM	Burst (psi) 3,520 1,400 2.51 rnal pressure g id inside casing -pull 5,660 WEATHERFORD	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt	wt (lb/ft) 36.0 Collapse: fully of Burst: maximu hole and 8.4 pp Tension: buoye 3,400 casing, float col on-vertical hole : stop-banded 10	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 8.4 Optimum: lar, casing to su ; 1 per 3-joints i 0' from float sho	Conn. LTC bg with 8.4 ppg surface pressure external pressure ppg fluid with 1 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 j	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM t & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on bot	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC	Wt (lb/ft) 36.0 Collapse: fully of Burst: maximu hole and 8.4 py Tension: buoye 3,400 casing, float col pn-vertical hole : stop-banded 10 P; 1 centralizer	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 84 Optimum: lar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg surface pressure external pressure ppg fluid with 1 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 j	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on bot	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC	wt (lb/ft) 36.0 Collapse: fully of Burst: maximu hole and 8.4 pp Tension: buoye 3,400 casing, float col on-vertical hole : stop-banded 10	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 84 Optimum: lar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg surface pressure external pressure ppg fluid with 1 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 j	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM t & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on bot Scepter Supply	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft lbs): Casing Summary: Centralizers: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC 11.75" SOLID E	Wt (lb/ft) 36.0 Collapse: fully of Burst: maximu hole and 8.4 pp Tension: buoye 3,400 casing, float col pon-vertical hole : stop-banded 10 P;1 centralizer : GODY POLYMER	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 8.4 Optimum: lar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatin	Conn. LTC bg with 8.4 ppg surface pressure ppg fluid with 3 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 j ng) to surface (Co	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM t & 1 centralizer entralizers from	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on bot Scepter Supply Planned TOC	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p o)	Tens. Conn (lbs) 453,000 215,529 2.10 production
Specs Loading Min. S.F. MU Torque (ft Ibs): Casing Summary: Centralizers:	9.625 Assumptions: Minumum: Float shoe, 1 jt 1 per joint in n 1 centralizers jt (floating) to KC 11.75" SOLID E	Wt (lb/ft) 36.0 Collapse: fully of Burst: maximu hole and 8.4 pp Tension: buoye 3,400 casing, float col pon-vertical hole : stop-banded 10 P;1 centralizer : GODY POLYMER	Grade J-55 evacuated casir m anticipated s og equivalent ex d weight in 84 Optimum: lar, casing to su ; 1 per 3-joints i 0' from float sho per 3 jts (floatir	Conn. LTC bg with 8.4 ppg surface pressure ppg fluid with 3 4,530 rface (FLOAT EQ n vertical hole be on bottom 1 j ng) to surface (Co	Collapse (psi) 2,020 1,607 1.26 equivalent exter with 9.5 ppg flu gradient 100,000 lbs over Maximum: UIPMENT FROM t & 1 centralizer	Burst (psi) 3,520 1,400 2.51 rnal pressure gr id inside casing -pull 5,660 WEATHERFORD floating on both Scepter Supply	Tens. Body (lbs) 564,000 215,529 2.62 radient g while drilling p	Tens. Conn (lbs) 453,000 215,529 2.10 production

	90:10 Type							
Lead	III:POZ	12.5	2.140	12.05	70%	0	829	1,774
Tail	Type III	14.6	1.380	6.64	20%	3,444	150	207
Displacement			0.5.(0)	10.0/0/	<u> </u>			ļ
Annular Capacity	0.3627	cuft/ft	9-5/8" casing x			0 5 /01 26 410	0.001	
	0.3132 0.4341	cuft/ft cuft/ft	9-5/8" casing x 9-5/8" casing v			9-5/8"36#ID 44	8.921	
			ssume gauge ho		est shoe jt ft ss (onen hole on		le	
Constant	D-Mud Breaker	SAPP	sume gauge no	ie und the exec.	ss (open nore on	iy)notcu in tub		
Spacer	D-WILL BIEUKEI	SAPP						
	ASTM Type III	D-CSE 1 5.0% BWOC	D-MPA-1 .4% BWOC Fluid Loss & Gas	D-SA 1 1.4% BWOC	D-CD 2 .4% BWOC	Cello Flace LCM .25	D-FP1 0.5% BWOC	
Lead	90/10 Poz	Strength Enhancer	Migration Control	Na Metasilicate	Dispersant	lb/sx	Defoamer	D-R1 .5% Retarder
			D-MPA-1 .4% BWOC					
			Fluid Loss & Gas			Cello Flace LCM .25		
Tail	ASTM Type III Blend	diate Cementin	Migration Control		Dispersant	lb/sx		D-R1 .2% Retarder
	Notify NMOCD drilling out.	& BLM if ceme	compressive str nt is not circula	ted to surface.	Cement must ad	chieve 500 psi c	ompressive stre	ength before
PRODUCTION:			al plan, run cas			1		
		ft (MD)	to		ft (MD)		Section Length:	7,571
	3,680	ft (TVD)	to	5,582	ft (TVD)	C	asing Required:	11,515
			Estimated KOP:	E 639	ft (MD)	E 212	ft (TVD)	T
	F	stimated Landi			ft (MD)		ft (TVD)	ł
			ateral Length:		ft (MD)	5,475		1
	J	2011/14104	aterar zengen	0,.00				
					YP (lb/100			T
Fluid:								
	Type	IVIVV (ppg)	WPSppm	HTHP	sqft)	ES	OWR	Comment
	Туре	MW (ppg)	WPS ppm	HTHP	sqft)	ES	OWR	WBM as
	OBM Newpark OptiD burn retorts on program specs.	8.0 - 9.0 prill OBM system cuttings sampl Reference New	120,000 CaCl	NC ying shakers are to check % ROC gram for additio	±6 rigged up after . Add diesel and nal details. No	+300 the rig (2nd set) products as req asphalt product	80:20 of shakers. Solid uired to mainta	WBM as contingency as control will in mud in
uids / Solids Notes: Hole Size: Bit / Motor:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" 8-1/2" DC bit MOTOR: NOV 0	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/	120,000 CaCl 1. Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83	±6 rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl	80:20 of shakers. Solii uired to mainta is are to be adde ication.	WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin	8.0 - 9.0 rill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5"7/ ng device(s) as ref	120,000 CaCl . Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 (tool spaced ~3	±6 rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl L,580 DIFF PSIG e bit.	80:20 of shakers. Solii uired to mainta is are to be adde ication.	WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/ ng device(s) as re DC w/16 mm - 1	120,000 CaCl . Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 (tool spaced ~3 natrix body, tar	±6 rigged up after . Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on (WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI MWD with GR,	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/ ng device(s) as re DC w/16 mm - 1 inclination, and	120,000 CaCl . Ensure that dr es one per tour t park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 (tool spaced ~3 natrix body, tar	±6 rigged up after . Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on (WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI MWD with GR, before KOP and	8.0 - 9.0 prill OBM system a cuttings sampl Reference New nanges to the m w/mud motor 177857 - 6.5" 7/ ng device(s) as re DC w/16 mm - 1 inclination, and l after Landing P	120,000 CaCl 1. Ensure that dr es one per tour 1 park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve Point)	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 of tool spaced ~3 natrix body, tar ey every joint fro	±6 rigged up after . Add diesel and nal details. No : with engineeri deg, 750 GPM, 1 ,000' behind th get TFA = 1.0 - 1 om KOP to Land	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on (WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en	8.0 - 9.0 prill OBM system a cuttings sampl Reference New nanges to the m w/mud motor 177857 - 6.5" 7/ ng device(s) as re DC w/16 mm - 1 inclination, and l after Landing P ntire section, no	120,000 CaCl 1. Ensure that dr es one per tour 1 park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve Point) mud-log or cutt	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 of tool spaced ~3 natrix body, tar ey every joint fro tings sampling,	±6 rigged up after . Add diesel and nal details. No i with engineeri deg, 750 GPM, 1 ,000' behind th get TFA = 1.0 - 1 om KOP to Land no OH WL logs	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in ing Point and su	80:20 of shakers. Solid uired to mainta is are to be adde ication. (or similar); on irvey every 100'	WBM as contingency ds control will in mud in d to the OBM demand
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakir BIT: 5-BLADE PI MWD with GR, before KOP and	8.0 - 9.0 prill OBM system o cuttings sampl Reference New nanges to the m w/mud motor 77857 - 6.5" 7/ ng device(s) as rep OC w/16 mm - 1 inclination, and after Landing P ntire section, no est (as noted abo	120,000 CaCl . Ensure that dr es one per tour 1 park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve 'oint) mud-log or cutt bye); pressure te	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 of tool spaced ~3 natrix body, tar ey every joint fro tings sampling, st 9-5/8" casing	±6 rigged up after . Add diesel and nal details. No : with engineeri deg, 750 GPM, 1 .000' behind the get TFA = 1.0 - 1 om KOP to Land no OH WL logs to	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in ing Point and su 1,500	80:20 of shakers. Solid uired to mainta is are to be adde ication. (or similar); on urvey every 100'	WBM as contingency ds control will in mud in d to the OBM demand demand
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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

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Casing Summary:	Float shoe, float collar w/debris catcher, 1 jt casing, float collar (Weatherford (WFT) float equipment), 20' marker joint, toe-
	intitiation sleeve (WFT RD 8,500 psi), casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation
	sub (NCS Air-Lock 2,500 psi from WFT), casing to surface. The toe-initiation sleeve shall be placed no closer to the unit
	boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore.
	Wellbore path must be no closer than 600' from the parallel lease lines. <i>Note: the LTP is the maximum depth of the toe</i>
	sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place
	the toe sleeve as close to (but not past) the planned LTP as possible.

		unt and placem						
		ralizer per 3 joir			cepter Supply)			
		9-5/8" shoe: 1						
	9-5/8" shoe to	surface: 1 cent	ralizer per 5 join	ts	1	1		-
						Planned TOC		Total Cmt (cu
Cement:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	(ft MD)	Total Cmt (sx)	ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	588	1,394
Tail	G:POZ blend	13.3	1.570	7.70	10%	4,913	1,068	1,676
Displacement	253	est bbls						
Annular Capacity	0.2691	cuft/ft	5-1/2" casing x	9-5/8" casing a	nnulus			
	0.2291	cuft/ft	5-1/2" casing x	8-1/2" hole an	nulus			
	0.1245	cuft/ft	5-1/2" casing v	ol	est shoe it ft	100		
	Calculated cer	nent volumes as	ssume gauge ho	le and the exces	s noted in table	2		
	American Cem	enting Liner & F	Production Blen	d				
				IntegraGuard Star				
Spacer	S-8 Silica Flour 163.7 lbs/bbl	Avis 616 viscosifier 11.6 lb/bbl	FP24 Detoamer .5 Ib/bbl	Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl			
Spuce	105.7 103/001	11.0 10/001	15/ 551	10/001	84/001			
					IntegraGuard GW86		FP24 Defoamer	
Lond	ASTM Type I/II	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	Viscosifier .1% BWOB	R7C Retarder .2% BWOB	0.3% BWOB, Anti- Static .01 lb/sx	
Leuu	ASTINI Type I/II	5.010/58	876 BWOB	BWOB	BWOB	BWOB	318110.01 10/54	
						IntegraGuard GW86		FP24 Defoamer .3%
T -11	T	Pozzolan Fly Ash		Bentonite Viscosifier		Viscosifier .1%	R3 Retarder .5%	BWOB, IntegraSeal
Iaii	Type G 50%	Extender 50%	3.0 lb/sx	4% BWOB	BWOB	BWOB	BWOB	0.25 lb/sx
		ment volumes as			s notea în table	2		
N		& BLM if ceme			and a Cross and Inc. M			
Note:		ot be considere						
		.1.a and 19.15.						
		g the azimuth o						
		erval, as defined						
		ind NMAC 19.15						
		ve, and the first t						
		all be closer to t		ry than 100' me	easured along t	he azimuth of th	e well or 330' r	measured
	nernendicular	to the azimuth	of the well.					

FINISH WELL:	ND BOP, cap well, RDMO.				
	After off-line cement job, cap ar	nd cover well. (Continue drilling operati	ons on subsequent we	lls on pad.
COMPLETION AND PR	ODUCTION PLAN:				
Est Lateral Length:	5,395				
Est Frac Inform:	22 Frac Stages	87,000	bbls slick water	7,020,000	lbs proppant
Flowback:	Flow back through production	tubing as press	sures allow		
Production:	Produce through production to	ubing via gas-li	ft into permanent produ	ction and storage facili	ties
ESTIMATED START D	ATES: 11/1/23				

Dinning.	11/1/23	
Completion:	12/31/23	
Production:	2/14/24	
Prepared by:	Alec Bridge	12/20/21
Updated:	Greg Olson	2/20/23
	Greg Olson	3/27/23
	G Olson	8/21/23



ENDURING RESOURCES IV, LLC 6300 S SYRACUSE WAY, SUITE 525 **CENTENNIAL, COLORADO 80211**

DRILLING PLAN:

Drill, complete, and equip single lateral in the Mancos-H formation

WELL	INFORMATION:	

ELL INFORMATION:					
Name:	Haynes Canyon Unit 436H				
API Number:	Not yet assigned				
AFE Number:	Not yet assigned				
ER Well Number:	Not yet assigned				
State:	New Mexico				
County:	Rio Arriba				
Surface Elevation:	6,689 ft ASL (GL)	6,714 ft ASL (KB)			
Surface Location:	3-23-6 Sec-Twn-Rng	1,733 ft FNL	303	ft FWL	
	36.25612 ° N latitude	107.464632 °W longitude		(NAD 83)	
BH Location:	2-23-6 Sec-Twn-Rng	2,280 ft FNL	2,585	ft FWL	
	36.255182 °N latitude	107.438659 °W longitude		(NAD 83)	
Driving Directions:	FROM THE INTERSECTION OF US	HWY 550 & US HWY 64 IN BLOOM	IFIELD, NM:		
	South on US Hww 550 for 53.8 r	niles to MM 97 6. Left (North) on C	P #270 (Stat	HWW 403) for	1 2

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

nosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	0/G/W	Pressure
(Ojo Alamo	5,299	1,415	1,482	W	normal
I	Kirtland	5,189	1,525	1,564	W	normal
F	Fruitland	4,968	1,746	1,807	G, W	sub
F	Pictured Cliffs	4,743	1,971	2,056	G, W	sub
l	Lewis	4,598	2,116	2,217	G, W	normal
(Chacra	4,297	2,417	2,549	G, W	normal
(Cliff House	3,184	3,530	3,778	G, W	sub
1	Menefee	3,184	3,530	3,778	G, W	normal
F	Point Lookout	2,473	4,241	4,564	G, W	normal
1	Mancos	2,157	4,557	4,913	0,G	sub (~0.38)
C	Gallup (MNCS_A)	1,821	4,893	5,284	0,G	sub (~0.38)
1	MNCS_B	1,726	4,988	5,389	0,G	sub (~0.38)
1	MNCS_C	1,571	5,143	5,561	0,G	sub (~0.38)
1	MNCS_Cms	1,501	5,213	5,638	0,G	sub (~0.38)
1	MNCS_D	1,451	5,263	5,697	0,G	sub (~0.38)
1	MNCS_E	1,380	5,334	5,785	0,G	sub (~0.38)
1	MNCS_F	1,325	5,389	5,865	0,G	sub (~0.38)
1	MNCS_G	1,239	5,475	6,020	0,G	sub (~0.38)
1	MNCS_H	1,209	5,505	6,085	0,G	sub (~0.38)
1	MNCS_I	0	0	0	0,G	sub (~0.38)
1	FTP TARGET	1,239	5,475	6,020	0,G	sub (~0.38)
1	PROJECTED LTP	1,132	5,582	11,515	0,G	sub (~0.38)

Surface: Nacimiento

Oil & Gas Zones: Several gas bearing zones will be encountered; target formation is the Gallup -+: al (0.43 nsi/ft) (aL di ents anticipated in all fo

Pressure:	Normal (0.43 psi/ft) or sub-nor	mai pressure	gradients ant	icipated in all formations		
	Max. pressure gradient:	0.43	psi/ft	Evacuated hole gradient:	0.22	psi/ft
	Maximum anticipated BH pres	sure, assumi	ng maximum	pressure gradient:	2,410	psi
	Maximum anticipated surface	pressure, ass	uming partia	lly evacuated hole:	1,190	psi
Temperature:	Maximum anticipated BHT is 1	25° F or less				

H₂S INFORMATION:

H₂ S 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:	
5	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:	Gamma Ray from drillout of 13-3/8" casing to TD
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 1,500 hp

- Mast: Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
- Top Drive: NOV IDS-350PE (350 ton)
- Prime Movers: 4 GE Jenbacher Natural Gas Generator
 - **Pumps:** 2 RS F-1600 (7,500 psi)
 - BOPE 1: Cameron single & double gate rams (13-5/8", 3,000 psi)
 - BOPE 2: Cameron annular (13-5/8", 5,000 psi)
 - **Choke** Cameron (4", 10,000 psi)

KB-GL (ft): 25

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

STATE AND FEDERAL	NOTIFICATIONS	BLM	State
Construction and	BLM is to be notified minimum of 48 hours prior to start of construction or reclamation.		
Reclamation:	Grazing permittee is to be notified 10 days in advance.	(505) 564-7600	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178
BOP	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and		
	cementing.	(505) 564-7750	(505) 334-6178
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note
	All notifications are to be recorded in the WellView report with time, date, name or		
	number that notifications were made to.		

Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov

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.

2) 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.

3)

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.

- 4) 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.
- 5) 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:

Fluid Measurement:	
Closed-Loop System:	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). 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 additional details. Sufficient barite will be on location to weight up mud system to

balance maximum anticipated pressure gradient.

DETAILED DRILLING PLAN:

SURFACE:	Drill vertically to casing setting depth (plus necessary rathole), 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 drill	ed, cased, and	cemented with a smaller rig in (advance of the drilling rig.						

			FL (mL/30		YP (lb/100		
Fluid:	Туре	MW (ppg)	min)	PV (cp)	sqft)	pН	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, deviation survey

Logging: None

Procedure: Drill to TD. Use 12-/4" bit and open to 17-1/2" if unable to drill with 17-1/2" bit. Run inclination survey in 100' stations from TD to surface. Condition hole and fluid for casing running as required. TOOH. Run casing. Pump cement as detailed below. Monitor returns during cement job and note cement volume to surface. Install cellar and wellhead.

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	793	116,634	116,634
Min. S.F.					7.39	3.44	7.31	7.79
	Accumptions	Collance: fully	waawatad aasi	a a with Q 1 mma	an university of the	rnal nroccura a	a diant	

Assumptions: Collapse: fully evacuated casing with 8.4 ppg equivalent external pressure gradient 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 N/A Minumum: N/A Maximum: N/A

MU Torque (ft lbs): Optimum: Make-up as per API Buttress Connection running procedure.

Casing Summary: 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:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	Hole 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 a	ınnulus	Csg capacity	0.8680	ft3/ft
Drake E	nergy Services:	Calculated cen	nent volumes as	sume gauge hol	e and the exces	s noted in table	•	Cu Ft Slurry
			D-CD2 .3% BWOC					505.3
		Calcium Chloride 2%	Dispersant/Friction	.25 lbs/sx Cello				
Tail	ASTM Type III Blend	BWOC Accelerator	reducer	Flake - seepage				
	Notify COGCC 8	& BLM if cemen	t is not circulate	ed to surface. Ce	ment must ach	ieve 500 psi co	mpressive strei	ngth before

drilling out.

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

INTERMEDIATE:	Drill as per dire	ectional plan to	casing setting	depth, run casıı	ng, cement casir	ng to surface.		
	350	ft (MD)	to	3,944	ft (MD)	Hole S	ection Length:	3,594 ft
	350	ft (TVD)	to	3,680	ft (TVD)	Cá	asing Required:	3,944 ft
			FL (mL/30		YP (lb/100			
Fluid:	Туре	MW (ppg)	min)	PV (cp)	sqft)	pН	Comr	nents
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8-14	9.0 - 9.5	No	OBM
Hole Size:	12-1/4"							
Bit / Motor:	12-1/4" PDC bi	t w/mud moto	r					
Bit / Motor:	MOTOR: NOV 0	87840 - 7/8.4.	0. stage. 0.16 re	v/gal. 1.83 DEG	. 900 GPM. 950	DIFF PSIG		
.,					, n (range 0.65 - 0.		th 6 - 12s	
MWD / Survey:	MWD Survey w							
Logging:	· · ·			10) (010) 200	ac a,)	onoptional		
55 5	NU BOPE and te	est (as noted ab	ove): pressure te	st 13-3/8" casin	ato	1,500	psi for 30 minu	itos
	Drill to TD follo		10.1		•	,		
FIOLEUUIE.					urveys every star			the second s
	0,		o ,	·		1 St. 1997	U	
					flow-rate is 650			
					rculating as requ		-	
			ob. Pump ceme	nt as detailed be	elow. Monitor re	eturns during ce	ement job and n	ote cement
	volume to surfa	ace.						
							Tens. Body	Tens. Conn
Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	(lbs)	(lbs)
Specs	9.625	36.0	J-55	LTC	2,020	3,520	564,000	453,000
, Loading					1,607	1,400	215,529	215,529
Min. S.F.					1.26	2.51	2.62	2.10
		Collanse: fully	evacuated casi	na with 8 4 nna	equivalent exte	_		•
	nissumptions.				with 9.5 ppg flu			nroduction
			pg equivalent e.				gg	production
				•	100,000 lbs over	r-null		
MU Torque (ft lbs):	Minumum:	3,400	Optimum:	4,530	Maximum:	5,660		
Casing Summary:		,	'	,		,		
						WEATHERFURL	')	
	1 per joint in n					0		
Centralizers:	1 centralizers ji					0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1
				ng) to surface (C	entralizers from	Scepter Supply	- SLIP'N'SLIDE	9-5/8" x
	11.75" SOLID E	BODY POLYMER	R)					
						Planned TOC		Total Cmt (cu
Cement:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	(ft MD)	Total Cmt (sx)	ft)
Stage 1 Spacer		8.5				0	10 bbls	· ·
			1	1	1			

	90:10 Type							
Lead	III:POZ	12.5	2.140	12.05	70%	0	829	1,774
Tail	Type III	14.6	1.380	6.64	20%	3,444	150	207
Displacement			0.5.(0)	10.0/0/				ļ
Annular Capacity	0.3627	cuft/ft	9-5/8" casing x			0 5 /01 26 410	0.001	
	0.3132 0.4341	cuft/ft cuft/ft	9-5/8" casing x 9-5/8" casing v			9-5/8"36#ID 44	8.921	
			ssume gauge ho		est shoe jt ft ss (onen hole on		le	
Constant	D-Mud Breaker	SAPP	sume gauge no	ie und the exec.	ss (open nore on	iy)notcu in tub		
Spacer	D-WILL BIEUKEI	SAPP						
	ASTM Type III	D-CSE 1 5.0% BWOC	D-MPA-1 .4% BWOC Fluid Loss & Gas	D-SA 1 1.4% BWOC	D-CD 2 .4% BWOC	Cello Flace LCM .25	D-FP1 0.5% BWOC	
Lead	90/10 Poz	Strength Enhancer	Migration Control	Na Metasilicate	Dispersant	lb/sx	Defoamer	D-R1 .5% Retarder
			D-MPA-1 .4% BWOC					
			Fluid Loss & Gas			Cello Flace LCM .25		
Tail	ASTM Type III Blend	diate Cementin	Migration Control		Dispersant	lb/sx		D-R1 .2% Retarder
	Notify NMOCD drilling out.	& BLM if ceme	compressive str nt is not circula	ted to surface.	Cement must ad	chieve 500 psi c	ompressive stre	ength before
PRODUCTION:			al plan, run cas			1		
		ft (MD)	to		ft (MD)		Section Length:	7,571
	3,680	ft (TVD)	to	5,582	ft (TVD)	C	asing Required:	11,515
			Estimated KOP:	E 639	ft (MD)	E 212	ft (TVD)	T
	F	stimated Landi			ft (MD)		ft (TVD)	ł
			ateral Length:		ft (MD)	5,475		1
	J	2011/14104	aterar zengen	0,.00				
					YP (lb/100			T
Fluid:								
	Type	IVIVV (ppg)	WPSppm	HTHP	sqft)	ES	OWR	Comment
	Туре	MW (ppg)	WPS ppm	HTHP	sqft)	ES	OWR	WBM as
	OBM Newpark OptiD burn retorts on program specs.	8.0 - 9.0 prill OBM system cuttings sampl Reference New	120,000 CaCl	NC ying shakers are to check % ROC gram for additio	±6 rigged up after . Add diesel and nal details. No	+300 the rig (2nd set) products as req asphalt product	80:20 of shakers. Solid uired to mainta	WBM as contingency as control will in mud in
uids / Solids Notes: Hole Size: Bit / Motor:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" 8-1/2" DC bit MOTOR: NOV 0	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/	120,000 CaCl 1. Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83	±6 rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl	80:20 of shakers. Solii uired to mainta is are to be adde ication.	WBM as contingency ds control will in mud in d to the OBM
uids / Solids Notes: Hole Size: Bit / Motor:	OBM Newpark OptiD burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin	8.0 - 9.0 rill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5"7/ ng device(s) as ref	120,000 CaCl . Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 (tool spaced ~3	±6 rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1	+300 the rig (2nd set) products as req asphalt product ng prior to appl L,580 DIFF PSIG e bit.	80:20 of shakers. Solii uired to mainta is are to be adde ication.	WBM as contingency ds control will in mud in d to the OBM
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uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en NU BOPE and tœ Drill to KOP fol Target ROP 500 when feasible." Geology and En curve. Land cur Keep DLS <2 de parameters / p torque 38K ft-1 casing running required with C Sweeps. Run ci Verify make up and test pack-o	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/ g device(s) as re- DC w/16 mm - 1 inclination, and after Landing P titre section, no est (as noted abc lowing directio) - 600 ft/hr. Ste Take surveys even agineering. Drill rve. Continue dr sg/100' and keep terformance: flo bs (MAX drill pi unless shakers) UN asing as describu- torque when ru off. Open floatati	120,000 CaCl . Ensure that dr es one per tour t park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve 'oint) mud-log or cutt bye); pressure te	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 tool spaced ~3 natrix body, tar ey every joint fro tings sampling, st 9-5/8" casing flow-rate is 650 ceep well on pla inimum. Confir directional pla section, steering to', when feasib 700 GPM, diffei reaching TD, pei hal cleaning nee ble cleaning new and circulato	±6 rigged up after Add diesel and nal details. No : with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1 om KOP to Land no OH WL logs to 1-700 GPM. Tar in. Keep DLS < 3 m landing targe n and updated l g as needed to ke le. Take surveys rential is pressu rform no more to dede. TOOH & LE dede. TOOH & LE seps, fine LCM p ning only if nec getting the toes e as required. Put	+300 the rig (2nd set) products as req asphalt product ng prior to appl 2,580 DIFF PSIG e bit. .5 sq-in ing Point and su 1,500 get differential i deg/100' and ke t, planned BUR i anding target. T eep well on plan every stand, at a re is 700 - 1,00 han one clean-u o drill pipe (ROC roduct is to be u essary (should f sleeve as close to ump cement as c	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on o (or similar); on o psi for 30 minu s pressure is 700 eep slide length for curve, and Ki ake survey every and in the targe a minimum. Targ 0 psig, ROP 500 up cycle to cond bH, if required; s used -Do not use NOT be required o LTP as possible	WBM as contingency ds control will in mud in d to the OBM demand
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en NU BOPE and tœ Drill to KOP fol Target ROP 500 when feasible." Geology and En curve. Land cur Keep DLS <2 de parameters / p torque 38K ft-1 casing running required with C Sweeps. Run ci Verify make up and test pack-o	8.0 - 9.0 prill OBM system a cuttings sampl Reference New hanges to the m w/mud motor 77857 - 6.5" 7/ g device(s) as re- DC w/16 mm - 1 inclination, and after Landing P titre section, no est (as noted abc lowing directio) - 600 ft/hr. Ste Take surveys even agineering. Drill rve. Continue dr sg/100' and keep terformance: flo bs (MAX drill pi unless shakers) UN asing as describu- torque when ru off. Open floatati	120,000 CaCl 1. Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve toint) 9 mm cutters, n 10 m	NC ying shakers are to check % ROC gram for additio to be discussed 3 rev/gal, 1.83 tool spaced ~3 natrix body, tar ey every joint fro tings sampling, st 9-5/8" casing flow-rate is 650 ceep well on pla inimum. Confir directional pla section, steering to', when feasib 700 GPM, diffei reaching TD, pei hal cleaning nee ble cleaning new and circulato	±6 rigged up after Add diesel and nal details. No : with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1 om KOP to Land no OH WL logs to 1-700 GPM. Tar in. Keep DLS < 3 m landing targe n and updated l g as needed to ke le. Take surveys rential is pressu rform no more to dede. TOOH & LE dede. TOOH & LE seps, fine LCM p ning only if nec getting the toes e as required. Put	+300 the rig (2nd set) products as req asphalt product ng prior to appl 2,580 DIFF PSIG e bit. .5 sq-in ing Point and su 1,500 get differential i deg/100' and ke t, planned BUR i anding target. T eep well on plan every stand, at a re is 700 - 1,00 han one clean-u o drill pipe (ROC roduct is to be u essary (should f sleeve as close to ump cement as c	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on o (or similar); on o psi for 30 minu s pressure is 700 eep slide length for curve, and Ki ake survey every and in the targe a minimum. Targ 0 psig, ROP 500 up cycle to cond bH, if required; s used -Do not use NOT be required o LTP as possible	WBM as contingency ds control will in mud in d to the OBM demand demand minimum ttes. > 1 - 1,000 psig. < 10' until KOP OP with / joint during et window. get rotating - 600 ft/hr, ition hole for with OBM). Land casing
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test: Procedure:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en NU BOPE and te Drill to KOP fol Target ROP 500 when feasible. Geology and En curve. Land cur Keep DLS <2 de parameters / p torque 38K ft-I casing running required with C sweeps. Run ci Verify make up and test pack-o volume circula	8.0 - 9.0 rill OBM system a cuttings sampl Reference New Hanges to the m w/mud motor 77857 - 6.5" 7/ ng device(s) as re- DC w/16 mm - 1 inclination, an- et after Landing P titre section, no est (as noted abd lowing direction 0 - 600 ft/hr. Ste Take surveys eve ugineering. Drill ve. Continue dr reg/100' and keep erformance: flo bs (MAX drill pi unless shakers i DBM system). W asing as describ- torque when ru ff. Open floatati ted to surface. I	120,000 CaCl h. Ensure that dr es one per tour i park's mud prog ud systems are to systems are to a systems are to b out of the systems are to a sys	NC ying shakers are to check % ROC iram for additio to be discussed 3 rev/gal, 1.83 (tool spaced ~3 natrix body, tar ey every joint fro tings sampling, st 9-5/8" casing flow-rate is 650 keep well on pla inimum. Confir directional pla section, steering (0', when feasib 700 GPM, differ reaching TD, per hal cleaning need pla cleaning need pla cleaning swe RT for casing rui bace out casing rug, and circulated PE. Clean pits. If	±6 rigged up after Add diesel and nal details. No - with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1 om KOP to Land no OH WL logs to -700 GPM. Tar in. Keep DLS < 3 m landing targe n and updated 1 g as needed to kk le. Take surveys rential is pressu rform no more to ded. TOOH & LE ceps, fine LCM p ning only if ner getting the toes e as required. Pu RDMO to next p:	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in ing Point and su 1,500 get differential i deg/100' and ke t, planned BUR i anding target. T eep well on plan every stand, at a re is 700 - 1,00 han one clean-u D drill pipe (ROC roduct is to be u cessary (should f sleeve as close to imp cement as o ad.	80:20 of shakers. Solid uired to mainta s are to be adde ication. (or similar); on rvey every 100' psi for 30 minu s pressure is 700 ep slide length for curve, and Ku for curve, and Ku for curve, and Ku for curve, and Ku for curve, and Ku and in the targy a minimum. Targ 0 psig, ROP 500 up cycle to cond DH, if required; s used -Do not use NOT be required b LTP as possible detailed below. I	WBM as contingency ds control will in mud in d to the OBM demand demand demand dtemand dtes. 0 - 1,000 psig. < 10' until KOP DP with joint during et window. get rotating - 600 ft/hr, ition hole for hould NOT be barite for with OBM). . Land casing Note cement Tens. Conn
uids / Solids Notes: Hole Size: Bit / Motor: Bit / Motor: MWD / Survey: Logging: Pressure Test: Procedure: Casing Specs:	OBM Newpark OptiE burn retorts on program specs. system. Any ch 8-1/2" 8-1/2" PDC bit MOTOR: NOV 0 friction breakin BIT: 5-BLADE PI MWD with GR, before KOP and GR MWD for en NU BOPE and te Drill to KOP fol Target ROP 500 when feasible. Geology and En curve. Land cu Keep DLS <2 de parameters / pt torque 38K ft-I casing running required with C sweeps. Run ci Verify make up and test pack-o volume circula	8.0 - 9.0 prill OBM system a cuttings sampl Reference New wanges to the m w/mud motor 77857 - 6.5" 7/ ng device(s) as re- DC w/16 mm - 1 inclination, and after Landing P thire section, no est (as noted abd lowing direction 0 - 600 ft/hr. Ster Take surveys every gineering. Drill type. Continue df type. Continue df bs (MAX drill pi unless shakers i DBM system). W asing as describer torque when ru ff. Open floatati ted to surface. I	120,000 CaCl 1. Ensure that dr es one per tour i park's mud prog ud systems are t 8, 5.0 stage, 0.2 equired, bottom 9 mm cutters, n d azimuth (surve toint) 9 mm cutters, n 10 m	NC ying shakers are to check % ROC irram for additio to be discussed 3 rev/gal, 1.83 (1 tool spaced ~3 natrix body, tar ey every joint fro tings sampling, st 9-5/8" casing flow-rate is 650 keep well on pla inimum. Confir ; direction, steering ; direction, ste	t6 rigged up after Add diesel and nal details. No with engineeri deg, 750 GPM, 1 ,000' behind the get TFA = 1.0 - 1 om KOP to Land no OH WL logs to - 700 GPM. Tar in. Keep DLS < 3 m landing targe n and updated l g as needed to k le. Take surveys rential is pressu form no more t eded. TOOH & LE eeps, fine LCM p ning only if nee getting the toe s e as required. Pu RDMO to next p	+300 the rig (2nd set) products as req asphalt product ng prior to appl 1,580 DIFF PSIG e bit. .5 sq-in ing Point and su 1,500 get differential i deg/100' and ke t, planned BUR anding target. T eep well on plan every stand, at a re is 700 - 1,00 han one clean-u D drill pipe (ROC roduct is to be u cessary (should N sleeve as close to ump cement as c ad. Burst (psi)	80:20 of shakers. Solid uired to mainta is are to be adde ication. (or similar); on o rvey every 100' psi for 30 minu s pressure is 700 ep slide length for curve, and Ku ake survey every a minimum. Targ O psig, ROP 500 op cycle to cond DH, if required; s used -Do not use NOT be required b TP as possible detailed below. I Tens. Body (lbs)	WBM as contingency ds control will in mud in d to the OBM demand

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

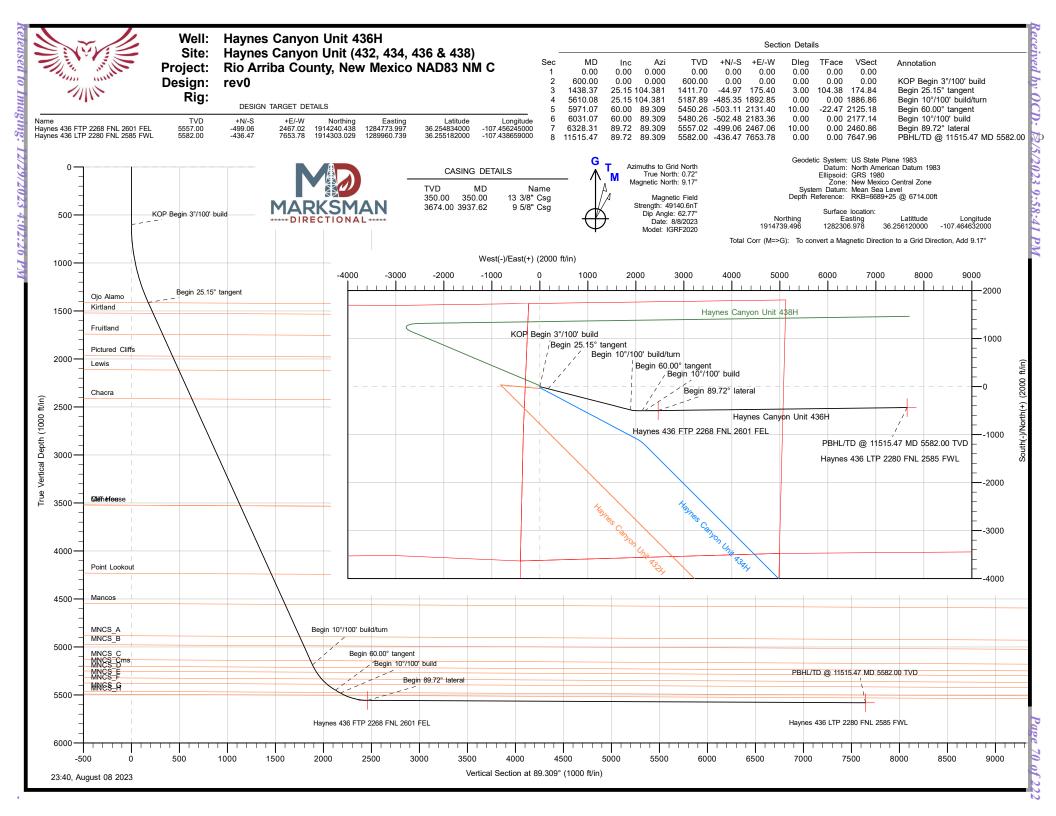
Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

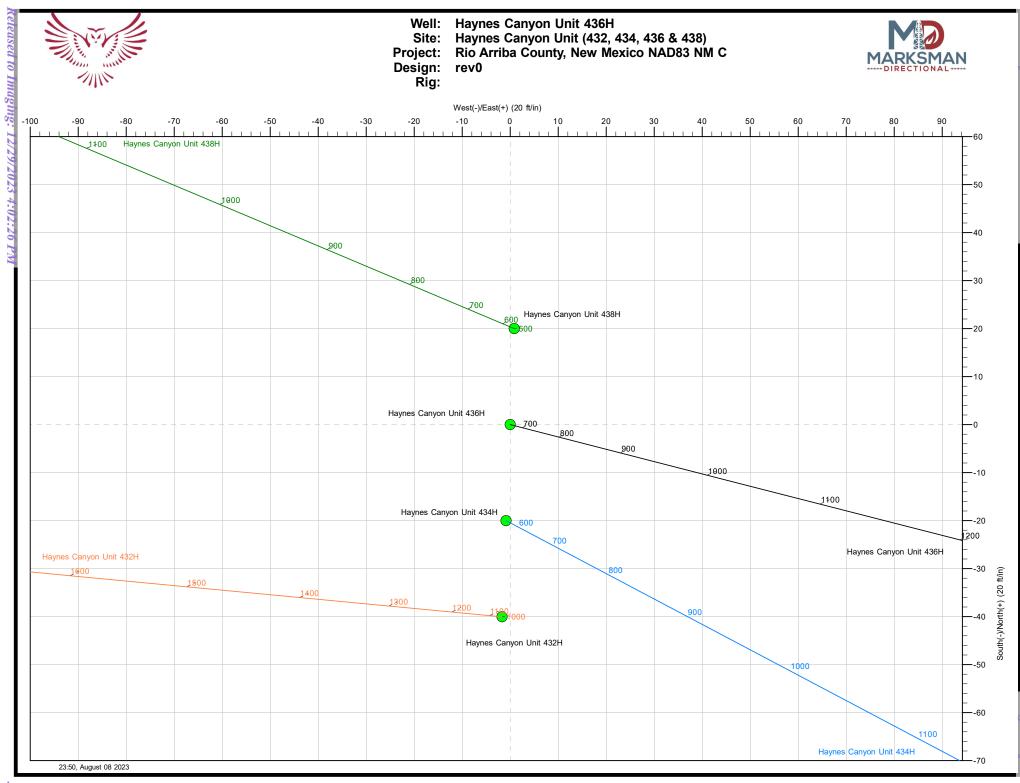
Casing Summary:	Float shoe, float collar w/debris catcher, 1 jt casing, float collar (Weatherford (WFT) float equipment), 20' marker joint, toe-
	intitiation sleeve (WFT RD 8,500 psi), casing to KOP with 20' marker joints spaced evenly in lateral every ~2,000', floatation
	sub (NCS Air-Lock 2,500 psi from WFT), casing to surface. The toe-initiation sleeve shall be placed no closer to the unit
	boundary than 300' measured perpendicular to the East or West lease lines for a East-West azimuth drilled wellbore.
	Wellbore path must be no closer than 600' from the parallel lease lines. <i>Note: the LTP is the maximum depth of the toe</i>
	sleeve and is noted on the Well Plan. Drill past the LTP as required for necessary rat-hole and shoe-track length to place
	the toe sleeve as close to (but not past) the planned LTP as possible.

		unt and placem								
		ralizer per 3 joir			cepter Supply)					
		9-5/8" shoe: 1								
	9-5/8" shoe to	surface: 1 cent	ralizer per 5 join	ts	1	1		-		
						Planned TOC		Total Cmt (cu		
Cement:	Туре	Weight (ppg)	Yield (cuft/sk)	Water (gal/sk)	% Excess	(ft MD)	Total Cmt (sx)	ft)		
Spacer	IntegraGuard Star	11		31.6		0	60 bbls			
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	588	1,394		
Tail	G:POZ blend	13.3	1.570	7.70	10%	4,913	1,068	1,676		
Displacement	253	est bbls								
Annular Capacity	0.2691	cuft/ft	5-1/2" casing x	9-5/8" casing a	nnulus					
	0.2291	cuft/ft	5-1/2" casing x	8-1/2" hole an	nulus					
	0.1245	cuft/ft	5-1/2" casing v	ol	est shoe it ft	100				
	Calculated cement volumes assume gauge hole and the excess noted in table									
	American Cem	enting Liner & F	Production Blen	d						
				IntegraGuard Star						
Spacer	S-8 Silica Flour 163.7 lbs/bbl	Avis 616 viscosifier 11.6 lb/bbl	FP24 Detoamer .5 Ib/bbl	Plus 3K LCM 15 lb/bbl	SS201 Surfactant 1 gal/bbl					
Spuce	105.7 103/001	11.0 10/001	15/ 551	10/001	84/001					
					IntegraGuard GW86		FP24 Defoamer			
Lond	ASTM Type I/II	BA90 Bonding Agent 5.0 lb/sx	Bentonite Viscosifier 8% BWOB	FL24 Fluid Loss .5% BWOB	Viscosifier .1% BWOB	R7C Retarder .2% BWOB	0.3% BWOB, Anti- Static .01 lb/sx			
Leuu	ASTINI Type I/II	5.010/58	876 BWOB	BWOB	BWOB	BWOB	318110.01 10/54			
						IntegraGuard GW86		FP24 Defoamer .3%		
T -11	T	Pozzolan Fly Ash		Bentonite Viscosifier		Viscosifier .1%	R3 Retarder .5%	BWOB, IntegraSeal		
Iaii	Type G 50%	Extender 50%	3.0 lb/sx	4% BWOB	BWOB	BWOB	BWOB	0.25 lb/sx		
		ment volumes as			s notea în table	2				
N		Notify NMOCD & BLM if cement is not circulated to surface.								
Note:		This well will not be considered an unorthodox well location as definited 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.I, respectively. In the case of this well, the last take point will be the bottom toe-								
		ve, and the first t								
		all be closer to t		ry than 100' me	easured along t	he azimuth of th	e well or 330' r	measured		
	nernendicular	to the azimuth	of the well.							

FINISH WELL:	ND BOP, cap well, RDMO.		
Procedure:	After off-line cement job, cap ar	nd cover well. Continue drilling ope	rations on subsequent wells on pad.
COMPLETION AND PR	RODUCTION PLAN:		
Est Lateral Length:	5,395		
Est Frac Inform:	22 Frac Stages	87,000 bbls slick water	7,020,000 lbs proppant
Flowback:	Flow back through production	tubing as pressures allow	
Production:	Produce through production to	ubing via gas-lift into permanent pro	duction and storage facilities
ESTIMATED START D	ATES:		
Drilling:	11/1/23		

11/1/20	
12/31/23	
2/14/24	
Alec Bridge	12/20/21
Greg Olson	2/20/23
Greg Olson	3/27/23
G Olson	8/21/23
	12/31/23 2/14/24 Alec Bridge Greg Olson Greg Olson





age 71 of 2



Database: Company: Project: Site: Well: Wellbore: Design:	DB_Decv0422v16 Enduring Resources LLC Rio Arriba County, New Mexico NAD83 NM C Haynes Canyon Unit (432, 434, 436 & 438) Haynes Canyon Unit 436H Original Hole rev0			TVD Refer MD Refere North Refe	ence:		Well Haynes Ca RKB=6689+25 RKB=6689+25 Grid Minimum Curva	@ 6714.00ft @ 6714.00ft	I	
Project	Rio Arrit	oa County, Nev	w Mexico NAD	33 NM C						
Map System: Geo Datum: Map Zone:	North Am	Plane 1983 erican Datum ico Central Zoi			System Dat	um:	M	lean Sea Level		
Site	Haynes	Canyon Unit (432, 434, 436 8	& 438)						
Site Position: From: Position Uncertaint	Lat/L y :	.ong 0.00 f	Northin Easting t Slot Ra	g:	1,282,30		Latitude: Longitude:			36.256010000 -107.464636000
Well	Haynes	Canyon Unit 4	36H, Surf loc: 1	733 FNL 303	FWL Section 0	3-T23N-R06W	1			
Well Position Position Uncertaint Grid Convergence:	+N/-S +E/-W y	0.0	00 ft East 00 ft We	rthing: sting: Ilhead Elevat		1,914,739.496 1,282,306.978	usft Lo	titude: ngitude: ound Level:		36.256120000 -107.464632000 6,689.00 ft
Wellbore	Origina	l Hole								
Magnetics	Мос	del Name	Sample	Date	Declina (°)	tion		Angle (°)	Field St (n	-
		IGRF2020		8/8/2023		8.46		62.77	49,14	0.63156172
Design	rev0									
Audit Notes:										
Version:			Phase	: F	PLAN	Tie	On Depth:		0.00	
Vertical Section:		D	epth From (TV	D)	+N/-S		/-W	Dir	rection	
			(ft) 0.00		(ft) 0.00		f t) 00	80	(°) 9.309	
			0.00		0.00	0.1	00		9.509	
Plan Survey Tool P Depth From (ft) 1 0.00	Depth (ft)	To Survey	8/8/2023 (Wellbore) riginal Hole)		Tool Name MWD OWSG MWD -	- Standard	Remarks			
Plan Sections										
Measured	lination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00 600.00 1,438.37 5,610.08 5,971.07 6 031.07	0.00 0.00 25.15 25.15 60.00	0.000 0.000 104.381 104.381 89.309 80.300	0.00 600.00 1,411.70 5,187.89 5,450.26 5,480.26	0.00 0.00 -44.97 -485.35 -503.11	0.00 0.00 175.40 1,892.85 2,131.40 2,183.36	0.00 0.00 3.00 0.00 10.00	0.00 0.00 3.00 0.00 9.65	0 0.00 0 0.00 0 0.00 5 -4.18	0.00 0.00 104.38 0.00 -22.47 0.00	
6,031.07 6,328.31 11,515.47	60.00 89.72 89.72	89.309 89.309 89.309	5,480.26 5,557.02 5,582.00	-502.48 -499.06 -436.47	2,183.36 2,467.06 7,653.78	0.00 10.00 0.00	0.00 10.00 0.00	0.00	0.00	laynes 436 LTP 228(

8/8/2023 11:48:07PM



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

0.00 100.00 200.00 300.00 350.00 13 3/8" Csg 400.00 500.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00 1,100.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000	0.00 100.00 200.00 300.00 350.00 400.00 500.00 609.95	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
200.00 300.00 350.00 13 3/8" Csg 400.00 500.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 0.00 0.00 0.00 0.00 100' build 3.00 6.00	0.000 0.000 0.000 0.000 0.000 0.000 0.000	200.00 300.00 350.00 400.00 500.00 600.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00
200.00 300.00 350.00 13 3/8" Csg 400.00 500.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 0.00 0.00 0.00 0.00 100' build 3.00 6.00	0.000 0.000 0.000 0.000 0.000 0.000 0.000	200.00 300.00 350.00 400.00 500.00 600.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00 0.00
300.00 350.00 13 3/8" Csg 400.00 500.00 600.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 0.00 0.00 0.00 100' build 3.00 6.00	0.000 0.000 0.000 0.000 0.000 104.381	300.00 350.00 400.00 500.00 600.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00 0.00
350.00 13 3/8" Csg 400.00 500.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 0.00 0.00 100' build 3.00 6.00	0.000 0.000 0.000 0.000 104.381	350.00 400.00 500.00 600.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00	0.00	0.00	0.00
400.00 500.00 600.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 100' build 3.00 6.00	0.000 0.000 104.381	500.00 600.00	0.00	0.00				
500.00 600.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 100' build 3.00 6.00	0.000 0.000 104.381	500.00 600.00	0.00	0.00				
500.00 600.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 0.00 100' build 3.00 6.00	0.000 0.000 104.381	500.00 600.00	0.00	0.00				
600.00 KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	0.00 100' build 3.00 6.00	0.000	600.00				0.00	0.00	0.00
KOP Begin 3°/1 700.00 800.00 900.00 1,000.00	100' build 3.00 6.00	104.381		0.00	0.00	0.00	0.00	0.00	0.00
700.00 800.00 900.00 1,000.00	3.00 6.00		699.95		0.00	0.00	0.00	0.00	0.00
900.00 1,000.00		104.381		-0.65	2.54	2.53	3.00	3.00	0.00
1,000.00	9.00		799.63	-2.60	10.13	10.10	3.00	3.00	0.00
1,000.00	0.00	104.381	898.77	-5.84	22.78	22.70	3.00	3.00	0.00
	12.00	104.381	997.08	-10.37	40.43	40.30	3.00	3.00	0.00
	12.00	104.381	1,094.31	-16.16	63.04	62.84	3.00	3.00	0.00
	18.00		1,190.18			90.26			
1,200.00 1,300.00	21.00	104.381 104.381	1,190.18	-23.22 -31.51	90.55 122.88	90.26 122.49	3.00 3.00	3.00 3.00	0.00 0.00
1,400.00 1,438.37	24.00 25.15	104.381 104.381	1,376.81 1,411.70	-41.01 -44.97	159.94 175.40	159.44 174.84	3.00 3.00	3.00 3.00	0.00 0.00
Begin 25.15° ta		104.001	1,411.70	-++.57	175.40	174.04	5.00	5.00	0.00
1,441.86	25.15	104.381	1,414.86	-45.34	176.84	176.28	0.00	0.00	0.00
Ojo Alamo									
1,500.00	25.15	104.381	1,467.49	-51.48	200.77	200.14	0.00	0.00	0.00
1,563.65	25.15	104.381	1,525.11	-58.20	226.98	226.26	0.00	0.00	0.00
Kirtland									
1,600.00	25.15	104.381	1,558.01	-62.04	241.94	241.17	0.00	0.00	0.00
1,700.00	25.15	104.381	1,648.53	-72.59	283.11	282.21	0.00	0.00	0.00
1,800.00	25.15	104.381	1,739.05	-83.15	324.28	323.25	0.00	0.00	0.00
1,807.23	25.15	104.381	1,745.59	-83.91	327.26	326.22	0.00	0.00	0.00
Fruitland									
1,900.00	25.15	104.381	1,829.57	-93.71	365.45	364.29	0.00	0.00	0.00
2,000.00	25.15	104.381	1,920.09	-104.26	406.62	405.33	0.00	0.00	0.00
2,056.35	25.15	104.381	1,971.09	-110.21	429.82	428.46	0.00	0.00	0.00
Pictured Cliffs									
2,100.00	25.15	104.381	2,010.60	-114.82	447.79	446.37	0.00	0.00	0.00
2,200.00	25.15	104.381	2,101.12	-125.37	488.95	487.41	0.00	0.00	0.00
2,216.89	25.15	104.381	2,116.42	-127.16	495.91	494.34	0.00	0.00	0.00
Lewis									
2,300.00	25.15	104.381	2,191.64	-135.93	530.12	528.45	0.00	0.00	0.00
2,400.00	25.15	104.381	2,282.16	-146.49	571.29	569.48	0.00	0.00	0.00
2,500.00	25.15	104.381	2,372.68	-157.04	612.46	610.52	0.00	0.00	0.00
2,549.05	25.15	104.381	2,417.08	-162.22	632.66	630.65	0.00	0.00	0.00
Chacra									
2,600.00	25.15	104.381	2,463.20	-167.60	653.63	651.56	0.00	0.00	0.00
2,700.00	25.15	104.381	2,553.72	-178.15	694.80	692.60	0.00	0.00	0.00
2,800.00	25.15	104.381	2,644.24	-188.71	735.97	733.64	0.00	0.00	0.00
2,900.00	25.15	104.381	2,734.76	-199.27	777.14	774.68	0.00	0.00	0.00
3,000.00	25.15	104.381	2,825.27	-209.82	818.31	815.72	0.00	0.00	0.00
3,100.00	25.15	104.381	2,915.79	-220.38	859.47	856.75	0.00	0.00	0.00
3,200.00	25.15	104.381	3,006.31	-230.94	900.64	897.79	0.00	0.00	0.00
3,300.00	25.15	104.381	3,096.83	-241.49	941.81	938.83	0.00	0.00	0.00
3,400.00	25.15	104.381	3,187.35	-252.05	982.98	979.87	0.00	0.00	0.00
3,500.00	25.15	104.381	3,107.35	-252.05	962.96 1,024.15	1,020.91	0.00	0.00	0.00

8/8/2023 11:48:07PM

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Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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)
3,600.00	25.15	104.381	3,368.39	-273.16	1,065.32	1,061.95	0.00	0.00	0.00
3,700.00 3,778.04	25.15 25.15	104.381 104.381	3,458.91 3,529.55	-283.72 -291.95	1,106.49 1,138.62	1,102.99 1,135.01	0.00 0.00	0.00 0.00	0.00 0.00
Cliff House -		1011001	0,020.00	201100	1,100102	1,100101	0.00	0.00	0.00
3,800.00	25.15	104.381	3,549.43	-294.27	1,147.66	1,144.02	0.00	0.00	0.00
3,900.00	25.15	104.381	3,639.95	-304.83	1,188.83	1,185.06	0.00	0.00	0.00
3,937.62	25.15	104.381	3,674.00	-308.80	1,204.31	1,200.50	0.00	0.00	0.00
9 5/8" Csg									
4,000.00	25.15	104.381	3,730.46	-315.39	1,230.00	1,226.10	0.00	0.00	0.00
4,100.00	25.15	104.381	3,820.98	-325.94	1,271.16	1,267.14	0.00	0.00	0.00
4,200.00	25.15	104.381	3,911.50	-336.50	1,312.33	1,308.18	0.00	0.00	0.00
4,300.00	25.15	104.381	4,002.02	-347.05	1,353.50	1,349.22	0.00	0.00	0.00
4,400.00	25.15	104.381	4,092.54	-357.61	1,394.67	1,390.26	0.00	0.00	0.00
4,500.00	25.15	104.381	4,183.06	-368.17	1,435.84	1,431.30	0.00	0.00	0.00
4,564.15	25.15	104.381	4,241.12	-374.94	1,462.25	1,457.62	0.00	0.00	0.00
Point Lookou									
4,600.00	25.15	104.381	4,273.58	-378.72	1,477.01	1,472.33	0.00	0.00	0.00
4,700.00	25.15	104.381	4,364.10	-389.28	1,518.18	1,513.37	0.00	0.00	0.00
4,800.00	25.15	104.381	4,454.62	-399.83	1,559.35	1,554.41	0.00	0.00	0.00
4,900.00	25.15	104.381	4,545.14	-410.39	1,600.52	1,595.45	0.00	0.00	0.00
4,912.91	25.15	104.381	4,556.82	-411.75	1,605.83	1,600.75	0.00	0.00	0.00
Mancos									
5,000.00	25.15	104.381	4,635.65	-420.95	1,641.68	1,636.49	0.00	0.00	0.00
5,100.00	25.15	104.381	4,726.17	-431.50	1,682.85	1,677.53	0.00	0.00	0.00
5,200.00	25.15	104.381	4,816.69	-442.06	1,724.02	1,718.57	0.00	0.00	0.00
5,283.82	25.15	104.381	4,892.57	-450.91	1,758.53	1,752.96	0.00	0.00	0.00
MNCS_A	05.45	101.001	4 007 04	450.00	4 705 40	4 750 00	0.00		0.00
5,300.00	25.15	104.381	4,907.21	-452.62	1,765.19	1,759.60	0.00	0.00	0.00
5,389.00	25.15	104.381	4,987.78	-462.01	1,801.83	1,796.13	0.00	0.00	0.00
MNCS_B 5,400.00	25.15	104.381	4,997.73	-463.17	1,806.36	1,800.64	0.00	0.00	0.00
5,500.00	25.15	104.381	5,088.25	-473.73	1,847.53	1,841.68	0.00	0.00	0.00
5,560.62	25.15	104.381	5,143.12	-480.13	1,872.49	1,866.56	0.00	0.00	0.00
MNCS_C	05.45	404.004	E 470 77	40.4.00	4 000 70	4 000 70	0.00	0.00	0.00
5,600.00 5,610.08	25.15 25.15	104.381 104.381	5,178.77 5,187.89	-484.28 -485.35	1,888.70 1,892.85	1,882.72 1,886.86	0.00 0.00	0.00 0.00	0.00 0.00
Begin 10°/10		104.301	5,107.09	-403.35	1,092.00	1,000.00	0.00	0.00	0.00
5,638.44	27.79	102.057	5,213.28	-488.23	1,905.16	1,899.13	10.00	9.31	-8.20
MNCS_Cms	25		-,		.,	.,		0.01	0.20
5,650.00	28.88	101.223	5,223.45	-489.33	1,910.53	1,904.49	10.00	9.40	-7.21
5,696.69	33.31	98.365	5,263.42	-493.39	1,934.28	1,928.19	10.00	9.49	-6.12
MNCS_D	00.01	00.000	0,200.72	100.00	1,004.20	1,020.10	10.00	0.40	-0.12
5,700.00	33.62	98.188	5,266.19	-493.66	1,936.09	1,929.99	10.00	9.56	-5.34
5,750.00	38.43	95.830	5,306.62	-497.21	1,965.27	1,959.13	10.00	9.61	-4.72
5,785.42	41.86	94.444	5,333.69	-499.24	1,988.01	1,981.84	10.00	9.68	-3.91
MNCS_E									
5,800.00	43.27	93.926	5,344.43	-499.96	1,997.84	1,991.67	10.00	9.71	-3.55
5,850.00	48.14	92.337	5,379.33	-501.90	2,033.57	2,027.37	10.00	9.74	-3.18
5,864.63	49.57	91.917	5,388.96	-502.31	2,044.58	2,038.37	10.00	9.76	-2.87
MNCS_F									
5,900.00	53.03	90.973	5,411.07	-503.00	2,072.17	2,065.95	10.00	9.78	-2.67
5,950.00	57.93	89.775	5,439.40	-503.25	2,113.35	2,107.13	10.00	9.80	-2.40
5,971.07	60.00	89.309	5,450.26	-503.11	2,131.40	2,125.18	10.00	9.82	-2.21



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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)
Begin 60.00°	° tangent								
6,000.00 6,019.73	60.00 60.00	89.309 89.309	5,464.72 5,474.59	-502.80 -502.60	2,156.45 2,173.54	2,150.23 2,167.32	0.00 0.00	0.00 0.00	0.00 0.00
MNCS_G 6,031.07	60.00	89.309	5,480.26	-502.48	2,183.36	2,177.14	0.00	0.00	0.00
Begin 10°/10	0' build								
6,050.00 6,084.72	61.89 65.37	89.309 89.309	5,489.45 5,504.87	-502.28 -501.91	2,199.91 2,231.01	2,193.69 2,224.79	10.00 10.00	10.00 10.00	0.00 0.00
MNCS_H									
6,100.00 6,150.00 6,200.00 6,250.00 6,300.00	66.89 71.89 76.89 81.89 86.89	89.309 89.309 89.309 89.309 89.309	5,511.06 5,528.65 5,542.10 5,551.30 5,556.18	-501.74 -501.17 -500.59 -500.00 -499.40	2,244.98 2,291.76 2,339.90 2,389.02 2,438.76	2,238.76 2,285.55 2,333.69 2,382.82 2,432.56	10.00 10.00 10.00 10.00 10.00	10.00 10.00 10.00 10.00 10.00	0.00 0.00 0.00 0.00 0.00
6,328.31	89.72	89.309	5.557.02	-499.06	2,467.06	2,460.86	10.00	10.00	0.00
Begin 89.72		03.003	0,007.02		∠,+07.00	2,700.00	10.00	10.00	0.00
6,400.00 6,500.00 6,600.00 6,700.00	89.72 89.72 89.72 89.72 89.72	89.309 89.309 89.309 89.309	5,557.36 5,557.84 5,558.32 5,558.81	-498.19 -496.98 -495.78 -494.57	2,538.74 2,638.73 2,738.72 2,838.72	2,532.55 2,632.55 2,732.55 2,832.55	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
6,800.00 6,900.00	89.72 89.72	89.309 89.309	5,559.29 5,559.77	-493.37 -492.16	2,938.71 3,038.70	2,932.54 3,032.54	0.00 0.00	0.00 0.00	0.00 0.00
7,000.00 7,100.00	89.72 89.72	89.309 89.309	5,560.25 5,560.73	-490.95 -489.75	3,138.69 3,238.68	3,132.54 3,232.54	0.00	0.00	0.00 0.00
7,200.00	89.72	89.309	5,561.21	-488.54	3,338.67	3,332.54	0.00	0.00	0.00
7,300.00 7,400.00	89.72 89.72	89.309 89.309	5,561.70 5,562.18	-487.33 -486.13	3,438.67 3,538.66	3,432.54 3,532.54	0.00 0.00	0.00 0.00	0.00 0.00
7,500.00	89.72	89.309	5,562.66	-484.92	3,638.65	3,632.54	0.00	0.00	0.00
7,600.00	89.72	89.309	5,563.14	-483.71	3,738.64	3,732.53	0.00	0.00	0.00
7,700.00	89.72	89.309	5,563.62	-482.51	3,838.63	3,832.53	0.00	0.00	0.00
7,800.00	89.72	89.309	5,564.10	-481.30	3,938.62	3,932.53	0.00	0.00	0.00
7,900.00	89.72	89.309	5,564.59	-480.09	4,038.61	4,032.53	0.00	0.00	0.00
8,000.00	89.72	89.309	5,565.07	-478.89	4,138.61	4,132.53	0.00	0.00	0.00
8,100.00 8,200.00	89.72 89.72	89.309 89.309	5,565.55 5,566.03	-477.68 -476.47	4,238.60 4,338.59	4,232.53 4,332.53	0.00 0.00	0.00 0.00	0.00 0.00
8,300.00	89.72	89.309	5,566.51	-475.27	4,438.58	4,432.53	0.00	0.00	0.00
8,400.00	89.72 89.72	89.309 89.309	5,566.99	-475.27	4,430.50 4,538.57	4,432.53 4,532.53	0.00	0.00	0.00
8,500.00	89.72	89.309	5,567.48	-472.85	4,638.56	4,632.52	0.00	0.00	0.00
8,600.00	89.72	89.309	5,567.96	-471.65	4,738.56	4,732.52	0.00	0.00	0.00
8,700.00	89.72	89.309	5,568.44	-470.44	4,838.55	4,832.52	0.00	0.00	0.00
8,800.00	89.72	89.309	5,568.92	-469.23	4,938.54	4,932.52	0.00	0.00	0.00
8,900.00	89.72	89.309	5,569.40	-468.03	5,038.53	5,032.52	0.00	0.00	0.00
9,000.00	89.72	89.309	5,569.88	-466.82	5,138.52	5,132.52	0.00	0.00	0.00
9,100.00	89.72	89.309	5,570.37	-465.61	5,238.51	5,232.52	0.00	0.00	0.00
9,200.00	89.72	89.309	5,570.85	-464.41	5,338.51	5,332.52	0.00	0.00	0.00
9,300.00	89.72	89.309	5,571.33	-463.20	5,438.50	5,432.52	0.00	0.00	0.00
9,400.00	89.72	89.309	5,571.81	-461.99	5,538.49	5,532.51	0.00	0.00	0.00
9,500.00	89.72	89.309	5,572.29	-460.79	5,638.48	5,632.51	0.00	0.00	0.00
9,600.00	89.72	89.309	5,572.77	-459.58	5,738.47	5,732.51	0.00	0.00	0.00
9,700.00	89.72	89.309	5,573.26	-458.37	5,838.46	5,832.51	0.00	0.00	0.00
9,800.00	89.72	89.309	5,573.74	-457.17	5,938.45	5,932.51	0.00	0.00	0.00
9,900.00	89.72	89.309	5,574.22	-455.96	6,038.45	6,032.51	0.00	0.00	0.00
10,000.00	89.72	89.309	5,574.70	-454.75	6,138.44	6,132.51	0.00	0.00	0.00

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Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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)
10,100.00	89.72	89.309	5,575.18	-453.55	6,238.43	6,232.51	0.00	0.00	0.00
10,200.00	89.72	89.309	5,575.66	-452.34	6,338.42	6,332.50	0.00	0.00	0.00
10,300.00	89.72	89.309	5,576.15	-451.13	6,438.41	6,432.50	0.00	0.00	0.00
10,400.00	89.72	89.309	5,576.63	-449.93	6,538.40	6,532.50	0.00	0.00	0.00
10,500.00	89.72	89.309	5,577.11	-448.72	6,638.40	6,632.50	0.00	0.00	0.00
10,600.00	89.72	89.309	5,577.59	-447.51	6,738.39	6,732.50	0.00	0.00	0.00
10,700.00	89.72	89.309	5,578.07	-446.31	6,838.38	6,832.50	0.00	0.00	0.00
10,800.00	89.72	89.309	5,578.55	-445.10	6,938.37	6,932.50	0.00	0.00	0.00
10,900.00	89.72	89.309	5,579.04	-443.89	7,038.36	7,032.50	0.00	0.00	0.00
11,000.00	89.72	89.309	5,579.52	-442.69	7,138.35	7,132.50	0.00	0.00	0.00
11,100.00	89.72	89.309	5,580.00	-441.48	7,238.34	7,232.49	0.00	0.00	0.00
11,200.00	89.72	89.309	5,580.48	-440.27	7,338.34	7,332.49	0.00	0.00	0.00
11,300.00	89.72	89.309	5,580.96	-439.07	7,438.33	7,432.49	0.00	0.00	0.00
11,400.00	89.72	89.309	5,581.44	-437.86	7,538.32	7,532.49	0.00	0.00	0.00
11,500.00	89.72	89.309	5,581.93	-436.65	7,638.31	7,632.49	0.00	0.00	0.00
11,515.47	89.72	89.309	5,582.00	-436.47	7,653.78	7,647.96	0.00	0.00	0.00

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
Haynes 436 FTP 2268 F - plan misses target - Point	0.00 center by 0.02	0.000 2ft at 6328.2	5,557.00 8ft MD (5557	-499.06 .01 TVD, -499	2,467.02 0.06 N, 2467.0	1,914,240.438 02 E)	1,284,773.997	36.254834000	-107.456245000
Haynes 436 LTP 2280 F - plan hits target cen - Point	0.00 ter	0.000	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000

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	
	3,937.62	3,674.00	9 5/8" Csg		9-5/8	12-1/4	



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,441.86	1,414.86	Ojo Alamo		0.28	89.309	
1,563.65	1,525.11	Kirtland		0.28	89.309	
1,807.23	1,745.59	Fruitland		0.28	89.309	
2,056.35	1,971.09	Pictured Cliffs		0.28	89.309	
2,216.89	2,116.42	Lewis		0.28	89.309	
2,549.05	2,417.08	Chacra		0.28	89.309	
3,778.04	3,529.55	Cliff House		0.28	89.309	
3,778.04	3,529.55	Menefee		0.28	89.309	
4,564.15	4,241.12	Point Lookout		0.28	89.309	
4,912.91	4,556.82	Mancos		0.28	89.309	
5,283.82	4,892.57	MNCS_A		0.28	89.309	
5,389.00	4,987.78	MNCS_B		0.28	89.309	
5,560.62	5,143.12	MNCS_C		0.28	89.309	
5,638.44	5,213.28	MNCS_Cms		0.28	89.309	
5,696.69	5,263.42	MNCS_D		0.28	89.309	
5,785.42	5,333.69	MNCS_E		0.28	89.309	
5,864.63	5,388.96	MNCS_F		0.28	89.309	
6,019.73	5,474.59	MNCS_G		0.28	89.309	
6,084.72	5,504.87	MNCS_H		0.28	89.309	

Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
600.00	600.00	0.00	0.00	KOP Begin 3°/100' build
1,438.37	1,411.70	-44.97	175.40	Begin 25.15° tangent
5,610.08	5,187.89	-485.35	1,892.85	Begin 10°/100' build/turn
5,971.07	5,450.26	-503.11	2,131.40	Begin 60.00° tangent
6,031.07	5,480.26	-502.48	2,183.36	Begin 10°/100' build
6,328.31	5,557.02	-499.06	2,467.06	Begin 89.72° lateral
11,515.47	5.582.00	-436.47	7,653.78	PBHL/TD @ 11515.47 MD 5582.00 TVD



Planning Report - Geographic

Database: Company: Project: Site: Well: Wellbore: Design: Project Map System: Geo Datum:	Endurin Rio Arrii Haynes Original rev0 Rio Arrib	Canyon Un Canyon Un Hole	New Mexico N it (432, 434, 4 it 436H lew Mexico N/	36 & 438)	Local Co-ordinate Reference: Well Haynes Canyon Unit 436H TVD Reference: RKB=6689+25 @ 6714.00ft MD Reference: RKB=6689+25 @ 6714.00ft North Reference: Grid Survey Calculation Method: Minimum Curvature						
Geo Datum: Map Zone:			co Central Z								
Site		Haynes	Canyon Uni	t (432, 434, 43	86 & 438)						
Site Position: From: Position Uncert	tainty:	Lat/Lo	ong 0.00	Eas	thing: ting: : Radius:	1,282,30	99.466 usft 95.297 usft 3-3/16 "	Latitude: Longitude:			36.256010000 -107.464636000
Well		Haynes (Canyon Unit	436H, Surf lo	c: 1733 FNL 303	3 FWL Section 0	3-T23N-R06V	V			
Well Position Position Uncert Grid Converger	tainty	+N/-S +E/-W	C	0.00 ft	Northing: Easting: Wellhead Eleva	1	,914,739.496 ,282,306.978	usft Lo	titude: ngitude: ound Level:		36.256120000 -107.464632000 6,689.00 ft
Wellbore		Original	Hole								
Magnetics		Mod	el Name	Sam	ple Date	Declina (°)	tion		Angle (°)	Field St (n]	-
Design Audit Notes: Version: Vertical Section		rev0		Pha Depth From ((ft) 0.00		PLAN +N/-S (ft) 0.00	+E (• On Depth: E/-W ft) .00		0.00 rection (°) 9.309	
Plan Survey To Depth Frc (ft) 1		Depth (ft)	To Surve	8/8/2023 y (Wellbore) Original Hole)		Tool Name MWD OWSG MWD	- Standard	Remarks			
Plan Sections											
Measured Depth (ft)	Inclina (°)		Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00 600.00		0.00 0.00 25.15 25.15	0.000 0.000 104.381 104.381	600.00 1,411.70	0.00 -44.97	0.00 0.00 175.40 1,892.85	0.00 0.00 3.00 0.00	0.00 0.00 3.00 0.00	0.00 0.00 0.00	0.00 0.00 104.38 0.00	
1,438.37 5,610.08 5,971.07 6,031.07 6,328.31 11,515.47		60.00 60.00 89.72 89.72	89.309 89.309 89.309 89.309	5,480.26 5,557.02	5 -502.48 2 -499.06	2,131.40 2,183.36 2,467.06 7,653.78	10.00 0.00 10.00 0.00	9.65 0.00 10.00 0.00	0.00 0.00	-22.47 0.00 0.00	laynes 436 LTP 228

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Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
100.00		0.000	100.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
200.00		0.000	200.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
300.00		0.000	300.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
350.00		0.000	350.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
13 3/8" (
400.00	•	0.000	400.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
500.00	0.00	0.000	500.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
600.00	0.00	0.000	600.00	0.00	0.00	1,914,739.496	1,282,306.978	36.256120000	-107.464632000
KOP Be	gin 3°/100' bui	ld							
700.00	3.00	104.381	699.95	-0.65	2.54	1,914,738.846	1,282,309.514	36.256118302	-107.464623375
800.00	6.00	104.381	799.63	-2.60	10.13	1,914,736.897	1,282,317.113	36.256113212	-107.464597523
900.00	9.00	104.381	898.77	-5.84	22.78	1,914,733.656	1,282,329.755	36.256104745	-107.464554514
1,000.00	12.00	104.381	997.08	-10.37	40.43	1,914,729.130	1,282,347.406	36.256092922	-107.464494467
1,100.00	15.00	104.381	1,094.31	-16.16	63.04	1,914,723.333	1,282,370.016	36.256077778	-107.464417547
1,200.00	18.00	104.381	1,190.18	-23.22	90.55	1,914,716.279	1,282,397.524	36.256059353	-107.464323963
1,300.00	21.00	104.381	1,284.43	-31.51	122.88	1,914,707.989	1,282,429.855	36.256037697	-107.464213974
1,400.00	24.00	104.381	1,376.81	-41.01	159.94	1,914,698.485	1,282,466.920	36.256012871	-107.464087879
1,438.37	25.15	104.381	1,411.70	-44.97	175.40	1,914,694.522	1,282,482.378	36.256002517	-107.464035291
Begin 2	5.15° tangent								
1,441.86	25.15	104.381	1,414.86	-45.34	176.84	1,914,694.153	1,282,483.814	36.256001555	-107.464030407
Ojo Alar	no								
1,500.00	25.15	104.381	1,467.49	-51.48	200.77	1,914,688.016	1,282,507.750	36.255985522	-107.463948977
1,563.65	25.15	104.381	1,525.11	-58.20	226.98	1,914,681.297	1,282,533.954	36.255967970	-107.463859831
Kirtland									
1,600.00	25.15	104.381	1,558.01	-62.04	241.94	1,914,677.460	1,282,548.919	36.255957947	-107.463808921
1,700.00	25.15	104.381	1,648.53	-72.59	283.11	1,914,666.904	1,282,590.088	36.255930371	-107.463668865
1,800.00		104.381	1,739.05	-83.15	324.28	1,914,656.347	1,282,631.256	36.255902795	-107.463528809
1,807.23	25.15	104.381	1,745.59	-83.91	327.26	1,914,655.584	1,282,634.234	36.255900800	-107.463518679
Fruitlan									
1,900.00		104.381	1,829.57	-93.71	365.45	1,914,645.791	1,282,672.425	36.255875219	-107.463388753
2,000.00		104.381	1,920.09	-104.26	406.62	1,914,635.235	1,282,713.594	36.255847642	-107.463248697
2,056.35	25.15	104.381	1,971.09	-110.21	429.82	1,914,629.286	1,282,736.793	36.255832103	-107.463169774
Pictured									
2,100.00		104.381	2,010.60	-114.82	447.79	1,914,624.679	1,282,754.763	36.255820066	-107.463108642
2,200.00		104.381	2,101.12	-125.37	488.95	1,914,614.123	1,282,795.932	36.255792489	-107.462968586
2,216.89	25.15	104.381	2,116.42	-127.16	495.91	1,914,612.339	1,282,802.887	36.255787830	-107.462944924
Lewis									
2,300.00		104.381	2,191.64	-135.93	530.12	1,914,603.567	1,282,837.101	36.255764912	-107.462828531
2,400.00		104.381	2,282.16	-146.49	571.29	1,914,593.010	1,282,878.269	36.255737335	-107.462688475
2,500.00	25.15	104.381	2,372.68	-157.04	612.46	1,914,582.454	1,282,919.438	36.255709758	-107.462548420
2,549.05	25.15	104.381	2,417.08	-162.22	632.66	1,914,577.276	1,282,939.633	36.255696231	-107.462479719
Chacra	05.45	404 204	0.400.00	407.00	052.02	4 044 574 000	4 000 000 007	20.055000404	407 400400005
2,600.00		104.381	2,463.20	-167.60	653.63	1,914,571.898	1,282,960.607	36.255682181	-107.462408365
2,700.00		104.381	2,553.72	-178.15	694.80 735.07	1,914,561.342 1,914,550.786	1,283,001.776	36.255654603	-107.462268310
2,800.00 2,900.00		104.381	2,644.24 2,734.76	-188.71 -199.27	735.97 777.14		1,283,042.945	36.255627026	-107.462128255 -107.461988200
,		104.381	,			1,914,540.229	1,283,084.114 1,283,125.283	36.255599448 36.255571870	-107.461848145
3,000.00 3,100.00		104.381	2,825.27 2,915.79	-209.82 -220.38	818.31 859.47	1,914,529.673		36.255571870	-107.461708091
		104.381 104.381	2,915.79	-220.38 -230.94	859.47 900.64	1,914,519.117 1,914,508.561	1,283,166.451 1,283,207.620	36.255544292	-107.461708091
3,200.00 3,300.00		104.381	3,006.83	-230.94 -241.49	900.84 941.81			36.255489135	-107.461427982
3,400.00		104.381	3,096.83 3,187.35	-241.49	941.81 982.98	1,914,498.005 1,914,487.449	1,283,248.789 1,283,289.958	36.255461556	-107.461287927
3,500.00		104.381	3,277.87	-262.60	982.98 1,024.15	1,914,476.892	1,283,331.127	36.255433977	-107.461147873
0,000.00	20.10	10 1.001	0,211.01	202.00	1,027.10	1,011,110.002	1,200,001.121	00.200400011	101.101141010

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Planning Report - Geographic

Database:	DB Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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
						1 014 466 226			-
3,600.00 3,700.00	25.15 25.15	104.381 104.381	3,368.39 3,458.91	-273.16 -283.72	1,065.32 1,106.49	1,914,466.336 1,914,455.780	1,283,372.296 1,283,413.465	36.255406398 36.255378819	-107.461007819 -107.460867765
3,778.04	25.15	104.381	3,529.55	-291.95	1,138.62	1,914,447.542	1,283,445.592	36.255357297	-107.460758470
	ise - Menefee								
3,800.00	25.15	104.381	3,549.43	-294.27	1,147.66	1,914,445.224	1,283,454.633	36.255351240	-107.460727711
3,900.00	25.15	104.381	3,639.95	-304.83	1,188.83	1,914,434.668	1,283,495.802	36.255323660	-107.460587657
3,937.62	25.15	104.381	3,674.00	-308.80	1,204.31	1,914,430.696	1,283,511.290	36.255313285	-107.460534967
9 5/8" Cs	-	101.001	0 700 40	045.00	4 000 00	4 044 404 440	4 000 500 074	00.055000004	407 400 447000
4,000.00 4,100.00	25.15	104.381	3,730.46 3,820.98	-315.39 -325.94	1,230.00 1,271.16	1,914,424.112	1,283,536.971	36.255296081	-107.460447603
4,100.00	25.15 25.15	104.381 104.381	3,820.98 3,911.50	-325.94 -336.50	1,312.33	1,914,413.555 1,914,402.999	1,283,578.140 1,283,619.309	36.255268501 36.255240921	-107.460307549 -107.460167496
4,300.00	25.15	104.381	4,002.02	-347.05	1,353.50	1,914,392.443	1,283,660.478	36.255213341	-107.460027442
4,400.00	25.15	104.381	4,092.54	-357.61	1,394.67	1,914,381.887	1,283,701.646	36.255185760	-107.459887389
4,500.00	25.15	104.381	4,183.06	-368.17	1,435.84	1,914,371.331	1,283,742.815	36.255158180	-107.459747335
4,564.15	25.15	104.381	4,241.12	-374.94	1,462.25	1,914,364.559	1,283,769.223	36.255140488	-107.459657498
Point Lo									
4,600.00	25.15	104.381	4,273.58	-378.72	1,477.01	1,914,360.775	1,283,783.984	36.255130599	-107.459607282
4,700.00 4,800.00	25.15 25.15	104.381 104.381	4,364.10 4,454.62	-389.28 -399.83	1,518.18 1,559.35	1,914,350.218 1,914,339.662	1,283,825.153 1,283,866.322	36.255103019 36.255075438	-107.459467229 -107.459327176
4,900.00	25.15	104.381	4,434.02	-410.39	1,600.52	1,914,329.106	1,283,907.491	36.255047856	-107.459187123
4,912.91	25.15	104.381	4,556.82	-411.75	1,605.83	1,914,327.743	1,283,912.806	36.255044295	-107.459169040
Mancos									
5,000.00	25.15	104.381	4,635.65	-420.95	1,641.68	1,914,318.550	1,283,948.660	36.255020275	-107.459047070
5,100.00	25.15	104.381	4,726.17	-431.50	1,682.85	1,914,307.994	1,283,989.828	36.254992694	-107.458907017
5,200.00	25.15	104.381	4,816.69	-442.06	1,724.02	1,914,297.437	1,284,030.997	36.254965112	-107.458766965
5,283.82	25.15	104.381	4,892.57	-450.91	1,758.53	1,914,288.589	1,284,065.506	36.254941993	-107.458649571
MNCS_A 5,300.00	25.15	104.381	4,907.21	-452.62	1,765.19	1,914,286.881	1,284,072.166	36.254937530	-107.458626912
5,389.00	25.15	104.381	4,987.78	-462.01	1,801.83	1,914,277.486	1,284,108.808	36.254912981	-107.458502259
MNCS_E			.,		.,	.,	.,,		
5,400.00	25.15	104.381	4,997.73	-463.17	1,806.36	1,914,276.325	1,284,113.335	36.254909948	-107.458486860
5,500.00	25.15	104.381	5,088.25	-473.73	1,847.53	1,914,265.769	1,284,154.504	36.254882366	-107.458346807
5,560.62	25.15	104.381	5,143.12	-480.13	1,872.49	1,914,259.370	1,284,179.460	36.254865646	-107.458261908
MNCS_C									
5,600.00	25.15	104.381	5,178.77	-484.28	1,888.70	1,914,255.213	1,284,195.673	36.254854784	-107.458206755
5,610.08	25.15	104.381	5,187.89	-485.35	1,892.85	1,914,254.149	1,284,199.822	36.254852003	-107.458192638
5,638.44	0°/ 100' build/tu 27.79	102.057	5,213.28	-488.23	1,905.16	1,914,251.270	1,284,212.130	36.254844518	-107.458150780
MNCS_C		102.001	0,210.20	100.20	1,000.10	1,011,201.210	1,201,212.100	00.201011010	101.100100100
5,650.00	28.88	101.223	5,223.45	-489.33	1,910.53	1,914,250.164	1,284,217.502	36.254841665	-107.458132517
5,696.69	33.31	98.365	5,263.42	-493.39	1,934.28	1,914,246.103	1,284,241.255	36.254831325	-107.458051798
MNCS_E)								
5,700.00	33.62	98.188	5,266.19	-493.66	1,936.09	1,914,245.840	1,284,243.064	36.254830664	-107.458045653
5,750.00	38.43	95.830	5,306.62	-497.21	1,965.27	1,914,242.287	1,284,272.243	36.254821907	-107.457946554
5,785.42	41.86	94.444	5,333.69	-499.24	1,988.01	1,914,240.253	1,284,294.980	36.254817098	-107.457869365
MNCS_E 5,800.00	43.27	93.926	5,344.43	-499.96	1 007 9/	1,914,239.534	1,284,304.819	36 25/815/60	-107.457835972
5,800.00	43.27 48.14	93.926 92.337	5,344.43 5,379.33	-499.96 -501.90	1,997.84 2,033.57	1,914,239.534	1,284,304.819	36.254815460 36.254811372	-107.457835972
5,864.63	49.57	91.917	5,388.96	-502.31	2,033.57	1,914,237.192	1,284,351.554	36.254810627	-107.457677391
MNCS_F		-		-	,				
5,900.00	53.03	90.973	5,411.07	-503.00	2,072.17	1,914,236.501	1,284,379.141	36.254809675	-107.457583811
5,950.00	57.93	89.775	5,439.40	-503.25	2,113.35	1,914,236.245	1,284,420.323	36.254810381	-107.457444150

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Planning Report - Geographic

B. () have	DD D ====0400:40		
Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

5.071.07 60.00 89.300 5.450.28 -107.45738238 Begin 50.00 60.00 89.309 5.447.2 -102.80 2.184.45 1.914.238.699 1.284.450.258 36.254811398 -107.45738238 Begin 50.00 60.00 89.309 5.447.59 -502.60 2.173.54 1.914.238.699 1.284.450.238 36.2548114237 -107.45728793 Begin 50.00 60.00 89.309 5.464.67 -502.48 2.183.36 1.914.237.017 1.284.450.334 36.254814899 -107.457205703 Begin 50.00 5.693.67 89.309 5.540.467 -501.91 2.231.01 1.914.237.501 2.244.860.873 39.254819103 -107.457045225 MNCS, H B B D <thd< th=""> D D <th< th=""><th>I</th><th>Measured Depth (ft)</th><th>Inclination (°)</th><th>Azimuth (°)</th><th>Vertical Depth (ft)</th><th>+N/-S (ft)</th><th>+E/-W (ft)</th><th>Map Northing (usft)</th><th>Map Easting (usft)</th><th>Latitude</th><th>Longitude</th></th<></thd<>	I	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
Begin 60.00* inagent Unit 236.692 1.284.463.428 30.254811306 -107.45729799 6.010.73 60.00 99.309 5.474.59 -502.60 2.118.45 1.914.236.692 1.284.463.428 30.2548114237 -107.457240999 MNCS.G 60.00 99.309 5.480.45 -502.48 2.118.30 1.914.237.617 1.284.463.428 30.254811469 -107.45720573 Begin f00/07 build 6.03.97 65.37 89.309 5.541.10 5.517.89 30.254811403 -107.45720573 MCS.H 6.08.97 6.537.89 30.00 5.641.07 1.914.237.512 1.284.537.981 30.254811605 -107.457204525 MCS.H 6.09.07 7.68 93.309 5.541.00 5.507.00 1.914.228.512 1.284.557.981 30.254811605 -107.45729992 6.100.00 7.68 93.309 5.557.02 490.00 2.281.07 1.914.228.578 1.284.481.71 30.254817805 -107.45829789 6.200.00 8.69 93.09 5.557.02 490.00 2.281.79 1.914.228.512.81		5,971.07	60.00	89.309	5,450.26	-503.11	2,131.40	1,914,236.390	1,284,438.376	36.254811398	-107.457382938
6.00 00.00 90.309 5.444.72 +00.20 2.184.43 1.214.236.602 1.234.440.517 36.254813086 +107.457240069 MACS_G 0 0.90.309 5.474.59 +00.20 2.173.44 1.914.238.699 1.234.440.517 36.25481427 +107.457240069 B.031 07 0 0.00 9.9.309 5.60.487 -60.22.80 2.183.36 1.914.237.017 1.234.400.34 36.254814289 -107.457150676 6.06.00 0 6.89.309 5.540.47 -00.17 2.241.90 1.914.237.217 1.234.506.79 36.254814050 -107.457150676 6.100.00 6.689 99.309 5.541.06 -501.71 2.241.83 1.914.237.217 1.234.569 73 36.254819050 -107.45690444 6.300.00 81.89 99.309 5.556.18 -400.40 2.438.74 1.914.237.417 1.234.466.571 36.25482572 107.45690444 6.302.00 81.89 99.309 5.557.34 -400.89 2.339.01 1.914.241.056 1.234.465.715 36.25483572 1077.45690444		Begin 60	.00° tangent								
MNCS G 6.031 07 6.0.3 07 6.0.3 07 6.0.3 07 1.284.490.334 96.254814899 1.07.45720773 Begin 10*1100*build 6.050.0 61.90 61.93.00 5.504.87 -501.91 2.2.31.01 1.914.237.017 1.284.508.879 36.254814013 -107.45720573 MNCS, H 6.000.0 66.89 89.309 5.504.87 -501.91 2.2.21.01 1.914.237.502 1.284.551.951 36.254815050 -107.459097800 6.100.00 66.89 89.309 5.571.06 -501.77 2.244.98 1.914.233.551 1.284.4551.951 36.25481202 1.07.459097800 6.200.00 83.80 5.557.10 -500.00 2.389.02 1.914.233.861 2.444.468.511 36.254822443 -107.45690414 6.300.00 83.208 5.557.87 4.496.19 2.387.4 1.914.240.091 2.244.805.71 36.254832302 -107.45690414 6.300.00 89.72 89.309 5.557.84 -496.572 2.387.72 1.914.240.191 2.36.446571 36.25483834 -107.4569667244 6.400.00		-	-	89.309	5,464.72	-502.80	2,156.45	1,914,236.692	1,284,463.428	36.254813086	-107.457297999
6.0.1 07 60.00 83.309 5.480.26 50.248 2,183.36 1,914.237.017 1,284.460.334 36.254814099 1.077.4570873 66,00 0 83.309 5.480.45 -500.22 2,190.91 1,914.237.592 1,284.503.7981 36.254816108 1.077.457045225 MICS_H 6 66.387 83.309 5.511.06 -501.17 2,224.98 1.914.233.25 1,284.551.951 36.254819050 1.077.456987800 6.100.00 71.88 83.309 5.542.10 -500.59 2,339.01 1.914.233.355 1,284.460.51.977 36.25482172 1.077.456987802 6.200.00 81.80 83.09 5.57.10 -500.59 2,389.01 1.914.233.991 2.847.46.86.977 36.25482172 1.077.456907832 6.200.00 81.972 83.309 5.57.78 -406.99 2.487.76 1.914.240.411 2.82.74633881 -107.456004893 6.400.00 89.72 83.309 5.57.78 -406.99 2.387.71 1.914.241.310 1.284.465.715 36.25483884 -107.456004893		6,019.73	60.00	89.309	5,474.59	-502.60	2,173.54	1,914,236.899	1,284,480.517	36.254814237	-107.457240059
Begin 07/100*build Source		MNCS_G	i								
6.00 0.00 9.03 5.480.46 -002.28 2.100.91 1.914.237.217 1.284.5037 9.82.594.10013 -107.45716078 MMCS H 1.074.5716078 2.231.01 1.914.237.592 1.284.537.891 38.2548.181013 -107.45716078 6.100.00 76.89 89.309 5.541.66 501.17 2.201.76 1.914.238.025 1.284.551.851 38.2548.181013 -107.456803220 6.200.00 81.89 89.309 5.551.30 -500.00 2.389.90 1.914.238.404 1.284.455.973 38.2548.2102 -107.45650444 6.300.00 68.89 68.309 5.557.36 499.40 2.447.06 1.284.457.715 36.2548.2102 -107.4560444 6.400.00 87.72 89.309 5.557.36 499.819 2.338.92 1.914.247.106 36.2548.3677 -107.456040139 6.500.00 87.72 89.309 5.557.36 499.819 2.338.71 1.914.247.130 36.25483667 -107.456040149 6.400.00 87.72 89.309 5.557.38 499.81		6,031.07	60.00	89.309	5,480.26	-502.48	2,183.36	1,914,237.017	1,284,490.334	36.254814899	-107.457206773
6.08.472 65.37 99.309 5.504.87 -501.91 2.231.01 1.914.237.592 1.284,537.881 38.254418100 -107.457045228 MNCS 88.300 5.511.06 -501.71 2.291.76 1.914.238.255 1.284,546.371 38.254419050 -107.456037840 6.100.00 71.89 89.300 5.528.65 -501.71 2.291.76 1.914.238.925 1.284,546.371 38.254432541 -107.456034840 6.200.00 76.89 89.309 5.557.02 499.00 2.438.76 1.714.240.997 1.284,953.973 38.25482752 -107.456544644 6.300.00 86.72 89.309 5.557.36 499.08 2.638.74 1.914.241.306 1.284.945.716 36.25443567 -107.456562844 6.600.00 89.72 89.309 5.557.36 496.8 2.638.73 1.914.241.310 1.284.945.716 36.25443567 -107.45562784 6.600.00 89.72 89.309 5.557.36 490.8 2.638.73 1.914.241.310 1.284.945.716 36.254494567 -107.455562344 6.600.00<		Begin 10	°/100' build								
HMCS_H Explore 2.244.98 1.914.227.761 1.224.551.951 38.254.810051 -107.45609780 6.100.00 76.88 98.309 5.528.65 -501.17 2.291.76 1.914.238.325 1.284.580.713 38.25482243 -107.456039424 6.200.00 76.88 98.309 5.552.10 -500.59 2.339.90 1.914.238.980 1.284.485.171 36.25482243 -107.456039444 6.300.00 81.88 99.309 5.557.36 -499.40 2.338.02 1.284.485.715 36.25482370 -107.4560444 6.400.00 80.72 99.309 5.557.84 -496.89 2.338.74 1.914.24.109 1.284.485.716 36.25443284 -107.456624483 6.600.00 80.72 89.309 5.557.84 -496.89 2.388.74 1.914.24.7102 1.286.485.697 36.254452864 -107.456624483 6.700.00 89.72 89.309 5.557.77 -496.29 2.788.72 1.914.24.7120 1.286.485.697 36.254452846 1.074.45630786 6.700.00 89.72 89.309 5.557.77 <td></td> <td></td> <td>61.89</td> <td></td> <td></td> <td></td> <td></td> <td>, ,</td> <td>, ,</td> <td></td> <td></td>			61.89					, ,	, ,		
6,100.00 66.89 80.309 5,511.06 -501.74 2.244.98 1.141.232.7761 1.244.586.73 3.625442200 -107.466937620 6,200.00 76.89 80.309 5,552.36 -501.70 2.233.90 1.141.238.06 1.244.586.73 3.62544225.10 -107.465630424 6,200.00 86.89 80.309 5,555.13 -500.00 2.339.90 1.241.240.049 1.244.578.30 3.6254822102 -107.456530414 6,300.00 86.89 80.309 5,557.36 -499.06 2.487.76 1.141.240.041 1.284.774.032 36.254438304 -107.45600183 6,500.00 89.72 89.309 5,557.34 -498.19 2.538.74 1.914.243.106 1.284.845.715 36.254435024 -107.45562314 6,500.00 89.72 89.309 5,558.32 -495.78 2.738.72 1.914.243.101 1.285.445607 36.254435029 -107.454543779 7,000.00 89.72 89.309 5,559.29 -490.35 3.338.67 1.914.243.713 1.285.44561 36.2544802667 -107.45546776				89.309	5,504.87	-501.91	2,231.01	1,914,237.592	1,284,537.981	36.254818108	-107.457045225
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8,700.0089.7289.3095,568.44-470.444,838.551,914,269.0571,287,145.51636.254993438-107.4482042338,800.0089.7289.3095,568.92-469.234,938.541,914,270.2641,287,245.50736.255000149-107.4478652068,900.0089.7289.3095,569.40-468.035,038.531,914,271.4711,287,345.49936.255006858-107.4475261789,000.0089.7289.3095,569.88-466.825,138.521,914,272.6771,287,445.49036.255002274-107.4471871519,100.0089.7289.3095,570.37-465.615,238.511,914,273.8841,287,545.48136.255020274-107.4468481239,200.0089.7289.3095,570.85-464.415,338.511,914,276.2971,287,745.46436.255033686-107.4461700689,300.0089.7289.3095,571.33-463.205,438.501,914,277.5041,287,845.45536.255040391-107.4458310409,500.0089.7289.3095,572.29-460.795,638.481,914,278.7101,287,945.44736.255037686-107.4454920129,600.0089.7289.3095,572.77-459.585,738.471,914,279.9171,288,045.43836.255053797-107.4454920129,600.0089.7289.3095,573.74-457.175,938.451,914,283.3301,288,145.42936.25506499-107.4448139569,800.0089.7289.3095,574.22-455.966,038.451,914		8,500.00	89.72	89.309	5,567.48	-472.85	4,638.56	1,914,266.644	1,286,945.533	36.254980015	-107.448882288
8,800.0089.7289.3095,568.92-469.234,938.541,914,270.2641,287,245.50736.25500149-107.4478652068,900.0089.7289.3095,569.40-468.035,038.531,914,271.4711,287,345.49936.255006858-107.4475261789,000.0089.7289.3095,569.88-466.825,138.521,914,272.6771,287,445.49036.255013567-107.4471871519,100.0089.7289.3095,570.37-465.615,238.511,914,273.8841,287,545.48136.255020274-107.4468481239,200.0089.7289.3095,570.85-464.415,338.511,914,276.2971,287,445.49036.25503686-107.4465090969,300.0089.7289.3095,571.33-463.205,438.501,914,277.5041,287,745.46436.255033686-107.4461700689,400.0089.7289.3095,571.81-461.995,538.491,914,277.5041,287,945.44736.255040391-107.4458310409,500.0089.7289.3095,572.77-459.585,738.471,914,279.9171,288,045.43836.255053797-107.4454920129,600.0089.7289.3095,573.26-458.375,838.461,914,281.1231,288,145.42936.255060499-107.4448139569,800.0089.7289.3095,573.74-457.175,938.451,914,283.5371,288,345.41236.255067200-107.444749289,900.0089.7289.3095,574.22-455.966,038.451,914,2		8,600.00	89.72	89.309	5,567.96	-471.65	4,738.56	1,914,267.851	1,287,045.525	36.254986727	-107.448543260
8,900.0089.7289.3095,569.40-468.035,038.531,914,271.4711,287,345.49936.255006858-107.4475261789,000.0089.7289.3095,569.88-466.825,138.521,914,272.6771,287,445.49036.255013567-107.4471871519,100.0089.7289.3095,570.37-465.615,238.511,914,273.8841,287,545.48136.255020274-107.4468481239,200.0089.7289.3095,570.85-464.415,338.511,914,275.0901,287,645.47336.255026981-107.4465090969,300.0089.7289.3095,571.33-463.205,438.501,914,276.2971,287,745.46436.255033686-107.4461700689,400.0089.7289.3095,571.81-461.995,538.491,914,277.5041,287,945.44736.255040391-107.4458310409,500.0089.7289.3095,572.29-460.795,638.481,914,278.7101,287,945.44736.25503797-107.4454920129,600.0089.7289.3095,572.77-459.585,738.471,914,279.9171,288,045.43836.255053797-107.4451529849,700.0089.7289.3095,573.76-458.375,838.461,914,281.1231,288,145.42936.25506499-107.4448139569,800.0089.7289.3095,573.74-457.175,938.451,914,283.5371,288,345.41236.255067200-107.4444749289,900.0089.7289.3095,574.22-455.966,038.451,914,		8,700.00	89.72	89.309	5,568.44	-470.44	4,838.55	1,914,269.057	1,287,145.516	36.254993438	-107.448204233
9,000.0089.7289.3095,569.88-466.825,138.521,914,272.6771,287,445.49036.255013567-107.4471871519,100.0089.7289.3095,570.37-465.615,238.511,914,273.8841,287,545.48136.255020274-107.4468481239,200.0089.7289.3095,570.85-464.415,338.511,914,275.0901,287,645.47336.255026981-107.4465090969,300.0089.7289.3095,571.33-463.205,438.501,914,276.2971,287,745.46436.255033686-107.4461700689,400.0089.7289.3095,571.81-461.995,538.491,914,277.5041,287,845.45536.255040391-107.4458310409,500.0089.7289.3095,572.29-460.795,638.481,914,278.7101,287,945.44736.255037095-107.4454920129,600.0089.7289.3095,572.77-459.585,738.471,914,279.9171,288,045.43836.255053797-107.4451529849,700.0089.7289.3095,573.26-458.375,838.461,914,281.1231,288,145.42936.255060499-107.4448139569,800.0089.7289.3095,573.74-457.175,938.451,914,283.3301,288,245.42136.255067200-107.444749289,900.0089.7289.3095,574.22-455.966,038.451,914,283.5371,288,345.41236.255073900-107.444135899											
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10,000.00 89.72 89.309 5,574.70 -454.75 6,138.44 1,914,284.743 1,288,445.403 36.255080599 -107.443796871		9,900.00									
		10,000.00	89.72	89.309	5,574.70	-454.75	6,138.44	1,914,284.743	1,288,445.403	36.255080599	-107.443796871

8/8/2023 11:48:42PM



Planning Report - Geographic

Database:	DB Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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
10,100.00	89.72	89.309	5,575.18	-453.55	6,238.43	1,914,285.950	1,288,545.395	36.255087297	-107.443457842
10,200.00	89.72	89.309	5,575.66	-452.34	6,338.42	1,914,287.156	1,288,645.386	36.255093994	-107.443118814
10,300.00	89.72	89.309	5,576.15	-451.13	6,438.41	1,914,288.363	1,288,745.378	36.255100690	-107.442779785
10,400.00	89.72	89.309	5,576.63	-449.93	6,538.40	1,914,289.570	1,288,845.369	36.255107385	-107.442440756
10,500.00	89.72	89.309	5,577.11	-448.72	6,638.40	1,914,290.776	1,288,945.360	36.255114079	-107.442101728
10,600.00	89.72	89.309	5,577.59	-447.51	6,738.39	1,914,291.983	1,289,045.352	36.255120772	-107.441762699
10,700.00	89.72	89.309	5,578.07	-446.31	6,838.38	1,914,293.189	1,289,145.343	36.255127464	-107.441423670
10,800.00	89.72	89.309	5,578.55	-445.10	6,938.37	1,914,294.396	1,289,245.334	36.255134155	-107.441084641
10,900.00	89.72	89.309	5,579.04	-443.89	7,038.36	1,914,295.603	1,289,345.326	36.255140845	-107.440745612
11,000.00	89.72	89.309	5,579.52	-442.69	7,138.35	1,914,296.809	1,289,445.317	36.255147535	-107.440406582
11,100.00	89.72	89.309	5,580.00	-441.48	7,238.34	1,914,298.016	1,289,545.308	36.255154223	-107.440067553
11,200.00	89.72	89.309	5,580.48	-440.27	7,338.34	1,914,299.223	1,289,645.300	36.255160910	-107.439728524
11,300.00	89.72	89.309	5,580.96	-439.07	7,438.33	1,914,300.429	1,289,745.291	36.255167597	-107.439389494
11,400.00	89.72	89.309	5,581.44	-437.86	7,538.32	1,914,301.636	1,289,845.282	36.255174282	-107.439050464
11,500.00	89.72	89.309	5,581.93	-436.65	7,638.31	1,914,302.842	1,289,945.274	36.255180967	-107.438711435
11,515.47	89.72	89.309	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000
PBHL/TD	@ 11515.47	MD 5582.00 T	VD						

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
Haynes 436 FTP 2268 F - plan misses target o - Point	0.00 center by 0.02	0.000 2ft at 6328.28	5,557.00 8ft MD (5557	-499.06 .01 TVD, -499	2,467.02 9.06 N, 2467.0	1,914,240.438 02 E)	1,284,773.997	36.254834000	-107.456245000
Haynes 436 LTP 2280 F - plan hits target cent - Point	0.00 er	0.000	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000

Casing Points							
	Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter ('')	Hole Diameter (")	
	350.00 3,937.62		13 3/8" Csg 9 5/8" Csg		13-3/8 9-5/8	17-1/2 12-1/4	



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,441.86	1,414.86	Ojo Alamo		0.28	89.309	
1,563.65	1,525.11	Kirtland		0.28	89.309	
1,807.23	1,745.59	Fruitland		0.28	89.309	
2,056.35	1,971.09	Pictured Cliffs		0.28	89.309	
2,216.89	2,116.42	Lewis		0.28	89.309	
2,549.05	2,417.08	Chacra		0.28	89.309	
3,778.04	3,529.55	Cliff House		0.28	89.309	
3,778.04	3,529.55	Menefee		0.28	89.309	
4,564.15	4,241.12	Point Lookout		0.28	89.309	
4,912.91	4,556.82	Mancos		0.28	89.309	
5,283.82	4,892.57	MNCS_A		0.28	89.309	
5,389.00	4,987.78	MNCS_B		0.28	89.309	
5,560.62	5,143.12	MNCS_C		0.28	89.309	
5,638.44	5,213.28	MNCS_Cms		0.28	89.309	
5,696.69	5,263.42	MNCS_D		0.28	89.309	
5,785.42	5,333.69	MNCS_E		0.28	89.309	
5,864.63	5,388.96	MNCS_F		0.28	89.309	
6,019.73	5,474.59	MNCS_G		0.28	89.309	
6,084.72	5,504.87	MNCS_H		0.28	89.309	
,	· · ·	_				

Plan Annotations

Measured	Vertical	Local Coordinates		
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
600.00	600.00	0.00	0.00	KOP Begin 3°/100' build
1,438.37	1,411.70	-44.97	175.40	Begin 25.15° tangent
5,610.08	5,187.89	-485.35	1,892.85	Begin 10°/100' build/turn
5,971.07	5,450.26	-503.11	2,131.40	Begin 60.00° tangent
6,031.07	5,480.26	-502.48	2,183.36	Begin 10°/100' build
6,328.31	5,557.02	-499.06	2,467.06	Begin 89.72° lateral
11,515.47	5,582.00	-436.47	7,653.78	PBHL/TD @ 11515.47 MD 5582.00 TVD

WELL NAME: Havnes Canvon Unit 436H

WELL NAME:	Haynes Canyon Unit 436H						
OBJECTIVE:	Drill, complete, and equip single lateral in the Mancos-H formation						
API Number:	Not yet assigr	ned					
AFE Number:	Not yet assigr	ned					
ER Well Number:	Not yet assigr	ned					
State:	New Mexico						
County:	Rio Arriba						
Surface Elev.:	6,689	ft ASL (GL)	6,714	ft ASL (KB)			
Surface Location:	3-23-6	Sec-Twn- Rng	1,733	ft FNL	303	ft FWL	
BH Location:	2-23-6	Sec-Twn- Rng	2280	ft FNL	2585	ft FWL	

QUICK REFERENCE					
Sur TD (MD)	350 ft				
Int TD (MD)	3,944 ft				
KOP (MD)	5,638 ft				
KOP (TVD)	5,213 ft				
Target (TVD)	5,475 ft				
Curve BUR	10 °/100 ft				
POE (MD)	6,020 ft				
TD (MD)	11,515 ft				
Lat Len (ft)	5,495 ft				

Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

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	3,944	9.625	36.0	J-55	LTC	0	3,944
Production	8.500	11,515	5.500	17.0	P-110	LTC	0	11,515

CEMENT PROPERTIES SUMMARY:

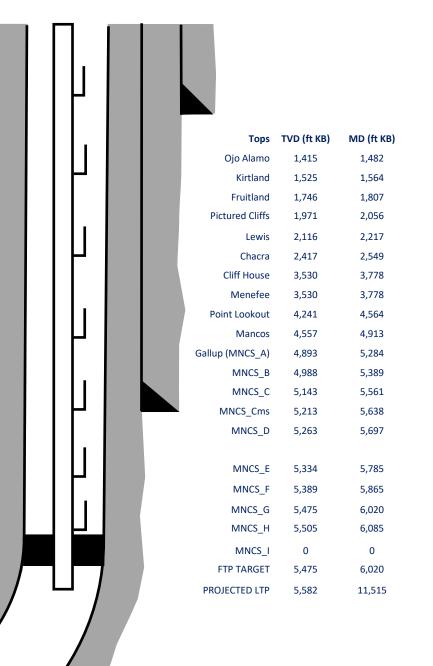
						тос		
	Туре	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	% Excess	(ft MD)	Total (sx)	Cu Ft Slurry
Surface	TYPE III	14.6	1.39	6.686	100%	0	364	505
Inter. (Lead)):10 Type III:P	12.5	2.14	12.05	70%	0	829	1,774
Inter. (Tail)	Type III	14.6	1.38	6.64	20%	3444.28	150	207
Prod. (Lead)	ASTM type I/I	12.4	2.370	13.4	50%	0	588	1,394
Prod. (Tail)	G:POZ blend	13.3	1.570	7.7	10%	4913	1068	1,676

COMPLETION / PRODUCTION SUMMARY:

Frac: 5395

Flowback: Flow back through production tubing as pressures allow

Production: Produce through production tubing via gas-lift into permanent production and storage facilities



AFMSS

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

APD ID: 10400093994

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Type: OIL WELL

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

HCU_436H_Existing_Roads_20230924201921.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? YES

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description:

Existing Road Improvement Attachment:

436H_HAYNES_CANYON_UNIT_Access_Road_20230920170827.pdf

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO



Well Name: HAYNES CANYON UNIT

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Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

HCU_436_Wells_Within_1Mile_08222023_20230919213427.pdf

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description:

Production Facilities map:

Haynes_Canyon_Unit_436_Facility_Layout_Rev_B_20230919213512.pdf

 $Haynes_Canyon_Unit_436_Completions_Layout_Rev_A_1_20230920142933_20230920170921.pdf$

Haynes_Canyon_Unit_436_Proposed_Reclamation_Rev_A_20230920171008.pdf

Haynes_Canyon_Unit_436H_Rig_Layout_Rev_A_20230920171102.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: GW WELL		
Water source use type:	DUST CONTROL	
	SURFACE CASING	
	INTERMEDIATE/PRODUCTION CASING	
Source latitude: 36.069826		Source longitude: -107.04718
Source datum: NAD83		
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	
Source land ownership: PRIVATE		
Source transportation land owners	ship: FEDERAL	
Water source volume (barrels): 15	562	Source volume (acre-feet): 2.00583437
Source volume (gal): 653604		

ceived by OCD: 12/5/2023 9:58:41 PM		Page 87 o
perator Name: ENDURING RESOU		
/ell Name: HAYNES CANYON UNIT	Well	Number: 436H
Water source type: GW WELL		
Water source use type:	DUST CONTROL	
	SURFACE CASING	
	INTERMEDIATE/PRODUC CASING	CTION
Source latitude: 36.359802		Source longitude: -107.81031
Source datum: NAD83		
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	
Source land ownership: STATE		
Source transportation land owner	-	Source volume (acre-feet): 2 00583437
Source transportation land owner	-	Source volume (acre-feet): 2.00583437
Source transportation land owner Water source volume (barrels): 15	-	Source volume (acre-feet): 2.00583437
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604	-	Source volume (acre-feet): 2.00583437
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED	-	Source volume (acre-feet): 2.00583437
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED	5562	Source volume (acre-feet): 2.00583437 Source longitude: -107.576013
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type:	5562	
Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type: Source latitude: 36.143567	5562	
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type: Source latitude: 36.143567 Source datum: NAD83 Water source permit type:	5562 STIMULATION	
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type: Source latitude: 36.143567 Source datum: NAD83 Water source permit type: Water source transport method:	STIMULATION	
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type: Source latitude: 36.143567 Source datum: NAD83 Water source permit type: Water source transport method: Source land ownership: STATE	STIMULATION WATER WELL TRUCKING	
Source transportation land owner Water source volume (barrels): 15 Source volume (gal): 653604 Water source type: RECYCLED Water source use type: Source latitude: 36.143567 Source datum: NAD83	STIMULATION WATER WELL TRUCKING	

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eceived by OCD: 12/5/2023 9:58:41 PM	r	Page 88 of 22.
Operator Name: ENDURING RESOL	JRCES LLC	
Well Name: HAYNES CANYON UNIT	T	Well Number: 436H
Water source type: RECYCLED		
Water source use type:	STIMULATION	
Source latitude: 36.205932		Source longitude: -107.741568
Source datum: NAD83		
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	
Source land ownership: FEDERA	L	
Source transportation land owner	rship: FEDERAL	
Water source volume (barrels): 65	50912	Source volume (acre-feet): 83.89806312
Source volume (gal): 27338304		
Water source type: RECYCLED		
Water source use type:	STIMULATION	
Source latitude: 36.210181		Source longitude: -107.831776
Source datum: NAD83		J
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	
Source land ownership: FEDERA	L	
Source transportation land owner	r ship: FEDERAL	
Water source volume (barrels): 68	50912	Source volume (acre-feet): 83.89806312
Source volume (gal): 27338304		
Water source type: RECYCLED		
Water source use type:	STIMULATION	
Source latitude: 36.117342		Source longitude: -107.488712
Source datum: NAD83		
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	

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Received by OCD: 12/5/2023 9:58:41 PM		Page 89 of 222
Operator Name: ENDURING RESOU	RCES LLC	
Well Name: HAYNES CANYON UNIT		Well Number: 436H
Source land ownership: FEDERAL		
Source transportation land owner	ship: FEDERAL	
Water source volume (barrels): 65	0912	Source volume (acre-feet): 83.89806312
Source volume (gal): 27338304		
Water source type: RECYCLED		
Water source use type:	STIMULATION	
Source latitude: 36.310147		Source longitude: -107.651626
Source datum: NAD83		
Water source permit type:	WATER WELL	
Water source transport method:	TRUCKING	
Source land ownership: FEDERAL		
Source transportation land owner	ship: FEDERAL	
• Water source volume (barrels): 65	-	Source volume (acre-feet): 83.89806312
Source volume (gal): 27338304		

Water source and transportation

HCU_436_Water_Transportation_08222023_20230919214803.pdf

Water source comments: Smelser (POD No. RG06855), Blanco Trading Post (POD No. SJ02105), NEU 2207-16B Water Recycling Facility, WLU 2309-24N Water Recycling Facility, KWU 2309-19K Water Recycling Facility, SEU 2206-20O Water Recycling Facility, NEL 2306-06P Water Recycling Facility New water well? N

New Water Well In	nfo	
Well latitude:	Well Longitude:	Well datum:
Well target aquifer:		
Est. depth to top of aquifer(ft):	Est thicl	kness of aquifer:
Aquifer comments:		
Aquifer documentation:		
Well depth (ft):	Well casin	g type:
Well casing outside diameter (in.):	Well casin	g inside diameter (in.):
New water well casing?	Used casi	ng source:

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Drilling method:	Drill material:
Grout material:	Grout depth:
Casing length (ft.):	Casing top depth (ft.):
Well Production type:	Completion Method:
Water well additional information:	

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: YES

Construction Materials description: Reference attached SUPO chapter 6 construction materials.

Construction Materials source location

MaterialSourceLocationMap_08162023_20230919213326.pdf

Section 7 - Methods for Handling

Waste type: DRILLING

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Drilling Fluids). **Amount of waste:** 12000 barrels

Waste disposal frequency : Weekly

Safe containment description: Drilling fluids would be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids would be recycled and transferred to other permitted closed-loop systems or disposed of at one of the locations specified in the SUPO section 9. **Safe containmant attachment:**

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: Approved commercial disposal facility or land farm.

Waste type: FLOWBACK

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Flowback). Flowback transported off location will consist of approximately 1000 bbls of produced water per day for approximately 14 days. **Amount of waste:** 1000 barrels

Waste disposal frequency : Daily

Safe containment description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Flowback). Flowback transported off location will consist of approximately 1000 bbls of produced water per day for approximately 14 days. **Safe containmant attachment:**

Waste disposal type: RECYCLE

Disposal location ownership: OTHER

Well Name: HAYNES CANYON UNIT

Well Number: 436H

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Disposal type description:

Disposal location description: Produced water from flowback will be stored, treated, and recycled at any of Enduring's approved water recycling facilities. Containments are constructed, lined, and monitored per regulatory requirements. Flowback would be disposed of at one of the disposal wells listed in Section 9 of the SUPO.

Waste type: SEWAGE

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Sewage). **Amount of waste:** 500 gallons

Waste disposal frequency : Weekly

Safe containment description: toilets would be provided and maintained as needed. See SUPO section 9 for reference.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL Disposal location ownership: PRIVATE FACILITY Disposal type description:

Disposal location description: Commercial facilities disposal.

Waste type: GARBAGE

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Garbage and other waste material). **Amount of waste:** 1500 pounds

Waste disposal frequency : Weekly

Safe containment description: All garbage and trash would be placed in enclosed metal trash containers. The trash and garbage would be hauled off site and dumped in an approved landfill, as needed. See SUPO, Section 9.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIALDisposal location ownership: PRIVATEFACILITYDisposal type description:

Disposal location description: Approved landfill.

Waste type: PRODUCED WATER

Waste content description: Reference attached Enduring Resources Surface Use Plan of Operations Chapter 9 (Methods for Handling Waste). Section 9 (Produced Water). **Amount of waste:** 11000 barrels

Waste disposal frequency : Weekly

Safe containment description: Drilling fluids would be stored onsite in above-ground storage tanks. See SUPO section 9, Drilling Fluids. **Safe containmant attachment:**

Waste disposal type: ON-LEASE INJECTION Disposal location ownership: PRIVATE

Disposal type description:

Well Name: HAYNES CANYON UNIT

Disposal location description: Commercial UIC, See SUPO Chapter 9 disposal locations.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO Are you storing cuttings on location? N Description of cuttings location Cuttings area length (ft.) Cuttings area width (ft.) Cuttings area depth (ft.) Cuttings area volume (cu. yd.) Is at least 50% of the cuttings area in cut? WCuttings area liner Cuttings area liner

Section 8 - Ancillary

Are you requesting any Ancillary Facilities?: N Ancillary Facilities

Comments:

Section 9 - Well Site

Well Site Layout Diagram:

Haynes_Canyon_Unit_436_Facility_Layout_Rev_B_20230920171338.pdf HCU_436H_Topsoil_and_Cut_20230924201804.pdf Comments:

Operator Name: ENDURING RESOURCES LLC

Well Number: 436H

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Section 10 - Plans for Surface

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: Haynes Canyon Unit

Multiple Well Pad Number: 432H

Recontouring

Haynes_Canyon_Unit_436H_Proposed_Reclamation_Rev_A_20230928143530.pdf

Drainage/Erosion control construction: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.5 AND THE CONSTRUCTION PLATS.

Drainage/Erosion control reclamation: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION) Section 4.5 AND THE CONSTRUCTION PLATS.

Well pad proposed disturbance (acres): 5.74	Well pad interim reclamation (acres): 3.64	Well pad long term disturbance (acres): 2.1
Road proposed disturbance (acres):	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres): 0	Powerline interim reclamation (acres):	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance	Pipeline interim reclamation (acres):	Pipeline long term disturbance
(acres): 1.37	1.37	(acres): 0
Other proposed disturbance (acres):	0 Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 7.11	Total interim reclamation: 5.01	Total long term disturbance: 2.1

Disturbance Comments:

Reconstruction method: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.4.

Topsoil redistribution: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.3.

Soil treatment: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.7.

Existing Vegetation at the well pad: Rubber-rabbit brush, Russian thistle, dropseed grass, needle and thread grass, and variety of forbs are the dominant species within the existing well pad and surrounding areas that have revegetated following previous disturbance.

Existing Vegetation at the well pad

Existing Vegetation Community at the road: Rubber-rabbit brush, Russian thistle, dropseed grass, needle and thread grass, and variety of forbs are the dominant species along the existing road and surrounding areas that have revegetated following previous disturbance.

Existing Vegetation Community at the road

Existing Vegetation Community at the pipeline: Rubber-rabbit brush, dropseed grass, needle and thread grass, and various forbs are the dominant species along the proposed pipeline route. **Existing Vegetation Community at the pipeline**

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Non native seed used? $\ensuremath{\mathsf{N}}$

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description

Will seed be harvested for use in site reclamation? N Seed harvest description: Seed harvest description attachment:

Seed

Seed Table

Seed type: PERENNIAL GRASS Seed source: COMMERCIAL Seed name: Western Wheatgrass Source name: Southwest Seed, Inc. Source address: 13514 Rd. 29, Dolores, CO 81323 Source phone: (970)565-8722 Seed cultivar: VNS Seed use location: WELL PAD PLS pounds per acre: 4 Proposed seeding season: AUTUMN Seed type: PERENNIAL GRASS Seed source: COMMERCIAL Seed name: Blue Grama Source name: Southwest Seed, Inc. Source address: 13514 Rd. 29, Dolores, CO 81323 Source phone: (970)565-8722 Seed cultivar: VNS Seed use location: WELL PAD PLS pounds per acre: 2 Proposed seeding season: AUTUMN Seed type: PERENNIAL GRASS Seed source: COMMERCIAL Seed name: Indian Ricegrass Source name: Southwest Seed, Inc. Source address: 13514 Rd. 29, Dolores, CO 81323 Source phone: (970)565-8722 Seed cultivar: VNS Seed use location: WELL PAD

PLS pounds per acre: 4

Seed type: PERENNIAL GRASS

Source name: Southwest Seed, Inc.

Seed name: Sand dropseed

Source phone: (970)565-8722

Seed use location: WELL PAD

Seed name: Fourwing saltbrush

Source phone: (970)565-8722

Seed use location: WELL PAD

Source name: Southwest Seed, Inc.

Source phone: (970)565-8722

Seed use location: WELL PAD

Seed name: Rocky Mountain Bee Plant

Source name: Southwest Seed, Inc.

Source phone: (970)565-8722

Seed use location: WELL PAD

PLS pounds per acre: 0

PLS pounds per acre: 0

PLS pounds per acre: 2

Seed name: Blue Flax

Seed cultivar: VNS

Seed type: FORB

Seed cultivar: VNS

Source name: Southwest Seed, Inc.

PLS pounds per acre: 0

Seed cultivar: VNS

Seed type: SHRUB

Seed cultivar: VNS

Seed type: FORB

Operator Name: ENDURING RESOURCES LLC Well Name: HAYNES CANYON UNIT

Well Number: 436H

Proposed seeding season: AUTUMN Seed source: COMMERCIAL

Source address: 13514 Rd. 29, Dolores, CO 81323

Proposed seeding season: AUTUMN Seed source: COMMERCIAL

Source address: 13514 Rd. 29, Dolores, CO 81323

Proposed seeding season: AUTUMN Seed source: COMMERCIAL

Source address: 13514 Rd. 29, Dolores, CO 81323

Proposed seeding season: AUTUMN Seed source: COMMERCIAL

Source address: 13514 Rd. 29, Dolores, CO 81323

Proposed seeding season: AUTUMN Seed source: COMMERCIAL

Source address: 13514 Rd. 29, Dolores, CO 81323

Seed type: PERENNIAL GRASS Seed name: Bottle brush squirreltail Source name: Southwest Seed, Inc. Source phone: (970)565-8722 Seed cultivar: VNS

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eived by OCD: 12/5/2023 9:58:41 PM	Page 96 of .
perator Name: ENDURING RESOURCES LLC	Well Number: 436H
en Name: HATNES CANTON UNIT	Weil Number: 430
Seed use location: WELL PAD	
PLS pounds per acre: 3	Proposed seeding season: AUTUMN
Seed type: SHRUB	Seed source: COMMERCIAL
Seed name: Winterfat	
Source name: Southwest Seed, Inc.	Source address: 13514 Rd. 29, Dolores, CO 81323
Source phone: (970)565-8722	
Seed cultivar: VNS	
Seed use location: WELL PAD	
PLS pounds per acre: 2	Proposed seeding season: AUTUMN

Seed Summary		
Seed Type	Pounds/Acre	
SHRUB	4	
FORB	0	
PERENNIAL GRASS	13	

Seed reclamation

Operator Contact/Responsible Official

First Name: Theresa

Last Name: Ancell

Phone: (970)749-0124

Last Name. Ancen

Total pounds/Acre: 17

Email: tancell@enduringresources.com

Seedbed prep: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 4 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.6. Seed BMP: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 3 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.7. Seed method: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 3 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.7. Seed method: REFERENCE ATTACHED ENDURING RESOURCES SURFACE RECLAMATION PLAN CHAPTER 3 (TECHNIQUES FOR SUCCESSFUL REVEGETATION), Section 4.8. Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment

Weed treatment plan description: N/A

Weed treatment plan

Monitoring plan description: N/A

Monitoring plan

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

Section 11 - Surface

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: PIPELINE Describe: Surface Owner: BUREAU OF LAND MANAGEMENT Other surface owner description: BIA Local Office: BOR Local Office: COE Local Office: DOD Local Office: NPS Local Office: State Local Office: USFWS Local Office: Other Local Office:

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

USFS Forest/Grassland:

USFS Ranger District:

Disturbance type: EXISTING ACCESS ROAD Describe: Surface Owner: BUREAU OF LAND MANAGEMENT Other surface owner description: BIA Local Office: BOR Local Office: COE Local Office: DOD Local Office: NPS Local Office: State Local Office: USFWS Local Office: USFWS Local Office: USFS Region: USFS Forest/Grassland:

USFS Ranger District:

Section 12 - Other

Right of Way needed? N ROW Type(s): Use APD as ROW?

ROW

SUPO Additional Information: Use a previously conducted onsite? Y

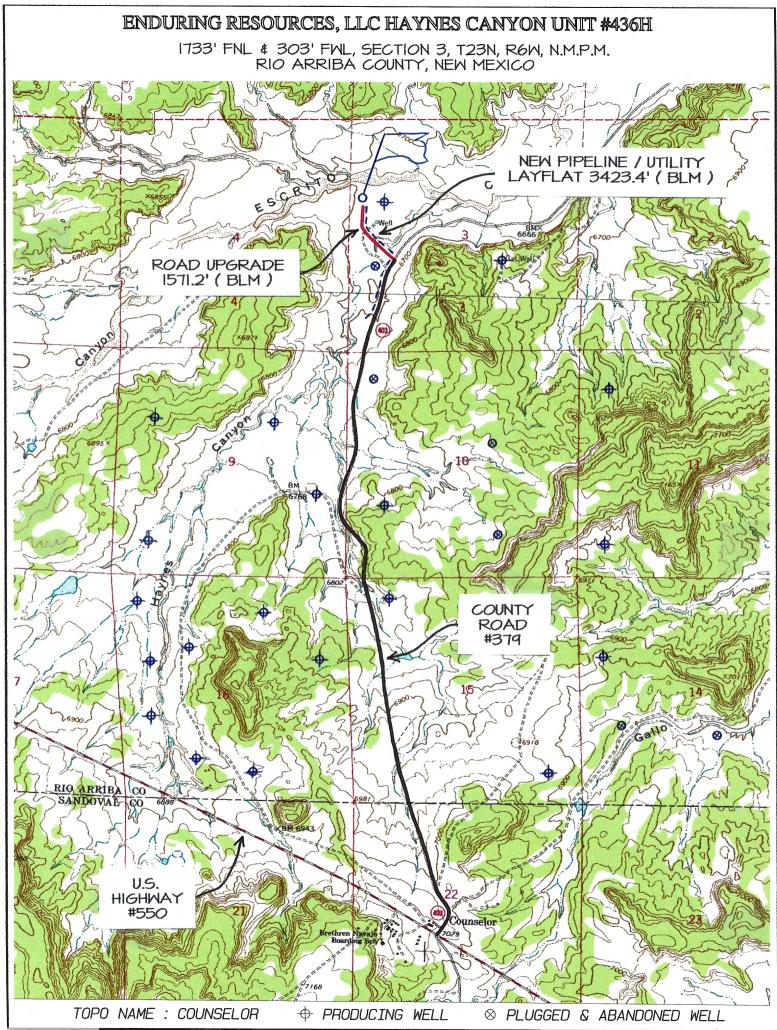
Well Name: HAYNES CANYON UNIT

Well Number: 436H

Previous Onsite information: Onsite was held on June 27, 2023, please see attached onsite notes for reference.

Other SUPO

20230627_HCU_436_Onsite_Notes_20230919213357.pdf HCU_436_RD.Maint.Pln_09202023_20230920170903_20230920181310.pdf HCU_436H_SUPO_Final_20230927_20230928152843.pdf HCU_436H_RecPlan_Final_20230929_20230929113951.pdf



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Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #436H

1733' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256120°N Longitude -107.464632°W Datum: NAD1983

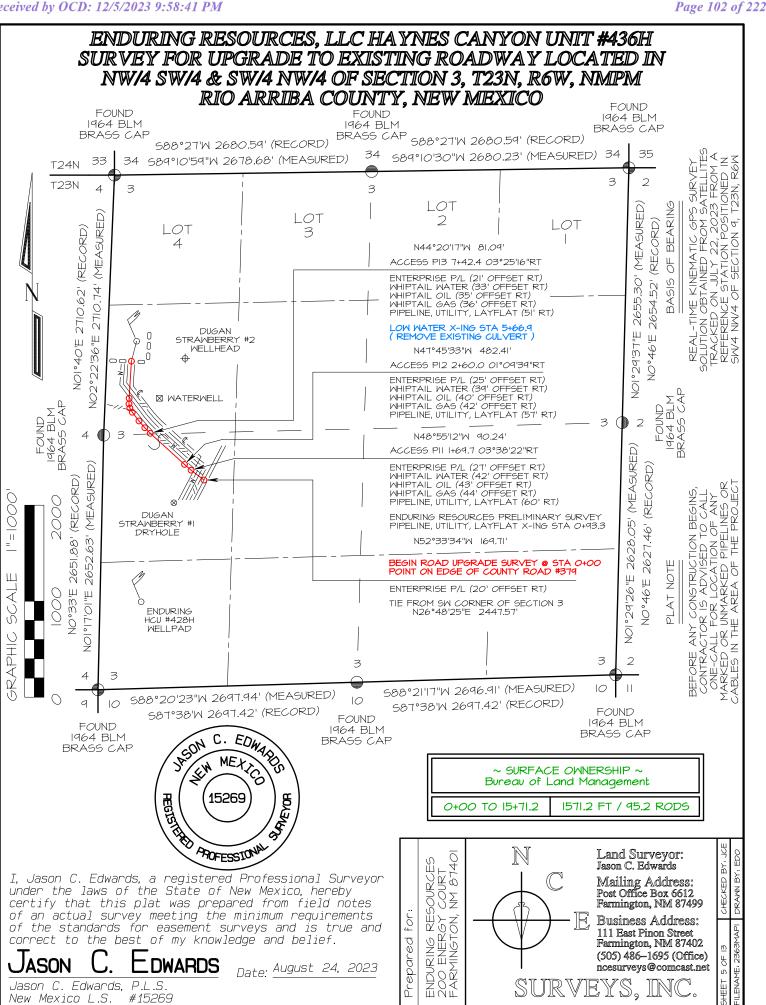
From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

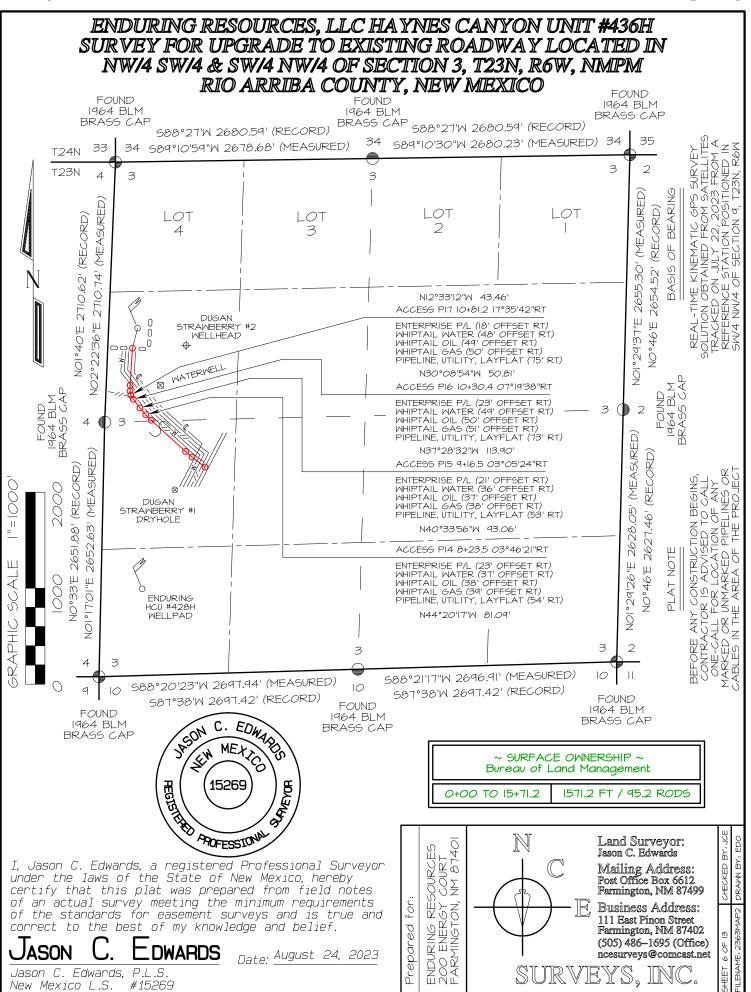
Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #436H existing location.

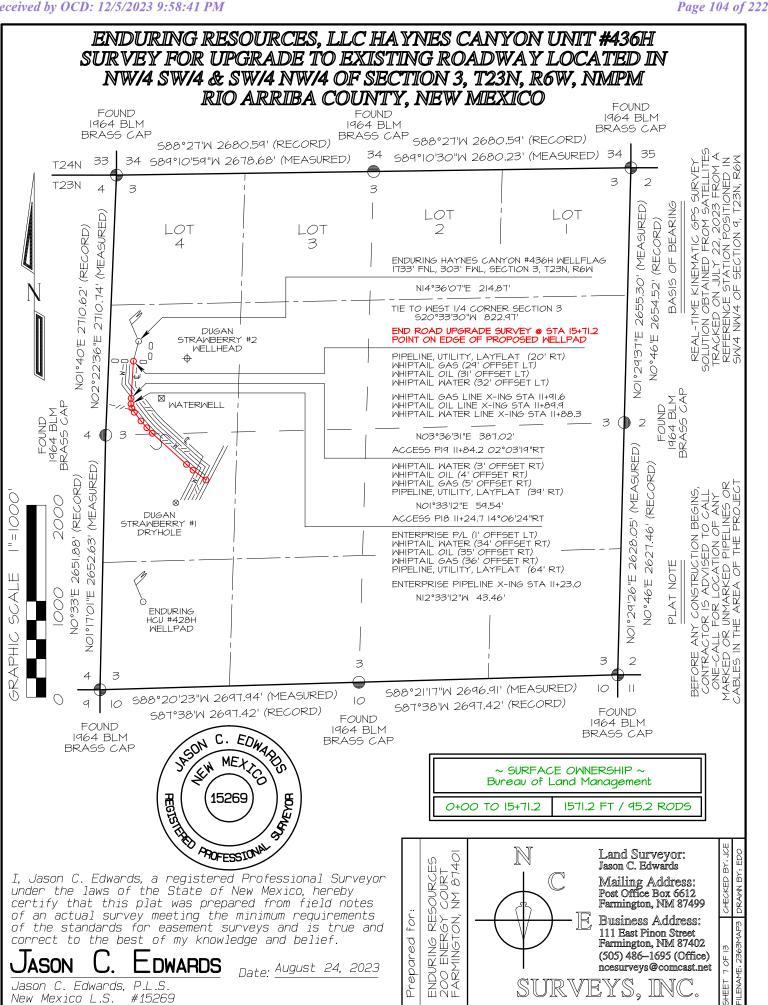


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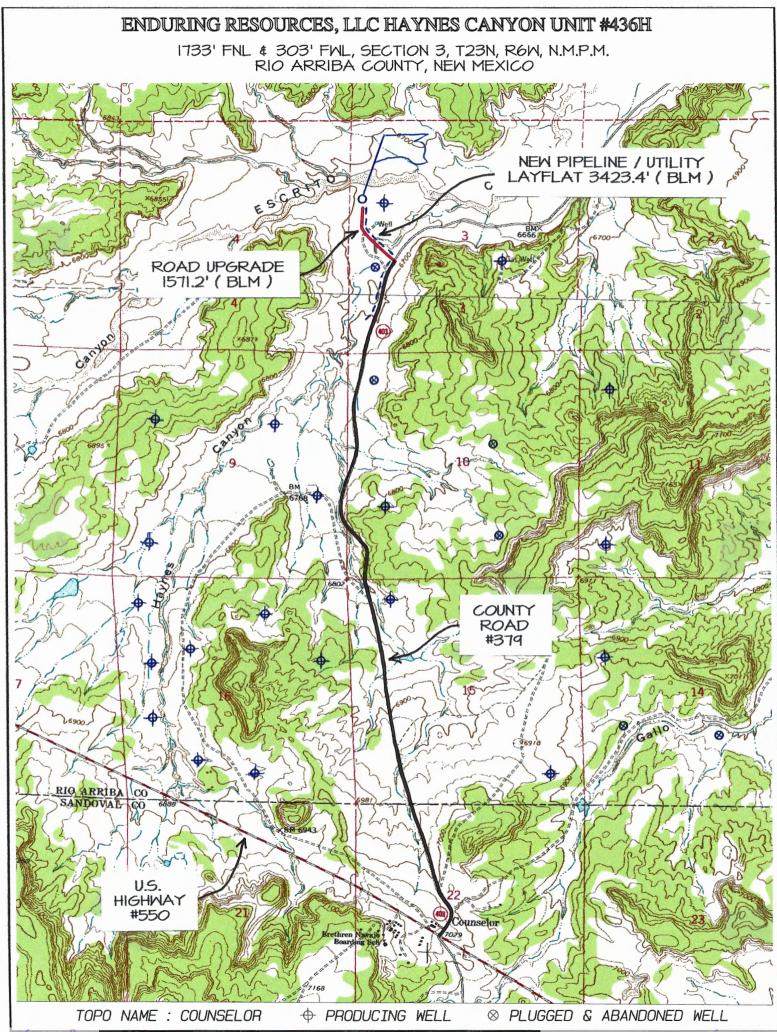


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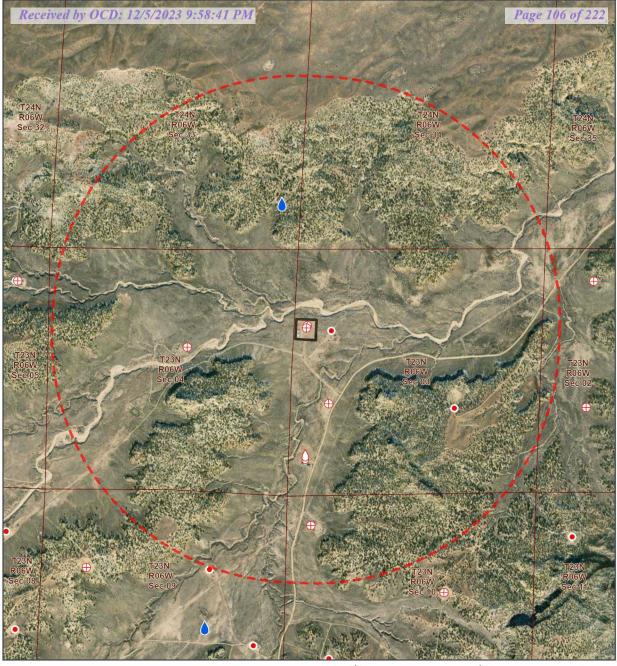


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HCU 432H Project | Wells Within 1 Mile

OSE Points of Diversion

Oil and Gas Well Status

- Active
- New
- Plugged (site released)

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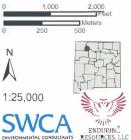
Wells	Within 1 Mile	Within Map Extent
OSE Points of Diversion	1	2
Active O&G	2	9
2/29/202314:02:	26 PM	2
Plugged (site released) O&G		9

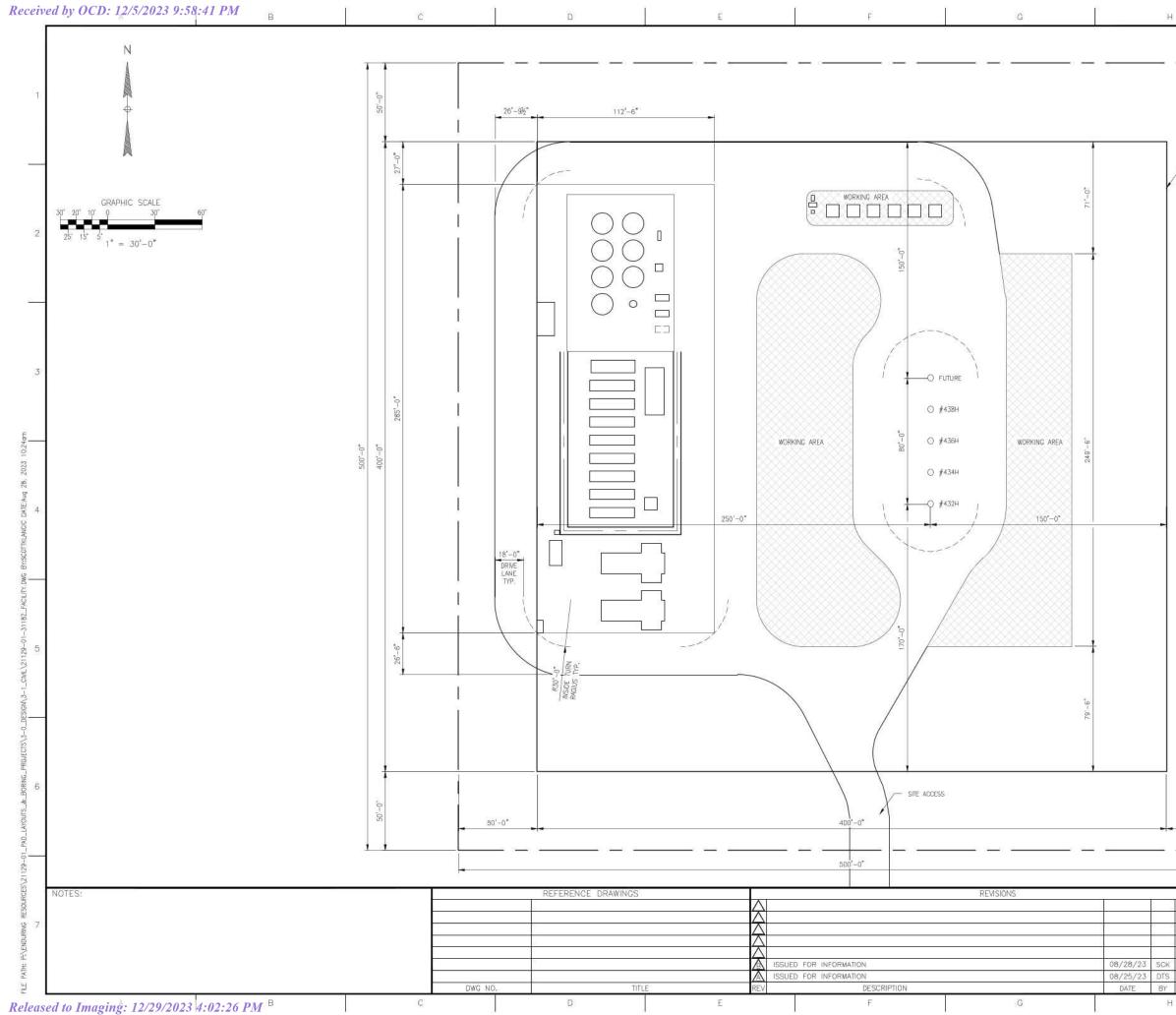
Wellpad

1 Mile Buffer

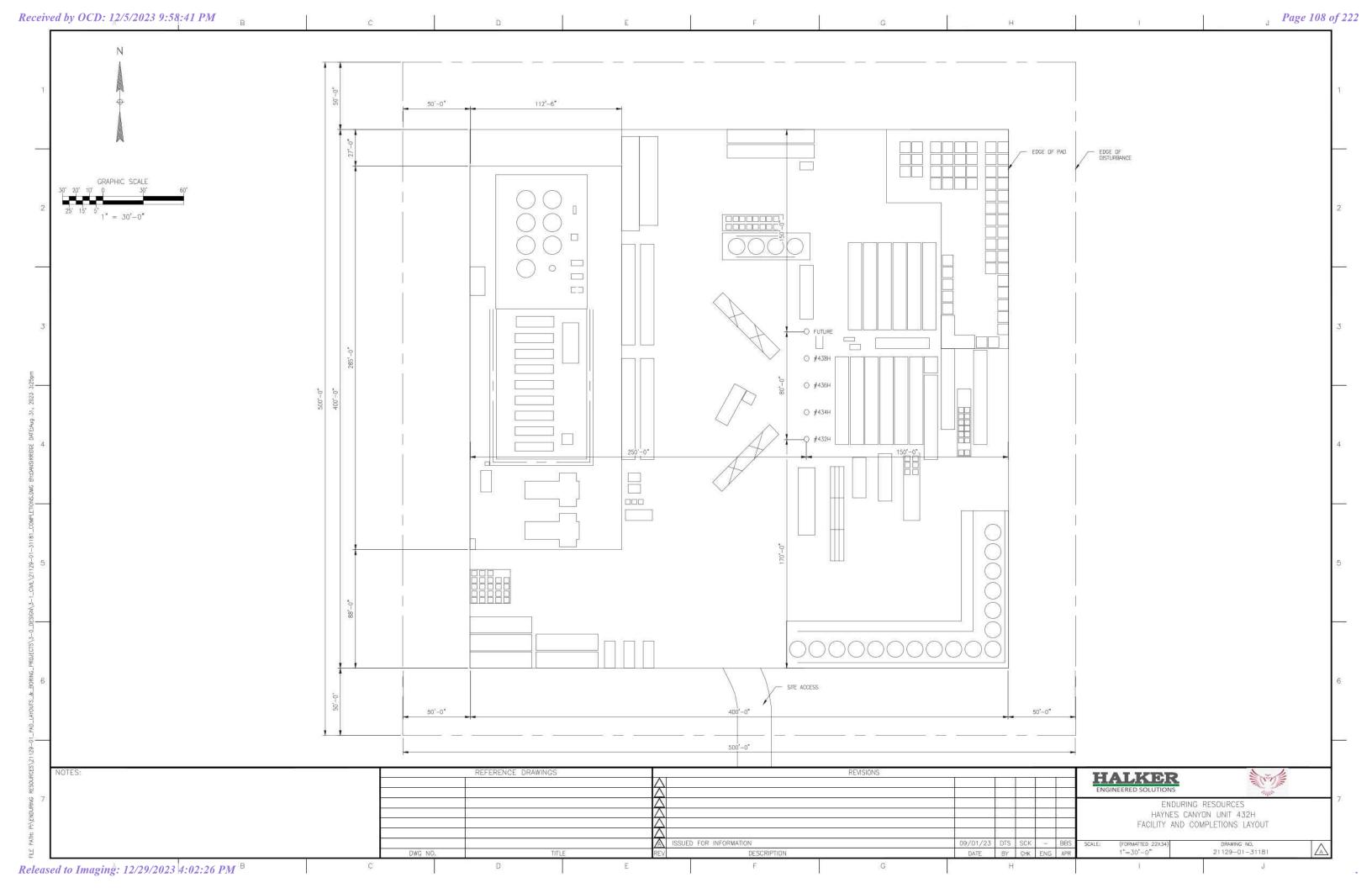
Rio Arriba County, NM NAD 1983 BLM Zone 13N 36.2561°N 107.4645°W

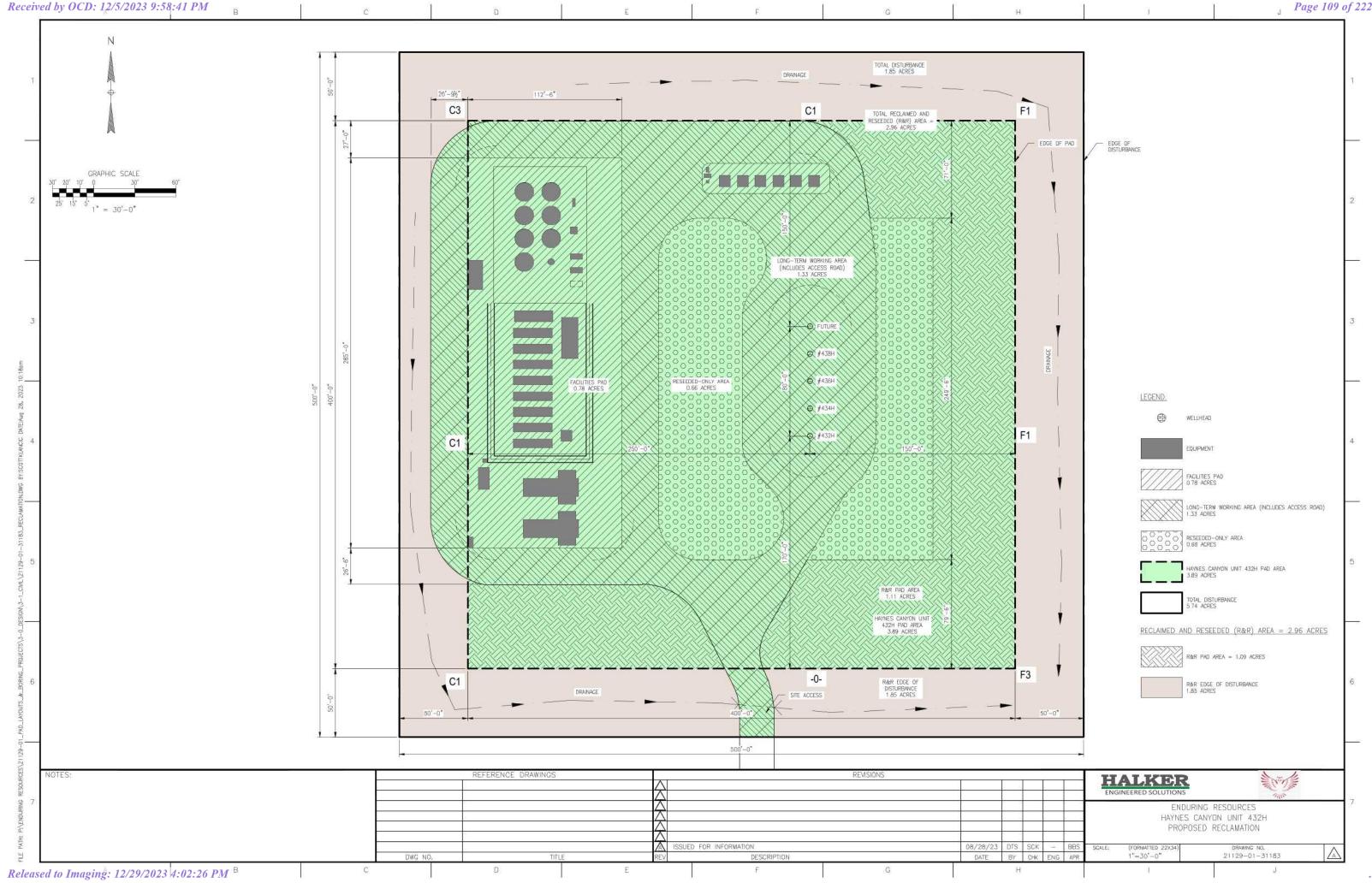
Base Map: ESRI ArcGIS Online, accessed August 2023 Updatee: 8/4/2023 Project No. 75253p36 Layout: 253p36_HCU_432_Wells_Within_1Mile Aprx: 75253p36_HCU432



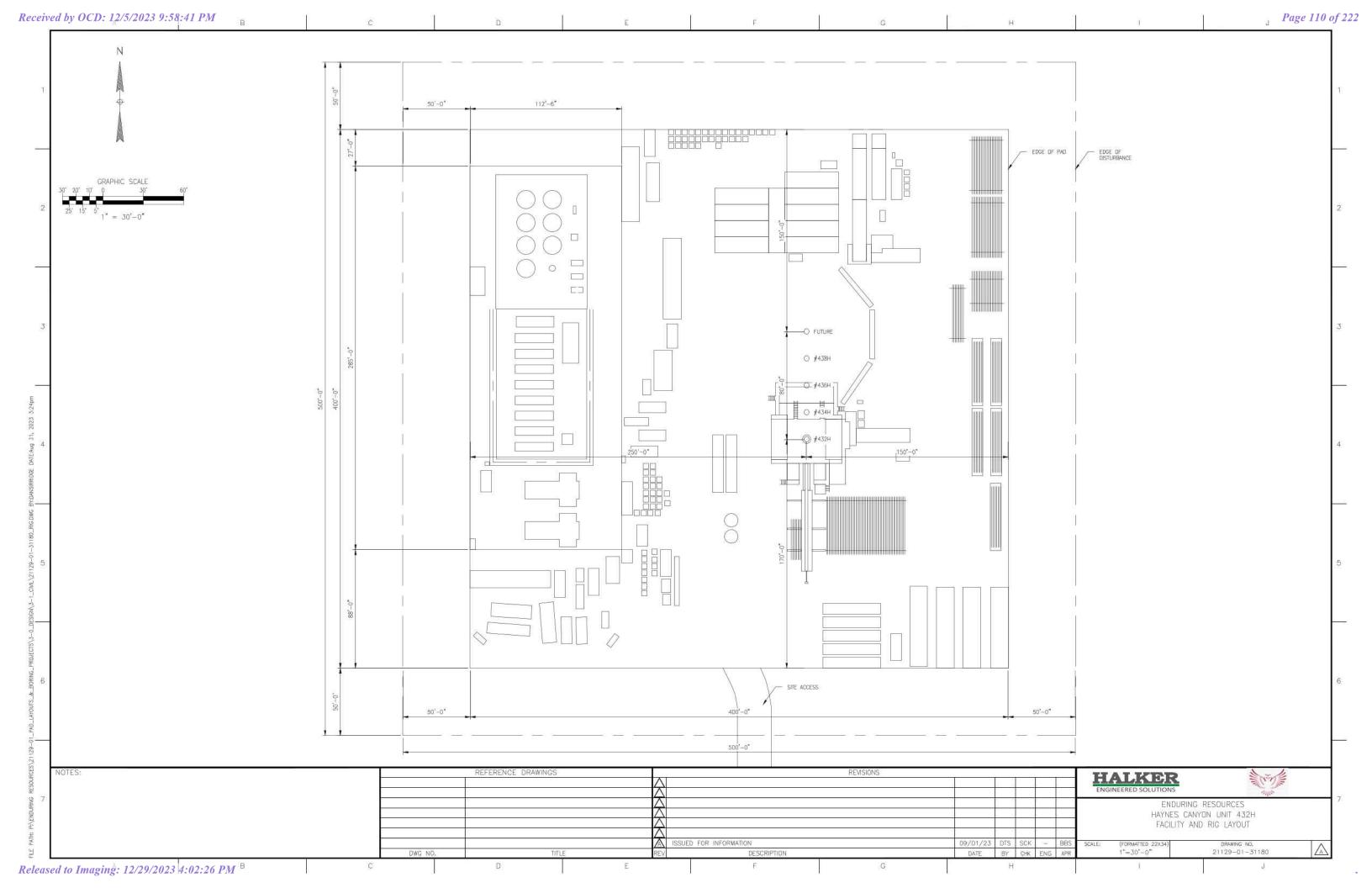


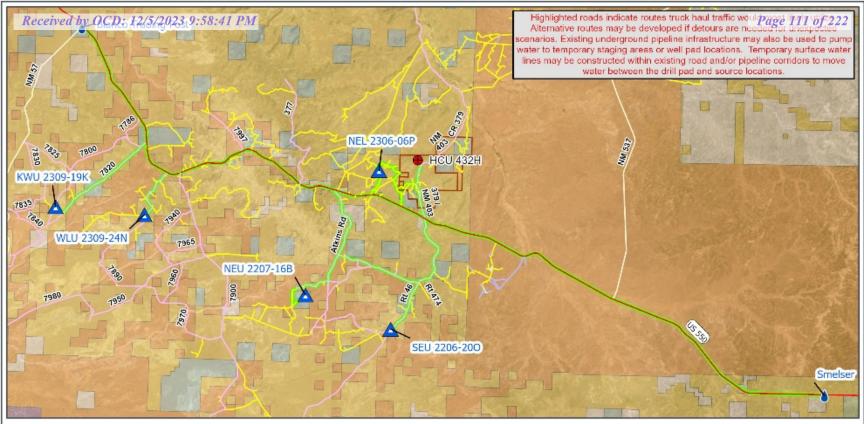
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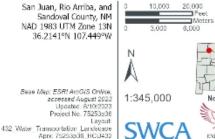




HCU 432H Project | Water Transportation



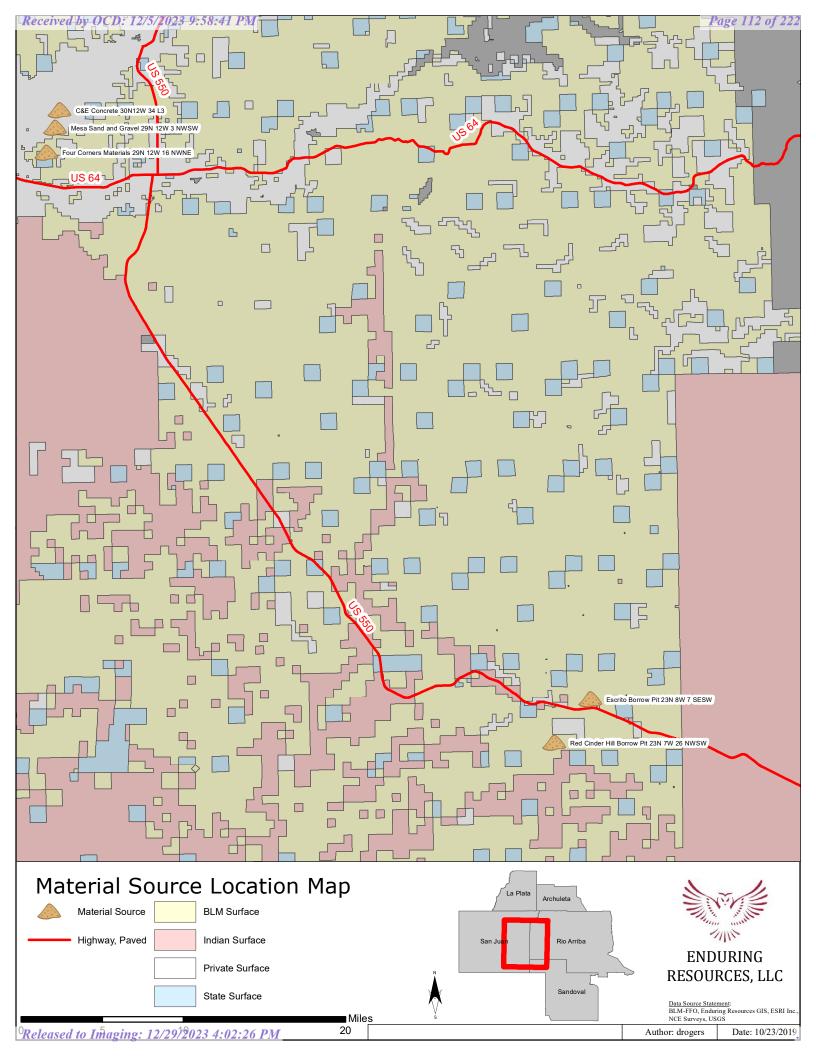
Unit Boundary

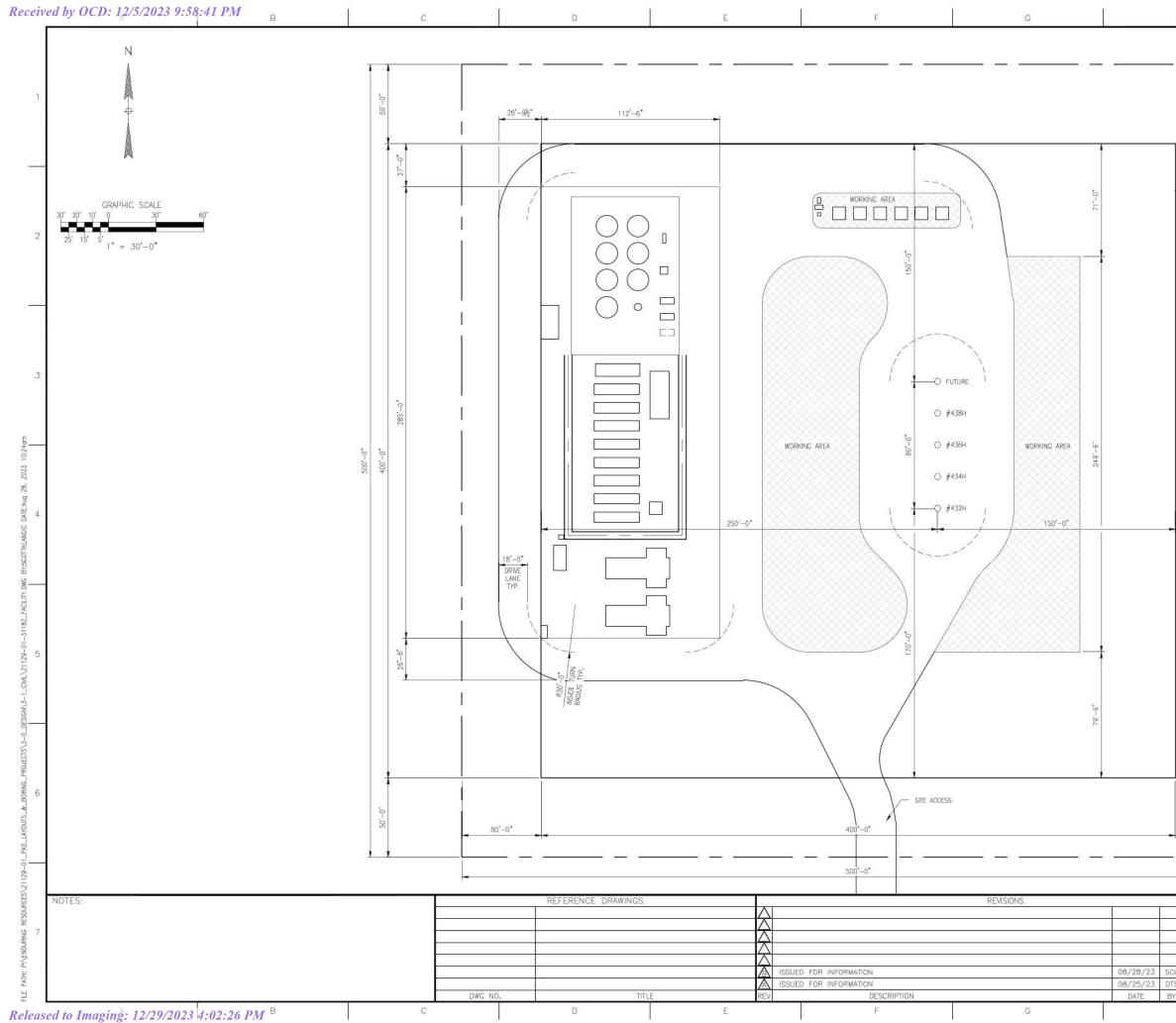


New Mexico

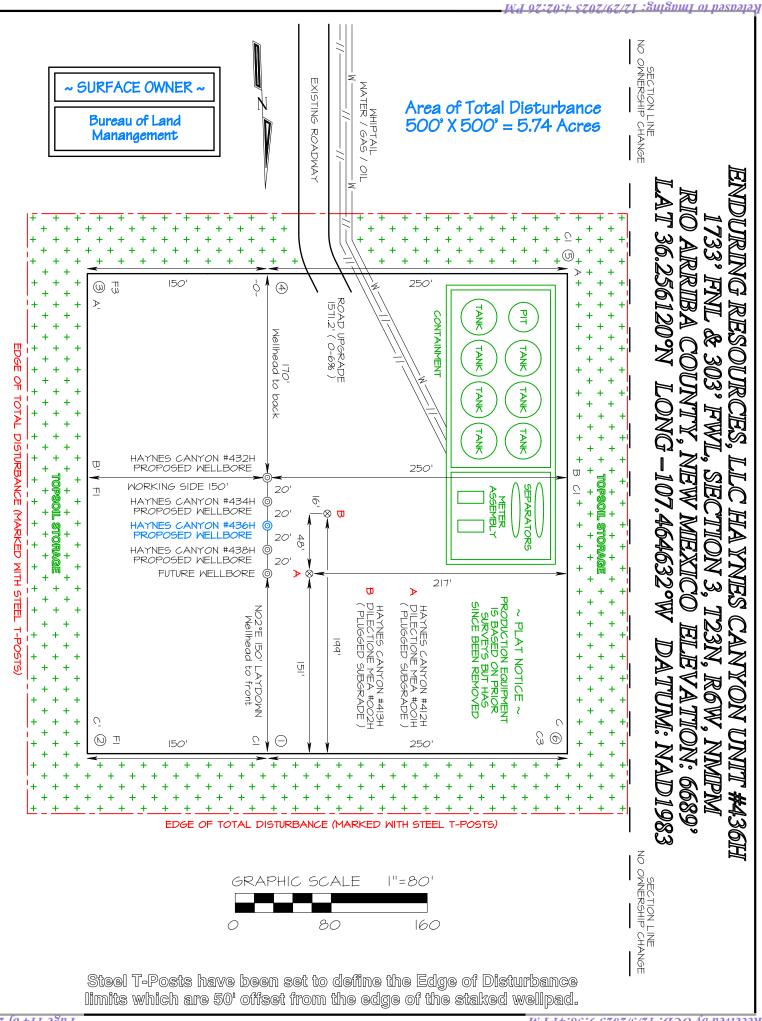
ENDURING *

PRVIDONMENTAL COMPLETANTS





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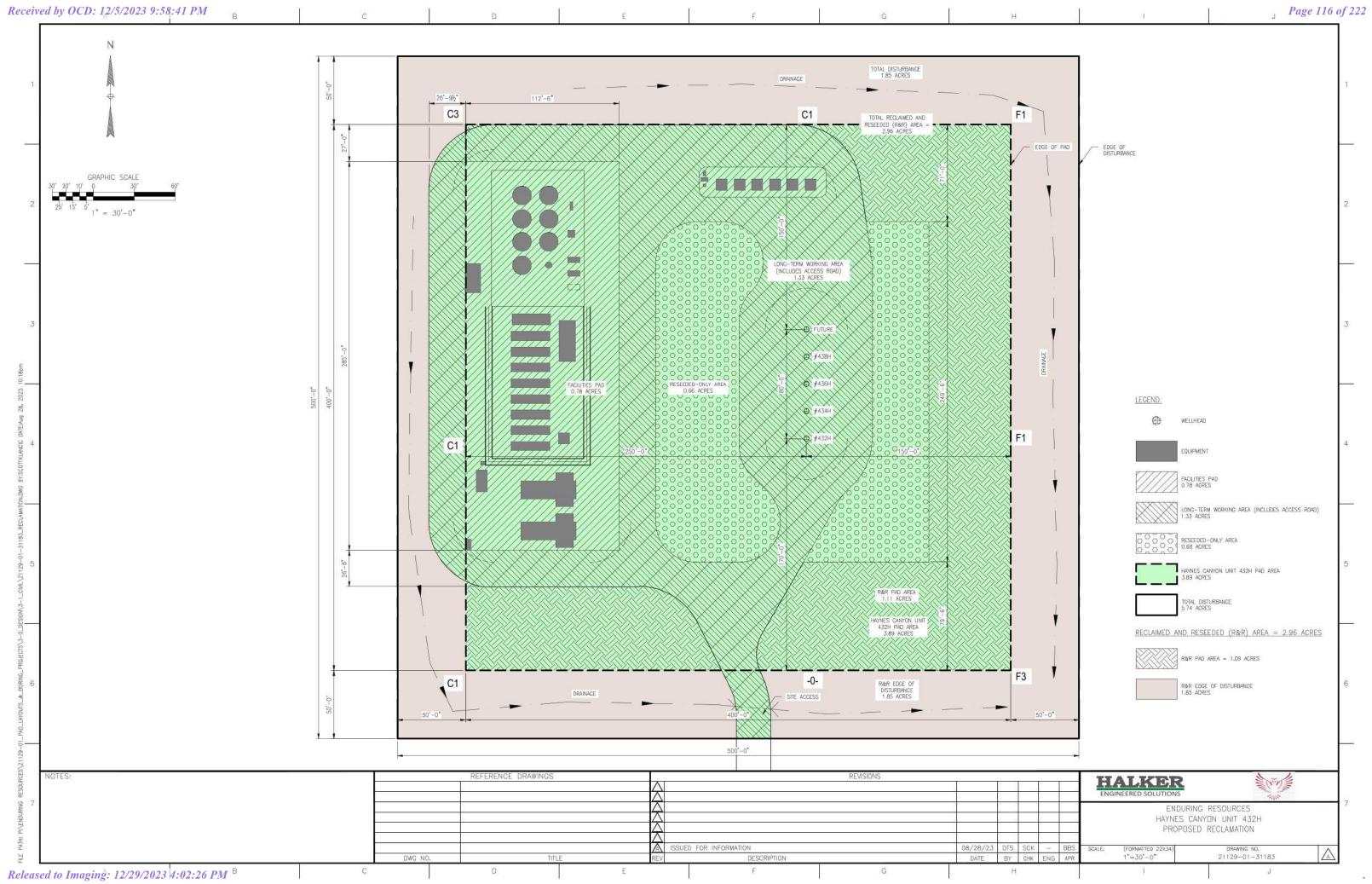


	ENDURING RESOURCES, LLC HAYNES CANYON UNIT #436H 1733' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
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	EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

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Onsite Notes for Enduring Resources IV, LLC's Proposed Haynes Canyon Unit 432H Pad

Will be located on an **existing** location. The APD's on said location have expired.

Onsite Date: June 27, 2023

Attendees	
NAME	ORGANIZATION
Harley Davis	BLM NRS
Gary Smith	BLM-FFO NRS
Jason Meininger	Division of Conservation Archaeology (DCA)
Jason Edwards	NCE Surveys
Johnny Stinson	Enduring Resources
Lena Wilson	Enduring Resources
Casey Haga	Enduring Resources

Notes that require change in plats are identified in Red.

Notes that Enduring needs to answer and consider are in Blue.

<u>Please review all onsite notes and reply to the entire group if there are</u> <u>changes, mistakes, or additional notes I may have missed. If there are replies</u> <u>with changes, I will update these notes with them accordingly. If you have</u> <u>questions or concerns, please contact me at:</u>

(970)-769-8814 or at chaga@enduringresources.com



ENDURING RESOURCES IV, LLC

200 Energy Court Farmington, New Mexico 87401 Phone: (505) 636-9720

Project Name: Haynes Canyon Unit 432H, 434H, 436H, 438H, and one future

On/Off lease: On Lease

Surface: BLM	Mineral: Federal, Fee, and State

Onsite Notes

Project Scope and Region

- ▲ These wells are being proposed on an existing location that has two plugged and abandoned wells. These plugged wells were cut and capped 3'6" below grade. The well pad was interim reclaimed but never fully reclaimed upon abandonment. The roadway is degraded but still accessible. The facilities were stripped but buried pipe remains buried in the facility lift. The SUPO needs to reflect that this "disturbance" exists but written in a level of detail as a new project since we currently hold no active APD to the location.
- ▲ Region dominated by sagebrush shrublands. Location is situated in a valley between several ephemeral washes. Area is surrounded by small mesas with sandstone outcrops.

Access Road

- There is an existing access road to location. This roadway will need upgraded to an all weather resource roadway. There is pipe each side of road that will restrict significant upgrades.
- Need to centerline survey existing roadway being used off CR 379 for upgrades.
- Remove the existing culvert in wash and replace with low water x-ing.
- Update topo to reflect existing road upgrade section.

Well Pad

- Well pad is existing but we don't hold active APD. The well pad was interim reclaimed but never fully reclaimed. We will permit the original footprint as seen in the plats.
- Add the two plugged and abandoned well locations to plats.
- Correct pad diagram dimensions. It should be 500' by 500'.

Well Connect Pipeline

- Facilities will be located on the HCU 428H location. As such, 3 phase flow lines will be needed from the 432H pad to the 428H pad. The existing whiptail pipe cannot be used for this.
- Survey new pipeline ROW from the HCU 432H to the HCU 428H pad.
- Need to plan layflat route.
- Need to survey layflat route.

Topsoil Storage

• Mulch vegetation into topsoil then strip and windrow along perimeter of location within the EOD.

Production Facilities

• Facilities will be remote to the HCU 428H Location.

Facilities Color

Juniper Green

<u>Seed Mix</u>

Sagebrush seed mix

Other Notes

Arc monitoring and reporting was needed on original build.



ROAD MAINTENANCE PLAN

<u>Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project</u> <u>HCU 432H, 434H, HCU436H, HCU438H and One Future</u>

September 2023



ENDURING RESOURCES IV, LLC

200 Energy Court Farmington, New Mexico 87401 Phone: (505) 636-9720

1. INTRODUCTION

Enduring Resources IV, LLC (Enduring) is providing this Road Maintenance Plan (Plan) to the Bureau of Land Management Farmington Field Office (BLM-FFO) as part of the Surface Use Plan of Operations (SUPO) for the Haynes (HCU) Five Well (432H, 434H, 436H, 438H and Future) Oil and Natural Gas Project (HCU 432H Project). The existing 1571.2-foot-long by 30-foot-wide access road addressed in this plan was previously permitted and constructed under the Applications for Permit to Drill (APD) for the HCU 412H. The coordinates for the access road are as follows:

• Start: N 107^o 27'53.61W 36^o 15'15.61N

End: N 107º 27'53.46W 36º 15'19.65N

The road maintenance procedures provided in this Plan meet the standards established in The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development and BLM Manual 9113. Per the HCU 432H Project APD's, Enduring will be responsible for road maintenance associated with the aforementioned wells. This responsibility will continue until Enduring transfers the permit or abandons the project and obtains a Final Abandonment Notice or relinquishment from the BLM-FFO. Refer to the SUPO or Conditions of Approval (COAs) attached to the approved APDs for any upgrades to existing roads.

2. ROAD INSPECTIONS

Enduring Representatives will formally inspect the road biannually, in the spring and fall, to assess the condition of the road. The formal road inspection will be recorded on a Road Inspection Form (blank form attached to this Plan). Completed Road Inspection Forms will be kept on file at Enduring and can be provided to the BLM-FFO, if requested.

Additionally, outside of the formal inspection period, Enduring Representatives driving to/from the project area will assess the condition of the road and notify the Enduring Construction Supervisor if maintenance is needed.

Road maintenance activities will be documented at Enduring and can be provided to the BLM-FFO, if requested.

3. ROAD MAINTENANCE

The following maintenance may be performed on an as needed basis:

- Water control structures (such as culverts, ditches, and silt traps) and/or cattle guards may be cleaned. If this occurs, the soil/sediment material will be spread on area roads or locations.
- Bar ditches may be pulled.
- Low water crossings and drainage dips may be cleared and/or repaired.
- Crowning may be repaired.
- Litter may be collected.
- Noxious weeds may be treated or controlled following the BLM-FFO noxious weed guidelines.
- The access road may be bladed.

ROAD INSPECTION FORM

Road Name:	County:
Date:	Time:
Weather:	
Inspector(s):	
Road Surface Type:	

Dood Condition Inspection Itoms		Road Condition			
Road Condition Inspection Items	Good	Poor	Comment		
Water Control Structure(s)					
Low Water Crossing(s)					
Road Crowning/Ruts/Potholes					
Road Surfacing					
Cattle Guard(s)					
Litter					
Noxious Weeds Within/Adjacent to Roadway					
Vegetation Within Roadway					

Additional Site Specific Inspection Notes:

SURFACE USE PLAN OF OPERATIONS

Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project

HCU 432H, HCU 434H, HCU 436H, HCU 438H and One Future

SEPTEMBER 2023



ENDURING RESOURCES IV, LLC

200 Energy Court Farmington, New Mexico 87401 Phone: (505) 636-9720

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- 6. WATER USE AND APPLICATIONS
- 7. LOCATIONS AND TYPES OF WATER SUPPLY
- 8. CONSTRUCTION MATERIALS
- 9. METHODS FOR HANDLING WASTE
- 10. PLANS FOR SURFACE RECLAMATION
- 11. SURFACE OWNERSHIP
- 12. OTHER INFORMATION
- APPENDIX A. SURVEY PLATS
- APPENDIX B. EXISTING WELLS WITHIN 1 MILE
- APPENDIX C. WATER TRANSPORTATION MAP
- APPENDIX D. CONSTRUCTION MATERIALS MAP
- APPENDIX E. WELL PAD LAYOUT DIAGRAMS

1. INTRODUCTION

1.1. Purpose and Intent

The purpose of the Proposed Project is to allow Enduring Resources IV, LLC's (Enduring) reasonable access to public lands to develop federal minerals administered by the Bureau of Land Management's (BLM's) Farmington Field Office (FFO) and New Mexico Oil Conservation Division (NMOCD) for Enduring's valid mineral lease (NMNM-028733) within the Haynes Canyon Unit (NMNM-142111).

The need for the Proposed Project is BLM's requirement to respond to Enduring's Application for Permit to Drill (APD). Per Onshore Oil and Gas Operating Regulations (43 Code of Federal Regulations [CFR] 3160); the Mineral Leasing Act (MLA) of 1920, as amended (30 United States Code [USC] 181 et seq); and the Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.).

In accordance with Onshore Oil and Gas Order No. 1 (43 CFR 3160), this Surface Use Plan of Operations (SUPO) has been prepared for Enduring's proposed Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project HCU 432H, HCU 434H, HCU 436H, HCU 438H, and one future (HCU 432H Project). The project as proposed would provide for the drilling, development, transportation, operation, and maintenance of the HCU 432H Project.

The proposed action is not known to cross or impact any U.S. Army Corps of Engineers (USACE) jurisdictional Waters of the U.S. (WOUS).

The information is provided to the surface management agency to give an accurate account of the proposed action for National Environmental Policy Act (NEPA) disclosure. This SUPO details only the proposed action, any alternatives considered in detail are described in the associated Environmental Analysis (EA) document.

Enduring will comply with all applicable laws, regulations, Onshore Orders, Conditions of Approval (COA) attached to the approved APDs, and this SUPO. No additional surface disturbance beyond that authorized by the approved APDs will be initiated without prior approval by the Authorized Officer (AO).

Enduring Resource IV, LLC (Enduring) may submit a request to the BLM-FFO to revise this SUPO at any time during the life of the project in accordance with The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and U.S. Forest Service 2007). Enduring would include justification for the revision request.

The Enduring representative for this reclamation plan is: Theresa Ancell Regulatory Manager Enduring Resources IV, LLC 200 Energy Court Farmington, New Mexico 87401 505-636-9720

2. PROJECT DESCRIPTION

Table 2.1. Project Information	
Applicant:	Enduring Resources IV, LLC
Project Name:	Haynes Canyon Unit (HCU) 432H-Five Well Site Reoccupation Project HCU 432H, 434H, 436H, 438H, and one future (HCU 432H Project)
Project Features:	One well pad with five wells and (production facilities if present), access road corridor, 3-phase pipeline, and utility corridor.
Lease Number(s):	NMNM-028733
Land Manager(s):	BLM-FFO
Mineral Manager(s):	BLM-FFO

Table 2.1. Project Information

Infrastructure proposed to be constructed, operated, subsequently interim reclaimed, and eventually fully reclaimed as part of the HCU 432H Project would be located on lease, located on BLM-FFO administered lands with Federal minerals. The project would be permitted, built, and operated per lease authority for the term of the proposed wells served in Enduring's surface lease (NMNM-028733) within the Haynes Canyon Unit (NMNM-142111X).

The HCU 432H Project would be constructed within existing disturbance associated with plugged and abandoned HCU 412H and HCU 413H wells. The existing well pad, for the HCU 412H was permitted, constructed, plugged and abandoned by a previous operator, WPX.

Existing on-lease infrastructure includes:

The 5.74-acre existing well pad proposed to be utilized for the HCU 432H five well Reoccupation Project well pad is 500-foot by 500-foot well pad inclusive of a 50-foot construction buffer zone/edge of disturbance (EOD).

Proposed HCU 432H Project infrastructure includes:

- Well pad: The 5.74 acre well pad would accommodate the development of five proposed wells.
- Access Road: One existing 1571.2-foot-long by 30-foot-wide access road corridor would be improved and utilized to accommodate access for construction, drilling, completion, and long-term operation of the wells mentioned above; no new access road is proposed for the project.
- Pipeline and Utilities Corridor: The HCU 432H proposed project located north of the proposed HCU 428H would include a 3383.8 foot by 40-foot pipeline and utilities corridor connecting HCU 432H to HCU 428H facilities and infrastructure. The pipeline corridor would be constructed adjacent to an existing Whiptail pipeline right-of-way (ROW). The proposed new corridor disturbance would be partially contained within the existing well pads (400-feet) and partially within the existing Whiptail ROW disturbance (20 feet of the 40 feet). The proposed new disturbance associated with the HCU 432H pipeline and utility corridor would be 2983.8 feet by 20-feet creating an estimated 1.37 acres of new disturbance. There are two Temporary Use Areas (TUAs) proposed within the HCU 432H pipeline corridor. TUA No. 1 located would be between STA 1648 and STA 1895.9 measuring 25-feet on the wide side of the corridor. TUA No. 2 would be located between STA 2164.8 and STA 2487.8 would be 25-feet on the wide side of the corridor.

2.1. Location

The HCU 432H Project is in the Southwest ¹/₄ of Northwest ¹/₄ of Section 3, Township 23 North, Range 6 West, New Mexico Principal Meridian (NMPM), in Rio Arriba County, New Mexico. See table 3.1 below and the survey plat package in Appendix A for detailed location regarding each of the proposed wells.

See the existing road map and written directions in the survey plat package in Appendix A. Directions are from the intersection of US Hwy 550 and US Hwy 64 in Bloomfield, New Mexico.

3. WELL SITE CONSTRUCTION AND LAYOUT

Drilling of the proposed HCU 432H Project would require utilizing a 5.74-acre existing well pad. This entire area would be utilized during construction, setting of production equipment, drilling, and completion phases. The Surface Hole Locations for the four wells associated with the HCU 432H Project are located below in Table 3.1.

Well flag	Footages	Latitude (NAD 83)	Longitude (NAD 83)
HCU 432H	1773' FSL, 303' FWL	36.256010°N	-107.464636°W
HCU 434H	1753' FSL, 303' FWL	36.256065°N	-107.464634°W
HCU 436H	1733' FSL, 303' FWL	36.256120°N	-107.464632°W
HCU 438H	1713' FSL, 303' FWL	36.256175°N	-107.464630°W

Table 3.1. Surface Hole Locations

During construction, the existing well pad would be leveled to provide adequate space and a level working surface for vehicles and equipment. Excavated materials from cuts are used to fill portions of the well pad to level the surface. The approximate cuts, fills, and well pad orientation are shown on the cut/fill worksheet and cross-section diagrams in the survey plats found in Appendix A.

See Appendix E for the proposed Well Pad Facility Diagram showing the long-term well pad layout, areas to be reclaimed, and anticipated utilization of existing disturbance acreage; Well Pad Drilling Diagrams showing the location and orientation of the drill rig; and the Well Pad Completion Diagram, showing the location and orientation of the completion equipment.

3.1. 3.1 Production Facilities

Current plans include collocating facilities for the proposed HCU 428H and HCU 432H projects. Due to existing infrastructure present at the HCU 428H project location, current plans are for production facilities for the HCU 432H Project to be located on the south adjacent HCU 428H well pad. However, due to the changing nature of projects, each project is being proposed with separate facilities to account for changes in drilling sequence and schedule. If facilities are not built and needed on location for the HCU 432H wells (as is intended), the pad will be reclaimed to reflect reduced operational needs without production facilities. Potential facilities on location may include but are not limited to (including facilities that may occur through the life of the four wells) and Temporary equipment during drilling, completion, and flowback operations may be placed anywhere within the permitted location. During road construction, production-associated equipment would be delivered and left within the permitted area until construction is complete.

3.2. Best Practices and Mitigation Measures

Topsoil removal, storage, and protection are described in detail in the associated Surface Reclamation Plan.

4. PROPOSED NEW OR RECONSTRUCTED ACCESS ROAD(S)

During the June 27, 2023, onsite visit, it was determined by the operator and surface managing agency that County Road 379 (CR 379) and the existing 1571.2-foot access road corridor would be utilized to access the proposed project location.

Upon approval, CR 379 and the project access road will be maintained, upgraded, or reconstructed to meet anticipated traffic volumes and all-weather access needs.

Any site-specific stipulations, design features, and Best Management Practices (BMPs) discussed to be implemented on this section of the existing roadway are listed below (4.2 Best Practices and Mitigation Measures) and in Enduring's Road Maintenance Plan. See the construction plats in Appendix A for the access road length and location from existing established roads.

4.1. Best Practices and Mitigation Measures

- A. Enduring will construct, improve, and maintain roads in accordance with The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. Enduring will defer to the county or the Roads Committee, when formed, for maintenance determinations for any existing County Roads or roads that are considered collector roads, utilized for the project. See Enduring's associated Road Maintenance Plan for more details.
- B. The existing culvert located access road culvert located at 566.9-feet will be removed and a low water crossing installed. Low water crossings may include armored on the downstream side.
- C. Any pre-existing water management and erosion control structures not specifically mentioned will be inspected and maintained to accommodate long-term stormwater control.
- D. If found to be necessary, additional water management features such as water bars, rolling dips, or culverts will be installed within the existing roadway if found to be necessary for maintaining a safe stable roadway allowing all-weather access.
- E. No construction or routine maintenance activities will be performed during periods when the soil is too wet to adequately support construction equipment. If equipment creates ruts deeper than six inches, the soil will be deemed too wet for construction or maintenance.
- F. Before any soil disturbing road or well pad construction-related activities, if present and warranted, the project area including the proposed access road and pipeline/utility corridor would be cleared of trees and vegetation. A compact track loader with a mulching attachment will mulch and incorporate all trees that measure less than 3 inches in diameter at ground level (if present) and slash/brush into the topsoil. A woodcutting crew will clear all trees three inches or greater at ground level (if present) with chainsaws. The mean height of any stump will not exceed one-half its diameter and in no case exceed six inches on the uphill side. Tree trunks (left whole) and large limbs will be stacked and made available to the public unless stipulated otherwise by the AO.
- G. Material will be imported only if necessary to establish a safe all-weather roadway. Once the roadway has been established, the driving surface may be capped if needed and deemed economically viable. Sandstone from a nearby permitted location would be the preferred surfacing material and would be laid approximately 8-12 inches thick.
- H. Maintenance of existing roads will be restricted to the existing disturbed footprint; no new surface disturbance will be created. Maintenance will continue until wells accessed by the existing roadway have been Plugged and Abandoned (P&A) and a Final Abandonment Notice (FAN) has been approved.
- I. During interim reclamation, once drilling and completion phases are complete for all wells on location, the roadway will be reduced in size to a 14-foot-wide running surface with 0 pullouts, and appropriate water/erosion control on each side of the roadway. The roadway will measure approximately 22 feet wide from the bottom of the borrow ditch to the bottom of the barrow ditch assuming a 24-inch lift on the road with 2:1 shoulder to the bottom of the ditch (silt traps, culvert bell holes, and turnout ditches will extend beyond this). All remaining disturbed areas within the 30-foot access road corridor and exterior to borrow ditches and back slopes anticipated to be needed for long-term maintenance will be reseeded in efforts to reduce erosion. Any established cut and fill slopes (including any Temporary Use Areas (TUAS) used for cut and fill) will be reseeded only to preserve safe and stable slopes.
- J. There are no steep slopes, side slopes, or large wash crossings requiring the need for additional TUAs beyond the 30-foot access road corridor.

- K. Due to the short nature of the proposed roadway and lack of foreseen drainage concerns, no new culverts are anticipated to be needed. If culverts exist or are found to be needed to maintain a safe and stable roadway, they would be installed during construction and/or interim reclamation. There are no pullouts necessary for the proposed access road due to its short nature and full sight distance from the new access road takeoff to the well pad.
- L. There are no Army Corps of Engineers designated Waters of the United States impacted by the proposed access road. No low water crossings would be required associated with the proposed action.
- M. The existing access road does not cross any existing fence lines.
- N. Enduring would maximize the use of native material within the project area to reduce or eliminate the need to haul in foreign material. This includes the use of sandstone surfacing material as opposed to foreign rock in this area. However, foreign materials such as pit run, gravel, road base, rip-rap cobblestone, and large boulders may be imported and used for reasons such as but not limited to elevating roadways, low water crossings, road surfacing, erosion control, culvert and cattle guard installations, natural barricade, surface replacement, and spot repairs. A map of potential borrowing sites where Enduring may obtain material can be found in Appendix D. The material sources have been labeled with the operator's name (if applicable) and legal location to the quarter-quarter. Material excavated during the establishment of silt traps and erosion control may also be used in construction project features.
- O. BMPs for dust abatement will be utilized along the roads to reduce fugitive dust during construction, drilling, completion, and any other heavy traffic activities during the life of the project. Water application using a rearspraying truck or other suitable means will be the primary method of dust suppression. If it is found to be necessary to apply commercial dust mitigation materials such as magnesium chloride, organic-based compounds, or polymer compounds; Enduring will seek approval from the appropriate surface managing agency. These dust mitigation measures may also be included as COAs attached to the approved APDs.
- P. The final reclamation of the proposed access road is discussed in the associated Surface Reclamation Plan.
- Q. Topsoil removal, storage, and protection are described in detail in the associated Surface Reclamation Plan.

5. LOCATION OF EXISTING WELLS

Water wells and oil and gas wells (plugged and abandoned, active, and proposed) within a one-mile radius of the HCU 432H Project are depicted in Appendix B. There are 1 water well, 9 oil and gas wells (plugged and abandoned, active, or proposed) within a one-mile radius of the proposed well pad location.

6. WATER USE AND APPLICATIONS

Please see Appendix C for the water transportation map identifying the locations of the supply wells.

During construction, freshwater sources would be used for the drill point and concrete casing. Fresh water would be used to dampen native soils as fill material is placed in lifts. This would promote adequate compaction on the fill slopes of the access road and well pad, as well as control fugitive dust.

During initial drilling, and post completion drill out operations, Enduring will use a consolidated 15,562 bbls of fresh water. This is inclusive of the HCU 432H (2,330 bbls), 434H (2,520 bbls), 436H (1,040 bbls), 438H (1,971 bbls) wells, and estimated 130 bbl rig wash. During well pad, road improvements and dust abatement, an estimated 7,571 bbls of water is estimated to meet improvement requirements.

The estimates are general and predicted using average past water volume usage for similar activities. Variables that can significantly affect these volumes include but are not limited to, soil type, grain size, grain shape, recent weather events, relative humidity, time of year, and soil moisture holding capacity.

Fresh water is additionally used on an as-needed basis for dampening native soils to maximum dry density using American Society for Testing and Materials (ASTM) standards to achieve acceptable engineered compaction, dust suppression along dirt roadways during drilling, completion, and any other operations where heavy traffic may be anticipated. The total amount applied during these activities is all dependent upon, but not limited to, the length of the dirt road, weather conditions, relative humidity, density of traffic, and duration of traffic.

During completion operations, Enduring predicts using a consolidated 650,912 bbls of non-potable brine water from a non-potable formation, produced water, and recycled water. This is inclusive of the HCU 432H (191,900 bbls), 434H (207,100 bbls), 436H (88,700 bbls), and 438H (163,212 bbls). Sources of these fluids and the process of recycling are discussed further below.

During completion operations, Enduring would use non-potable water from a non-potable water-bearing formation. Enduring may also utilize produced water gathered from their existing wells within the Mancos Gallup area. Produced water may be gathered and delivered to the HCU 432H Project via existing underground pipeline infrastructure and trucks. Produced water gathered at Shiprock San Juan, LLC's 4-1 CDP may also be tracked and used during completion operations. Flowback water from completion operations will be recycled for reuse. These non-potable sources will be gathered, stored, treated, and recycled at any of Enduring's Water Recycling Facilities.

Enduring filters and separates water contained within their recycling facilities in three phases. Phase one includes the retention of water within a 750 bbl water leg that separates 100-micron oil droplets and sediment/particles. Phase two, downstream of the water leg, water passes through a large coalesquer filter with estimated 30-micron oil droplet removal capabilities. The final phase of filtration before entering the containment includes passing through two filter pots in parallel containing bag or cartridge filters. These filters can vary in micron filtration sizing dictated by the solids recovered, likely, a range between 10-50 microns. Enduring will size bag or cartridge filters as necessary during operations. The average Entrada water supply well total dissolved solids (TDS) are 10,000+.

Flowback water from completion activities will be recycled and returned to an Enduring water recycling facility for reuse. Flowback water may contain solids, oil, and produced water when immediately returned from the wellbore. Before the water leaves the completion location, it will pass through the permanent facilities on location if built and commissioned or pass through a temporary treatment facility on location. Treatment will remove oil and solids before leaving the location. Flowback water may additionally pass through the permanent water treatment facility at the containment location before entering the containment if necessary. Flowback water within containment after treatment and filtration may contain a mixture of produced water and supply water from the Entrada Formation used for the stimulation process.

Enduring will fill and store water in all their water recycling containments and Above-Ground Storage Tanks (ASTs) for anticipated use during drilling and completion activities. Filling containments and ASTs via Entrada supply wells will begin no later than four to five working weeks before drilling and completion activities commence unless supplementary sources are used in addition thereto. Enduring provides all stimulation fluid properties and additives through the Frac Focus site established for reporting to State and Federal Agencies. See Frac Focus for stimulation fluid components.

7. LOCATIONS AND TYPES OF WATER SUPPLY

Fresh water would be obtained from the following location(s):

5.3. Smelser (POD No. RG06855)

The Smelser Well is located in the northeast ¼ of the northeast ¼ of Section 9, Township 21, North Range 2 West, NMPM. The well is located at Latitude 36.069826° North and Longitude -107.04718° West. This source is located on private lands. Transportation from source will be via truck.

5.4. Blanco Trading Post (POD No. SJ02105)

 The Blanco Trading Post Well is located in the southwest ¹/₄ of the northeast ¹/₄ of Section 32, Township 25 North, Range 9 West, NMPM. The well is located at Latitude 36.359802° North and Longitude - 107.810310° West. This source is located on State of New Mexico lands managed by the New Mexico State Lands Office (NMSLO). Transportation from source will be via truck.

Non-Potable water would be obtained from the following location(s):

Enduring Resources NEU 2207-16B Water Recycling Facility

The NEU 2207-16B Water Recycling Facility is located in the Northwest ¼ of the Northeast ¼ of Section 16, Township 22 North, Range 9 West, NMPM. The supply well is located at Latitude 36.143567° North and Longitude -107.576013° West. This water recycling Facility is located on State of New Mexico lands managed by the NMSLO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources WLU 2309-24N Water Recycling Facility

The WLU 2309-24N Water Recycling Facility is located in the Southeast ¹/₄ of the Southwest ¹/₄ and Southwest ¹/₄ of the Southeast ¹/₄ of Section 24, Township 23 North, Range 9 West, NMPM. The supply well is located at Latitude 36.205932° North and Longitude -107.741568° West. This water recycling Facility is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources KWU 2309-19K Water Recycling Facility

The KWU 2309-19K Water Recycling Facility is located in the Northeast ¼ of the Southwest ¼ of Section 19, Township 23 North, Range 9 West, NMPM. The supply well is located at Latitude 36.210181° North and Longitude -107.831776° West. This water recycling Facility is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources SEU 2206-200 Water Recycling Facility

The SEU 2206-200 Water Recycling Facility is located in the Southwest ¼ of the Southeast ¼ of Section 20, Township 22 North, Range 6 West, NMPM. The supply well is located at Latitude 36.117342° North and Longitude -107.488712° West. This water supply well is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

Enduring Resources NEL 2306-06P Water Recycling Facility

The NELC 2306-06P Water Recycling Facility is located in the South ½ of Section 14, Township 22 North, Range 8 West, NMPM. The supply well is located at Latitude 36.310147° North and Longitude -107.651626° West. This water supply well is located on public lands managed by the BLM-FFO. Transportation from the source would be via truck unless alternate methods are otherwise permitted.

8. CONSTRUCTION MATERIALS

- A. Enduring will maximize the use of native material within the proposed project area to reduce or eliminate the need to haul in foreign material.
- B. All surface infrastructure would be constructed utilizing native borrow within the permitted area to create a balanced working surface. Surfacing material or fill material, such as sandstone, gravel, pit run, or road base would be used if needed and economically viable and obtained from an approved location.
- C. Material may be imported and used for any of the following reasons; low water crossings (pit run and road base), road surfacing (road base, gravel, or sandstone), erosion control (riprap cobblestone), barricades (boulders), under and surrounding equipment (gravel), and filling soft or muddy areas (sandstone, pit run, road base, or gravel).
- D. A map of borrow pit locations where Enduring may obtain material can be found in Appendix D. The borrow pits are labeled with the operating company name if applicable and the legal location of the quarter-quarter.

E. Range ponds are not currently proposed to be constructed for the construction of the HCU 432H Project.

9. METHODS FOR HANDLING WASTE

- A. Cuttings:
 - Drilling operations will utilize a closed-loop system. Drilling of the horizontal laterals will be accomplished with water-based mud. Oil-based mud could be used contingent on the formation properties encountered.
 - All cuttings will be placed in roll-off bins and hauled to a commercial disposal facility or land farm. Enduring will follow Onshore Oil and Gas Order No. 1 regarding the placement, operation, and removal of closed-loop systems. No blow pit will be used.
 - Closed-loop tanks will be adequately sized for the containment of all fluids.
- B. Drilling Fluids:
 - Drilling fluids will be stored onsite in above-ground storage tanks. Upon termination of drilling operations, the drilling fluids will be recycled and transferred to other permitted closed-loop systems or disposed of at a designated facility.
- C. Spills:
 - Any spills of non-freshwater fluids will be immediately cleaned up and removed to an approved disposal site.
- D. Sewage
 - Portable toilets will be provided and maintained as needed during construction.
- E. Garbage and other waste material
 - All garbage and trash will be placed in enclosed metal trash containers. The trash and garbage will be hauled off-site and dumped in an approved landfill, as needed.
- F. Hazardous Waste
 - No chemicals subject to reporting under Superfund Amendments and Reauthorization Act Title III in an
 amount equal to or greater than 10,000 pounds will be used, produced, stored, transported, or disposed of
 annually in association with the drilling, testing, or completion of these wells.
 - No extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities will be used, produced, stored, transported, or disposed of annually in association with the drilling, testing, or completing of these wells.
 - All fluids (i.e., scrubber cleaners) used during the washing of production equipment will be properly disposed of to avoid ground contamination or hazards to livestock or wildlife.
- G. Flowback:
 - Flowback transported off location/through temporary flowback equipment will consist of approximately 1,000 bbls of produced water per day per well for approximately 14 days. After this flow-back period, production will be sent to the permanent facility for processing.
 - Flowback fluid will be gathered, recycled, and reused as described in Section 5. If there are no foreseeable drilling and completion operations, flow back will be disposed of at one of the disposal wells listed below.
- H. Produced water will be hauled by truck and/or if permitted, transported through below-grade or surface pipeline infrastructure to any of Enduring's water recycling facilities. Produced water may be gathered and used in future drilling and completion operations as an alternative disposal method.
- I. Enduring will dispose of produced water at the following facilities:
 - Disposal 001, API 30-045-26862, operated by Basin Disposal Inc., located in the Southeast ¼ of the Northwest ¼, Section 3, Township 29 North, Range 11 West.
 - Sunco Disposal 001, API 30-045-28653, operated by Agua Moss, LLC, located in the Southwest ¼ of the Northwest ¼, Section 2, Township 29 North, Range 12 West.
 - Pretty Lady 30 11 34 001, API 30-045-30922, operated by Agua Moss, LLC, located in the Northwest ¼ of the Southeast ¼, Section 34, Township 30 North, Range 11 West.

- NE Lybrook SWD 001, API 30-039-31378, operated by Enduring Resources IV, LLC, located in the Northwest ¼ of the Southeast ¼ of Section 13, Township 23 North, Range 7 West.
- W Lybrook 2309 24N SWD 001, API 30-045-38292, operated by Enduring Resources IV, LLC, located in the Southeast ¹/₄ of the Southwest ¹/₄ of Section 24, Township 23 North, Range 9 West.

10. PLANS FOR SURFACE RECLAMATION

A Surface Reclamation Plan for the HCU 432H Project has been provided as a separate document. The projectassociated Surface Reclamation Plan was prepared in accordance with Onshore Oil and Gas Order No. 1 and the BLM Bare Soil Reclamation Procedures.

The Surface Reclamation plan addresses:

- Configuration of the reshaped topography;
- Drainage systems;
- Segregation of spoil material;
- Surface disturbances;
- Backfill requirements;
- Redistribution of topsoil;
- Soil treatments;
- Seeding or other steps to reestablish vegetation;
- Weed control;
- and practices necessary to reclaim all disturbed areas.

11. SURFACE OWNERSHIP

The project is located on public lands managed by the BLM-FFO

Bureau of Land Management Farmington Field Office 6251 College Boulevard, Suite A Farmington, New Mexico 87402 (505) 564-7600

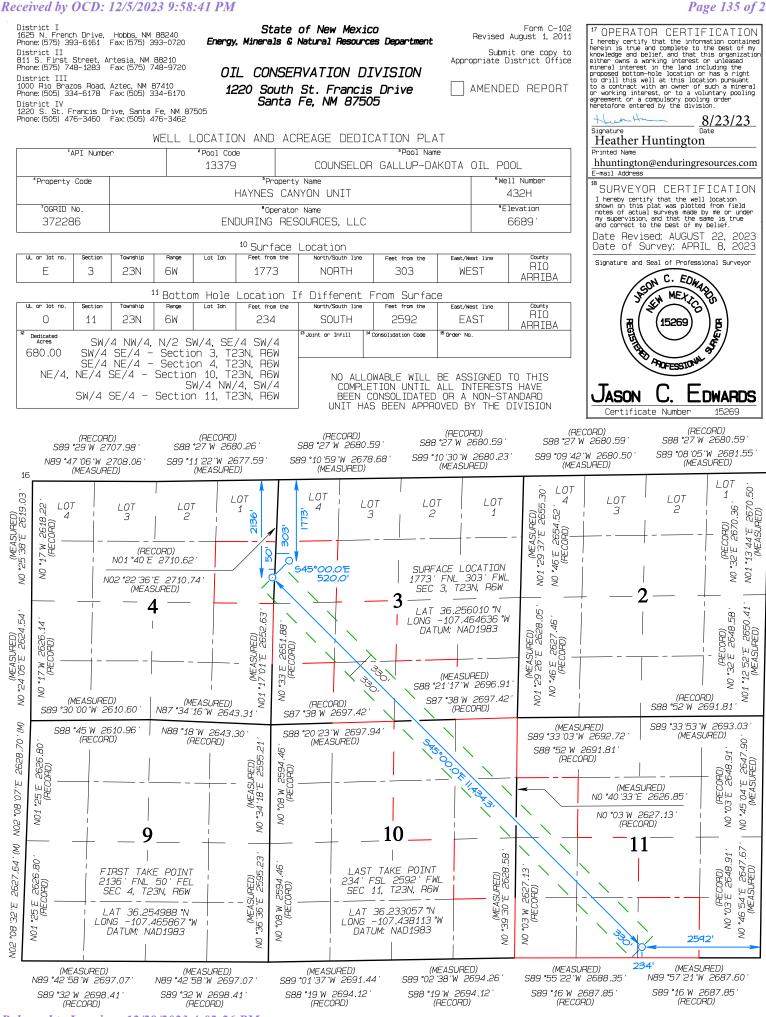
12. OTHER INFORMATION

- A. Enduring's appointed construction contractors will call New Mexico One-Call (or equivalent) to identify the location of any marked or unmarked pipelines or cables located in proximity to the proposed HCU 432H Project or any other areas proposed to have ground disturbances at least two working days before ground disturbance.
- B. The construction phase of the project will commence upon receipt of an approved APD. The BLM-FFO will be notified via phone or email at least 48 hours before the start of construction activities associated with the project.
- C. All activities associated with the construction, use/operation, maintenance, and abandonment or termination of the HCU 432H Project will be limited to areas approved in the APDs.
- D. The project area has been surveyed by the Division of Conservation Archeology (DCA). The cultural survey report has been submitted directly to the surface managing agencies. Cultural mitigation, monitoring, and implementation of site protection barriers will occur if stipulated in the COAs attached to the approved APDs.

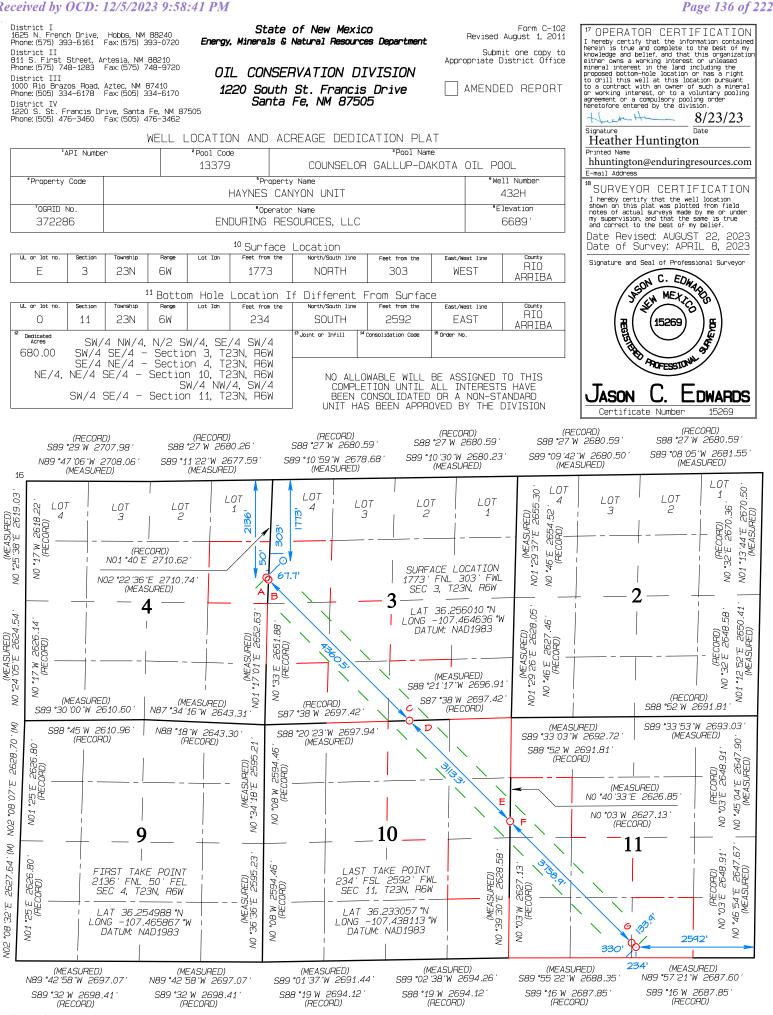
- E. Per BLM at the June 27, 2023, onsite, a biological survey would not be required as no new surface is permitted or anticipated disturbance resultant of project approval and implementation. Any necessary protection of flora and fauna, Special Status Species (SSS), wildlife, migratory birds, water resources, and air resources will occur if stipulated in the COAs attached to the approved APDs or stipulations in the ROW grants.
- F. Construction and maintenance activities will cease if soil or road surfaces become saturated to the extent that construction equipment is unable to stay within the project area and/or when activities cause irreparable harm to roads, soils, or streams.
- G. All BLM-FFO general COAs will apply to this proposed action.

Appendix A. SURVEY PLATS

.



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- LEASE X-ING (A) 2187' FNL O' FEL SEC 4, T23N, R6W
- LAT 36.254858 °N LONG -107.465703 °W DATUM: NAD1983

- LEASE X-ING (B) 2187' FNL 0' FWL SEC 3, T23N, R6W
- LAT 36.254858 °N LONG -107.465703 °W DATUM: NAD1983

LEASE X-ING (C) O'FSL 2229'FEL SEC 3, T23N, R6W

LAT 36.246496 °N LONG -107.455117 °W DATUM: NAD1983

LEASE X-ING (D) 0' FNL 2229' FEL SEC 10, T23N. R6W

LAT 36.246496 °N LONG -107.455117 °W DATUM: NAD1983

LEASE X-ING (E) 2266' FNL 0' FEL SEC 10, T23N, R6W

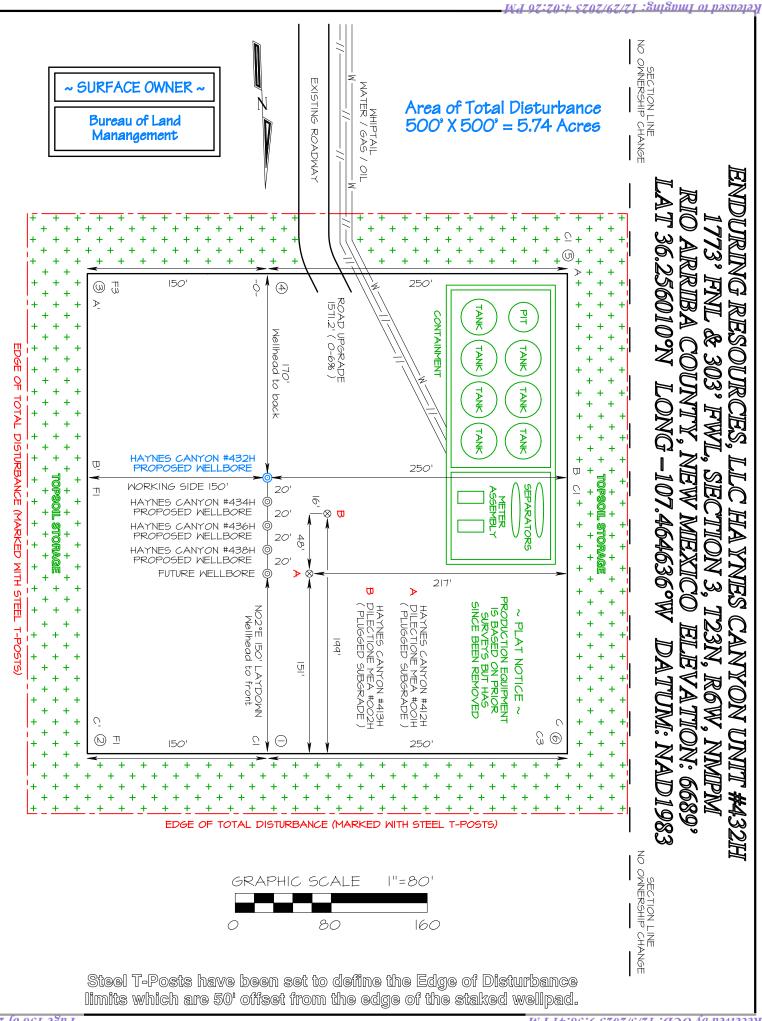
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LAT 36.240524 °N LONG -107.447560 °W DATUM: NAD1983

LEASE X-ING (G) 328' FSL 2688' FWL SEC 11, T23N, R6W

LAT 36.233314 °N LONG -107.438438 °W DATUM: NAD1983

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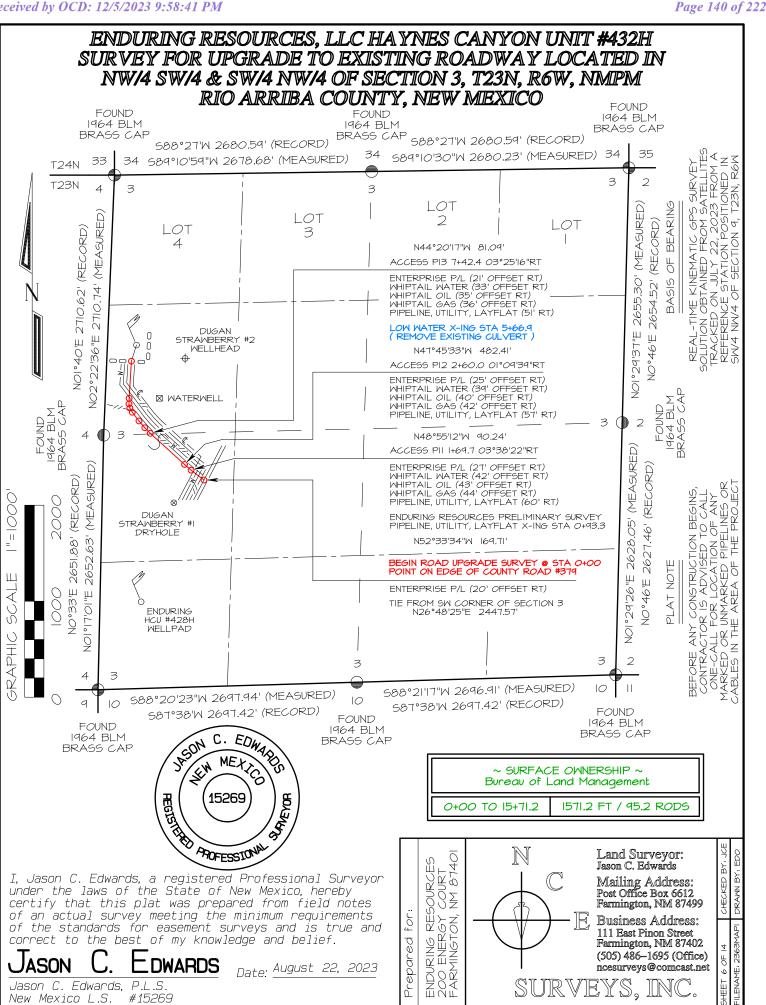


	ENDURING RESOURCES, LLC HAYNES CANYON UNIT #432H 1773' FNL & 303' FWL, SECTION 3, T23N, R6W, NMPM RIO ARRIBA COUNTY, NEW MEXICO ELEVATION: 6689'
A - A	HORIZONTAL SCALE I"=55' C/L VERTICAL SCALE I"=30'
-06dd	
-1b899	
6679'	
	C/L
₽-₽_	
6699	
-b899	
6679	
	C/L
C - C	
66dd	
-12000	
66791	
	EDWARDS SURVEYING, INC. IS NOT LIABLE FOR LOCATION OF UNDERGROUND UTILITIES OR PIPELINES. CONTRACTOR SHOULD CONTACT ONE-CALL FOR LOCATION OF ANY MARKED OR UNMARKED UNDERGROUND UTILITIES OR PIPELINES ON WELLPAD AND/OR ACCESS ROAD AT LEAST TWO WORKING DAYS PRIOR TO CONSTRUCTION.

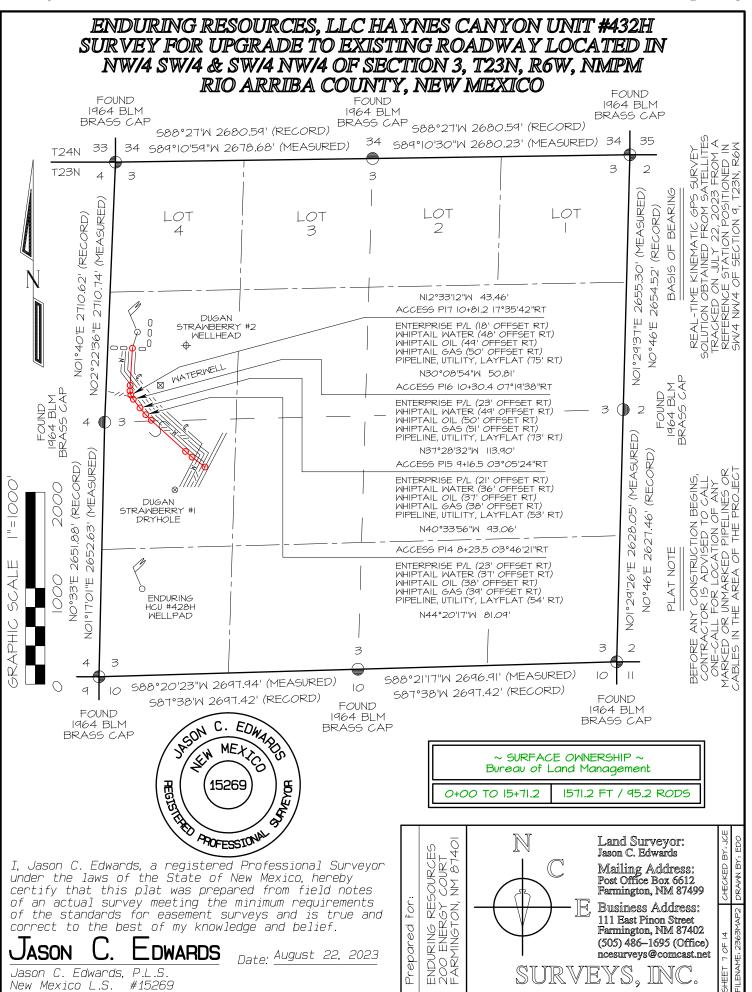
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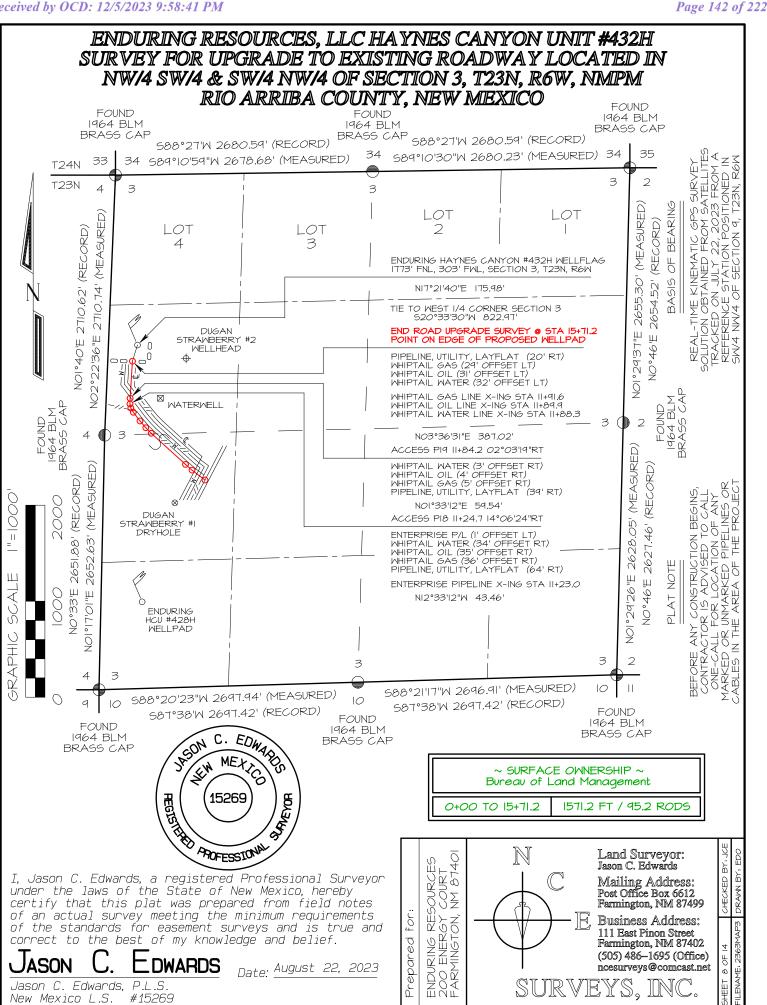


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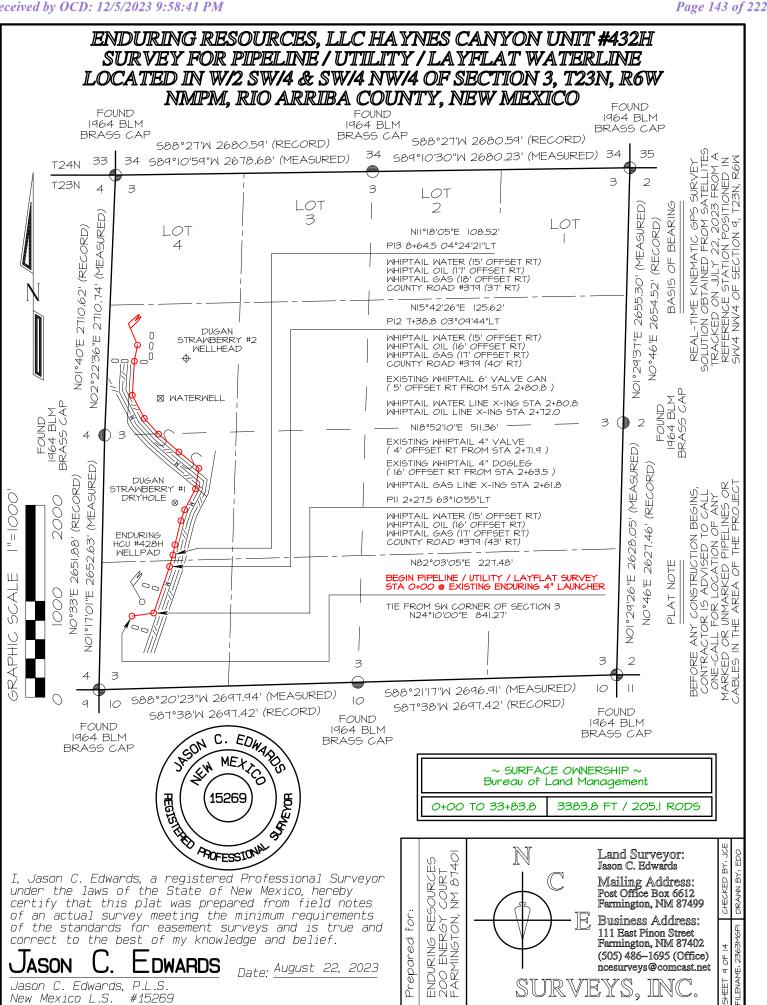


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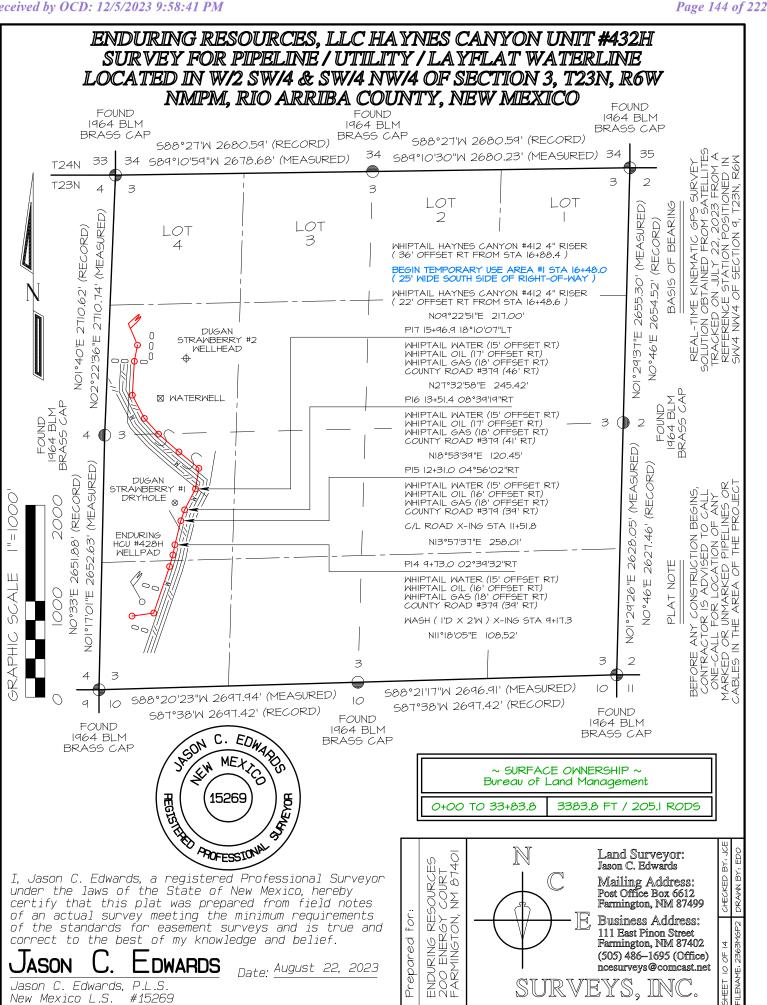
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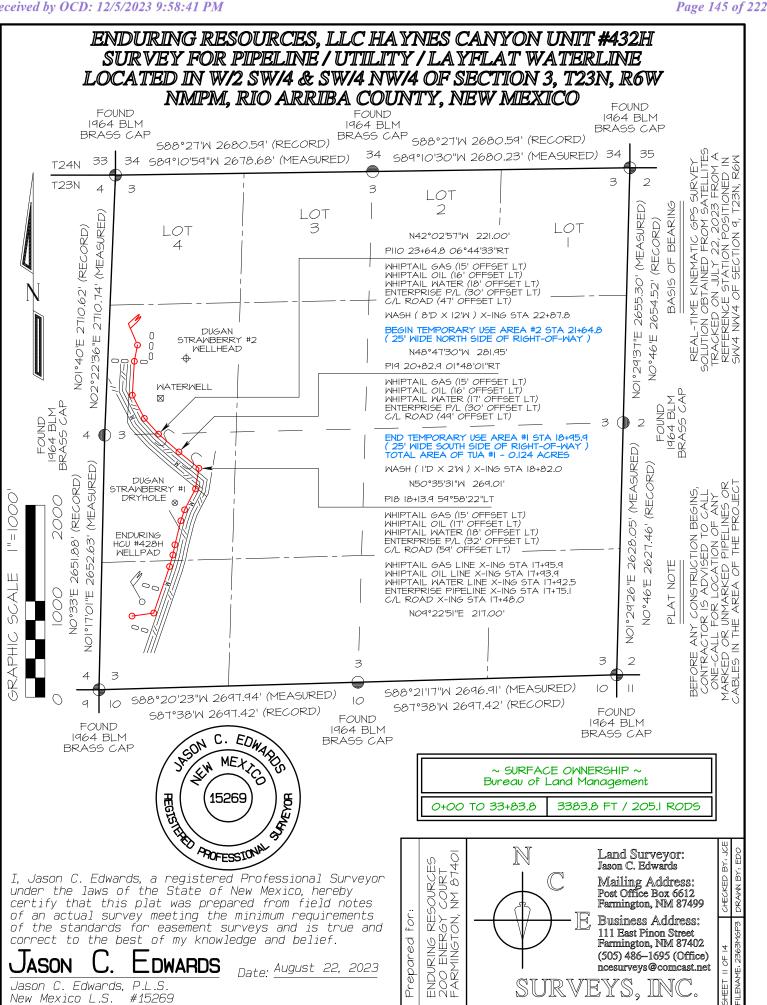


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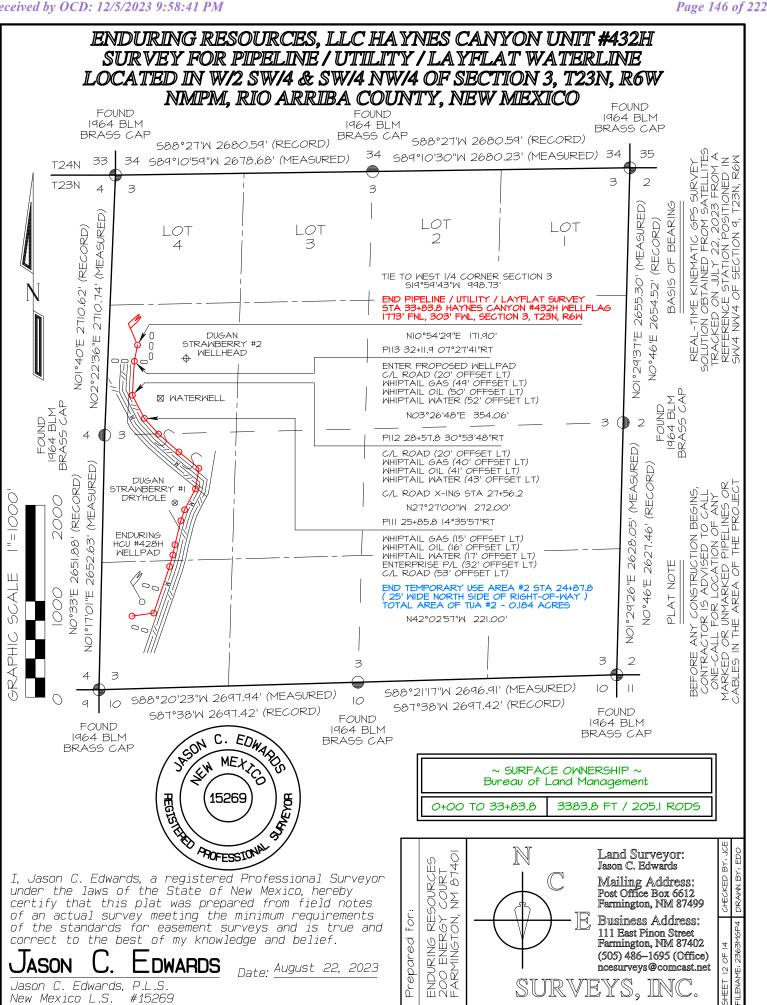
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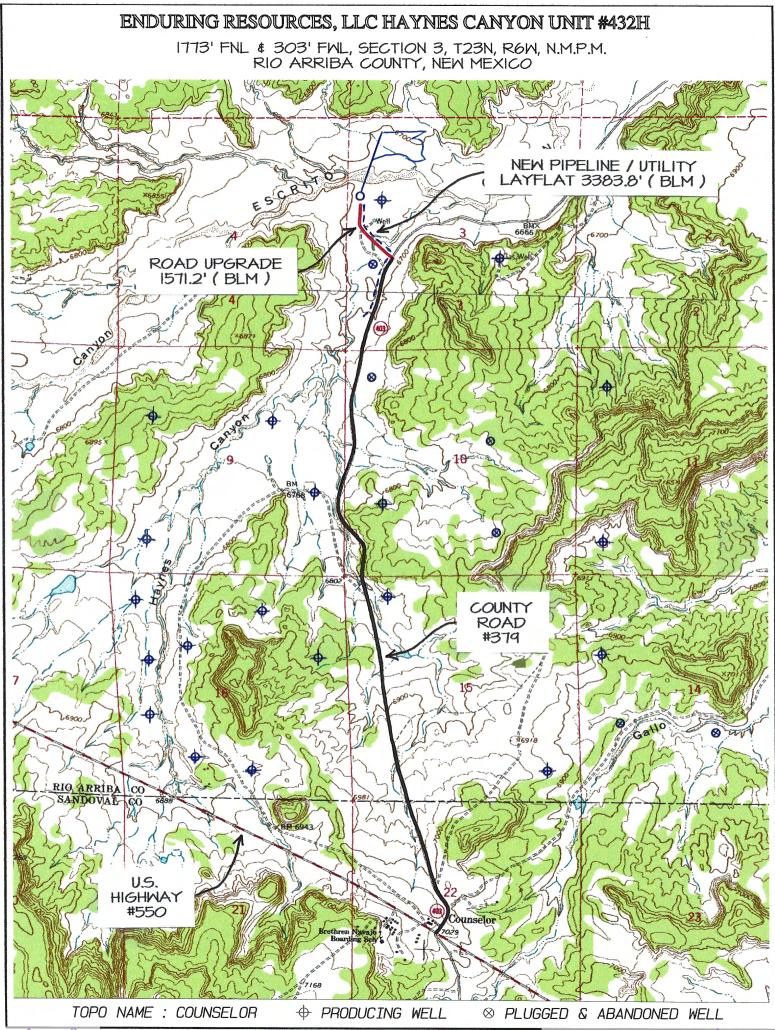


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Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #432H

1773' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256010°N Longitude -107.464636°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

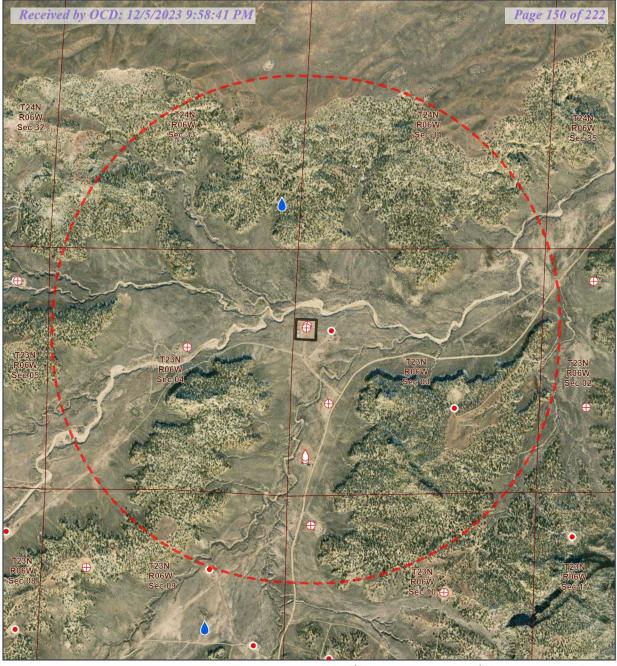
Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #432H existing location.

Appendix B. EXISTING WELLS WITHIN 1 MILE

.



HCU 432H Project | Wells Within 1 Mile

OSE Points of Diversion

Oil and Gas Well Status

- Active
- New
- Plugged (site released)

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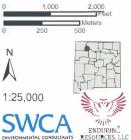
Wells	Within 1 Mile	Within Map Extent
OSE Points of Diversion	1	2
Active O&G	2	9
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Plugged (site released) O&G		9

Wellpad

1 Mile Buffer

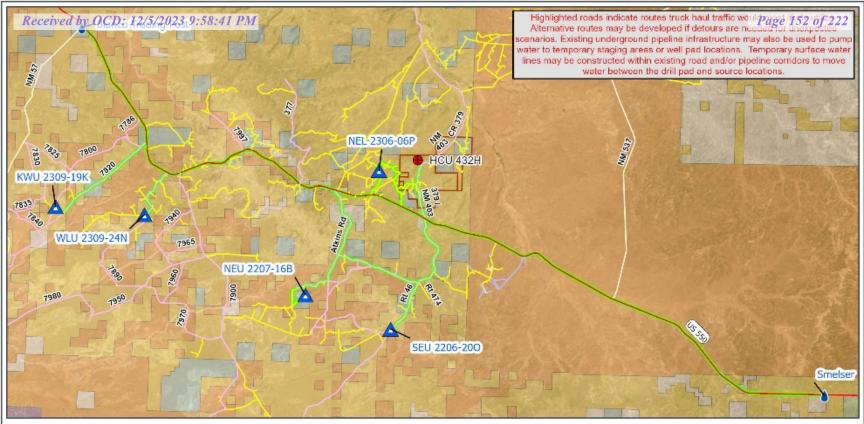
Rio Arriba County, NM NAD 1983 BLM Zone 13N 36.2561°N 107.4645°W

Base Map: ESRI ArcGIS Online, accessed August 2023 Updatee: 8/4/2023 Project No. 75253p36 August: 253p36_HCU_432_Wells_Vithin_1Mile Aprx: 75253p36_HCU432



Appendix C. WATER TRANSPORTATION MAP

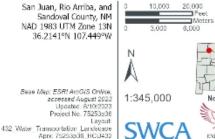
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HCU 432H Project | Water Transportation



Unit Boundary



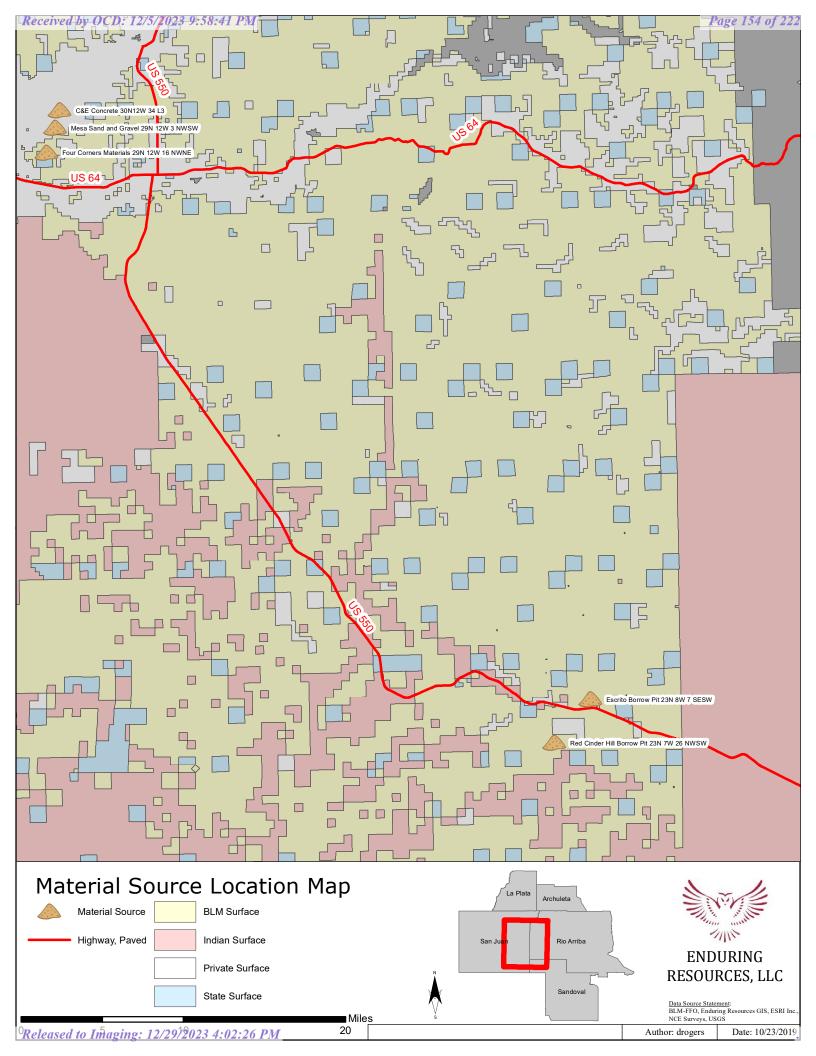
New Mexico

ENDURING *

PRVIDONMENTAL COMPLETANTS

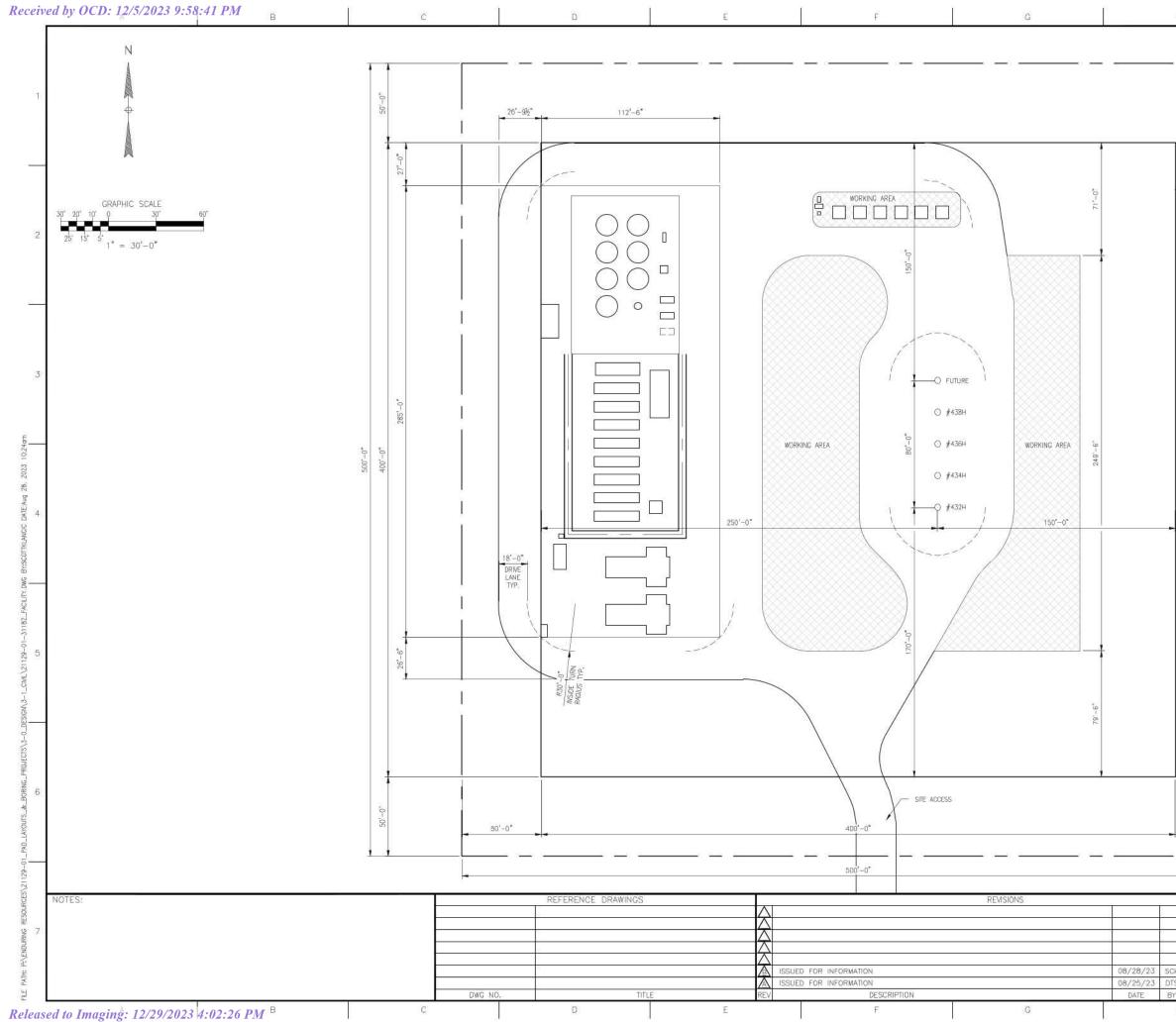
Appendix D. CONSTRUCTION MATERIALS MAP

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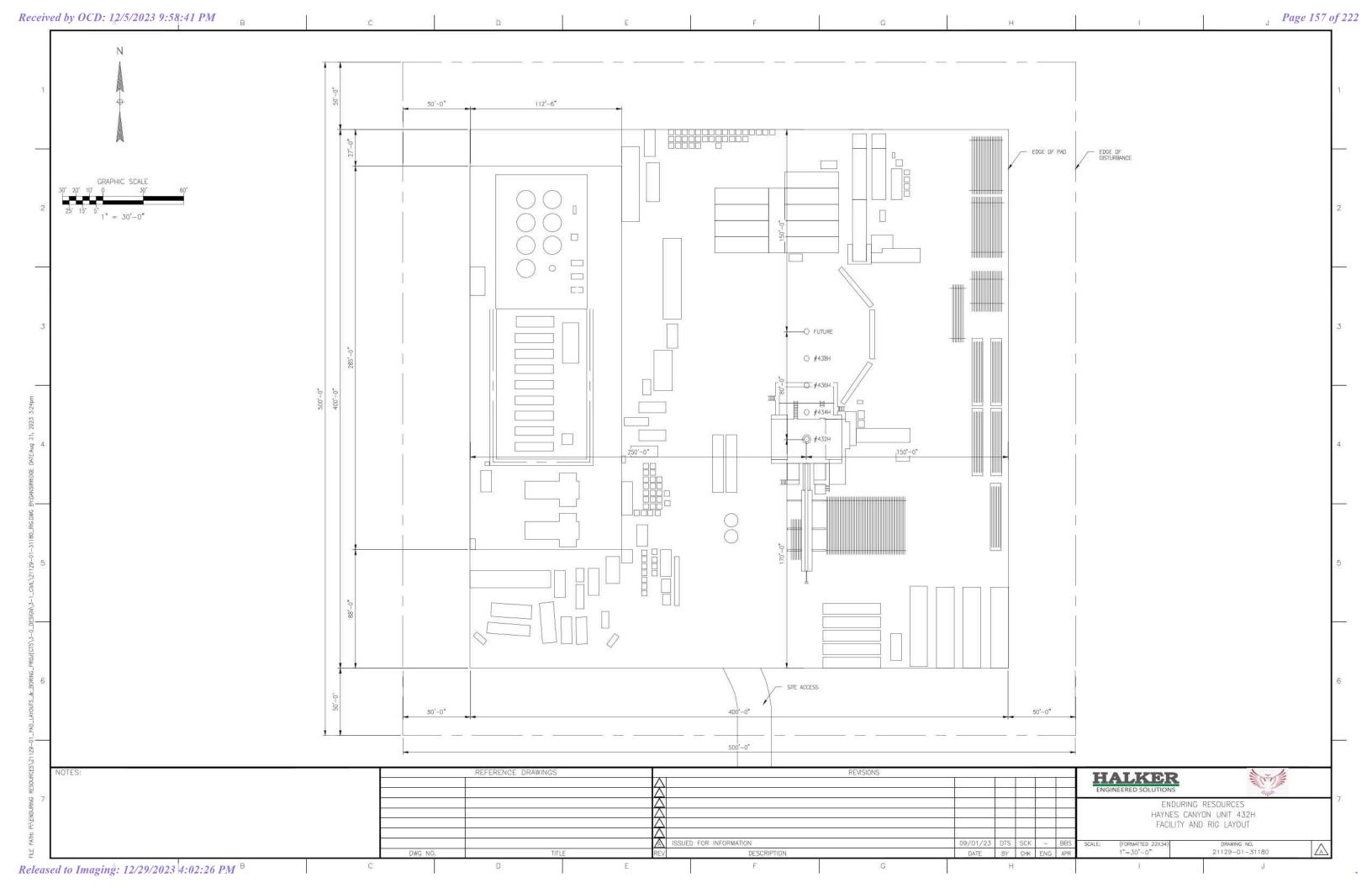


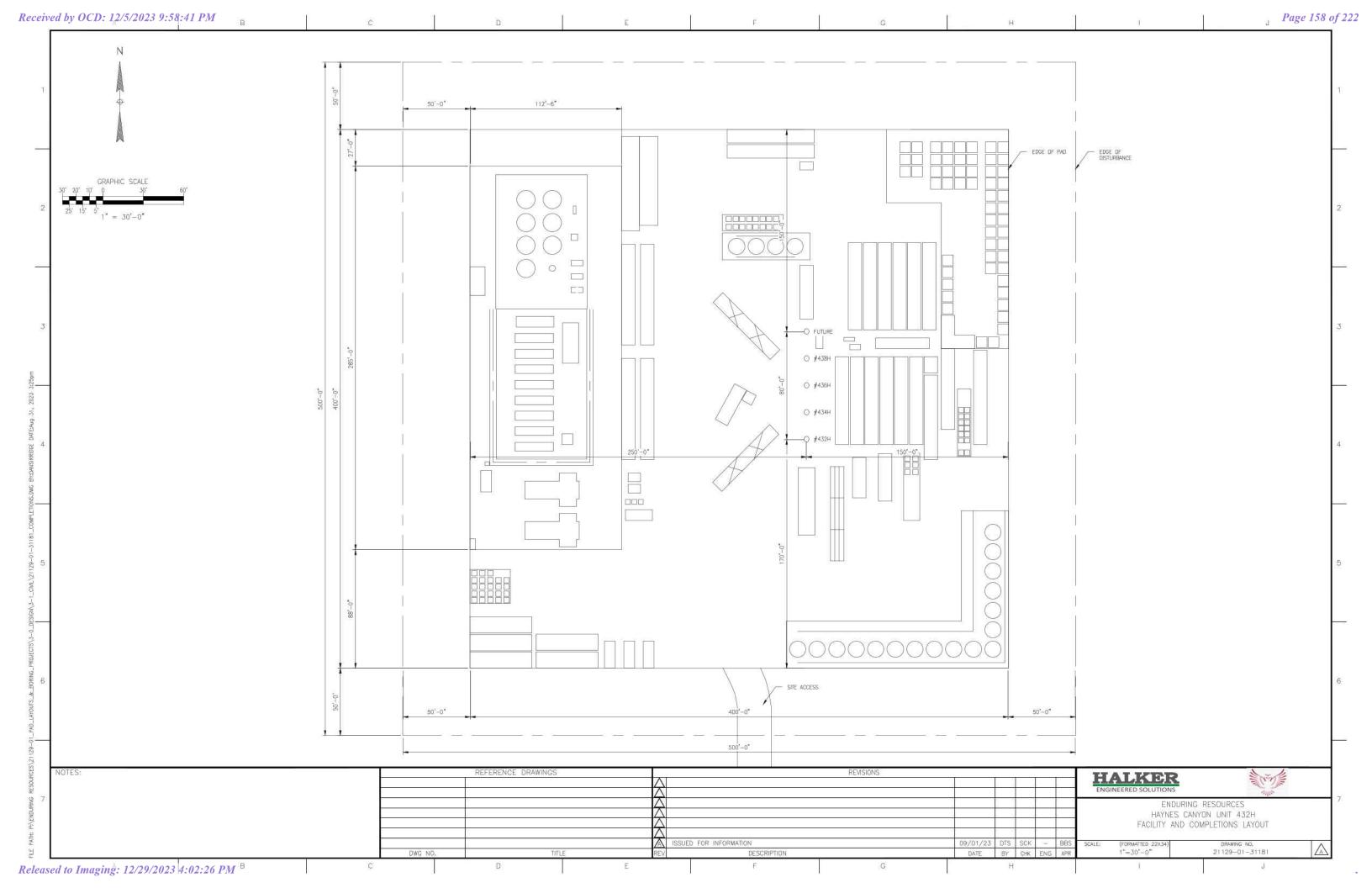
Appendix E. WELL PAD LAYOUT DIAGRAMS

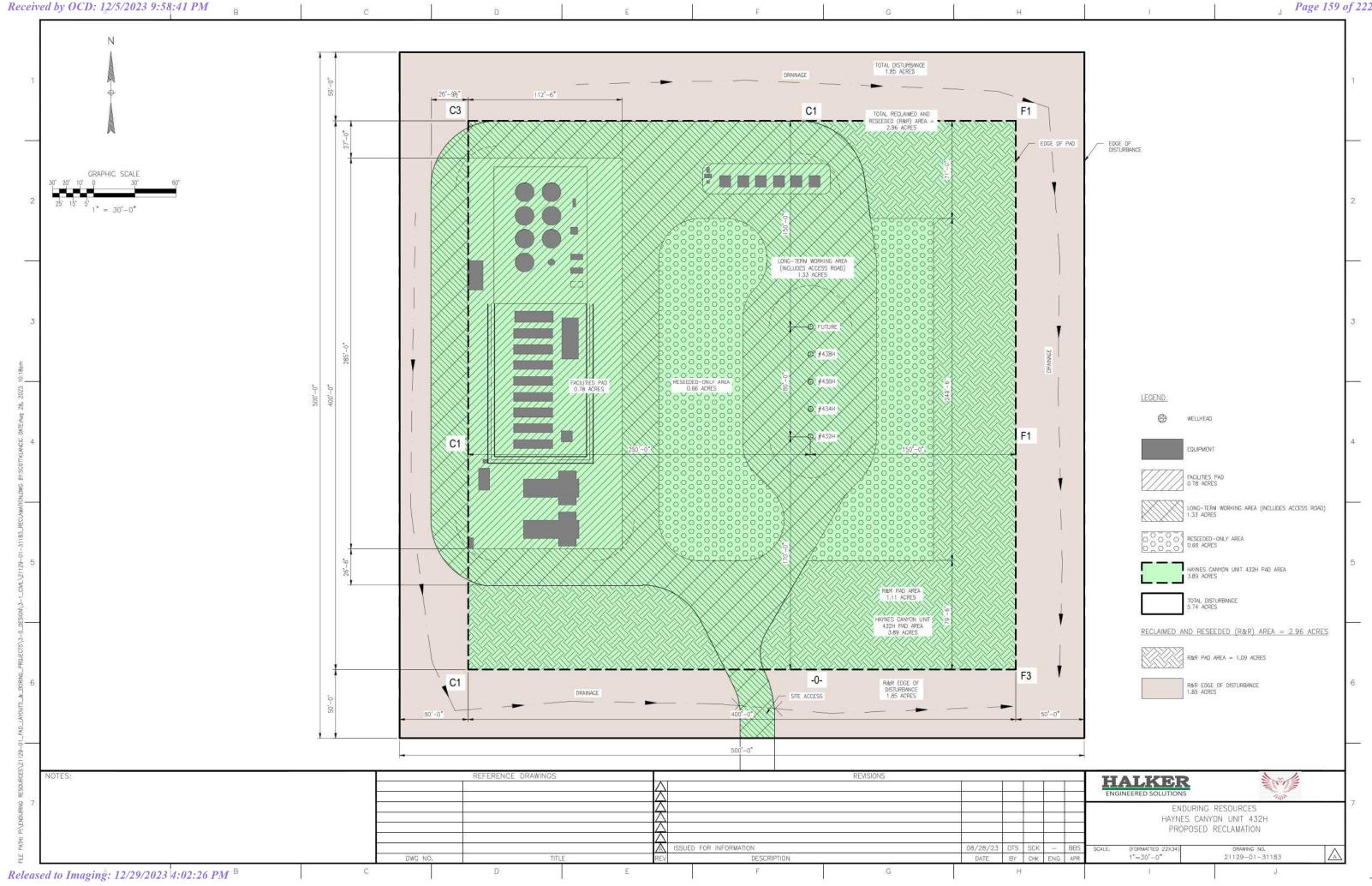
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					20
				3	i
249'-6"	-		1	4	-
		1	1		2
79'-6"			1	5)
14		50'-0"	-	6	5
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	08/28/23 50		HAYNES CAN FACILIT	RESOURCES YON UNIT 432H Y LAYOUT	7
	08/25/23 DT DATE B	'S BBS - BBS	SCALE: (FORMATTED 22X34)	DRAWING NO. 21129-01-31182	







11			

SURFACE RECLAMATION PLAN

Haynes Canyon Unit (HCU) 432H-Four Well-Site Reoccupation <u>Project</u>

<u>HCU 432H, HCU 434H, HCU 436H, HCU 438H</u>

SEPTEMBER 2023



ENDURING RESOURCES IV, LLC

200 Energy Court

Farmington, New Mexico 87401

Phone: (505) 636-9720

.

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Appendix A. Onsite Noxious Weed Form

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1. INTRODUCTION

This Surface Reclamation Plan (Plan) has been prepared for the Bureau of Land Management (BLM) Farmington Field Office (FFO) to support the Surface Use Plan of Operations (SUPO) for the Haynes Canyon Unit (HCU) 432H-Four Well-Site Reoccupation Project HCU 432H, HCU 434H, HCU 436H, HCU 438H (HCU 432H Project). Following the guidance provided in Appendix A (SUPO Procedure) of the *Farmington Field Office Bare Soil Reclamation Procedures* (Procedures) (BLM 2013), this Plan will be used to re-establish vegetation and control New Mexico Department of Agriculture (NMDA)–listed Class A and Class B noxious weeds (NMDA 2020) within the project area. Information associated with the project is provided in Table 1.

Table	1.	Project Information
-------	----	----------------------------

Applicant:	Enduring Resources IV, LLC	
Project Name:	Haynes Canyon Unit (HCU) 432H-Five Well-Site Reoccupation Project	
Project Features:	 Reoccupation of existing HCU 412H well pad and facilities Four proposed oil and gas wells (HCU 432H, HCU 434H, HCU 436H, HCU 438H) 	
Lease Number(s):	NMNM-028733	
Unit Number:	NMNM-142111 New BLM System MLRS # NMNM105770949	
Land Manager(s):	BLM-FFO	
Mineral Manager(s):	BLM-FFO	
Associated Authorization Applications, Pending:	4 APDs	

Enduring may submit a request to the BLM-FFO to revise this reclamation plan at any time during the life of the project in accordance with page The Gold Book: Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (BLM and U.S. Forest Service 2007). Enduring would include justification for the revision request.

The Enduring contact person for this reclamation plan is:

Theresa Ancell Regulatory Manager Enduring Resources IV, LLC 200 Energy Court Farmington, New Mexico 87401 505-636-9720

2. PROJECT DESCRIPTION

2.1. Location

The project area is in Rio Arriba County, New Mexico, approximately 60 miles south-southeast of Bloomfield, New Mexico. The project area can be accessed as follows:

- From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550
- for 53.8 miles to Mile Marker 97.6
- Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;
- Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for
- 1.7 miles to fork in roadway;
- Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in
- road;
- Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #432H.The project area is located on lands managed by the BLM FFO. The legal location is provided below.

2.1.1. Well Pad

BLM-managed surface

Enduring would utilize the existing 5.74-acre HCU 412H well pad located in the Southwest ¹/₄ of Northwest ¹/₄ of Section 3, Township 23 North, Range 6, New Mexico Principal Meridian (NMPM).

2.1.2. Access Road

One existing 1571.2-foot-long by 30-foot-wide access road corridor would be improved and utilized to accommodate access for construction, drilling, completion, and long-term operation of the wells mentioned above; no new access road is proposed for the project.

2.1.3. Pipeline Utilities Corridor

The HCU 432H proposed project located north of the proposed HCU 428H would include a 3383.8 foot by 40-foot pipeline and utilities corridor connecting HCU 432H to HCU 428H facilities and infrastructure.

2.1. Pre-Disturbance On-Site Meeting

A pre-disturbance on-site meeting for the project was held with representatives from the BLM-FFO, Enduring, and SWCA Environmental Consultants (SWCA) on June 27, 2023. The BLM-FFO invited stakeholders and interested parties to the meeting. Aside from those listed, no private citizens or other groups attended.

2.2. Surface Disturbance

Enduring proposes to utilize the existing HCU 412H well pad and existing access road. Enduring proposes a new pipeline/utilities corridor for the proposed HCU 432H five well project connecting the proposed HCU 432 to the proposed HCU 428H facilities; new surface disturbance with the pipeline corridor is proposed. During construction, the project working area would be lightly "skimmed" and cleared of vegetation and topsoil would be stored in designated areas.

The Enduring proposed HCU 432H pipeline corridor would be constructed adjacent to an existing Whiptail pipeline right-of-way (ROW). The proposed new corridor disturbance would be partially contained within the existing well pads (400-feet) and partially within the existing Whiptail ROW disturbance (20 feet of the 40 feet). The proposed new disturbance associated with the HCU 432H pipeline and utility corridor would be 2983.8 feet by 20-feet creating an estimated 1.37 acres of new disturbance. Additionally, there are two Temporary Use Areas (TUAs) proposed within the HCU 432H pipeline corridor. TUA No. 1 located would be between STA 1648 and STA 1895.9 would be 25-feet on the wide side of the corridor. TUA No. 2 would be located between STA 2164.8 and STA 2487.8 would be 25-feet on the wide side of the corridor.

2.3. Reclamation

During interim reclamation, approximately 4.22 acres of the well pad and access road will be reclaimed. The remaining 2.51 acres of the well pad and project area will remain disturbed throughout the life of the project and will be reclaimed during final reclamation, when the project is abandoned.

Roadway interim reclamation, once drilling and completion phases are complete for all wells on location, the roadway will be reduced in size from 30-foot to a 14-foot-wide running surface. All remaining disturbed areas within the 30-foot access road corridor and exterior to borrow ditches and back slopes anticipated to be needed for long-term maintenance will be reseeded in efforts to reduce erosion.

Upon completion of pipeline and utilities, 1.37 acres of pipeline/utilities corridor would be reclaimed.

Based on the amount of surface disturbance, Vegetation Reclamation Procedure B applies to this project (BLM 2013). Vegetation Reclamation Procedure B is described further in the Procedures (BLM 2013). Surface disturbance is summarized in Table 2 below.

Table 2. Surface Disturbance Associated with the Project

Project Feature	Summarized Description	Landowner/ Land Manager	Existing Surface Disturbance (acres)	Proposed New Disturbance (acres)	Interim Reclamation (acres)	Final Reclamation (acres)
Access Road	Existing, preauthorized	BLM	1.08	N/A	0.58	0.5

.

Project Feature	Summarized Description	Landowner/ Land Manager	Existing Surface Disturbance (acres)	Proposed New Disturbance (acres)	Interim Reclamation (acres)	Final Reclamation (acres)
Well pad	Existing, Preauthorized The well pad measures approximately 500' × 450'	BLM	5.74	N/A	3.64	2.1
Pipeline & Utilities Corridor	Proposed 2983.8 feet x 40	BLM	0	1.37	1.37	0
Total [†]		BLM	6.82	1.37	5.59	2.6

[†] Totals may vary due to rounding discrepancies.

3. SITE CONDITIONS

The project area topography is fairly level. The elevation of the project area ranges from approximately 6,690 to 6,710 feet above mean sea level. Two soil types are mapped within the project area: Blancot-Notal association and Gypsiorthids-Badland-Stumble complex (Natural Resources Conservation Service 2023). Based on the climatic records for Lybrook, New Mexico (Station No. 295290), this area has an average annual maximum temperature of 61.1 degrees Fahrenheit and an average annual minimum temperature of 34.9 degrees Fahrenheit. The average annual rainfall is 10.8 inches, with the majority occurring between July and September. The average annual total snowfall is 25.3 inches, which largely occurs between October and April (Western Regional Climate Center 2023). Soil testing may be conducted prior to reclamation activities, if requested by the BLM.

3.1. Vegetation Community

Reclamation standards are based on eight BLM FFO–designated vegetation communities that are outlined in the Farmington Field Office Bare Soil Reclamation Procedures (BLM 2013). During the on-site meeting on June 27, 2023, the BLM determined that the sagebrush community would best describe the project area prior to previous disturbances. Dominate species in the surrounding area include sagebrush (*Artemisia tridentata*), blue grama (*Bouteloua gracilis*), and fourwing saltbush (*Atriplex canescens*). Existing disturbance within the project area includes the HCU 412H well pad, an access road, and livestock grazing. There was no indication of current recreational activity.

During the pre-disturbance on-site meeting, SWCA and Enduring personnel conducted a noxious weed survey for New Mexico Department of Agriculture (NMDA)–listed Class A and Class B noxious weeds in the project area. No NMDA-listed noxious weed species were identified within the project area.

Please refer to the onsite noxious weed form in Appendix A for details.

3.2. Project Area Photographs

Photographs of the project area to be reclaimed are provided in Table 3.

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Table 3. Project Area Photographs

Photograph Description	Photograph
Photograph of existing access	
Photograph taken from stake 2 looking towards stakes.	

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Photograph Description	Photograph
Photograph taken from stake 3 viewing well stakes.	
Photograph taken from mid- east stake viewing well stakes.	

4. RECLAMATION TECHNIQUES FOR SUCCESSFUL REVEGETATION

The BLM FFO will be notified at least 48 hours prior to the start of reclamation activities. Final facility layouts and placement were determined at the formal BLM facility on-site meeting with the BLM FFO.

4.1. Interim Reclamation

Interim reclamation will take place within 120 days of final construction. This phase will occur following the construction, drilling, and completion phases of the project. Areas that will be reclaimed during interim reclamation are described in Section 2.2.

4.2. Vegetation and Site Clearing

If present, trees and brush 3 inches in diameter or greater at ground level will be cut and stacked for wood gatherers. All other trees and brush will be mowed or mulched at ground level. Stumps and root balls will be hauled to an approved disposal site or stockpiled at the edge of the well pad and buried in the cut slopes of the well pad during interim reclamation. Any slash and brush will be chipped, shredded, or mulched, and incorporated into the topsoil for later use in interim reclamation. Vegetation that has re-established within the interim reclaimed portions of the disturbance area will be mulched and incorporated into the topsoil as additional organic matter.

4.3. Topsoil Stripping, Storage, and Replacement

The upper 6 inches of topsoil (if available) will be stripped following vegetation mulching. Topsoil would not be mixed with the underlying subsoil horizons and would be stockpiled as a berm/windrow along the interior perimeter of the construction buffer zone. Topsoil and sub-surface soils will be replaced in the proper order, prior to final seedbed preparation. Topsoil will be spread evenly over sub-soils upon completion of recontouring operations and prior to final seedbed preparation. Redistribution of topsoil shall not be done when the ground or topsoil is wet. Vehicle/equipment traffic will not be allowed to cross topsoil stockpiles. If topsoil is stored for a length of time such that nutrients are depleted from the topsoil, amendments would be added to the topsoil as advised by the Enduring environmental scientist or appropriate agent/contractor.

4.4. Recontouring

All disturbed areas related to the project area will be recontoured to blend with the surrounding landscape, emphasizing restoration of the existing drainage patterns and landforms to pre-construction condition to the extent practicable. Within areas that require recontouring, the surface will be recontoured to match pre-disturbance conditions (particularly drainage patterns) or to blend with the surrounding landform as closely as possible.

The well pad will be contoured to blend with the surrounding landforms, removing signs of cut/fill slopes. The fill slope on the northern sides of the location and stockpiled berm just northeast of the fill slope will be pushed (dozer)/excavated (excavator)/or carried (belly scraper) and placed within the cut slope on the southern sides of the location. Natural rolling contours will be implemented to break up the surface and aid in removing signs of the well pad once vegetation establishes.

4.5. Water Management/Erosion Control Features

The BLM-FFO and the Enduring would work in collaboration to develop site-specific erosion control or water management features and to identify installation locations. Potential erosion control or water management features that may be used include (but are not limited to) water bars or rolling dips for roads, sediment basins or sediment traps, check dams, silt fencing, bellholes upstream of culverts, outlet protection for culverts, erosion control blankets, straw bales, and straw wattles.

As determined during the on-site visit on June 27, 2023, the following water management/erosion control features would be implemented during construction of the project:

• Diversions will be constructed as needed.

During interim reclamation, areas of the project that are not needed for long-term operations and maintenance will be recontoured to reestablish disturbed terrain and blend into the surrounding landscape. The natural drainage network would be reestablished as practicable with necessary diversions around the long-term project footprint.

4.6. Seedbed Preparation

For cut-and-fill slopes, initial seedbed preparation would consist of pushing (dozer)/excavating (excavator)/hauling (belly scraper) the unneeded fill slope material and placing it within the cut slopes. Natural rolling contours would be implemented to break up the surface and aid in removing signs of the sharp well pad corners once vegetation establishes. Emphasis would be placed on restoration of the existing drainage patterns and landforms to pre-construction conditions, to the extent practicable.

Within areas that would be reseeded, stockpiled topsoil would be evenly redistributed prior to final seedbed preparation. Seedbed preparation within compacted areas would include ripping to a minimum depth of 18 inches and spacing furrows 2 feet apart. Ripping would be conducted perpendicularly in two phases, where practicable. If large clumps/clods result from the ripping process, disking would be conducted perpendicular to slopes in order to provide terracing and minimize runoff and erosion. Final seedbed preparation would consist of raking or harrowing the spread topsoil prior to seeding to promote a firm (but not compacted) seedbed without surface crusting. Seedbed preparation may not be necessary for topsoil storage piles or other areas of temporary seeding.

4.7. Soil Amendments

Soil amendments would be added to the topsoil, if needed, as advised by the Enduring environmental scientist or appropriate surface management agency. During the onsite meeting, no soil amendments were identified for use during reclamation.

4.8. Seeding

Table 4 lists BLM FFO's sagebrush seed pick list was identified as suitable for the project area. The seed pick list components are listed in Table 5.

Common Name	Scientific Name	Pure live Seed lbs/acre ¹
Fourwing saltbush	Atriplex canescens	2.0
Winterfat	Krascheninnikovia lanata	2.0
Sand dropseed	Sporobolus cryptandrus	0.5
Western wheatgrass	Pascopyrum smithii	4.0
Indian ricegrass	Achnatherum hymenoides	4.0
Blue grama	Bouteloua gracilis	2.5
Bottle brush squirreltail	Elymus elymoides	3.0
Blue flax	Linum lewisii	0.25
Rocky Mountain bee plant	Cleome Serrulata	0.25

¹Based on 60 PLS per square foot, drill seeded; double this rate (120 PLS per square foot) if broadcast or hydro-seeded.

Seeding will occur immediately following recontouring and seedbed preparation. A disc-type seed drill with two boxes for various seed sizes will be utilized for seeding the disturbed areas of the site. Enduring or its reclamation subcontractor will ensure that perennial grasses and shrubs are planted at the appropriate depth. Intermediate-size seeds (such as wheatgrasses and shrubs) will be planted at a depth of 0.5-inch, larger seeds (such as Indian ricegrass) will be planted at a depth of 1 to 2 inches, and small seeds (such as sand dropseed) will be planted at a depth of 0.25 inch. In situations where differing planting depths are not practicable with the equipment being used, the entire mix will be planted no deeper than 0.25 inch. A drag, packer, or roller will follow the seeder to ensure uniform seed coverage and adequate compaction. Seeding will be run perpendicular to slopes in order to minimize runoff and erosion.

Drill seeding may be used on well-packed and stable soils on gentler slopes and where tractors and drills can safely operate. Where drill seeding is not practical, the contractor will hand broadcast seed using a "*cyclone*" hand seeder or similar broadcast seeder. Galleta seed may also be broadcast; due to the light fluffy nature of this seed, it does not seed well through a drill seeder. Broadcast application of seed requires a doubling of the drill-seeding rate. The seed will then be raked into the ground so that the seed is planted no deeper than 0.25 inch below the surface.

Upon completion of seeding, straw mulch will be spread across the reclaimed area and crimped into the soil. This will promote site stabilization and slightly increase moisture retention.

4.9. Noxious and Invasive Weed Control

Should any noxious or invasive weeds be documented within the project area following the completion of reclamation activities, Enduring will follow the guidance outlined in their Pesticide Use Proposal approved by the BLM FFO. Enduring will submit all required documentation for weed treatments associated with the proposed project; this includes chemical and manual weed removal. Enduring will submit a Pesticide Use Report quarterly and annually or when requested by the BLM-FFO Authorized Officer or the BLM-FFO Noxious Weed Specialist.

5. MONITORING REQUIREMENTS

Reclamation monitoring is required to document attainment of the vegetation percent cover standard and reclamation success. The monitoring and reporting methods described below will apply to both interim and final reclamation. Monitoring and reporting requirements remain in effect as long as the permit, grant, or authorization is in force, and until all associated facilities and infrastructure are abandoned by BLM procedure and a FAN and/or relinquishment is issued. The vegetation percent cover referenced below is described in detail in Section 5.4 (Reclamation Attainment).

5.1. Initial Monitoring and Reporting

Monitoring sites will be established by the BLM FFO, in collaboration with Enduring, during the required earthwork and/or seeding inspections. Initial monitoring tasks will be conducted by the BLM FFO. The BLM FFO will submit the initial monitoring reports to Enduring within 60 days of conducting the initial monitoring tasks.

5.2. Annual Monitoring and Reporting

Enduring will perform annual monitoring starting 2 calendar years after BLM FFO's approval of earthwork and/or seeding. Annual monitoring will continue until the vegetation percent cover standard has been attained. Annual monitoring reports will be submitted to the BLM FFO by December 31 of the year monitored.

5.3. Long-Term Monitoring

After the required percent revegetation standard has been attained, Enduring will begin long-term monitoring. This includes every fifth year after attainment as determined by the BLM FFO, Enduring will monitor the site at all established photo points to ensure the site remains productive and stable. Enduring will submit the monitoring report to the BLM by December 31 of the year monitored.

5.4. Reclamation Attainment

Per the Procedures (BLM 2013), the following foliar percent cover standards listed in Table 5 must be attained for reclamation to be considered successful.

Functional Group	Percent (%) Foliar Cover	Common Species
Trees/Shrubs/ Grasses/ Forbs	≥ 35	Utah juniper, Piñon pine; big sagebrush, four-wing saltbush, antelope bitterbrush, alkali sacaton, Western wheatgrass, Indian ricegrass, galleta, sand dropseed, scarlet globemallow, wooly Indian wheat, fleabane, Penstemon spp., buckwheat, threadleaf groundsel.
Invasive/undesirables 10% allowed toward meeting standard of 35%	≤ 10	Plants that have the potential to become a dominant species on a site where its presence is a detriment to revegetation efforts or the native plant community. Examples of invasive species include cheatgrass, Russian thistle, halogeton.

Table 5. Reclamation Goal for Sagebrush Community

When vegetation meets the attainment standards listed in Table 4 and as required by the BLM-FFO Bare Soil Reclamation Procedure, Enduring may request BLM-FFO concurrence that vegetation percent cover standards have been attained any time after 2 calendar years of completion of earthwork and seeding. Enduring will submit a final abandonment notice (FAN), identifying that revegetation standards have been attained. The BLM-FFO will reply to the operator to confirm concurrence (or not) with a rationale for the determination within 60 days of receiving the

request. If the revegetation standards are not being attained, Enduring and the BLM-FFO will analyze the issues that may have contributed to vegetation reclamation failure or lack of meaningful progress. Remedial actions will be developed collaboratively if vegetation percent cover standards are not being attained. Details regarding this process can be found in the Procedures (BLM 2013).

6. REFERENCES

Bureau of Land Management (BLM). 2013. Farmington Field Office Bare Soil Reclamation Procedures. Available at: http://www.emnrd.state.nm.us/MMD/AML/documents/FFOBareSoilReclamationProcedures2-1-13.pdf. Accessed July 2023.

Bureau of Land Management (BLM) and U.S. Forest Service. 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

Natural Resources Conservation Service. 2023. Web Soil Survey. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed July 2023.

New Mexico Department of Agriculture (NMDA). 2020. Memo: New Mexico Noxious Weed List Update. Available at: <u>https://nmdeptag.nmsu.edu/apr/noxious-weeds.html.</u> Accessed July 2023.

Western Regional Climate Center. 2023. New Mexico Climate Summaries: Lybrook, New Mexico (295290). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?nm5290. Accessed July 2023.

APPENDIX A. ONSITE NOXIOUS WEED FORM

Onsite Noxious Weed Form

If noxious weeds are found during the onsite, fill out form and submit to FFO weed coordinator Operator <u>Endwim</u> Surveyor(s) Well Name and Number $\frac{1271202}{321}$ Date $\frac{21271202}{321}$

well Name and Number (192 pro) (art for 9 5071 Bate	716410-1
Location: Township, Range, Section TZ3W, REW 53	()
Location of Project NAD 83 Decimal Degrees 36.2345° N	107.454 ac

		Class A Noxious	Weeu Cheek		X 7 11
	Alfombrilla	Diffuse knapweed	Hydrilla	Purple starthistle	Yellow toadflax
	Black henbane	Dyer's woad	Leafy spurge	Ravenna grass	
	Camelthorm	Eurasian watermilfoil	Oxeye daise	Scotch thistle	
٢	Canada thistle	Giant salvinia	Parrotfeather	Spotted knapweed	
	Dalmation toadflax	Hoary cress	Purple loosestrife	Yellow starthistle	

Class A Noxious Weed – Check Box if Found

Class B Noxious Weed – Check Box if Found

African rue	Perennial pepperweed	Russian knapweed	Tree of heaven
Chicory	Musk thistle	Poison hemlock	
Halogeton	Malta starthistle	Teasel	

Comments:

\$

6/27/23 **FFO Representative:** sign and date 23 **Operator** Representative sign and date

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WAFMSS

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

Submission Date: 09/29/2023

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12/05/2023

PWD Data Report

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Type: OIL WELL

APD ID: 10400093994

Well Number: 436H Well Work Type: Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined

Would you like to utilize Lined Pit PWD options? N Produced Water Disposal (PWD) Location: PWD surface owner: Lined pit PWD on or off channel: Lined pit PWD discharge volume (bbl/day): Lined pit Pit liner description: **Pit liner manufacturers** Precipitated solids disposal: Decribe precipitated solids disposal: Precipitated solids disposal Lined pit precipitated solids disposal schedule: Lined pit precipitated solids disposal schedule Lined pit reclamation description: Lined pit reclamation Leak detection system description: Leak detection system

PWD disturbance (acres):

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

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Lined pit Monitor description:

Lined pit Monitor

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information

Section 3 - Unlined

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres):

PWD surface owner:

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule

Unlined pit reclamation description:

Unlined pit reclamation

Unlined pit Monitor description:

Unlined pit Monitor

Do you propose to put the produced water to beneficial use?

Beneficial use user

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic

State

Unlined Produced Water Pit Estimated

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

PWD disturbance (acres):

Injection well name:

Injection well API number:

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Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information

Section 4 -

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

PWD surface owner:

Injection well number:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection

Underground Injection Control (UIC) Permit?

UIC Permit

Section 5 - Surface

Would you like to utilize Surface Discharge PWD options? N

 Produced Water Disposal (PWD) Location:

 PWD surface owner:
 PWD disturbance (acres):

 Surface discharge PWD discharge volume (bbl/day):
 PWD disturbance (acres):

 Surface Discharge NPDES Permit?
 Surface Discharge NPDES Permit attachment:

 Surface Discharge site facilities information:
 Surface discharge site facilities map:

 Section 6 Section 6

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner:

Other PWD discharge volume (bbl/day):

PWD disturbance (acres):

Operator Name: ENDURING RESOURCES LLC

Well Name: HAYNES CANYON UNIT

Well Number: 436H

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Other PWD type description:

Other PWD type

Have other regulatory requirements been met?

Other regulatory requirements

WAFMSS

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

APD ID: 10400093994 Operator Name: ENDURING RESOURCES LLC Well Name: HAYNES CANYON UNIT Well Type: OIL WELL

Submission Date: 09/29/2023

ALL STREET, ST

Well Number: 436H Well Work Type: Drill Highlighted data reflects the most recent changes <u>Show Final Text</u>

Bond Info Data

Bond

Federal/Indian APD: FED

BLM Bond number:

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond

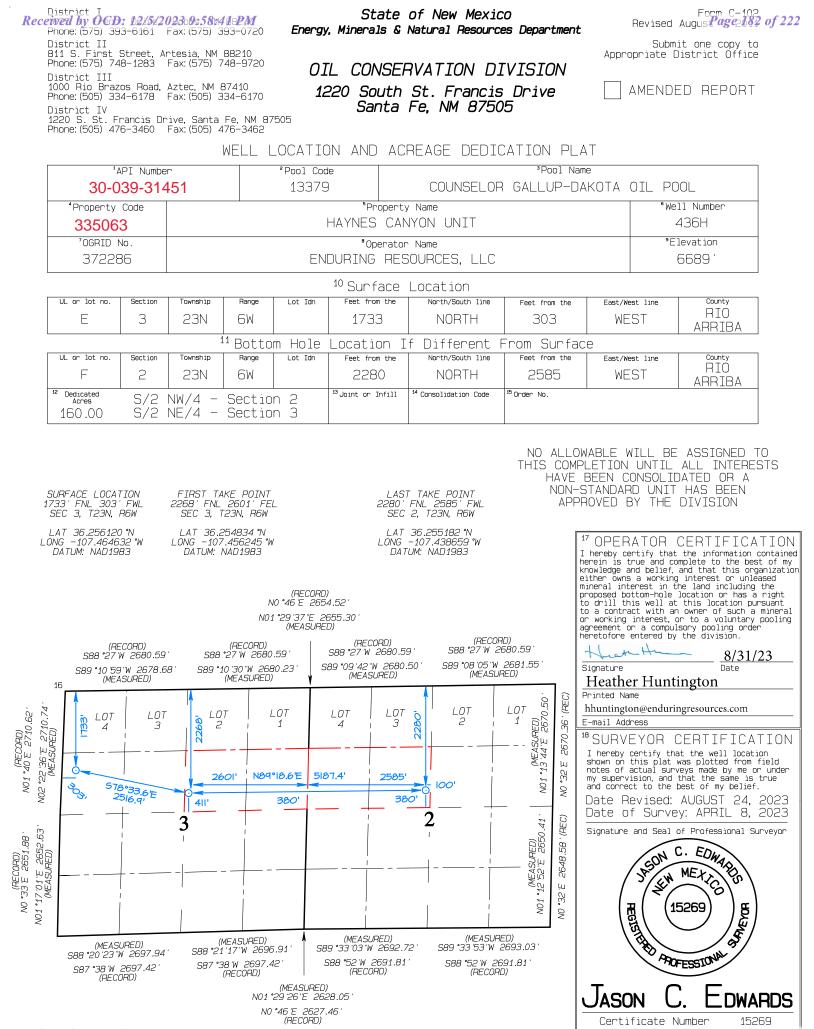
Reclamation bond number:

Reclamation bond amount:

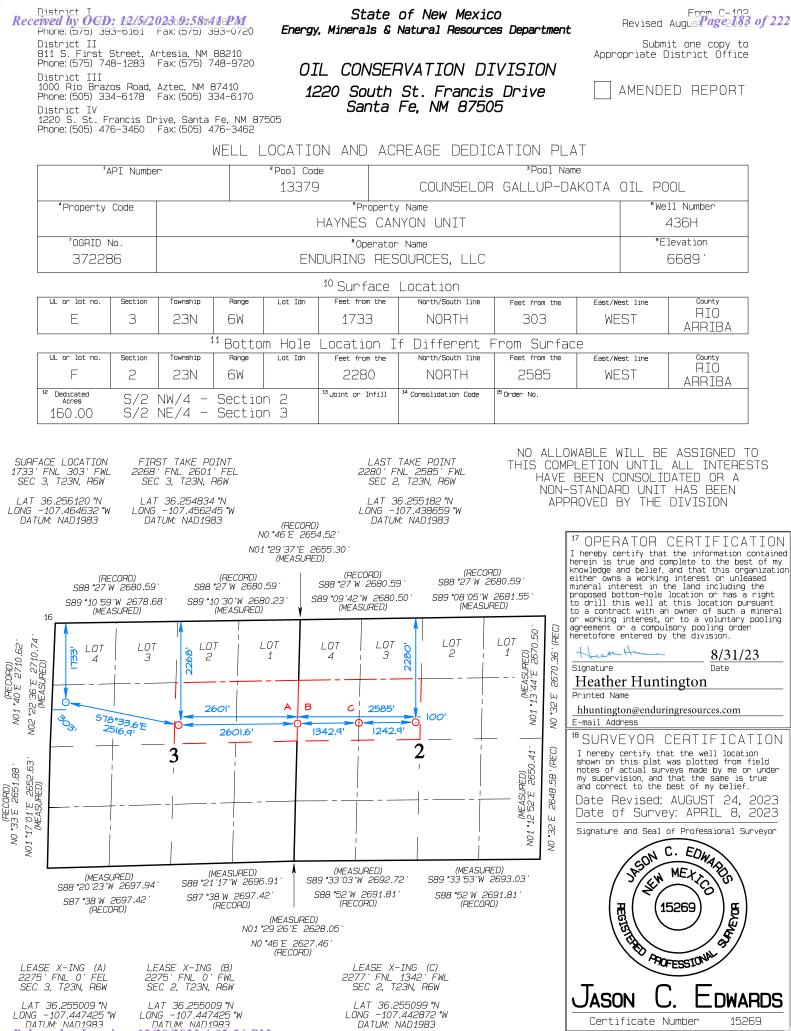
Reclamation bond rider amount:

Additional reclamation bond information

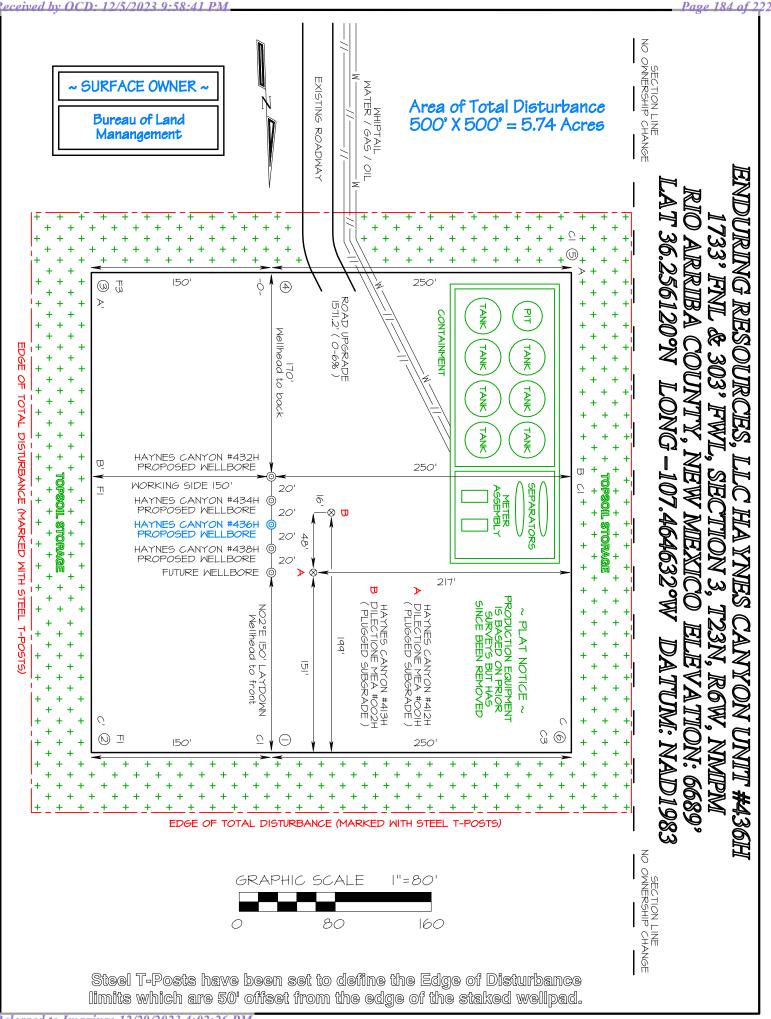
12/05/2023



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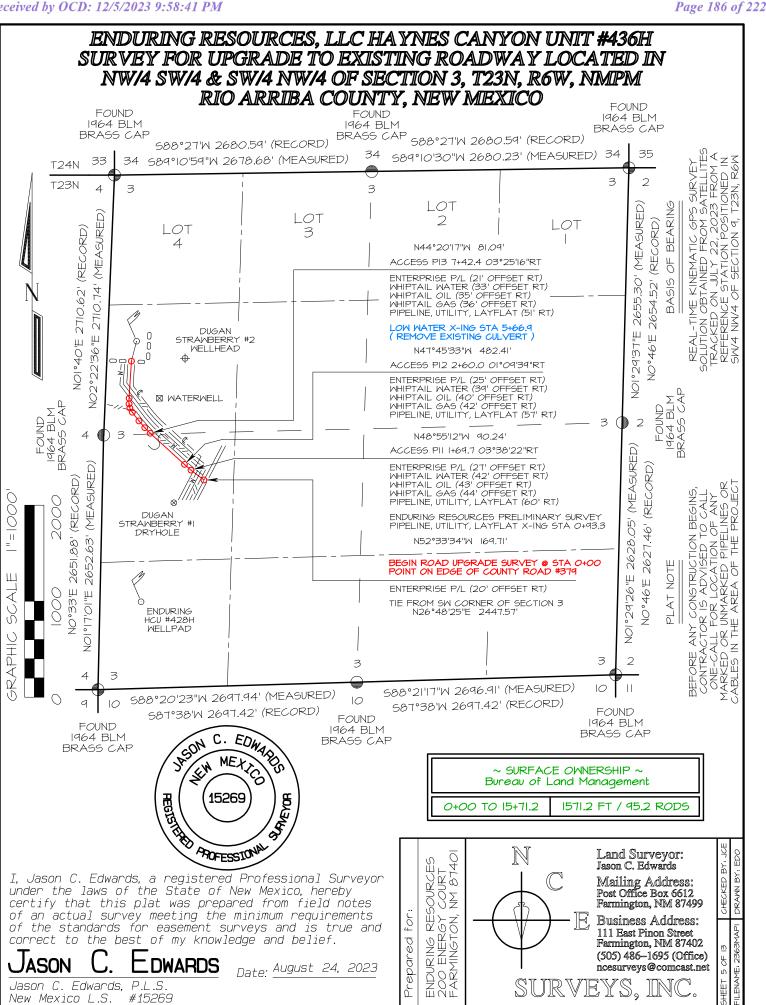


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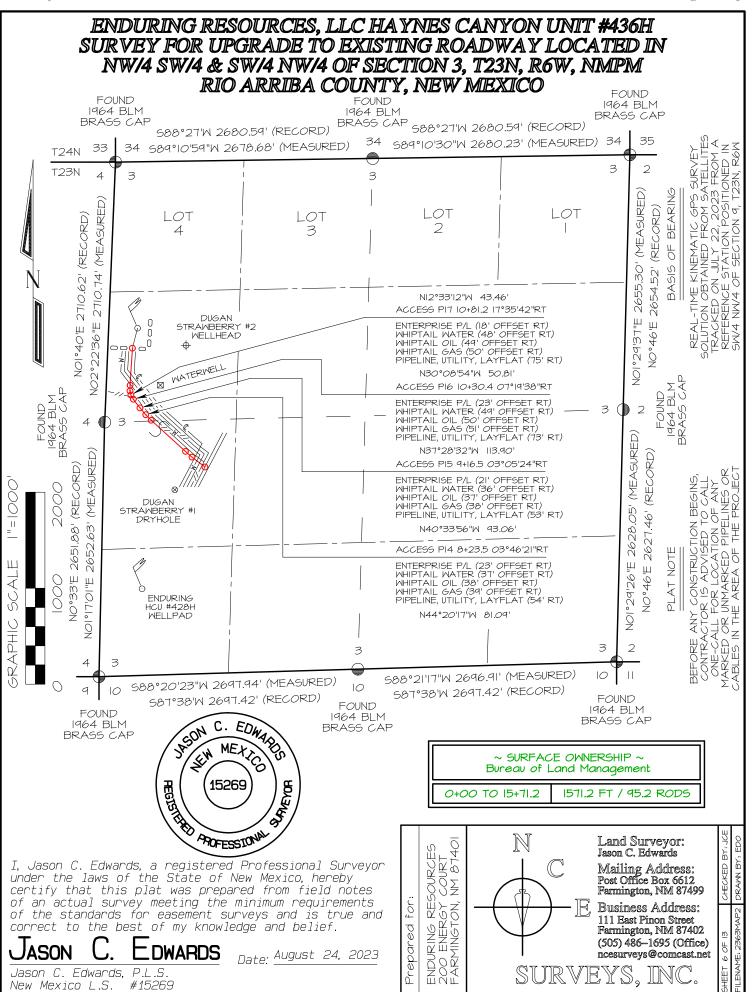
ENDURING RESOURCES, LLC HA YNES CANYON UNIT #436H 1733' ENIL & 303' EWIL, SECTION 3, T23N, R6W, NMIPM NORIZONTAL SCALE 1'-55' CL VERTICAL SCALE 1 CL CL CL CL CL CL CL CL CL CL

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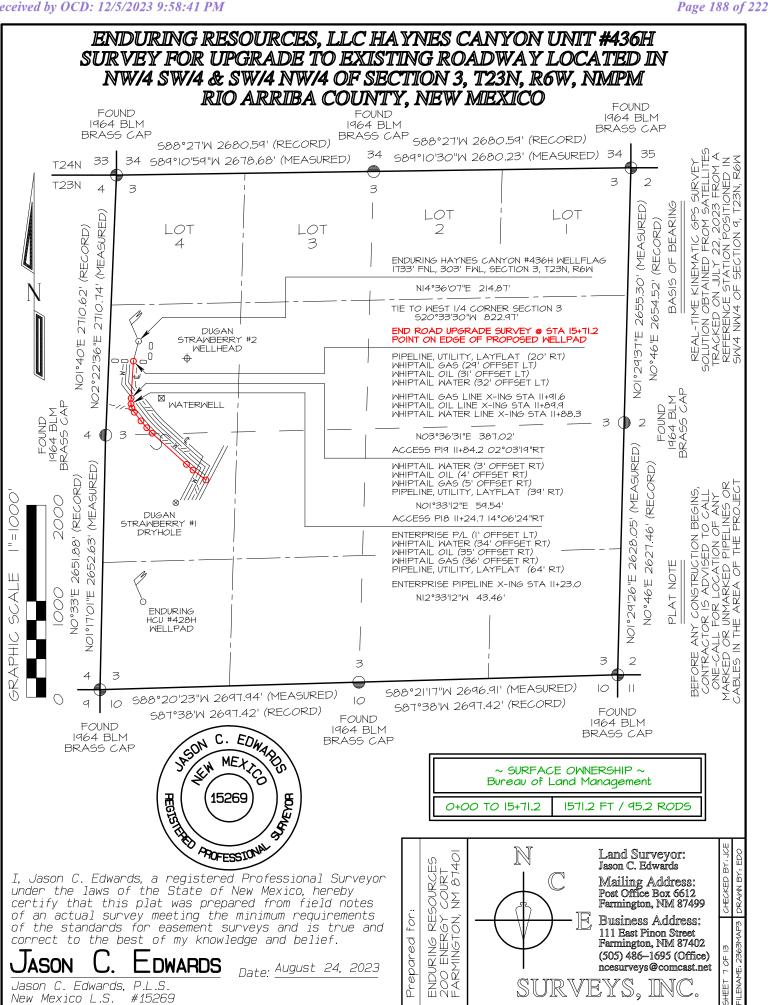


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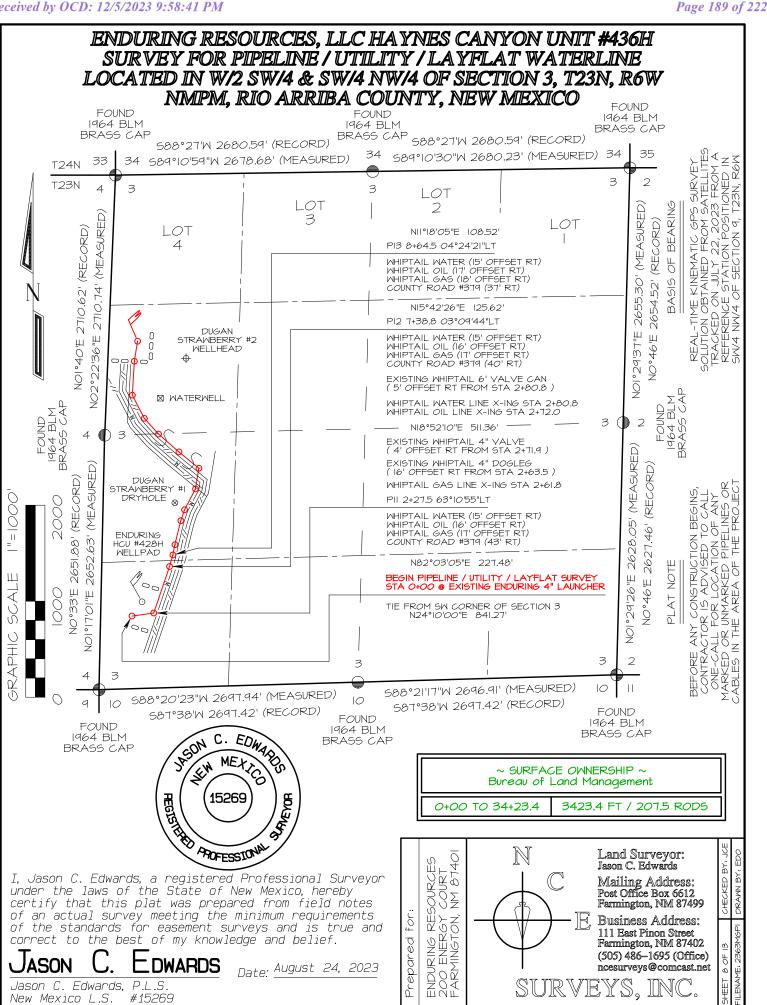


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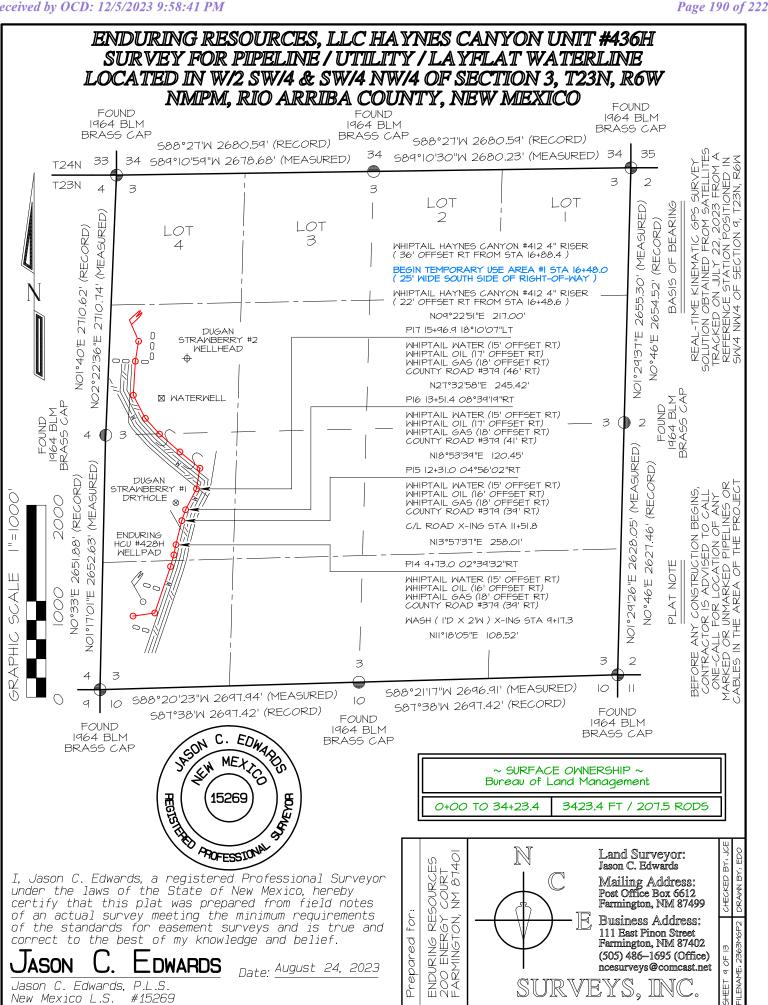
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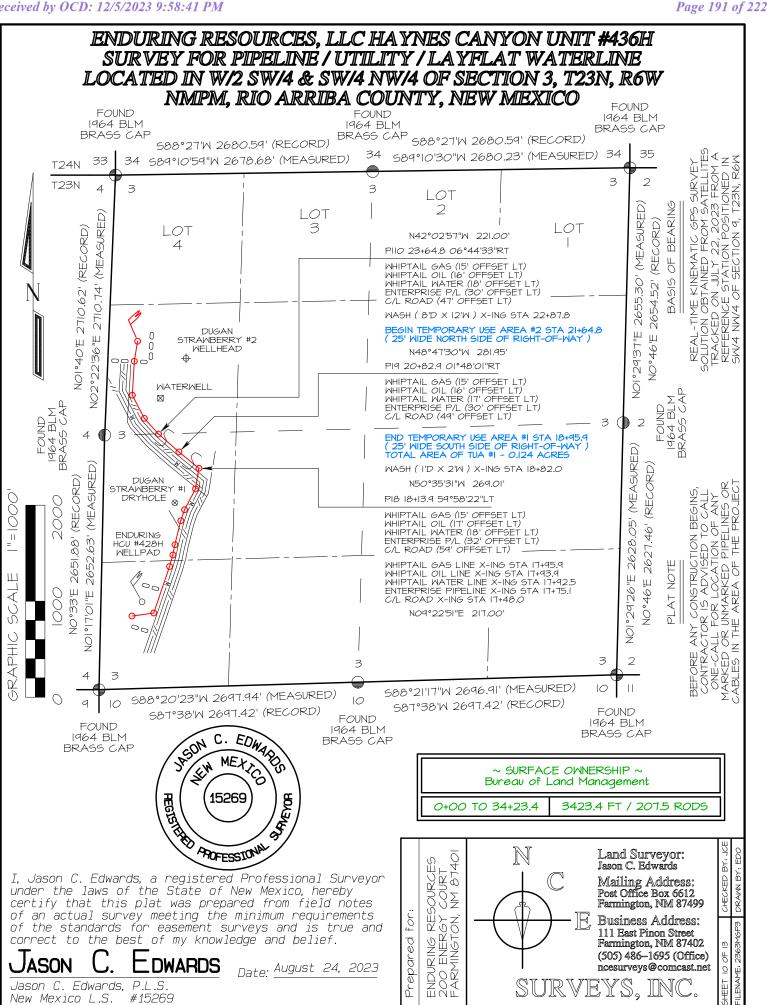
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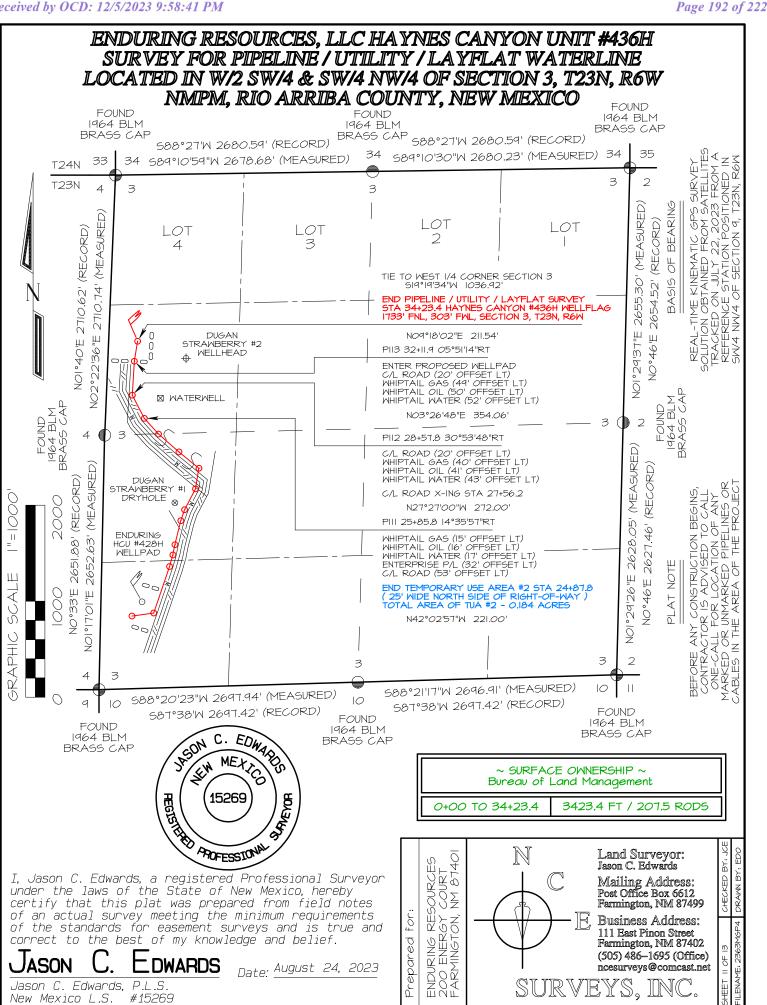
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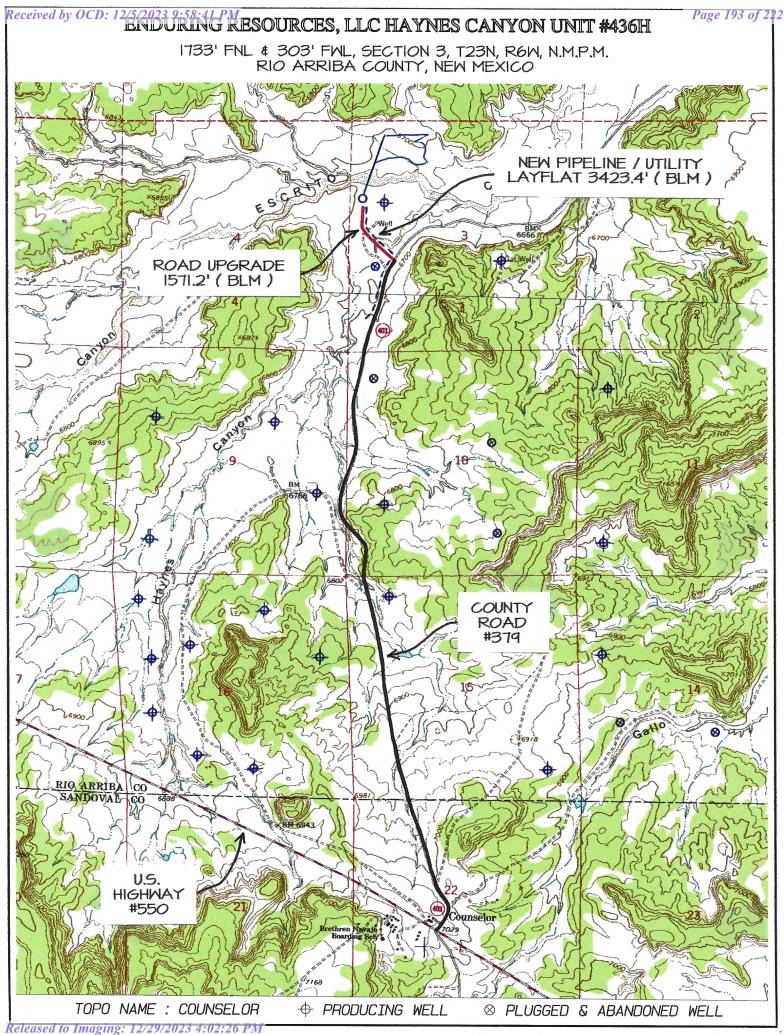
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Directions from the Intersection of US Hwy 550 & US Hwy 64

in Bloomfield, NM to Enduring Resources, LLC Haynes Canyon Unit #436H

1733' FNL & 303' FWL, Section 3, T23N, R6W, N.M.P.M., Rio Arriba County, NM

Latitude 36.256120°N Longitude -107.464632°W Datum: NAD1983

From the intersection of US Hwy 550 & US Hwy 64 in Bloomfield, NM, travel Southerly on US Hwy 550 for 53.8 miles to Mile Marker 97.6

Go Left (Northerly) on County Road #379 (aka State Highway #403) for 1.5 miles to fork in roadway;

Go Right (Northerly) which is straight remaining on County Road #379 (aka State Highway #403) for 1.7 miles to fork in roadway;

Go Left (North-westerly) exiting County Road #379 (aka State Highway #403) for 0.2 miles to fork in road;

Go Right (Northerly) for 0.1 miles to Enduring Haynes Canyon Unit #436H existing location.

State of New Mexico Energy, Minerals and Natural Resources Department

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

Via E-permitting

Submit Electronically

Date: 12/5/2023

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.

<u>Section 1 – Plan Description</u> Effective May 25, 2021

_____ OGRID: _372286_

I. Operator: Enduring Resources IV, LLC_

II. Type: \square Original \square Amendment due to \square 19.15.27.9.D(6)(a) NMAC \square 19.15.27.9.D(6)(b) NMAC \square 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
Haynes Canyon Unit 432H	pending	Sec. 3, T23N, R6W	UL:E SHL:1773' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 434H	pending	Sec. 3, T23N, R6W	UL:E SHL:1753' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 436H	pending	Sec. 3, T23N, R6W	UL:E SHL:1733' FNL & 303' FWL	412	1925	550
Haynes Canyon Unit 438H	pending	Sec. 3, T23N, R6W	UL:E SHL:1713' FNL & 303' FWL	412	1925	550

IV. Central Delivery Point Name: <u>Haynes Canyon 428 CDP</u> [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
Haynes Canyon Unit 432H	pending	6/10/2024	6/30/2024	7/26/2024	8/26/2024	8/28/2024
Haynes Canyon Unit 434H	pending	6/23/2024	7/3/2024	7/26/2024	8/26/2024	8/28/2024
Haynes Canyon Unit 436H	pending	7/6/2024	7/20/2024	7/26/2024	8/27/2024	8/29/2024
Haynes Canyon Unit 438H	pending	7/18/2024	7/24/2024	7/26/2024	8/27/2024	8/29/2024

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

VII. Operational Practices: \boxtimes 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.

 \boxtimes 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. \Box 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 \boxtimes will \square 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 \boxtimes does \square 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: \Box 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:

 \boxtimes 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

 \Box 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. \Box 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. \Box 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: Hat Han				
Printed Name: Heather Huntington				
Title: Regulatory Agent				
E-mail Address: hhuntington@enduringresources.com				
Date: 12/5/2023				
Phone: 505-636-9751				
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)				
(Only applicable when submitted as a standarone form)				
Approved By:				
Approved By:				
Approved By: Title:				
Approved By: Title: Approval Date:				

Attachments:

Separation Equipment: Below is a complete description of how Operator will size separation equipment to optimize gas capture.

Description of how separation equipment will be sized to optimize gas capture:

Well separation equipment is sized to have appropriate residence time and vapor space to remove gas particles on the micron scale per typical engineering calculations and/or operational experience. Furthermore, a sales scrubber downstream of the well separators is planned in order to capture any additional liquids if present. All gas is routed to end users or the sales pipeline under normal operating conditions.

Operational & Best Management Practices: Below is a complete description of the actions the Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC. Additionally, below is a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Drilling Operations:

Enduring Resources will minimize venting by:

- Gas will only be vented to the atmosphere to avoid risk of immediate or substantial adverse impact to employee safety, public health, and the environment.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location

Completion Operations:

Enduring Resources will minimize venting by:

- Separator operation will commence as soon as technically feasible.
- Gas will route immediately to a collection system or applied to other beneficial use, such as a fuel source for onsite equipment.
- During initial flowback and if technically feasible, flaring shall occur rather than venting.
- If natural gas does not meet pipeline standards, gas will be vented or flared. A gas analysis will be performed twice weekly until standards are met (for up to 60 days). This is not anticipated to occur.
- If required, all venting and flaring of natural gas during flowback operations shall be performed in compliance with Subsections B, C and D of <u>19.15.27.8</u> NMAC.

Production Operations:

Enduring Resources will minimize venting by:

- Shutting in the wells if the pipeline is not available. No flaring of high pressure gas will occur.
- Utilizing gas for equipment fuel, heater fuel, and artificial lift when allowable.
- Capturing low pressure gas via a gas capture system when allowable.

In General:

- All venting and flaring from drilling, flowback and operation phases shall be reported in compliance with Subsection G of <u>19.15.27.8</u> NMAC.
- If utilized, flare stacks shall be located at a minimum of 100 feet from the nearest surface hole location and 100 ft from the permanent facility storage tanks.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on <u>Gas Transporter</u> system at that time. Based on current information, it is <u>Operator's</u> belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and nonpipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

.

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation On lease
 - \circ Only a portion of gas is consumed operating the generator, remainder of gas will be flared
 - Compressed Natural Gas On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal On lease
 - o Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines
- Power generation for grid;
- Liquids removal on lease;
- Reinjection for underground storage;
- Reinjection for temporary storage;
- Reinjection for enhanced oil recovery;
- Fuel cell production; and
- Other alternative beneficial uses approved by the division.



ENDURING RESOURCES IV, LLC 6300 S SYRACUSE WAY, SUITE 525 CENTENNIAL, COLORADO 80211

DRILLING PLAN:

Drill, complete, and equip single lateral in the Mancos-H formation

WELL INFORMATION	N:		
Name:	Haynes Canyon Unit 436H		
API Number:	Not yet assigned		
AFE Number:	Not yet assigned		
ER Well Number:	Not yet assigned		
State:	New Mexico		
County:	Rio Arriba		
Surface Elevation:	6,689 ft ASL (GL)	6,714 ft ASL (KB)	
Surface Location:	3-23-6 Sec-Twn-Rng	1,733 ft FNL	303 ft FWL
	36.25612 ° N latitude	107.464632 $^{\circ}$ W longitude	(NAD 83)
BH Location:	2-23-6 Sec-Twn-Rng	2,280 ft FNL	2,585 ft FWL
	36.255182 ° N latitude	107.438659 $^\circ$ W longitude	(NAD 83)
Driving Directions:	FROM THE INTERSECTION OF	US HWY 550 & US HWY 64 IN BLC	DOMFIELD, NM:

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

GEOLOGIC AND RESERVOIR INFORMATION:

Prognosis:	Formation Tops	TVD (ft ASL)	TVD (ft KB)	MD (ft KB)	O/G/W	Pressure
	Ojo Alamo	5,299	1,415	1,482	W	normal
	Kirtland	5,189	1,525	1,564	W	normal
	Fruitland	4,968	1,746	1,807	G, W	sub
	Pictured Cliffs	4,743	1,971	2,056	G, W	sub
	Lewis	4,598	2,116	2,217	G, W	normal
	Chacra	4,297	2,417	2,549	G, W	normal
	Cliff House	3,184	3,530	3,778	G, W	sub
	Menefee	3,184	3,530	3,778	G, W	normal
	Point Lookout	2,473	4,241	4,564	G, W	normal
	Mancos	2,157	4,557	4,913	0,G	sub (~0.38)
	Gallup (MNCS_A)	1,821	4,893	5,284	0,G	sub (~0.38)
	MNCS_B	1,726	4,988	5,389	0,G	sub (~0.38)
	MNCS_C	1,571	5,143	5,561	0,G	sub (~0.38)
	MNCS_Cms	1,501	5,213	5,638	0,G	sub (~0.38)
	MNCS_D	1,451	5,263	5,697	0,G	sub (~0.38)
	MNCS_E	1,380	5,334	5,785	0,G	sub (~0.38)
	MNCS_F	1,325	5,389	5,865	0,G	sub (~0.38)
	MNCS_G	1,239	5,475	6,020	0,G	sub (~0.38)
	MNCS_H	1,209	5,505	6,085	0,G	sub (~0.38)
	MNCS_I	0	0	0	0,G	sub (~0.38)
	FTP TARGET	1,239	5,475	6,020	0,G	sub (~0.38)
	PROJECTED LTP	1,132	5,582	11,515	0,G	sub (~0.38)

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:

Maximum anticipated BH pressure, assuming maximum pressure gradient:	2,410	psi
Maximum anticipated surface pressure, assuming partially evacuated hole:	1,190	psi
 Movimum opticipated DUT is 125° F or loss		

Temperature: Maximum anticipated BHT is 125° F or less

H₂S INFORMATION:

H₂S 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: Gamma Ray from drillout of 13-3/8" casing to TD

0.22

psi/ft

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 1,500 hp
Mast:	Hyduke Triple (136 ft, 600,000 lbs, 10 lines)
Top Drive:	NOV IDS-350PE (350 ton)
Prime Movers:	4 - GE Jenbacher Natural Gas Generator
Pumps:	2 - RS F-1600 (7,500 psi)
BOPE 1:	Cameron single & double gate rams (13-5/8", 3,000 psi)
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.

STATE AND FEDERA	LNOTIFICATIONS	BLM	State	
Spud	BLM and state are to be notified minimum of 24 hours prior to spud.	(505) 564-7750	(505) 334-6178	
ВОР	BLM is to be notified minimum of 24 hours prior to BOPE testing.	(505) 564-7750	see note	
Casing / cementing	BLM and state are to be notified minimum of 24 hours prior to running casing and			
	cementing.	(505) 564-7750	(505) 334-6178	
Plugging	BLM and state are to be notified minimum of 24 hours prior to plugging ops.	(505) 564-7750	see note	
	All notifications are to be recorded in the WellView report with time, date, name or number that notifications were made to.			
Note: Monica Keuhling with the OCD requests state notifications 24 hrs in advance for spud, BOP tests, casing & cementing and any plugging be given to her in both phone message and email: (505) 320-0243, monica.keuhling@emnrd.nm.gov				

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.

- 2) 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.
- 3) 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.
- 4) 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.
- 5) 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 w	ill be utilized. Th	ne system will (consist of above	e-ground nining	and above-gro	ound storage
					below-grade st			
		-			rations cease. T		- · ·	
	fluids and gen	erated cuttings	and of prevent	ing uncontrolle	ed releases of th	ne same. The sy	stem will be o	perated in an
	efficient mann	er to allow the	recycling and re	euse of as muc	h fluid as possib	ole and to mini	mimize the amo	ount of fluids
	and solids that	require dispos	al.					
Fluid Disposal :	Fluids that can	not be reused,	recycled, or ret	turned to the s	upplier will be h	nauled to and d	isposed of at a	n approved
			stem, Inc. or En					
Solids Disposal :								
	-		e hauled to and	disposed of at	an approved di	sposal site (Ind	ustrial Ecosyste	em, Inc. or
	Envirotech, Ind							
Fluid Program:					ufficient barite v	vill be on locati	on to weight u	p mud system
	to balance ma	ximum anticipa	ited pressure gr	adient.				
DETAILED DRILLING	PLAN:							
							_	
<u>SURFACE:</u>	-	-		-	ole), run casing			0.00
		ft (MD)	to		ft (MD)		ection Length:	350 ft
		ft (TVD)	to		ft (TVD)		sing Required:	350 ft
	Note: Surjace	nole may be al	nnea, casea, an	a cementea w	ith a smaller rig	j in aavance oj	the arming rig	•
			FL		YP			
Fluid:	Туре	MW (ppg)	(mL/30 min)	PV (cp)	(lb/100 sqft)	рН	Comr	nents
	Fresh Water	8.4	N/C	2 - 8	2 - 12	9.0	Spud	mud
Hole Size:	17-1/2"							
	Mill Tooth or F							
MWD / Survey:		ation survey						
Logging:	None							
								_
				-			Tens. Body	Tens. Conn
Casing Specs:		Wt (lb/ft)	Grade	Conn.	Collapse (psi)	Burst (psi)	(lbs)	(lbs)
Specs	13.375	54.5	J-55	BTC	1,130	2,730	853,000	909,000
Loading Min. S.F.					153 7.39	793 3.44	116,634 7.31	116,634 7.79
IVIIII. S.F.	Accumptions:	Collanse: fully	avacuated casi	na with 9 1 pp	equivalent ext	-		7.79
	Assumptions.				e with 9.5 ppg f		-	n intermediate
			pg equivalent e				ng white arming	fincennearate
					100,000 lbs ove	pr-null		
MU Torque (ft lbs):	Minumum:	N/A	Optimum:	N/A	Maximum:	N/A		
		,	Connection runi	,		,		
Casing Summary:					-			
	-	-	-		ottom 3 jts, 1 ce	ntralizer per 2	its to surface	
			Yield	Water	Hole Cap.	· _ ·	Planned TOC	Total Cmt
Cement:	Туре	Weight (ppg)		(gal/sk)	(cuft/ft)	% Excess	(ft MD)	(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 Er	nergy Services:	Calculated cen	nent volumes as	ssume gauge h	ole and the exce		ole	Cu Ft Slurry
								505.3
			D-CD2 .3% BWOC					

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.

INTERIVIEDIATE:	Drill as per aire	ectional plan t	o casing setting	aeptn, run ca	sing, cement ca	ising to surjac	е.	
	350	ft (MD)	to	3,944	ft (MD)	Hole	Section Length:	3,594 ft
	350	ft (TVD)	to	3,680	ft (TVD)	Cá	asing Required:	3,944 ft
			,					
			FL		YP			
Fluid:	Туре	MW (ppg)	(mL/30 min)	PV (cp)	(lb/100 sqft)	рН	Commen	ts
	LSND (5% KCl)	8.8 - 9.5	20	8 - 14	8 - 14	9.0 - 9.5	No OBN	1
Hole Size:	12-1/4"							
Bit / Motor:	12-1/4" PDC bi	t w/mud moto	or					
Bit / Motor:	MOTOR: NOV	087840 - 7/8,	4.0, stage, 0.16	rev/gal, 1.83 [DEG, 900 GPM, 9	950 DIFF PSIG		
	BIT: 6-BLADE P	DC w/16 mm o	or 19 mm cutter	s, TFA = 0.67 s	q-in (range 0.65	5 - 0.90 max), j	et with 6 - 12s	
MWD / Survey:	MWD Survey w	vith inclination	and azimuth su	rvey (every 10	0' at a minimun	n), GR optiona	il	
Logging:	None							
Pressure Test:	NU BOPE and t	est (as noted a	above); pressure	e test 13-3/8" (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)
Spece		36.0	J-55	LTC	2,020	3,520	564,000	453,000
Loading		5010	7.00	2.0	1,607	1,400	215,529	215,529
Min. S.F.					1.26	2.51	2.62	2.10
	<i>Minumum:</i> Float shoe, 1 j 1 per joint in r 1 centralizers	Burst: maximu hole and 8.4 p Tension: buoyo 3,400 t casing, float c non-vertical hole jt stop-banded	e; 1 per 3-joints	surface pressur xternal pressur 1 ppg fluid with 4,530 surface (FLOAT 5 in vertical hol hoe on bottom	e with 9.5 ppg j re gradient 100,000 lbs ovu Maximum: EQUIPMENT F e 1 j t & 1 centra	fluid inside casi er-pull 5,660 ROM WEATHEF lizer floating or	ng while drilling RFORD) bottom joint,	1 centralizer
	5/8" x 11.75"	SOLID BODY P	OLYMER)					
			Yield	Water		Planned TOC	Total Cmt	Total Cmt (c
Cement	Туре	Weight (ppg)	(cuft/sk)	(gal/sk)	% Excess	(ft MD)	(sx)	ft)
age 1 Space		8.5	, , ,	,		0	10 bbls	,
- Be - opuce.	90:10 Type						10 0010	
Lead		12.5	2.140	12.05	70%	0	829	1,774
Tai		12.5	1.380	6.64	20%		150	207
		-	1.380	0.04	20%	3,444	120	207
Displacement		est bbls	a = /c"		L .			1
Annular Capacity		cuft/ft	9-5/8" casing >	-	-			
	0.3132	cuft/ft	9-5/8" casing >	< 12-1/4" hole (annulus	9-5/8" 36# ID	8.921	
	0.4341	cuft/ft	9-5/8" casing v	vol	est shoe jt ft	44		
	Calculated cer	nent volumes a	ssume gauge h	ole and the exc	ess (open hole o	only) noted in to	able	
Snace	D-Mud Breaker	SAPP						
Lead	ASTM Type III 90/10 Poz	D-CSE 1 5.0% BWOC Strength Enhancer	-	D-SA 1 1.4% BWOC Na Metasilicate	D-CD 2 .4% BWOC Dispersant	Cello Flace LCM .25 lb/sx	D-FP1 0.5% BWOC Defoamer	D-R1 .5% Retarde
			D-MPA-1 .4% BWOC Fluid Loss &					
	ASTM Type III		BWOC Fluid Loss & Gas Migration			Cello Flace LCM .25		
Tai	Blend Drake Interme Cement must	-	BWOC Fluid Loss & Gas Migration Control Ing Program	-	Dispersant e drilling out.	lb/sx		D-R1 .2% Retarde
Tai <u>PRODUCTION</u>	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll	achieve 500 ps D & BLM if cem g out. owing direction	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s ment is not circu	lated to surfactions	Dispersant e drilling out. ce. Cement mus rasing to surface	ıb/sx st achieve 500 e.		e strength
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944	achieve 500 ps D & BLM if cem ; out. <i>owing direction</i> ft (MD)	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s ment is not circu mal plan, run ca to	lated to surfact sing, cement of 11,515	Dispersant e drilling out. ce. Cement mus rasing to surface ft (MD)	Ib/sx st achieve 500 e. Hole S	ection Length:	e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944	achieve 500 ps D & BLM if cem g out. owing direction	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s ment is not circu	lated to surfact sing, cement of 11,515	Dispersant e drilling out. ce. Cement mus rasing to surface	Ib/sx st achieve 500 e. Hole S		e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD)	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s hent is not circu nal plan, run ca to to	lated to surfact sing, cement of 11,515 5,582	Dispersant e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD)	Ib/sx st achieve 500 e. Hole S Ca	ection Length: sing Required:	e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD)	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s thent is not circu mal plan, run ca to to to	lated to surfact sing, cement of 11,515 5,582 5,638	Dispersant e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD)	Ib/sx st achieve 500 e. Hole S Ca 5,213	ection Length: sing Required: ft (TVD)	e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) E: timated Landir	BWOC Fluid Loss & Gas Migration Control in compressive s enent is not circu nal plan, run ca to to stimated KOP: ing Point (FTP):	lated to surfact sing, cement of 11,515 5,582 5,638 6,020	Dispersant e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD) ft (MD) ft (MD)	Ib/sx st achieve 500 e. Hole S Ca 5,213	ection Length: sing Required:	e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) E: timated Landir	BWOC Fluid Loss & Gas Migration Control ag Program ii compressive s thent is not circu mal plan, run ca to to to	lated to surfact sing, cement of 11,515 5,582 5,638 6,020	Dispersant e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD)	Ib/sx st achieve 500 e. Hole S Ca 5,213	ection Length: sing Required: ft (TVD)	e strength 7,571
	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) E: timated Landir	BWOC Fluid Loss & Gas Migration Control in compressive s enent is not circu nal plan, run ca to to stimated KOP: ing Point (FTP):	lated to surfact sing, cement of 11,515 5,582 5,638 6,020	Dispersant e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD) ft (MD) ft (MD)	Ib/sx st achieve 500 e. Hole S Ca 5,213	ection Length: sing Required: ft (TVD)	e strength 7,571 11,515 Comment
<u>PRODUCTION</u>	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) Estimated Landir Estimated L MW (ppg)	BWOC Fluid Loss & Gas Migration Control ing Program it compressive s ment is not circu mal plan, run ca to to to stimated KOP: ateral Length: WPS ppm	lated to surface sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP	e drilling out. ce. Cement mus asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) ft (MD) ft (MD)	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES	ection Length: sing Required: ft (TVD) ft (TVD) OWR	e strength 7,571 11,515 Comment WBM as
<u>PRODUCTION</u>	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Type OBM	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) Estimated Landir Estimated L	BWOC Fluid Loss & Gas Migration Control ing Program it compressive s nent is not circu nal plan, run ca to to to stimated KOP: ing Point (FTP): ateral Length:	lated to surface sing, cement of 11,515 5,582 5,638 6,020 5,495	e drilling out. ce. Cement mus casing to surface ft (MD) ft (TVD) ft (MD) ft (MD) ft (MD)	Ib/sx st achieve 500 e. Hole S Ca 5,213 5,475	ection Length: sing Required: ft (TVD) ft (TVD)	e strength 7,571 11,515 Comment WBM as
<u>PRODUCTION</u> Fluid Hole Size	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2"	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) Estimated Landir Estimated L MW (ppg) 8.0 - 9.0	BWOC Fluid Loss & Gas Migration Control ing Program it compressive states to an	lated to surface sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP	e drilling out. ce. Cement mus asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) ft (MD) ft (MD)	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES	ection Length: sing Required: ft (TVD) ft (TVD) OWR	e strength 7,571 11,515 Comment WBM as
<u>PRODUCTION</u> Fluid Hole Size Bit / Motor	Blend Drake Interme Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction break	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) <i>Estimated Landir</i> <i>Estimated Landir</i>	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: WPS ppm 120,000 CaCl	lated to surface sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced	Dispersant e drilling out. ce. Cement mus asing to surface ft (MD) ft	Ib/sx st achieve 500 e. Hole S Ca 5,213 5,475 ES +300 VI, 1,580 DIFF F the bit.	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20	e strength 7,571 11,515 Comment WBM as contingenc
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey	Blend Drake Intermet Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es 0BM 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GF before KOP ar	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landir Estimated Landir Estimated Landir 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing	BWOC Fluid Loss & Gas Migration Control ing Program di compressive states is not circue nal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surv g Point)	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint	Dispersant e drilling out. ce. Cement must casing to surface ft (MD) ft (TVD) ft (MD) ft (MD)	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit. D - 1.5 sq-in nding Point and	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20	e strength 7,571 11,515 Comment WBM as contingenc ; on demand
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging	Blend Drake Intermet Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GF before KOP ar GR MWD for e	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated Landin Estimated Landin 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing entire section, r	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: UVPS ppm 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surv g Point) no mud-log or circu	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir	Dispersant e drilling out. ce. Cement must asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) f	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit. D - 1.5 sq-in nding Point and gs	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 'SIG (or similar) d survey every	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimus
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging	Blend Drake Intermet Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es 0BM 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GF before KOP ar	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated Landin Estimated Landin 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing entire section, r	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: UVPS ppm 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surv g Point) no mud-log or circu	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir	Dispersant e drilling out. ce. Cement must asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) f	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit. D - 1.5 sq-in nding Point and	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimu
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging	Blend Drake Intermet Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GF before KOP ar GR MWD for e	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated Landin Estimated Landin 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing entire section, r	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: UVPS ppm 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surv g Point) no mud-log or circu	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir	Dispersant e drilling out. ce. Cement must asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) f	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit. D - 1.5 sq-in nding Point and gs	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 'SIG (or similar) d survey every psi for 30 minu	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimu
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging Pressure Test	Blend Drake Intermed Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" 8-1/2" PDC bil MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GP before KOP ar GR MWD for e NU BOPE and	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated Landin Estimated Landin 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing entire section, r test (as noted a	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surr g Point) no mud-log or cr above); pressure	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir e test 9-5/8" ca	Dispersant e drilling out. ce. Cement mus asing to surface ft (MD) ft	Ib/sx st achieve 500 p e. Hole S Ca 5,213 5,475 ES +300 W, 1,580 DIFF F the bit. p- 1.5 sq-in nding Point and gs 1,500	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 SIG (or similar) d survey every psi for 30 minu Tens. Body	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimum utes. Tens. Conr
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging Pressure Test Casing Specs	Blend Drake Intermed Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es OBM 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GF before KOP ar GR MWD for e NU BOPE and Size (in)	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated L MW (ppg) 8.0 - 9.0 w/mud motor 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar d after Landing entire section, r test (as noted a Wt (lb/ft)	BWOC Fluid Loss & Gas Migration Control og Program di compressive s ment is not circu nal plan, run ca to to to stimated KOP: ng Point (FTP): ateral Length: WPS ppm 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters d azimuth (sur- g Point) no mud-log or ci above); pressure Grade	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir e test 9-5/8" ca Conn.	Dispersant e drilling out. ce. Cement mus asing to surface ft (MD) ft	Ib/sx st achieve 500 e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit.) - 1.5 sq-in nding Point and gs 1,500 Burst (psi)	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 SIG (or similar) d survey every psi for 30 minu Tens. Body (lbs)	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimum utes. Tens. Conr (lbs)
PRODUCTION: Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging Pressure Test Casing Specs Specs	Blend Drake Intermed Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GP before KOP ar GR MWD for e NU BOPE and Size (in) 5.500	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated Landin Estimated Landin 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar ad after Landing entire section, r test (as noted a	BWOC Fluid Loss & Gas Migration Control ing Program di compressive s ment is not circu mal plan, run ca to to to stimated KOP: g Point (FTP): ateral Length: 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters and azimuth (surr g Point) no mud-log or cr above); pressure	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir e test 9-5/8" ca	e drilling out. e. Cement mus asing to surface ft (MD) ft (TVD) ft (MD) ft (MD) ft (MD) ft (MD) ft (MD) ft (MD) ft (MD) extension of the surface state of the surfa	Ib/sx st achieve 500 e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit.)- 1.5 sq-in nding Point and gs 1,500 Burst (psi) 10,640	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 SIG (or similar) d survey every psi for 30 minu Tens. Body (lbs) 546,000	e strength 7,571 11,515 Comment WBM as contingenc ; on demand 100' minimum utes. Tens. Conr (lbs) 445,000
PRODUCTION Fluid Hole Size Bit / Motor Bit / Motor MWD / Survey Logging Pressure Test Casing Specs	Blend Drake Intermed Cement must Notify NMOC before drilling Drill to TD foll 3,944 3,680 Es Es OBM 8-1/2" 8-1/2" 8-1/2" PDC bit MOTOR: NOV friction breaki BIT: 5-BLADE I MWD with GP before KOP ar GR MWD for e NU BOPE and Size (in) 5.500	achieve 500 ps D & BLM if cem ; out. owing direction ft (MD) ft (TVD) timated Landin Estimated L MW (ppg) 8.0 - 9.0 w/mud motor 077857 - 6.5" ng device(s) as PDC w/16 mm - t, inclination, ar d after Landing entire section, r test (as noted a Wt (lb/ft)	BWOC Fluid Loss & Gas Migration Control og Program di compressive s ment is not circu nal plan, run ca to to to stimated KOP: ng Point (FTP): ateral Length: WPS ppm 120,000 CaCl 7/8, 5.0 stage, C required, botto 19 mm cutters d azimuth (sur- g Point) no mud-log or ci above); pressure Grade	sing, cement of 11,515 5,582 5,638 6,020 5,495 HTHP NC 0.23 rev/gal, 1. m tool spaced , matrix body, vey every joint uttings samplir e test 9-5/8" ca Conn.	Dispersant e drilling out. ce. Cement mus asing to surface ft (MD) ft	Ib/sx st achieve 500 e. Hole S Ca 5,213 5,475 ES +300 M, 1,580 DIFF F the bit.) - 1.5 sq-in nding Point and gs 1,500 Burst (psi)	ection Length: sing Required: ft (TVD) ft (TVD) OWR 80:20 SIG (or similar) d survey every psi for 30 minu Tens. Body (lbs)	e strength 7,571 11,515 Comment WBM as contingence ; on demand 100' minimur utes. Tens. Conn (lbs)

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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

Casing Summary: Float shoe, float collar, 1 jt casing, float collar, 20' marker joint, toe-intitiation sleeve, casing to KOP with 20' marker joints spaced evenly in lateral every 2,000', floatation sub at KOP, casing to surface. The toe-initiation sleeve (last-take-point) cannot be placed closer than 330' to the unit boundary when measured perpendicular to the well path.

Centralizers: Centralizer count and placement may be adjusted based on well conditions and as-drilled surveys.
Lateral: 1 centralizer per 3 joints (purchase centralizers from Scepter Supply)

Top of curve to 9-5/8" shoe: 1 centralizer per 5 joints

	9-5/8" shoe to	o surface: 1 cen	tralizer per 5 jo	oints				
			Yield	Water		Planned TOC	Total Cmt	Total Cmt (cu
Cement:	Туре	Weight (ppg)	(cuft/sk)	(gal/sk)	% Excess	(ft MD)	(sx)	ft)
Spacer	IntegraGuard Star	11		31.6		0	60 bbls	
Lead	ASTM type I/II	12.4	2.370	13.40	50%	0	588	1,394
Tail	G:POZ blend	13.3	1.570	7.70	10%	4,913	1,068	1,676
Displacement	253	est bbls						
Annular Capacity	0.2691	cuft/ft	5-1/2" casing >	< 9-5/8" casing	annulus			
	0.2291	cuft/ft	5-1/2" casing >	x 8-1/2" hole an	nulus			
	0.1245	cuft/ft	5-1/2" casing v	vol	est shoe jt ft	100		
	Calculated cen	nent volumes as	ssume gauge h	ole and the exce	ess noted in tai	ble		
	American Cem	enting Liner & I	Production Bler	nd				

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 Ib/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	Туре 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 Ib/sx

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

American Cementing Liner & Production Blend

LCM will be added to spacer. LCM may be added lead slurry and tail slurry depending on drilling observations and observations during cementing on initial wells on pad.

Notify NMOCD & BLM if cement is not circulated to surface.

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:
 5,395

 Est Frac Inform:
 22 Frac Stages
 87,000 bbls slick water
 7,020,000 lbs proppant

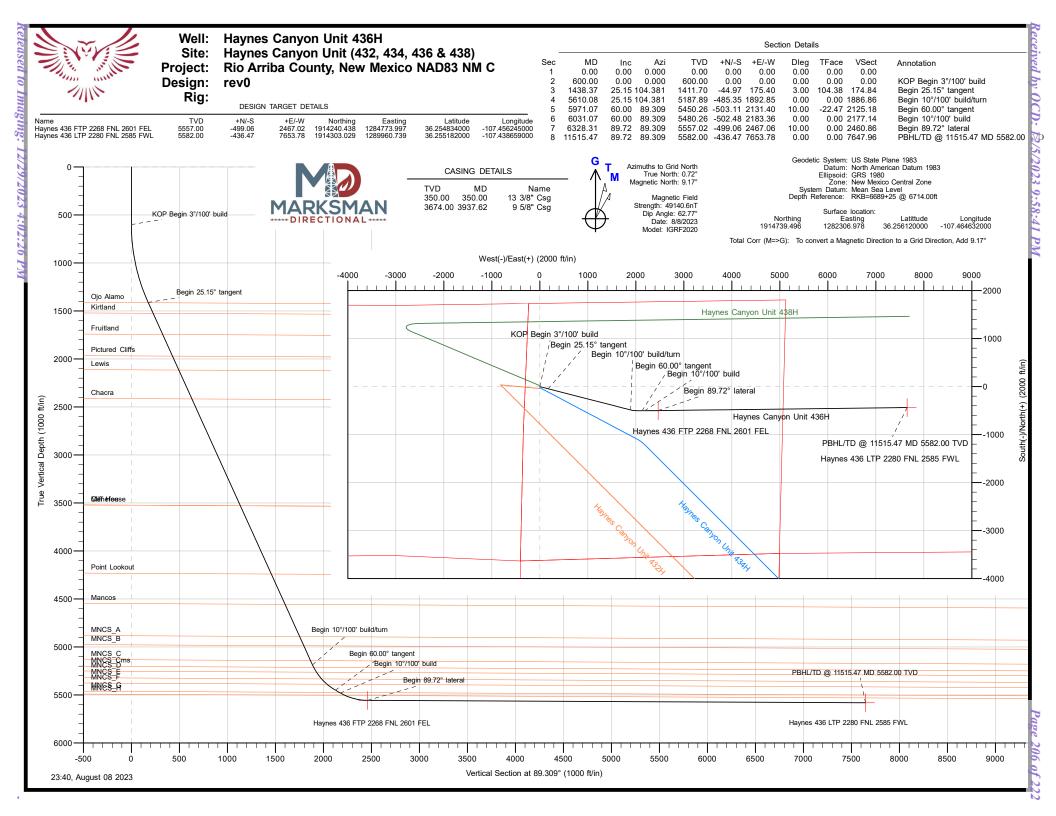
 Flowback:
 Flow back through production tubing as pressures allow

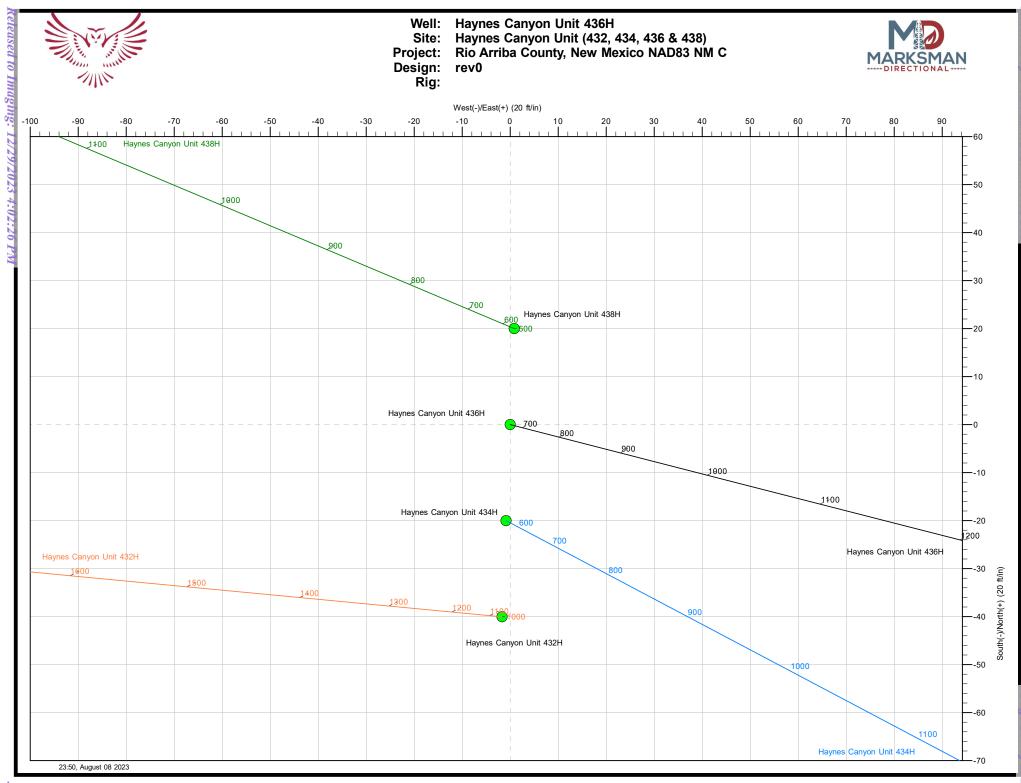
 Production:
 Produce through production tubing via gas-lift into permanent production and storage facilities

ESTIMATED START DATES:

Drilling:	11/1/2023
Completion:	12/31/2023
Production:	2/14/2024

Prepared by:	Alec Bridge	12/20/2021
Updated:	Greg Olson	2/20/2023
	Greg Olson	3/27/2023
	G Olson	8/21/2023





age 207 of 2



Database: Company: Project: Site: Well: Wellbore: Design:	Endurin Rio Arr Haynes	s Canyon Unit s Canyon Unit	ew Mexico NAD (432, 434, 436		TVD Refer MD Refere North Refe	nce:		Well Haynes Ca RKB=6689+25 (RKB=6689+25 (Grid Minimum Curva	@ 6714.00ft @ 6714.00ft	1
Project	Rio Arrik	oa County, Ne	w Mexico NAD8	3 NM C						
Map System: Geo Datum: Map Zone:	North Am	Plane 1983 erican Datum ico Central Zo			System Dat	um:	M	ean Sea Level		
Site	Haynes	Canyon Unit (432, 434, 436 8	438)						
Site Position: From: Position Uncertaint	Lat/L /:	.ong 0.00 f	Northir Easting t Slot Ra	- :	1,282,30	99.466 usft 05.297 usft 3-3/16 "	Latitude: Longitude:			36.256010000 -107.464636000
Well	Haynes	Canyon Unit 4	36H, Surf loc: 1	733 FNL 303	FWL Section 0	3-T23N-R06W	1			
Well Position Position Uncertaint Grid Convergence:	+N/-S +E/-W	0.0	00 ft Eas	thing: ting: Ihead Elevati	1	I,914,739.496 I,282,306.978	usft Lor	itude: ngitude: pund Level:		36.256120000 -107.464632000 6,689.00 ft
Wellbore	Origina	l Hole								
Magnetics	Мос	del Name	Sample	Date	Declina (°)	tion		Angle °)		trength IT)
		IGRF2020		8/8/2023		8.46		62.77	49,1	40.63156172
Design	rev0									
Audit Notes:										
Version:			Phase		PLAN		On Depth:		0.00	
Vertical Section:		D	epth From (TV (ft)	0)	+N/-S (ft)		/-W ït)		ection (°)	
			0.00		0.00	0.0	00	89	9.309	
Plan Survey Tool Problem Depth From (ft) 1 0.00	rogram Depth (ft) 11,51	To Survey	8/8/2023 (Wellbore) riginal Hole)		Tool Name MWD OWSG MWD -	Standard	Remarks			
Plan Sections										
Measured Depth Incl (ft)	ination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00 600.00 1,438.37 5,610.08 5,971.07 6,031.07	0.00 0.00 25.15 25.15 60.00 60.00	0.000 0.000 104.381 104.381 89.309 89.309	0.00 600.00 1,411.70 5,187.89 5,450.26 5,480.26	0.00 0.00 -44.97 -485.35 -503.11 -502.48	0.00 0.00 175.40 1,892.85 2,131.40 2,183.36	0.00 0.00 3.00 0.00 10.00 0.00	0.00 0.00 3.00 0.00 9.65 0.00	0.00 0.00 0.00 -4.18 0.00	0.00 0.00 104.38 0.00 -22.47 0.00	
6,328.31 11,515.47	89.72 89.72	89.309 89.309	5,557.02 5,582.00	-499.06 -436.47	2,467.06 7,653.78	10.00 0.00	10.00 0.00	0.00	0.00	Haynes 436 LTP 2280

8/8/2023 11:48:07PM

COMPASS 5000.16 Build 96



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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
KOP Begin 3°									
700.00	3.00	104.381	699.95	-0.65	2.54	2.53	3.00	3.00	0.00
800.00	6.00	104.381	799.63	-2.60	10.13	10.10	3.00	3.00	0.00
900.00	9.00	104.381	898.77	-5.84	22.78	22.70	3.00	3.00	0.00
1,000.00	12.00	104.381	997.08	-10.37	40.43	40.30	3.00	3.00	0.00
1,100.00	15.00	104.381	1,094.31	-16.16	63.04	62.84	3.00	3.00	0.00
1,200.00	18.00	104.381	1,190.18	-23.22	90.55	90.26	3.00	3.00	0.00
1,300.00	21.00	104.381	1,284.43	-31.51	122.88	122.49	3.00	3.00	0.00
1,400.00	24.00	104.381	1,376.81	-41.01	159.94	159.44	3.00	3.00	0.00
1,438.37	25.15	104.381	1,411.70	-44.97	175.40	174.84	3.00	3.00	0.00
Begin 25.15°	-	404.004	4 44 4 00	45.04	470.04	470.00	0.00	0.00	0.00
1,441.86	25.15	104.381	1,414.86	-45.34	176.84	176.28	0.00	0.00	0.00
Ojo Alamo 1,500.00	25.15	104.381	1,467.49	-51.48	200.77	200.14	0.00	0.00	0.00
1,563.65	25.15	104.381	1,525.11	-58.20	226.98	226.26	0.00	0.00	0.00
Kirtland									
1,600.00	25.15	104.381	1,558.01	-62.04	241.94	241.17	0.00	0.00	0.00
1,700.00	25.15	104.381	1,648.53	-72.59	283.11	282.21	0.00	0.00	0.00
1,800.00	25.15	104.381	1,739.05	-83.15	324.28	323.25	0.00	0.00	0.00
1,807.23	25.15	104.381	1,745.59	-83.91	327.26	326.22	0.00	0.00	0.00
Fruitland			.,						
1,900.00	25.15	104.381	1,829.57	-93.71	365.45	364.29	0.00	0.00	0.00
2,000.00	25.15	104.381	1,920.09	-104.26	406.62	405.33	0.00	0.00	0.00
2,056.35	25.15	104.381	1,971.09	-110.21	429.82	428.46	0.00	0.00	0.00
Pictured Cliff	S								
2,100.00	25.15	104.381	2,010.60	-114.82	447.79	446.37	0.00	0.00	0.00
2,200.00	25.15	104.381	2,101.12	-125.37	488.95	487.41	0.00	0.00	0.00
2,216.89	25.15	104.381	2,116.42	-127.16	495.91	494.34	0.00	0.00	0.00
Lewis									
2,300.00	25.15	104.381	2,191.64	-135.93	530.12	528.45	0.00	0.00	0.00
2,400.00	25.15	104.381	2,282.16	-146.49	571.29	569.48	0.00	0.00	0.00
2,500.00	25.15	104.381	2,372.68	-157.04	612.46	610.52	0.00	0.00	0.00
2,549.05	25.15	104.381	2,417.08	-162.22	632.66	630.65	0.00	0.00	0.00
Chacra	05.45	101.001	0.400.00	407.00	050.00	054.50	0.00	0.00	0.00
2,600.00	25.15	104.381	2,463.20	-167.60	653.63	651.56	0.00	0.00	0.00
2,700.00	25.15	104.381	2,553.72	-178.15	694.80	692.60	0.00	0.00	0.00
2,800.00	25.15	104.381	2,644.24	-188.71	735.97	733.64	0.00	0.00	0.00
2,900.00	25.15	104.381	2,734.76	-199.27	777.14	774.68	0.00	0.00	0.00
3,000.00	25.15	104.381	2,825.27	-209.82	818.31	815.72	0.00	0.00	0.00
3,100.00	25.15	104.381	2,915.79	-220.38	859.47	856.75	0.00	0.00	0.00
3,200.00	25.15	104.381	3,006.31	-230.94	900.64	897.79	0.00	0.00	0.00
3,300.00	25.15	104.381	3,096.83	-241.49	941.81	938.83	0.00	0.00	0.00
3,400.00	25.15	104.381	3,187.35	-252.05	982.98	979.87	0.00	0.00	0.00
3,500.00	25.15	104.381	3,277.87	-262.60	1,024.15	1,020.91	0.00	0.00	0.00

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Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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)
3,600.00	25.15	104.381	3,368.39	-273.16	1,065.32	1,061.95	0.00	0.00	0.00
3,700.00 3,778.04	25.15 25.15	104.381 104.381	3,458.91 3,529.55	-283.72 -291.95	1,106.49 1,138.62	1,102.99 1,135.01	0.00 0.00	0.00 0.00	0.00 0.00
Cliff House -		1011001	0,020.00	201100	1,100102	1,100101	0.00	0.00	0.00
3,800.00	25.15	104.381	3,549.43	-294.27	1,147.66	1,144.02	0.00	0.00	0.00
3,900.00	25.15	104.381	3,639.95	-304.83	1,188.83	1,185.06	0.00	0.00	0.00
3,937.62	25.15	104.381	3,674.00	-308.80	1,204.31	1,200.50	0.00	0.00	0.00
9 5/8" Csg									
4,000.00	25.15	104.381	3,730.46	-315.39	1,230.00	1,226.10	0.00	0.00	0.00
4,100.00	25.15	104.381	3,820.98	-325.94	1,271.16	1,267.14	0.00	0.00	0.00
4,200.00	25.15	104.381	3,911.50	-336.50	1,312.33	1,308.18	0.00	0.00	0.00
4,300.00	25.15	104.381	4,002.02	-347.05	1,353.50	1,349.22	0.00	0.00	0.00
4,400.00	25.15	104.381	4,092.54	-357.61	1,394.67	1,390.26	0.00	0.00	0.00
4,500.00	25.15	104.381	4,183.06	-368.17	1,435.84	1,431.30	0.00	0.00	0.00
4,564.15	25.15	104.381	4,241.12	-374.94	1,462.25	1,457.62	0.00	0.00	0.00
Point Lookou									
4,600.00	25.15	104.381	4,273.58	-378.72	1,477.01	1,472.33	0.00	0.00	0.00
4,700.00	25.15	104.381	4,364.10	-389.28	1,518.18	1,513.37	0.00	0.00	0.00
4,800.00	25.15	104.381	4,454.62	-399.83	1,559.35	1,554.41	0.00	0.00	0.00
4,900.00	25.15	104.381	4,545.14	-410.39	1,600.52	1,595.45	0.00	0.00	0.00
4,912.91	25.15	104.381	4,556.82	-411.75	1,605.83	1,600.75	0.00	0.00	0.00
Mancos									
5,000.00	25.15	104.381	4,635.65	-420.95	1,641.68	1,636.49	0.00	0.00	0.00
5,100.00	25.15	104.381	4,726.17	-431.50	1,682.85	1,677.53	0.00	0.00	0.00
5,200.00	25.15	104.381	4,816.69	-442.06	1,724.02	1,718.57	0.00	0.00	0.00
5,283.82	25.15	104.381	4,892.57	-450.91	1,758.53	1,752.96	0.00	0.00	0.00
MNCS_A	05.45	101.001	4 007 04	450.00	4 705 40	4 750 00	0.00		0.00
5,300.00	25.15	104.381	4,907.21	-452.62	1,765.19	1,759.60	0.00	0.00	0.00
5,389.00	25.15	104.381	4,987.78	-462.01	1,801.83	1,796.13	0.00	0.00	0.00
MNCS_B 5,400.00	25.15	104.381	4,997.73	-463.17	1,806.36	1,800.64	0.00	0.00	0.00
5,500.00	25.15	104.381	5,088.25	-473.73	1,847.53	1,841.68	0.00	0.00	0.00
5,560.62	25.15	104.381	5,143.12	-480.13	1,872.49	1,866.56	0.00	0.00	0.00
MNCS_C	05.45	404.004	E 470 77	40.4.00	4 000 70	4 000 70	0.00	0.00	0.00
5,600.00 5,610.08	25.15 25.15	104.381 104.381	5,178.77 5,187.89	-484.28 -485.35	1,888.70 1,892.85	1,882.72 1,886.86	0.00 0.00	0.00 0.00	0.00 0.00
Begin 10°/10		104.301	5,107.09	-403.35	1,092.00	1,000.00	0.00	0.00	0.00
5,638.44	27.79	102.057	5,213.28	-488.23	1,905.16	1,899.13	10.00	9.31	-8.20
MNCS_Cms	25		-,		.,	.,		0.01	0.20
5,650.00	28.88	101.223	5,223.45	-489.33	1,910.53	1,904.49	10.00	9.40	-7.21
5,696.69	33.31	98.365	5,263.42	-493.39	1,934.28	1,928.19	10.00	9.49	-6.12
MNCS_D	00.01	00.000	0,200.72	100.00	1,004.20	1,020.10	10.00	0.40	-0.12
5,700.00	33.62	98.188	5,266.19	-493.66	1,936.09	1,929.99	10.00	9.56	-5.34
5,750.00	38.43	95.830	5,306.62	-497.21	1,965.27	1,959.13	10.00	9.61	-4.72
5,785.42	41.86	94.444	5,333.69	-499.24	1,988.01	1,981.84	10.00	9.68	-3.91
MNCS_E									
5,800.00	43.27	93.926	5,344.43	-499.96	1,997.84	1,991.67	10.00	9.71	-3.55
5,850.00	48.14	92.337	5,379.33	-501.90	2,033.57	2,027.37	10.00	9.74	-3.18
5,864.63	49.57	91.917	5,388.96	-502.31	2,044.58	2,038.37	10.00	9.76	-2.87
MNCS_F									
5,900.00	53.03	90.973	5,411.07	-503.00	2,072.17	2,065.95	10.00	9.78	-2.67
5,950.00	57.93	89.775	5,439.40	-503.25	2,113.35	2,107.13	10.00	9.80	-2.40
5,971.07	60.00	89.309	5,450.26	-503.11	2,131.40	2,125.18	10.00	9.82	-2.21



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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)
Begin 60.00°	° tangent								
6,000.00	60.00	89.309	5,464.72	-502.80	2,156.45	2,150.23	0.00	0.00	0.00
6,019.73	60.00	89.309	5,474.59	-502.60	2,173.54	2,167.32	0.00	0.00	0.00
MNCS_G									
6,031.07	60.00	89.309	5,480.26	-502.48	2,183.36	2,177.14	0.00	0.00	0.00
Begin 10°/10	0' build								
6,050.00	61.89	89.309	5,489.45	-502.28	2,199.91	2,193.69	10.00	10.00	0.00
6,084.72	65.37	89.309	5,504.87	-501.91	2,231.01	2,224.79	10.00	10.00	0.00
MNCS_H									
6,100.00	66.89	89.309	5,511.06	-501.74	2,244.98	2,238.76	10.00	10.00	0.00
6,150.00	71.89	89.309	5,528.65	-501.17	2,291.76	2,285.55	10.00	10.00	0.00
6,200.00	76.89	89.309	5,542.10	-500.59	2,339.90	2,333.69	10.00	10.00	0.00
6,250.00	81.89	89.309	5,551.30	-500.00	2,389.02	2,382.82	10.00	10.00	0.00
6,300.00	86.89	89.309	5,556.18	-499.40	2,438.76	2,432.56	10.00	10.00	0.00
6,328.31	89.72	89.309	5,557.02	-499.06	2,467.06	2,460.86	10.00	10.00	0.00
Begin 89.72		03.003	0,007.02		2,707.00	2,700.00	10.00	10.00	0.00
6,400.00	89.72	89.309	5,557.36	-498.19	2,538.74	2,532.55	0.00	0.00	0.00
6,500.00	89.72	89.309	5,557.84	-496.98	2,638.73	2,632.55	0.00	0.00	0.00
6,600.00	89.72	89.309	5,558.32	-495.78	2,738.72	2,732.55	0.00	0.00	0.00
6,700.00	89.72	89.309	5,558.81	-494.57	2,838.72	2,832.55	0.00	0.00	0.00
6,800.00	89.72	89.309	5,559.29	-493.37	2,938.71	2,932.54	0.00	0.00	0.00
6,900.00	89.72	89.309	5,559.77	-492.16	3,038.70	3,032.54	0.00	0.00	0.00
7,000.00	89.72	89.309	5,560.25	-490.95	3,138.69	3,132.54	0.00	0.00	0.00
7,100.00	89.72	89.309	5,560.73	-489.75	3,238.68	3,232.54	0.00	0.00 0.00	0.00
7,200.00	89.72	89.309	5,561.21	-488.54	3,338.67	3,332.54	0.00	0.00	0.00
7,300.00	89.72	89.309	5,561.70	-487.33	3,438.67	3,432.54	0.00	0.00	0.00
7,400.00	89.72	89.309	5,562.18	-486.13	3,538.66	3,532.54	0.00	0.00	0.00
7,500.00	89.72	89.309	5,562.66	-484.92	3,638.65	3,632.54	0.00	0.00	0.00
7,600.00	89.72	89.309	5,563.14	-483.71	3,738.64	3,732.53	0.00	0.00	0.00
7,700.00	89.72	89.309	5,563.62	-482.51	3,838.63	3,832.53	0.00	0.00	0.00
7,800.00	89.72	89.309	5,564.10	-481.30	3,938.62	3,932.53	0.00	0.00	0.00
7,900.00	89.72	89.309	5,564.59	-480.09	4,038.61	4,032.53	0.00	0.00	0.00
8,000.00	89.72	89.309	5,565.07	-478.89	4,138.61	4,132.53	0.00	0.00	0.00
8,100.00	89.72	89.309	5,565.55	-477.68	4,238.60	4,232.53	0.00	0.00	0.00
8,200.00	89.72	89.309	5,566.03	-476.47	4,338.59	4,332.53	0.00	0.00	0.00
8,300.00	89.72	89.309	5,566.51	-475.27	4,438.58	4,432.53	0.00	0.00	0.00
8,400.00	89.72	89.309	5,566.99	-475.27	4,438.58	4,432.53	0.00	0.00	0.00
8,500.00	89.72	89.309	5,567.48	-472.85	4,638.56	4,632.52	0.00	0.00	0.00
8,600.00	89.72	89.309	5,567.96	-471.65	4,738.56	4,732.52	0.00	0.00	0.00
8,700.00	89.72	89.309	5,568.44	-470.44	4,838.55	4,832.52	0.00	0.00	0.00
8,800.00	89.72	89.309	5,568.92	-469.23	4,938.54	4,932.52	0.00	0.00	0.00
8,900.00	89.72 80.72	89.309	5,569.40 5,569.88	-468.03	5,038.53 5,138.52	5,032.52 5,132.52	0.00	0.00 0.00	0.00 0.00
9,000.00 9,100.00	89.72 89.72	89.309 89.309	5,569.88 5,570.37	-466.82 -465.61	5,138.52 5,238.51	5,132.52 5,232.52	0.00 0.00	0.00	0.00
9,200.00	89.72 89.72	89.309 89.309	5,570.37 5,570.85	-465.61	5,238.51	5,232.52 5,332.52	0.00	0.00	0.00
,									
9,300.00	89.72	89.309	5,571.33	-463.20	5,438.50	5,432.52	0.00	0.00	0.00
9,400.00	89.72	89.309	5,571.81	-461.99	5,538.49	5,532.51	0.00	0.00	0.00
9,500.00	89.72	89.309	5,572.29	-460.79	5,638.48	5,632.51	0.00	0.00	0.00
9,600.00	89.72	89.309	5,572.77	-459.58	5,738.47	5,732.51	0.00	0.00	0.00
9,700.00	89.72	89.309	5,573.26	-458.37	5,838.46	5,832.51	0.00	0.00	0.00
9,800.00	89.72	89.309	5,573.74	-457.17	5,938.45	5,932.51	0.00	0.00	0.00
9,900.00	89.72	89.309	5,574.22	-455.96	6,038.45	6,032.51	0.00	0.00	0.00
10,000.00	89.72	89.309	5,574.70	-454.75	6,138.44	6,132.51	0.00	0.00	0.00

8/8/2023 11:48:07PM



Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

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)
10,100.00	89.72	89.309	5,575.18	-453.55	6,238.43	6,232.51	0.00	0.00	0.00
10,200.00	89.72	89.309	5,575.66	-452.34	6,338.42	6,332.50	0.00	0.00	0.00
10,300.00	89.72	89.309	5,576.15	-451.13	6,438.41	6,432.50	0.00	0.00	0.00
10,400.00	89.72	89.309	5,576.63	-449.93	6,538.40	6,532.50	0.00	0.00	0.00
10,500.00	89.72	89.309	5,577.11	-448.72	6,638.40	6,632.50	0.00	0.00	0.00
10,600.00	89.72	89.309	5,577.59	-447.51	6,738.39	6,732.50	0.00	0.00	0.00
10,700.00	89.72	89.309	5,578.07	-446.31	6,838.38	6,832.50	0.00	0.00	0.00
10,800.00	89.72	89.309	5,578.55	-445.10	6,938.37	6,932.50	0.00	0.00	0.00
10,900.00	89.72	89.309	5,579.04	-443.89	7,038.36	7,032.50	0.00	0.00	0.00
11,000.00	89.72	89.309	5,579.52	-442.69	7,138.35	7,132.50	0.00	0.00	0.00
11,100.00	89.72	89.309	5,580.00	-441.48	7,238.34	7,232.49	0.00	0.00	0.00
11,200.00	89.72	89.309	5,580.48	-440.27	7,338.34	7,332.49	0.00	0.00	0.00
11,300.00	89.72	89.309	5,580.96	-439.07	7,438.33	7,432.49	0.00	0.00	0.00
11,400.00	89.72	89.309	5,581.44	-437.86	7,538.32	7,532.49	0.00	0.00	0.00
11,500.00	89.72	89.309	5,581.93	-436.65	7,638.31	7,632.49	0.00	0.00	0.00
11,515.47	89.72	89.309	5,582.00	-436.47	7,653.78	7,647.96	0.00	0.00	0.00

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
Haynes 436 FTP 2268 F - plan misses target o - Point	0.00 center by 0.02	0.000 2ft at 6328.28	5,557.00 Bft MD (5557	-499.06 .01 TVD, -499	2,467.02 9.06 N, 2467.0	1,914,240.438 02 E)	1,284,773.997	36.254834000	-107.456245000
Haynes 436 LTP 2280 F - plan hits target cent - Point	0.00 ter	0.000	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000

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	
	3,937.62	3,674.00	9 5/8" Csg		9-5/8	12-1/4	



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Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,441.86	1,414.86	Ojo Alamo		0.28	89.309	
1,563.65	1,525.11	Kirtland		0.28	89.309	
1,807.23	1,745.59	Fruitland		0.28	89.309	
2,056.35	1,971.09	Pictured Cliffs		0.28	89.309	
2,216.89	2,116.42	Lewis		0.28	89.309	
2,549.05	2,417.08	Chacra		0.28	89.309	
3,778.04	3,529.55	Cliff House		0.28	89.309	
3,778.04	3,529.55	Menefee		0.28	89.309	
4,564.15	4,241.12	Point Lookout		0.28	89.309	
4,912.91	4,556.82	Mancos		0.28	89.309	
5,283.82	4,892.57	MNCS_A		0.28	89.309	
5,389.00	4,987.78	MNCS_B		0.28	89.309	
5,560.62	5,143.12	MNCS_C		0.28	89.309	
5,638.44	5,213.28	MNCS_Cms		0.28	89.309	
5,696.69	5,263.42	MNCS_D		0.28	89.309	
5,785.42	5,333.69	MNCS_E		0.28	89.309	
5,864.63	5,388.96	MNCS_F		0.28	89.309	
6,019.73	5,474.59	MNCS_G		0.28	89.309	
6,084.72	5,504.87	MNCS_H		0.28	89.309	

Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
600.00	600.00	0.00	0.00	KOP Begin 3°/100' build
1,438.37	1,411.70	-44.97	175.40	Begin 25.15° tangent
5,610.08	5,187.89	-485.35	1,892.85	Begin 10°/100' build/turn
5,971.07	5,450.26	-503.11	2,131.40	Begin 60.00° tangent
6,031.07	5,480.26	-502.48	2,183.36	Begin 10°/100' build
6,328.31	5,557.02	-499.06	2,467.06	Begin 89.72° lateral
11,515.47	5.582.00	-436.47	7,653.78	PBHL/TD @ 11515.47 MD 5582.00 TVD



Planning Report - Geographic

Database: Company: Project: Site: Well: Well: Wellbore: Design:	End Rio Hay Hay	nes Canyon Ui nes Canyon Ui jinal Hole	New Mexico NAI nit (432, 434, 436		Local Co-ordinate Reference:Well Haynes Canyon Unit 436HTVD Reference:RKB=6689+25 @ 6714.00ftMD Reference:RKB=6689+25 @ 6714.00ftNorth Reference:GridSurvey Calculation Method:Minimum Curvature					
Project	Rio A	Arriba County, N	New Mexico NAD	83 NM C						
Map System: Geo Datum: Map Zone:	North	ate Plane 1983 American Datu lexico Central 2	m 1983		System Date	um:	M	ean Sea Level		
Site	Hayr	nes Canyon Un	it (432, 434, 436	& 438)						
Site Position: From: Position Uncert		at/Long 0.00	Northi Eastin ft Slot R	-	1,282,30	99.466 usft 95.297 usft 3-3/16 "	Latitude: Longitude:			36.256010000 -107.464636000
Well	Hayn	es Canyon Uni	t 436H, Surf loc:	1733 FNL 303	FWL Section 0	3-T23N-R06W	I			
Well Position Position Uncert Grid Convergen		V	0.00 ft Ea	orthing: sting: ellhead Elevati	1	,914,739.496 ,282,306.978	usft Loi	itude: ngitude: ound Level:		36.256120000 -107.464632000 6,689.00 ft
Wellbore	Orig	inal Hole								
Magnetics	ľ	Model Name	Sample	e Date	Declinat (°)	tion		Angle °)	Field Str (nT	-
IGRF2020				8/8/2023		8.46		62.77	49,14	0.63156172
Design	rev0									
Audit Notes:										
Version:			Phase	e: P	LAN	Tie	On Depth:		0.00	
Vertical Section	:		Depth From (TV (ft) 0.00	/D)	+N/-S (ft) 0.00	(1	/ -W ft) 00		ection (°) 9.309	
Plan Survey To Depth Fro (ft) 1	om De	Date pth To (ft) Surve 1,515.47 rev0 (ey (Wellbore)		Tool Name MWD OWSG MWD -	- Standard	Remarks			
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			0.00	0.00	0.00	0.00		0.00	
	0.00			0.00	0.00	0.00	0.00		0.00	
600.00				-44.97 -485.35	175.40 1,892.85	3.00 0.00	3.00 0.00		104.38 0.00	
1,438.37	25.15 25.15	5 104 381			.,002.00	5.00	0.00	0.00	0.00	
	25.15 25.15 60.00			-503.11	2,131.40	10.00	9.65	-4.18	-22.47	
1,438.37 5,610.08	25.15	89.309	5,450.26		2,131.40 2,183.36	10.00 0.00	9.65 0.00	-4.18 0.00	-22.47 0.00	
1,438.37 5,610.08 5,971.07	25.15 60.00	89.309 89.309 89.309 89.309 89.309	5,450.265,480.265,557.02	-503.11				0.00		



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

0.00 0.00 0.00 0.00 0.00 1014 720 466 1.282 206 379 38 22610000 -107 44642200 0.00 0.00 0.00 0.00 0.00 0.00 114 720 466 1.282 206 379 38 22610000 -107 44632200 30.00 0.00 0.00 0.00 0.00 0.00 114 720 466 1.282 306 378 38 22610000 -107 44632200 13 387 Ceg 0.00 0.00 0.00 0.00 0.01 114 739 466 1.282 306 578 38 22612000 -107 44632200 600.00 0.00 0.00 0.00 0.00 131 4739 466 1.282 306 578 38 22612000 -107 4463200 600.00 0.00 0.00 0.00 0.00 131 4738 466 1.282 306 578 38 22612000 -107 4463200 700.00 3.00 0.03 810 976 38 22612000 -107 4463200 107 4463200 700.00 3.00 0.04 381 9769 2.264 131 4738 466 1.282 306 578 38 22612000 -107 444635783 700.00 <th>Measured Depth (ft)</th> <th>Inclination (°)</th> <th>Azimuth (°)</th> <th>Vertical Depth (ft)</th> <th>+N/-S (ft)</th> <th>+E/-W (ft)</th> <th>Map Northing (usft)</th> <th>Map Easting (usft)</th> <th>Latitude</th> <th>Longitude</th>	Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
100.00 0.000 0.000 0.000 1.914.739.466 1.282.306.978 38.25612000 -107.46463200 300.00 0.000 300.00 0.000 300.00 0.000 1.914.739.466 1.282.306.978 38.25612000 -107.46463200 400.00 0.000 0.000 0.000 1.914.739.466 1.282.306.978 38.25612000 -107.46463200 500.00 0.00 0.000 0.000 1.914.739.466 1.282.306.978 38.25612000 -107.46463200 600.00 0.000 0.000 0.000 1.914.739.466 1.282.306.978 38.25612000 -107.46463200 600.00 0.000 0.000 0.000 0.001 1.914.739.466 1.282.306.978 38.25612000 -107.46463207 700.000 0.000 10.431 10.995 -0.05 2.54 1.914.738.466 1.282.306.974 38.25612010 -107.464632075 800.00 0.00 10.431 1.941.737.556 1.282.307.55 38.25613201 -107.46453375 900.00 10.431 1.914.73	0.00	0.00	0 000	0.00	0.00	0.00	1 914 739 496	1 282 306 978	36 256120000	-107 464632000
200.00 0.00 0.000 0.000 0.000 0.00 0.00										
30.00 0.00 0.00 300.00 0.00 1914.739.498 1.282.306.978 36.256120000 -107.464322000 13.38" Csg 1.38" Csg 1.38.38" Csg 1.282.306.978 36.256120000 -107.464322000 400.00 0.00 0.000 500.00 0.00 1.914.739.498 1.282.306.978 36.256120000 -107.464322000 500.00 0.000 500.00 0.000 1.914.739.498 1.282.306.978 36.256113000 -107.46432200 700.00 3.00 104.381 689.95 -0.65 2.54 1.914.738.498 1.282.309.575 36.256113212 -107.464923753 900.00 6.00 104.381 877 -5.84 2.78 1.914.738.548 1.282.370.018 36.256113222 -107.464937533 900.00 15.00 104.381 1.907.08 -10.37 40.43 1.914.733.346 328.370.018 36.256012202 -107.464937431 1.000.00 21.00 114.381 1.907.08 -10.37 40.43 1.914.7233.39 328.370.018 36.256002517										
35.00 0.00 0.00 0.00 1.914.739.496 1.282.306.978 36.25612000 -1.07.46463200 50.00 0.00 0.000 500.00 0.000 500.00 0.000 500.00 0.000 500.00 0.000 500.00 0.000 500.00 0.000 500.00 0.000 1.914.738.496 1.282.306.978 36.25612000 -1.07.46463200 KOP Bagin 3'HOD' build 700.00 0.00 1.914.738.496 1.282.307.975 36.256112012 -1.07.46465320 900.00 0.00 1.43.81 699.95 -0.85 2.54 1.914.738.861 -1.822.337.55 36.256113022 -1.07.464654731 900.00 1.50.01 1.43.81 987.08 -1.03.7 4.0.43 1.914.733.56 1.282.347.916 36.256104763 -1.07.464674744 1.000.00 12.00 14.381 987.08 -1.03.7 4.0.43 1.914.723.33 1.282.483.755 36.25600367777 -1.07.46425374 1.000.00 2.100 1.43.81 -1.63.14 -1.137.779 1.282.377.016 3							, ,			
13.88° Ceg 1.282.306.078 38.25612000 1.07.4463200 500.00 0.00 500.00 0.00 1.914.739.496 1.282.306.078 38.25612000 1.07.4463200 600.00 0.00 0.00 0.00 1.914.739.496 1.282.306.078 38.25612000 1.07.4463200 700.00 5.00 1.4381 689.95 -0.85 2.54 1.914.738.496 1.282.309.574 38.25611302 -107.44692307 800.00 6.00 104.381 799.63 -2.60 10.13 1.914.738.546 1.282.397.975 38.25611302 -107.446925743 900.00 15.00 104.381 1.907.68 -10.37 40.43 1.914.723.331 1.282.370.016 38.25690202 -107.446412347 1.000.00 12.00 104.381 1.904.43 -1314.716.279 1.282.370.016 38.25690202 -107.446412347 1.200.00 14.00 1.438.1 1.914.43 -122.49 95.55 -107.446412347 1.400.00 24.00 104.381 1.914.444.33 1.122.83 1.9								, ,		
400.00 0.00 400.00 0.00 1.914.739.46F 1.282.306.978 38.256120000 -107.446432000 KOB Begin 27100 ⁶ build 1.914.739.46F 1.282.306.978 38.256120000 -107.446432000 KOB Begin 27100 ⁶ build 1.914.739.46F 1.282.306.978 38.256120000 -107.44643200 S00.00 0.00 1.04.381 699.95 -0.65 2.24 1.914.738.846 1.282.306.978 38.25612000 -107.44643370 900.00 0.00 1.04.381 699.95 -0.65 2.24 1.914.738.367 1.282.307.575 38.26112012 -107.446435753 900.00 1.04.381 1.090.81 1.091.831 1.904.311 1.914.728.333 1.282.497.563 38.28057776 -107.4464357171 1.000.00 1.800 1.438.31 1.918.433 1.914.763.333 1.282.497.504 38.280578207 -107.44643571 1.300.00 2.100 1.438.31 1.914.644.97 1.914.763.791 1.282.498.50 38.280578797 -107.446435871 1.300.00 2.100 1.438.31 1.414.717			0.000	000.00	0100	0.00	.,	.,202,000.010	00.200120000	1011101002000
S00.00 0.000 500.00 0.000 1.914.739.466 1.282.306.978 382.26120000 -107.446432000 KOP Begin 3'H00' build 0.00 0.00 0.00 1.914.739.466 1.282.306.978 382.26120000 -107.446432030 S00.00 0.00 1.914.739.466 1.282.307.55 382.26120000 -107.446432375 800.00 0.00 1.438.47 1.914.738.466 1.282.371.13 382.26112312 -107.446423375 900.00 9.00 014.381 997.08 -103.7 40.43 1.914.728.335 1.282.371.408 382.266112312 -107.4464524514 1,000.00 12.00 144.381 1.008.31 -161.16 63.04 1.914.728.37 1.282.371.283.57 38.28610200777 -107.446432493 1,000.00 12.00 144.381 1.008.31 1.471.67 1.914.684.822 1.282.470.2855 38.28610200271 -107.446432496 1,443.87 25.15 1.483.47 1.914.684.521 1.282.482.814 38.256612070 -107.464332407 1,900.00 25.15 1.443.81		-	0.000	400.00	0.00	0.00	1 914 739 496	1 282 306 978	36 256120000	-107 464632000
e00.00 0.00 0.00 0.00 1,914,739.496 1,282,306.976 36.256120000 -107.446433200 KOP Begin 37100*build 700.00 3.00 104.381 690.05 -2.60 10.13 1,914,736.897 1,282,371.13 36.256113312 -107.44642375 900.00 9.00 104.381 696.77 -5.64 2.2.78 1,282,371.13 36.256103412 -107.446429752 900.00 15.00 04.381 199.08 -10.37 40.43 1,181,723.66 1,282,370.16 36.25601271 -107.446429774 1,000.00 15.00 04.381 1,981.3 -16.61 3,141,773.68 -1282,329.575 36.256037677 -107.4464215974 1,400.00 24.00 14.381 1,376.81 -41.01 159.94 1,314,677.896 2.282,482.378 36.256012871 -107.446423571 1,414.84 25.15 104.381 1,376.81 -41.01 159.94 1,314,677.896 2.282,483.814 36.256012871 -107.446423571 1,441.84 25.15 104.381 1,474.86										
KOP Begin 37/06 build Cond								, ,		
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3,500.00 25.15 104.381 3,277.87 -262.60 1,024.15 1,914,476.892 1,283,331.127 36.255433977 -107.461147873										
	3,500.00	25.15	104.381	3,277.87	-262.60	1,024.15	1,914,476.892	1,283,331.127	36.255433977	-107.461147873



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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
3,600.00	25.15	104.381	3,368.39	-273.16	1,065.32	1,914,466.336	1,283,372.296	36.255406398	-107.461007819
3,700.00	25.15	104.381	3,458.91	-283.72	1,106.49	1,914,455.780	1,283,413.465	36.255378819	-107.460867765
3,778.04	25.15	104.381	3,529.55	-291.95	1,138.62	1,914,447.542	1,283,445.592	36.255357297	-107.460758470
Cliff Hou	ise - Menefee								
3,800.00	25.15	104.381	3,549.43	-294.27	1,147.66	1,914,445.224	1,283,454.633	36.255351240	-107.460727711
3,900.00	25.15	104.381	3,639.95	-304.83	1,188.83	1,914,434.668	1,283,495.802	36.255323660	-107.460587657
3,937.62	25.15	104.381	3,674.00	-308.80	1,204.31	1,914,430.696	1,283,511.290	36.255313285	-107.460534967
9 5/8" C s 4,000.00	59 25.15	104.381	3,730.46	-315.39	1,230.00	1,914,424.112	1,283,536.971	36.255296081	-107.460447603
4,100.00	25.15	104.381	3,820.98	-325.94	1,271.16	1,914,413.555	1,283,578.140	36.255268501	-107.460307549
4,200.00	25.15	104.381	3,911.50	-336.50	1,312.33	1,914,402.999	1,283,619.309	36.255240921	-107.460167496
4,300.00	25.15	104.381	4,002.02	-347.05	1,353.50	1,914,392.443	1,283,660.478	36.255213341	-107.460027442
4,400.00	25.15	104.381	4,092.54	-357.61	1,394.67	1,914,381.887	1,283,701.646	36.255185760	-107.459887389
4,500.00	25.15	104.381	4,183.06	-368.17	1,435.84	1,914,371.331	1,283,742.815	36.255158180	-107.459747335
4,564.15	25.15	104.381	4,241.12	-374.94	1,462.25	1,914,364.559	1,283,769.223	36.255140488	-107.459657498
Point Lo 4,600.00	окоит 25.15	104.381	4,273.58	-378.72	1,477.01	1,914,360.775	1,283,783.984	36.255130599	-107.459607282
4,700.00	25.15	104.381	4,364.10	-389.28	1,518.18	1,914,350.218	1,283,825.153	36.255103019	-107.459467229
4,800.00	25.15	104.381	4,454.62	-399.83	1,559.35	1,914,339.662	1,283,866.322	36.255075438	-107.459327176
4,900.00	25.15	104.381	4,545.14	-410.39	1,600.52	1,914,329.106	1,283,907.491	36.255047856	-107.459187123
4,912.91	25.15	104.381	4,556.82	-411.75	1,605.83	1,914,327.743	1,283,912.806	36.255044295	-107.459169040
Mancos	05.45	101.001	4 005 05	400.05	4 0 4 4 0 0	1 011 010 550	4 000 040 000	00.055000075	407 4500 47070
5,000.00 5,100.00	25.15 25.15	104.381 104.381	4,635.65 4,726.17	-420.95 -431.50	1,641.68 1,682.85	1,914,318.550 1,914,307.994	1,283,948.660 1,283,989.828	36.255020275 36.254992694	-107.459047070 -107.458907017
5,200.00	25.15	104.381	4,816.69	-442.06	1,724.02	1,914,297.437	1,284,030.997	36.254965112	-107.458766965
5,283.82	25.15	104.381	4,892.57	-450.91	1,758.53	1,914,288.589	1,284,065.506	36.254941993	-107.458649571
MNCS_A	1								
5,300.00	25.15	104.381	4,907.21	-452.62	1,765.19	1,914,286.881	1,284,072.166	36.254937530	-107.458626912
5,389.00	25.15	104.381	4,987.78	-462.01	1,801.83	1,914,277.486	1,284,108.808	36.254912981	-107.458502259
MNCS_E		104 201	4 007 72	462.47	1 906 26	1 014 076 005	1 004 112 225	26.254000048	107 459496960
5,400.00 5,500.00	25.15 25.15	104.381 104.381	4,997.73 5,088.25	-463.17 -473.73	1,806.36 1,847.53	1,914,276.325 1,914,265.769	1,284,113.335 1,284,154.504	36.254909948 36.254882366	-107.458486860 -107.458346807
5,560.62	25.15	104.381	5,143.12	-480.13	1,872.49	1,914,259.370	1,284,179.460	36.254865646	-107.458261908
MNCS_C	;								
5,600.00	25.15	104.381	5,178.77	-484.28	1,888.70	1,914,255.213	1,284,195.673	36.254854784	-107.458206755
5,610.08	25.15	104.381	5,187.89	-485.35	1,892.85	1,914,254.149	1,284,199.822	36.254852003	-107.458192638
•	°/100' build/tu								
5,638.44	27.79	102.057	5,213.28	-488.23	1,905.16	1,914,251.270	1,284,212.130	36.254844518	-107.458150780
MNCS_C 5,650.00	28.88	101.223	5,223.45	-489.33	1,910.53	1,914,250.164	1,284,217.502	36.254841665	-107.458132517
5,696.69	33.31	98.365	5,263.42	-493.39	1,934.28	1,914,246.103	1,284,241.255	36.254831325	-107.458051798
MNCS_E			-,		.,	.,	.,,		
5,700.00	33.62	98.188	5,266.19	-493.66	1,936.09	1,914,245.840	1,284,243.064	36.254830664	-107.458045653
5,750.00	38.43	95.830	5,306.62	-497.21	1,965.27	1,914,242.287	1,284,272.243	36.254821907	-107.457946554
5,785.42	41.86	94.444	5,333.69	-499.24	1,988.01	1,914,240.253	1,284,294.980	36.254817098	-107.457869365
MNCS_E		02.000	E 044 40	400.00	1 007 04	1 014 000 504	1 004 004 040	26 25 4045 400	107 457005070
5,800.00 5,850.00	43.27 48.14	93.926 92.337	5,344.43 5,379.33	-499.96 -501.90	1,997.84 2,033.57	1,914,239.534 1,914,237.600	1,284,304.819 1,284,340.542	36.254815460 36.254811372	-107.457835972 -107.457714751
5,864.63	40.14 49.57	92.337 91.917	5,379.33 5,388.96	-501.90	2,033.57 2,044.58	1,914,237.600	1,284,351.554	36.254810627	-107.457677391
MNCS_F		01.011	0,000.00	002.01	2,0.1.00	.,	.,_0.,001.007	00.201010021	
5,900.00	53.03	90.973	5,411.07	-503.00	2,072.17	1,914,236.501	1,284,379.141	36.254809675	-107.457583811
5,950.00	57.93	89.775	5,439.40	-503.25	2,113.35	1,914,236.245	1,284,420.323	36.254810381	-107.457444150



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Planned Survey

Corr Corr<	Measured Depth (ft)		Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	l otitudo	Longitudo
Begin 60.00* tangent		(°)						(usit)	Latitude	Longitude
6.00 00.00 90.309 5.464.72 -402.80 2.164.45 1.914.228.602 1.284.480.17 8.254813086 -107.45720799 MACS_G 0 0.90.309 5.474.69 -402.80 2.183.36 1.914.228.601 2.84.480.17 8.254813086 -107.45720799 BG.01 07 MOP U U U U.774.5720576 0.00.0 6.89.309 5.69.467 -00.22 2.19.91 1.914.237.571 1.284.508.679 0.8254818013 -107.4570676 6.06.00 0.68.89 99.309 5.59.467 -00.77 2.241.81 1.914.237.571 1.284.508.679 0.8254818013 0.8254818023 -107.45500786 6.100.00 0.86.89 99.309 5.551.10 -00.77 2.241.81 1.914.237.611 2.84.465.71 3.8254810020 -107.45500786 6.100.00 8.89 99.309 5.558.18 -99.300 1.914.228.00 1.284.465.71 3.825481302 -107.45500786 6.226.210 0.712.893.09 5.557.84 -99.40 2.438.74 1.914.242.060 2.844.465.71 <th< td=""><td></td><td></td><td>89.309</td><td>5,450.26</td><td>-503.11</td><td>2,131.40</td><td>1,914,236.390</td><td>1,284,438.376</td><td>36.254811398</td><td>-107.457382938</td></th<>			89.309	5,450.26	-503.11	2,131.40	1,914,236.390	1,284,438.376	36.254811398	-107.457382938
6.197.3 60.00 83.309 5.474.59 -502.60 2.173.54 1.914.238.689 1.284.480.517 38.254814237 1.077.457240057 Beigin 0770 00.00 83.309 5.480.26 -502.24 2.183.36 1.914.237.017 1.284.490.334 38.254814399 1.107.457750775 Beigin 0770 01.00 83.309 5.504.87 -501.91 2.231.01 1.914.237.521 1.284.557.981 38.254811005 -107.457730775 6.090.00 7.68 89.309 5.511.06 -501.71 2.241.48 1.914.237.521 1.284.551.951 38.254812005 -107.45097860 6.100.00 7.88 89.309 5.513.0 -000.00 2.389.02 1.914.238.061 2.344.648.371 38.25481202 -107.456907860 6.300.00 89.72 89.309 5.557.02 -499.06 2.487.76 1.914.204.091 1.234.467.75 38.25481202 -107.456907800 6.300.00 89.72 89.309 5.557.36 -498.19 2.538.74 1.914.204.190 1.234.467.75 38.25481202 -107.456907804	-	-								
MNCS G Constraint Constraint<							, ,			
6.31 07 60.00 83.309 5.480.26 -02.48 2.183.36 1.914.237.017 1.284.460.334 38.254814899 -107.457208773 6.050.00 61.58 83.309 5.489.45 -50.22 2.199.91 1.914.237.592 1.284.563.7981 38.25481806 -107.45750676 6.080.72 65.37 83.309 5.504.87 -501.91 9.14.237.591 1.38.25481806 -107.45697860 6.100.00 76.88 83.309 5.524.65 -501.17 2.204.48 9.14.233.251 1.284.651.951 38.254819050 -107.456907860 6.200.00 8.58 89.309 5.557.02 -299.00 2.487.66 1.914.239.661 2.944.668.671 38.25481202 -107.456907860 6.300.00 8.97.27 83.309 5.557.02 -499.69 2.487.76 1.914.249.669 38.254813202 -107.4569078104 6.600.00 89.72 83.309 5.557.26 -499.69 2.587.34 1.914.240.099 1.284.467.77 38.245483202 -107.4569078144 6.600.00 89.72 83.309			89.309	5,474.59	-502.60	2,173.54	1,914,236.899	1,284,480.517	36.254814237	-107.457240059
Begin 10*100*101 0			00.000	5 400 00	500.40	0.400.00	4 044 007 047	4 004 400 004	20.054044000	407 457000770
6.05 00 61.89 99.309 5.468.47 -602.28 2.19.01 1.914.237.217 1.284.537.981 36.254819013 -107.45715076 0.00 6.68 39.39 5.541.06 -501.117 2.231.01 1.914.237.521 1.284.537.811 36.254819013 -107.45690760 6.100.00 74.89 89.309 5.541.00 -500.177 2.247.76 1.914.238.281 1.284.686.371 36.254819050 -107.45690760 6.200.00 88.89 89.309 5.557.10 -500.00 2.389.00 1.914.280.095 1.284.645.715 36.254832407 -107.456504814 6.300.00 89.72 89.309 5.557.20 499.08 2.467.06 1.914.240.141 1.284.757.38 36.254832407 -107.456504483 6.400.00 89.72 89.309 5.557.24 498.19 2.538.74 1.914.241.910 1.284.845.715 36.254832807 -107.45650444 6.400.00 89.72 89.309 5.567.36 498.19 2.738.72 1.914.241.925 1.284.845.617 36.254832807 -107.45660448357 <td></td> <td></td> <td>89.309</td> <td>5,480.26</td> <td>-502.48</td> <td>2,183.30</td> <td>1,914,237.017</td> <td>1,284,490.334</td> <td>30.254814899</td> <td>-107.457206773</td>			89.309	5,480.26	-502.48	2,183.30	1,914,237.017	1,284,490.334	30.254814899	-107.457206773
6.08.472 65.37 69.309 5.504.87 -501.91 2.24.101 1.914.227.502 1.284.557.091 38.254818108 -107.457045228 MNCS H	-		80 300	5 480 45	502.28	2 100 01	1 01/ 237 217	1 284 506 870	36 25/816013	107 457150676
MNCS_H 6100.00 66.89 89.309 5.511.06 -501.74 2.244.98 1.914.237.761 1.284.551.951 38.254.812.201 -107.466937800 6100.00 76.89 89.309 5.528.65 -501.17 2.291.76 1.914.238.969.73 38.25482221 -107.466937800 62.200.00 81.89 89.309 5.551.30 -500.00 2.338.02 1.914.238.909 1.224.468.973 38.25483272 -107.46630914 6.300.00 86.89 89.309 5.557.02 -499.06 2.467.06 1.914.241.909 1.224.745.738 38.25483207 -107.456244833 6.400.00 89.72 89.309 5.557.24 -499.68 2.686.73 1.914.2421.512 1.284.845.715 38.25443567 -107.456001839 6.500.00 89.72 89.309 5.557.84 -496.89 2.388.72 1.914.2421.512 1.284.845.716 38.254435679 -107.456001839 6.600.00 89.72 89.309 5.557.92 -498.38 2.388.71 1.914.242.512 1.284.845.701 39.244845579 -107.45460433788 <td></td>										
6,100.00 66.89 80.309 5,551.06 -501.74 2,244.98 1,914.233.29 1284.598.73 332.25432243 -107.456839242 6,200.00 76.89 80.309 5,554.10 -500.90 2,339.90 1,914.233.906 1.284.498.73 332.25432232 -107.456609464 6,300.00 86.89 80.309 5,555.10 -400.00 2,389.10 1.284.494.738 332.25432122 -107.45630434 6,320.00 86.89 80.309 5,557.36 -409.06 2,467.06 1,914.240.491 1.284.774.032 36.25483400 -107.456601839 6,400.00 89.72 89.309 5,557.36 +409.68 2,638.74 1,914.241.306 1.284.945.715 36.25483269 -107.456622314 6,600.00 89.72 89.309 5,557.36 +405.78 2,738.72 1,914.242.3719 1.285.445671 30.25486029 -107.45662314 6,600.00 89.72 89.309 5,558.32 +405.78 2,738.72 1,914.242.3719 1.285.445671 30.25446279 -107.456303788 6,600.00			00.000	0,001.01	001.01	2,201.01	1,011,201.002	1,201,001.001	00.201010100	101.101010220
6.190.00 71.89 89.390 5,528.65 -501.17 2.291.76 1.914.223.89 1.284.948.97.33 38.2544222.01 -107.468639242 6.200.00 81.89 83.390 5,551.30 -600.00 2.389.02 1.914.223.499 1.284.9468.973 38.25442271 -107.46867929 6.323.31 88.72 88.390 5,557.02 -499.06 2.487.06 1.914.240.499 1.284.9475.73 38.25483200 -107.456001339 6.400.00 89.72 89.399 5,557.36 -499.19 2.538.73 1.914.242.112 1.284.87.76 38.25483203 -107.456001339 6.500.00 89.72 89.399 5,557.36 -498.19 2.538.73 1.914.242.132 1.284.845.715 38.254842567 -107.456001339 6.600.00 89.72 89.399 5,558.81 -495.7 2.338.72 1.914.242.132 1.285.446.80 38.254842567 -107.4560214 6.800.00 89.72 89.399 5,550.27 -492.16 3.308.70 1.914.242.452 1.285.446.61 38.254847247 -107.45382788	_		89.309	5.511.06	-501.74	2.244.98	1.914.237.761	1.284.551.951	36.254819050	-107,456997860
6.250.00 81.89 89.309 5.551.8 -400.00 2.389.02 1.914.239.499 1.284.745.733 36.254828720 -107.456500464 6.320.31 89.309 5.557.02 -499.06 2.467.06 1.914.240.441 1.284.745.715 36.254838040 -107.456244883 6.400.00 89.72 89.309 5.557.84 -496.19 2.538.74 1.914.241.306 1.284.845.715 36.254838834 -107.456001830 6.600.00 89.72 89.309 5.558.32 -498.78 2.738.71 1.914.242.51 1.284.845.715 36.254838634 -107.455001830 6.700.00 89.72 89.309 5.558.29 -493.77 1.914.244.512 1.285.245.689 36.25485298 -107.454924773 6.800.00 89.72 89.309 5.560.73 -492.16 3.338.70 1.914.247.321 1.285.445.689 36.25487215 -107.45332788 7.000.00 89.72 89.309 5.560.73 -492.16 3.338.71 1.914.247.52 1.285.445.614 36.25487215 -107.4533278285 7.000.00 8										
6.300.00 86.89 89.309 5,557.10 -499.40 2,438.76 1,914,240.091 1,224,745.738 36.254832102 -107.456344833 Begin 38.72* Istaral 89.309 5,557.70 -499.06 2,467.06 1,914,240.041 1,224,745.738 36.254838007 -107.456344833 6,400.00 89.72 89.309 5,557.84 -496.90 2,538.74 1,914,241.306 1,284,445.715 36.254838544 -107.455601839 6,500.00 89.72 89.309 5,558.1 -495.77 1,914,242.91 1,284,445.70 36.254485298 -107.454394726 6,000.00 89.72 89.309 5,559.77 -49.67 2,338.71 1,914,244.732 1,285,445.663 36.254485298 -107.4543947287 6,000.00 89.72 89.309 5,560.73 -498.57 3,338.67 1,914,240.752 1,285,445.663 36.25485294 -107.453289637 7,000.00 89.72 89.309 5,561.70 -487.33 3,38.67 1,914,240.752 1,285,445.663 36.25485292 -107.453289635 7,000.00										
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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	-		89.309	5,557.36	-498.19	2,538.74	1,914,241.306	1,284,845.715	36.254838834	-107.456001839
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	6,500.00	89.72	89.309	5,557.84	-496.98	2,638.73	1,914,242.512	1,284,945.706	36.254845567	-107.455662814
6.800.00 89.72 89.309 5.559.29 -493.37 2,93.87.1 1,914,247.339 1,285,245.600 36.2546772487 -107.454646737 6,900.00 89.72 89.309 5.550.77 -492.16 3,038.70 1,914,247.339 1,285,345.671 36.2546772457 -107.45367685 7,100.00 89.72 89.309 5.550.73 -489.75 3,238.68 1,914,245.752 1,285,645.64 36.254879215 -107.453626859 7,200.00 89.72 89.309 5.561.10 -487.33 3,338.67 1,914,250.958 1,285,745.637 36.254892667 -107.4522950607 7,400.00 89.72 89.309 5,562.18 -486.13 3,538.66 1,914,255.785 1,285,945.628 36.254912839 -107.4522950607 7,600.00 89.72 89.309 5,563.14 -483.71 3,738.64 1,914.256.785 1,286,145.602 36.25491281 -107.451935292 7,600.00 89.72 89.309 5,564.10 -481.30 3,938.62 1,914.256.191 1,286,145.564 36.25493302 -107.45193529 7,600.00 89.72 89.309 5,565.55 -477.68	6,600.00	89.72	89.309	5,558.32	-495.78	2,738.72	1,914,243.719	1,285,045.697	36.254852298	-107.455323788
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7,000.00 89.72 89.309 5,660.73 .499.95 3,138.69 1,914.248.545 1,285,445.663 362.54879215 -107.453967665 7,100.00 89.72 89.309 5,561.70 .488.54 3,338.67 1,914.249.752 1,285,645.664 362.54892667 .107.453289633 7,300.00 89.72 89.309 5,561.70 .487.33 3,438.67 1,914.250.957 1,285,645.646 362.254893032 .107.4522690607 7,400.00 89.72 89.309 5,562.18 .486.13 3,538.66 1,914.256.372 1,285,945.620 362.254912839 .107.452271555 7,600.00 89.72 89.309 5,563.14 .483.71 3,738.64 1,914.256.785 1,286,945.620 362.54912839 .107.451594502 7,600.00 89.72 89.309 5,565.14 .480.71 3,738.64 1,914.256.785 1,286,945.620 362.5493202 .107.451594502 7,800.00 89.72 89.309 5,565.55 .477.68 1,281.425.035 1,286,945.563 362.54992687 .107.450916449 8,000.0 89.72 89.309 5,566.55 .477.68 4,338.61	6,800.00	89.72	89.309	5,559.29	-493.37	2,938.71	1,914,246.132	1,285,245.680	36.254865759	-107.454645737
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	9,800.00	89.72	89.309		-457.17	5,938.45	1,914,282.330	1,288,245.421	36.255067200	-107.444474928
10,000.00 89.72 89.309 5,574.70 -454.75 6,138.44 1,914,284.743 1,288,445.403 36.255080599 -107.443796871	9,900.00	89.72	89.309	5,574.22	-455.96	6,038.45	1,914,283.537	1,288,345.412	36.255073900	-107.444135899
	10,000.00	89.72	89.309	5,574.70	-454.75	6,138.44	1,914,284.743	1,288,445.403	36.255080599	-107.443796871



Planning Report - Geographic

Database:	DB Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	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
10,100.00	89.72	89.309	5,575.18	-453.55	6,238.43	1,914,285.950	1,288,545.395	36.255087297	-107.443457842
10,200.00	89.72	89.309	5,575.66	-452.34	6,338.42	1,914,287.156	1,288,645.386	36.255093994	-107.443118814
10,300.00	89.72	89.309	5,576.15	-451.13	6,438.41	1,914,288.363	1,288,745.378	36.255100690	-107.442779785
10,400.00	89.72	89.309	5,576.63	-449.93	6,538.40	1,914,289.570	1,288,845.369	36.255107385	-107.442440756
10,500.00	89.72	89.309	5,577.11	-448.72	6,638.40	1,914,290.776	1,288,945.360	36.255114079	-107.442101728
10,600.00	89.72	89.309	5,577.59	-447.51	6,738.39	1,914,291.983	1,289,045.352	36.255120772	-107.441762699
10,700.00	89.72	89.309	5,578.07	-446.31	6,838.38	1,914,293.189	1,289,145.343	36.255127464	-107.441423670
10,800.00	89.72	89.309	5,578.55	-445.10	6,938.37	1,914,294.396	1,289,245.334	36.255134155	-107.441084641
10,900.00	89.72	89.309	5,579.04	-443.89	7,038.36	1,914,295.603	1,289,345.326	36.255140845	-107.440745612
11,000.00	89.72	89.309	5,579.52	-442.69	7,138.35	1,914,296.809	1,289,445.317	36.255147535	-107.440406582
11,100.00	89.72	89.309	5,580.00	-441.48	7,238.34	1,914,298.016	1,289,545.308	36.255154223	-107.440067553
11,200.00	89.72	89.309	5,580.48	-440.27	7,338.34	1,914,299.223	1,289,645.300	36.255160910	-107.439728524
11,300.00	89.72	89.309	5,580.96	-439.07	7,438.33	1,914,300.429	1,289,745.291	36.255167597	-107.439389494
11,400.00	89.72	89.309	5,581.44	-437.86	7,538.32	1,914,301.636	1,289,845.282	36.255174282	-107.439050464
11,500.00	89.72	89.309	5,581.93	-436.65	7,638.31	1,914,302.842	1,289,945.274	36.255180967	-107.438711435
11,515.47	89.72	89.309	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000
PBHL/TD) @ 11515.47 I	MD 5582.00 T	VD						

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
Haynes 436 FTP 2268 F - plan misses target o - Point	0.00 center by 0.02	0.000 2ft at 6328.28	5,557.00 8ft MD (5557	-499.06 .01 TVD, -499	2,467.02 9.06 N, 2467.0	1,914,240.438 02 E)	1,284,773.997	36.254834000	-107.456245000
Haynes 436 LTP 2280 F - plan hits target cent - Point	0.00 er	0.000	5,582.00	-436.47	7,653.78	1,914,303.029	1,289,960.739	36.255182000	-107.438659000

Casing Points							
	Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter ('')	Hole Diameter (")	
	350.00 3,937.62		13 3/8" Csg 9 5/8" Csg		13-3/8 9-5/8	17-1/2 12-1/4	



Planning Report - Geographic

Database:	DB_Decv0422v16	Local Co-ordinate Reference:	Well Haynes Canyon Unit 436H
Company:	Enduring Resources LLC	TVD Reference:	RKB=6689+25 @ 6714.00ft
Project:	Rio Arriba County, New Mexico NAD83 NM C	MD Reference:	RKB=6689+25 @ 6714.00ft
Site:	Haynes Canyon Unit (432, 434, 436 & 438)	North Reference:	Grid
Well:	Haynes Canyon Unit 436H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev0		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,441.86	1,414.86	Ojo Alamo		0.28	89.309	
1,563.65	1,525.11	Kirtland		0.28	89.309	
1,807.23	1,745.59	Fruitland		0.28	89.309	
2,056.35	1,971.09	Pictured Cliffs		0.28	89.309	
2,216.89	2,116.42	Lewis		0.28	89.309	
2,549.05	2,417.08	Chacra		0.28	89.309	
3,778.04	3,529.55	Cliff House		0.28	89.309	
3,778.04	3,529.55	Menefee		0.28	89.309	
4,564.15	4,241.12	Point Lookout		0.28	89.309	
4,912.91	4,556.82	Mancos		0.28	89.309	
5,283.82	4,892.57	MNCS_A		0.28	89.309	
5,389.00	4,987.78	MNCS_B		0.28	89.309	
5,560.62	5,143.12	MNCS_C		0.28	89.309	
5,638.44	5,213.28	MNCS_Cms		0.28	89.309	
5,696.69	5,263.42	MNCS_D		0.28	89.309	
5,785.42	5,333.69	MNCS_E		0.28	89.309	
5,864.63	5,388.96			0.28	89.309	
6,019.73	5,474.59	 MNCS_G		0.28	89.309	
6,084.72	5,504.87	—		0.28	89.309	

Plan Annotations

Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
600.00	600.00	0.00	0.00	KOP Begin 3°/100' build
1,438.37	1,411.70	-44.97	175.40	Begin 25.15° tangent
5,610.08	5,187.89	-485.35	1,892.85	Begin 10°/100' build/turn
5,971.07	5,450.26	-503.11	2,131.40	Begin 60.00° tangent
6,031.07	5,480.26	-502.48	2,183.36	Begin 10°/100' build
6,328.31	5,557.02	-499.06	2,467.06	Begin 89.72° lateral
11,515.47	5,582.00	-436.47	7,653.78	PBHL/TD @ 11515.47 MD 5582.00 TVD

WFLL NAME: Havnes Canvon Unit 436H

WELL NAME:	Haynes Canyon Unit 436H								
OBJECTIVE:	Drill, complete, and equip single lateral in the Mancos-H formation								
API Number:	lot yet assigned								
AFE Number:	Not yet assigned								
ER Well Number:	R Well Number: Not yet assigned								
State:	New Mexico								
County:	Rio Arriba								
Surface Elev.:	6,689	ft ASL (GL)	6,714	ft ASL (KB)					
Surface Location:	3-23-6	Sec-Twn- Rng	1,733	ft FNL	303	ft FWL			
BH Location:	2-23-6	Sec-Twn- Rng	2280	ft FNL	2585	ft FWL			

-						
QUICK REFERENCE						
Sur TD (MD)	350 ft					
Int TD (MD)	3,944 ft					
KOP (MD)	5,638 ft					
KOP (TVD)	5,213 ft					
Target (TVD)	5,475 ft					
Curve BUR	10 °/100 ft					
POE (MD)	6,020 ft					
TD (MD)	11,515 ft					
Lat Len (ft)	5,495 ft					

Driving Directions: FROM THE INTERSECTION OF US HWY 550 & US HWY 64 IN BLOOMFIELD, NM:

South on US Hwy 550 for 53.8 miles to MM 97.6; Left (North) on CR #379 (State Hwy 403) for 1.3 miles to fork; Right (North) remaining on CR #379/403 for 1.8 miles to T intersection of CR 498, Left (NorthWest) on CR 498 for .2 miles to location access on right into Haynes Canyon Unit 432H Pad. From South to North will be Haynes Canyon Unit 432H, 434H, 436H, and 438H.

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	3,944	9.625	36.0	J-55	LTC	0	3,944
Production	8.500	11,515	5.500	17.0	P-110	LTC	0	11,515

CEMENT PROPERTIES SUMMARY:

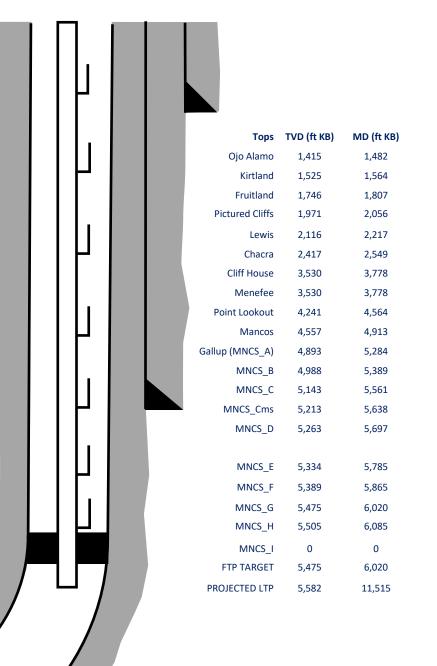
						тос		
	Туре	Wt (ppg)	Yd (cuft/sk)	Wtr (gal/sk)	% Excess	(ft MD)	Total (sx)	Cu Ft Slurry
Surface	TYPE III	14.6	1.39	6.686	100%	0	364	505
Inter. (Lead)	1:10 Type III:P	12.5	2.14	12.05	70%	0	829	1,774
Inter. (Tail)	Type III	14.6	1.38	6.64	20%	3444.28	150	207
Prod. (Lead)	ASTM type I/I	12.4	2.370	13.4	50%	0	588	1,394
Prod. (Tail)	G:POZ blend	13.3	1.570	7.7	10%	4913	1068	1,676

COMPLETION / PRODUCTION SUMMARY:

Frac: 5395

Flowback: Flow back through production tubing as pressures allow

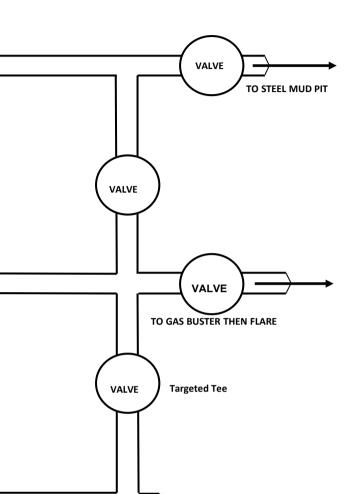
Production: Produce through production tubing via gas-lift into permanent production and storage facilities



BOPE & CHOKE MANIFOLD DIAGRAMS

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 **CHOKE MANIFOLD** REMOTE Rig Floor Rig Floor CONTROL VALVE SUPER СНОКЕ Rotating Head VALVE Flow Line Fill-Up Line (to shakers) Pressure Gauge VALVE . . Valves and <u>Pipi</u>ng are VALVE VALVE FROM HCR VALVE T3 annular(13-5/8", 5,000 psi) VALVE Annular Preventer T3 Annular & Shaffer double gate ram (13-5/8", 5,000 psi) VALVE Pipe Rams Kill Line (2" minimum) **Blind Rams** MANUAL Choke Line (3" minimum) VALVE СНОКЕ HCR Valve **Rig Matting** 13-5/8" WH **Rig Matting** (3K) 13-3/8" csg



District I 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720 District II

811 S. First St., Artesia, NM 88210 Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410 Phone:(505) 334-6178 Fax:(505) 334-6170

District IV 1220 S. St Francis Dr., Santa Fe, NM 87505 Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 291557

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CONDITIONS

Operator:	OGRID:
ENDURING RESOURCES, LLC	372286
6300 S Syracuse Way, Suite 525	Action Number:
Centennial, CO 80111	291557
	Action Type:
	[C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	Notify OCD 24 hours prior to casing & cement	12/29/2023
ward.rikala	Will require a File As Drilled C-102 and a Directional Survey with the C-104	12/29/2023
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	12/29/2023
ward.rikala	Cement is required to circulate on both surface and intermediate1 strings of casing	12/29/2023
ward.rikala	If cement does not circulate on any string, a CBL is required for that string of casing	12/29/2023
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	12/29/2023