

Form 3160-3  
(June 2015)FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator		8. Lease Name and Well No.
3a. Address	3b. Phone No. (include area code)	9. API Well No.
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)		12. County or Parish
16. No of acres in lease		13. State
17. Spacing Unit dedicated to this well		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.		
19. Proposed Depth		
20. BLM/BIA Bond No. in file		
21. Elevations (Show whether DF, KDB, RT, GL, etc.)		
22. Approximate date work will start*		
23. Estimated duration		
24. Attachments		

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

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

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

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

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

(Continued on page 2)

\*(Instructions on page 2)



## 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 well, 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 directionally 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 well 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 will 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 connects this information to an 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 Connection 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: SESW / 681 FSL / 2199 FWL / TWSP: 32N / RANGE: 08W / SECTION: 27 / LAT: 36.949311 / LONG: -107.663828 ( TVD: 0 feet, MD: 0 feet )  
PPP: NENE / 0 FSL / 0 FWL / TWSP: 32N / RANGE: 08W / SECTION: 32 / LAT: 0.0 / LONG: 0.0 ( TVD: 0 feet, MD: 0 feet )  
PPP: NENW / 0 FSL / 0 FEL / TWSP: 32N / RANGE: 08W / SECTION: 33 / LAT: 0.0 / LONG: 0.0 ( TVD: 0 feet, MD: 0 feet )  
PPP: NENW / 0 FSL / 0 FEL / TWSP: 32N / RANGE: 08W / SECTION: 34 / LAT: 0.0 / LONG: 0.0 ( TVD: 0 feet, MD: 0 feet )  
PPP: NESW / 1889 FSL / 2609 FWL / TWSP: 32N / RANGE: 08W / SECTION: 28 / LAT: 36.952883 / LONG: -107.680372 ( TVD: 7294 feet, MD: 7761 feet )  
PPP: NESE / 1918 FSL / 0 FWL / TWSP: 32N / RANGE: 08W / SECTION: 28 / LAT: 36.952701 / LONG: -107.671456 ( TVD: 7294 feet, MD: 7761 feet )  
PPP: NESW / 1875 FSL / 1565 FWL / TWSP: 32N / RANGE: 08W / SECTION: 27 / LAT: 36.95259 / LONG: -107.666097 ( TVD: 7294 feet, MD: 7761 feet )  
PPP: NWSW / 1884 FSL / 1297 FWL / TWSP: 32N / RANGE: 08W / SECTION: 27 / LAT: 36.952609 / LONG: -107.667018 ( TVD: 7294 feet, MD: 7761 feet )  
PPP: NESE / 1862 FSL / 0 FEL / TWSP: 32N / RANGE: 08W / SECTION: 29 / LAT: 36.953107 / LONG: -107.689283 ( TVD: 7305 feet, MD: 18976 feet )  
BHL: NWSW / 1862 FSL / 796 FWL / TWSP: 32N / RANGE: 08W / SECTION: 29 / LAT: 36.953373 / LONG: -107.704469 ( TVD: 7305 feet, MD: 18976 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.

CONFIDENTIAL

## Conditions of Approval

Operator: Hilcorp Energy Company  
Well Names: San Juan 32-8 Fed Com 701 (601H, 602H, 603H, 604H, 605H, 606H, 607H, 608H, 609H) & San Juan 32-8 Com 702 (601H, 602H, 603H, 604H, 605H, 606H, 607H, 608H, 609H)  
Legal Location: Sec 27, Twn 32N, R 8W, San Juan County, NM  
NEPA Log Number: DOI-BLM-NM-F010-2023-0063-EA  
Inspection Date: December 15, 2022  
Lease Number: NMSF079381

The following conditions of approval will apply to San Juan 32 8 Unit Federal 701 & 702 Com Natural Gas Wells and Pipeline 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-F010-2023-0063-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 \(blm.gov\)](https://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 [http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices.html).

Farmington 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. Hilcorp 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.

**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.

### 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 ( <i>Centaurea repens</i> )	Musk Thistle ( <i>Carduss nutans</i> )
Bull Thistle ( <i>Cirsium vulgare</i> )	Canada Thistle ( <i>Cirsium arvense</i> )
Scotch Thistle ( <i>Onopordum acanthium</i> )	Hoary Cress ( <i>Cardaria draba</i> )
Perennial Pepperweed ( <i>Lepidium latifolium</i> )	Halogeton ( <i>Halogeton glomeratus</i> )
Spotted Knapweed ( <i>Centaurea maculosa</i> )	Dalmation Toadflax ( <i>Linaria genistifolia</i> )



Yellow Toadflax ( <i>Linaria vulgaris</i> )	Camelthorn ( <i>Alhagi pseudalhagi</i> )
African Rue ( <i>Peganum harmala</i> )	Salt Cedar ( <i>Tamarix spp.</i> )
Diffuse Knapweed ( <i>Centaurea diffusa</i> )	Leafy Spurge ( <i>Euphorbia esula</i> )

- 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. Vehicles and 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. Hilcorp'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 Use Report (PUR) 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. Hilcorp's weed-control contractor would contact the BLM-FFO prior to using these chemicals and provide Pesticide Use Reports (PURs) post treatment.
- b. 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:** F-4 Timing Limitation Stipulation - Important Seasonal Wildlife Habitat applies. No surface use is allowed during the following time period, December 1 - March 31.

**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.



BLM Report Number: 2023(II)014F  
 USGS Map: Anastacio Spring, NM  
 Activity Code: 1310  
 NMCRIS No: 152031

**CULTURAL RESOURCE RECORD OF REVIEW**  
 BUREAU OF LAND MANAGEMENT  
 FARMINGTON FIELD OFFICE

**1. Description of Report/Project:**

Project Name: San Juan 32-8 Unit Com 601 Well Pad Project.

Project Sponsor: Hilcorp.

Arch. Firm & Report No.: Stratified Environmental and Archaeological Services, LLC.; SEAS Report No. 22-068.

Location: T32N R8W Section 27.

Well Footages: see plats

Split Estate: yes.

Project Dimensions: 847 ft x 600 ft –well pad.  
 1,045 ft x 40 ft – access road.

Sites Located: none.

Determination: No Effect to Historic Properties.

**2. Field Check:** No.

**3. Cultural ACEC:** No.

**4. Sensitive Cultural Area:** No.

**5. Recommendation:** *PROCEED WITH ACTION:* X *STIPULATIONS ATTACHED:*   

**6. Reviewer /Archaeologist:** Kim Adams **Date:** 4/28/2023

Report Summary	BLM	Other	Total
Acres Inventoried	1.29	24.26	25.55
Sites Recorded	0	0	0
Prev. Recorded Sites	0	0	0
Sites Avoided	0	0	0
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](mailto:kadams@blm.gov).



BLM Report Number: 2024(III)001F  
 USGS Map: Anastacio Spring, Navajo Dam,  
 and Burnt Mesa, NM  
 Activity Code: 1310  
 NMCRIS No: 154068

### **CULTURAL RESOURCE RECORD OF REVIEW**

BUREAU OF LAND MANAGEMENT  
 FARMINGTON FIELD OFFICE

#### **1. Description of Report/Project:**

Project Name: 32-8 Freshwater Waterlines Project.

Project Sponsor: Hilcorp Energy Company.

Arch. Firm & Report No.: Chronicle Heritage; Chronicle Report No. 23-702.

Location: T31N R7W Sections 2, 3, 11, 14, 23, 25, & 26.

T32N R7W Sections 17, 18, 19, 20, 21, 22, 26, 27, 29, & 34.

T32N R8W Sections 24, 25, 26, and 27.

Well Footages: N/A

Split Estate: Yes

Project Dimensions: 31,919 ft x 30 ft – waterline.  
 58,065 ft x 30 ft – waterline

Sites Located: LA4258/NM-01-991 (NRHP: Eligible; Update; Avoided).  
 LA4270/NM-01-881 (NRHP: Eligible; Update; Partially Avoided).  
 LA4422/NM-01-890 (NRHP: Eligible; Update; Partially Avoided).  
 LA4820/NM-01-38236 (NRHP: Eligible; Update; Partially Avoided).  
 LA78807/NM-01-36578 (NRHP: Not Determined; Update; Avoided).  
 LA79410/NM-01-37261 (NRHP: Eligible; Update; Partially Avoided).  
 LA82025/NM-01-37901 (NRHP: Eligible; Update; Partially Avoided).  
 LA82111/NM-01-37894 (NRHP: Not Eligible; Update; Avoided; No Further Work).  
 LA84611/NM-01-38171 (NRHP: Not Eligible; Update; Avoided; No Further Work).  
 LA98419/NM-01-38924 (NRHP: Eligible; Update; Avoided).  
 LA99158/NM-01-39005 (NRHP: Eligible; Update; Avoided).  
 LA104581/NM-01-39612 (NRHP: Not Eligible; Update; Avoided; No Further Work).  
 LA118130/NM-01-40584 (NRHP: Eligible; Update; Avoided).  
 LA140230/NM-01-43412 (NRHP: Not Determined; Update; Avoided).  
 LA186032/NM-01-48881 (NRHP: Not Eligible; Update; No Further Work).  
 LA187625/NM-01-48946 (NRHP: Eligible; Update; Avoided).  
 LA187834/NM-01-48967 (NRHP: Not Determined; Update; Avoided).  
 LA189397/NM-01-49009 (NRHP: Not Determined; Update; Avoided).  
 LA203631/NM-210-49564 (NRHP: Not Eligible; Avoided; No Further Work).  
 LA203632/NM-210-49565 (NRHP: Not Determined; Avoided; No Further Work).  
 HCPI 53627/NM-210-49555 (NRHP: Not Eligible; Update; No Further Work).  
 HCPI 54359/NM-210-49566 (NRHP: Not Eligible; No Further Work).

(LA89711 was subsumed into LA4420. LA4821, LA4823, & LA4824 were subsumed into LA4270. LA4263, LA71619, LA71620, LA78806, LA80922, LA82023, LA82024, LA82028, LA82108, LA82109, LA82110, LA82112, LA88656, LA126995, LA134499, LA144214, & LA187835 were Not Relocated.

Determination: No Adverse Effect to Historic Properties.

**2. Field Check:** none.

**3. Cultural ACEC:** No.

4. Sensitive Cultural Area: No

5. Recommendation: *PROCEED WITH ACTION*: X *STIPULATIONS ATTACHED*: X

6. Reviewer /Archaeologist: Kim Adams Date: 4/8/2024

Report Summary	BLM	Other	Total
Acres Inventoried	228.46	103.56	332.02
Sites Recorded	3	0	3
Prev. Recorded Sites	12	7	19
Sites Avoided	7	7	14
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](mailto:kadams@blm.gov).



CULTURAL RESOURCE STIPULATIONS  
Farmington Field Office  
BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

**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 site protection barriers are located as indicated on the attached maps in the vicinity of LA4258, LA4270, LA4422, LA4820, LA78807, LA79410, LA82025, LA98419, LA99158, LA118130, LA187625, & LA189397.
- Inform BLM-FFO archaeologists that monitoring will be occurring within 24 hours of the scheduled monitoring.
- Observe all construction and the placement of this layflat line within 100' of LA4258, LA4270, LA4422, LA4820, LA78807, LA79410, LA82025, LA98419, LA99158, LA118130, LA140230, LA187625, LA187834, & LA189397.
- 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 placement of the layflat line or any 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 barrier 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 maps.
- 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](mailto: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(III)001F

Project Name: 32-8 Freshwater Waterlines Project **ROW will be restricted in Site Boundary**  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 

SITE PROTECTION BARRIER = 

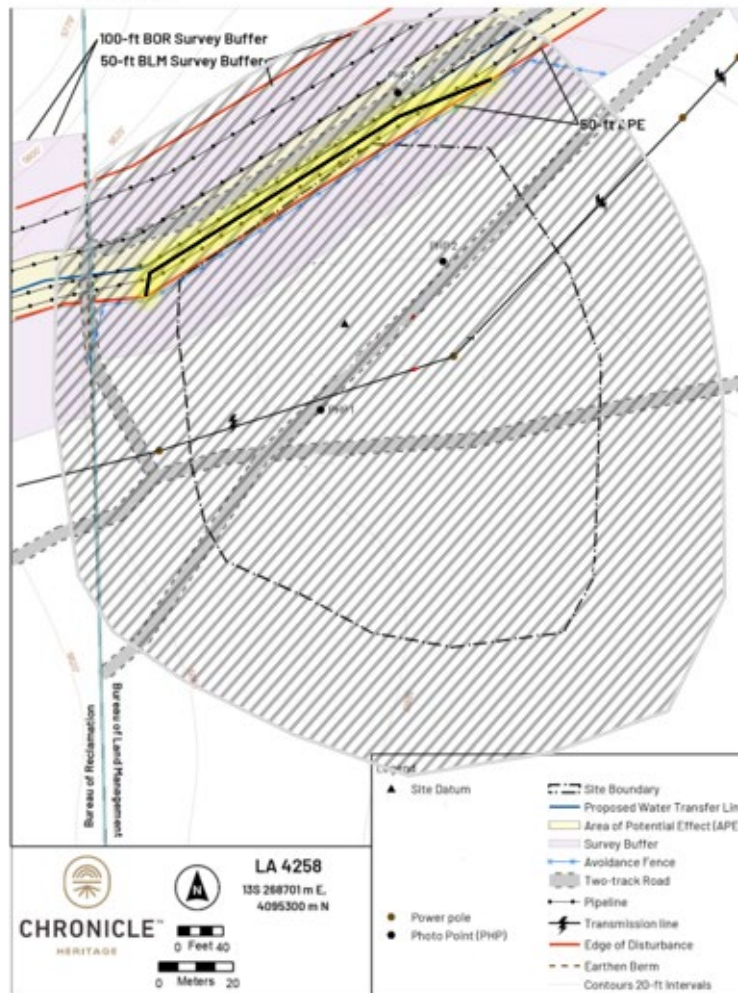


Figure 6-2. Site LA 4258 map.

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**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project. **ROW will be restricted in Site Boundary**  
Project Sponsor: Hilcorp Energy Company.

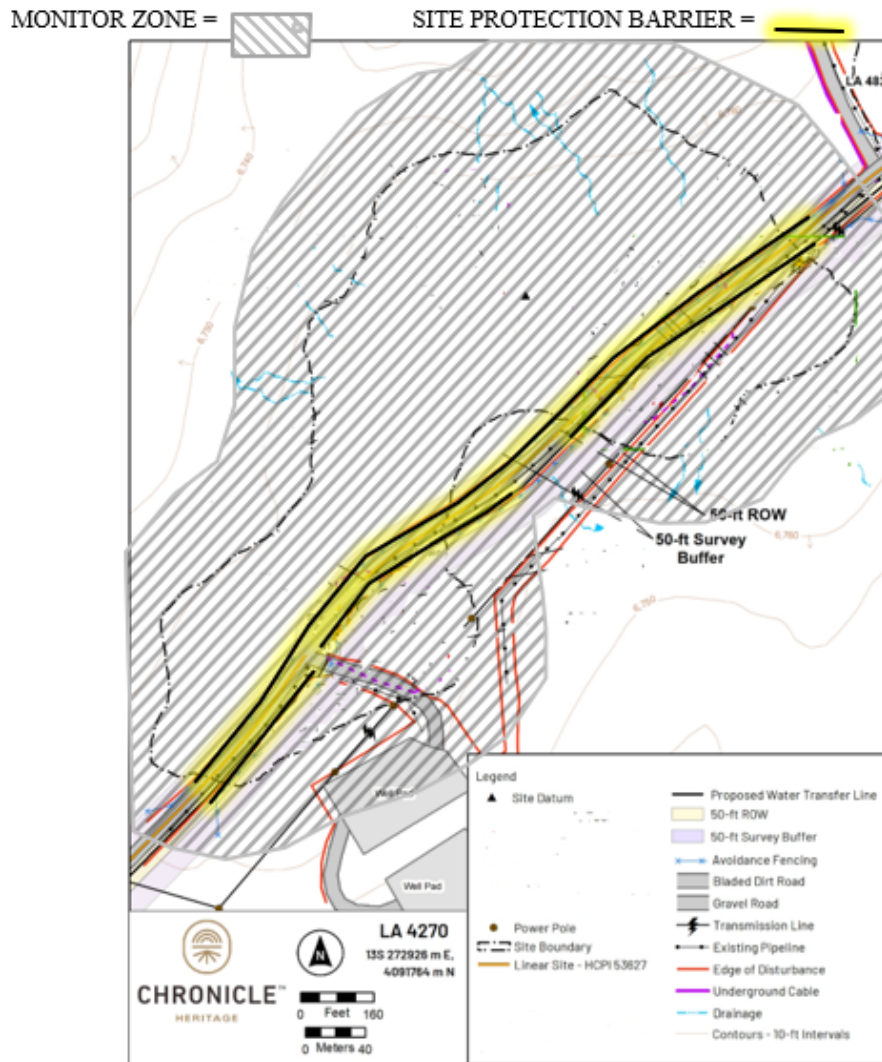


Figure 6-4. Site LA 4270 map.



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Farmington Field Office

BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project. **ROW will be restricted in site boundary**Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE =



SITE PROTECTION BARRIER =

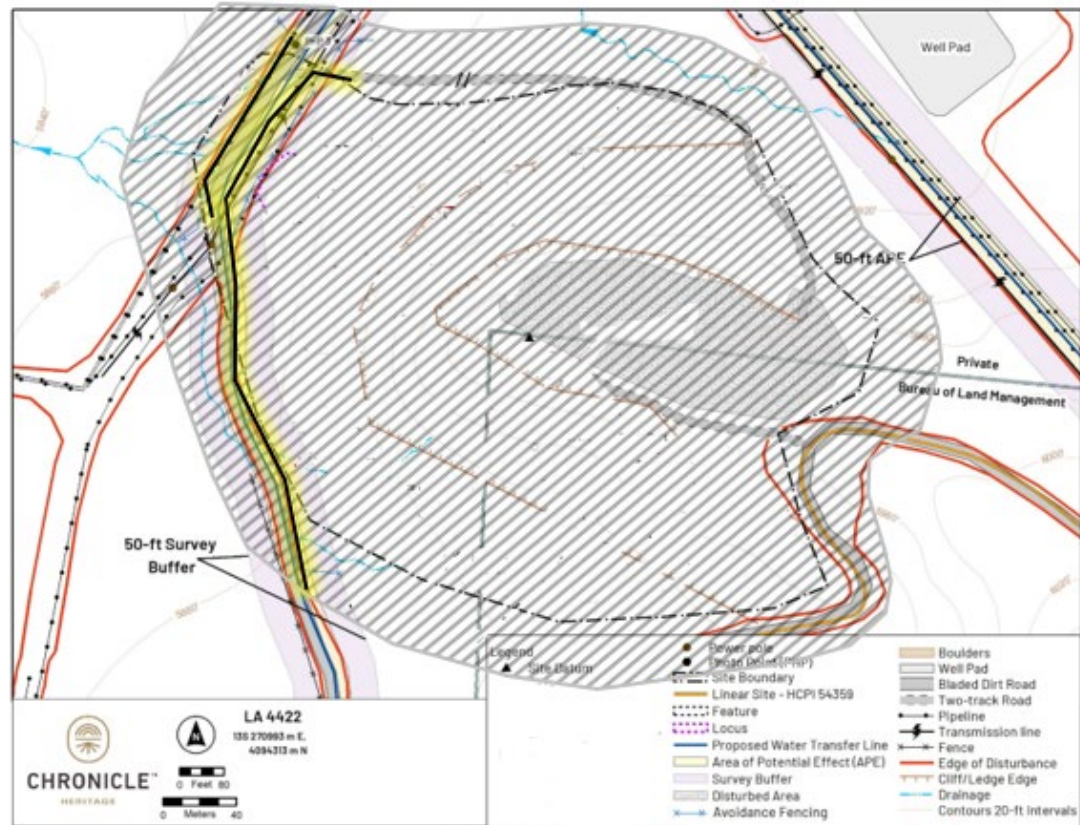


Figure 6-14. LA 4422 site map.

**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)**  
**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project. **ROW will be restricted in site boundary**  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE =



SITE PROTECTION BARRIER =

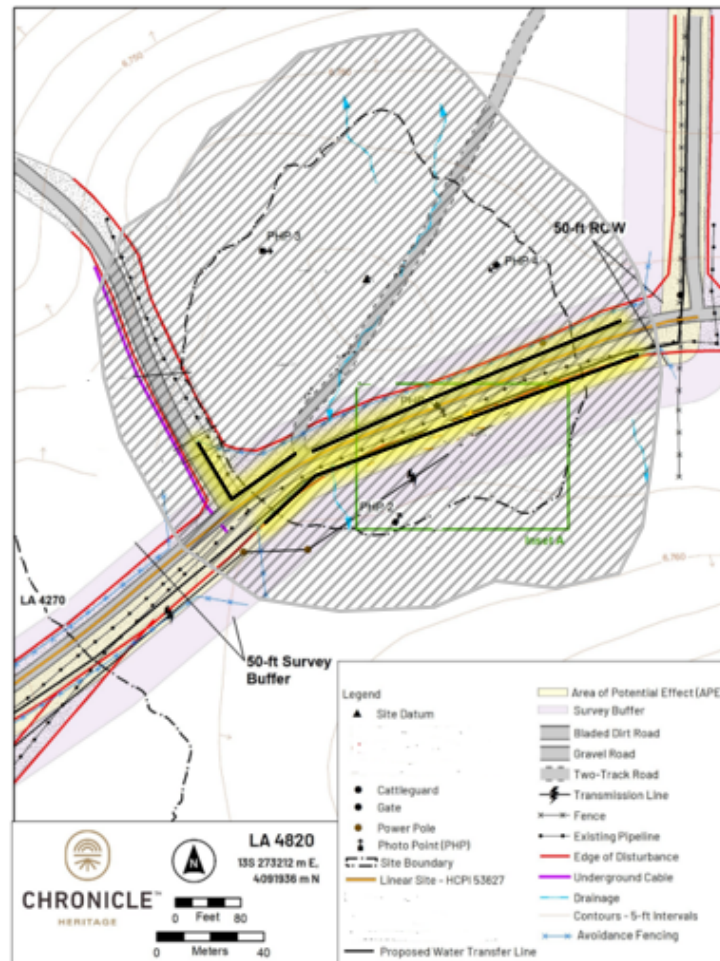


Figure 6-18. LA 4820 site map.

**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)****CULTURAL RESOURCE STIPULATIONS**

Farmington Field Office

BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE =

SITE PROTECTION BARRIER =

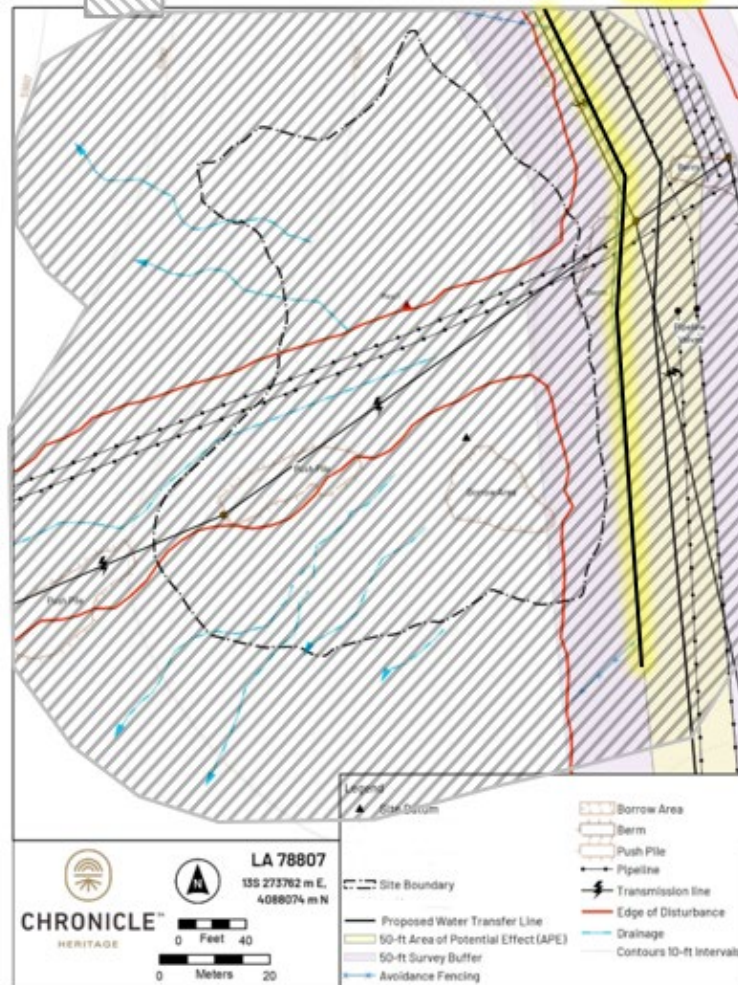




Figure 6-23 LA78807 site map.



**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)**  
**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 

SITE PROTECTION BARRIER = 

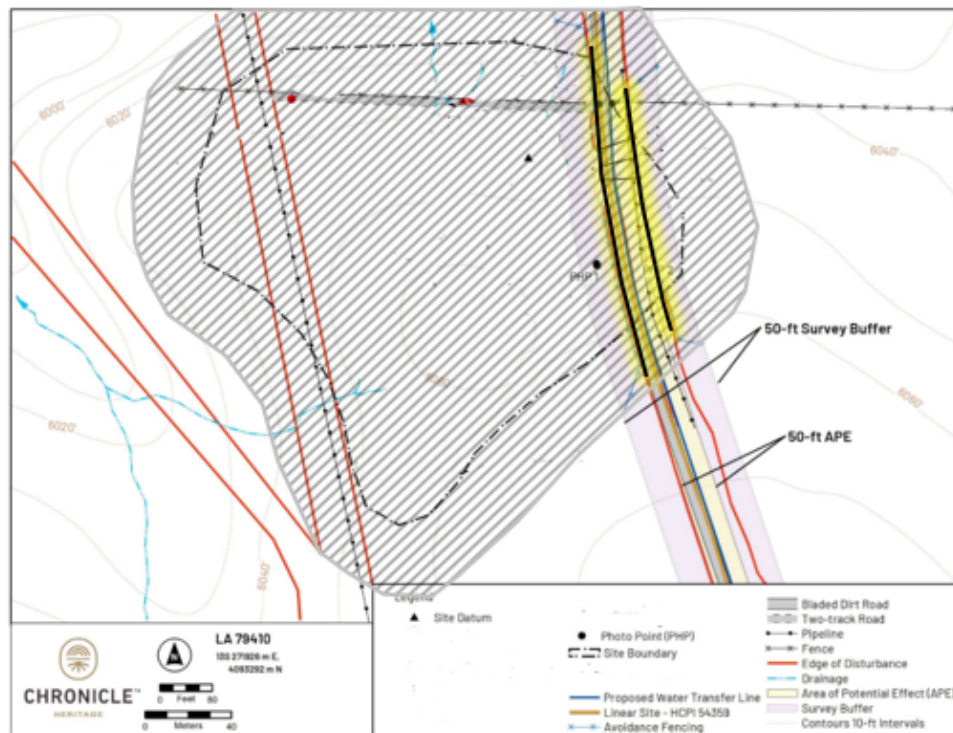




Figure 6-29. LA 79410 site map.

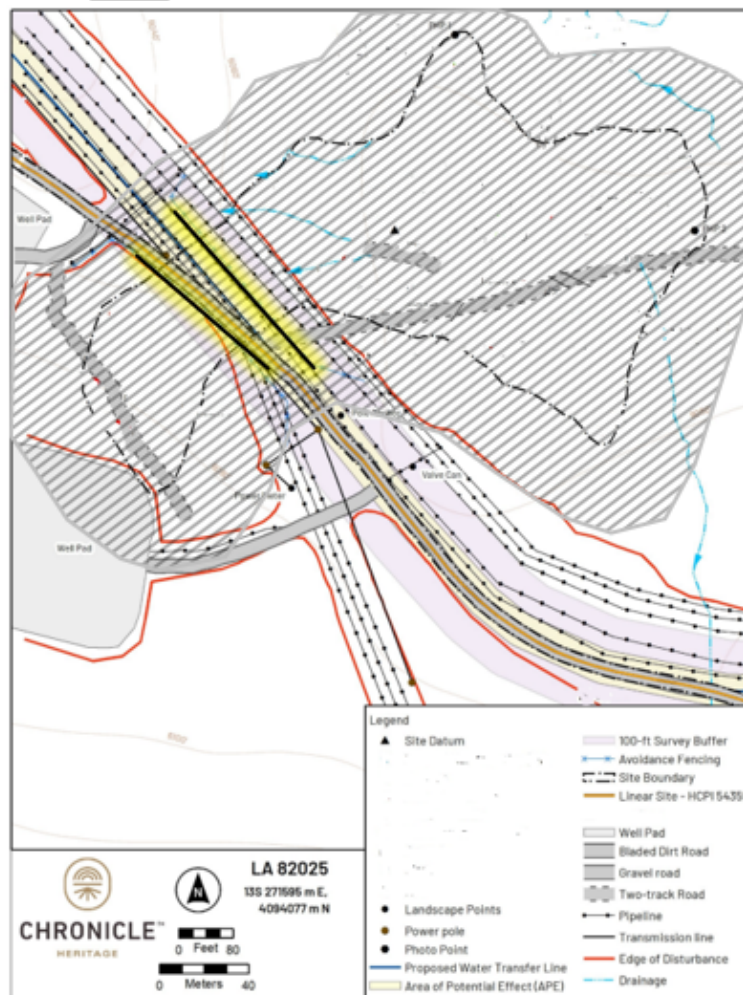


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 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 

SITE PROTECTION BARRIER = 



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 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project. **ROW will be restricted in site boundary.**  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE =



SITE PROTECTION BARRIER =

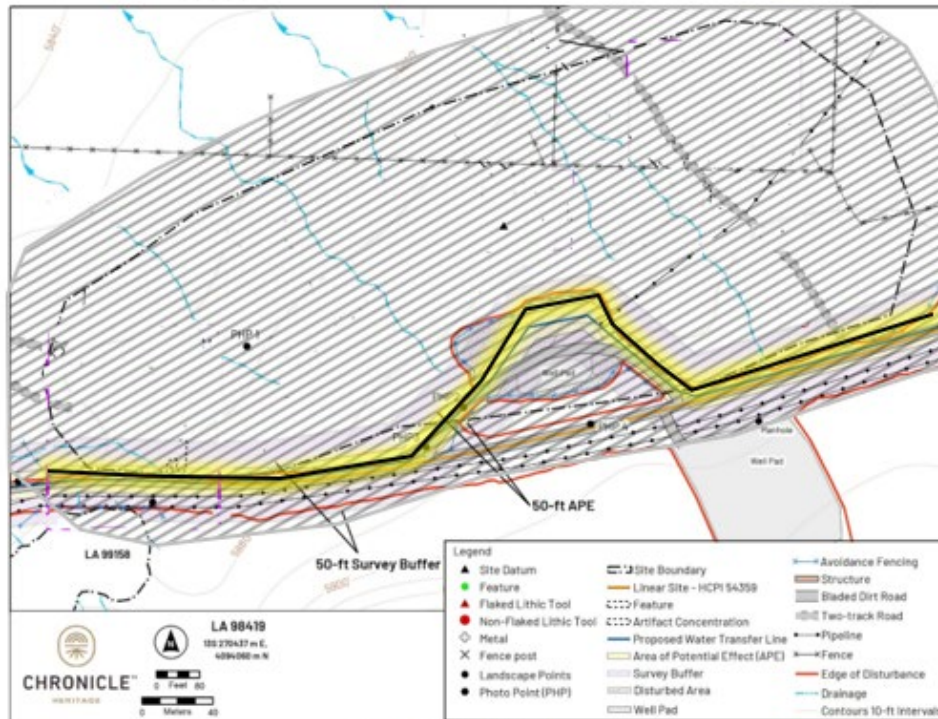




Figure 6-45. LA 98419 site map

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**CULTURAL RESOURCE STIPULATIONS**

Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 

SITE PROTECTION BARRIER = 

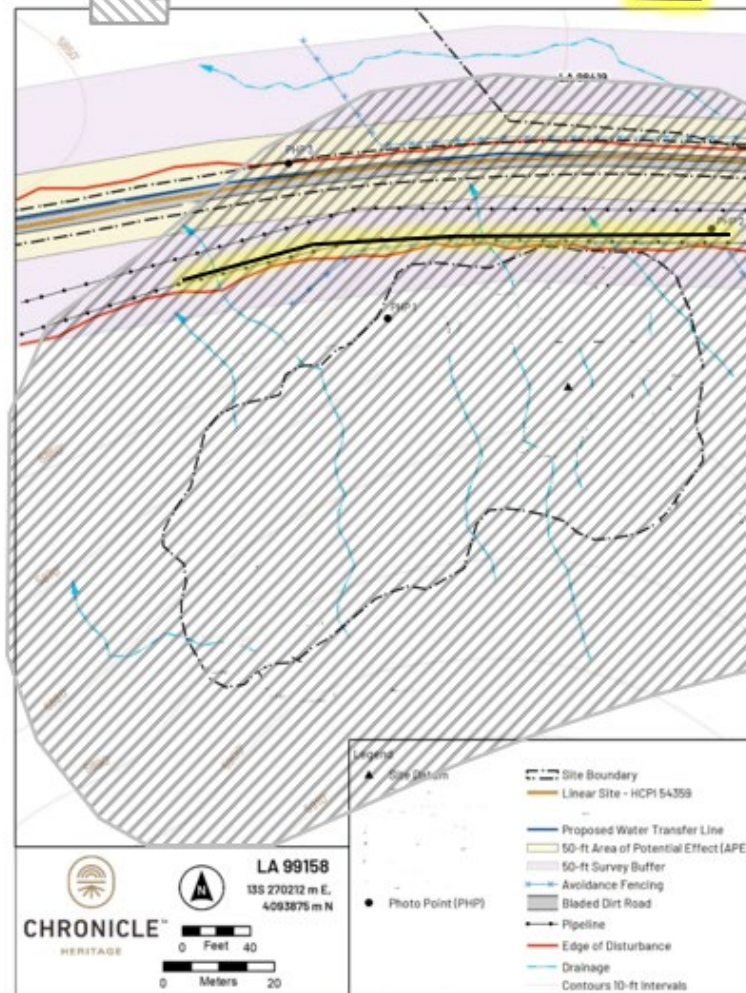


Figure 6-57. LA 99158 site map.



**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)**  
**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

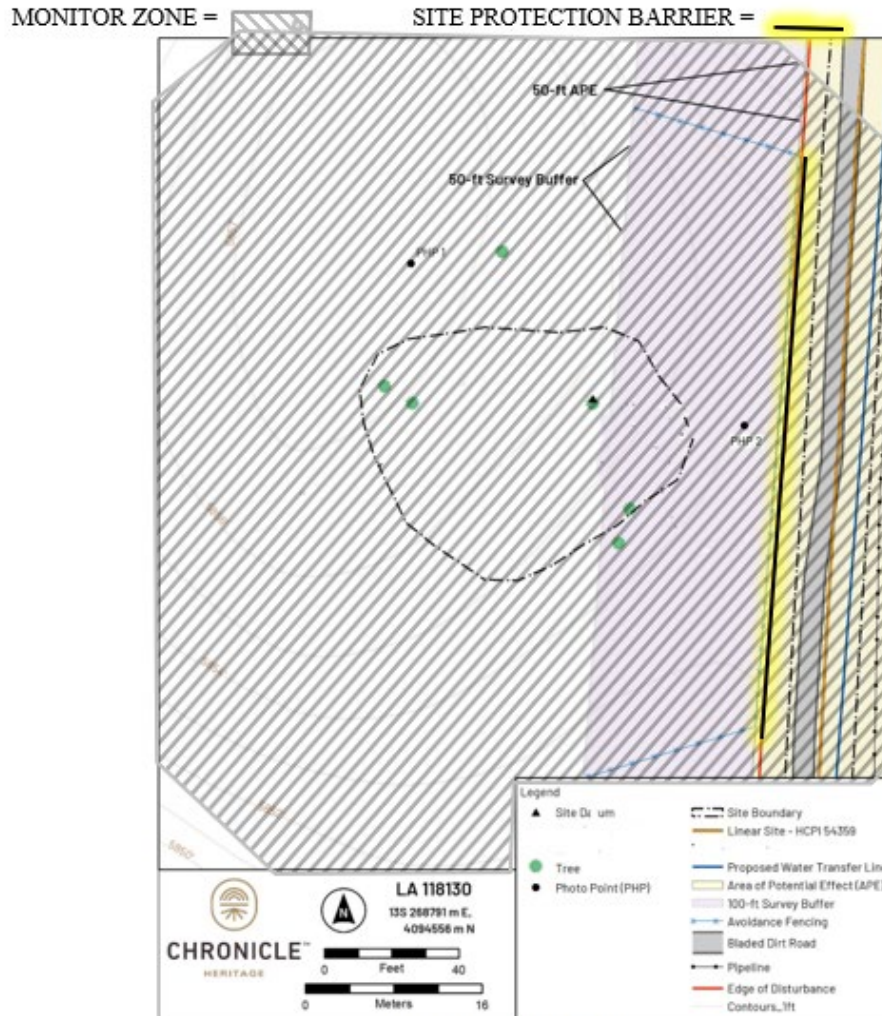


Figure 6-63. LA118130 site map.

**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)**  
**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.



MONITOR ZONE = 




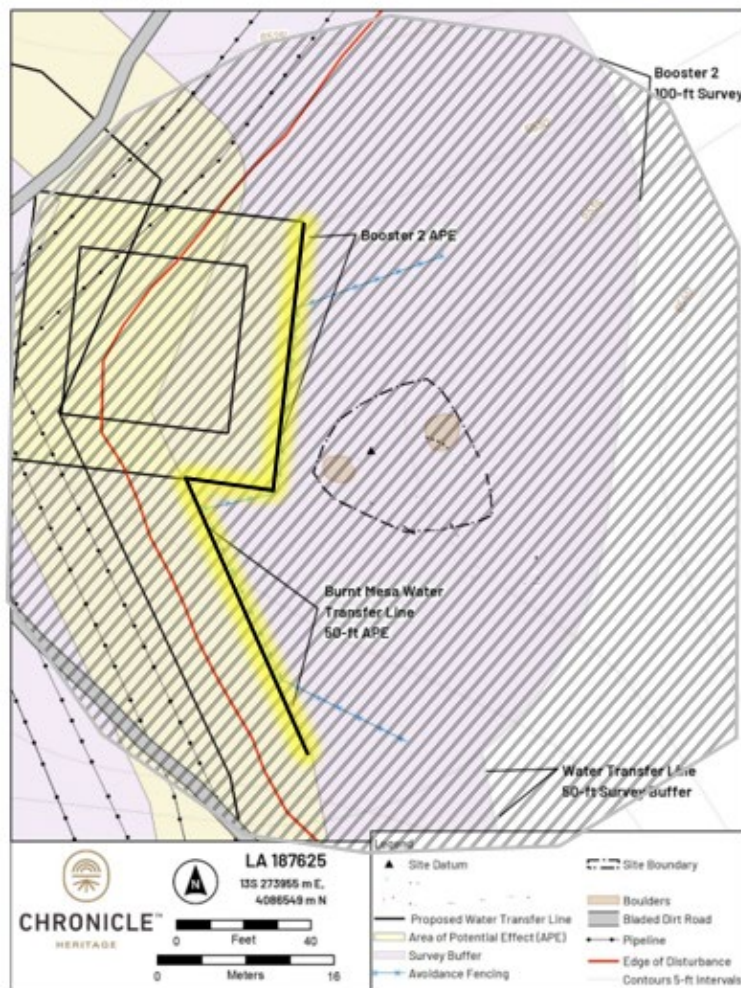
Figure 6-65. LA 140230 site map.

**For Official Use Only: Disclosure of site locations prohibited (43 CFR 7.18)**  
**CULTURAL RESOURCE STIPULATIONS**  
 Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 


SITE PROTECTION BARRIER = 

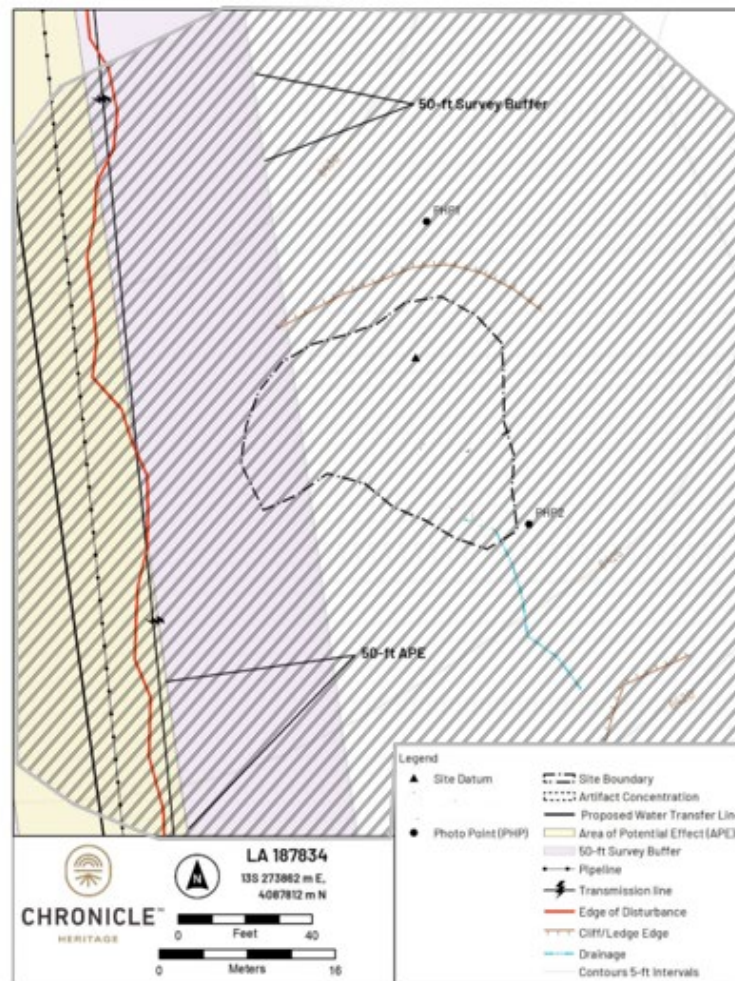




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 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE = 





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**CULTURAL RESOURCE STIPULATIONS**

Farmington Field Office  
 BLM Report Number: 2024(III)001F

Project Name: 32-8 Freshwater Waterlines Project.  
Project Sponsor: Hilcorp Energy Company.

MONITOR ZONE =



SITE PROTECTION BARRIER =

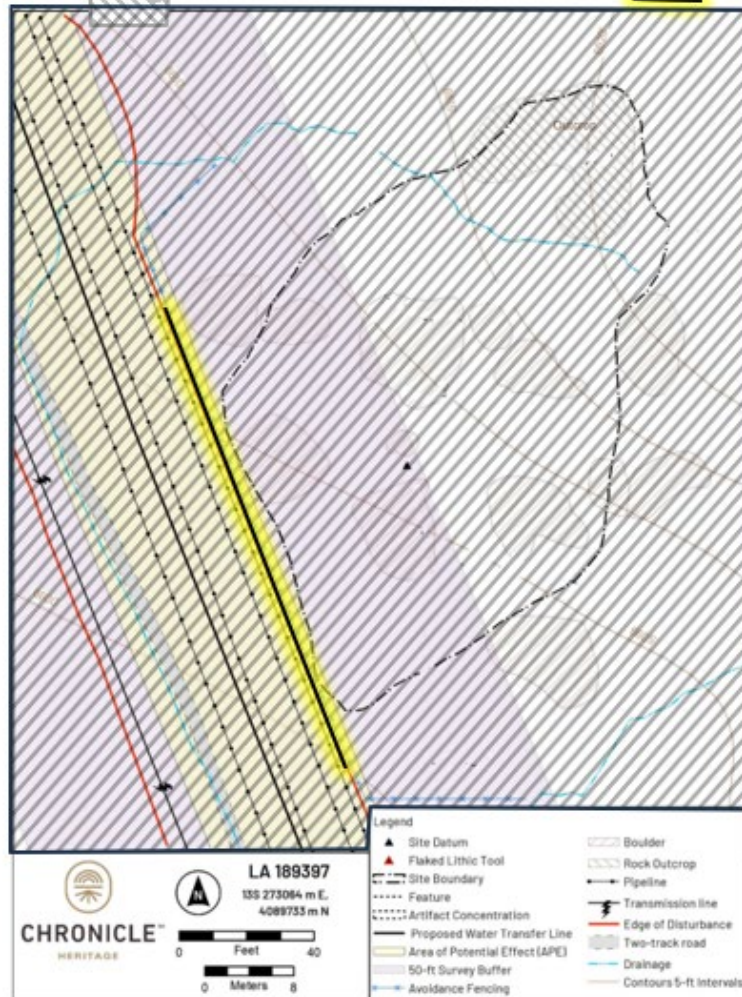


Figure 6-78. LA189397 site map.

Submit one copy to  
Appropriate District Office

District II  
811 S. First Street, Artesia, NM 88210  
Phone: (505) 748-1283 Fax: (505) 748-9720

District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

District IV  
1220 S. St. Francis Drive, Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

*API Number		*Pool Code	*Pool Name	
		97232	BASIN MANCOS	
*Property Code	*Property Name			*Well Number
	SAN JUAN 32 8 701 FEDERAL COM			602H
*OGRID No.	*Operator Name			*Elevation
372171	HILCORP ENERGY COMPANY			6696'

**10 Surface Location**

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	27	32N	8W		681	SOUTH	2199	WEST	SAN JUAN

**11 Bottom Hole Location If Different From Surface**

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	29	32N	8W		1862	SOUTH	796	WEST	SAN JUAN

12 Dedicated Acres 1600.00		S/2 - Section 29 S/2 - Section 28 SW/4 - Section 27 N/2 - Section 32 N/2 - Section 33 NW/4 - Section 34	13 Joint or Infill INFILL	14 Consolidation Code	15 Order No. R-235
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION					

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

*Amanda Walker* 5/22/2023  
Signature Date  
Printed Name  
mwalker@hilcorp.com  
E-mail Address

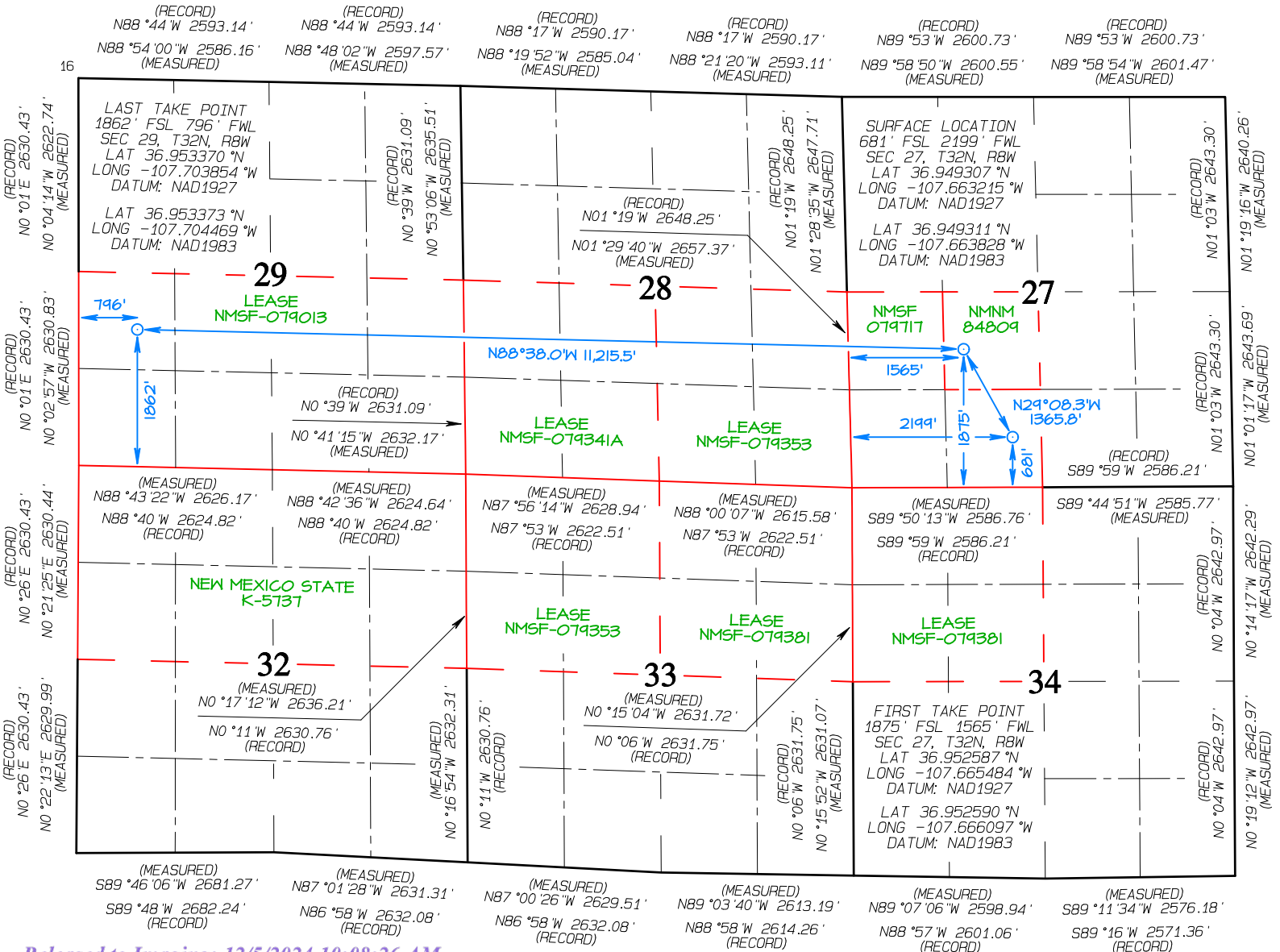
**18 SURVEYOR CERTIFICATION**  
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Date Revised: MAY 11, 2023  
Survey Date: SEPTEMBER 16, 2022

Signature and Seal of Professional Surveyor

**JASON C. EDWARDS**  
NEW MEXICO  
15269  
REGISTERED PROFESSIONAL SURVEYOR

**JASON C. EDWARDS**  
Certificate Number 15269





San Juan County, NM

San Juan 32-8 701 Federal Com 602H

Hilcorp Energy Company

### Technical Drilling Plan (Rev. 3)

Hilcorp Energy Company proposes to drill and complete the referenced horizontal well targeting the Mancos formation.

*Note: This technical drilling plan will be adjusted based upon actual conditions.*

#### 1. Location

<b>Date:</b>	October 24, 2023	<b>Pool:</b>	Mancos
<b>Well Name:</b>	San Juan 32-8 701 Federal Com 602H	<b>Ground Elevation (ft. MSL):</b>	6,696'
<b>Surface Hole Location:</b>	36.9493067° N, -107.6632151° W	<b>Total Measured Depth (ft.)</b>	18,976'
<b>Bottom Hole Location:</b>	36.9533700° N, -107.7038539° W	<b>County, State:</b>	San Juan County, NM

*Note: All depths in the directional drilling plan are referenced from an estimated RKB datum of 17' above ground level.*

#### 2. Geological Markers

Anticipated formation tops with comments of any possible water, gas or oil shows are indicated below:

Formation	Depth (ft. TVD)	Remarks
Ojo Alamo	2,433	Possible Water
Kirtland	2,577	Gas & Water
Fruitland	3,221	Gas & Water
Pictured Cliffs	3,643	Possible Gas
Lewis Shale	3,937	None
Cliffhouse	5,566	Possible Gas & Water
Menefee	5,658	None
Point Lookout	5,952	Gas
Mancos	6,408	Gas
Mancos A	6,960	Gas
Mancos B	7,147	Gas
Gallup	7,563	Water / Gas / Oil

#### 3. Pressure Control Equipment

See Appendix A for BOP equipment and choke manifold schematics.

- BOP equipment will be nipped up on top of the wellhead after surface casing is set and cemented.
- Pressure control configurations will be designed to meet the minimum 5M standards.
- All equipment will have 5M pressure rating at a minimum.
- BOP Testing: The BOPE will be tested to **250 psi (Low) for 5 minutes and 5,000 psi (High) for 10 minutes**. Pressure test **surface casing to 600 psi for 30 minutes** and **intermediate casing to 1,500 psi for 30 minutes**. Utilize a BOPE Testing Unit with a recording chart and appropriate test plug for testing. BOP



San Juan County, NM

San Juan 32-8 701 Federal Com 602H

Hilcorp Energy Company

equipment will be tested upon installation, every 30 days, and after any repairs are made to the BOP equipment. Annular preventors will be functionally tested at least once per week. Pipe and blind rams will be function tested each trip. **The New Mexico Oil & Gas Conservation Division and the BLM will be notified 24 hours in advance of testing BOPE.** All tests and inspections will be recorded and logged with time and results. A full BOP test will be conducted when initially installed for the first well on the pad or if a seal subject to test pressure is broken, following related repairs, and at a minimum of 30-day intervals. A BOPE shell test only will be conducted for subsequent wells on the pad when seals subject to pressure have not been broken, repaired, and fall within the 30-day interval of the first full test.

- A rotating head will be installed on top of the annular as seen in the attached diagram.

#### 4. Casing & Cement Program

##### A. Proposed Casing Program:

Proposed Casing Design								
Casing String	Hole Size	Casing Size	Weight/Grade	Top Depth (MD/TVD)	Shoe Depth (MD/TVD)	Collapse	Yield	Joint Strength
Surface	17-1/2"	13-3/8"	54.5#, J55 or equiv, LTC/BTC	0'	350' / 350'	1,130 psi	2,730 psi	514,000 lbs
Intermediate	12-1/4"	9-5/8"	43.5 # L80 or equiv, LTC/BTC	0'	6,599' / 6,508'	3,810 psi	6,330 psi	813,000 lbs
Production	8-1/2"	5-1/2"	20.0#, P110 or equiv, LTC/BTC	0'	18,976' / 7,305'	11,080 psi	12,360 psi	548,000 lbs
Proposed Casing Design Safety Factors								
Casing String	Burst Design SF		Collapse Design SF		Joint Tensile Design SF		Connection Tensile Design SF	
Surface	16.7		8.8		44.7		47.7	
Intermediate	1.63		1.18		3.5		2.8	
Production	2.8		2.9		1.7		1.8	

San Juan County, NM

San Juan 32-8 701 Federal Com 602H



## Notes:

- Production casing will be run from surface to TD.
- If the 8-1/2" hole is not drilled to the total planned measured depth, the production casing setting depth and length will be adjusted accordingly.
- Casing Design Parameters – Designed for full evacuation. Mud Weights used for calculations: Surface = 9.0 ppg, Intermediate = 11.5 ppg, Production = 12.0 ppg. Burst: 1.15; Collapse: 1.125; Tensile: 1.6.
  - Burst: (Casing Burst Rating) / (Maximum Burst Load (Max MW x TVD x .052))
  - Collapse: (Full hydrostatic of MW in annulus) – (Hydrostatic of vacated casing, 0.1 psi/ft)
  - Tensile: (Tensile rating) / (measured depth x casing weight)
- A toe initiation sliding sleeve will be installed at the toe of the production casing.

**B. Proposed Centralizer Program:**

Proposed Centralizer Program	
Interval	Centralizers & Placement
Surface	1 centralizer per joint on bottom 3 joints.
Intermediate	1 centralizer per joint in shoe track. 1 centralizer every 3 <sup>rd</sup> joint to surface.
Production	Centralizers determined by hole conditions from TD to top of cement.

**C. Proposed Cement Program:**

Proposed Cement Design							
Interval	Depth (ft. MD)	Lead/Tail	Volume (ft <sup>3</sup> )	Sacks	Slurry	Density	Planned TOC
Surface	350'	Tail	486 ft <sup>3</sup>	414	Premium Cement – 100% OH Excess 2% CaCl, 0.125 lb/sk Poly E Flake 1.175 ft <sup>3</sup> /sk – 5.14 gal/sk	15.8 ppg	Surface
Intermediate	6,599'	Lead	1,947 ft <sup>3</sup>	987	HalCem Cement – 25% OH Excess 0.3% HR-5, 0.125 lb/sk Poly E Flake 1.974 ft <sup>3</sup> /sk – 10.28 gal/sk	12.3 ppg	Surface
		Tail	625 ft <sup>3</sup>	483	VariCem Cement – 25 % OH Excess 0.1% HR-5, 0.125 lb/sk Poly E Flake 1.295 ft <sup>3</sup> /sk – 5.69 gal/sk	13.5 ppg	5,000'
Production	18,976'	Tail	3,535 ft <sup>3</sup>	2,607	BondCem Cement – 10% OH Excess 0.3% Super CBL, 0.1% HR-601 1.356 ft <sup>3</sup> /sk – 6.08 gal/sk	13.3 ppg	5,000'

## Notes:

- The cement slurry additives may be adjusted to accommodate required pump and compressive test times.

San Juan County, NM

San Juan 32-8 701 Federal Com 602H



- Actual cement volumes will be determined and may be adjusted onsite based on well conditions.
- For the intermediate hole section, a 2-stage cement job may be performed if hole conditions dictate. If needed, the stage tool will be placed appropriately as conditions indicate.
- Cement will be circulated to surface on surface and intermediate casing sections to protect water bearing zones.
- A minimum of 8 hours of wait on cement time will be observed on each hole section to allow adequate time for cement to achieve a minimum of 500 psi of compressive strength. The BOP will not be nipped down, the wellhead will not be installed, the casing will not be tested and the prior casing shoe will not be drilled out until adequate wait on cement time has been observed (8 hours or time to reach 500 psi compressive strength).

## 5. Drilling Fluids Program

### A. Proposed Drilling Fluids Program:

Proposed Drilling Fluids Program					
Interval	Fluid Type	Density	Fluid Loss	Invert Ratio	Depth
		(ppg)	(mL/30 min)	(%Diesel / %Brine)	(ft. MD)
Surface	Water/Gel	8.3 – 9.2	NC	N/A	0' – 350'
Intermediate	LSND / Gel	8.4 – 10.0	<6	N/A	350' – 6,599'
Production	Oil Base Mud	10.0 – 12.0	6 – 8	70/30 – 75/25	6,599' – 18,976'

#### Notes:

- In the 8-1/2" production section, oil base mud will be utilized which will be an invert mud. The base fluid will be diesel. Brine fluid will be CaCl<sub>2</sub> or KCl.
- Lost circulation material may be added to the mud systems to manage fluid losses as hole conditions dictate.
- The well will be drilled utilizing a closed-loop circulating system. Drill cuttings for all hole sections will be transported to an approved disposal site.
- Estimated total volume of drill cuttings for disposal: 1,884 bbls (10,568 ft<sup>3</sup>).

## 6. Estimated Pressures & Drilling Hazards

### A. Estimated Pressures

- Estimated Reservoir Pressure of Mancos Shale target: 4,000 – 4,200 psi
- Estimated Mancos Shale target formation temperature: 180° F
- No over-pressured intervals expected (aside from Mancos Shale target).
- There is production from the Fruitland Coal, Mesa Verde and Pictured Cliffs formations in offset wells in the area, which could result in these formations being depleted.



San Juan County, NM

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**B. Water Flows**

- Water flows are possible in the intermediate section. Water flows will be mitigated with increased mud weight.

**C. Lost Circulation**

- Lost circulation is possible in the intermediate section. Losses will be mitigated by utilizing LCM in the mud system.

**D. Hydrogen Sulfide**

- No hydrogen sulfide is expected to be encountered based on nearby well production.

**7. Testing, Logging, Coring**

**A. Mud Logging**

- Mud loggers will collect formation samples every 30-90' from surface casing shoe to TD of the well.

**B. MWD**

- Measurement while drilling tools will be utilized on all sections of the well to measure and record inclination and azimuth.

**C. LWD**

- Logging while drilling tools (gamma ray) will be utilized while drilling the production section from the intermediate casing kick-off to the production hole section TD to assist in staying in the desired interval while drilling the lateral section.

**D. Open Hole Logging**

- There are no planned open hole logs.

**E. Coring**

- Whole cores and sidewall cores are not planned for this well.

**F. Cased Hole Logging**

- The 9-5/8" intermediate casing will be cemented to surface to protect water bearing zones. If cement is not circulated to surface on the intermediate cement job, a temperature survey or a cement bod log will be run to verify top of cement.

San Juan County, NM

San Juan 32-8 701 Federal Com 602H



## 8. Directional Drilling Plan

- The directional drilling plan and plot are attached.
- The directional plan is built from geologic targets from offset wells and lease boundaries. The production hole section will be landed and drilled horizontally within the target formation utilizing LWD tools to steer the wellbore. On-site adjustments to the directional plan will be made as formation and wellbore dictate.

## 9. Completion

### A. Pressure Testing

- A pressure test of the 5-1/2" production casing will be conducted to the maximum allowable frac pressure for 30 minutes.
- Pressure will be cycled to shift the toe sleeve open.

### B. Stimulation

- The well will be stimulated with sand and water. The number of stages and amount of proppant used will be adjusted based on actual lateral length and real-time pumping conditions during the stimulation.
- Individual stages will be perforated on wireline and isolated using frac plugs or dissolvable frac plugs.
- Upon completion of the stimulation operation, frac plugs will be drilled out and the stimulation fluid will be flowed back.

\*NOTE: Although this horizontal well may be drilled past the applicable setbacks, an unorthodox location application is not required because the completed interval in this well, as defined by 19.15.16.7 8(1) NMAC, will be entirely within the applicable setbacks. This approach complies with all applicable rules, including 19.15.16.14 A(3) NMAC, 19.15.16.14 8(2) NMAC, 19.15.16.15 8(2)NMAC, and 19.15.16.15 8(4) NMAC.

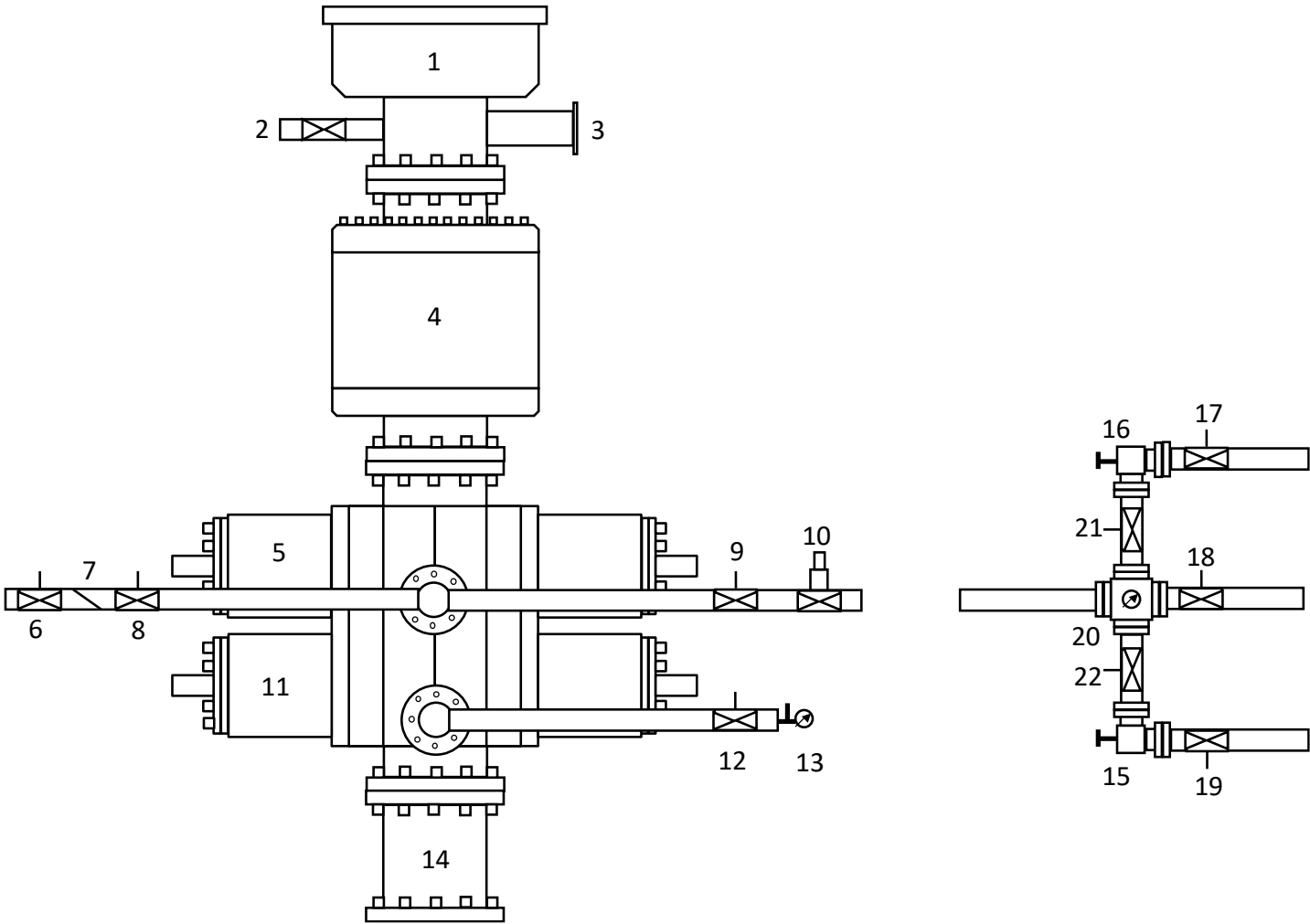
San Juan County, NM

San Juan 32-8 701 Federal Com 602H



Appendix A

13-5/8” 5M BOP & 5M Choke Manifold Configuration



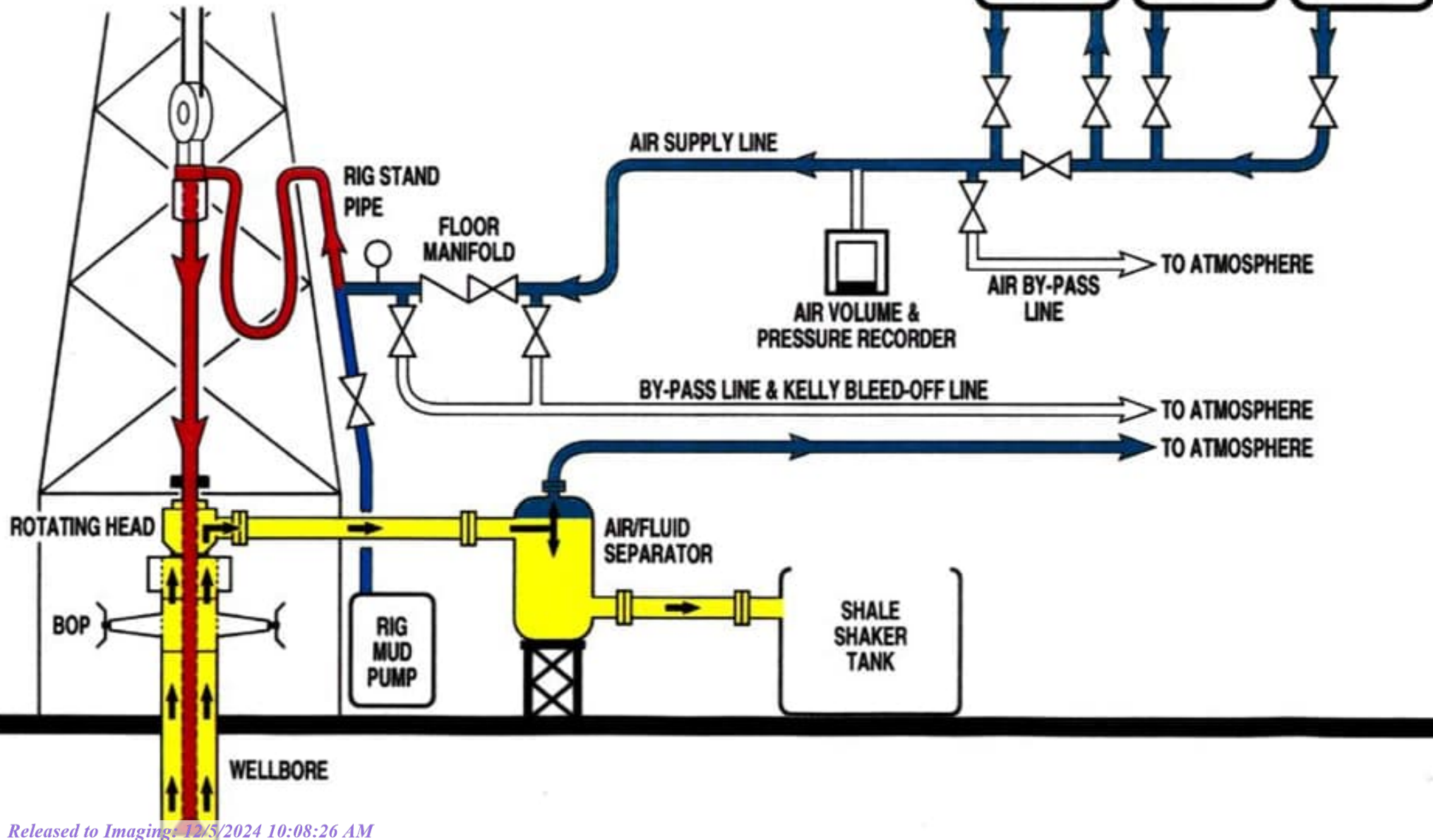
1	Rotating Head	12	Manual Isolation Valve
2	Fill-Up Line	13	Needle Valve & Pressure Gauge
3	Flow Line	14	Spacer Spool (if needed)
4	5M Annular Preventer	15	Manual Choke
5	5M Pipe Rams	16	Hydraulically Operated Choke
6	Manual Isolation Valve	17	Manual Isolation Valve
7	Check Valve	18	Manual Isolation Valve
8	Manual Isolation Valve	19	Manual Isolation Valve
9	Manual Isolation Valve	20	Valve Block & Pressure Gauge
10	High Closing Ratio Valve	21	Manual Isolation Valve
11	5M Blind Rams	22	Manual Isolation Valve



# AERATED FLUID DRILLING LAYOUT

**KEY :**

-  AIR
-  FLUID
-  AERATED FLUID
-  RETURNS



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

Submit Electronically  
Via E-permitting

## NATURAL GAS MANAGEMENT PLAN

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

### Section 1 – Plan Description Effective May 25, 2021

**I. Operator:** Hilcorp Energy Company **OGRID:** 372171 **Date:** 5/19/2023

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

If Other, please describe: \_\_\_\_\_

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

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MMCF/D	Anticipated Produced Water BBL/D
San Juan 32 8 701 Federal Com 601H		N-27-32N-8W	581' FSL & 2198' FWL	0	15	100
San Juan 32 8 701 Federal Com 602H		N-27-32N-8W	681' FSL & 2199' FWL	0	15	100
San Juan 32 8 701 Federal Com 603H		N-27-32N-8W	631' FSL & 2199' FWL	0	15	100
San Juan 32 8 701 Federal Com 604H		N-27-32N-8W	531' FSL & 2198' FWL	0	15	100
San Juan 32 8 701 Federal Com 605H		N-27-32N-8W	481' FSL & 2198' FWL	0	15	100
San Juan 32 8 701 Federal Com 606H		N-27-32N-8W	656' FSL & 2199' FWL	0	15	100
San Juan 32 8 701 Federal Com 607H		N-27-32N-8W	606' FSL & 2198' FWL	0	15	100
San Juan 32 8 701 Federal Com 608H		N-27-32N-8W	556' FSL & 2198' FWL	0	15	100
San Juan 32 8 701 Federal Com 609H		N-27-32N-8W	506' FSL & 2198' FWL	0	15	100
San Juan 32 8 702 Federal Com 601H		N-27-32N-8W	569' FSL & 2238' FWL	0	15	100
San Juan 32 8 702 Federal Com 602H		N-27-32N-8W	669' FSL & 2239' FWL	0	15	100
San Juan 32 8 702 Federal Com 603H		N-27-32N-8W	619' FSL & 2239' FWL	0	15	100
San Juan 32 8 702 Federal Com 604H		N-27-32N-8W	519' FSL & 2238' FWL	0	15	100
San Juan 32 8 702 Federal Com 605H		N-27-32N-8W	469' FSL & 2238' FWL	0	15	100
San Juan 32 8 702 Federal Com 606H		N-27-32N-8W	644' FSL & 2239' FWL	0	15	100
San Juan 32 8 702 Federal Com 607H		N-27-32N-8W	594' FSL & 2238' FWL	0	15	100
San Juan 32 8 702 Federal Com 608H		N-27-32N-8W	544' FSL & 2238' FWL	0	15	100
San Juan 32 8 702 Federal Com 609H		N-27-32N-8W	494' FSL & 2238' FWL	0	15	100

**IV. Central Delivery Point Name:** Milagro/Ignacio Gas Plant [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
San Juan 32 8 701 Federal Com 601H						<u>2024</u>
San Juan 32 8 701 Federal Com 602H						<u>2024</u>
San Juan 32 8 701 Federal Com 603H						<u>2024</u>
San Juan 32 8 701 Federal Com 604H						<u>2024</u>
San Juan 32 8 701 Federal Com 605H						<u>2024</u>
San Juan 32 8 701 Federal Com 606H						<u>2024</u>
San Juan 32 8 701 Federal Com 607H						<u>2024</u>
San Juan 32 8 701 Federal Com 608H						<u>2024</u>
San Juan 32 8 701 Federal Com 609H						<u>2024</u>
San Juan 32 8 702 Federal Com 601H						<u>2024</u>
San Juan 32 8 702 Federal Com 602H						<u>2024</u>
San Juan 32 8 702 Federal Com 603H						<u>2024</u>
San Juan 32 8 702 Federal Com 604H						<u>2024</u>
San Juan 32 8 702 Federal Com 605H						<u>2024</u>
San Juan 32 8 702 Federal Com 606H						<u>2024</u>
San Juan 32 8 702 Federal Com 607H						<u>2024</u>
San Juan 32 8 702 Federal Com 608H						<u>2024</u>
San Juan 32 8 702 Federal Com 609H						<u>2024</u>

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

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

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

## **Section 2 – Enhanced Plan**

### **EFFECTIVE APRIL 1, 2022**

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

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

#### **IX. Anticipated Natural Gas Production:**

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

#### **X. Natural Gas Gathering System (NGGS):**

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

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

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

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

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

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



### **Section 3 - Certifications**

**Effective May 25, 2021**

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

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

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

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

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

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

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

### **Section 4 - Notices**


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

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

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

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

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

Signature: 
Printed Name: Amanda Walker
Title: Operations Regulatory Tech Sr.
E-mail Address: <a href="mailto:mwalker@hilcorp.com">mwalker@hilcorp.com</a>
Date: 5/19/2023
Phone: 346-237-2177
<b>OIL CONSERVATION DIVISION</b> <b>(Only applicable when submitted as a standalone form)</b>
Approved By:
Title:
Approval Date:
Conditions of Approval:

## Hilcorp Energy Natural Gas Management Plan Attachments

### VI. Separation Equipment

The operator will select separation equipment for the maximum anticipated throughput and pressure to optimize gas capture. Separation equipment is sized according to manufacturer's design specifications. Separation vessels are built following the A.S.M.E. section VIII division 1 codes for pressure vessel design, fabrication, inspection, testing and certification. Anticipated well pressures and production rates are evaluated to select separation equipment according to the equipment's designed operating pressure and throughput.

After completion, the operator utilizes flowback equipment, including separators, to manage wellbore fluids and solids during the initial separation period. After the initial flowback period is complete the operator utilizes iterative facility separation equipment to ensure that optimal separation is achieved.

### VII. Operational Practices 19.15.27.8 NMAC A through F

- A. The operator will maximize the recovery of natural gas and minimize the amount of gas vented or flared when technically and safely feasible as further described and detailed within the following subsections (B-F of 19.15.27.8). In all cases where natural gas venting and flaring requires regulatory reporting, reporting will be submitted accurately and within the required time frames.
- B. Venting and flaring during drilling operations:
  - a. New Drill HZ Gas Wells: The operator drills wells in the area by utilizing a balanced mud to safely drill the wellbore. This technique prevents gas from coming to surface during the drilling process. If there is an emergency or malfunction and natural gas does come to surface the natural gas will be captured and routed to sales if technically and safely feasible.
- C. Venting and flaring during completion or recompletion operations:
  - a. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from the newly drilled and completed wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible. During initial flowback and initial separation flowback the operator will utilize contracted flowback equipment, including separators, to manage wellbore fluids and solids. The initial flowback period will be minimized and flow will be sent to separation equipment as soon as possible to reduce the amount of gas that is vented to atmosphere. The natural gas will be utilized on site as needed for fuel gas and natural gas will be sold.
- D. Venting and flaring during production operations:
  - a. New Drill HZ Gas Wells: The operator's facilities are designed to handle the maximum throughput and pressures from producing wellbores. The amount of gas vented and flared will be minimized when technically and safely feasible.

Operations will effectively manage the following scenarios to minimize the quantity of natural gas that is vented or flared:

- (a) If there is an emergency or malfunction vented or flared natural gas will be reported, if required, and the emergency or malfunction will be resolved as soon as technically and safely feasible.
- (b) If the wellbore needs to be unloaded to atmosphere the operator will not vent the well after the well has achieved a stabilized rate and pressure. The operator will remain on site during unloading. Plunger lift systems will be optimized to reduce the amount of natural gas venting. Downhole maintenance, such as workovers, swabbing, etc. will only be conducted as needed and best management practices will be utilized to reduce venting of natural gas.
- (c) The operator will minimize the amount of time that natural gas is vented to atmosphere from gauging and sampling a storage tank or low pressure vessel. The formation is only anticipated to produce water and therefore tank emissions are anticipated to be negligible.
- (d) The operator will reduce the amount of time needed for loading out liquids from a storage tanks or other low-pressure vessels whenever feasible. Operations will always utilize the water transfer systems when available. Water loading emissions are anticipated to be negligible.
- (e) Equipment will be repaired and maintained routinely to minimize the venting or flaring of natural gas. Repairs and maintenance will be conducted in a manner that minimizes the amount of natural gas vented to atmosphere through the isolation of the equipment that is being repaired or maintained.
- (f) Electric controllers and pumps will be installed to replace pneumatic controllers whenever feasible. Pneumatic controllers and pumps will be inspected frequently to ensure that no excess gas is vented to atmosphere.
- (g) No dehydration or amine units are anticipated to be set on location.
- (h) Compressors, compressor engines, turbines, flanges, connectors, valves, storage tanks, and other low-pressure vessels and flanges will be routinely inspected to ensure that no excess venting occurs outside of normal operations.
- (i) Regulatory required testing, such as bradenhead and packer testing will be performed in a manner that minimizes the amount of natural gas vented to atmosphere.
- (j) If natural gas does not meet gathering pipeline specifications gas samples will be collected twice per week to determine when pipeline specification gas content has been achieved. During this time frame gas will be flared and not vented to atmosphere. Natural gas that meets pipeline specifications will be sold via pipeline and natural gas that can be utilized for fuel gas will be used during this time.
- (k) If pipeline, equipment, or facilities need purged of impurities gas losses will be minimized as much as technically and safely feasible.

## E. Performance standards:

- a. The production facilities are designed to handle the maximum throughput and pressures from producing wellbores and will be designed to minimize waste. The amount of gas vented and flared will be minimized when technically and safely feasible.
  - b. All tanks that are routed to a control device that is installed after 5/25/2021 will have an automatic gauging system to minimize the amount of vented natural gas.
  - c. If a flare stack is installed or replaced after 5/25/2021 it will be equipped with an automatic ignitor or continuous pilot. The flare stack will be properly sized and designed to ensure proper combustion efficiency. The flare stack will be located 100 feet away from the nearest wellhead or storage tank.
  - d. AVO inspections will be conducted weekly for the year after completion and for all wells producing greater than 60,000 cubic feet of natural gas daily. The AVO inspection will include all components, including flare stacks, thief hatches, closed vent systems, pumps, compressors, pressure relief devices, valves, lines, flanges, connectors, and associated pipeline to identify any leaks and releases by comprehensive auditory, visual, and olfactory inspection. The AVO inspection records will be maintained for 5 years which will be available at the department's request. Identified leaks will be repaired as soon as feasible to minimize the amount of vented natural gas.
- F. Measurement or estimation of vented and flared natural gas.
- a. The volume of natural gas that is vented, flared or consumed for beneficial use will be measured when possible, or estimated, during drilling, completions, or production operations.
  - b. Equipment will be installed to measure the volume of natural gas flared for all APD's issued after 5/25/2021 on facilities that will have an average daily gas rate greater than 60,000 cubic feet of natural gas. Measurement equipment will conform to API MPMS Chapter 14.10 regulations. The measurement equipment will not have a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment. If metering is not practical then the volume of gas will be estimated.





Company: Hilcorp Energy Corp.  
Project: San Juan, NM NAD27  
Site: San Juan 32-8 Pad  
Well: San Juan 32 8 701 Federal Com 602H  
Wellbore: OH  
Design: Plan #3

PROJECT DETAILS: San Juan, NM NAD27

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: New Mexico West 3003  
System Datum: Mean Sea Level  
Local North: True



WELL DETAILS: San Juan 32 8 701 Federal Com 602H

GL 6696' & RKB 17' @ 6713.00ft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	A09
0.00	0.00	2164858.70	549710.10	36.9493067	-107.6632151	

Plan: Plan #3 (San Juan 32 8 701 Federal Com 602H/OH)

Created By: Janie Collins Date: 13:19, October 08 2023

DESIGN TARGET DETAILS

Time	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
32-8 701 FC 602H LP	7294.00	1194.12	-662.91	2166051.64	549045.07	36.9525867	-107.6654838
32-8 701 FC 602H BHL	7305.00	1481.81	-11874.45	2166319.31	537833.05	36.9533700	-107.7038539

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.000	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
1010.93	10.22	358.389	1008.23	45.42	-1.28	2.00	358.39	6.89
6767.42	10.22	358.389	6673.40	1066.25	-30.00	0.00	0.00	161.80
7760.74	89.94	271.470	7294.00	1194.12	-662.91	9.00	-86.98	805.67
18975.98	89.94	271.470	7305.00	1481.81	-11874.45	0.00	0.00	11966.55



Azimuths to True North  
Magnetic North: 8

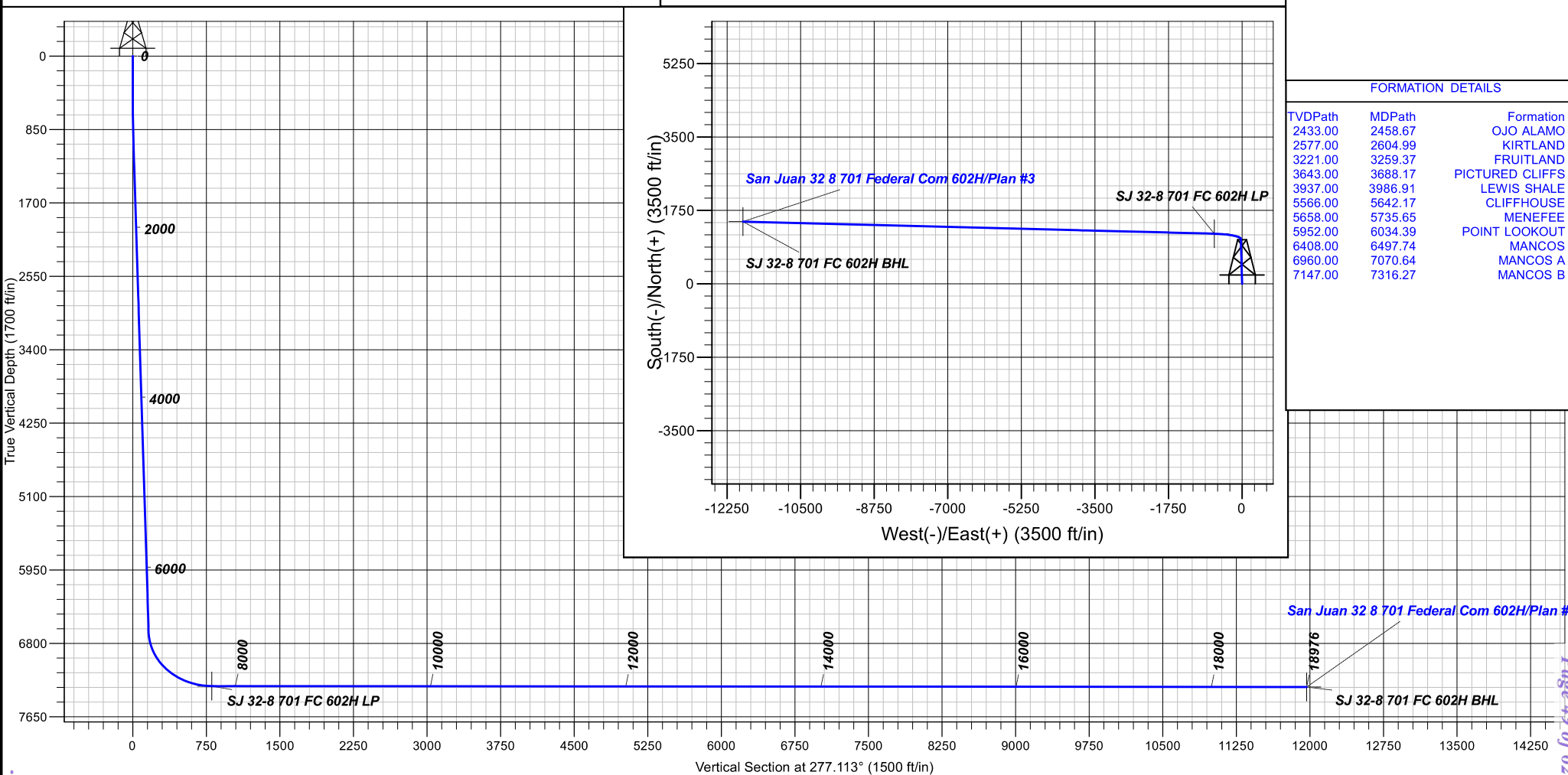
Magnetic Field  
Strength: 49568  
Dip Angle: 63.2  
Date: 12/31/2021  
Model: HDGM2021\_

CASING DETAILS

No casing data is available

FORMATION DETAILS

TVDPath	MDPath	Formation
2433.00	2458.67	OJO ALAMO
2577.00	2604.99	KIRTLAND
3221.00	3259.37	FRUITLAND
3643.00	3688.17	PICTURED CLIFFS
3937.00	3986.91	LEWIS SHALE
5566.00	5642.17	CLIFFHOUSE
5658.00	5735.65	MENEFFEE
5952.00	6034.39	POINT LOOKOUT
6408.00	6497.74	MANCOS
6960.00	7070.64	MANCOS A
7147.00	7316.27	MANCOS B





## Hilcorp Energy Corp.

San Juan, NM NAD27

San Juan 32-8 Pad

San Juan 32 8 701 Federal Com 602H - Slot A09

OH

Plan: Plan #3

## Standard Planning Report

08 October, 2023





# Lonestar Consulting, LLC

## Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

<b>Project</b>	San Juan, NM NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico West 3003		

<b>Site</b>	San Juan 32-8 Pad		
<b>Site Position:</b>		<b>Northing:</b>	2,164,658.76 usft
<b>From:</b>	Map	<b>Easting:</b>	549,714.77 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.20 in
		<b>Latitude:</b>	36.9487575
		<b>Longitude:</b>	-107.6632004

<b>Well</b>	San Juan 32 8 701 Federal Com 602H - Slot A09		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b> 2,164,858.70 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b> 549,710.10 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
<b>Grid Convergence:</b>	0.10 °	<b>Ground Level:</b>	6,696.00 ft

<b>Wellbore</b>	OH		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	HDGM2021_FILE	12/31/2021	8.78
			<b>Dip Angle (°)</b>
			63.37
			<b>Field Strength (nT)</b>
			49,568.50000000

<b>Design</b>	Plan #3		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b> 0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b>
			277.113

<b>Plan Survey Tool Program</b>	<b>Date</b>	10/8/2023		
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	18,975.98 Plan #3 (OH)	MWD+HDGM	
			OWSG MWD + HDGM	

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.000	0.00	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	
1,010.93	10.22	358.389	1,008.23	45.42	-1.28	2.00	2.00	0.00	358.39	
6,767.42	10.22	358.389	6,673.40	1,066.25	-30.00	0.00	0.00	0.00	0.00	
7,760.74	89.94	271.470	7,294.00	1,194.12	-662.91	9.00	8.03	-8.75	-86.98	SJ 32-8 701 FC 602H
18,975.98	89.94	271.470	7,305.00	1,481.81	-11,874.45	0.00	0.00	0.00	0.00	SJ 32-8 701 FC 602H



## Lonestar Consulting, LLC

## Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
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	2.00	358.389	599.98	1.74	-0.05	0.26	2.00	2.00	0.00
700.00	4.00	358.389	699.84	6.98	-0.20	1.06	2.00	2.00	0.00
800.00	6.00	358.389	799.45	15.69	-0.44	2.38	2.00	2.00	0.00
900.00	8.00	358.389	898.70	27.87	-0.78	4.23	2.00	2.00	0.00
1,000.00	10.00	358.389	997.47	43.51	-1.22	6.60	2.00	2.00	0.00
1,010.93	10.22	358.389	1,008.23	45.42	-1.28	6.89	2.00	2.00	0.00
1,100.00	10.22	358.389	1,095.88	61.22	-1.72	9.29	0.00	0.00	0.00
1,200.00	10.22	358.389	1,194.30	78.95	-2.22	11.98	0.00	0.00	0.00
1,300.00	10.22	358.389	1,292.71	96.69	-2.72	14.67	0.00	0.00	0.00
1,400.00	10.22	358.389	1,391.12	114.42	-3.22	17.36	0.00	0.00	0.00
1,500.00	10.22	358.389	1,489.54	132.15	-3.72	20.05	0.00	0.00	0.00
1,600.00	10.22	358.389	1,587.95	149.89	-4.22	22.74	0.00	0.00	0.00
1,700.00	10.22	358.389	1,686.37	167.62	-4.72	25.44	0.00	0.00	0.00
1,800.00	10.22	358.389	1,784.78	185.35	-5.21	28.13	0.00	0.00	0.00
1,900.00	10.22	358.389	1,883.19	203.09	-5.71	30.82	0.00	0.00	0.00
2,000.00	10.22	358.389	1,981.61	220.82	-6.21	33.51	0.00	0.00	0.00
2,100.00	10.22	358.389	2,080.02	238.55	-6.71	36.20	0.00	0.00	0.00
2,200.00	10.22	358.389	2,178.43	256.29	-7.21	38.89	0.00	0.00	0.00
2,300.00	10.22	358.389	2,276.85	274.02	-7.71	41.58	0.00	0.00	0.00
2,400.00	10.22	358.389	2,375.26	291.75	-8.21	44.27	0.00	0.00	0.00
2,500.00	10.22	358.389	2,473.68	309.49	-8.71	46.96	0.00	0.00	0.00
2,600.00	10.22	358.389	2,572.09	327.22	-9.21	49.65	0.00	0.00	0.00
2,700.00	10.22	358.389	2,670.50	344.95	-9.70	52.35	0.00	0.00	0.00
2,800.00	10.22	358.389	2,768.92	362.69	-10.20	55.04	0.00	0.00	0.00
2,900.00	10.22	358.389	2,867.33	380.42	-10.70	57.73	0.00	0.00	0.00
3,000.00	10.22	358.389	2,965.75	398.15	-11.20	60.42	0.00	0.00	0.00
3,100.00	10.22	358.389	3,064.16	415.89	-11.70	63.11	0.00	0.00	0.00
3,200.00	10.22	358.389	3,162.57	433.62	-12.20	65.80	0.00	0.00	0.00
3,300.00	10.22	358.389	3,260.99	451.35	-12.70	68.49	0.00	0.00	0.00
3,400.00	10.22	358.389	3,359.40	469.09	-13.20	71.18	0.00	0.00	0.00
3,500.00	10.22	358.389	3,457.81	486.82	-13.70	73.87	0.00	0.00	0.00
3,600.00	10.22	358.389	3,556.23	504.55	-14.19	76.56	0.00	0.00	0.00
3,700.00	10.22	358.389	3,654.64	522.29	-14.69	79.25	0.00	0.00	0.00
3,800.00	10.22	358.389	3,753.06	540.02	-15.19	81.95	0.00	0.00	0.00
3,900.00	10.22	358.389	3,851.47	557.76	-15.69	84.64	0.00	0.00	0.00
4,000.00	10.22	358.389	3,949.88	575.49	-16.19	87.33	0.00	0.00	0.00
4,100.00	10.22	358.389	4,048.30	593.22	-16.69	90.02	0.00	0.00	0.00
4,200.00	10.22	358.389	4,146.71	610.96	-17.19	92.71	0.00	0.00	0.00
4,300.00	10.22	358.389	4,245.12	628.69	-17.69	95.40	0.00	0.00	0.00
4,400.00	10.22	358.389	4,343.54	646.42	-18.19	98.09	0.00	0.00	0.00
4,500.00	10.22	358.389	4,441.95	664.16	-18.68	100.78	0.00	0.00	0.00
4,600.00	10.22	358.389	4,540.37	681.89	-19.18	103.47	0.00	0.00	0.00
4,700.00	10.22	358.389	4,638.78	699.62	-19.68	106.16	0.00	0.00	0.00
4,800.00	10.22	358.389	4,737.19	717.36	-20.18	108.86	0.00	0.00	0.00
4,900.00	10.22	358.389	4,835.61	735.09	-20.68	111.55	0.00	0.00	0.00
5,000.00	10.22	358.389	4,934.02	752.82	-21.18	114.24	0.00	0.00	0.00
5,100.00	10.22	358.389	5,032.43	770.56	-21.68	116.93	0.00	0.00	0.00



## Lonestar Consulting, LLC

## Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.00	10.22	358.389	5,130.85	788.29	-22.18	119.62	0.00	0.00	0.00	
5,300.00	10.22	358.389	5,229.26	806.02	-22.68	122.31	0.00	0.00	0.00	
5,400.00	10.22	358.389	5,327.68	823.76	-23.17	125.00	0.00	0.00	0.00	
5,500.00	10.22	358.389	5,426.09	841.49	-23.67	127.69	0.00	0.00	0.00	
5,600.00	10.22	358.389	5,524.50	859.22	-24.17	130.38	0.00	0.00	0.00	
5,700.00	10.22	358.389	5,622.92	876.96	-24.67	133.07	0.00	0.00	0.00	
5,800.00	10.22	358.389	5,721.33	894.69	-25.17	135.77	0.00	0.00	0.00	
5,900.00	10.22	358.389	5,819.75	912.42	-25.67	138.46	0.00	0.00	0.00	
6,000.00	10.22	358.389	5,918.16	930.16	-26.17	141.15	0.00	0.00	0.00	
6,100.00	10.22	358.389	6,016.57	947.89	-26.67	143.84	0.00	0.00	0.00	
6,200.00	10.22	358.389	6,114.99	965.62	-27.17	146.53	0.00	0.00	0.00	
6,300.00	10.22	358.389	6,213.40	983.36	-27.66	149.22	0.00	0.00	0.00	
6,400.00	10.22	358.389	6,311.81	1,001.09	-28.16	151.91	0.00	0.00	0.00	
6,500.00	10.22	358.389	6,410.23	1,018.83	-28.66	154.60	0.00	0.00	0.00	
6,600.00	10.22	358.389	6,508.64	1,036.56	-29.16	157.29	0.00	0.00	0.00	
6,700.00	10.22	358.389	6,607.06	1,054.29	-29.66	159.98	0.00	0.00	0.00	
6,767.42	10.22	358.389	6,673.40	1,066.25	-30.00	161.80	0.00	0.00	0.00	
6,800.00	10.77	342.530	6,705.45	1,072.04	-30.99	163.50	9.00	1.71	-48.67	
6,900.00	16.07	310.142	6,802.81	1,089.92	-44.40	179.03	9.00	5.29	-32.39	
7,000.00	23.67	295.701	6,896.85	1,107.58	-73.13	209.72	9.00	7.61	-14.44	
7,100.00	31.98	288.213	6,985.23	1,124.60	-116.47	254.83	9.00	8.31	-7.49	
7,200.00	40.56	283.598	7,065.79	1,140.56	-173.35	313.25	9.00	8.58	-4.61	
7,300.00	49.27	280.375	7,136.54	1,155.05	-242.37	383.53	9.00	8.71	-3.22	
7,400.00	58.05	277.905	7,195.74	1,167.74	-321.82	463.95	9.00	8.78	-2.47	
7,500.00	66.87	275.869	7,241.93	1,178.30	-409.77	552.52	9.00	8.82	-2.04	
7,600.00	75.71	274.087	7,273.98	1,186.47	-504.03	647.07	9.00	8.84	-1.78	
7,700.00	84.56	272.441	7,291.09	1,192.06	-602.30	745.27	9.00	8.85	-1.65	
7,760.74	89.94	271.470	7,294.00	1,194.12	-662.91	805.67	9.00	8.86	-1.60	
7,800.00	89.94	271.470	7,294.04	1,195.13	-702.15	844.74	0.00	0.00	0.00	
7,900.00	89.94	271.470	7,294.14	1,197.70	-802.12	944.26	0.00	0.00	0.00	
8,000.00	89.94	271.470	7,294.23	1,200.26	-902.09	1,043.77	0.00	0.00	0.00	
8,100.00	89.94	271.470	7,294.33	1,202.83	-1,002.06	1,143.29	0.00	0.00	0.00	
8,200.00	89.94	271.470	7,294.43	1,205.39	-1,102.02	1,242.80	0.00	0.00	0.00	
8,300.00	89.94	271.470	7,294.52	1,207.96	-1,201.99	1,342.32	0.00	0.00	0.00	
8,400.00	89.94	271.470	7,294.62	1,210.52	-1,301.96	1,441.83	0.00	0.00	0.00	
8,500.00	89.94	271.470	7,294.72	1,213.09	-1,401.92	1,541.35	0.00	0.00	0.00	
8,600.00	89.94	271.470	7,294.82	1,215.65	-1,501.89	1,640.86	0.00	0.00	0.00	
8,700.00	89.94	271.470	7,294.91	1,218.22	-1,601.86	1,740.38	0.00	0.00	0.00	
8,800.00	89.94	271.470	7,295.01	1,220.78	-1,701.83	1,839.90	0.00	0.00	0.00	
8,900.00	89.94	271.470	7,295.11	1,223.35	-1,801.79	1,939.41	0.00	0.00	0.00	
9,000.00	89.94	271.470	7,295.20	1,225.91	-1,901.76	2,038.93	0.00	0.00	0.00	
9,100.00	89.94	271.470	7,295.30	1,228.48	-2,001.73	2,138.44	0.00	0.00	0.00	
9,200.00	89.94	271.470	7,295.40	1,231.04	-2,101.69	2,237.96	0.00	0.00	0.00	
9,300.00	89.94	271.470	7,295.50	1,233.61	-2,201.66	2,337.47	0.00	0.00	0.00	
9,400.00	89.94	271.470	7,295.59	1,236.17	-2,301.63	2,436.99	0.00	0.00	0.00	
9,500.00	89.94	271.470	7,295.69	1,238.74	-2,401.59	2,536.50	0.00	0.00	0.00	
9,600.00	89.94	271.470	7,295.79	1,241.30	-2,501.56	2,636.02	0.00	0.00	0.00	
9,700.00	89.94	271.470	7,295.89	1,243.87	-2,601.53	2,735.53	0.00	0.00	0.00	
9,800.00	89.94	271.470	7,295.98	1,246.43	-2,701.50	2,835.05	0.00	0.00	0.00	
9,900.00	89.94	271.470	7,296.08	1,249.00	-2,801.46	2,934.56	0.00	0.00	0.00	
10,000.00	89.94	271.470	7,296.18	1,251.56	-2,901.43	3,034.08	0.00	0.00	0.00	
10,100.00	89.94	271.470	7,296.27	1,254.13	-3,001.40	3,133.59	0.00	0.00	0.00	
10,200.00	89.94	271.470	7,296.37	1,256.69	-3,101.36	3,233.11	0.00	0.00	0.00	





## Lonestar Consulting, LLC

## Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,300.00	89.94	271.470	7,296.47	1,259.26	-3,201.33	3,332.62	0.00	0.00	0.00	
10,400.00	89.94	271.470	7,296.57	1,261.82	-3,301.30	3,432.14	0.00	0.00	0.00	
10,500.00	89.94	271.470	7,296.66	1,264.39	-3,401.26	3,531.66	0.00	0.00	0.00	
10,600.00	89.94	271.470	7,296.76	1,266.95	-3,501.23	3,631.17	0.00	0.00	0.00	
10,700.00	89.94	271.470	7,296.86	1,269.52	-3,601.20	3,730.69	0.00	0.00	0.00	
10,800.00	89.94	271.470	7,296.95	1,272.08	-3,701.17	3,830.20	0.00	0.00	0.00	
10,900.00	89.94	271.470	7,297.05	1,274.65	-3,801.13	3,929.72	0.00	0.00	0.00	
11,000.00	89.94	271.470	7,297.15	1,277.21	-3,901.10	4,029.23	0.00	0.00	0.00	
11,100.00	89.94	271.470	7,297.25	1,279.78	-4,001.07	4,128.75	0.00	0.00	0.00	
11,200.00	89.94	271.470	7,297.34	1,282.34	-4,101.03	4,228.26	0.00	0.00	0.00	
11,300.00	89.94	271.470	7,297.44	1,284.91	-4,201.00	4,327.78	0.00	0.00	0.00	
11,400.00	89.94	271.470	7,297.54	1,287.47	-4,300.97	4,427.29	0.00	0.00	0.00	
11,500.00	89.94	271.470	7,297.64	1,290.04	-4,400.94	4,526.81	0.00	0.00	0.00	
11,600.00	89.94	271.470	7,297.73	1,292.60	-4,500.90	4,626.32	0.00	0.00	0.00	
11,700.00	89.94	271.470	7,297.83	1,295.17	-4,600.87	4,725.84	0.00	0.00	0.00	
11,800.00	89.94	271.470	7,297.93	1,297.73	-4,700.84	4,825.35	0.00	0.00	0.00	
11,900.00	89.94	271.470	7,298.02	1,300.30	-4,800.80	4,924.87	0.00	0.00	0.00	
12,000.00	89.94	271.470	7,298.12	1,302.87	-4,900.77	5,024.38	0.00	0.00	0.00	
12,100.00	89.94	271.470	7,298.22	1,305.43	-5,000.74	5,123.90	0.00	0.00	0.00	
12,200.00	89.94	271.470	7,298.32	1,308.00	-5,100.70	5,223.42	0.00	0.00	0.00	
12,300.00	89.94	271.470	7,298.41	1,310.56	-5,200.67	5,322.93	0.00	0.00	0.00	
12,400.00	89.94	271.470	7,298.51	1,313.13	-5,300.64	5,422.45	0.00	0.00	0.00	
12,500.00	89.94	271.470	7,298.61	1,315.69	-5,400.61	5,521.96	0.00	0.00	0.00	
12,600.00	89.94	271.470	7,298.70	1,318.26	-5,500.57	5,621.48	0.00	0.00	0.00	
12,700.00	89.94	271.470	7,298.80	1,320.82	-5,600.54	5,720.99	0.00	0.00	0.00	
12,800.00	89.94	271.470	7,298.90	1,323.39	-5,700.51	5,820.51	0.00	0.00	0.00	
12,900.00	89.94	271.470	7,299.00	1,325.95	-5,800.47	5,920.02	0.00	0.00	0.00	
13,000.00	89.94	271.470	7,299.09	1,328.52	-5,900.44	6,019.54	0.00	0.00	0.00	
13,100.00	89.94	271.470	7,299.19	1,331.08	-6,000.41	6,119.05	0.00	0.00	0.00	
13,200.00	89.94	271.470	7,299.29	1,333.65	-6,100.38	6,218.57	0.00	0.00	0.00	
13,300.00	89.94	271.470	7,299.39	1,336.21	-6,200.34	6,318.08	0.00	0.00	0.00	
13,400.00	89.94	271.470	7,299.48	1,338.78	-6,300.31	6,417.60	0.00	0.00	0.00	
13,500.00	89.94	271.470	7,299.58	1,341.34	-6,400.28	6,517.11	0.00	0.00	0.00	
13,600.00	89.94	271.470	7,299.68	1,343.91	-6,500.24	6,616.63	0.00	0.00	0.00	
13,700.00	89.94	271.470	7,299.77	1,346.47	-6,600.21	6,716.14	0.00	0.00	0.00	
13,800.00	89.94	271.470	7,299.87	1,349.04	-6,700.18	6,815.66	0.00	0.00	0.00	
13,900.00	89.94	271.470	7,299.97	1,351.60	-6,800.14	6,915.18	0.00	0.00	0.00	
14,000.00	89.94	271.470	7,300.07	1,354.17	-6,900.11	7,014.69	0.00	0.00	0.00	
14,100.00	89.94	271.470	7,300.16	1,356.73	-7,000.08	7,114.21	0.00	0.00	0.00	
14,200.00	89.94	271.470	7,300.26	1,359.30	-7,100.05	7,213.72	0.00	0.00	0.00	
14,300.00	89.94	271.470	7,300.36	1,361.86	-7,200.01	7,313.24	0.00	0.00	0.00	
14,400.00	89.94	271.470	7,300.45	1,364.43	-7,299.98	7,412.75	0.00	0.00	0.00	
14,500.00	89.94	271.470	7,300.55	1,366.99	-7,399.95	7,512.27	0.00	0.00	0.00	
14,600.00	89.94	271.470	7,300.65	1,369.56	-7,499.91	7,611.78	0.00	0.00	0.00	
14,700.00	89.94	271.470	7,300.75	1,372.12	-7,599.88	7,711.30	0.00	0.00	0.00	
14,800.00	89.94	271.470	7,300.84	1,374.69	-7,699.85	7,810.81	0.00	0.00	0.00	
14,900.00	89.94	271.470	7,300.94	1,377.25	-7,799.82	7,910.33	0.00	0.00	0.00	
15,000.00	89.94	271.470	7,301.04	1,379.82	-7,899.78	8,009.84	0.00	0.00	0.00	
15,100.00	89.94	271.470	7,301.14	1,382.38	-7,999.75	8,109.36	0.00	0.00	0.00	
15,200.00	89.94	271.470	7,301.23	1,384.95	-8,099.72	8,208.87	0.00	0.00	0.00	
15,300.00	89.94	271.470	7,301.33	1,387.51	-8,199.68	8,308.39	0.00	0.00	0.00	
15,400.00	89.94	271.470	7,301.43	1,390.08	-8,299.65	8,407.90	0.00	0.00	0.00	
15,500.00	89.94	271.470	7,301.52	1,392.64	-8,399.62	8,507.42	0.00	0.00	0.00	



## Lonestar Consulting, LLC

## Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,600.00	89.94	271.470	7,301.62	1,395.21	-8,499.58	8,606.94	0.00	0.00	0.00	
15,700.00	89.94	271.470	7,301.72	1,397.77	-8,599.55	8,706.45	0.00	0.00	0.00	
15,800.00	89.94	271.470	7,301.82	1,400.34	-8,699.52	8,805.97	0.00	0.00	0.00	
15,900.00	89.94	271.470	7,301.91	1,402.90	-8,799.49	8,905.48	0.00	0.00	0.00	
16,000.00	89.94	271.470	7,302.01	1,405.47	-8,899.45	9,005.00	0.00	0.00	0.00	
16,100.00	89.94	271.470	7,302.11	1,408.03	-8,999.42	9,104.51	0.00	0.00	0.00	
16,200.00	89.94	271.470	7,302.20	1,410.60	-9,099.39	9,204.03	0.00	0.00	0.00	
16,300.00	89.94	271.470	7,302.30	1,413.16	-9,199.35	9,303.54	0.00	0.00	0.00	
16,400.00	89.94	271.470	7,302.40	1,415.73	-9,299.32	9,403.06	0.00	0.00	0.00	
16,500.00	89.94	271.470	7,302.50	1,418.29	-9,399.29	9,502.57	0.00	0.00	0.00	
16,600.00	89.94	271.470	7,302.59	1,420.86	-9,499.26	9,602.09	0.00	0.00	0.00	
16,700.00	89.94	271.470	7,302.69	1,423.42	-9,599.22	9,701.60	0.00	0.00	0.00	
16,800.00	89.94	271.470	7,302.79	1,425.99	-9,699.19	9,801.12	0.00	0.00	0.00	
16,900.00	89.94	271.470	7,302.88	1,428.55	-9,799.16	9,900.63	0.00	0.00	0.00	
17,000.00	89.94	271.470	7,302.98	1,431.12	-9,899.12	10,000.15	0.00	0.00	0.00	
17,100.00	89.94	271.470	7,303.08	1,433.68	-9,999.09	10,099.66	0.00	0.00	0.00	
17,200.00	89.94	271.470	7,303.18	1,436.25	-10,099.06	10,199.18	0.00	0.00	0.00	
17,300.00	89.94	271.470	7,303.27	1,438.82	-10,199.02	10,298.70	0.00	0.00	0.00	
17,400.00	89.94	271.470	7,303.37	1,441.38	-10,298.99	10,398.21	0.00	0.00	0.00	
17,500.00	89.94	271.470	7,303.47	1,443.95	-10,398.96	10,497.73	0.00	0.00	0.00	
17,600.00	89.94	271.470	7,303.57	1,446.51	-10,498.93	10,597.24	0.00	0.00	0.00	
17,700.00	89.94	271.470	7,303.66	1,449.08	-10,598.89	10,696.76	0.00	0.00	0.00	
17,800.00	89.94	271.470	7,303.76	1,451.64	-10,698.86	10,796.27	0.00	0.00	0.00	
17,900.00	89.94	271.470	7,303.86	1,454.21	-10,798.83	10,895.79	0.00	0.00	0.00	
18,000.00	89.94	271.470	7,303.95	1,456.77	-10,898.79	10,995.30	0.00	0.00	0.00	
18,100.00	89.94	271.470	7,304.05	1,459.34	-10,998.76	11,094.82	0.00	0.00	0.00	
18,200.00	89.94	271.470	7,304.15	1,461.90	-11,098.73	11,194.33	0.00	0.00	0.00	
18,300.00	89.94	271.470	7,304.25	1,464.47	-11,198.69	11,293.85	0.00	0.00	0.00	
18,400.00	89.94	271.470	7,304.34	1,467.03	-11,298.66	11,393.36	0.00	0.00	0.00	
18,500.00	89.94	271.470	7,304.44	1,469.60	-11,398.63	11,492.88	0.00	0.00	0.00	
18,600.00	89.94	271.470	7,304.54	1,472.16	-11,498.60	11,592.39	0.00	0.00	0.00	
18,700.00	89.94	271.470	7,304.63	1,474.73	-11,598.56	11,691.91	0.00	0.00	0.00	
18,800.00	89.94	271.470	7,304.73	1,477.29	-11,698.53	11,791.42	0.00	0.00	0.00	
18,900.00	89.94	271.470	7,304.83	1,479.86	-11,798.50	11,890.94	0.00	0.00	0.00	
18,975.98	89.94	271.470	7,305.00	1,481.81	-11,874.45	11,966.55	0.00	0.00	0.00	

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SJ 32-8 701 FC 602H LF - plan hits target center - Point	0.00	0.000	7,294.00	1,194.12	-662.91	2,166,051.63	549,045.07	36.9525867	-107.6654838
SJ 32-8 701 FC 602H BI - plan hits target center - Point	0.00	0.000	7,305.00	1,481.81	-11,874.45	2,166,319.30	537,833.05	36.9533700	-107.7038539



# Lonestar Consulting, LLC Planning Report



<b>Database:</b>	Grand Junction	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Company:</b>	Hilcorp Energy Corp.	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Project:</b>	San Juan, NM NAD27	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site:</b>	San Juan 32-8 Pad	<b>North Reference:</b>	True
<b>Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #3		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,458.67	2,433.00	OJO ALAMO		0.00	0.000	
2,604.99	2,577.00	KIRTLAND		0.00	0.000	
3,259.37	3,221.00	FRUITLAND		0.00	0.000	
3,688.17	3,643.00	PICTURED CLIFFS		0.00	0.000	
3,986.91	3,937.00	LEWIS SHALE		0.00	0.000	
5,642.17	5,566.00	CLIFFHOUSE		0.00	0.000	
5,735.65	5,658.00	MENEFEE		0.00	0.000	
6,034.39	5,952.00	POINT LOOKOUT		0.00	0.000	
6,497.74	6,408.00	MANCOS		0.00	0.000	
7,070.64	6,960.00	MANCOS A		0.00	0.000	
7,316.27	7,147.00	MANCOS B		0.00	0.000	



# Hilcorp Energy Corp.

San Juan, NM NAD27

San Juan 32-8 Pad

San Juan 32 8 701 Federal Com 602H

OH

Plan #3

## Anticollision Summary Report

08 October, 2023





# Lonestar Consulting, LLC

## Anticollision Summary Report



<b>Company:</b>	Hilcorp Energy Corp.	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Project:</b>	San Juan, NM NAD27	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Reference Site:</b>	San Juan 32-8 Pad	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Grand Junction
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #3
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	Stations
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum centre distance of 15,000.00ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Pedal Curve
<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/8/2023
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>
0.00	18,975.98	Plan #3 (OH)
		<b>Tool Name</b>
		MWD+HDGM
		<b>Description</b>
		OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
San Juan 32-8 Pad						
San Juan 32 8 701 Federal Com 601H - Lateral - Plan #3	500.00	500.00	99.99	96.53	28.875	CC, ES
San Juan 32 8 701 Federal Com 601H - Lateral - Plan #3	18,975.98	18,844.57	1,888.30	1,174.67	2.646	SF
San Juan 32 8 701 Federal Com 601H - Pilot - Plan #3	500.00	500.00	99.99	96.53	28.875	CC, ES
San Juan 32 8 701 Federal Com 601H - Pilot - Plan #3	500.00	900.00	127.87	121.53	20.169	SF
San Juan 32 8 701 Federal Com 603H - OH - Plan #3	624.20	626.33	47.89	43.53	10.984	CC, ES
San Juan 32 8 701 Federal Com 603H - OH - Plan #3	18,975.98	18,826.90	935.16	220.43	1.308	Level 3, SF
San Juan 32 8 701 Federal Com 604H - OH - Plan #3	410.00	410.00	149.99	147.17	53.234	CC
San Juan 32 8 701 Federal Com 604H - OH - Plan #3	500.00	497.54	150.40	146.96	43.647	ES
San Juan 32 8 701 Federal Com 604H - OH - Plan #3	18,975.98	18,901.14	2,837.19	2,124.57	3.981	SF
San Juan 32 8 701 Federal Com 605H - OH - Plan #3	410.00	410.00	200.00	197.18	70.982	CC
San Juan 32 8 701 Federal Com 605H - OH - Plan #3	500.00	496.73	200.40	196.96	58.204	ES
San Juan 32 8 701 Federal Com 605H - OH - Plan #3	18,975.98	19,396.00	3,786.76	3,068.29	5.271	SF
San Juan 32 8 701 Federal Com 606H - OH - Plan #3	800.00	802.36	20.09	14.48	3.580	CC
San Juan 32 8 701 Federal Com 606H - OH - Plan #3	18,975.98	18,962.53	498.64	-173.43	0.742	Level 1, ES, SF
San Juan 32 8 701 Federal Com 607H - OH - Plan #3	410.00	410.00	75.00	72.18	26.618	CC
San Juan 32 8 701 Federal Com 607H - OH - Plan #3	500.00	498.91	75.36	71.91	21.837	ES
San Juan 32 8 701 Federal Com 607H - OH - Plan #3	18,975.98	18,995.05	1,414.73	704.32	1.991	SF
San Juan 32 8 701 Federal Com 608H - OH - Plan #3	410.00	410.00	125.00	122.18	44.363	CC
San Juan 32 8 701 Federal Com 608H - OH - Plan #3	500.00	497.96	125.40	121.96	36.376	ES
San Juan 32 8 701 Federal Com 608H - OH - Plan #3	18,975.98	18,968.43	2,363.27	1,652.42	3.325	SF
San Juan 32 8 701 Federal Com 609H - OH - Plan #3	410.00	410.00	175.00	172.18	62.109	CC
San Juan 32 8 701 Federal Com 609H - OH - Plan #3	500.00	497.12	175.41	171.96	50.925	ES
San Juan 32 8 701 Federal Com 609H - OH - Plan #3	18,975.98	19,275.78	3,310.41	2,596.21	4.635	SF
San Juan 32 8 702 Federal Com 601H - Lateral - Plan #3	500.00	500.00	119.40	115.93	34.480	CC, ES
San Juan 32 8 702 Federal Com 601H - Lateral - Plan #3	1,010.93	1,008.23	163.00	155.86	22.824	SF
San Juan 32 8 702 Federal Com 601H - Pilot - Plan #3	500.00	500.00	119.40	115.93	34.480	CC, ES
San Juan 32 8 702 Federal Com 601H - Pilot - Plan #3	1,010.93	1,008.23	163.00	155.86	22.824	SF
San Juan 32 8 702 Federal Com 602H - OH - Plan #3	599.01	599.42	41.63	37.46	9.978	CC
San Juan 32 8 702 Federal Com 602H - OH - Plan #3	800.00	800.75	42.40	36.78	7.541	ES
San Juan 32 8 702 Federal Com 602H - OH - Plan #3	6,767.42	6,766.67	167.37	112.32	3.040	SF
San Juan 32 8 702 Federal Com 603H - OH - Plan #3	636.61	639.56	72.81	68.36	16.360	CC, ES
San Juan 32 8 702 Federal Com 603H - OH - Plan #3	1,000.00	1,002.15	92.03	84.95	13.001	SF
San Juan 32 8 702 Federal Com 604H - OH - Plan #3	410.00	410.00	167.35	164.53	59.394	CC
San Juan 32 8 702 Federal Com 604H - OH - Plan #3	500.00	497.24	167.76	164.31	48.697	ES
San Juan 32 8 702 Federal Com 604H - OH - Plan #3	800.00	777.09	202.61	197.13	37.013	SF
San Juan 32 8 702 Federal Com 605H - OH - Plan #3	410.00	410.00	216.23	213.41	76.743	CC

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





# Lonestar Consulting, LLC

## Anticollision Summary Report



<b>Company:</b>	Hilcorp Energy Corp.	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Project:</b>	San Juan, NM NAD27	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Reference Site:</b>	San Juan 32-8 Pad	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Grand Junction
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
San Juan 32-8 Pad						
San Juan 32 8 702 Federal Com 605H - OH - Plan #3	500.00	496.52	216.63	213.19	62.931	ES
San Juan 32 8 702 Federal Com 605H - OH - Plan #3	900.00	860.92	275.74	269.62	45.062	SF
San Juan 32 8 702 Federal Com 606H - OH - Plan #3	651.68	653.61	53.88	49.33	11.828	CC
San Juan 32 8 702 Federal Com 606H - OH - Plan #3	800.00	803.17	54.62	48.99	9.706	ES
San Juan 32 8 702 Federal Com 606H - OH - Plan #3	3,100.00	3,099.00	185.15	162.02	8.004	SF
San Juan 32 8 702 Federal Com 607H - OH - Plan #3	410.00	410.00	96.21	93.39	34.145	CC
San Juan 32 8 702 Federal Com 607H - OH - Plan #3	500.00	498.76	96.54	93.09	27.966	ES
San Juan 32 8 702 Federal Com 607H - OH - Plan #3	900.00	897.20	127.30	121.02	20.282	SF
San Juan 32 8 702 Federal Com 608H - OH - Plan #3	410.00	410.00	143.20	140.38	50.824	CC
San Juan 32 8 702 Federal Com 608H - OH - Plan #3	500.00	497.62	143.62	140.17	41.671	ES
San Juan 32 8 702 Federal Com 608H - OH - Plan #3	800.00	779.73	178.44	172.96	32.537	SF
San Juan 32 8 702 Federal Com 609H - OH - Plan #3	410.00	410.00	191.71	188.89	68.041	CC
San Juan 32 8 702 Federal Com 609H - OH - Plan #3	500.00	496.87	192.12	188.68	55.790	ES
San Juan 32 8 702 Federal Com 609H - OH - Plan #3	900.00	863.96	251.52	245.39	41.036	SF
SJ 32-8 UN 047 - OH - OH	18,975.98	5,428.00	2,988.63	2,788.92	14.964	CC, ES, SF
SJ 32-8 UN 231 - OH - OH	13,300.00	3,390.00	3,864.61	3,806.58	66.595	CC
SJ 32-8 UN 231 - OH - OH	13,400.00	3,390.00	3,864.72	3,805.91	65.715	ES
SJ 32-8 UN 231 - OH - OH	16,100.00	3,390.00	4,745.46	4,622.57	38.616	SF

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



# Lonestar Consulting, LLC

## Anticollision Summary Report

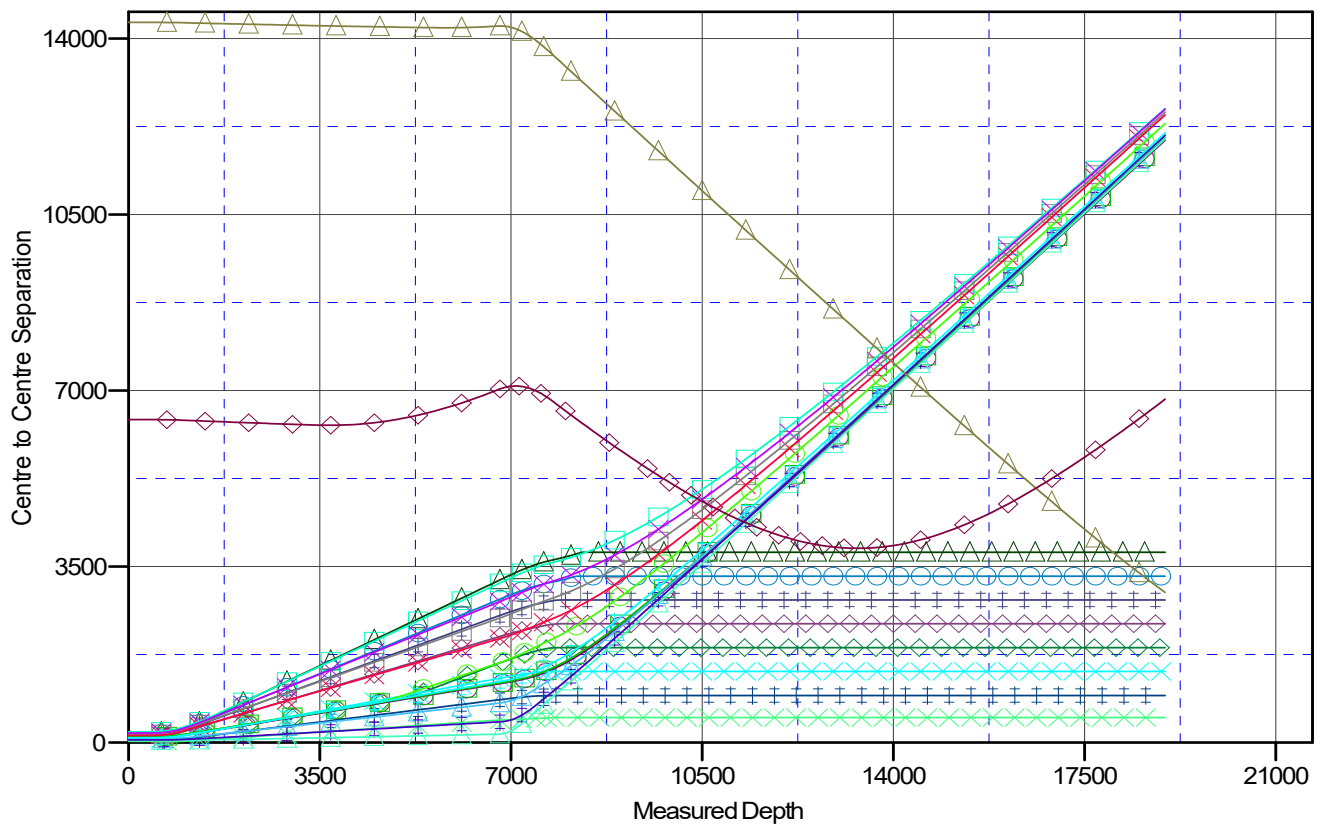


<b>Company:</b>	Hilcorp Energy Corp.	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Project:</b>	San Juan, NM NAD27	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Reference Site:</b>	San Juan 32-8 Pad	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Grand Junction
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to GL 6696' & RKB 17' @ 6713.00ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -107.8333334

Coordinates are relative to: San Juan 32 8 701 Federal Com 602H - Slot A09  
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30  
 Grid Convergence at Surface is: 0.10°

### Ladder Plot



### LEGEND

San Juan 32 8 701 Fe deraCom601H-LateralPlan #3 VO	San Juan 32 8 701 Fe deraCom608H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom605H-CHPlan #3 VO
San Juan 32 8 701 Fe deraCom601H-PlotPlan #3 VO	San Juan 32 8 701 Fe deraCom609H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom606H-CHPlan #3 VO
San Juan 32 8 701 Fe deraCom603H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom601H-LateralPlan #3 VO	San Juan 32 8 702 Fe deraCom607H-CHPlan #3 VO
San Juan 32 8 701 Fe deraCom604H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom601H-PlotPlan #3 VO	San Juan 32 8 702 Fe deraCom608H-CHPlan #3 VO
San Juan 32 8 701 Fe deraCom605H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom602H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom609H-CHPlan #3 VO
San Juan 32 8 701 Fe deraCom606H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom603H-CHPlan #3 VO	SJ32-8 UN047, OH/O HVO
San Juan 32 8 701 Fe deraCom607H-CHPlan #3 VO	San Juan 32 8 702 Fe deraCom604H-CHPlan #3 VO	SJ32-8 UN231, OH/O HVO

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



# Lonestar Consulting, LLC

## Anticollision Summary Report

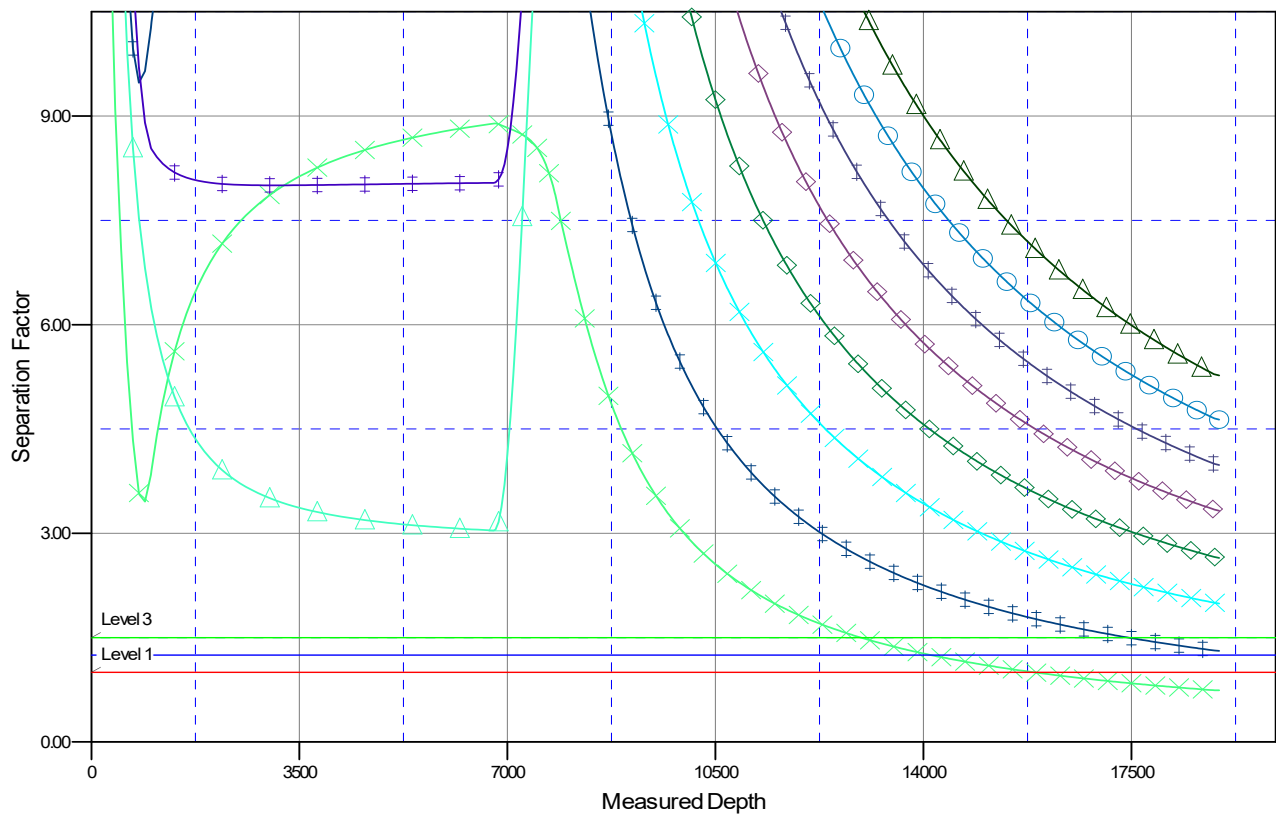


<b>Company:</b>	Hilcorp Energy Corp.	<b>Local Co-ordinate Reference:</b>	Well San Juan 32 8 701 Federal Com 602H - Slot A09
<b>Project:</b>	San Juan, NM NAD27	<b>TVD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Reference Site:</b>	San Juan 32-8 Pad	<b>MD Reference:</b>	GL 6696' & RKB 17' @ 6713.00ft
<b>Site Error:</b>	0.00 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	San Juan 32 8 701 Federal Com 602H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	Grand Junction
<b>Reference Design:</b>	Plan #3	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to GL 6696' & RKB 17' @ 6713.00ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -107.833334

Coordinates are relative to: San Juan 32 8 701 Federal Com 602H - Slot A09  
 Coordinate System is US State Plane 1927 (Exact solution), New Mexico West 30  
 Grid Convergence at Surface is: 0.10°

## Separation Factor Plot



### LEGEND

San Juan 32 8 701 Fe deraCom601H/Lateral/Plan#3 VO	San Juan 32 8 701 Fe deraCom608HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom605HCH/Plan#3 VO
San Juan 32 8 701 Fe deraCom601H/Plan#3 VO	San Juan 32 8 701 Fe deraCom609HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom606HCH/Plan#3 VO
San Juan 32 8 701 Fe deraCom603HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom601H/Lateral/Plan#3 VO	San Juan 32 8 702 Fe deraCom607HCH/Plan#3 VO
San Juan 32 8 701 Fe deraCom604HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom601H/Plan#3 VO	San Juan 32 8 702 Fe deraCom608HCH/Plan#3 VO
San Juan 32 8 701 Fe deraCom605HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom602HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom609HCH/Plan#3 VO
San Juan 32 8 701 Fe deraCom606HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom603HCH/Plan#3 VO	SLJ2-8 UN047, OH/O HVO
San Juan 32 8 701 Fe deraCom607HCH/Plan#3 VO	San Juan 32 8 702 Fe deraCom604HCH/Plan#3 VO	SLJ2-8 UN231, OH/O HVO

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

Sante Fe Main Office  
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Online Phone Directory  
<https://www.emnrd.nm.gov/oed/contact-us>

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

CONDITIONS

Action 400031

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 400031
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
mray	Cement is required to circulate on both surface and intermediate1 strings of casing.	11/6/2024
mray	If cement does not circulate on any string, a Cement Bond Log (CBL) is required for that string of casing.	11/6/2024
ward.rikala	Notify the OCD 24 hours prior to casing & cement.	12/5/2024
ward.rikala	File As Drilled C-102 and a directional Survey with C-104 completion packet.	12/5/2024
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.	12/5/2024
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.	12/5/2024