District IV.
152. French Dr., Hobbs, NM 88240
District III.
1000 Rio Brazos Road, Aztec, NM 87410
District IV.
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

For temporary pits, closed-loop systems, and below-grade tanks, submit to the appropriate NMOCD District Office.

For permanent pits and exceptions submit to the Santa Fe Environmental Bureau office and provide a copy to the appropriate NMOCD District Office.

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# Pit, Closed-Loop System, Below-Grade Tank, or Proposed Alternative Method Permit or Closure Plan Application

Proposed Antimative Method Fernite of Closure Plate Application			
Type of action:  X Permit of a pit, closed-loop system, below-grade tank, or proposed alternative method  Closure of a pit, closed-loop system, below-grade tank, or proposed alternative method  Modification to an existing permit  Closure plan only submitted for an existing permitted or non-permitted pit, closed-loop system, below-grade tank, or proposed alternative method			
Instructions: Please submit one application (Form C-144) per individual pit, closed-loop system, below-grade tank or alternative request			
Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.			
Operator: Energen Resources Corporation OGRID #: 162928			
Address: 2010 Afton Place, Farmington, NM 87401			
Facility or well name:			
API Number: 30-039 - 30999 OCD Permit Number:			
U/L or Qtr/Qtr A Section 3 Township 26N Range 03W County: Rio Arriba			
Center of Proposed Design: Latitude 36.52095 N Longitude 107.12549 W NAD: ☐1927 🛛 1983			
Surface Owner:  Federal  State  Private  Tribal Trust or Indian Allotment			
☐ Pit: Subsection F or G of 19.15.17.11 NMAC   Temporary: ☐ Drilling ☐ Workover   ☐ Permanent ☐ Emergency ☐ Cavitation ☐ P&A   ☐ Lined ☐ Unlined Liner type: Thicknessmil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other   ☐ String-Reinforced   Liner Seams: ☐ Welded ☐ Factory ☐ Other Volume:bbl Dimensions: Lx Wx D    3.     X Closed-loop System: Subsection H of 19.15.17.11 NMAC  Type of Operation: ☐ P&A   X Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)    X Drying Pad   X Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other     X Lined ☐ Unlined Liner type: Thickness 20 mil ☐ LLDPE☐ HDPE☐ PVC ☐ Other   Liner Seams: ☐ Welded ☐ Factory   X Other			
Below-grade tank: Subsection I of 19.15.17.11 NMAC   Subsection I of 19.15.17.11 NMA			
Submittal of an exception request is required. Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.			

6. <b>Eencing:</b> Subsection D of 19.15.17.11 NMAC (Applies to permanent pits, temporary pits, and below-grade tanks)			
Chain link, six feet in height, two strands of barbed wire at top (Required if located within 1000 feet of a permanent residence, school, hospital, institution or church)			
Four foot height, four strands of barbed wire evenly spaced between one and four feet			
Alternate. Please specify			
7. Netting: Subsection E of 19.15.17.11 NMAC (Applies to permanent pits and permanent open top tanks)			
Screen Netting Other			
Monthly inspections (If netting or screening is not physically feasible)			
8. Signs: Subsection C of 19.15.17.11 NMAC			
12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers			
X Signed in compliance with 19.15.3.103 NMAC			
9.  Administrative Approvals and Exceptions: Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17 NMAC for guidance.  Administrative approval(s): Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bu	reau office for		
consideration of approval.	reau office for		
Exception(s): Requests must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.			
Siting Criteria (regarding permitting): 19.15.17.10 NMAC Instructions: The applicant must demonstrate compliance for each siting criteria below in the application. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval.  Applicant must attach justification for request. Please refer to 19.15.17,10 NMAC for guidance. Siting criteria does not apply to drying pads or above-grade tanks associated with a closed-loop system.			
Ground water is less than 50 feet below the bottom of the temporary pit, permanent pit, or below-grade tank.  NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells	☐ Yes ☐ No		
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site			
Within 300 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to temporary, emergency, or cavitation pits and below-grade tanks)  - Visual inspection (certification) of the proposed site; Aerial photo; Satellite image			
Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.  (Applies to permanent pits)  Visual inspection (certification) of the proposed site; Aerial photo; Satellite image			
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic or stock watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial application.  NM Office of the State Engineer - iWATERS database search; Visual inspection (certification) of the proposed site			
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	Yes No		
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; Visual inspection (certification) of the proposed site	· Yes No		
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mining and Mineral Division	☐ Yes ☐ No		
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; Topographic map	Yes No		
Within a 100-year floodplain.	☐ Yes ☐ No		

11. TempErary Pits, Emergency Pits, and Below-grade Tanks Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC The Translations: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are
atiuched.  Hydrogeologic Report (Below-grade Tanks) - based upon the requirements of Paragraph (4) of Subsection B of 19.15.17.9 NMAC  Hydrogeologic Data (Temporary and Emergency Pits) - based upon the requirements of Paragraph (2) of Subsection B of 19.15.17.9 NMAC  Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design) API Number: or Permit Number:
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.
Geologic and Hydrogeologic Data (only for on-site closure) - based upon the requirements of Paragraph (3) of Subsection B of 19.15.17.9  Siting Criteria Compliance Demonstrations (only for on-site closure) - based upon the appropriate requirements of 19.15.17.10 NMAC  Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC  Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC  Closure Plan (Please complete Boxes 14 through 18, if applicable) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC
Previously Approved Design (attach copy of design)  API Number:
Previously Approved Operating and Maintenance Plan API Number: (Applies only to closed-loop system that use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)
Permanent Pits Permit Application Checklist: Subsection B of 19.15.17.9 NMAC Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.  Hydrogeologic Report - based upon the requirements of Paragraph (1) of Subsection B of 19.15.17.9 NMAC Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC Climatological Factors Assessment Certified Engineering Design Plans - based upon the appropriate requirements of 19.15.17.11 NMAC Dike Protection and Structural Integrity Design - based upon the appropriate requirements of 19.15.17.11 NMAC Leak Detection Bosign - based upon the appropriate requirements of 19.15.17.11 NMAC Liner Specifications and Compatibility Assessment - based upon Quality Control/Quality Assurance Construction and Installation Plan the appropriate requirements of 19.15.17.11 NMAC Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC Freeboard and Overtopping Prevention Plan - based upon the appropriate requirements of 19.15.17.11 NMAC Nuisance or Hazardous Odors, including H2S, Prevention Plan Emergency Response Plan Oil Field Waste Stream Characterization Monitoring and Inspection Plan Erosion Control Plan Closure Plan - based upon the appropriate requirements of Subsection C of 19.15.17.19 NMAC and 19.15.17.13 NMAC
Proposed Closure: 19.15.17.13 NMAC Instructions: Please complete the applicable boxes, Boxes 14 through 18, in regards to the proposed closure plan.  Type: Drilling Workover Emergency Cavitation P&A Permanent Pit Below-grade Tank Closed-loop System Alternative  Proposed Closure Method: Waste Excavation and Removal  Waste Removal (Closed-loop systems only) On-site Closure Method (Only for temporary pits and closed-loop systems) In-place Burial On-site Trench Burial Alternative Closure Method (Exceptions must be submitted to the Santa Fe Environmental Bureau for consideration)
Waste Excavation and Removal Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each of the following items must be attached to the closure plan. Please indicate, by a check mark in the box, that the documents are attached.    Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC   Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC   Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)   Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC   X Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

16.  Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Instructions: Please indentify the facility or facilities for the disposal of liquids	und Steel Tanks or Haul-off Bins Cos, drilling fluids and drill cuttings. U	Inly: (19.15.17.13.D 'se attachment if more	NMAC) than two
The titles are required	Disposal Facility Permit Number:		
	Disposal Facility Permit Number: _		
Will any of the proposed closed-loop system operations and associated activitie	es occur on or in areas that will not b	e used for future serv	ice and
operations?  Yes (If yes, please provide the information below)  No			
Required for impacted areas which will not be used for future service and operations:  Soil Backfill and Cover Design Specifications based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC  Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC			c
Siting Criteria (regarding on-site closure methods only: 19.15.17.10 NMAC Instructions: Each siting criteria requires a demonstration of compliance in the closure plan. Recommendations of acceptable source material are provided below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate district office or may be considered an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of approval. Justifications and/or demonstrations of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.			
Ground water is less than 50 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS;	Data obtained from nearby wells		☐ Yes ☐ No ☐ NA
Ground water is between 50 and 100 feet below the bottom of the buried waste - NM Office of the State Engineer - iWATERS database search; USGS;			☐ Yes ☐ No ☐ NA
Ground water is more than 100 feet below the bottom of the buried waste.  - NM Office of the State Engineer - iWATERS database search; USGS;	Data obtained from nearby wells		☐ Yes ☐ No ☐ NA
Within 300 feet of a continuously flowing watercourse, or 200 feet of any other lake (measured from the ordinary high-water mark).  - Topographic map; Visual inspection (certification) of the proposed site.		sinkhole, or playa	Yes No
Within 300 feet from a permanent residence, school, hospital, institution, or chu - Visual inspection (certification) of the proposed site; Aerial photo; Sat		l application.	Yes No
Within 500 horizontal feet of a private, domestic fresh water well or spring that watering purposes, or within 1000 horizontal feet of any other fresh water well - NM Office of the State Engineer - iWATERS database; Visual inspect	or spring, in existence at the time of	initial application.	Yes No
Within incorporated municipal boundaries or within a defined municipal fresh valopted pursuant to NMSA 1978, Section 3-27-3, as amended.  - Written confirmation or verification from the municipality; Written ap			☐ Yes ☐ No
Within 500 feet of a wetland.  - US Fish and Wildlife Wetland Identification map; Topographic map; V	Visual inspection (certification) of th	<b>I</b>	☐ Yes ☐ No
Within the area overlying a subsurface mine.  - Written confirmation or verification or map from the NM EMNRD-Mi	ining and Mineral Division		☐ Yes ☐ No
Within an unstable area.  - Engineering measures incorporated into the design; NM Bureau of Geosciety; Topographic map	ology & Mineral Resources; USGS;	<b>I</b>	Yes No
Within a 100-year floodplain FEMA map			☐ Yes ☐ No
On-Site Closure Plan Checklist: (19.15.17.13 NMAC) Instructions: Each o by a check mark in the box, that the documents are attached.	f the following items must be attach	ed to the closure plan	. Please indicate,
Siting Criteria Compliance Demonstrations - based upon the appropriate requirements of 19.15.17.10 NMAC  Proof of Surface Owner Notice - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Construction/Design Plan of Burial Trench (if applicable) based upon the appropriate requirements of 19.15.17.11 NMAC  Construction/Design Plan of Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19.15.17.13 NMAC  Protocols and Procedures - based upon the appropriate requirements of 19.15.17.13 NMAC  Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Waste Material Sampling Plan - based upon the appropriate requirements of Subsection F of 19.15.17.13 NMAC  Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings or in case on-site closure standards cannot be achieved)  Soil Cover Design - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC  Re-vegetation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC			

Operator Application Certification: I hereby certify that the information submitted with this application is true, accurate a	nd complete to the best of my knowledge and belief.		
Name (Print): Stephen Byers	Title: Drilling Engineer		
14 1 1 1			
Signature: Jupun Cyvul e-mail address: sbyers@energen.com	505.004.4144		
	Telephone: 505-324-4144		
OCD Approval: Permit Application (including closure plan) Closu  OCD Representative Signature:  OCD Representative OCD			
Title: Compliance White OCD	Permit Number:		
Closure Report (required within 60 days of closure completion): Subsection K of 19.15.17.13 NMAC Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.  Closure Completion Date:			
Closure Method:  Waste Excavation and Removal On-Site Closure Method Alternative Closure Method Waste Removal (Closed-loop systems only)  If different from approved plan, please explain.			
Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.  Disposal Facility Name: Disposal Facility Permit Number:			
Disposal Facility Name:	al Facility Permit Number:		
Were the closed-loop system operations and associated activities performed on or in areas that will not be used for future service and operations?  [ Yes (If yes, please demonstrate compliance to the items below)			
Required for impacted areas which will not be used for future service and operations:  Site Reclamation (Photo Documentation)  Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique	·		
Closure Report Attachment Checklist: Instructions: Each of the following items must be attached to the closure report. Please indicate, by a check mark in the box, that the documents are attached.  Proof of Closure Notice (surface owner and division) Proof of Deed Notice (required for on-site closure) Plot Plan (for on-site closures and temporary pits) Confirmation Sampling Analytical Results (if applicable) Waste Material Sampling Analytical Results (required for on-site closure) Disposal Facility Name and Permit Number Soil Backfilling and Cover Installation Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) On-site Closure Location: Latitude Longitude NAD: 1927 1983			
25.			
Operator Closure Certification:  I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.			
Name (Print):	Title:		
Signature:	_ Date:		
e-mail address:	Telephone:		



## **CLOSED-LOOP SYSTEM**

#### Design Plan

The closed loop system will include a drying pad and sump to facilitate the collection of liquids derived from drill cuttings and an above ground steel holding tank suitable for generated cuttings and fluids during rig operations. The tank will be of sufficient volume to maintain a safe free board between disposal of the liquids and solids from rig operations.

- 1) Fencing is not required for an above ground closed-loop system.
- 2) The drying pad will be constructed by 6 inches of clay dirt over a 20-mil string-reinforced LLDPE liner to prevent infiltration of any draining liquid.
- 3) Run-off will be prevented from lined ditches on the perimeter of the drying pad.
- 4) Berms will also be constructed on the outside perimeter to prevent run-on of water or fluids.
- 5) It will be signed in compliance with 19.15.3.103 NMAC.

### **Operating and Maintenance Plan**

A modified steel tank will be operated and maintained; to contain liquids and drill cuttings, to aid in the prevention of contamination of fresh water sources, in order to protect public health and the environment. To attain this goal the following steps will be followed:

- 1) The liquids in the closed-loop tank will be re-circulated through the mud system or vacuumed and disposed of at Envirotech (Permit Number NM-01-0011) or IEI/JFJ Landfarm (#NM-01-0010B) on a periodic basis to prevent over topping.
- 2) As drill solids are generated, a front-end loader removes the waste and will begin stacking it on a drying pad.
- 3) Small amounts of dirt or lime my added to aid in drying.
- 4) No hazardous waste, miscellaneous solid waste or debris will be discharged into or stored in the tank. Only fluids or cuttings used or generated by rig operations will be placed or stored in the tank.
- 5) The division district office will be notified within 48 hours of the discovery of compromised integrity of the closed-loop tank. Upon the discovery of the compromised tank, repairs will be enacted immediately.
- 6) All of the above operations will be inspected and a log will be signed and dated. During rig operations the inspection will be daily.

#### Closure Plan

The closed loop holding tank will be closed in accordance with 19.15.17.13. To accomplish this, all cuttings on the drying pad and any remaining fluids in the holding tank will be hauled to **Envirotech** (Permit # NM-01-0011) or **IEI/JFL Landfarm** (# NM-01-0010B) immediately following rig operations. The tanks will be removed from location as part of the rig move, and stacked cuttings to a commercial disposal site mentioned above. The APD Conditions of Approval will be followed for cite reclamation.

#### **Completion Plan**

A closed-loop tank will be set on location once drilling operations have ceased. The closed-loop tank will measure 20 ft height by 12 ft diameter (400 BBL) or 20 ft height by 10 ft 6 in diameter (300 BLL). It will be designed, operated, maintained and closed according to the attached Closed-loop Design Plan, Closed-loop Operating and Maintenance Plan, and Closed-loop Closure Plan.

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## **CLOSED LOOP SYSTEM SCHEMATIC**

Hole	Depth	Length	Volume
(in)	(ft)	(ft)	(ft <sup>3</sup> )
12 1/4	200	200	164
8 3/4	4500	4300	1796
6 1/4	3500	3300	703

Estimated Gauge Hole Volume 2662

Length	Width	Height	Volume
(ft)	(ft)	(ft)	(ft <sup>3</sup> )
135	60	3	24300

Waste Vol. Estimate for one cuttings pile

