District I 1625 N French Dr , Hobbs, NM 88240 District II 1301 W Grand Avenue, Artesia, NM 88210 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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Proposed Alternative Method Permit or Closure Plan Application
Type of action:  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  X 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
lease be advised that approval of this request does not relieve theoperator of liability should operations result in pollution of surface water, ground water or the invironment. 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 OGRID # 162928
Address 2010 Afton Place, Farmington, New Mexico 87401
Facility or well name
API Number 3003905718 OCD Permit Number
U/L or Qtr/Qtr L Section 35 Township 25N Range 05W County Rio Arriba
Center of Proposed Design: Latitude <u>36 35383</u> Longitude <u>-107 3371</u> NAD: ☐1927 ☐ 1983
Surface Owner
□ Pit:       Subsection F or G of 19 15.17 11 NMAC         Temporary       □ Drilling       □ Workover         □ Permanent       □ Emergency       □ Cavitation       □ P&A         □ Lined       □ Unlined       Liner type. Thickness
Closed-loop System: Subsection H of 19.15 17 11 NMAC
Type of Operation P&A Drilling a new well Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent)
☐ Drying Pad ☐ Above Ground Steel Tanks ☐ Haul-off Bins ☐ Other
☐ Lined ☐ Unlined Liner type. Thickness mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other
intent)  Drying Pad
Liner Seams   Welded   Factory   Other
X Below-grade tank: Subsection I of 19 15 17 11 NMAC
Volumebbl Type of fluid Produced Water
X Below-grade tank: Subsection I of 19 15 17 11 NMAC  Volume bbl Type of fluid Produced Water  Tank Construction material
Secondary containment with leak detection  Visible sidewalls, liner, 6-inch lift and automatic overflow shut-off
☐ Visible sidewalls and liner X Visible sidewalls only ☐ Other
Liner type Thicknessmil
5 Alternative Method:

Submittal of an exception request is required Exceptions must be submitted to the Santa Fe Environmental Bureau office for consideration of approval

Fencing: 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, institution or church)  Four foot height, four strands of barbed wire evenly spaced between one and four feet  Alternate Please specify	hospital,			
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)				
Signs: Subsection C of 19 15.17.11 NMAC  12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers  Signed in compliance with 19 15.3.103 NMAC	·			
Administrative Approvals and Exceptions:  Justifications and/or demonstrations of equivalency are required Please refer to 19 15.17 NMAC for guidance.  Please check a box if one or more of the following is requested, if not leave blank:  Administrative approval(s) Requests must be submitted to the appropriate division district or the Santa Fe Environmental Bureau office for consideration of approval  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	☐ Yes ☐ No			
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	Yes No			
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	Yes No			
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	☐ Yes ☐ No			
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 - FEMA map	☐ Yes ☐ No			

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Temporary Pits, Emergency Pits, and Below-grade Tanks 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.  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 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 Design - based upon the appropriate requirements of 19 15 17 11 NMAC  Quality Control/Quality Assurance Construction and Installation Plan  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 H <sub>2</sub> S, Prevention Plan  Emergency Response Plan  Oil Field Waste Stream Characterization  Monitoring and Inspection Plan  Erossion Control Plan  Closure Plan - based upon the appropriate requirements of Subsection C of 19 15 17 9 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.  X Protocols and Procedures - based upon the appropriate requirements of 19 15 17 13 NMAC  X Confirmation Sampling Plan (if applicable) - based upon the appropriate requirements of Subsection F of 19 15 17 13 NMAC  X Disposal Facility Name and Permit Number (for liquids, drilling fluids and drill cuttings)  X 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

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 the disposal of liquids, drilling fluids and drill cuttings. Use at facilities are required.				
Disposal Facility Name Disposal Facility Permit Number				
Disposal Facility Name Disposal Facility Permit Number:				
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service 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				
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 acceptorized below. Requests regarding changes to certain siting criteria may require administrative approval from the appropriate of an exception which must be submitted to the Santa Fe Environmental Bureau office for consideration of appropriate of equivalency are required. Please refer to 19.15.17.10 NMAC for guidance.	propriate district office or may be			
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; Data obtained from nearby wells				
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				
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 applic  Visual inspection (certification) of the proposed site, Aerial photo, Satellite image	eation. Yes No			
Within 500 horizontal feet of a private, domestic fresh water well or spring that less than five households use for domestic watering purposes, or within 1000 horizontal feet of any other fresh water well or spring, in existence at the time of initial - NM Office of the State Engineer - iWATERS database, Visual inspection (certification) of the proposed site				
Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal adopted pursuant to NMSA 1978, Section 3-27-3, as amended  - Written confirmation or verification from the municipality; Written approval obtained from the municipality	ordinance Yes No			
Within 500 feet of a wetland - US Fish and Wildlife Wetland Identification map, Topographic map, Visual inspection (certification) of the propose	sed 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 Ge Society, Topographic map	cological Yes No			
Within a 100-year floodplain - FEMA map	☐ Yes ☐ No			
On-Site 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.  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 Temporary Pit (for in-place burial of a drying pad) - based upon the appropriate requirements of 19 15.17 11 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 I of 19.15.17 13 NMAC  Site Reclamation 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 and complete to the best of my knowledge and belief				
Name (Print) Ld Hasely Title Sr Environmental Engineer				
Signature 21 Hank Date 6/5/12				
e-mail address <u>cd hasely@energen.com</u> Telephone (505) 324-4131				
OCD Approval: Permit Application (including closure plan)   Closure Plan (only)   OCD Conditions (see attachment)				
OCD Representative Signature: 45/05/2017				
Title: Compliance Office 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 Disposal 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) No				
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				
24 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				
Soil Backfilling and Cover Installation  Re-vegetation Application Rates and Seeding Technique Site Reclamation (Photo Documentation) On-site Closure Location Latitude  Longitude    1927   1983				
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				

# **BELOW-GRADE TANK CLOSURE PLAN**

#### **ENERGEN RESOURCES**

## **CLOSURE STEPS:**

NOTE: Tank must be closed within 60 days of the cessation of the use of the tank's operation and prior to June 16, 2013.

- (1) Notify the surface owner by certified mail, return receipt requested, of the plans to close the below-grade tank.
- (2) Notify the Aztec OCD office (Brandon Powell 334-6178, Ext 15) verbally or by other means at least 72 hours, but not more than one week, prior to the planned closure operation.
- (3) Remove liquids from the below-grade tank. Dispose of the liquids and sludge in a division-approved facility.
- (4) Remove the below-grade tank for re-use in an above-ground setup or for disposal in a division-approved manner.
- (5) Unless the equipment is required for some other purpose, remove any on-site equipment associated with the below-grade tank.
- (6) Test the soils beneath the below-grade tank to determine whether a release has occurred.
  - Collect, at a minimum, a five point, composite sample;
  - Collect individual grab samples from any area that is wet, discolored or showing other evidence of a release;

Analyze for BTEX, TPH and chlorides to demonstrate:

- Benzene concentration does not exceed 0.2 mg/kg, as determined by EPA SW-846 methods 8021B or 8260B
- Total BTEX concentration does not exceed 50 mg/kg, as determined by EPA SW-846 methods 8021B or 8260B
- TPH concentration does not exceed 100 mg/kg, as determined by EPA method 418.1
- Chloride concentration does not exceed 250 mg/kg, as determined by EPA method 300.1 or the background concentration, whichever is greater.
- (7) <u>IF the soil analyses show that the soils meet the concentrations specified in (6) above</u>, backfill the excavation with compacted, non-waste containing, earthen material in a manner that will prevent ponding or erosion. If the area will not be needed for operations, reclaim the area as described in the "RECLAMATION" section.
- (8) <u>IF the soil analyses show that the soils exceed one or more of the concentrations specified in (6) above</u>, notify the Aztec OCD office (Brandon Powell 334-6178, Ext 15) and proceed per 19 15.3 116 NMAC

NOTE: If groundwater is encountered at any time during the closure process, the OCD office will be notified and a specific closure plan will be submitted to the Aztec and Santa Fe OCD offices for approval.

## **FINAL CLOSURE REPORT:**

Within 60 days of closure completion, submit a closure report on form C-144, with necessary attachments to document all closure activities including sampling results

### **RECLAMATION:**

If the area is not needed for operations, reclaim the area to a safe and stable condition that blends with the surrounding undisturbed area. Restore the impacted surface area to the condition that existed prior to oil and gas operations by placement of the soil cover, recontour the location and associated areas to a contour that approximates the original contour and blends with the surrounding topography and re-vegetate.

- (A) Construct the soil cover to the site's existing grade and prevent ponding of water and erosion of the cover material. The soil cover shall consist of the background thickness of topsoil or one foot of suitable material to establish vegetation at the site, whichever is greater
- (B) Seed or plant the disturbed areas the first growing season after closing the below-grade tank Drill on the contour whenever practical or by other division-approved methods. The goal is to obtain vegetative cover that equals 70% of the native perennial vegetative cover (un-impacted by overgrazing, fire or other intrusion damaging to native vegetation) consisting of at least three native plant species, including at least one grass, but not including noxious weeds, and maintain that cover through two successive growing seasons. During the two successive growing seasons that prove viability, there shall be no artificial irrigation of the vegetation.
  - (C) Repeat seeding or planting until it successfully achieves the required vegetative cover.
- (D) If conditions are not favorable for the establishment of vegetation, such as periods of drought, contact the Aztec OCD office to discuss possibly delaying seeding or planting until soil moisture conditions become favorable or using additional techniques such as mulching, fertilizing, irrigating, fencing or other practices.
- (E) Notify the Aztec OCD office (Brandon Powell -334-6178, Ext 15) when the area has been seeded or planted <u>and</u> when it successfully achieves re-vegetation.