



Alabama Department of Environmental Management
adem.alabama.gov

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April 1, 2025

Mr. Clint Howard
U.S. Army Garrison-Redstone Arsenal
4488 Martin Road
Redstone Arsenal, AL 35898

RE: **UIC PERMIT NUMBER ALSI5450004**
RSA-095
Eagle Road and Sandpiper Road
Redstone Arsenal, Madison County, Alabama

Dear Mr. Howard:

A **Draft** copy of the permit is enclosed for your review.

If you have any comments on the draft permit, please submit them to this office **within the next thirty (30) days** so that any issues of concern might be resolved.

If you have any questions, please call me at (334) 271-7844.

Sincerely,

Jeff Aul
UIC Program

JA

Enclosure: Draft UIC Permit ALS5450004



Birmingham Office
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
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2715 Sandlin Road, S.W.
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UNDERGROUND INJECTION CONTROL PERMIT

PERMITTEE: U.S. Army Garrison-Redstone

FACILITY/LOCATION: RSA-095
Eagle Road and Sandpiper Road
Redstone Arsenal, Madison County, Alabama
Latitude: N 34.622628/ Longitude W -86.602790

PERMIT NUMBER: ALSI5450004

INJECTION WELL CLASS: Class V

SOURCE OF POLLUTANTS: Injection of zero-valent iron, organic amendment, soybean oil, and viscosity modifier solution to aid in the remediation of existing groundwater contamination

In accordance with and subject to the provisions of the Safe Drinking Water Act, as amended, 42 U.S.C. §§ 300f-300j (the "SDWA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14, (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§ 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to construct and operate injection well(s) of the above-described class.

ISSUANCE DATE:

EFFECTIVE DATE:

EXPIRATION DATE:

DRAFT

Alabama Department of Environmental Management

PART I Authorization to Operate

- A. The permittee is authorized to operate a Class V Injection Well(s), at the facility described in the permit application and in the cover page of this permit, in accordance with the provisions set forth in this permit.
- B. This permit and the authorization to inject shall remain in effect until the expiration date stated on the cover page of this permit. If the permittee desires to continue injection past the expiration date of this permit, the permittee shall request a permit reissuance at least 180 days prior to expiration of this permit.

PART II Construction Requirements

- A. Injection Well Requirements

The permittee shall inject only the zero-valent iron, organic amendment, soybean oil, and viscosity modifier solution to aid in the remediation of existing groundwater contamination as described in the permit application.

- B. Modifications

Approval of the Alabama Department of Environmental Management (ADEM) shall be obtained prior to modification of any injection well activity. Modification shall mean any action that will change the nature of the injection activity, the methods of monitoring injection, or will result in injection of a fluid not specifically authorized by this permit.

- C. Operation

The injection wells shall function properly. Should the wells not function properly the permittee shall take corrective action, to include cessation, as required by the ADEM.

PART III Monitoring and Operating Requirements

- A. Injection Fluid

The permittee shall not inject any substance that is defined as hazardous or toxic by Federal or State laws or regulations or any substance not identified in the application for this permit. The injection of substances other than those identified in the permit application is prohibited. The permittee shall provide a means for confirmatory sampling of the injection material, should the need arise.

- B. Monitoring Wells

1. The permittee shall monitor and limit groundwater in accordance with Appendix A. The injection activity shall not result in the exceedance of any established MCL in groundwater outside the areas of contamination.
2. The groundwater monitoring regime must be sufficient to detect any adverse effects to groundwater quality due to the injection activity. The Department may change the sampling requirements if the sampling data indicate a need to do so.
3. Monitoring wells shall be sampled for background water quality prior to injection.

PART IV Records, Reports, & Submittals**A. Records**

1. The permittee shall retain all records concerning the data used to complete the permit application, the operation of the wells, and the nature and composition of pollutants injected; to include records of the calibration of instruments, meters and gauges, quality control records, and recordings from continuous monitoring instrumentation; until at least three years after the injection activity ends.
2. When requested by the ADEM, the permittee shall deliver copies of any of the records maintained in accordance with this permit.

B. Reports

1. The permittee shall submit to the ADEM written confirmation of all injections that occur, including the initial injection. The written confirmation shall be submitted no later than thirty (30) days after the injection and shall include the information listed below:
 - a) The date of the injection.
 - b) The amount of zero-valent iron, organic amendment, soybean oil, and viscosity modifier solution injected.
 - c) The location(s) of the injection.
2. The permittee shall submit quarterly groundwater monitoring reports to the ADEM no later than (30) days after the end of each quarterly period. The first report submitted shall include the results of the baseline sampling event.
3. Injection reports and groundwater monitoring reports must be submitted electronically via the Department's AEPACS system (<https://adem.alabama.gov/aepacs>). To participate in this program, the appropriate representatives of the permittee must establish an AEPACS account and request access to this site.
4. The permittee shall report to ADEM any of the following:
 - a) Any planned action which will change the use of the injection wells, will result in injection of a fluid different from that authorized by this permit, will change the method of operations of any injection well, or will change the method of the monitoring of well operations or injected fluids.
 - b) Any planned transfer of ownership of all or part of the permitted facility.
 - c) Any relevant facts of which the permittee becomes aware which should have been submitted in a permit application and any corrections to data previously submitted in a permit application.

5. Other Submittals

Studies, engineering reports, plans and specifications, plugging and abandonment plans, logging reports, and other technical documents submitted to comply with this permit shall be prepared by or under the supervision of qualified persons defined by the UIC Regulations of the ADEM.

PART V Plugging and Abandonment

- A. The permittee shall perform any abandonment and closure actions that may be required by ADEM to remove a threat to groundwater quality or to the health of persons which is caused by the injection activity.
- B. Upon the end of use for each injection well, the permittee shall plug and abandon each well in a manner which protects each USDW from pollution by surface water and which prevents the movement of any pollutant or formation fluid from one USDW to another or from one formation to another and which isolates the injection zone.

PART VI Permit Modification, Revocation, Suspension, and Termination

- A. ADEM may impose emergency additional conditions to this permit when necessary to protect waters of the state from pollution. These conditions may include suspension of the permit to inject and shall remain in effect until the permit is modified, revoked, suspended or terminated in accordance with Rules 6-8-.12(a)3-5 and 6-8-.12(f) of the UIC Regulations of the ADEM.
- B. Non-emergency permit modification, revocation, suspension, and termination actions shall be accomplished in accordance with ADEM Administrative Code Rule 335-6-8.

PART VII General Provisions

- A. The permittee shall comply with all provisions of the UIC Regulations of the ADEM and shall comply with all provisions of this permit and shall reduce or halt injection if needed to maintain compliance with the permit and regulations.
- B. The permittee shall comply with all applicable Federal and State hazardous waste management regulations.
- C. The permittee shall allow members of the ADEM staff to:
 - 1. Access property and records of the permittee for purposes of inspection.
 - 2. Collect samples of the injected fluids, process and wastewater streams associated with the permitted injection wells.
 - 3. Collect samples from any monitoring wells.
 - 4. Obtain copies of records upon request.
- D. The permittee shall immediately take all reasonable steps to minimize or correct any adverse environmental impact resulting from the operation of the permitted injection wells.

- E. This permit does not convey any property rights of any sort, or any exclusive privilege.
- F. The filing of a request by the permittee for a permit modification, revocation, and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- G. Any noncompliance with this permit constitutes a violation of the Alabama Water Pollution Control Act and/or the Underground Injection Control Regulations and is grounds for enforcement action such as permit termination, revocation, modification; or denial of a permit renewal application.
- H. Injection to waters of the state, which in this case is groundwater, in accordance with this permit shall not result in the exceedance of a Maximum Contaminant Level (MCL) as established by the Environmental Protection Agency. Injection to groundwater, in accordance with this permit shall not result in a violation of a surface water quality standard.
- I. All provisions of ADEM Code Rule 335-6-8.12 are incorporated as terms and conditions of this permit by reference.
- J. The permittee authorized to discharge under this permit, who wishes to continue to discharge upon the expiration of this permit, shall submit an application for reissuance, using the Department's Alabama Environmental Permitting and Compliance System (AEPACS), unless the Permittee submits in writing valid justification as to why the electronic submittal process cannot be utilized and the Department approves in writing the utilization of hard copy submittals. The AEPACS can be accessed at the following link: <http://adem.alabama.gov/AEPACS>. Such application shall be submitted at least 180 days prior to the expiration date of this permit. Permit requests for initial issuance and modifications of the existing permit should all be submitted through the AEPACS system.

APPENDIX A

Groundwater monitoring wells RS443, RS1476, RS2134, and RS2142 shall be sampled prior to startup and then as specified below:

<u>GROUNDWATER CHARACTERISTICS</u>	<u>UNITS</u>	<u>DISCHARGE LIMITS</u>	<u>MONITORING REQUIREMENTS</u>	
			<u>FREQUENCY</u>	<u>SAMPLE TYPE</u>
TDS	mg/l	Report	Quarterly	Grab
pH	S.U.	Report	Quarterly	Grab
Iron	mg/l	Report	Quarterly	Grab

ADEM Permit Rationale

Date: April 1, 2025

Prepared by: Jeff Aul

Responsible Official: Mr. Clint Howard

Permittee Name: U.S. Army Garrison-Redstone Arsenal
4488 Martin Road
Redstone Arsenal, AL 35898

Facility Name: RSA-095

Location: Eagle Road and Sandpiper Road
Redstone Arsenal, Madison County, Alabama
Lat: N 34.622628/Long: W -86.602790

UIC Permit Number: ALSI5450004

Draft Permit is: Modification

Injection Description: Injection of zero-valent iron, organic amendment, soybean oil, and viscosity modifier solution to aid in the remediation of existing groundwater contamination

Discussion: Standard permit drafted

1. Modification to update the DPT injection area
2. No hazardous injection
3. Sampling point required
4. AEPACS required to be utilized for reporting
5. AEPACS required to be utilized for permit reissuances/modifications/transfers