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North Carolina Department of Environment and Natural Resources  
Division of Water Quality

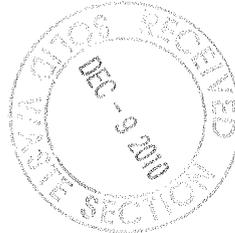
Beverly Eaves Perdue  
Governor

Coleen H. Sullins  
Director

Dee Freeman  
Secretary

November 26, 2010

Josh Miller, Solid Waste Director  
621 Liledoun Road  
Taylorsville, NC 28681



**Ref: Issuance of Injection Permit WI0300160**  
Alexander County Landfill  
Taylorsville, Alexander County, North Carolina.

Dear Mr. Miller:

In accordance with the application received on August 24, 2010, and the supporting data received November 8, 2010, we are forwarding permit number WI0300160. This permit is to inject EOS and BAC-9 to remediate groundwater contaminated with chlorinated solvents and petroleum products at the facility referenced above. This permit shall be effective from the date of issuance until October 31, 2012, and shall be subject to the conditions and limitations stated therein, including the requirement to submit a final project evaluation as stated in PART VII – MONITORING AND REPORTING REQUIREMENTS. Please read the entire permit to ensure that you are aware of all compliance requirements of the permit.

You will need to notify this office by telephone 48 hours prior to initiation of operation of the facility. In order to continue uninterrupted legal use of the injection facility for the stated purpose, you must submit an application to renew the permit 120 days prior to its expiration date. Please contact me at 919-715-6164 or [Thomas.Slusser@ncdenr.gov](mailto:Thomas.Slusser@ncdenr.gov) if you have any questions about your permit.

Best Regards,

Thomas Slusser, L.G.  
Program Manager  
Underground Injection Control Program

cc: Andrew Pitner, Mooresville Regional Office  
Mark Brown, MESCO  
Jackie Drummond, DWM Solid Waste Section  
WI0300160 Permit File

AQUIFER PROTECTION SECTION  
1636 Mail Service Center, Raleigh, North Carolina 27699-1636  
Location: 2728 Capital Boulevard, Raleigh, North Carolina 27604  
Phone: 919-733-3221 \ FAX 1: 919-715-0588; FAX 2: 919-715-6048 \ Customer Service: 1-877-623-6748  
Internet: [www.ncwaterquality.org](http://www.ncwaterquality.org)

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**NORTH CAROLINA**

**ENVIRONMENTAL MANAGEMENT COMMISSION**

**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
RALEIGH, NORTH CAROLINA**

PERMIT FOR THE CONSTRUCTION AND OPERATION OF A WELL FOR INJECTION

In accordance with the provisions of Article 7, Chapter 87; Article 21, Chapter 143, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

Alexander County Solid Waste

FOR THE CONSTRUCTION AND OPERATION OF 21 TYPE 5I INJECTION WELLS, defined in Title 15A North Carolina Administrative Code 2C .0209(e)(3)(C), to inject EOS 598B42 and BAC-9 microbes, for the enhanced bioremediation of chlorinated solvents and petroleum hydrocarbons. These injection wells/points will be located at the Alexander County Landfill, 2500 Payne Dairy Road, Taylorsville, Alexander County, North Carolina, and will be operated in accordance with the application submitted August 24, 2010, and in conformity with the specifications and supporting data submitted November 8, 2010, all of which are filed with the Department of Environment and Natural Resources and are considered a part of this permit.

This permit is for Construction and Operation only, and does not waive any provisions of the Water Use Act or any other applicable Laws, Rules, or Regulations. Operation and use of an injection well shall be in compliance with Title 15A North Carolina Administrative Code 2C .0100 and .0200, and any other Laws, Rules, and Regulations pertaining to well construction and use.

This permit shall be effective, unless revoked, from the date of its issuance until October 31, 2012, and shall be subject to the specified conditions and limitations set forth in Parts I through X hereof.

Permit issued this the November 25<sup>th</sup> day of NOVEMBER, 2010.



FOR Coleen H. Sullins, Director  
Division of Water Quality

By Authority of the Environmental Management Commission.

## **PART I - WELL CONSTRUCTION GENERAL CONDITIONS**

1. The Permittee must comply with all conditions of this permit and with the standards and criteria specified in Criteria and Standards Applicable to Injection Wells (15A NCAC 2C .0200). Any noncompliance with conditions of this permit constitutes a violation of the North Carolina Well Construction Act and is grounds for enforcement action as provided for in N.C.G.S. 87-94.
2. This permit shall become voidable unless the facility is constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
3. This permit is valid only for construction of the number of injection wells described in the application and other supporting data. Construction of additional injection wells must be approved in advance by the Aquifer Protection Section.
4. Each injection well shall not hydraulically connect separate aquifers.
5. Each injection well shall be constructed in such a manner that water from land surface cannot migrate into the gravel pack or well screen.
6. Each injection well shall be secured to reasonably insure against unauthorized access and use. Each well shall be permanently labeled with a warning that it is for injection purposes and the entrance to each well must be secured with a locking cap.
7. Each injection well shall be afforded reasonable protection against damage during construction and use.
8. Each injection well shall have permanently affixed an identification plate.
9. Within 30 days of completion of well construction, a completed Well Construction Record (Form GW-1) must be submitted for each injection well to:

Aquifer Protection Section-UIC Program  
DENR-Division of Water Quality  
1636 Mail Service Center  
Raleigh, NC 27699-1636

## **PART II - WELL CONSTRUCTION SPECIAL CONDITIONS**

At least forty-eight (48) hours prior to constructing each injection well, the Permittee shall notify the Aquifer Protection Section-Underground Injection Control (UIC) Central Office staff, telephone number 919-715-6164 and the Mooresville Regional Office Aquifer Protection Section Staff, telephone number 704-663-1699.

### **PART III - OPERATION AND USE GENERAL CONDITIONS**

1. This permit is effective only with respect to the nature, volume of materials, rate of injection, and number of injection wells as described in the application and other supporting data.
2. This permit is not transferable without prior notice to, and approval by, the Director of the Division of Water Quality (Director). In the event there is a desire for the facility to change ownership, or there is a name change of the Permittee, a formal permit amendment request must be submitted to the Director, including any supporting materials as may be appropriate, at least 30 days prior to the date of the change.
3. The issuance of this permit shall not relieve the Permittee of the responsibility of complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other local, state, and federal agencies which have jurisdiction. Furthermore, the issuance of this permit does not imply that all regulatory requirements have been met.

### **PART IV - PERFORMANCE STANDARDS**

1. The injection facility shall be effectively maintained and operated at all times so that there is no contamination of groundwater which will render it unsatisfactory for normal use. In the event that the facility fails to perform satisfactorily, including the creation of nuisance conditions or failure of the injection zone to adequately assimilate the injected fluid, the Permittee shall take immediate corrective actions including those actions that may be required by the Division of Water Quality such as the repair, modification, or abandonment of the injection facility.
2. The Permittee shall be required to comply with the terms and conditions of this permit even if compliance requires a reduction or elimination of the permitted activity.
3. The issuance of this permit shall not relieve the Permittee of the responsibility for damages to surface or groundwater resulting from the operation of this facility.

### **PART V - OPERATION AND MAINTENANCE REQUIREMENTS**

1. The injection facility shall be properly maintained and operated at all times.
2. The Permittee must notify the Division and receive prior written approval from the Director of any planned alterations or additions in the permitted facility or activity not specifically authorized by the permit.
3. At least forty-eight (48) hours prior to the initiation of the operation of the facility for injection, the Permittee must notify by telephone the Aquifer Protection Section-UIC, Central Office staff, telephone number 919-715-6164. Notification is required so that Division staff can inspect or otherwise review the injection facility and determine if it is in compliance with permit conditions.

## **PART VI - INSPECTIONS**

1. Any duly authorized officer, employee, or representative of the Division of Water Quality may, upon presentation of credentials, enter and inspect any property, premises, or place on or related to the injection facility at any reasonable time for the purpose of determining compliance with this permit, may inspect or copy any records that must be maintained under the terms and conditions of this permit, and may obtain samples of groundwater, surface water, or injection fluids.
2. Department representatives shall have reasonable access for purposes of inspection, observation, and sampling associated with injection and any related facilities as provided for in N.C.G.S. 87-90.
3. Provisions shall be made for collecting any necessary and appropriate samples associated with the injection facility activities.

## **PART VII - MONITORING AND REPORTING REQUIREMENTS**

1. The proposed monitoring plan included in the application shall be followed. All sample results shall be submitted to the Aquifer Protection Section's Mooresville Regional Office and the Raleigh Central Office. Any monitoring (including groundwater, surface water, or soil sampling) deemed necessary by the Division of Water Quality to ensure surface and ground water protection, will be established and an acceptable sampling reporting schedule shall be followed.
2. The Permittee shall submit an Injection Event Record within 30 days of completing each injection.
3. The Permittee shall produce a final project evaluation within 9 months after completing all injection-related activity associated with this permit or produce a project interim evaluation before submitting a renewal application for this permit. This document shall assess the injection projects findings in a written summary. The final project evaluation shall also contain monitoring well sampling data, contaminant plume maps and potentiometric surface maps.
4. The monitoring results and the final project evaluation shall be submitted to:

Aquifer Protection Section-UIC Program  
DENR-Division of Water Quality  
1636 Mail Service Center  
Raleigh, NC 27699-1636

and to:

Aquifer Protection Section  
DENR-DWQ Mooresville Regional Office  
610 East Center Avenue, Suite 301  
Mooresville, NC 28115

5. The Permittee shall report by telephone, within 48 hours of the occurrence or first knowledge of the occurrence, to the Mooresville Regional Office, telephone number 704-663-1699, any of the following:
  - (A) Any occurrence at the injection facility which results in any unusual operating circumstances;
  - (B) Any failure due to known or unknown reasons, that renders the facility incapable of proper injection operations, such as mechanical or electrical failures.
6. Where the Permittee becomes aware of an omission of any relevant facts in a permit application, or of any incorrect information submitted in said application or in any report to the Director, the relevant and correct facts or information shall be promptly submitted to the Director by the Permittee.
7. In the event that the permitted facility fails to perform satisfactorily, the Permittee shall take such immediate action as may be required by the Director.

#### **PART VIII - PERMIT RENEWAL**

In order to continue uninterrupted legal use of the injection facility for the stated purpose, the Permittee must submit an application to renew the permit 120 days prior to its expiration date.

#### **PART IX - CHANGE OF WELL STATUS**

1. The Permittee shall provide written notification within 15 days of any change of status of an injection well. Such a change would include the discontinued use of a well for injection. If a well is taken completely out of service temporarily, the Permittee must install a sanitary seal. If a well is not to be used for any purpose that well must be permanently abandoned according to 15A NCAC 2C .0214, Well Construction Standards.
2. When operations have ceased at the facility and a well will no longer be used for any purpose, the Permittee shall abandon that injection well in accordance with the procedures specified in 15A NCAC 2C .0214, including but not limited to the following:
  - (A) All casing and screen materials may be removed prior to initiation of abandonment procedures if such removal will not cause or contribute to contamination of the groundwaters.
  - (B) The entire depth of each well shall be sounded before it is sealed to insure freedom from obstructions that may interfere with sealing operations.
  - (C) The well shall be thoroughly disinfected, prior to sealing, if the Director determines that failure to do so could lead to the contamination of an underground source of drinking water.

(D) Drilled wells shall be completely filled with cement grout or bentonite grout, which shall be introduced into the well through a pipe which extends to the bottom of the well and is raised as the well is filled.

(E) In the case of gravel-packed wells in which the casing and screens have not been removed, neat-cement, or bentonite grout shall be injected into the well completely filling it from the bottom of the casing to the top.

(F) In those cases when, as a result of the injection operations, a subsurface cavity has been created, each well shall be abandoned in such a manner that will prevent the movement of fluids into or between underground sources of drinking water and in accordance with the terms and conditions of the permit.

(G) The Permittee shall submit a Well Abandonment Record (Form GW-30) as specified in 15A NCAC 2C .0213(h)(1) within 30 days of completion of abandonment.

3. The written documentation required in Part IX (1) and (2) (G) shall be submitted to:

Aquifer Protection Section-UIC Program  
DENR-Division of Water Quality  
1636 Mail Service Center  
Raleigh, NC 27699-1636

## **PART X – WORKER PRECAUTIONS DURING APPLICATION**

1. Some effects reported to be associated with the product proposed to be used are as follows: eye, skin, nose, throat, and lung irritation. If the product is released into the environment in a way that could result in a suspension of fine solid or liquid particles (e.g., grinding, blending, vigorous shaking or mixing), then proper personal protective equipment should be used. The application process should be reviewed by an industrial hygienist to ensure that the most appropriate personal protective equipment is used.
2. Persons working with these products should wear goggles or a face shield, gloves, and protective clothing. Face and body protection should be used for anticipated splashes or sprays.
3. Eating, drinking, smoking, handling contact lenses, and applying cosmetics should not be permitted in the application area during or immediately following application.
4. Safety controls should be in place to ensure that the check valve and the pressure delivery systems are working properly.
5. The Material Safety Data Sheets should be followed to prevent incompatible or adverse reactions and injuries.