



October 10, 2014

Robert Goldstein
3921 Greenpeak Rd
Jarrettsville, MD 21084

Re: Point of Entry Treatment (POET) System Installation
3921 Greenpeak Rd, Jarrettsville, MD 21084
MDE Case No. 2006-0442-HA

Dear Mr. Goldstein:

The results from the most recent sampling event, which were provided to you on September 10, 2014, demonstrate a detection of methyl tertiary butyl ether (MTBE) in your well water at a concentration of 20.8 micrograms per liter ($\mu\text{g/L}$). This detected concentration exceeds the Maryland Department of the Environment (MDE) action level for MTBE at 20.0 $\mu\text{g/L}$. In a Site Status Letter to Carroll Fuels on September 23, 2014, the MDE has requested that a granular activated carbon (aka POET) system be installed in your home to treat your potable water **no later than October 30, 2014**. Please see the attached Site Status Letter with Fact Sheet of which you received a copy direct from the MDE.

Please review and sign the attached POET Access Agreement and return one copy of the signed agreement in the enclosed stamped, self-addressed envelope to GES. Upon receipt of your signed agreement, we will arrange for the installation of the POET system in your home. Your POET system will then be sampled prior to November 15, 2014. We will notify you in advance of the next scheduled sampling events.

If you have any questions concerning this sampling event, please feel free to contact me at 800-220-3606, Ext. 3717. You may also contact Ms. Jeannette DeBartolomeo or Mrs. Susan Bull of the MDE at 410-537-3427 or 410-537-3499, respectively.

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Gregory Reichart
Project Manager

Attachments

c: Jeannette DeBartolomeo, MDE (2 copies & CD)
Susan Bull, MDE
Peter Smith, HCHD
Herb Meade, CIFC (via email)
Todd Passmore, Apex
GES File

SITE ACCESS AGREEMENT

Under contract with Carroll Independent Fuel Company (CIFC) and the environmental consultant, Groundwater & Environmental Services, Inc. ("Consultant"), a certified subcontractor will install a potable water treatment system at the following property (the "Property") owned by **Robert Goldstein** ("Property Owner"):

**3921 Greenpeak Rd
Jarrettsville, MD 21084**

The work to be performed hereunder, in accordance with investigative activities with the Maryland Department of the Environment (MDE), is as follows:

Installation of one potable water treatment system to include:

1. Two fiberglass carbon treatment units
2. Sampling ports with associated plumbing

Property Owner hereby grants Consultant permission to enter upon the Property and to conduct the activities described above on the following conditions:

1. Consultant will release and hold the Property Owner harmless for loss of or damage to the equipment belonging to Consultant while such equipment is in or on the Property, except where such loss or damage is a result of the Property Owner's extreme negligence and/or willful misconduct.
2. Consultant will be responsible for maintenance and repairs to the system and its components. Property Owner will not be responsible for repairs, nor should Property Owner come in contact with system or system components. Tampering with system by Property Owner or Property Owner's lessees will be considered willful misconduct and thus forfeit Condition #1.
3. Consultant will contact Property Owner with at least 24 hours prior notice in order to enter the property to sample the treatment system or to make repairs to the system.
4. Consultant assumes all costs associated with system installation, system maintenance, system repairs (except those repairs made due to Property Owner's negligence and/or willful misconduct), system sampling, and any other system activities as required by the Maryland Department of the Environment.
5. Consultant will provide Property Owner with analytical results from system sampling events.

PROPERTY OWNER
Robert Goldstein

CONSULTANT
Groundwater & Environmental Services, Inc.

Name: _____

Name: _____

Signature: _____

Signature: _____

Date: _____

Date: _____

Phone: _____



MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719

410-537-3442 410-537-3092 (fax)

1-800-633-6101, ext. 3442

Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

September 23, 2014

Mr. Herbert M. Meade
Director, Environmental Health and Safety
Carroll Independent Fuel
2700 Loch Raven Road
Baltimore MD 21218

RE: SITE STATUS LETTER

Case No. 2006-0442-HA

High's Dairy Store No. 130

4101 Norrisville Road, Madonna

Harford County, Maryland

Facility I.D. No. 2057

Dear Mr. Meade:

The Oil Control Program recently completed a review of the case file for the above-referenced property, including the August 2014 sampling results. In July 2005, three groundwater monitoring wells were installed in accordance with Code of Maryland Regulations (COMAR) 26.10.02.03-4. Sampling of the monitoring well network in March 2014 detected methyl tertiary-butyl ether (MTBE) at 11.2 parts per billion (ppb), which has decreased from the historic high of 1,600 ppb detected in December 2005. Sampling of the station's on-site drinking water supply well remains non-detect for petroleum constituents.

In April 2008, a representative from the Harford County Health Department collected a drinking water sample from the residence located at 3914 Madonna Road in response to a complaint of gasoline odors in the well. The sample collected revealed MTBE at 41 ppb. A confirmatory sample collected in June 2008 revealed MTBE at 58.1 ppb. The Department determined that High's Dairy Store No. 130 was the likely source of the MTBE impact and required the installation and maintenance of a granular activated carbon (GAC) filtration system on the residence (installed in August 2008) and quarterly monitoring of this well. In addition, the Department required quarterly sampling of the close proximity adjacent supply wells at 3921 and 3922 Greenpeak Road and annual sampling of the supply wells located at 3908 and 3922 Madonna Road.

Samples collected from the drinking water supply well at 3921 Greenpeak Road in May 2014 detected MTBE at 19.4 ppb. A confirmatory sample collected in June 2014 detected MTBE at 17.7 ppb. In August 2014, additional sampling of this supply well revealed MTBE at 20.8 ppb. Based on the aforementioned findings, the Department hereby requires the following:

SEP 24 2014

Request for GAC Filtration System and Monitoring:

- 1) **No later than October 30, 2014**, install and maintain a GAC filtration system on the private drinking water supply well located at 3921 Greenpeak Road (see enclosed fact sheet).
- 2) **No later than November 15, 2014**, collect samples from the newly installed GAC filtration system. Samples must be collected pre-, mid-, and post-filtration. All samples collected must be analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates, using EPA Method 524.2. Submit copies of all sampling results to the property owner, the Harford County Health Department, and the MDE-OCP case manager.
- 3) **No later than December 15, 2014**, and on a **monthly** basis for three months, collect samples from the GAC system (pre-, mid-, and post-filtration) and analyze for full-suite VOCs, including fuel oxygenates, using EPA Method 524.2. Submit copies of all sample results to the property owner, the Harford County Health Department, and the MDE-OCP case manager. The MDE-OCP will evaluate these sampling results and determine an appropriate future sampling frequency for the GAC system.

Responsibility for the GAC Filtration System:

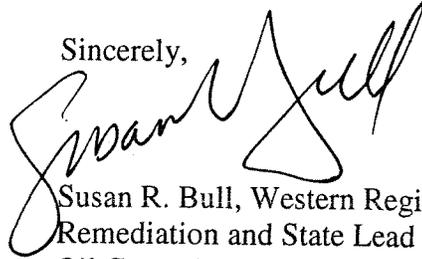
Please note that if Carroll Independent Fuel fails to complete installation of the GAC filtration system by **October 30, 2014**, the Department will assume control of mitigating impact to this off-site private well. The MDE-OCP has determined that environmental conditions at 3921 Greenpeak Road warrant the installation, future sampling, and proper maintenance and operation of a GAC filtration system. Under Section §4-405(c) of the Environment Article, Annotated Code of Maryland, the Department shall assume control of any discharge or spill situation when it determines that the responsible party is not acting promptly to remove the spill or is not undertaking removal or mitigation in a manner appropriate to control or rectify the conditions constituting the emergency or hazard involved.

Cost Recovery:

Pursuant to Sections 4-408 and §411(f) of the Environment Article, Annotated Code of Maryland, the cost of labor, equipment, operation, materials, and any other costs incurred in containment, cleanup, removal, and restoration work resulting from the discharge of oil, petroleum products and their by-products shall be reimbursed to the State by the person responsible for the discharge. As a potential responsible party (PRP), as defined under COMAR 26.10.02, Carroll Independent Fuel may be subject to legal sanctions by the Department for assuming the cost of installing the GAC filtration systems.

When submitting documentation to the Oil Control Program, reference Case No. 2006-0442-HA and provide three (3) hard copies and an electronic copy on a labeled compact disc (CD) to the attention of the case manager at the above letterhead address. If you have any questions, please contact the case manager, Ms. Jeannette DeBartolomeo at 410-537-3427 (email: jeannette.debartolomeo@maryland.gov) or me at 410-537-3499 (email: susan.bull@maryland.gov).

Sincerely,



Susan R. Bull, Western Region Section Head
Remediation and State Lead Division
Oil Control Program

JD/nln

Enclosure: GAC System Fact Sheet

cc: Mr. Peter Reichardt (Groundwater Environmental Services, Inc.)
Mr. Robert Goldstein (Property Owner)
Ms. Cari Bisco (Harford County Health Dept.)
Mr. Andrew B. Miller
Mr. Christopher Ralston
Mr. Horacio Tablada



FACT SHEET

Granular Activated Carbon (GAC) Filtration Systems at Petroleum Contaminated Residential Property State Financed Installation and Removal

What is Granular Activated Carbon (GAC)?

Activated carbon is made from materials such as petroleum coke, bituminous coal, lignite, wood products, coconut shell, or peanut shells. Activation is achieved in a process where steam and high temperature contacts with the material, producing a carbon substance with many small pores. The activated carbon is crushed to produce a granular or pulverized product. Small pores in the granular activated carbon (GAC) increase the surface area of the material, allowing certain compounds/contaminants attracted to the carbon to be adsorbed onto the carbon. The efficiency of the adsorption process is influenced by the characteristics of the carbon and the contaminant, as well as the amount of water pumped through the filter.

Different types of carbon remove different contaminants, and no one type of carbon removes all contaminants. Activated carbon filters will not remove microbial contaminants, calcium, magnesium, fluoride, nitrate, and many other compounds that are highly soluble in water. However, most carbon compounds, such as those found in gasoline and oil, are removed effectively.

Types of GAC Systems

The two types of residential GAC filtration systems commonly used are:

- **Point-of-Use (POU) System.** A system, installed either at a tap or underneath a sink, which typically treats cold water used for drinking and cooking. POU systems treat water at a location in the home.
- **Point-of-Entry (POE) System.** A system that treats all water by being connected to the supply line as it enters the home. This system is recommended for most petroleum contaminant situations. This system usually consists of two 2-cubic-foot fiberglass-reinforced GAC filters, 12 -inch diameter by 48-inch height, piped in series with sampling ports installed before the first filter, in-between the two filters, and after the two filters. Once the POE system is installed, a sampling schedule will be set up to collect samples pre-, mid-, and post-filtration. The schedule of sampling is based on the level of contamination and amount of water used in the home. The sampling frequency will be adjusted as a filter history is developed.

Some drawbacks for a home using a GAC unit include pressure decline, staining of water fixtures, and change in taste. These items can normally be addressed through the proper choice of carbon material and system service. We recommend changing or servicing the filters at least once a year to avoid bacteria buildup and ensure proper water pressure is maintained in the home. We further recommend the use of virgin coconut shell carbon as a filter medium.

Criteria for State-Funded GAC System Installation

A residential drinking water well is sampled using EPA Method 524.2 and petroleum concentrations are detected above the federal and State Safe Drinking Water Standard (i.e. MCL). The Maryland Department of the Environment's Oil Control Program (MDE-OCP) reserves the right to request another confirmatory sample to verify contaminant levels. The maximum contaminant level (MCL) for benzene, toluene, ethylbenzene, and xylene (BTEX) and the State's action level for methyl-tertiary butyl ether (MTBE), chemicals commonly detected as a result of petroleum impact, are:

- 5 ppb for benzene
- 1,000 ppb for toluene
- 700 ppb for ethylbenzene
- 10,000 ppb for xylenes
- 20 ppb for MTBE

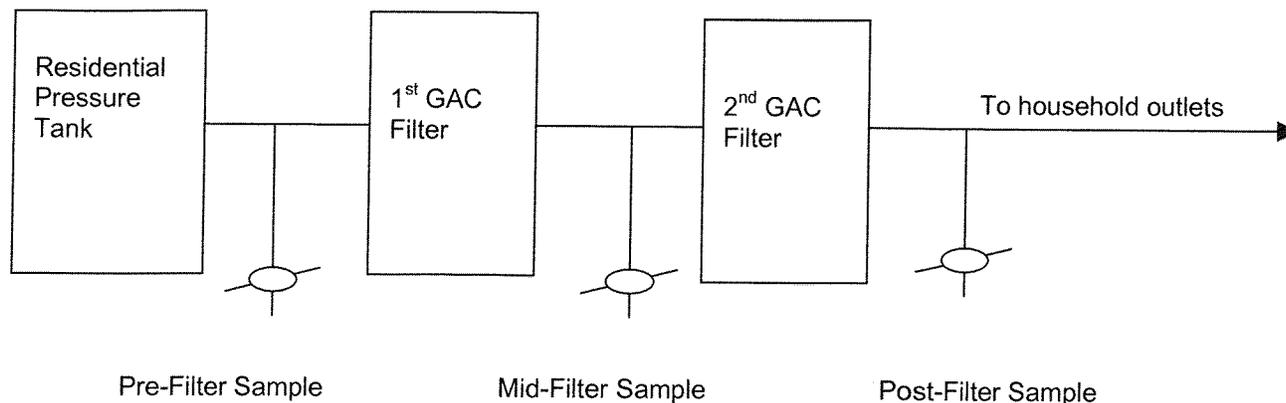
The MDE-OCP will finance the installation of a GAC system provided the residential property is the primary place of residence for the property owner and it is not utilized as a rental property or for commercial purposes. The Department will finance the installation of two 2-cubic-foot carbon filters in series and initiate a schedule to sample water circulating through the GAC system to determine frequency of sampling and efficiency of the filtration system. Sampling and maintenance of the filtration system will be at no cost to the homeowner.

If the residential drinking water well is suspected to be impacted by an on-site activity (e.g. leaking heating oil tank), it will be the responsibility of the property owner to install his or her own treatment system. The Department will continue to investigate the source and extent of the subsurface petroleum impact and ensure that off-site impacts are limited. If off-site impacts are identified, it will be the responsibility of the property owner who caused the subsurface leak to install a filtration system for the off-site drinking water well.

Residential properties meeting the MDE-OCP criteria for a State-funded GAC system will first sign an Access Agreement with the Department. Simply stated, the Access Agreement is a mutual understanding between the Department and the homeowner. The homeowner basically allows the MDE-OCP and/or its contractor access to the residence to install the GAC system and to collect water samples. The Department, in return, maintains the filtration system and returns the property to its original condition upon termination of the filtration system usage.

The MDE-OCP and/or its contractor will initiate a sampling schedule comprised of monthly sampling for the first three months, then sampling every two, three, or four months, depending on analytical results and quantity of water usage. State contractors contact the resident to perform a carbon change when sampling shows that contaminants in the first GAC filter have saturated all pore spaces in the carbon, resulting in what is termed "breakthrough" into the second filter. The second filter acts as a backup to the first filter and will adsorb contaminants moving through the first tank until replacement of the filter has occurred.

Schematic Diagram of a Typical Point of Entry GAC System



GAC System Removal

When the MDE-OCP has determined that a GAC system is no longer required at a residence, the Department will, based on the residents choice, either offer the filtration system to the resident or contract to have the system removed and water piping returned to its original condition. The MDE-OCP will terminate maintenance of a GAC system when one of the following conditions is met:

- Sampling data for residential drinking water for one year has been non-detect for the regulated compounds.
- Sampling data for 18 consecutive months indicate that petroleum constituents are present, but levels have not exceeded the MCL or the State action level for the regulated compound.

If you have any questions about GAC filtration systems, please call the Oil Control Program at 410-537-3443.

Disclaimer:

The intent of this fact sheet is to provide information to the reader. To fully understand the subject, the reader should research additional sources of information. MDE makes no claims to the accuracy of this information and accepts no liability regarding the use or interpretation of this document.